City of Iqaluit
Type A Water Licence Amendment and Renewal Application

ATTACHMENT 16

LTWP Detailed Design Report - Appendix A - Drawings

Rev 1
April 24, 2026

LIST OF GENERAL DRAWINGS

DRAWING No.	DRAWING TITLE
G000	COVER PAGE
G001	INDEX SHEET - 1
G002	INDEX SHEET - 2
G101	OVERALL SITE PLAN
G501	WATER SYSTEM SCHEMATIC

LIST OF CIVIL SITE DRAWINGS

	DESCRIPTION
C101	LQ PUMP STATION - SITE PLAN
C201	LQ PUMP STATION - INTAKE
C202	SERVICE CORRIDOR BETWEEN RESERVOIR AND LAKE GERALDINE 1 OF 2
C203	SERVICE CORRIDOR BETWEEN RESERVOIR AND LAKE GERALDINE 2 OF 2
C204	SERVICE CORRIDOR BETWEEN RESERVOIR AND LAKE GERALDINE - SECTIONS
C301	LQ PUMP STATION - SITE PLAN SECTIONS
C1101	AR PUMP STATION - SITE PLAN
C1201	AR PUMP STATION - INTAKE
C1301	AR PUMP STATION - SITE PLAN SECTIONS

LIST OF CIVIL DAM & DYKES DRAWINGS

	DESCRIPTION
B101	RESERVOIR SYSTEM PLAN VIEW
B102	DAM 1 PLAN VIEW
B103	DYKES 2 AND 3 PLAN VIEW
B104	DYKES 4 AND 5 PLAN VIEW
B105	DYKE 6 PLAN VIEW
B106	DYKE 7 (SPILLWAY) PLAN VIEW
B107	DYKE 8 PLAN VIEW
B301	DAM 1 CROSS-SECTIONS (1)
B302	DAM 1 CROSS-SECTIONS (2)
B303	DYKES 2 AND 3 CROSS-SECTIONS
B304	DYKES 4 AND 5 CROSS-SECTIONS
B305	DYKE 6 CROSS-SECTIONS
B306	LONG SECTIONS
B307	DYKE 8 CROSS-SECTIONS
B308	RESERVOIR LONG CROSS-SECTION A-A'
B309	RESERVOIR LONG CROSS-SECTION B-B'
B310	RESERVOIR LONG CROSS-SECTION C-C'

LIST OF CONVEYANCE DRAWINGS

DRAWING No.	DESCRIPTION
U201	WATERMAIN PLAN AND PROFILE STA. 0+000 TO STA. 0+300
U202	WATERMAIN PLAN AND PROFILE STA. 0+300 TO STA. 0+620
U203	WATERMAIN PLAN AND PROFILE STA. 0+620 TO STA. 0+940
U204	WATERMAIN PLAN AND PROFILE STA. 0+940 TO STA. 1+260
U205	WATERMAIN PLAN AND PROFILE STA. 1+260 TO STA. 1+540
U206	WATERMAIN PLAN AND PROFILE STA. 1+540 TO STA. 1+800
U207	WATERMAIN PLAN AND PROFILE STA. 1+800 TO STA. 2+120
U208	WATERMAIN PLAN AND PROFILE STA. 2+120 TO STA. 2+440
U209	WATERMAIN PLAN AND PROFILE STA. 2+440 TO STA. 2+720
U210	WATERMAIN PLAN AND PROFILE STA. 2+720 TO STA. 3+040
U211	WATERMAIN PLAN AND PROFILE STA. 3+040 TO STA. 3+360
U212	WATERMAIN PLAN AND PROFILE STA. 3+360 TO STA. 3+660
U213	WATERMAIN PLAN AND PROFILE STA. 3+660 TO STA. 3+860
U214	AR PUMP STATION - WATERMAIN PLAN AND PROFILE STA. 0+00 TO STA. 0+300
U215	AR PUMP STATION - WATERMAIN PLAN AND PROFILE STA. 0+300 TO STA. 0+500
U216	AR PUMP STATION - WATERMAIN PLAN AND PROFILE STA. 0+500 TO STA. 0+800
U301	WATERMAIN CROSS SECTIONS 1 OF 2
U302	WATERMAIN CROSS SECTIONS 2 OF 2

LIST OF CIVIL ROAD AND DRAINAGE DRAWINGS

DRAWING No.	DESCRIPTION
T101	ACCESS ROAD TO QIKIQTALIK STA. 0+050 TO 0+350
T102	ACCESS ROAD TO QIKIQTALIK STA. 0+450 TO 0+750 AND 0+800 TO 1+100
T103	ACCESS ROAD TO QIKIQTALIK STA. 1+150 TO 1+700
T104	ACCESS ROAD TO QIKIQTALIK STA. 1+750 TO 2+300
T105	ACCESS ROAD TO QIKIQTALIK STA. 2+300 TO 2+950
T106	ACCESS ROAD TO QIKIQTALIK STA. 2+950 TO 3+450
T107	PROPOSED PUMP STATION 2 ACCESS ROAD STA. 3+450 TO 3+831
T108	PROPOSED RING ROAD STA. 11+940 TO 12+580 AND BERM ACCESS ROAD 17+000 TO 17+060
T109	PROPOSED RING ROAD STA. 12+580 TO 12+930 AND 12+930 TO 13+290
T110	PROPOSED RING ROAD STA. 13+290 TO 13+860 AND 15+000 TO 15+170
T111	PROPOSED RING ROAD STA. 13+860 TO 14+210 AND 15+170 TO 15+553
T112	NEW RESERVOIR ACCESS ROAD STA. 16+480 TO 16+776 AND 16+270 TO 16+480
T113	BERM ACCESS ROAD STA. 17+000 TO 17+200
T114	QUARRY BY-PASS STA. 19+000 TO 19+630
T115	QUARRY BY-PASS STA. 19+630 TO 19+956
T116	BERM ACCESS ROAD STA. 17+000 TO 17+236 AND QUARRY BY-PASS STA. 19+000 TO 19+290
T117	QUARRY BY-PASS STA. 19+290 TO 19+630 AND STA. 19+630 TO 19+956

LIST OF STRUCTURAL DRAWINGS

DRAWING No.	DESCRIPTION
S001	GENERAL NOTES
S002	GENERAL NOTES
S101	LQ PUMP STATION. GROUND FLOOR PLAN
S102	LQ PUMP STATION. VALVE ROOM FLOOR PLAN
S103	LQ PUMP STATION. WET WELL FLOOR PLAN
S104	LQ PUMP STATION. ROOF PLAN
S301	LQ PUMP STATION. SECTION 1-1
S302	LQ PUMP STATION. SECTION 2-2
S303	LQ PUMP STATION. SECTIONS 3-3
S304	LQ PUMP STATION. SECTIONS 4-4
S305	LQ PUMP STATION. SECTIONS 7-7, 8-8
S1101	AR PUMP STATION. GROUND FLOOR PLAN
S1102	AR PUMP STATION. VALVE ROOM FLOOR PLAN
S1103	AR PUMP STATION. WET WELL FLOOR PLAN
S1104	AR PUMP STATION. ROOF PLAN
S1301	AR PUMP STATION. SECTION 1-1
S1302	AR PUMP STATION. SECTION 2-2
S1303	AR PUMP STATION. SECTION 3-3
S1304	AR PUMP STATION. SECTION 4-4
S2101	LQ INTAKE
S2102	AR INTAKE
S2103	AR PIPE BRIDGE
S2104	RESERVOIR VALVE CHAMBER
S2105	LG INTAKE

LIST OF ARCHITECTURAL DRAWINGS

DRAWING No.	DESCRIPTION
A002	LQ PUMP STATION - CONCEPTUAL EXTERIOR VIEWS
A201	LQ PUMP STATION - CONCEPTUAL ELEVATION
A1001	AR PUMP STATION - CONCEPTUAL EXTERIOR VIEWS
A1201	AR PUMP STATION - CONEPTUAL ELEVATION

LIST OF PROCESS DRAWINGS

DRAWING No.	DESCRIPTION
P101	LQ PUMP STATION - PLAN AT EL. 210.50m
P102	LQ PUMP STATION - PLAN AT EL. 207.00 m
P301	LQ PUMP STATION - SECTION 1
P302	LQ PUMP STATION - SECTION 2
P401	PUMP STATION DETAILS - 1
P402	PUMP STATION DETAILS - 2
P403	PUMP STATION DETAILS - 3
P1101	AR PUMP STATION - PLAN AT GROUND ELEVATION
P1102	AR PUMP STATION - PLAN AT EL 91.000
P1103	AR PUMP STATION - INTAKE PLAN
P1301	AR PUMP STATION - MECHANICAL SECTIONS
P1302	AR PUMP STATION - INTAKE SECTIONS

LIST OF MECHANICAL DRAWINGS

DRAWING No.	DESCRIPTION
M001	GENERAL NOTES
M002	MECHANICAL LEGEND
M003	MECHANICAL LEGEND
M101	LQ PUMP STATION - HVAC PLAN AT EL. 210.5m
M102	LQ PUMP STATION - HVAC PLAN AT EL. 207.0m
M301	LQ PUMP STATION - HVAC SECTION A
M302	LQ PUMP STATION - HVAC SECTION B
M303	LQ PUMP STATION - HVAC SECTION C
M304	LQ PUMP STATION - HVAC SECTION D
M401	LQ PUMP STATION - HVAC DETAILS
M501	LQ PUMP STATION - HVAC SCHEMATICS
M103	LQ PUMP STATION - PLUMBING & DRAINAGE AT EL. 210.5m
M104	LQ PUMP STATION - PLUMBING & DRAINAGE AT EL. 207.0m
M402	LQ PUMP STATION - PLUMBING & DRAINAGE DETAILS - 1
M403	LQ PUMP STATION - PLUMBING & DRAINAGE DETAILS - 2
M502	LQ PUMP STATION - EQUIPMENT SCHEDULES
M503	LQ PUMP STATION - PLUMBING AND DRAINAGE SCHEMATICS
M1101	AR PUMP STATION - HVAC PLAN AT EL. 101.7m
M1102	AR PUMP STATION - HVAC PLAN AT EL. 97.8 m
M1301	AR PUMP STATION - HVAC SECTIONS
M1401	AR PUMP STATION - HVAC DETAILS
M1501	AR PUMP STATION - EQUIPMENT SCHEDULE

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN	2024-03-22

Consultant
ARCADIS
8133 Warden Avenue - Unit 300
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Project title
CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
F.B.S.

Drawn by
F.B.S.

Approved by
M.J.

Project Manager
C.G.

Drawing title
GENERAL

INDEX SHEET - 1

Project no.	Drawing no.	Revision no.
30192375	G001	B

0 10 20 30 40 50 60 70 80 90 100mm

LIST OF ELECTRICAL DRAWINGS

	DESCRIPTION
E001	ELECTRICAL LEGEND
E101	LQ PUMP STATION - ELECTRICAL SITE PLAN
E102	LQ PUMP STATION - PLAN AT EL 210.5m
E103	LQ PUMP STATION - PLAN AT EL. 207.0 m
E501	LQ PUMP STATION - SINGLE LINE DIAGRAM
E502	LQ PUMP STATION - MCC LAYOUT AND PANEL SCHEDULE
E1101	AR PUMP STATION - ELECTRICAL SITE PLAN
E1102	AR PUMP STATION - PLAN AT 101.7m
E1103	AR PUMP STATION - PLAN AT 97.8m
E1501	AR PUMP STATION - SINGLE LINE DIAGRAM
E1502	AR PUMP STATION - MCC LAYOUT AND PANEL SCHEDULE
E2501	RESERVOIR INTAKE BUILDING - SINGLE LINE DIAGRAM

LIST OF INSTRUMENTATION DRAWINGS

DRAWING No.	DESCRIPTION
I001	LEGEND 1
N1103	AR PUMP STATION - NETWORK ARCHITECTURE
I002	LEGEND 2
I003	LEGEND 3
I101	LQ PUMP STATION - PUMP STATION P&ID
I102	LQ PUMP STATION - AIR BURST SYSTEM P&ID
I103	LQ PUMP STATION - CONVEYANCE PIPELINE P&ID
I104	LQ PUMP STATION - SERVICE CORRIDOR P&ID
I105	LQ PUMP STATION - CONTROL AND GENERATOR P&ID
I1101	AR PUMP STATION - PUMP STATION P&D
I1102	AR PUMP STATION - CONVEYANCE PIPELINE P&ID
I1103	AR PUMP STATION - CONTROL AND GENERATOR P&ID
N101	LQ PUMP STATION - PLAN AT EL. 210.5m
N102	LQ PUMP STATION - PLAN AT EL. 207.00m
N103	LQ PUMP STATION - NETWORK ARCHITECTURE
N1101	AR PUMP STATION - PLAN AT EL. 105.65m
N1102	AR PUMP STATION - PLAN AT EL. 99.100m

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN	2024-03-22

Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
F.B.S.

Drawn by
F.B.S.

Approved by
M.J.

Project Manager
C.G.

Drawing title

GENERAL

INDEX SHEET - 2

Project no.	Drawing no.	Revision no.
30192375	**G002**	**B**

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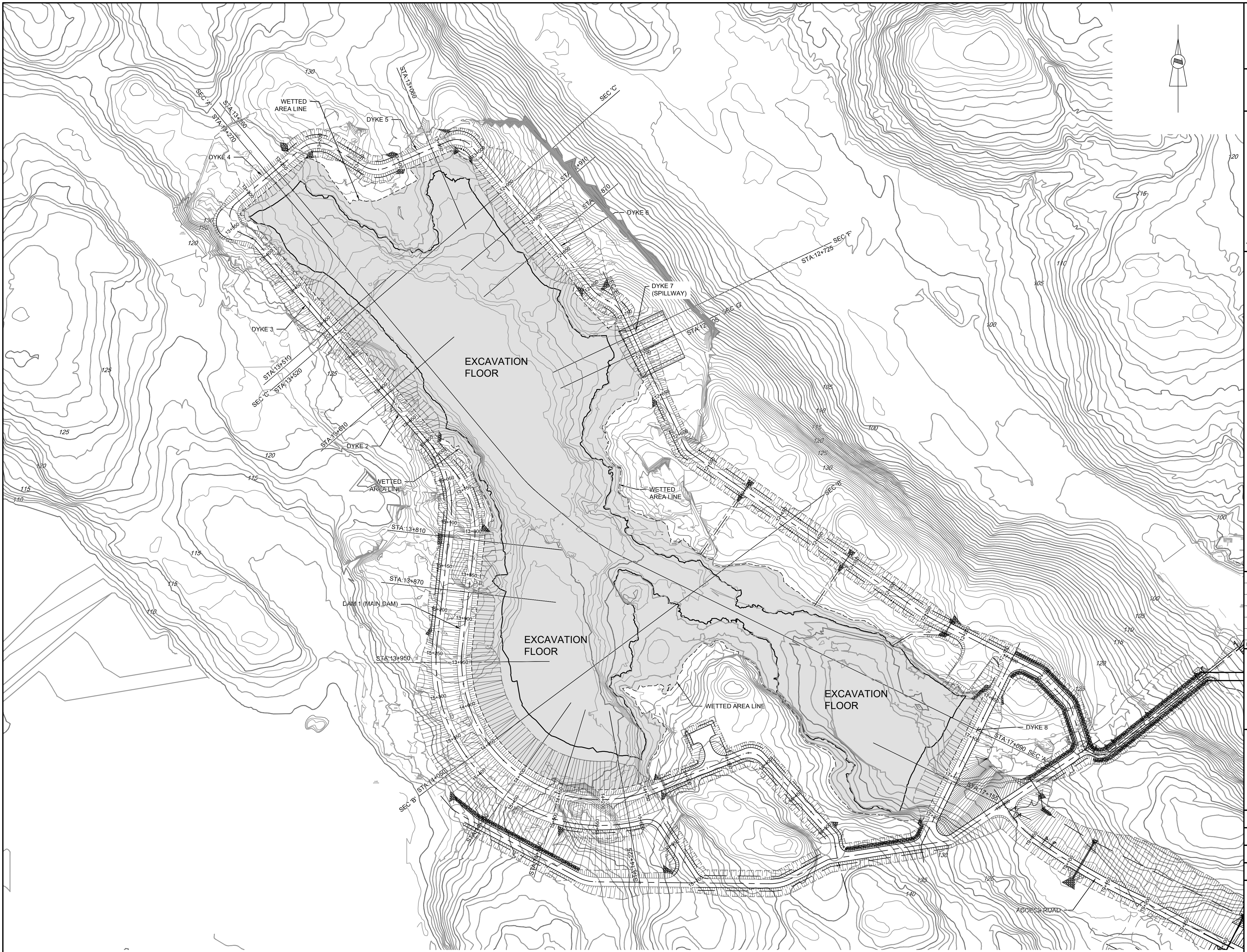
WETTED AREA LINE
DYKE 5
DYKE 4
DYKE 3
DYKE 2
DYKE 6
DYKE 7 (SPILLWAY)
DYKE 8
DAM 1 (MAIN DAM)
EXCAVATION FLOOR
EXCAVATION FLOOR
EXCAVATION FLOOR
WETTED AREA LINE
WETTED AREA LINE
WETTED AREA LINE
ACCESS ROAD
SEC 'A'
SEC 'B'
SEC 'C'
SEC 'D'
SEC 'E'
SEC 'F'
SEC 'G'
STA:13+060
STA:13+250
STA:13+270
STA:12+910
STA:12+810
STA:12+725
STA:13+510
STA:13+520
STA:13+610
STA:13+810
STA:13+870
STA:13+950
STA:14+050
STA:14+225
STA:17+090
STA:17+155
130
125
120
115
110
105
100
140

RESERVOIR SYSTEM PLAN VIEW

Scale 1:2000 @ A1

0 10 20 30 40 50 60 70 80 90 100mm

A1 – 841X594

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

LEGEND

PATTERN	DETAIL
⁘	CUTTING
▩	FILLING
▨	RIPRAP
▤	10m BUFFER ZONE
■	WETTED AREA OF RESERVOIR
▨	DAM CREST

Revision	Description	Date
C	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
A	ISSUED FOR CONCEPT DESIGN	2023-11-27

Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
R.J.

Drawn by
A.A.

Approved by
E.L.

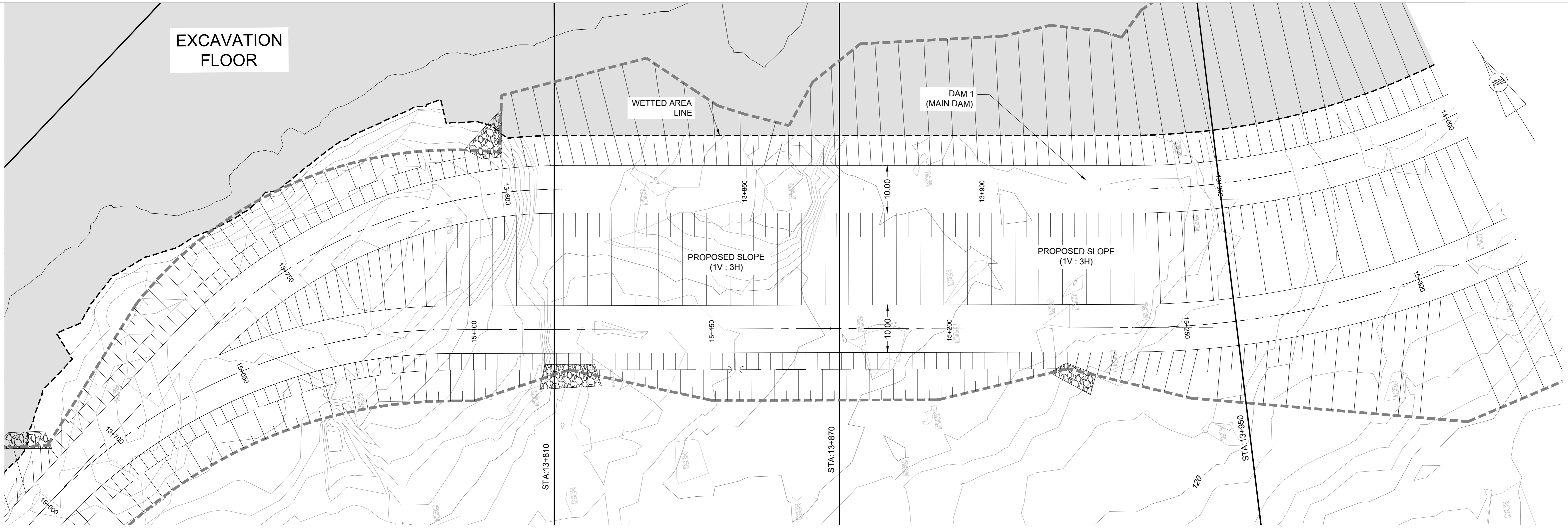
Project Manager
C.G.

Drawing title

CIVIL

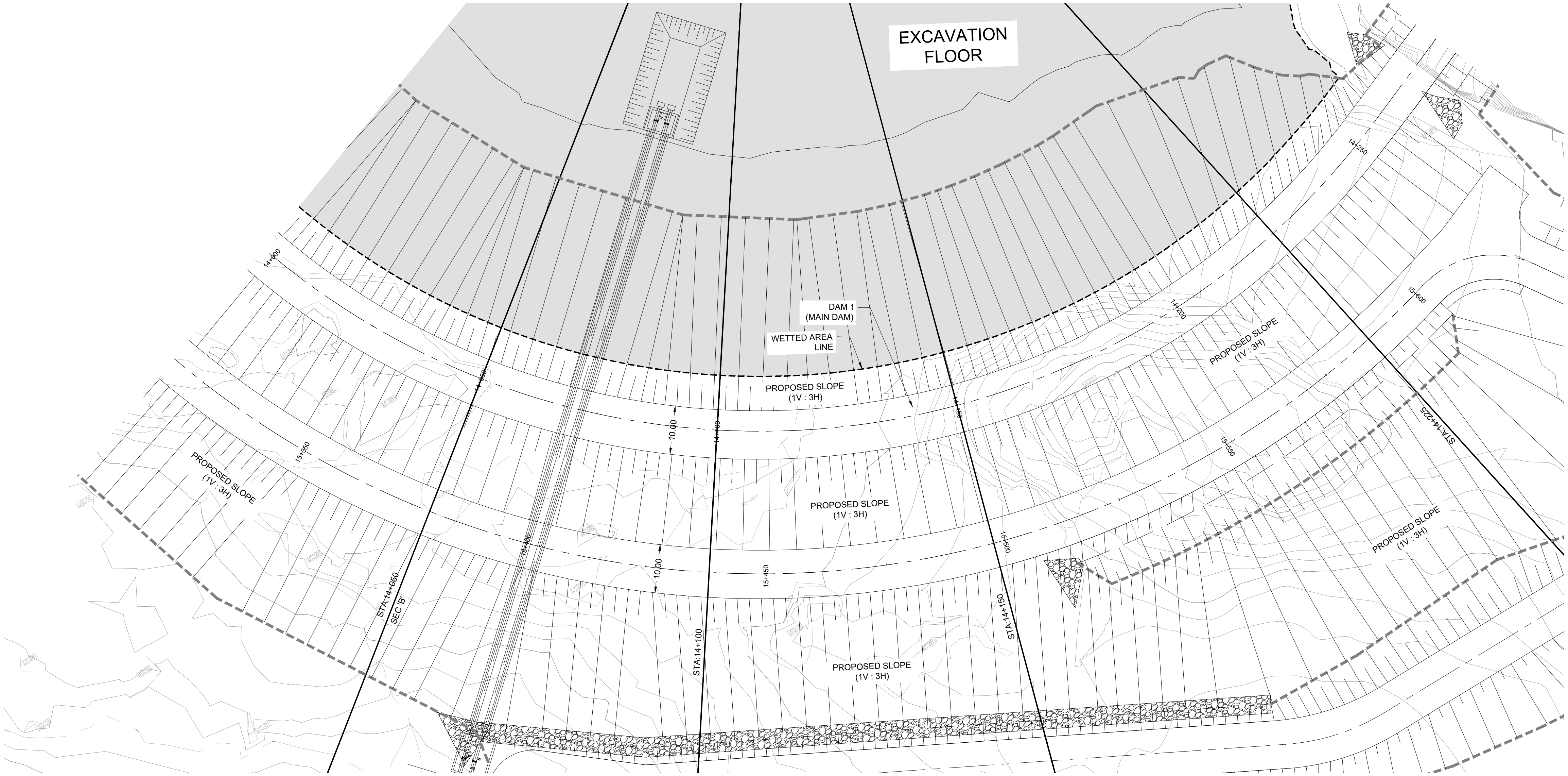
RESERVOIR SYSTEM PLAN VIEW

Project no.	Drawing no.	Revision no.
30192375	B101	C


EXCAVATION FLOOR
WETTED AREA LINE
DAM 1 (MAIN DAM)
PROPOSED SLOPE (1V : 3H)
PROPOSED SLOPE (1V : 3H)
10.00
10.00
13+700
13+750
13+800
13+850
13+900
13+950
14+000
15+000
15+050
15+100
15+150
15+200
15+250
15+300
STA:13+810
STA:13+870
STA:13+950
120

DYKE 1 PLAN VIEW

Scale 1:500 @ A1


EXCAVATION FLOOR
DAM 1 (MAIN DAM)
WETTED AREA LINE
PROPOSED SLOPE (1V : 3H)
PROPOSED SLOPE (1V : 3H)
PROPOSED SLOPE (1V : 3H)
PROPOSED SLOPE (1V : 3H)
PROPOSED SLOPE (1V : 3H)
PROPOSED SLOPE (1V : 3H)
10.00
10.00
14+000
14+050
14+100
14+150
14+200
14+250
15+350
15+400
15+450
15+500
15+550
15+600
STA:14+050 SEC 'B'
STA:14+100
STA:14+150
STA:14+225

DAM 1 PLAN VIEW

Scale 1:500 @ A1

0 10 20 30 40 50 60 70 80 90 100mm

A1 – 841X594

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

LEGEND

PATTERN	DETAIL
▨	CUTTING
▨	FILLING
▨	RIPRAP
▨	10m BUFFER ZONE
▨	WETTED AREA OF RESERVOIR
▨	DAM CREST
◆	SURVEY CONTROL MONUMENT
TM	THERMISTOR
+	PIEZOMETER
☒	INCLINOMETER
▲	REMOTE CAMERA
▨	STAFF GUAGE

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN	2024-03-22

Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
R.J.

Drawn by
A.A.

Approved by
E.L.

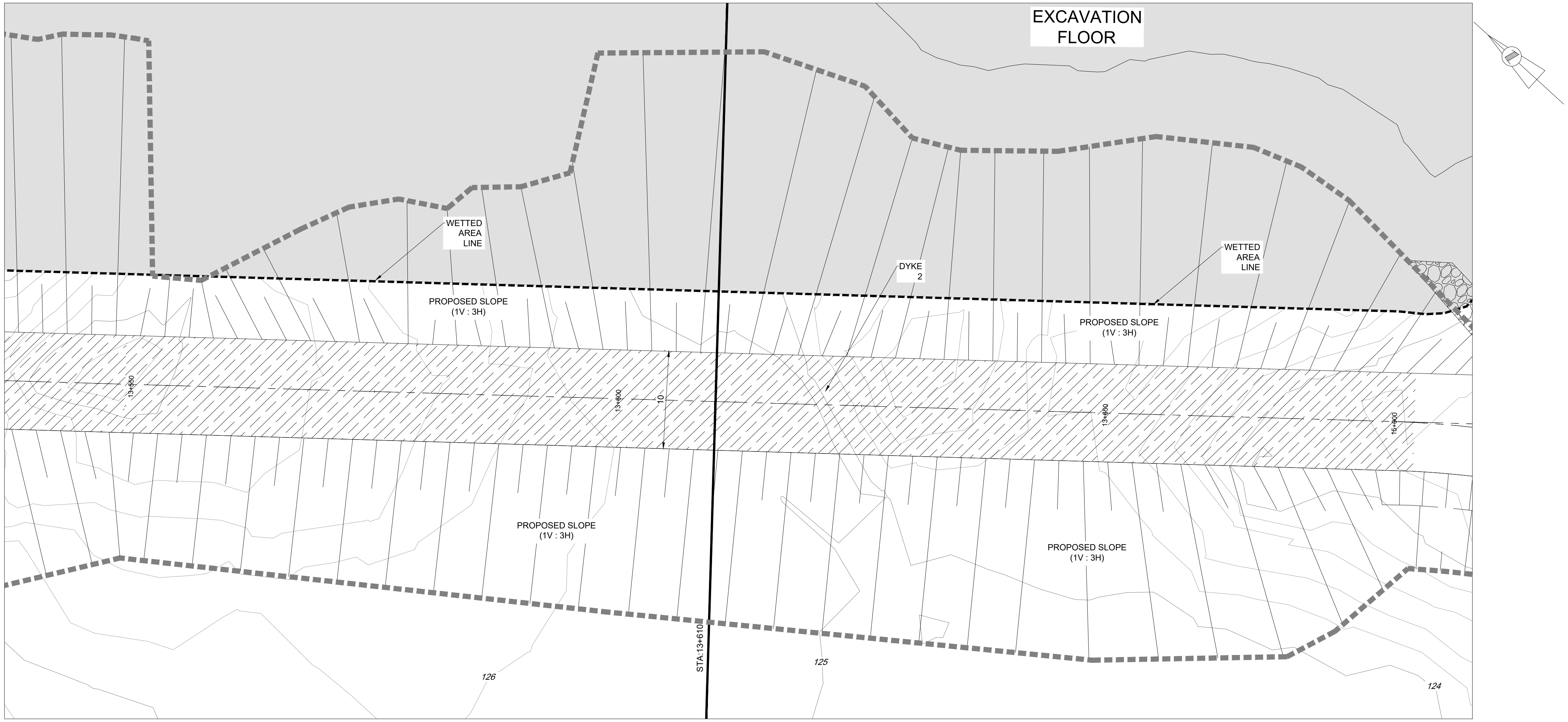
Project Manager
C.G.

Drawing title

CIVIL

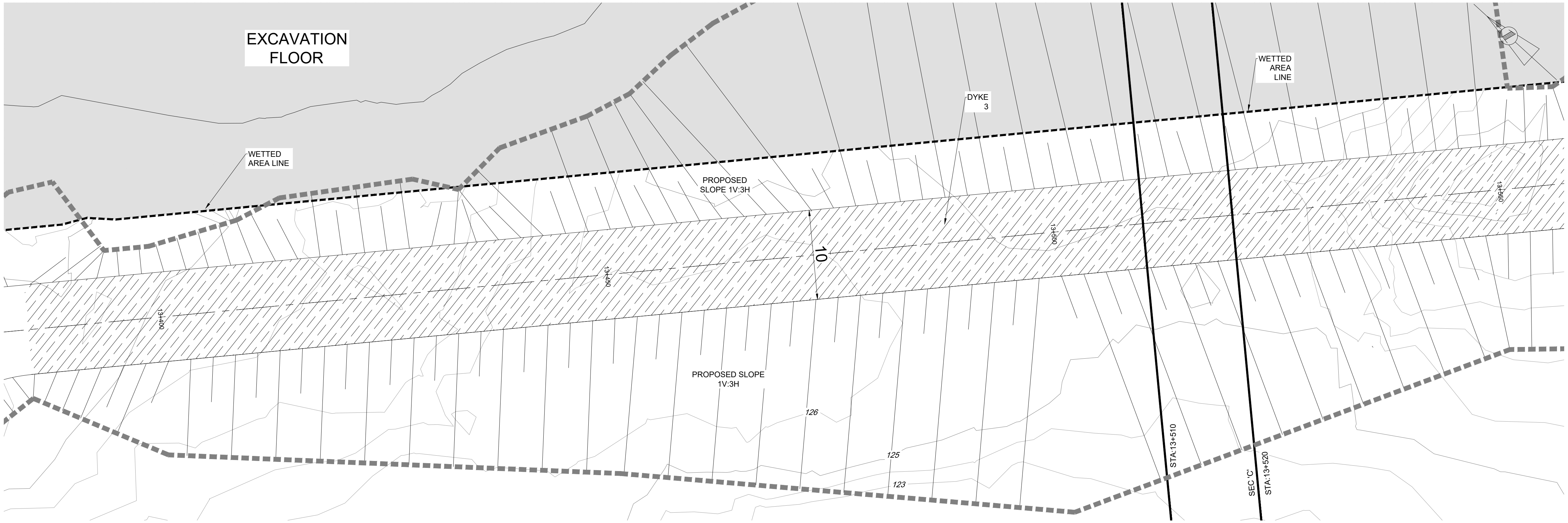
DAM 1 PLAN VIEW

Project no.	Drawing no.	Revision no.
30192375	B102	B


EXCAVATION FLOOR
WETTED AREA LINE
DYKE 2
WETTED AREA LINE
PROPOSED SLOPE (1V : 3H)
PROPOSED SLOPE (1V : 3H)
13+550
13+600
10
13+650
15+000
PROPOSED SLOPE (1V : 3H)
PROPOSED SLOPE (1V : 3H)
STA:13+610
126
125
124

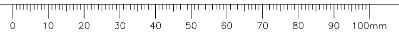
DYKE 2 PLAN VIEW

Scale 1:250 @ A1


EXCAVATION FLOOR
DYKE 3
WETTED AREA LINE
WETTED AREA LINE
PROPOSED SLOPE 1V:3H
10
13+400
13+450
13+500
13+550
PROPOSED SLOPE 1V:3H
126
125
123
STA:13+510
SEC 'C'
STA:13+520

DYKE 3 PLAN VIEW

Scale 1:250 @ A1


0
10
20
30
40
50
60
70
80
90
100mm

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A1 – 841X594

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

LEGEND	
PATTERN	DETAIL
▨	CUTTING
▩	FILLING
▨	RIPRAP
▨	10m BUFFER ZONE
▭	WETTED AREA OF RESERVOIR
▨	DAM CREST

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN	2024-03-22

Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
R.J.

Drawn by
A.A.

Approved by
E.L.

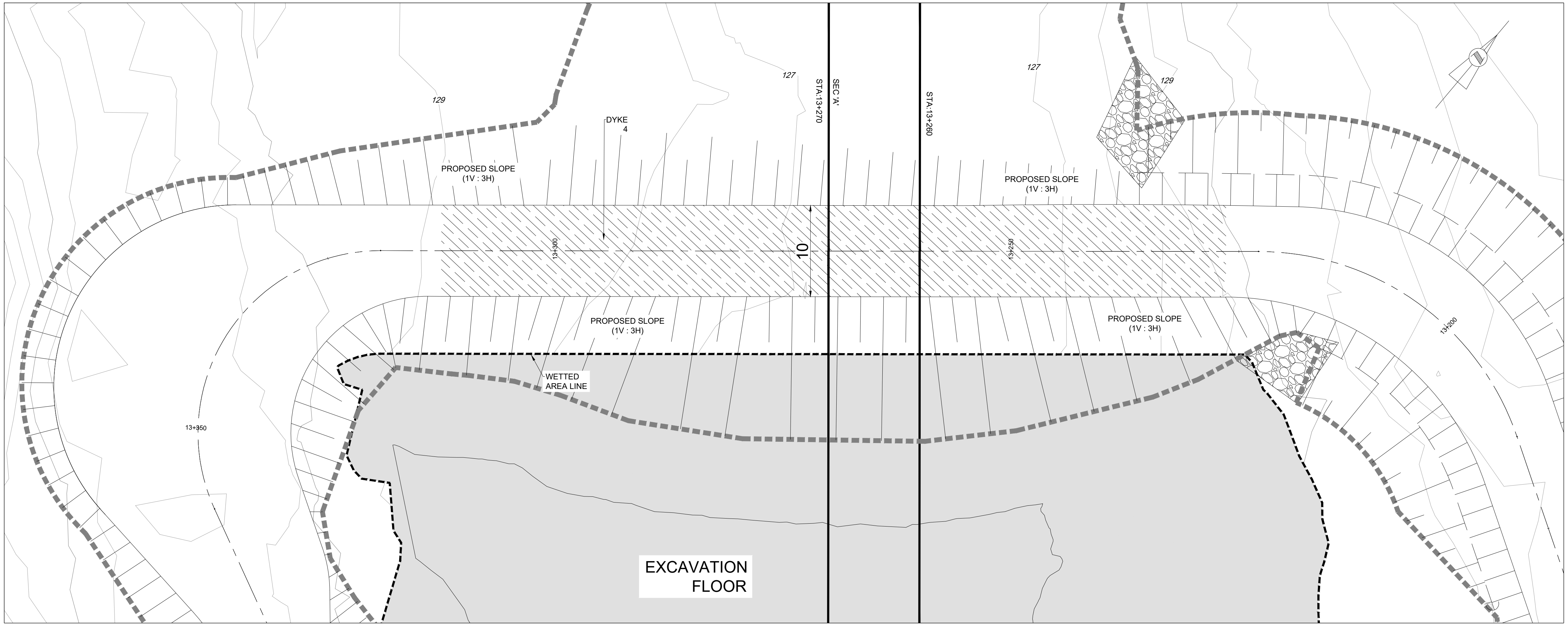
Project Manager
C.G.

Drawing title

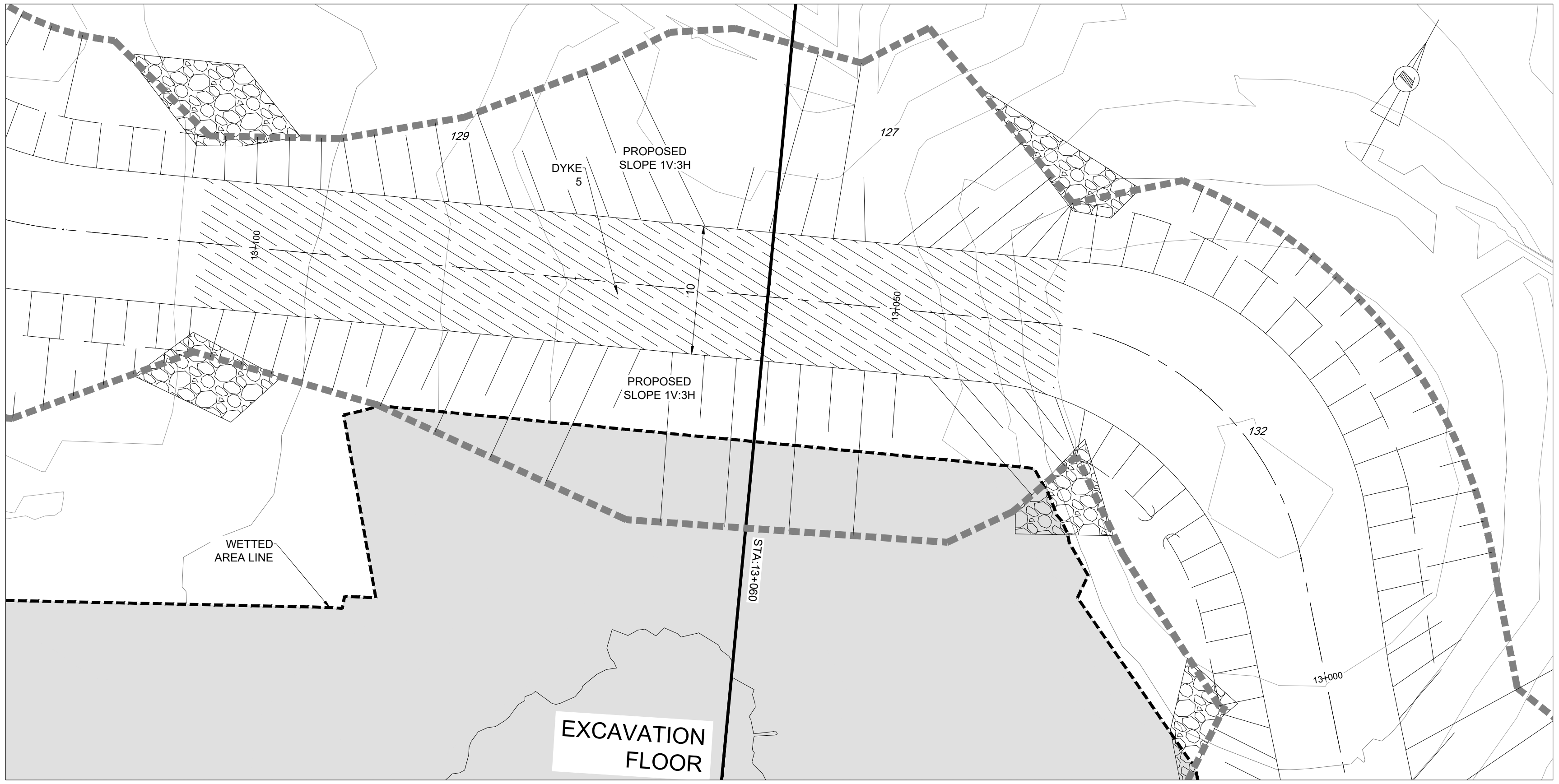
CIVIL

DYKES 1 & 2 PLAN VIEW

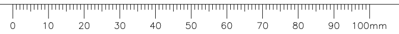
Project no.	Drawing no.	Revision no.
30192375	B103	B


129
127
127
129
SEC 'A'
STA:13+270
STA:13+260
DYKE 4
PROPOSED SLOPE (1V : 3H)
PROPOSED SLOPE (1V : 3H)
13+300
10
13+250
13+200
13+350
PROPOSED SLOPE (1V : 3H)
PROPOSED SLOPE (1V : 3H)
WETTED AREA LINE
EXCAVATION FLOOR

DYKE 4 PLAN VIEW
Scale 1:250 @ A1


129
127
DYKE 5
PROPOSED SLOPE 1V:3H
13+100
10
13+050
PROPOSED SLOPE 1V:3H
132
WETTED AREA LINE
STA:13+060
13+000
EXCAVATION FLOOR

DYKE 5 PLAN VIEW
Scale 1:250 @ A1


0
10
20
30
40
50
60
70
80
90
100mm

Iqaluit

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

LEGEND	
PATTERN	DETAIL
░	CUTTING
▩	FILLING
▨	RIPRAP
░	10m BUFFER ZONE
▭	WETTED AREA OF RESERVOIR
▨	DAM CREST

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN	2024-03-22

Consultant

ARCADIS

8133 Warden Avenue - Unit 300
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tel 905 763 2322
www.arcadis.com

Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
R.J.

Drawn by
A.A.

Approved by
E.L.

Project Manager
C.G.

Drawing title

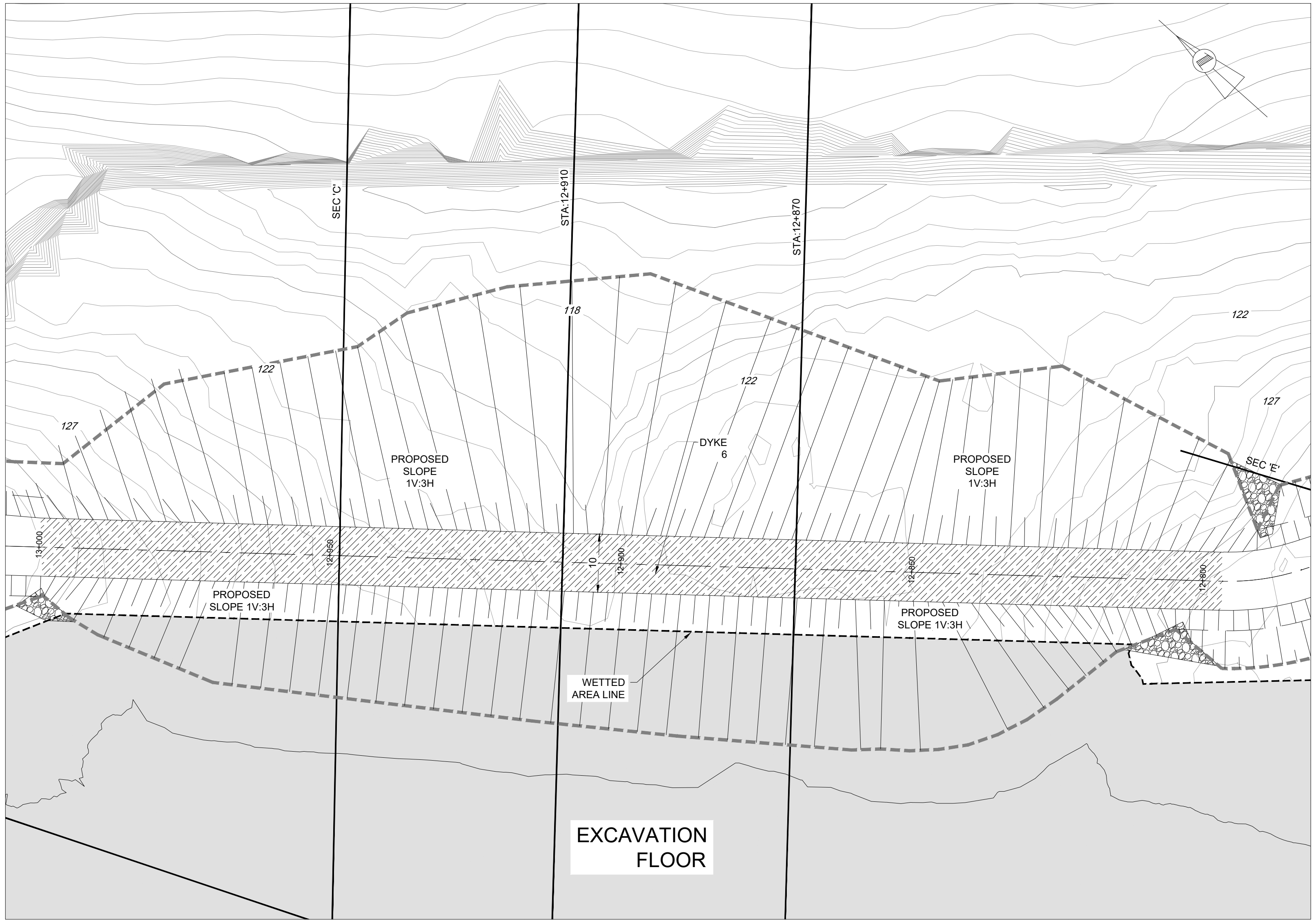
CIVIL

DYKES 4 & 5 PLAN VIEW

Project no.	Drawing no.	Revision no.
30192375	B104	B

C:\Users\iziba\DC\ACCDocs\IBI - DT Services\30288139-Iqaluit_LongTermWater C3D2025\Project Files\7.0_Production\7.03_Design\03_Geotech\Sheets\B104.dwg

A1 - 841X594


SEC 'C'
STA:12+910
STA:12+870
118
122
122
122
122
127
127
PROPOSED SLOPE 1V:3H
DYKE 6
PROPOSED SLOPE 1V:3H
SEC 'E'
13+000
12+950
10
12+900
12+850
12+800
PROPOSED SLOPE 1V:3H
PROPOSED SLOPE 1V:3H
WETTED AREA LINE
EXCAVATION FLOOR

DYKE 6 PLAN VIEW

Scale 1:500 @ A1

0 10 20 30 40 50 60 70 80 90 100mm

C:\Users\iziba\DC\ACCDocs\IBI – DT Services\30288139–Iqaluit_LongTermWater C3D2025\Project Files\7.0_Production\7.03_Design\03_Geotech\Sheets\B105.dwg

A1 – 841X594

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

LEGEND

PATTERN	DETAIL
▒	CUTTING
▩	FILLING
▨	RIPRAP
░	10m BUFFER ZONE
▭	WETTED AREA OF RESERVOIR
▨	DAM CREST

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN	2024-03-22

Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
R.J.

Drawn by
A.A.

Approved by
E.L.

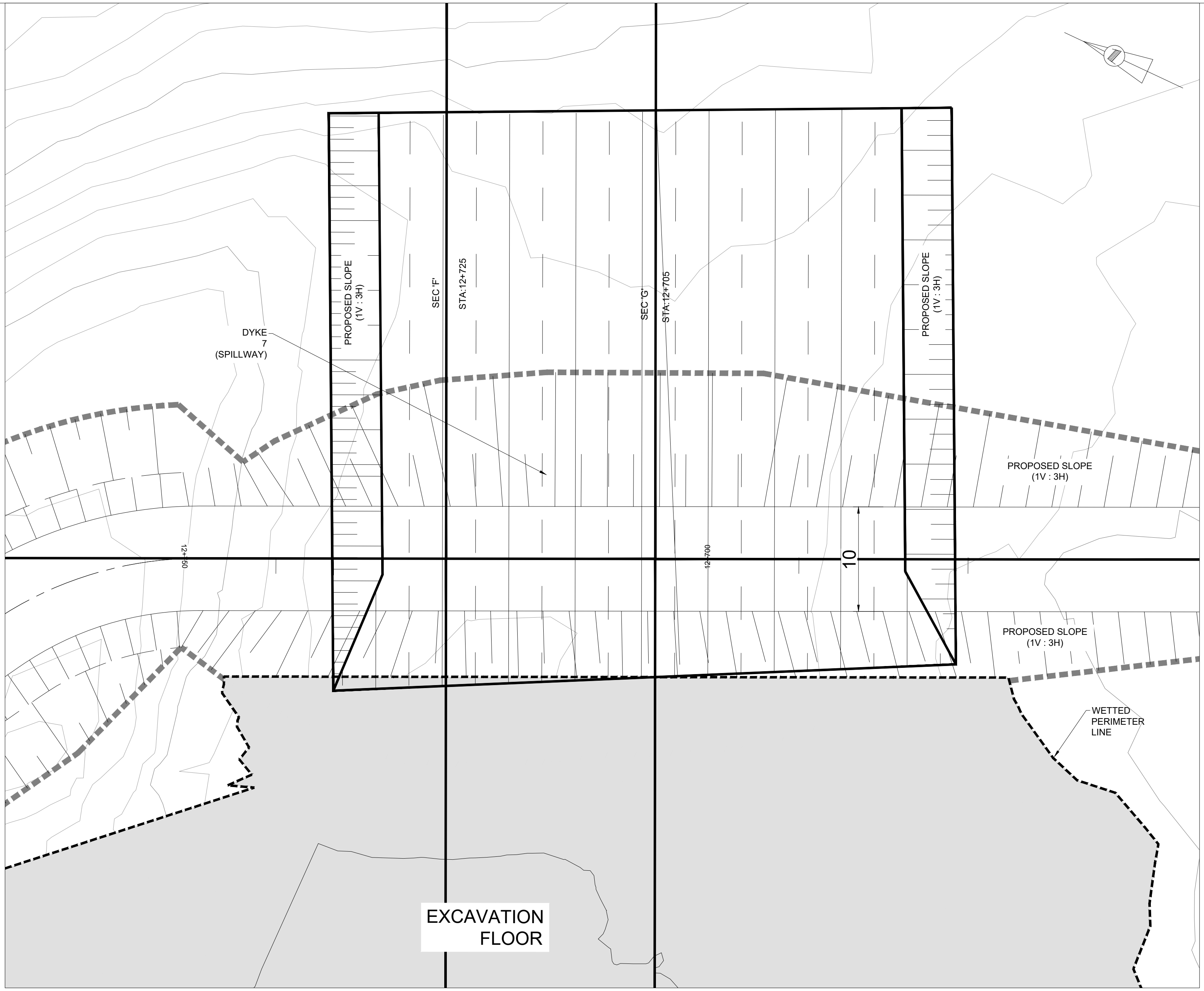
Project Manager
C.G.

Drawing title

CIVIL

DYKE 6 PLAN VIEW

Project no.	Drawing no.	Revision no.
30192375	B105	B


PROPOSED SLOPE
(1V : 3H)
SEC 'F'
STA:12+725
SEC 'G'
STA:12+705
PROPOSED SLOPE
(1V : 3H)
DYKE
7
(SPILLWAY)
PROPOSED SLOPE
(1V : 3H)
12+650
12+700
10
PROPOSED SLOPE
(1V : 3H)
WETTED
PERIMETER
LINE
EXCAVATION
FLOOR

DYKE 7 (SPILLWAY) PLAN VIEW

Scale 1:250 @ A1

0 10 20 30 40 50 60 70 80 90 100mm

A1 – 841X594

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

LEGEND

PATTERN	DETAIL
░	CUTTING
▩	FILLING
▨	RIPRAP
░	10m BUFFER ZONE
■	WETTED AREA OF RESERVOIR
▨	DAM CREST

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN	2024-03-22

Consultant

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Project title

CITY OF IQALUIT

**LONG TERM WATER PROGRAM
SUPPLY AND STORAGE**

Designed by
R.J.

Drawn by
A.A.

Approved by
E.L.

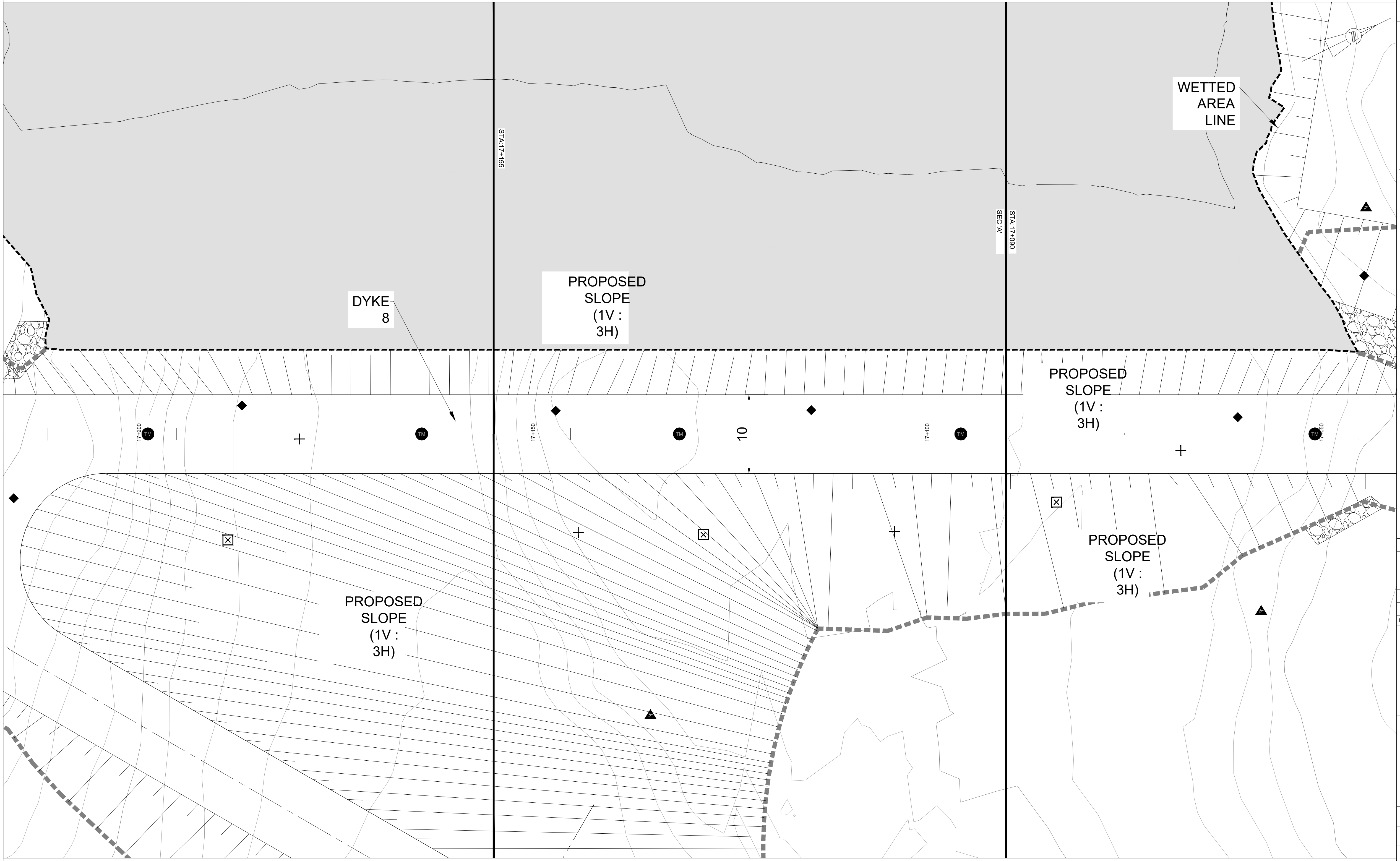
Project Manager
C.G.

Drawing title

CIVIL

DYKE 7 (SPILLWAY) PLAN VIEW

Project no.	Drawing no.	Revision no.
30192375	B106	B



DYKE 8 PLAN VIEW

Scale 1:250 @ A1

0 10 20 30 40 50 60 70 80 90 100mm

A1 – 841X594

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

LEGEND

PATTERN	DETAIL
⁘	CUTTING
▩	FILLING
▨	RIPRAP
▤	10m BUFFER ZONE
▭	WETTED AREA OF RESERVOIR
▨	DAM CREST
◆	SURVEY CONTROL MONUMENT
● TM	THERMISTOR
+	PIEZOMETER
☒	INCLINOMETER
▲	REMOTE CAMERA
⧄	STAFF GUAGE

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN	2024-03-22

Consultant

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Project title

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**LONG TERM WATER PROGRAM
SUPPLY AND STORAGE**

Designed by
R.J.

Drawn by
A.A.

Approved by
E.L.

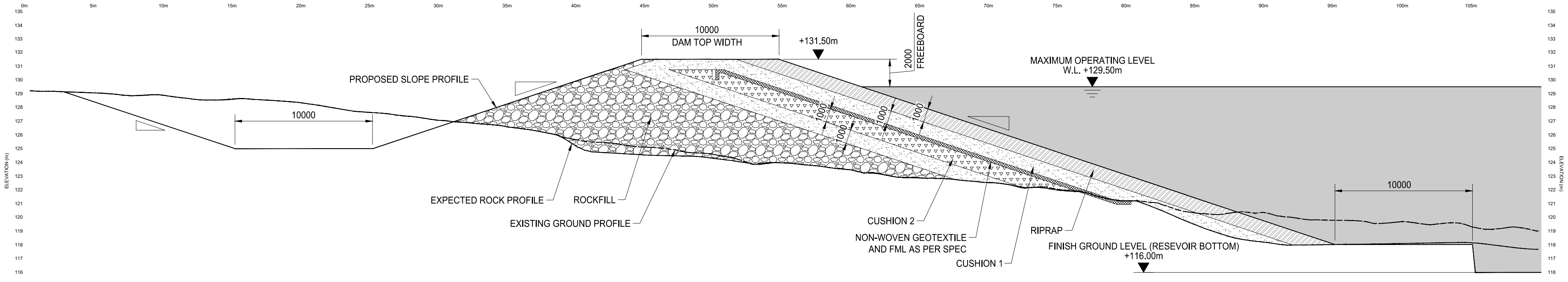
Project Manager
C.G.

Drawing title

CIVIL

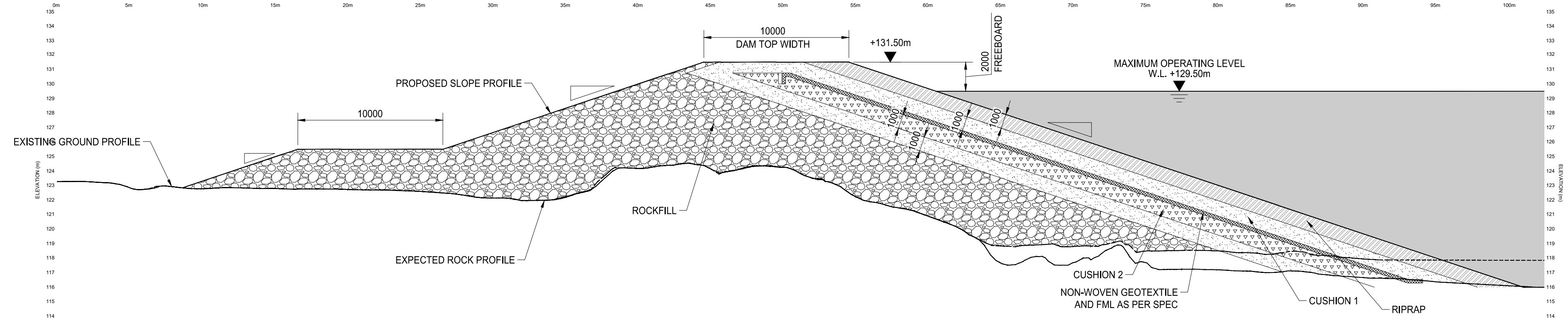
DYKE 8 PLAN VIEW

Project no.	Drawing no.	Revision no.
30192375	B107	B


10000
DAM TOP WIDTH
+131.50m
2000
FREEBOARD
MAXIMUM OPERATING LEVEL
W.L. +129.50m
PROPOSED SLOPE PROFILE
10000
1000
1000
1000
1000
EXPECTED ROCK PROFILE
ROCKFILL
EXISTING GROUND PROFILE
CUSHION 2
NON-WOVEN GEOTEXTILE
AND FML AS PER SPEC
CUSHION 1
RIPRAP
FINISH GROUND LEVEL (RESEVOIR BOTTOM)
+116.00m
10000
ELEVATION (m)

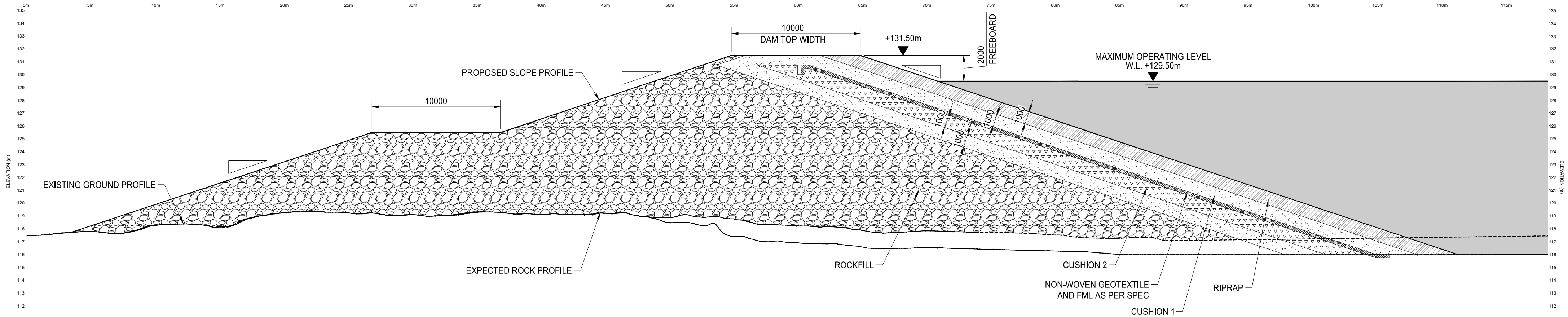
GEOMEMBRANE FACED ROCKFILL DYKE SECTION AT STA: 14+225 (DAM 1)

Scale 1:200


10000
DAM TOP WIDTH
+131.50m
2000
FREEBOARD
MAXIMUM OPERATING LEVEL
W.L. +129.50m
PROPOSED SLOPE PROFILE
10000
EXISTING GROUND PROFILE
1000
1000
1000
1000
ROCKFILL
EXPECTED ROCK PROFILE
CUSHION 2
NON-WOVEN GEOTEXTILE
AND FML AS PER SPEC
CUSHION 1
RIPRAP
ELEVATION (m)

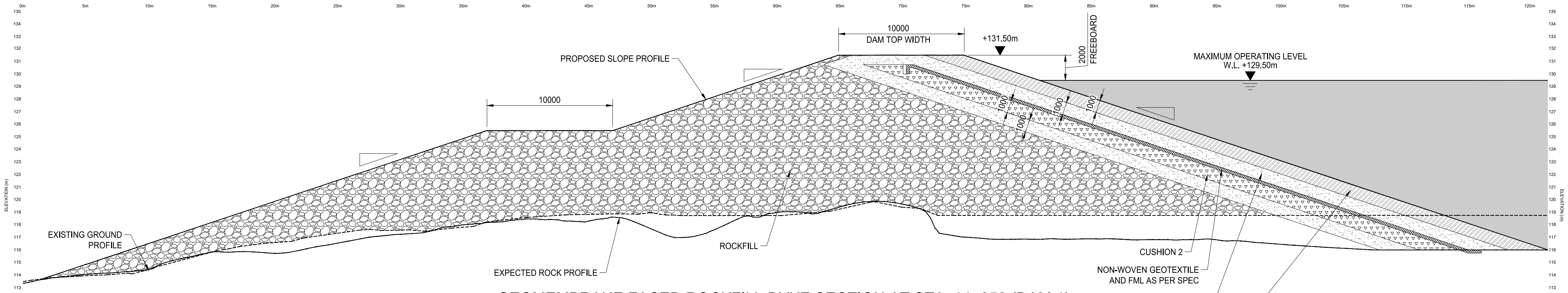
GEOMEMBRANE FACED ROCKFILL DYKE SECTION AT STA: 14+150 (DAM 1)

Scale 1:200


10000
DAM TOP WIDTH
+131.50m
2000
FREEBOARD
MAXIMUM OPERATING LEVEL
W.L. +129.50m
PROPOSED SLOPE PROFILE
10000
1000
1000
1000
1000
EXISTING GROUND PROFILE
EXPECTED ROCK PROFILE
ROCKFILL
CUSHION 2
NON-WOVEN GEOTEXTILE
AND FML AS PER SPEC
RIPRAP
CUSHION 1
ELEVATION (m)

GEOMEMBRANE FACED ROCKFILL DYKE SECTION AT STA: 14+100 (DAM 1)

Scale 1:200


10000
DAM TOP WIDTH
+131.50m
2000
FREEBOARD
MAXIMUM OPERATING LEVEL
W.L. +129.50m
PROPOSED SLOPE PROFILE
10000
1000
1000
1000
1000
EXISTING GROUND
PROFILE
ROCKFILL
EXPECTED ROCK PROFILE
CUSHION 2
NON-WOVEN GEOTEXTILE
AND FML AS PER SPEC
CUSHION 1
RIPRAP
ELEVATION (m)

GEOMEMBRANE FACED ROCKFILL DYKE SECTION AT STA: 14+050 (DAM 1)

Scale 1:200

A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

LEGEND

PATTERN	DETAIL
◌	ROCKFILL
░	CUSHION 1
▽	CUSHION 2
▩	HDPE GEOMEMBRANE AND NON-WOVEN GEOTEXTILE
▨	RIPRAP

Revision	Description	Date
C	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
A	ISSUED FOR CONCEPT DESIGN	2023-11-27

Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
R.J.

Drawn by
A.A.

Approved by
E.L.

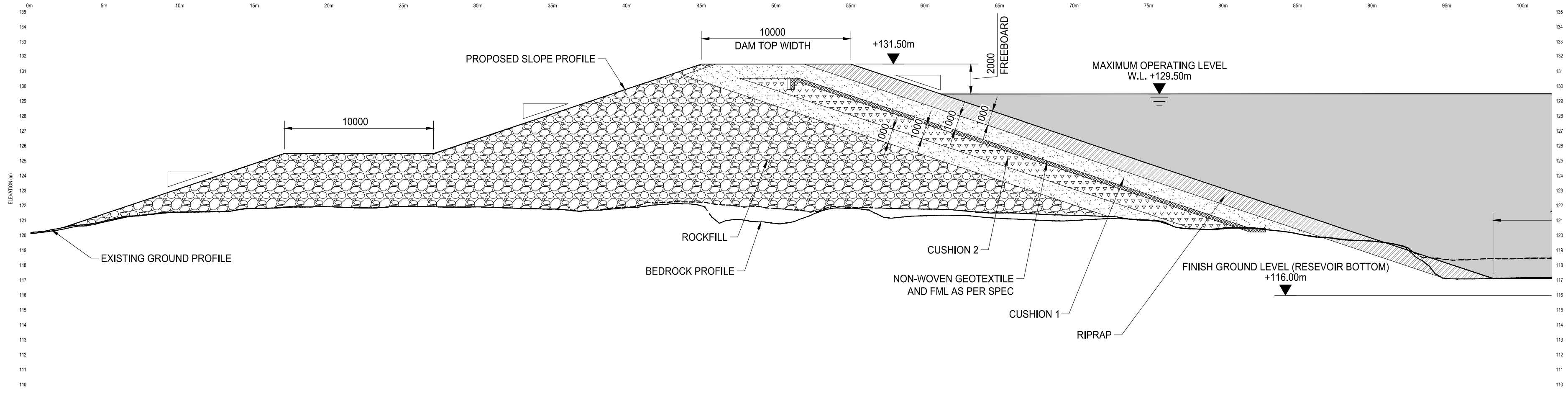
Project Manager
C.G.

Drawing title

CIVIL

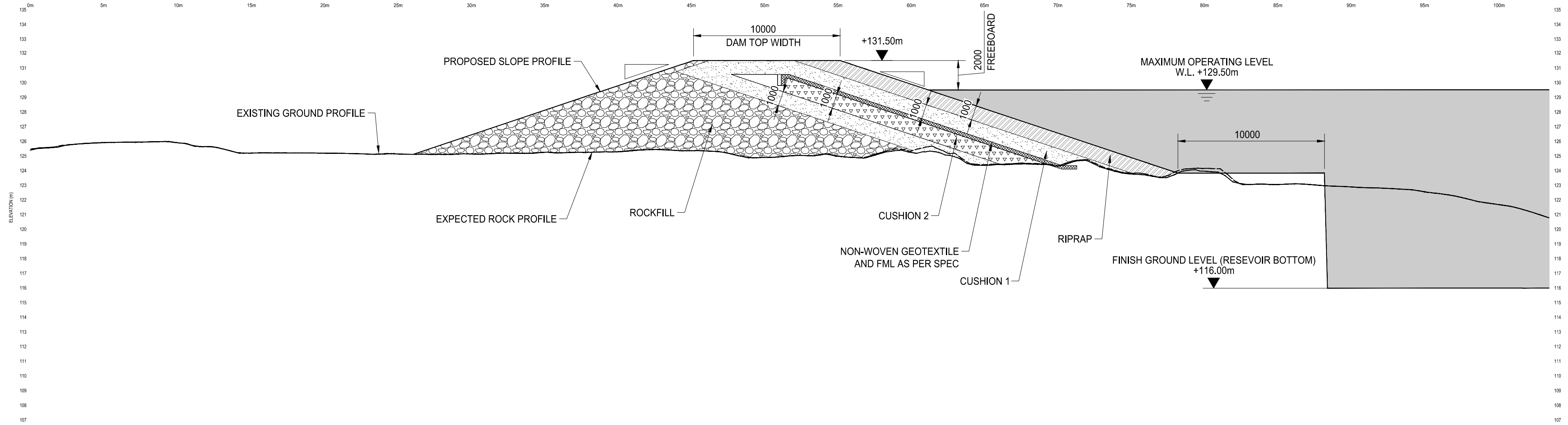
DAM 1 CROSS-SECTIONS (1)

Project no.	Drawing no.	Revision no.
30192375	B301	C


10000
DAM TOP WIDTH
+131.50m
2000
FREEBOARD
PROPOSED SLOPE PROFILE
MAXIMUM OPERATING LEVEL
W.L. +129.50m
10000
1000
1000
1000
1000
ELEVATION (m)
EXISTING GROUND PROFILE
ROCKFILL
BEDROCK PROFILE
CUSHION 2
NON-WOVEN GEOTEXTILE
AND FML AS PER SPEC
CUSHION 1
RIPRAP
FINISH GROUND LEVEL (RESEVOIR BOTTOM)
+116.00m

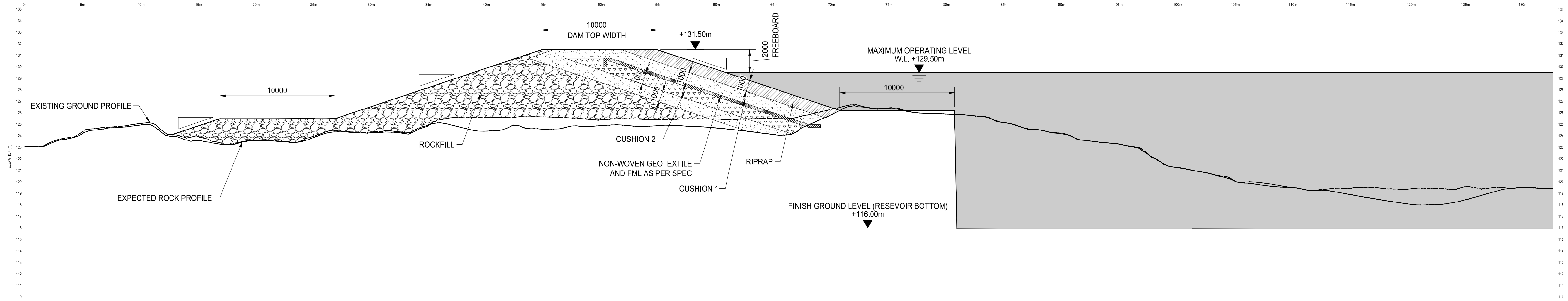
GEOMEMBRANE FACED ROCKFILL DYKE SECTION AT STA: 13+950 (DAM 1)

Scale 1:200


10000
DAM TOP WIDTH
+131.50m
2000
FREEBOARD
PROPOSED SLOPE PROFILE
MAXIMUM OPERATING LEVEL
W.L. +129.50m
EXISTING GROUND PROFILE
1000
1000
1000
1000
10000
ELEVATION (m)
EXPECTED ROCK PROFILE
ROCKFILL
CUSHION 2
NON-WOVEN GEOTEXTILE
AND FML AS PER SPEC
CUSHION 1
RIPRAP
FINISH GROUND LEVEL (RESEVOIR BOTTOM)
+116.00m

GEOMEMBRANE FACED ROCKFILL DYKE SECTION AT STA: 13+870 (DAM 1)

Scale 1:200


10000
DAM TOP WIDTH
+131.50m
2000
FREEBOARD
MAXIMUM OPERATING LEVEL
W.L. +129.50m
10000
10000
1000
1000
1000
1000
EXISTING GROUND PROFILE
ELEVATION (m)
ROCKFILL
CUSHION 2
NON-WOVEN GEOTEXTILE
AND FML AS PER SPEC
RIPRAP
CUSHION 1
EXPECTED ROCK PROFILE
FINISH GROUND LEVEL (RESEVOIR BOTTOM)
+116.00m

GEOMEMBRANE FACED ROCKFILL DYKE SECTION AT STA: 13+810 (DAM 1)

Scale 1:200

LEGEND

PATTERN	DETAIL
▨	ROCKFILL
▨	CUSHION 1
▨	CUSHION 2
▨	HDPE GEOMEMBRANE AND NON-WOVEN GEOTEXTILE
▨	RIPRAP

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
C	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
A	ISSUED FOR CONCEPT DESIGN	2023-11-27

Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
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Drawn by
A.A.

Approved by
E.L.

Project Manager
C.G.

Drawing title

CIVIL

DAM 1 CROSS-SECTIONS (2)

Project no.	Drawing no.	Revision no.
30192375	B302	C

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A1 – 841X594

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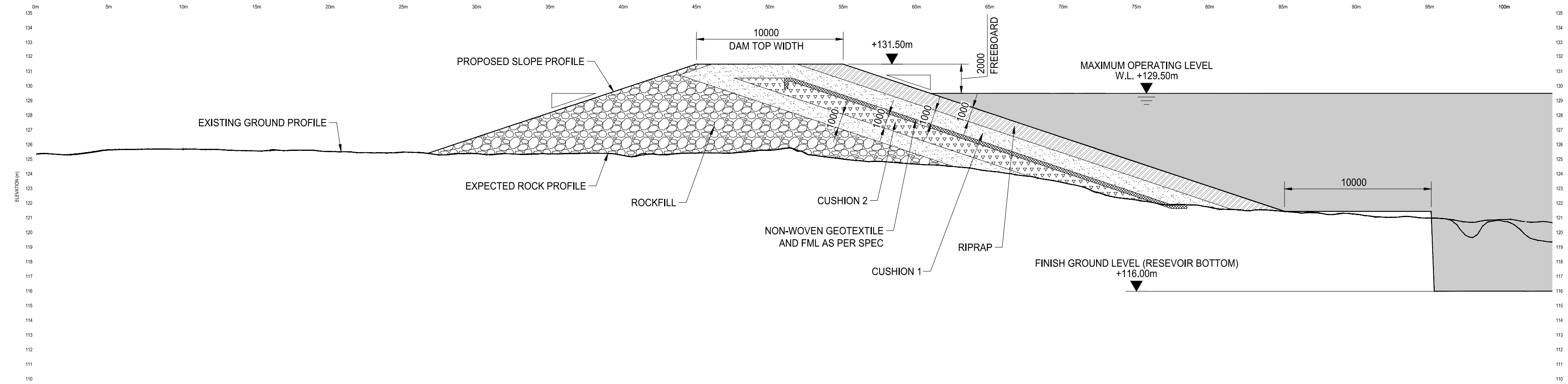
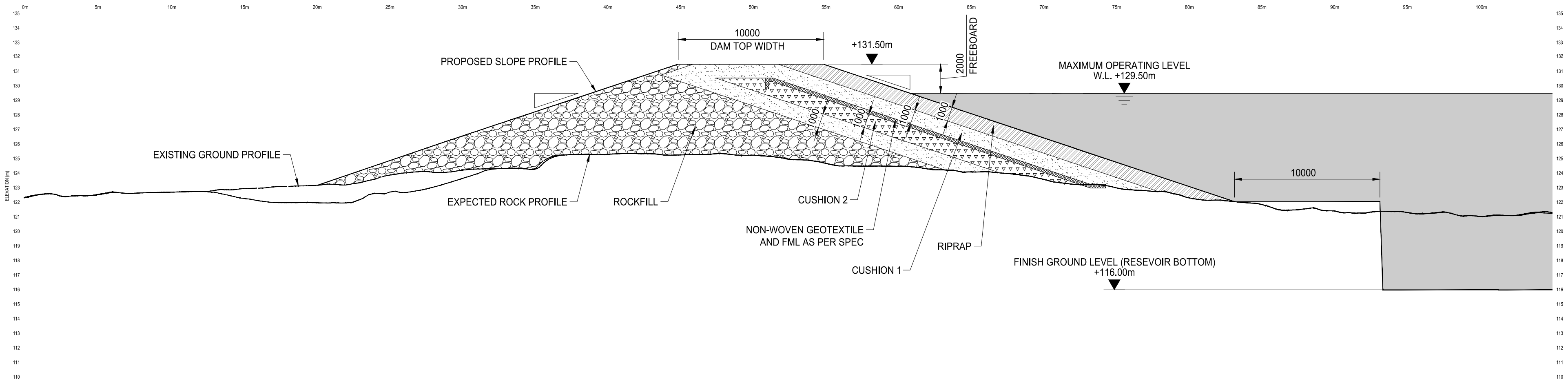

0m
5m
10m
15m
20m
25m
30m
35m
40m
45m
50m
55m
60m
65m
70m
75m
80m
85m
90m
95m
100m
ELEVATION (m)
10000
DAM TOP WIDTH
+131.50m
2000
FREEBOARD
MAXIMUM OPERATING LEVEL
W.L. +129.50m
PROPOSED SLOPE PROFILE
EXISTING GROUND PROFILE
1000
1000
1000
1000
10000
EXPECTED ROCK PROFILE
ROCKFILL
CUSHION 2
NON-WOVEN GEOTEXTILE
AND FML AS PER SPEC
RIPRAP
CUSHION 1
FINISH GROUND LEVEL (RESEVOIR BOTTOM)
+116.00m

GEOMEMBRANE FACED ROCKFILL DYKE SECTION AT STA: 13+610 (DYKE 2)

Scale 1:200


0m
5m
10m
15m
20m
25m
30m
35m
40m
45m
50m
55m
60m
65m
70m
75m
80m
85m
90m
95m
100m
ELEVATION (m)
10000
DAM TOP WIDTH
+131.50m
2000
FREEBOARD
MAXIMUM OPERATING LEVEL
W.L. +129.50m
PROPOSED SLOPE PROFILE
EXISTING GROUND PROFILE
1000
1000
1000
1000
10000
EXPECTED ROCK PROFILE
ROCKFILL
CUSHION 2
NON-WOVEN GEOTEXTILE
AND FML AS PER SPEC
RIPRAP
CUSHION 1
FINISH GROUND LEVEL (RESEVOIR BOTTOM)
+116.00m

GEOMEMBRANE FACED ROCKFILL DYKE SECTION AT STA: 13+510 (DYKE 3)

Scale 1:200

LEGEND

PATTERN	DETAIL
▨	ROCKFILL
░	CUSHION 1
▽▽▽▽	CUSHION 2
▩	HDPE GEOMEMBRANE AND NON-WOVEN GEOTEXTILE
▨	RIPRAP

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
C	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
A	ISSUED FOR CONCEPT DESIGN	2023-11-27

Consultant

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SUPPLY AND STORAGE

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E.L.

Project Manager
C.G.

Drawing title

CIVIL

DYKES 2 AND 3 CROSS-SECTIONS

Project no.	Drawing no.	Revision no.
30192375	B303	C

C:\Users\iziba\DC\ACCDocs\IBI – DT Services\30288139-Iqaluit_LongTermWater C3D2025\Project Files\7.0_Production\7.03_Design\03_Geotech\Sheets\B303.dwg

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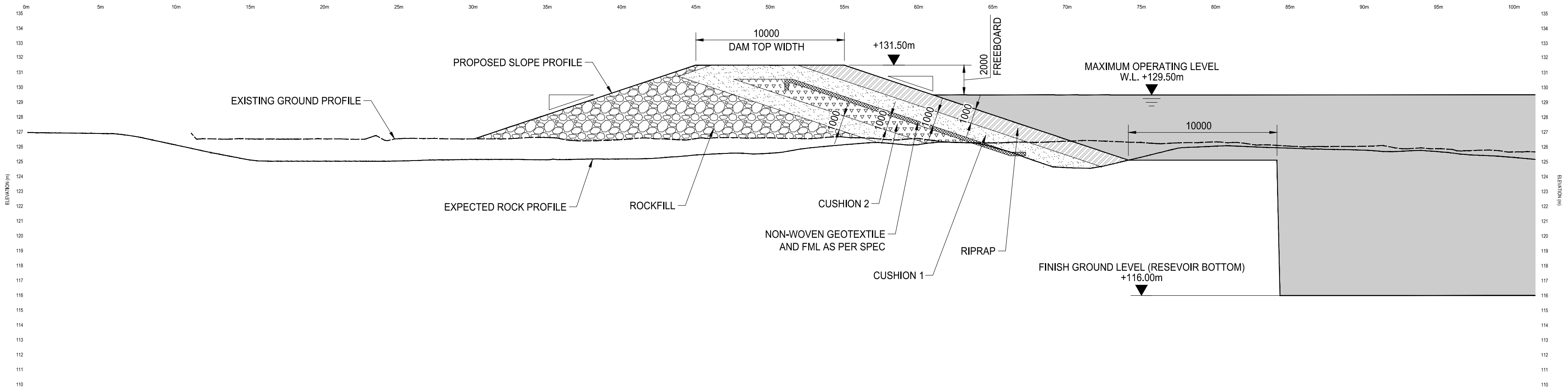
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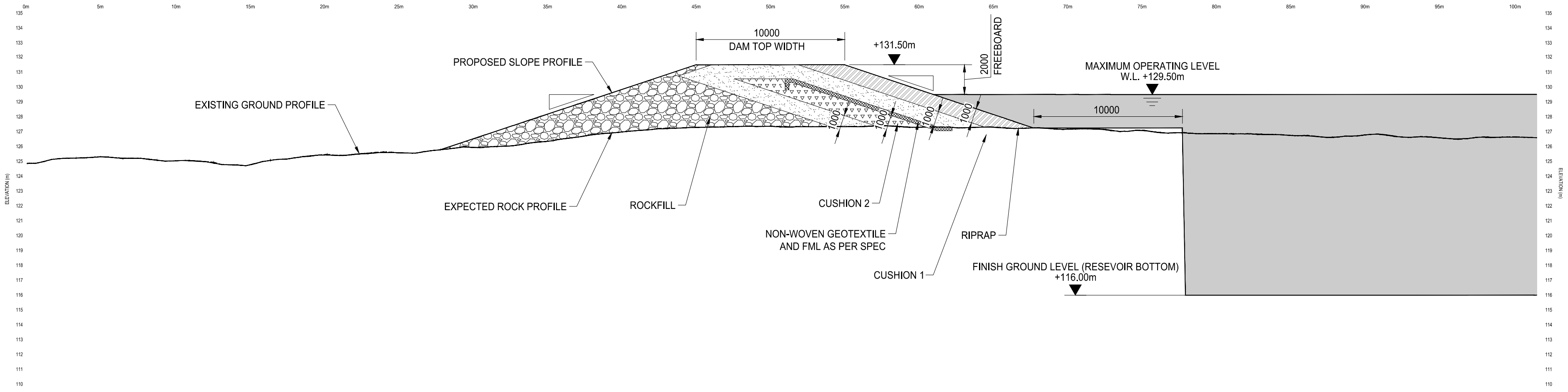
75m
80m
85m
90m
95m
100m
ELEVATION (m)
135
110
10000
DAM TOP WIDTH
+131.50m
2000
FREEBOARD
PROPOSED SLOPE PROFILE
EXISTING GROUND PROFILE
MAXIMUM OPERATING LEVEL
W.L. +129.50m
10000
1000
1000
1000
1000
EXPECTED ROCK PROFILE
ROCKFILL
CUSHION 2
NON-WOVEN GEOTEXTILE
AND FML AS PER SPEC
CUSHION 1
RIPRAP
FINISH GROUND LEVEL (RESEVOIR BOTTOM)
+116.00m

GEOMEMBRANE FACED ROCKFILL DYKE SECTION AT STA: 13+260 (DYKE 4)

Scale 1:200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85m
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95m
100m
ELEVATION (m)
135
110
10000
DAM TOP WIDTH
+131.50m
2000
FREEBOARD
PROPOSED SLOPE PROFILE
EXISTING GROUND PROFILE
MAXIMUM OPERATING LEVEL
W.L. +129.50m
10000
1000
1000
1000
1000
EXPECTED ROCK PROFILE
ROCKFILL
CUSHION 2
NON-WOVEN GEOTEXTILE
AND FML AS PER SPEC
CUSHION 1
RIPRAP
FINISH GROUND LEVEL (RESEVOIR BOTTOM)
+116.00m

GEOMEMBRANE FACED ROCKFILL DYKE SECTION AT STA: 13+000 (DYKE 5)

Scale 1:200

LEGEND

PATTERN	DETAIL
○	ROCKFILL
░	CUSHION 1
▽	CUSHION 2
▩	HDPE GEOMEMBRANE AND NON-WOVEN GEOTEXTILE
▨	RIPRAP

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
C	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
A	ISSUED FOR CONCEPT DESIGN	2023-11-27

Consultant

ARCADIS

8133 Warden Avenue - Unit 300
Markham ON L6G 1B3 Canada
tel 905 763 2322
www.arcadis.com

Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
R.J.

Drawn by
A.A.

Approved by
E.L.

Project Manager
C.G.

Drawing title

CIVIL

DYKES 4 AND 5 CROSS-SECTIONS

Project no.	Drawing no.	Revision no.
30192375	B304	C

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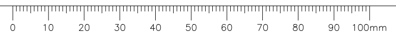
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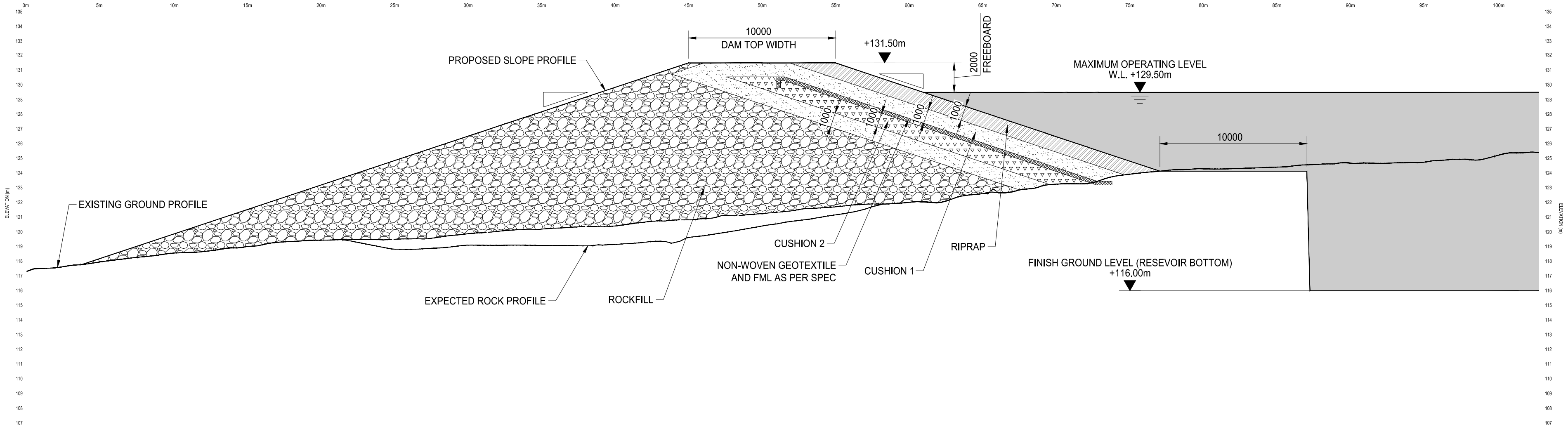
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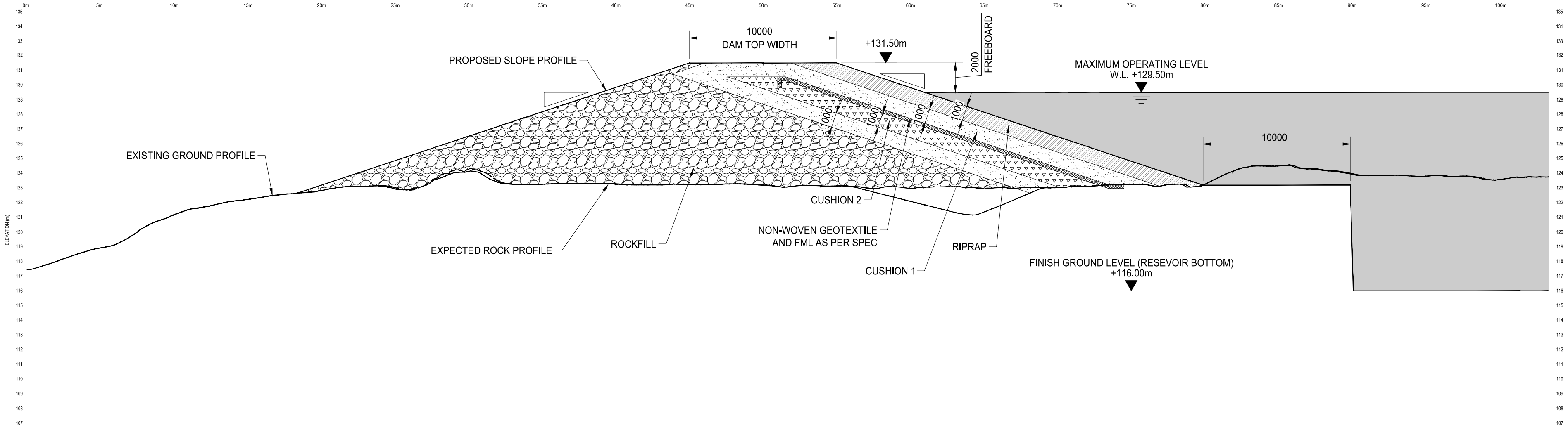
70m
75m
80m
85m
90m
95m
100m
ELEVATION (m)
10000
DAM TOP WIDTH
+131.50m
2000
FREEBOARD
PROPOSED SLOPE PROFILE
MAXIMUM OPERATING LEVEL
W.L. +129.50m
1000
1000
1000
1000
10000
EXISTING GROUND PROFILE
CUSHION 2
NON-WOVEN GEOTEXTILE
AND FML AS PER SPEC
CUSHION 1
RIPRAP
FINISH GROUND LEVEL (RESEVOIR BOTTOM)
+116.00m
EXPECTED ROCK PROFILE
ROCKFILL

GEOMEMBRANE FACED ROCKFILL DYKE SECTION AT STA: 12+910 (DYKE 6)

Scale 1:200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75m
80m
85m
90m
95m
100m
ELEVATION (m)
10000
DAM TOP WIDTH
+131.50m
2000
FREEBOARD
PROPOSED SLOPE PROFILE
MAXIMUM OPERATING LEVEL
W.L. +129.50m
1000
1000
1000
1000
10000
EXISTING GROUND PROFILE
CUSHION 2
NON-WOVEN GEOTEXTILE
AND FML AS PER SPEC
EXPECTED ROCK PROFILE
ROCKFILL
RIPRAP
CUSHION 1
FINISH GROUND LEVEL (RESEVOIR BOTTOM)
+116.00m

GEOMEMBRANE FACED ROCKFILL DYKE SECTION AT STA: 12+870 (DYKE 6)

Scale 1:200

LEGEND

PATTERN	DETAIL
⬭	ROCKFILL
░	CUSHION 1
▽▽▽▽▽	CUSHION 2
▩	HDPE GEOMEMBRANE AND NON-WOVEN GEOTEXTILE
▨	RIPRAP

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Revision	Description	Date
C	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
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Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
R.J.

Drawn by
A.A.

Approved by
E.L.

Project Manager
C.G.

Drawing title

CIVIL

DYKE 6 CROSS-SECTIONS

Project no.	Drawing no.	Revision no.
30192375	B305	C

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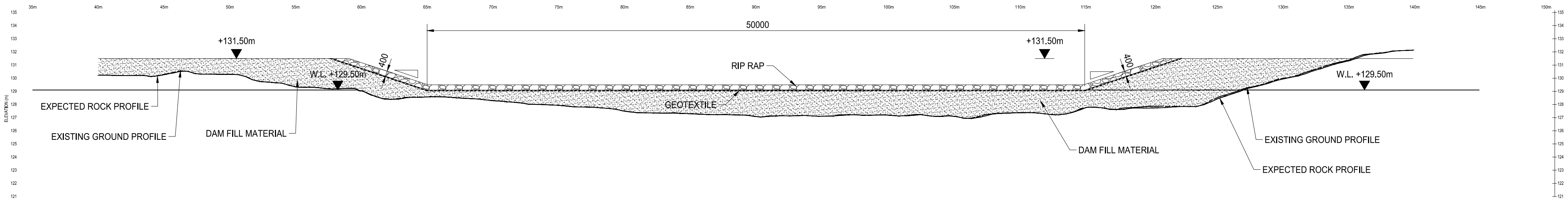
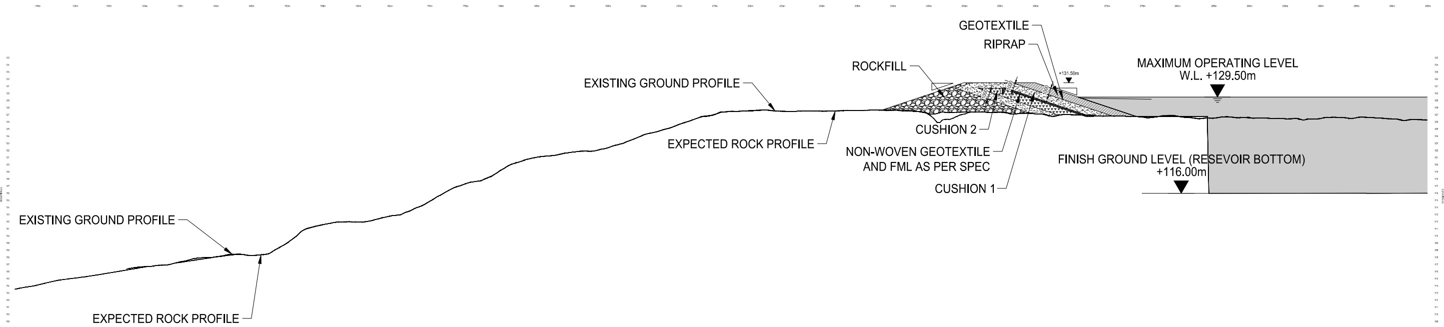

50000
+131.50m
+131.50m
400
400
W.L. +129.50m
W.L. +129.50m
RIP RAP
GEOTEXTILE
EXPECTED ROCK PROFILE
EXISTING GROUND PROFILE
DAM FILL MATERIAL
DAM FILL MATERIAL
EXISTING GROUND PROFILE
EXPECTED ROCK PROFILE
ELEVATION (m)

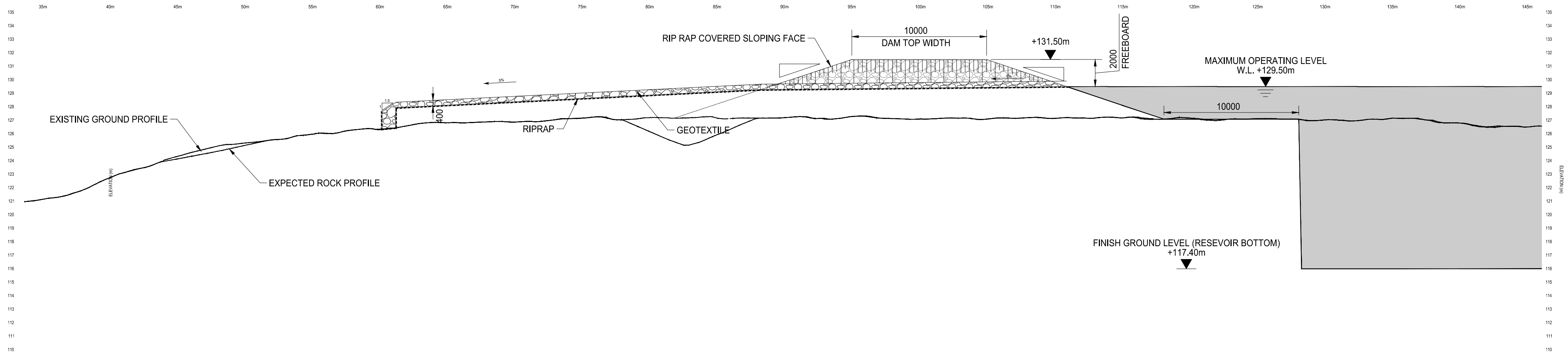
DYKE-7-SPILLWAY LONG SECTION E-E

SCALE 1:200


GEOTEXTILE
RIPRAP
ROCKFILL
MAXIMUM OPERATING LEVEL
W.L. +129.50m
EXISTING GROUND PROFILE
CUSHION 2
EXPECTED ROCK PROFILE
NON-WOVEN GEOTEXTILE
AND FML AS PER SPEC
FINISH GROUND LEVEL (RESEVOIR BOTTOM)
+116.00m
CUSHION 1
EXISTING GROUND PROFILE
EXPECTED ROCK PROFILE

DYKE-7-SPILLWAY LONG SECTION F-F

SCALE 1:500


10000
DAM TOP WIDTH
+131.50m
2000
FREEBOARD
RIP RAP COVERED SLOPING FACE
MAXIMUM OPERATING LEVEL
W.L. +129.50m
10000
400
EXISTING GROUND PROFILE
RIPRAP
GEOTEXTILE
EXPECTED ROCK PROFILE
FINISH GROUND LEVEL (RESEVOIR BOTTOM)
+117.40m
ELEVATION (m)

DYKE-7-SPILLWAY LONG SECTION G-G

SCALE 1:200

LEGEND	
PATTERN	DETAIL
◌	ROCKFILL
░	CUSHION 1
▽	CUSHION 2
▦	HDPE GEOMEMBRANE AND NON-WOVEN GEOTEXTILE
▨	RIPRAP

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Revision	Description	Date
C	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
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Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
R.J.

Drawn by
A.A.

Approved by
E.L.

Project Manager
C.G.

Drawing title

CIVIL

DYKE 7(SPILLWAY) CROSS SECTIONS

Project no.	Drawing no.	Revision no.
30192375	B306	C

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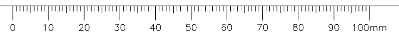
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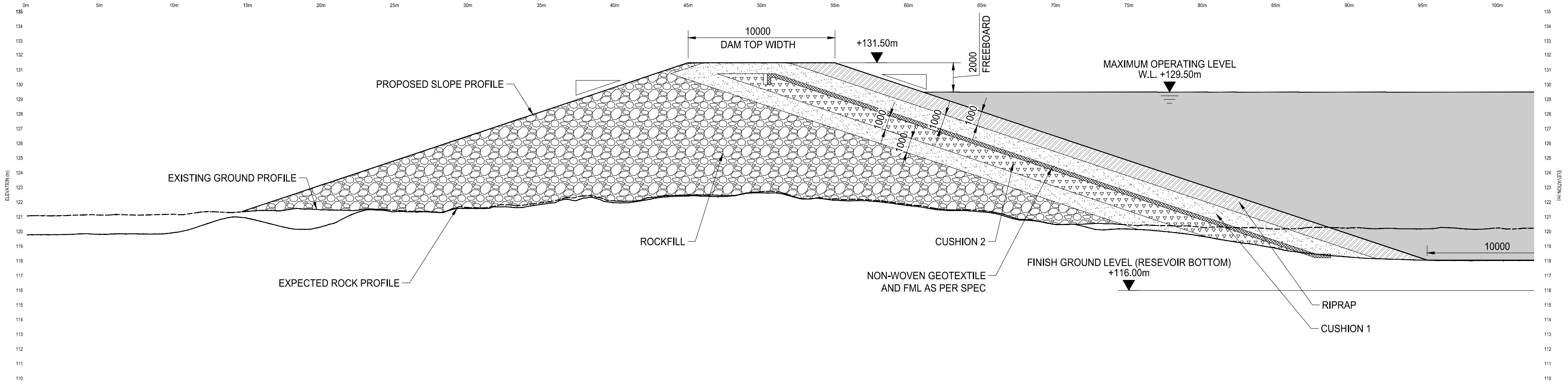
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119
118
117
116
115
114
113
112
111
110
ELEVATION (m)
10000
DAM TOP WIDTH
+131.50m
2000
FREEBOARD
MAXIMUM OPERATING LEVEL
W.L. +129.50m
PROPOSED SLOPE PROFILE
1000
1000
1000
1000
EXISTING GROUND PROFILE
ROCKFILL
CUSHION 2
NON-WOVEN GEOTEXTILE
AND FML AS PER SPEC
FINISH GROUND LEVEL (RESEVOIR BOTTOM)
+116.00m
10000
EXPECTED ROCK PROFILE
RIPRAP
CUSHION 1

GEOMEMBRANE FACED ROCKFILL DYKE SECTION AT STA: 17+155 (DYKE 8)

Scale 1:200

LEGEND

PATTERN	DETAIL
○	ROCKFILL
░	CUSHION 1
▽	CUSHION 2
▩	HDPE GEOMEMBRANE AND NON-WOVEN GEOTEXTILE
▨	RIPRAP

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Consultant
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Project title
CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
R.J.

Drawn by
A.A.

Approved by
E.L.

Project Manager
C.G.

Drawing title
CIVIL

DYKE 8 CROSS-SECTIONS

Project no.	Drawing no.	Revision no.
30192375	B307	C

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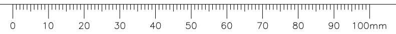
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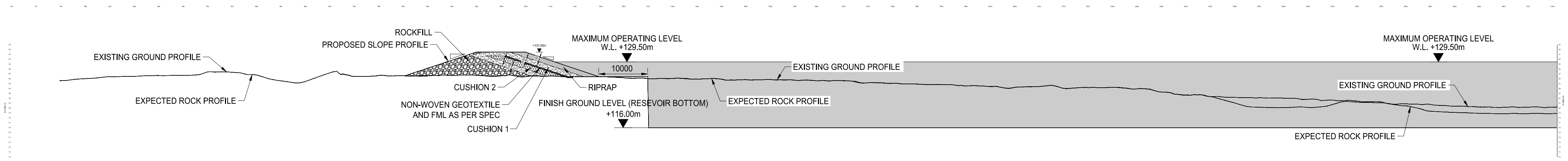
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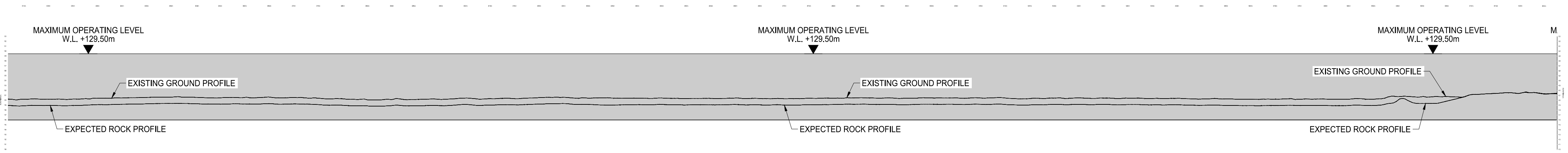
PROPOSED SLOPE PROFILE
EXISTING GROUND PROFILE
EXPECTED ROCK PROFILE
CUSHION 2
NON-WOVEN GEOTEXTILE AND FML AS PER SPEC
CUSHION 1
MAXIMUM OPERATING LEVEL W.L. +129.50m
10000
RIPRAP
FINISH GROUND LEVEL (RESEVOIR BOTTOM) +116.00m
EXISTING GROUND PROFILE
EXPECTED ROCK PROFILE
MAXIMUM OPERATING LEVEL W.L. +129.50m
EXISTING GROUND PROFILE
EXPECTED ROCK PROFILE

LONG SECTION A-A'

SCALE 1:500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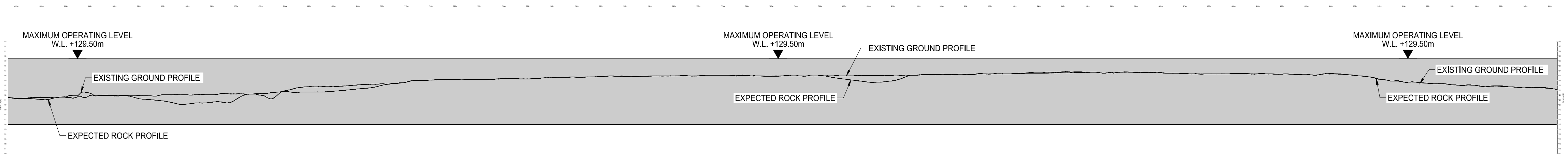
MAXIMUM OPERATING LEVEL W.L. +129.50m
MAXIMUM OPERATING LEVEL W.L. +129.50m
M
EXISTING GROUND PROFILE
EXISTING GROUND PROFILE
EXISTING GROUND PROFILE
EXPECTED ROCK PROFILE
EXPECTED ROCK PROFILE
EXPECTED ROCK PROFILE

LONG SECTION A-A'

SCALE 1:500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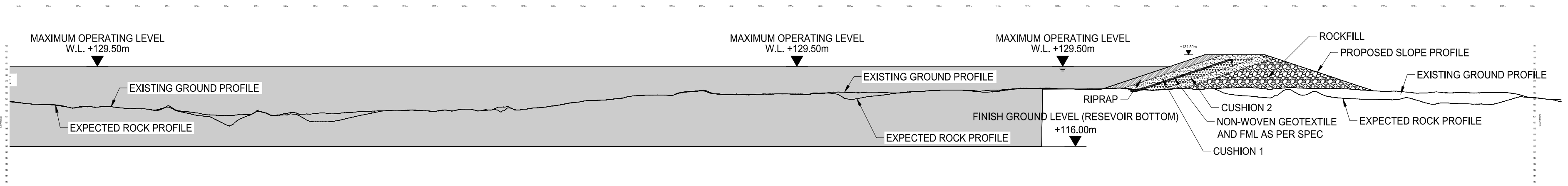
MAXIMUM OPERATING LEVEL W.L. +129.50m
MAXIMUM OPERATING LEVEL W.L. +129.50m
EXISTING GROUND PROFILE
EXISTING GROUND PROFILE
EXISTING GROUND PROFILE
EXPECTED ROCK PROFILE
EXPECTED ROCK PROFILE
EXPECTED ROCK PROFILE

LONG SECTION A-A'

SCALE 1:500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MAXIMUM OPERATING LEVEL W.L. +129.50m
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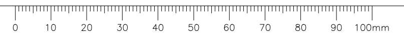
EXISTING GROUND PROFILE
EXPECTED ROCK PROFILE
EXISTING GROUND PROFILE
EXPECTED ROCK PROFILE
RIPRAP
FINISH GROUND LEVEL (RESEVOIR BOTTOM) +116.00m
ROCKFILL
PROPOSED SLOPE PROFILE
EXISTING GROUND PROFILE
CUSHION 2
NON-WOVEN GEOTEXTILE AND FML AS PER SPEC
CUSHION 1
EXPECTED ROCK PROFILE

LONG SECTION A-A'

SCALE 1:500

LEGEND

PATTERN	DETAIL
▨	ROCKFILL
▨	CUSHION 1
▨	CUSHION 2
▨	HDPE GEOMEMBRANE AND NON-WOVEN GEOTEXTILE
▨	RIPRAP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Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
R.J.

Drawn by
A.A.

Approved by
E.L.

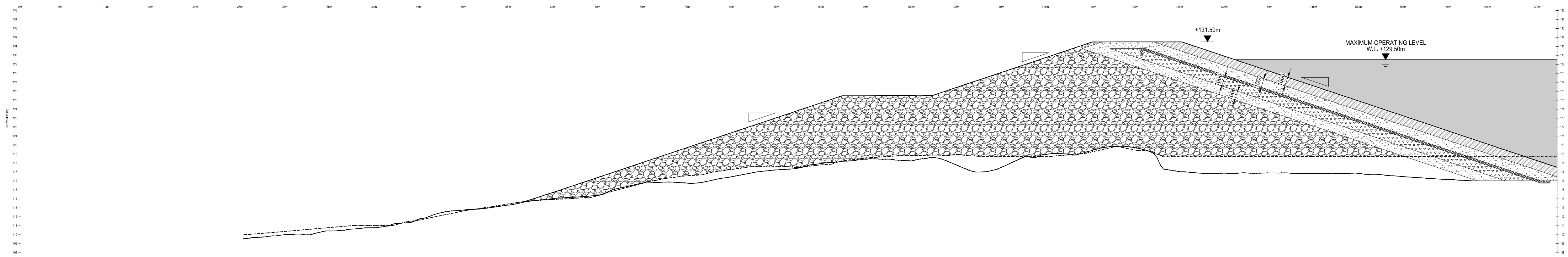
Project Manager
C.G.

Drawing title

CIVIL

RESERVOIR
LONG CROSS SECTION A-A'

Project no.	Drawing no.	Revision no.
30192375	B308	C


+131.50m
MAXIMUM OPERATING LEVEL
W.L. +129.50m
1000
1000
1000
1000
ELEVATION (m)
0m 5m 10m 15m 20m 25m 30m 35m 40m 45m 50m 55m 60m 65m 70m 75m 80m 85m 90m 95m 100m 105m 110m 115m 120m 125m 130m 135m 140m 145m 150m 155m 160m 165m 170m
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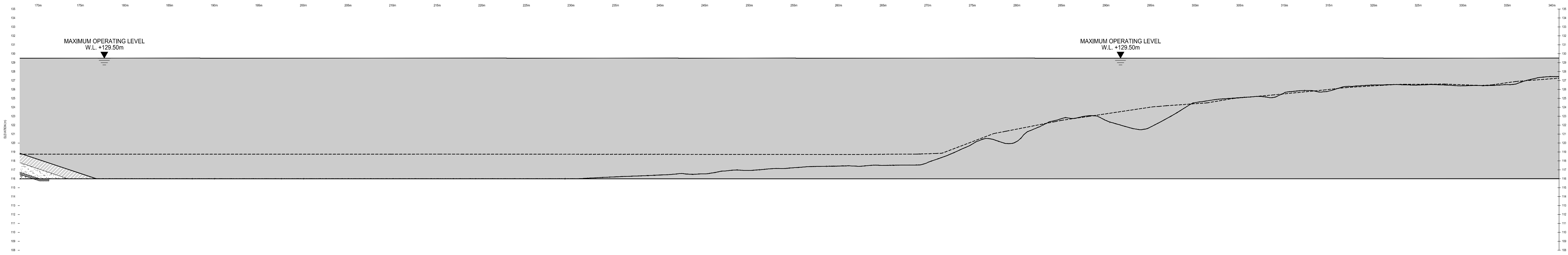
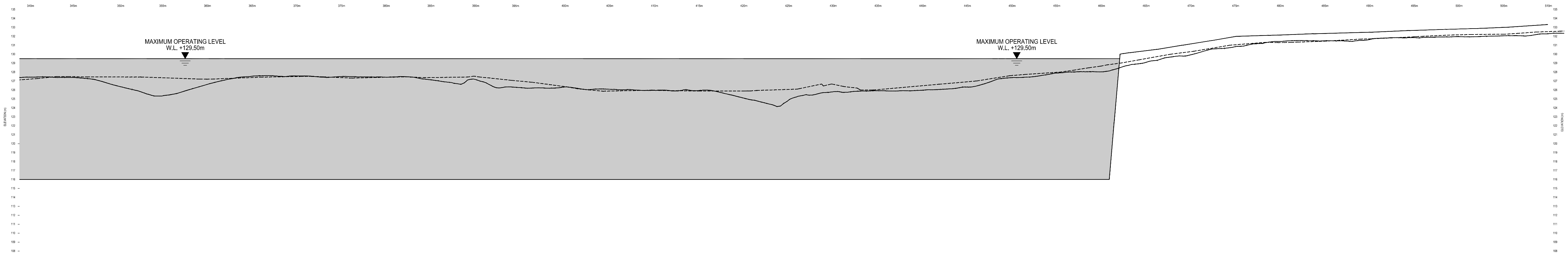
LONG SECTION B-B'

SCALE 1:250


MAXIMUM OPERATING LEVEL
W.L. +129.50m
MAXIMUM OPERATING LEVEL
W.L. +129.50m
ELEVATION (m)
170m 175m 180m 185m 190m 195m 200m 205m 210m 215m 220m 225m 230m 235m 240m 245m 250m 255m 260m 265m 270m 275m 280m 285m 290m 295m 300m 305m 310m 315m 320m 325m 330m 335m 340m
135 134 133 132 131 130 129 128 127 126 125 124 123 122 121 120 119 118 117 116 115 114 113 112 111 110 109 108

LONG SECTION B-B'

SCALE 1:250


MAXIMUM OPERATING LEVEL
W.L. +129.50m
MAXIMUM OPERATING LEVEL
W.L. +129.50m
ELEVATION (m)
340m 345m 350m 355m 360m 365m 370m 375m 380m 385m 390m 395m 400m 405m 410m 415m 420m 425m 430m 435m 440m 445m 450m 455m 460m 465m 470m 475m 480m 485m 490m 495m 500m 505m 510m
135 134 133 132 131 130 129 128 127 126 125 124 123 122 121 120 119 118 117 116 115 114 113 112 111 110 109 108

LONG SECTION B-B'

SCALE 1:250

LEGEND

PATTERN	DETAIL
⬡	ROCKFILL
░	CUSHION 1
▽	CUSHION 2
▩	HDPE GEOMEMBRANE AND NON-WOVEN GEOTEXTILE
▨	RIPRAP

Iqaluit

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
C	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
A	ISSUED FOR CONCEPT DESIGN	2023-11-27

Consultant

ARCADIS

8133 Warden Avenue - Unit 300
Markham ON L6G 1B3 Canada
tel 905 763 2322
www.arcadis.com

Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
R.J.

Drawn by
A.A.

Approved by
E.L.

Project Manager
C.G.

Drawing title

CIVIL

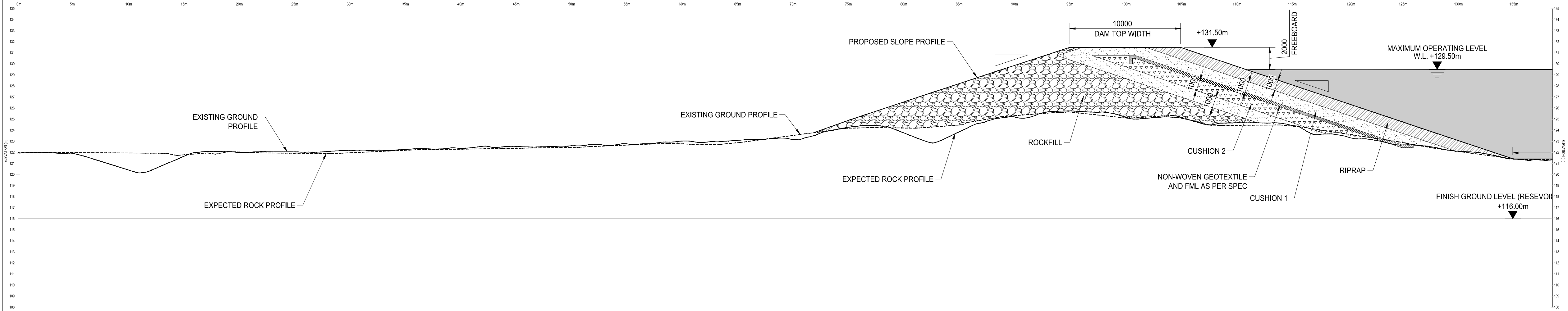
RESERVOIR
LONG CROSS SECTION B-B'

Project no.	Drawing no.	Revision no.
30192375	**B309**	**C**

C:\Users\iziba\DC\ACCDocs\IBI - DT Services\30288139-Iqaluit_LongTermWater C3D2025\Project Files\7.0_Production\7.03_Design\03_Geotech\Sheets\B309.dwg

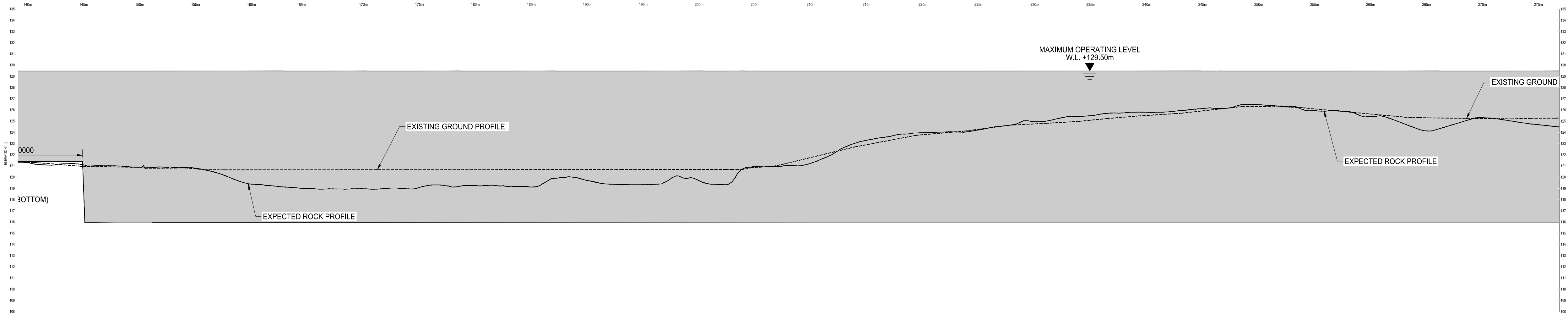
A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm


PROPOSED SLOPE PROFILE
10000
DAM TOP WIDTH
+131.50m
2000
FREEBOARD
MAXIMUM OPERATING LEVEL
W.L. +129.50m
1000
EXISTING GROUND PROFILE
ROCKFILL
CUSHION 2
EXPECTED ROCK PROFILE
NON-WOVEN GEOTEXTILE AND FML AS PER SPEC
RIPRAP
CUSHION 1
FINISH GROUND LEVEL (RESEVOIR
+116.00m
ELEVATION (m)

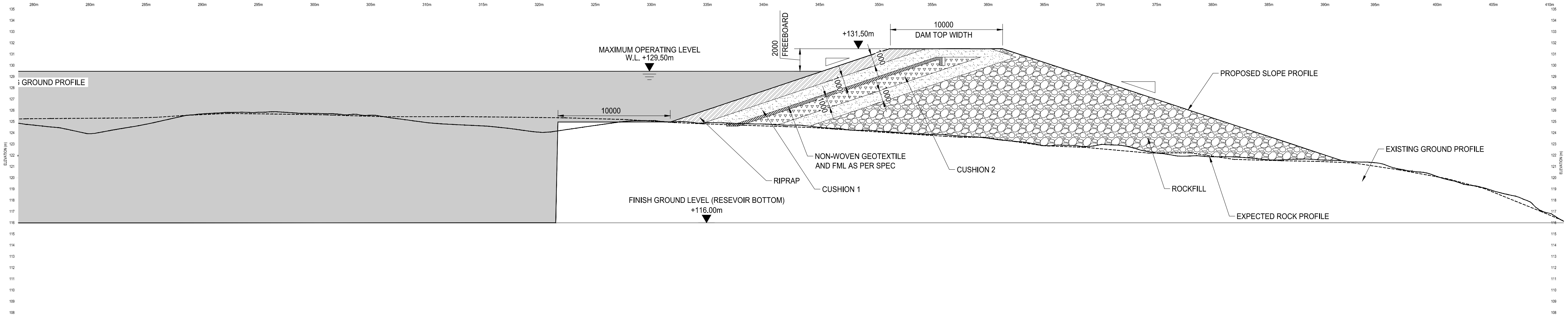
LONG SECTION C-C'

SCALE 1:200


MAXIMUM OPERATING LEVEL
W.L. +129.50m
EXISTING GROUND
EXISTING GROUND PROFILE
EXPECTED ROCK PROFILE
0000
BOTTOM)
ELEVATION (m)

LONG SECTION C-C'

SCALE 1:200


GROUND PROFILE
MAXIMUM OPERATING LEVEL
W.L. +129.50m
2000
FREEBOARD
+131.50m
10000
DAM TOP WIDTH
1000
PROPOSED SLOPE PROFILE
10000
EXISTING GROUND PROFILE
NON-WOVEN GEOTEXTILE AND FML AS PER SPEC
CUSHION 2
RIPRAP
CUSHION 1
ROCKFILL
EXPECTED ROCK PROFILE
FINISH GROUND LEVEL (RESEVOIR BOTTOM)
+116.00m
ELEVATION (m)

LONG SECTION C-C'

SCALE 1:200

LEGEND

PATTERN	DETAIL
▨	ROCKFILL
░	CUSHION 1
▽▽▽▽▽	CUSHION 2
▩	HDPE GEOMEMBRANE AND NON-WOVEN GEOTEXTILE
▧	RIPRAP

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

C	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
A	ISSUED FOR CONCEPT DESIGN	2023-11-27
Revision	Description	Date

Consultant

ARCADIS

8133 Warden Avenue - Unit 300
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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
R.J.

Drawn by
A.A.

Approved by
E.L.

Project Manager
C.G.

Drawing title

CIVIL

RESERVOIR
LONG CROSS SECTION C-C'

Project no.	Drawing no.	Revision no.
30192375	B310	C

C:\Users\iziba\DC\ACCDocs\IBI – DT Services\30288139–Iqaluit_LongTermWater C3D2025\Project Files\7.0_Production\7.03_Design\03_Geotech\Sheets\B310.dwg

A1 – 841X594

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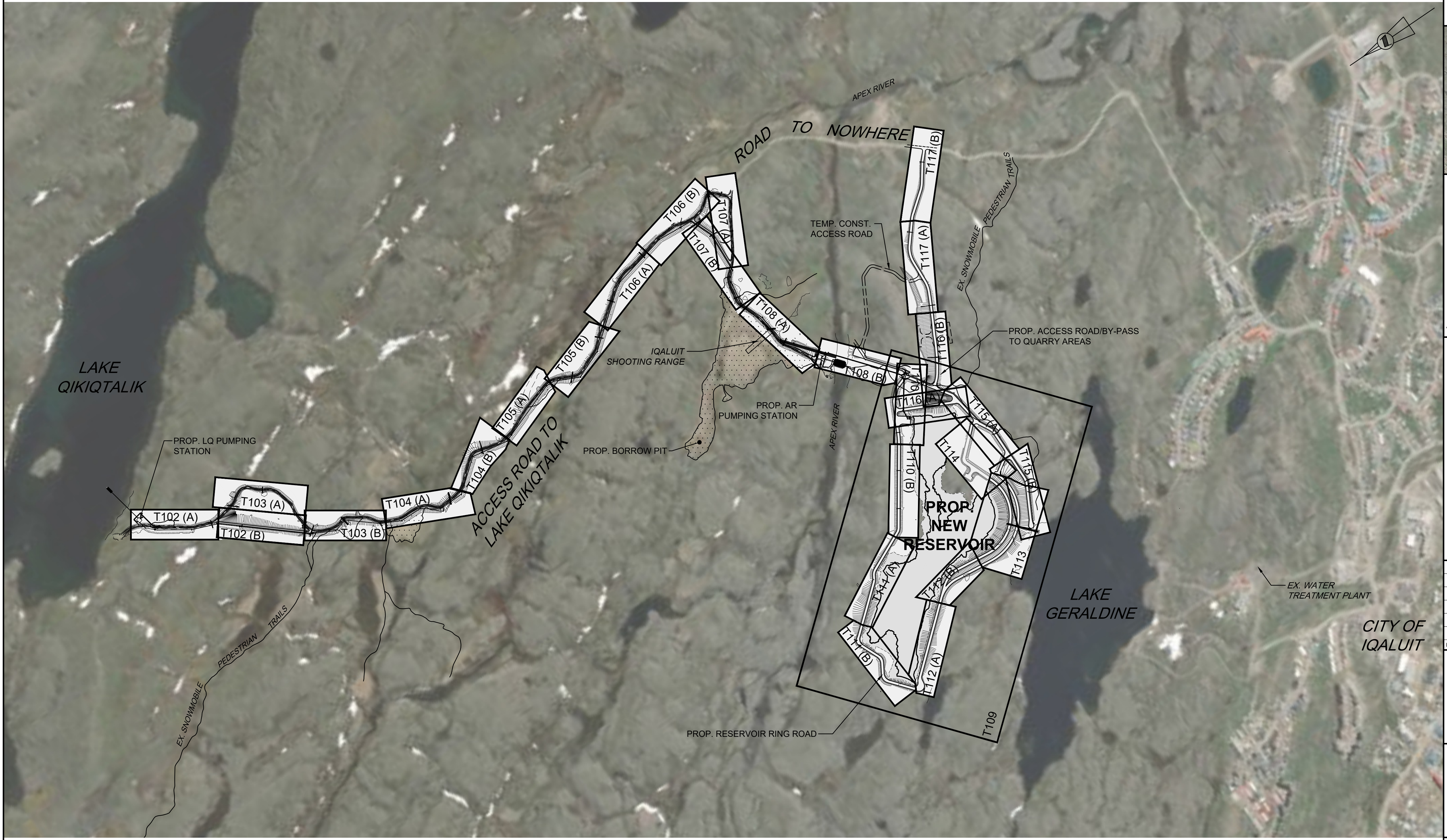
LAKE QIKIQTALIK
PROP. LQ PUMPING STATION
T102 (A)
T102 (B)
T103 (A)
T103 (B)
T104 (A)
T104 (B)
T105 (A)
T105 (B)
T106 (A)
T106 (B)
T107 (A)
T107 (B)
T108 (A)
T108 (B)
ACCESS ROAD TO LAKE QIKIQTALIK
ROAD TO NOWHERE
APEX RIVER
IQALUIT SHOOTING RANGE
PROP. BORROW PIT
PROP. AR PUMPING STATION
TEMP. CONST. ACCESS ROAD
EX. SNOWMOBILE PEDESTRIAN TRAILS
PROP. ACCESS ROAD/BY-PASS TO QUARRY AREAS
T109
T110 (B)
T111 (A)
T111 (B)
T112 (A)
T112 (B)
T113
T114
T115 (A)
T115 (B)
T116 (A)
T116 (B)
T117 (A)
T117 (B)
PROP. NEW RESERVOIR
PROP. RESERVOIR RING ROAD
LAKE GERALDINE
EX. WATER TREATMENT PLANT
CITY OF IQALUIT
EX. SNOWMOBILE PEDESTRIAN TRAILS

100 50 0 100 200 300

1:7500 (m)

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PRELIMINARY
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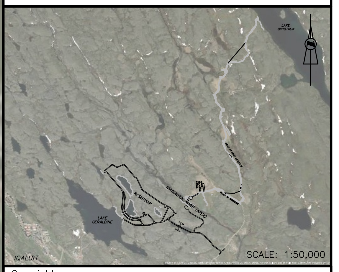
LAKE QIKIQTALIK
RESERVOIR
NIAQUNGUK RIVER (APEX)
LAKE GERALDINE
IQALUIT
SCALE: 1:50,000

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

NOTE:

FOR DETAIL WATERMAIN DRAWINGS
REFER TO U201 TO 1205

A	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
Revision	Description	Date

Consultant

ARCADIS

8133 Warden Avenue - Unit 300
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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
G.M.

Drawn by
M.L.

Approved by
N.G.

Project Manager
C.G.

Drawing title

GENERAL OVERALL
GRADING CUT SHEET
OVERALL LOCATION KEY PLAN

Project no.	Drawing no.	Revision no.
30192375	T101	A

C:\Users\iziba\DC\ACCDocs\IBI - DT Services\30288139-Iqaluit_LongTermWater C3D2025\Project Files\7.0_Production\7.03_Design\04_Civil\Sheets\T101.dwg

A1 - 841X594

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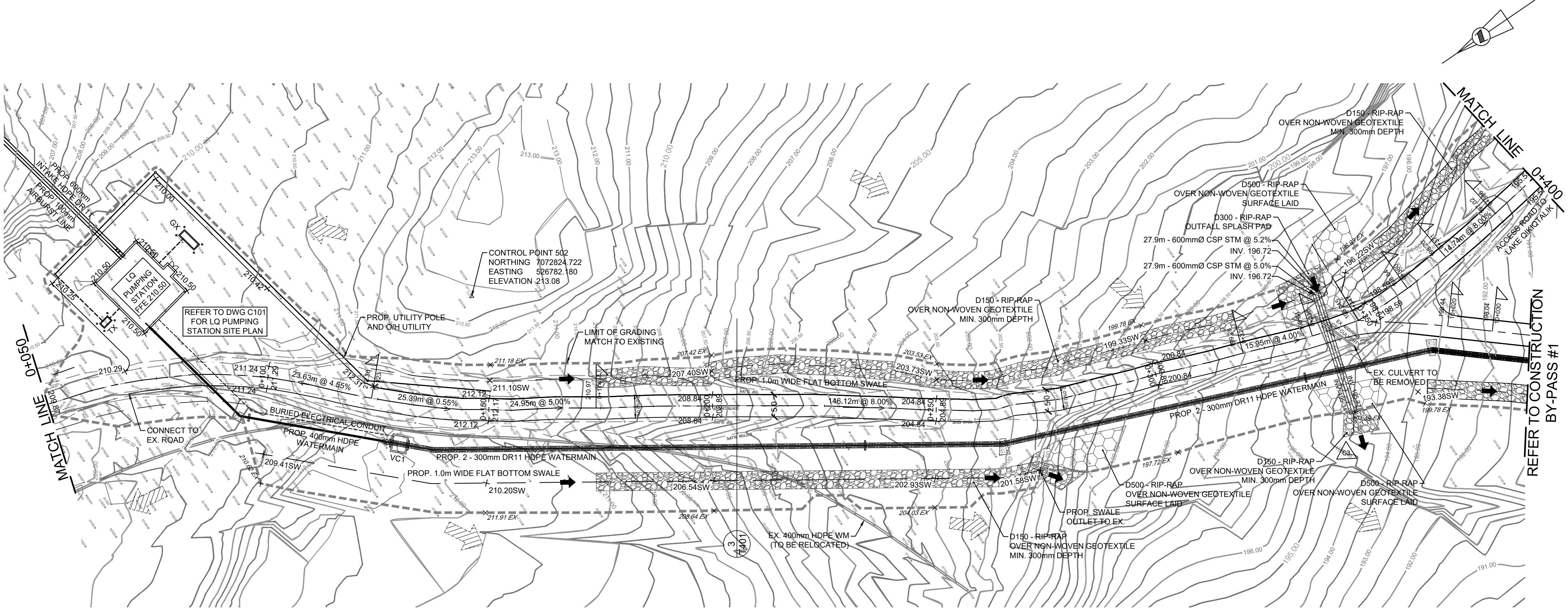
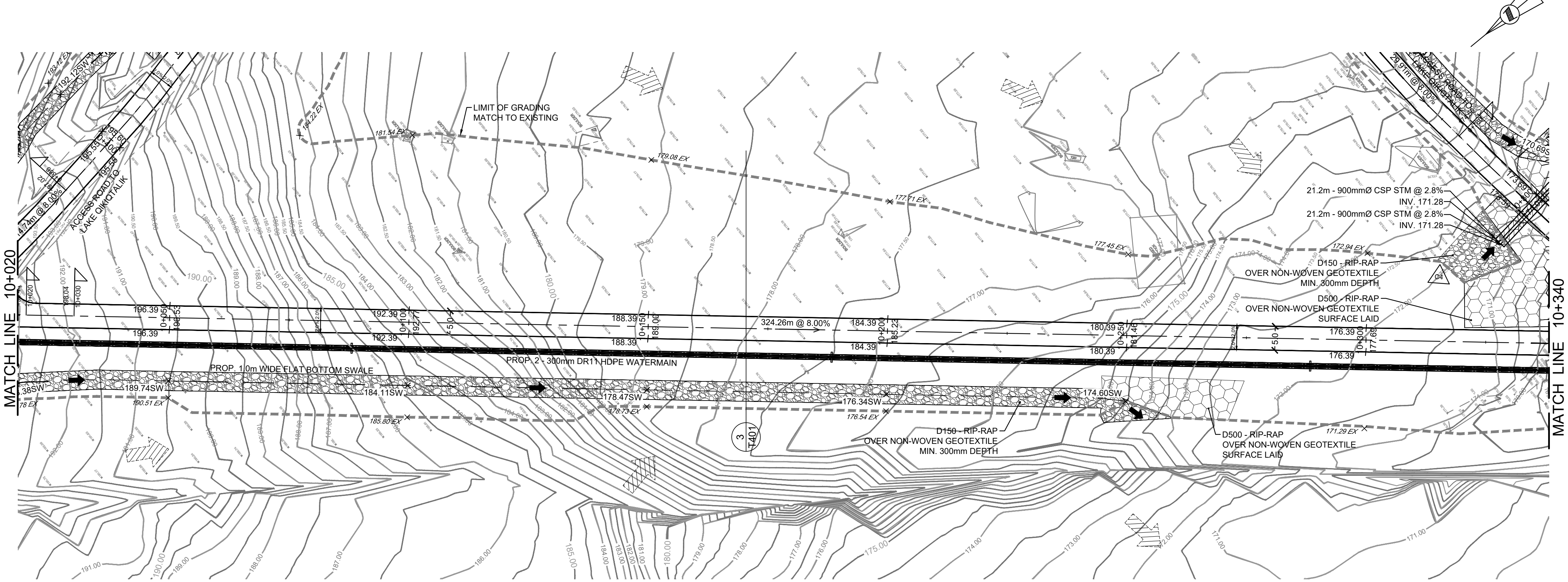

MATCH LINE
0+050
MATCH LINE
0+400
REFER TO CONSTRUCTION BY-PASS #1
PROP. 600mm INTAKE HDPE DR11
PROP. 100mm AIRBURST LINE
LQ PUMPING STATION FFE 210.50
GX
TX
REFER TO DWG C101 FOR LQ PUMPING STATION SITE PLAN
PROP. UTILITY POLE AND O/H UTILITY
CONTROL POINT 502
NORTHING 7072824.722
EASTING 526782.180
ELEVATION 213.08
LIMIT OF GRADING MATCH TO EXISTING
CONNECT TO EX. ROAD
BURIED ELECTRICAL CONDUIT
PROP. 400mm HDPE WATERMAIN
VC1
PROP. 2 - 300mm DR11 HDPE WATERMAIN
PROP. 1.0m WIDE FLAT BOTTOM SWALE
23.63m @ 4.85%
25.39m @ 0.55%
24.95m @ 5.00%
146.12m @ 8.00%
15.95m @ 4.00%
14.74m @ 8.00%
EX. 400mm HDPE WM (TO BE RELOCATED)
EX. CULVERT TO BE REMOVED
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
D500 - RIP-RAP OVER NON-WOVEN GEOTEXTILE SURFACE LAID
D300 - RIP-RAP OUTFALL SPLASH PAD
27.9m - 600mmØ CSP STM @ 5.2% INV. 196.72
27.9m - 600mmØ CSP STM @ 5.0% INV. 196.72
PROP. SWALE OUTLET TO EX.
ACCESS ROAD TO LAKE QIKIQTALIK
3 / T401

ACCESS ROAD TO LAKE QIKIQTALIK


MATCH LINE 10+020
MATCH LINE 10+340
ACCESS ROAD TO LAKE QIKIQTALIK
14.74m @ 8.00%
LIMIT OF GRADING MATCH TO EXISTING
324.26m @ 8.00%
PROP. 1.0m WIDE FLAT BOTTOM SWALE
PROP. 2 - 300mm DR11 HDPE WATERMAIN
21.2m - 900mmØ CSP STM @ 2.8% INV. 171.28
21.2m - 900mmØ CSP STM @ 2.8% INV. 171.28
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
D500 - RIP-RAP OVER NON-WOVEN GEOTEXTILE SURFACE LAID
3 / T401

CONSTRUCTION BY-PASS ROAD #1

5 0 5 10 20
1:500 (m)

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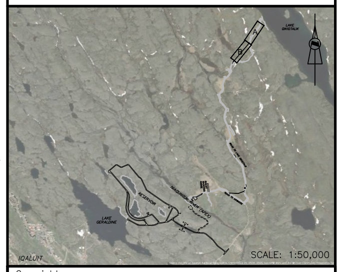
SCALE: 1:50,000

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

NOTE:

FOR DETAIL WATERMAIN DRAWINGS REFER TO U201 TO 1205

Revision	Description	Date
A	ISSUED FOR 50% DESIGN REVIEW	2025-12-19

Consultant

ARCADIS

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tel 905 763 2322
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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
G.M.

Drawn by
M.L.

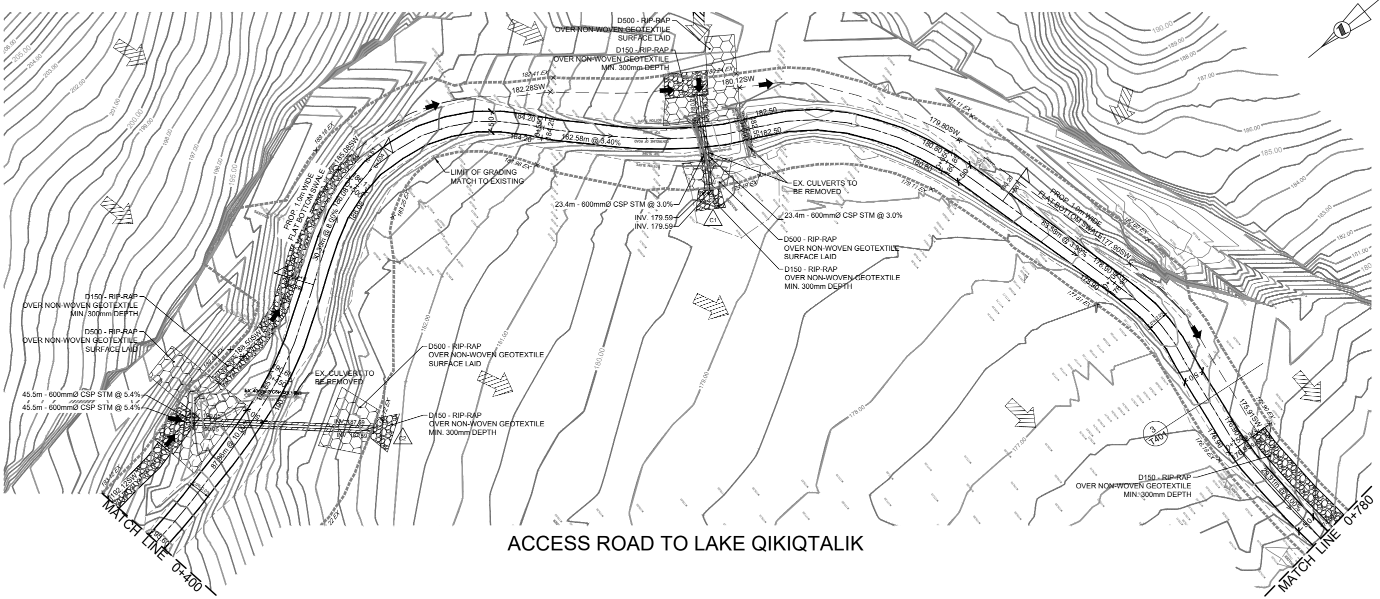
Approved by
N.G.

Project Manager
C.G.

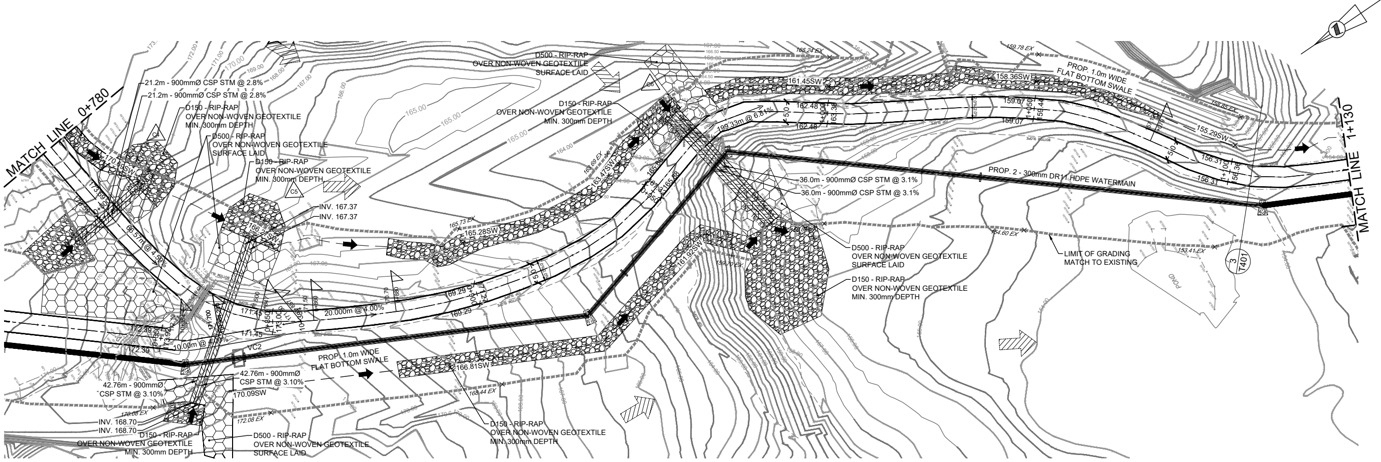
Drawing title

GRADING CUT SHEET
ACCESS ROAD TO QIKIQTALIK
FROM STATION 0+050 TO 0+400
CONSTRUCTION BY-PASS #1
FROM STATION 10+020 TO 10+340

Project no.	Drawing no.	Revision no.
30192375	T102	A


D500 - RIP-RAP
OVER NON-WOVEN GEOTEXTILE
SURFACE LAID
D150 - RIP-RAP
OVER NON-WOVEN GEOTEXTILE
MIN. 300mm DEPTH
182.41 EX
182.28SW
180.24 EX
180.12SW
181.11 EX
179.80SW
184.20
184.20
162.58m @ 3.40%
182.50
182.50
180.80
180.60
LIMIT OF GRADING
MATCH TO EXISTING
23.4m - 600mmØ CSP STM @ 3.0%
INV. 179.59
INV. 179.59
C1
EX. CULVERTS TO
BE REMOVED
23.4m - 600mmØ CSP STM @ 3.0%
PROP. 1.0m WIDE
FLAT BOTTOM SWALE
185.08SW
189.16 EX
30.30m @ 8.00%
188.50SW
PROP. 1.0m WIDE
FLAT BOTTOM SWALE
177.90SW
83.58m @ 3.90%
178.90
178.90
177.51 EX
45.5m - 600mmØ CSP STM @ 5.4%
45.5m - 600mmØ CSP STM @ 5.4%
EX. CULVERT TO
BE REMOVED
INV. 187.69
C2
192.12SW
192.47 EX
3
T401
175.91SW
176.19 EX
176.80 EX
MATCH LINE 0+400
MATCH LINE 0+780

ACCESS ROAD TO LAKE QIKIQTALIK


MATCH LINE 0+780
21.2m - 900mmØ CSP STM @ 2.8%
21.2m - 900mmØ CSP STM @ 2.8%
D150 - RIP-RAP
OVER NON-WOVEN GEOTEXTILE
MIN. 300mm DEPTH
D500 - RIP-RAP
OVER NON-WOVEN GEOTEXTILE
SURFACE LAID
C5
INV. 167.37
INV. 167.37
C6
165.24 EX
161.45SW
159.78 EX
158.36SW
PROP. 1.0m WIDE
FLAT BOTTOM SWALE
162.48
162.48
159.07
159.07
109.33m @ 6.81%
155.29SW
156.31
156.31
PROP. 2 - 300mm DR11 HDPE WATERMAIN
36.0m - 900mmØ CSP STM @ 3.1%
36.0m - 900mmØ CSP STM @ 3.1%
165.73 EX
165.28SW
163.47SW
161.92SW
154.60 EX
LIMIT OF GRADING
MATCH TO EXISTING
153.41 EX
POND
3
T401
MATCH LINE 1+130
68.57m @ 4.90%
20.000m @ 4.00%
169.29
169.29
171.45
171.45
10.00m @ 4.00%
172.30
172.30
VC2
PROP. 1.0m WIDE
FLAT BOTTOM SWALE
166.81SW
168.44 EX
42.76m - 900mmØ
CSP STM @ 3.10%
42.76m - 900mmØ
CSP STM @ 3.10%
170.09SW
172.08 EX
INV. 168.70
INV. 168.70
D150 - RIP-RAP
OVER NON-WOVEN GEOTEXTILE
MIN. 300mm DEPTH
D500 - RIP-RAP
OVER NON-WOVEN GEOTEXTILE
SURFACE LAID

ACCESS ROAD TO LAKE QIKIQTALIK

5 0 5 10 20
1:500 (m)

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www.iqaluit.ca

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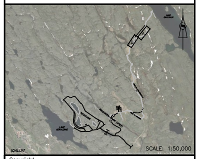
A
B
IQALUIT
SCALE: 1:50,000

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

NOTE:

FOR DETAIL WATERMAIN DRAWINGS
REFER TO U201 TO 1205

Revision	Description	Date
A	ISSUED FOR 50% DESIGN REVIEW	2025-12-19

Consultant

ARCADIS

8133 Warden Avenue - Unit 300
Markham ON L6G 1B3 Canada
tel 905 763 2322
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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
G.M.

Drawn by
M.L.

Approved by
N.G.

Project Manager
C.G.

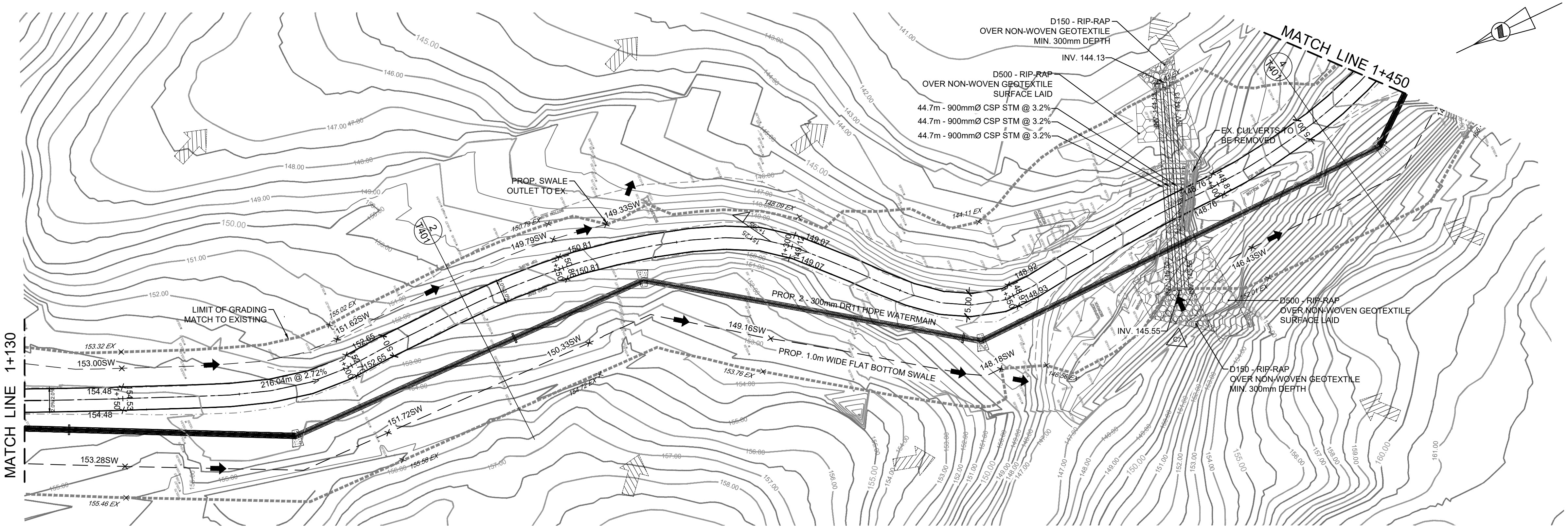
Drawing title

GRADING CUT SHEET
ACCESS ROAD TO QIKIQTALIK
FROM STATION 0+400 TO 0+780
AND
FROM STATION 0+780 TO 1+130

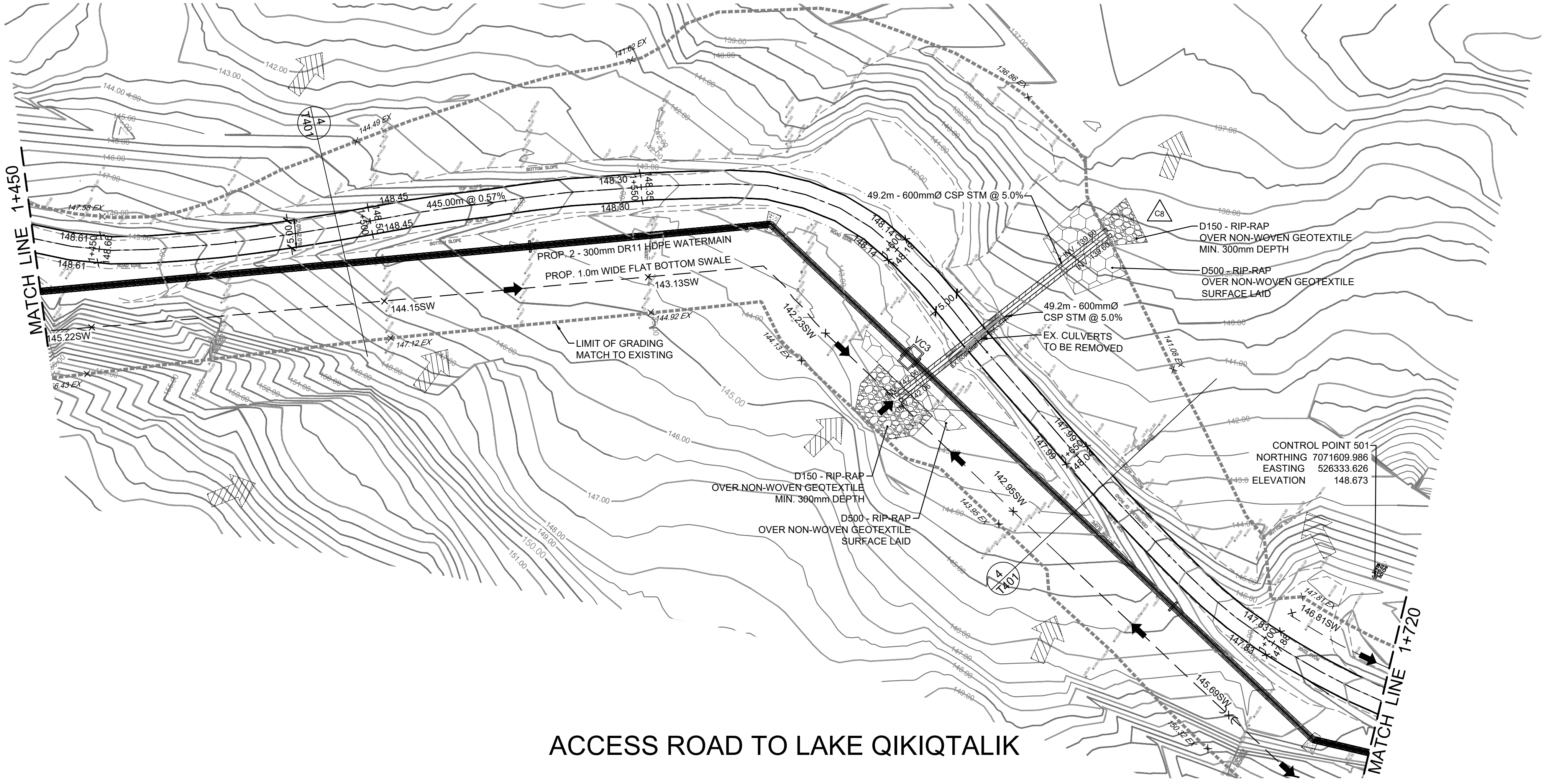
Project no.	Drawing no.	Revision no.
30192375	T103	A

A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm


MATCH LINE 1+130
MATCH LINE 1+450
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
INV. 144.13
D500 - RIP-RAP OVER NON-WOVEN GEOTEXTILE SURFACE LAID
44.7m - 900mmØ CSP STM @ 3.2%
44.7m - 900mmØ CSP STM @ 3.2%
44.7m - 900mmØ CSP STM @ 3.2%
EX. CULVERTS TO BE REMOVED
PROP. SWALE OUTLET TO EX.
LIMIT OF GRADING MATCH TO EXISTING
216.04m @ 2.72%
PROP. 2 - 300mm DR11 HDPE WATERMAIN
PROP. 1.0m WIDE FLAT BOTTOM SWALE
INV. 145.55
D500 - RIP-RAP OVER NON-WOVEN GEOTEXTILE SURFACE LAID
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
149.33SW
149.79SW
151.62SW
153.00SW
150.33SW
151.72SW
153.28SW
149.16SW
148.18SW
146.43SW
2 T401
4 T401

ACCESS ROAD TO LAKE QIKIQTALIK


MATCH LINE 1+450
MATCH LINE 1+720
445.00m @ 0.57%
PROP. 2 - 300mm DR11 HDPE WATERMAIN
PROP. 1.0m WIDE FLAT BOTTOM SWALE
LIMIT OF GRADING MATCH TO EXISTING
49.2m - 600mmØ CSP STM @ 5.0%
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
D500 - RIP-RAP OVER NON-WOVEN GEOTEXTILE SURFACE LAID
49.2m - 600mmØ CSP STM @ 5.0%
EX. CULVERTS TO BE REMOVED
C8
VC3
CONTROL POINT 501
NORTHING 7071609.986
EASTING 526333.626
ELEVATION 148.673
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
D500 - RIP-RAP OVER NON-WOVEN GEOTEXTILE SURFACE LAID
144.15SW
143.13SW
145.22SW
142.23SW
142.95SW
145.69SW
146.81SW
4 T401

ACCESS ROAD TO LAKE QIKIQTALIK

5 0 5 10 20
1:500 (m)

1085 Mivvik Street, P.O. Box 460
Iqaluit NU X0A 0H0 Canada
tel 867 979 5600
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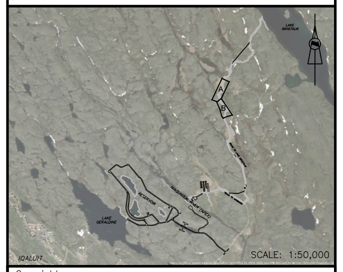
LAKE QIKIQTALIK
A
B
ROAD TO LAKE QIKIQTALIK
RESERVOIR
NIAQUNGUK RIVER (APEX)
LAKE GERALDINE
IQALUIT
SCALE: 1:50,000

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

NOTE:

FOR DETAIL WATERMAIN DRAWINGS
REFER TO U201 TO 1205

Revision	Description	Date
A	ISSUED FOR 50% DESIGN REVIEW	2025-12-19

Consultant

8133 Warden Avenue - Unit 300
Markham ON L6G 1B3 Canada
tel 905 763 2322
www.arcadis.com

Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
G.M.

Drawn by
M.L.

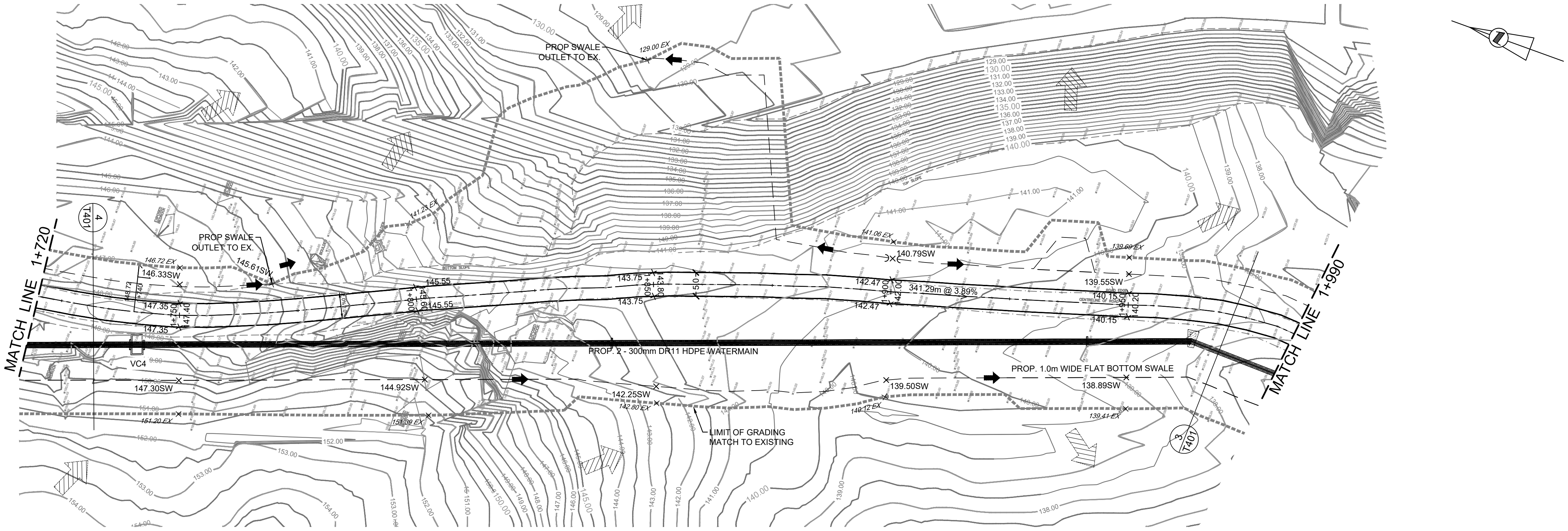
Approved by
N.G.

Project Manager
C.G.

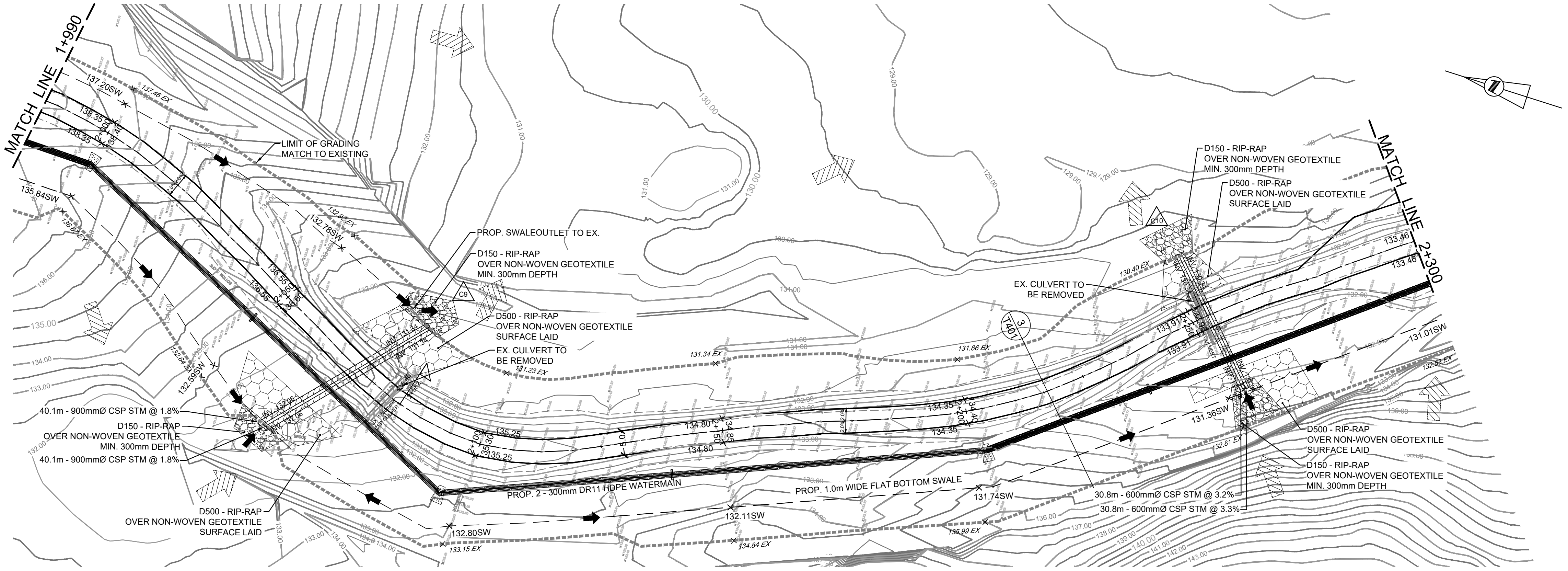
Drawing title

GRADING CUT SHEET
ACCESS ROAD TO LAKE QIKIQTALIK
FROM STATION 1+100 TO 1+450
ACCESS ROAD TO LAKE QIKIQTALIK
FROM STATION 1+450 TO 1+720

Project no.	Drawing no.	Revision no.
30192375	T104	A


MATCH LINE 1+720
MATCH LINE 1+990
4
T401
3
T401
PROP SWALE OUTLET TO EX.
PROP SWALE OUTLET TO EX.
129.00 EX
141.23 EX
141.06 EX
139.60 EX
146.72 EX
146.33SW
145.61SW
147.35
147.35
145.55
145.55
143.75
143.75
143.80
142.47
142.47
140.79SW
341.29m @ 3.89%
139.55SW
140.15
140.15
VC4
PROP. 2 - 300mm DR11 HDPE WATERMAIN
147.30SW
144.92SW
142.25SW
142.80 EX
139.50SW
140.12 EX
PROP. 1.0m WIDE FLAT BOTTOM SWALE
138.89SW
139.41 EX
151.20 EX
151.39 EX
LIMIT OF GRADING MATCH TO EXISTING

ACCESS ROAD TO LAKE QIKIQTALIK


MATCH LINE 1+990
MATCH LINE 2+300
137.20SW
137.46 EX
138.35
138.35
135.84SW
LIMIT OF GRADING MATCH TO EXISTING
132.76SW
132.95 EX
PROP. SWALEOUTLET TO EX.
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
C9
D500 - RIP-RAP OVER NON-WOVEN GEOTEXTILE SURFACE LAID
EX. CULVERT TO BE REMOVED
131.23 EX
131.34 EX
131.86 EX
132.59SW
40.1m - 900mmØ CSP STM @ 1.8%
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
40.1m - 900mmØ CSP STM @ 1.8%
135.25
135.25
134.80
134.80
134.85
134.35
134.35
134.40
PROP. 2 - 300mm DR11 HDPE WATERMAIN
PROP. 1.0m WIDE FLAT BOTTOM SWALE
D500 - RIP-RAP OVER NON-WOVEN GEOTEXTILE SURFACE LAID
132.80SW
133.15 EX
132.11SW
134.84 EX
131.74SW
135.99 EX
EX. CULVERT TO BE REMOVED
3
T401
130.49 EX
C10
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
D500 - RIP-RAP OVER NON-WOVEN GEOTEXTILE SURFACE LAID
133.46
133.46
131.01SW
131.36SW
132.81 EX
D500 - RIP-RAP OVER NON-WOVEN GEOTEXTILE SURFACE LAID
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
30.8m - 600mmØ CSP STM @ 3.2%
30.8m - 600mmØ CSP STM @ 3.3%

ACCESS ROAD TO LAKE QIKIQTALIK

5 0 5 10 20
1:500 (m)

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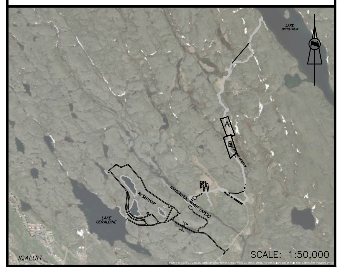
LAKE QIKIQTALIK
A
B
RESERVOIR
NIAQUNGUK RIVER (APEX)
LAKE GERALDINE
IQALUIT
SCALE: 1:50,000

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

NOTE:

FOR DETAIL WATERMAIN DRAWINGS
REFER TO U201 TO 1205

A	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
Revision	Description	Date

Consultant

ARCADIS

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Project title

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LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
G.M.

Drawn by
M.L.

Approved by
N.G.

Project Manager
C.G.

Drawing title

GRADING CUT SHEET
ACCESS ROAD TO LAKE QIKIQTALIK
FROM STATION 1+720 TO 1+990
ACCESS ROAD TO LAKE QIKIQTALIK
FROM STATION 1+990 TO 2+300

Project no.	Drawing no.	Revision no.
30192375	T105	A

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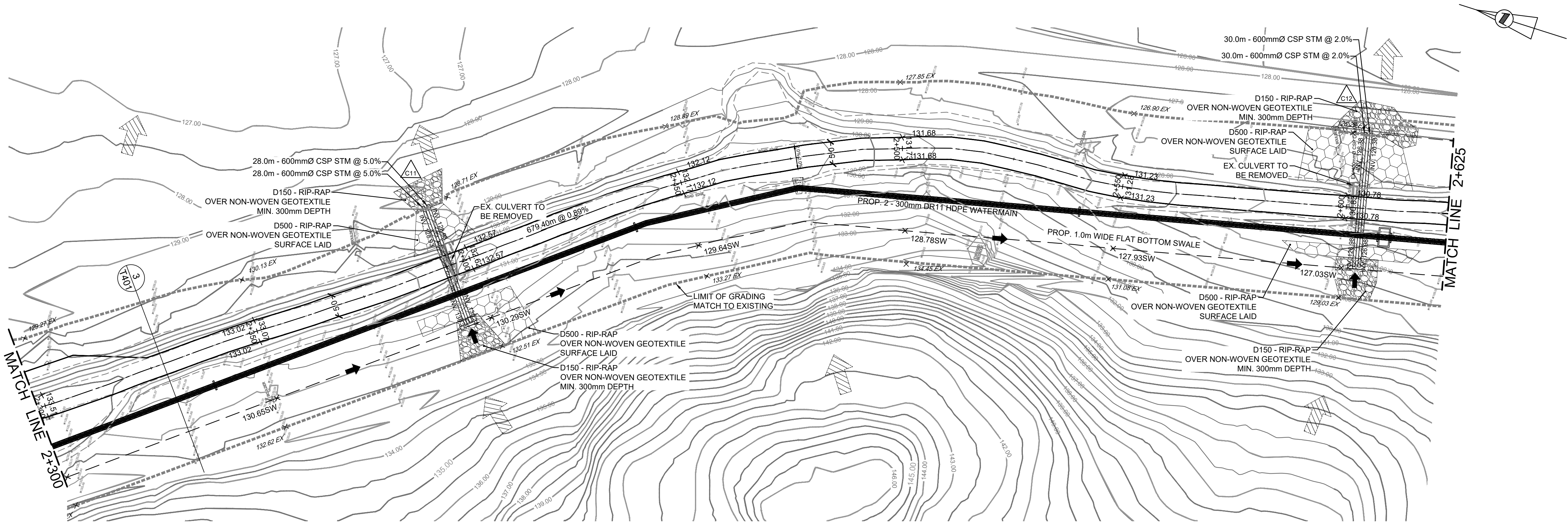
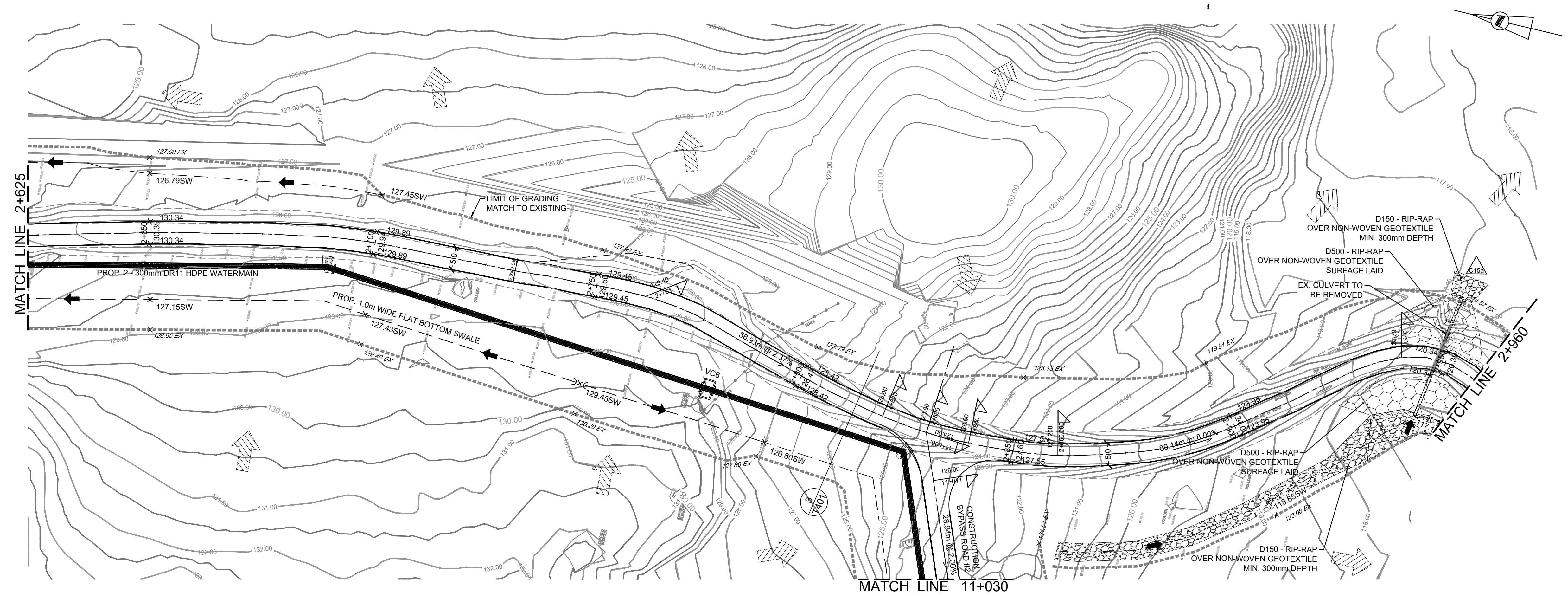
A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm


30.0m - 600mmØ CSP STM @ 2.0%
30.0m - 600mmØ CSP STM @ 2.0%
C12
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
D500 - RIP-RAP OVER NON-WOVEN GEOTEXTILE SURFACE LAID
EX. CULVERT TO BE REMOVED
MATCH LINE 2+625
28.0m - 600mmØ CSP STM @ 5.0%
28.0m - 600mmØ CSP STM @ 5.0%
C11
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
D500 - RIP-RAP OVER NON-WOVEN GEOTEXTILE SURFACE LAID
EX. CULVERT TO BE REMOVED
679.40m @ 0.89%
PROP. 2 - 300mm DR11 HDPE WATERMAIN
PROP. 1.0m WIDE FLAT BOTTOM SWALE
LIMIT OF GRADING MATCH TO EXISTING
D500 - RIP-RAP OVER NON-WOVEN GEOTEXTILE SURFACE LAID
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
D500 - RIP-RAP OVER NON-WOVEN GEOTEXTILE SURFACE LAID
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
3 T401
MATCH LINE 2+300
131.68
131.23
130.78
132.12
132.57
133.02
129.64SW
128.78SW
127.93SW
127.03SW
130.29SW
130.65SW
127.85 EX
126.90 EX
128.89 EX
128.71 EX
130.13 EX
129.27 EX
133.27 EX
134.45 EX
131.08 EX
129.03 EX
132.51 EX
132.62 EX

ACCESS ROAD TO LAKE QIKIQTALIK


MATCH LINE 2+625
127.00 EX
126.79SW
127.45SW
LIMIT OF GRADING MATCH TO EXISTING
130.34
129.89
129.45
PROP. 2 - 300mm DR11 HDPE WATERMAIN
127.15SW
PROP. 1.0m WIDE FLAT BOTTOM SWALE
127.43SW
128.95 EX
129.40 EX
58.93m @ 2.37%
129.42
128.42
VC6
129.45SW
130.20 EX
126.80SW
127.80 EX
3 T401
CONSTRUCTION BY-PASS ROAD #2
28.94m @ 2.00%
127.55
80.14m @ 8.00%
123.95
123.55
120.34
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
D500 - RIP-RAP OVER NON-WOVEN GEOTEXTILE SURFACE LAID
EX. CULVERT TO BE REMOVED
C15a
D500 - RIP-RAP OVER NON-WOVEN GEOTEXTILE SURFACE LAID
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
118.85SW
123.08 EX
119.91 EX
123.13 EX
127.19 EX
MATCH LINE 2+960
MATCH LINE 11+030

ACCESS ROAD TO LAKE QIKIQTALIK
AND CONSTRUCTION BY-PASS ROAD #2

5 0 5 10 20
1:500 (m)

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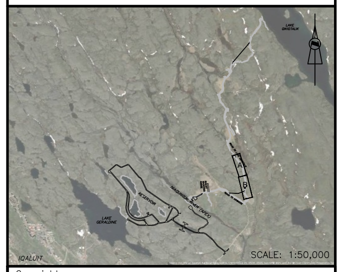
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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

NOTE:

FOR DETAIL WATERMAIN DRAWINGS REFER TO U201 TO 1205

Revision	Description	Date
A	ISSUED FOR 50% DESIGN REVIEW	2025-12-19

Consultant

ARCADIS
8133 Warden Avenue - Unit 300
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www.arcadis.com

Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
G.M.

Drawn by
M.L.

Approved by
N.G.

Project Manager
C.G.

Drawing title

GRADING CUT SHEET
ACCESS ROAD TO LAKE QIKIQTALIK
FROM STATION 2+300 TO 2+625
AND FROM STATION 2+625 TO 2+950
CONSTRUCTION BY-PASS #2
FROM STATION 11+000 TO 11+030

Project no.	Drawing no.	Revision no.
30192375	T106	A

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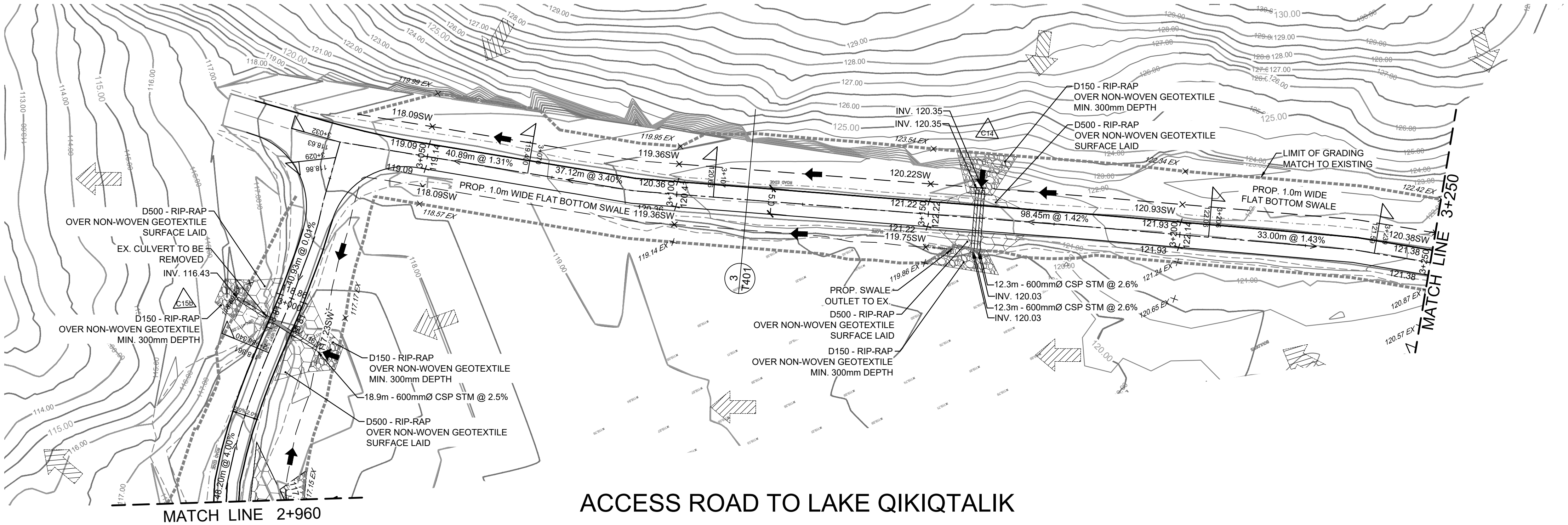
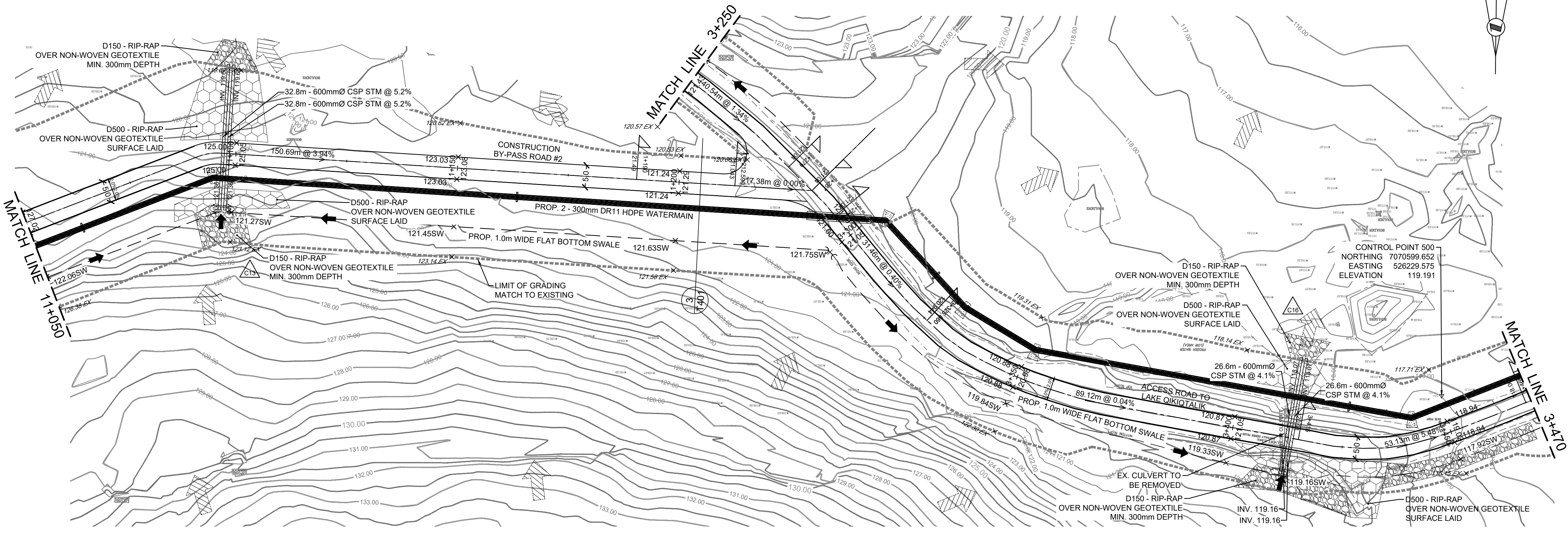
A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm


D150 - RIP-RAP
OVER NON-WOVEN GEOTEXTILE
MIN. 300mm DEPTH
D500 - RIP-RAP
OVER NON-WOVEN GEOTEXTILE
SURFACE LAID
INV. 120.35
INV. 120.35
C14
LIMIT OF GRADING
MATCH TO EXISTING
PROP. 1.0m WIDE
FLAT BOTTOM SWALE
118.09SW
119.09
40.89m @ 1.31%
37.12m @ 3.40%
119.36SW
120.36
120.22SW
PROP. 1.0m WIDE FLAT BOTTOM SWALE
118.09SW
119.36SW
121.22
98.45m @ 1.42%
120.93SW
121.93
33.00m @ 1.43%
120.38SW
121.38
MATCH LINE 3+250
D500 - RIP-RAP
OVER NON-WOVEN GEOTEXTILE
SURFACE LAID
EX. CULVERT TO BE
REMOVED
INV. 116.43
C15
D150 - RIP-RAP
OVER NON-WOVEN GEOTEXTILE
MIN. 300mm DEPTH
121.22
119.75SW
3
T401
PROP. SWALE
OUTLET TO EX.
D500 - RIP-RAP
OVER NON-WOVEN GEOTEXTILE
SURFACE LAID
D150 - RIP-RAP
OVER NON-WOVEN GEOTEXTILE
MIN. 300mm DEPTH
12.3m - 600mmØ CSP STM @ 2.6%
INV. 120.03
12.3m - 600mmØ CSP STM @ 2.6%
INV. 120.03
D150 - RIP-RAP
OVER NON-WOVEN GEOTEXTILE
MIN. 300mm DEPTH
18.9m - 600mmØ CSP STM @ 2.5%
D500 - RIP-RAP
OVER NON-WOVEN GEOTEXTILE
SURFACE LAID
40.93m @ 0.01%
46.20m @ 4.00%
MATCH LINE 2+960

ACCESS ROAD TO LAKE QIKIQTALIK


D150 - RIP-RAP
OVER NON-WOVEN GEOTEXTILE
MIN. 300mm DEPTH
32.8m - 600mmØ CSP STM @ 5.2%
32.8m - 600mmØ CSP STM @ 5.2%
D500 - RIP-RAP
OVER NON-WOVEN GEOTEXTILE
SURFACE LAID
MATCH LINE 3+250
40.54m @ 1.34%
CONSTRUCTION
BY-PASS ROAD #2
150.69m @ 3.94%
123.03
121.24
17.38m @ 0.00%
D500 - RIP-RAP
OVER NON-WOVEN GEOTEXTILE
SURFACE LAID
PROP. 2 - 300mm DR11 HDPE WATERMAIN
121.27SW
121.45SW
PROP. 1.0m WIDE FLAT BOTTOM SWALE
121.63SW
121.75SW
D150 - RIP-RAP
OVER NON-WOVEN GEOTEXTILE
MIN. 300mm DEPTH
C13
LIMIT OF GRADING
MATCH TO EXISTING
3
T401
122.06SW
MATCH LINE 11+050
31.46m @ 0.40%
D150 - RIP-RAP
OVER NON-WOVEN GEOTEXTILE
MIN. 300mm DEPTH
D500 - RIP-RAP
OVER NON-WOVEN GEOTEXTILE
SURFACE LAID
C16
CONTROL POINT 500
NORTHING 7070599.652
EASTING 526229.575
ELEVATION 119.191
26.6m - 600mmØ
CSP STM @ 4.1%
26.6m - 600mmØ
CSP STM @ 4.1%
ACCESS ROAD TO
LAKE QIKIQTALIK
89.12m @ 0.04%
120.88
120.87
119.84SW
PROP. 1.0m WIDE FLAT BOTTOM SWALE
119.33SW
53.13m @ 5.46%
118.94
117.92SW
MATCH LINE 3+470
EX. CULVERT TO
BE REMOVED
D150 - RIP-RAP
OVER NON-WOVEN GEOTEXTILE
MIN. 300mm DEPTH
INV. 119.16
INV. 119.16
119.16SW
D500 - RIP-RAP
OVER NON-WOVEN GEOTEXTILE
SURFACE LAID

ACCESS ROAD TO QIKIQTALIK
AND CONSTRUCTION BY-PASS #2

5 0 5 10 20
1:500 (m)

Iqaluit

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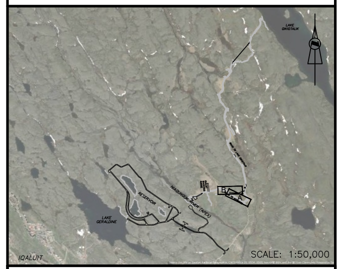
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FOR DETAIL WATERMAIN DRAWINGS
REFER TO U201 TO 1205

Revision	Description	Date
A	ISSUED FOR 50% DESIGN REVIEW	2025-12-19

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Drawn by
M.L.

Approved by
N.G.

Project Manager
C.G.

Drawing title

GRADING CUT SHEET
ACCESS ROAD TO LAKE QIKIQTALIK
FROM STATION 2+960 TO 3+250
AND FROM STATION 3+250 TO 3+470
CONSTRUCTION BY-PASS #2
FROM STATION 11+050 TO 11+249

Project no.	Drawing no.	Revision no.
30192375	T107	A

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A1 – 841X594

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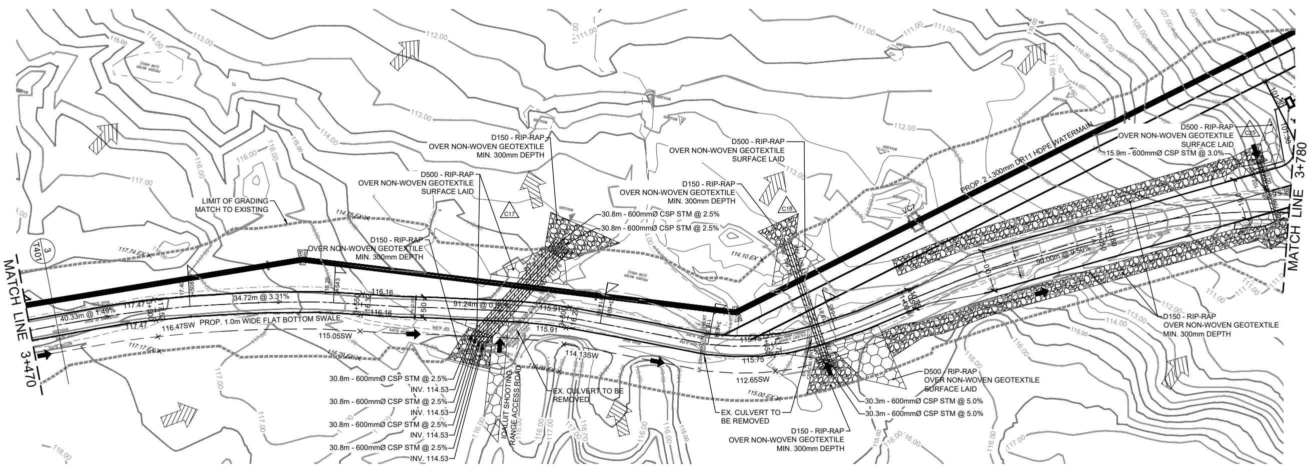
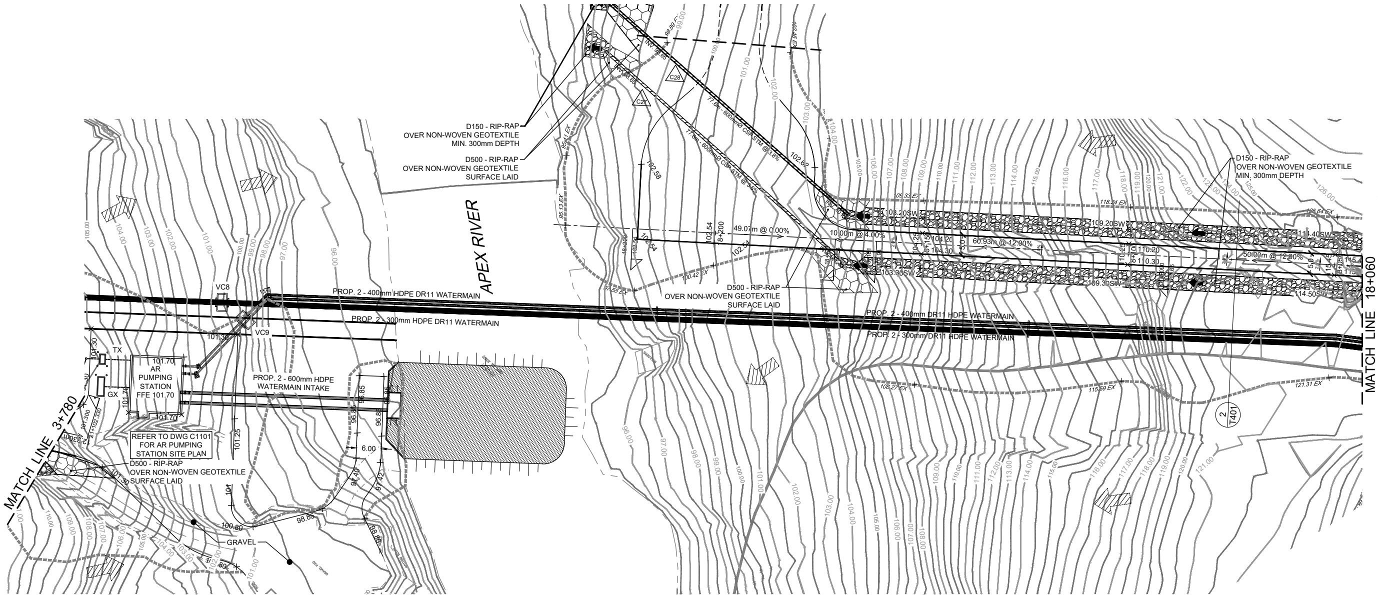

MATCH LINE 3+470
MATCH LINE 3+780
LIMIT OF GRADING MATCH TO EXISTING
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
D500 - RIP-RAP OVER NON-WOVEN GEOTEXTILE SURFACE LAID
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
D500 - RIP-RAP OVER NON-WOVEN GEOTEXTILE SURFACE LAID
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
30.8m - 600mmØ CSP STM @ 2.5%
30.8m - 600mmØ CSP STM @ 2.5%
C17
C18
VC7
PROP. 2 - 300mm DR11 HDPE WATERMAIN
D500 - RIP-RAP OVER NON-WOVEN GEOTEXTILE SURFACE LAID
15.9m - 600mmØ CSP STM @ 3.0%
C19
40.33m @ 1.49%
34.72m @ 3.31%
91.24m @ 0.22%
90.00m @ 5.50%
PROP. 1.0m WIDE FLAT BOTTOM SWALE
116.47SW
115.05SW
114.13SW
112.65SW
115.91
115.75
116.16
30.8m - 600mmØ CSP STM @ 2.5% INV. 114.53
30.8m - 600mmØ CSP STM @ 2.5% INV. 114.53
30.8m - 600mmØ CSP STM @ 2.5% INV. 114.53
30.8m - 600mmØ CSP STM @ 2.5% INV. 114.53
IQALUIT SHOOTING RANGE ACCESS ROAD
EX. CULVERT TO BE REMOVED
EX. CULVERT TO BE REMOVED
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
D500 - RIP-RAP OVER NON-WOVEN GEOTEXTILE SURFACE LAID
30.3m - 600mmØ CSP STM @ 5.0%
30.3m - 600mmØ CSP STM @ 5.0%
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
3 T401

PROPOSED AR PUMPING STATION ACCESS ROAD


MATCH LINE 3+780
MATCH LINE 18+060
APEX RIVER
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
D500 - RIP-RAP OVER NON-WOVEN GEOTEXTILE SURFACE LAID
C28
C27
77.6m - 600mmØ CSP STM @ 3.6%
77.6m - 600mmØ CSP STM @ 3.6%
49.07m @ 0.00%
10.00m @ 4.00%
60.93m @ 12.80%
50.00m @ 12.80%
108.20SW
109.20SW
111.40SW
103.30SW
109.30SW
114.50SW
D500 - RIP-RAP OVER NON-WOVEN GEOTEXTILE SURFACE LAID
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
VC8
VC9
PROP. 2 - 400mm HDPE DR11 WATERMAIN
PROP. 2 - 300mm HDPE DR11 WATERMAIN
PROP. 2 - 400mm DR11 HDPE WATERMAIN
PROP. 2 - 300mm DR11 HDPE WATERMAIN
TX
GX
AR PUMPING STATION FFE 101.70
PROP. 2 - 600mm HDPE WATERMAIN INTAKE
REFER TO DWG C1101 FOR AR PUMPING STATION SITE PLAN
D500 - RIP-RAP OVER NON-WOVEN GEOTEXTILE SURFACE LAID
GRAVEL
6.00
2 T401

PROPOSED PUMPING STATION 2 ACCESS ROAD AND TEMPORARY CONSTRUCTION TURNAROUND

5 0 5 10 20
1:500 (m)

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Iqaluit NU X0A 0H0 Canada
tel 867 979 5600
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PRELIMINARY
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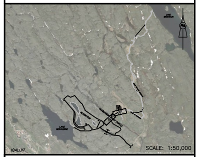
IQALUIT
SCALE: 1:50,000

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

NOTE:

FOR DETAIL WATERMAIN DRAWINGS
REFER TO U201 TO 1205

A	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
Revision	Description	Date

Consultant

8133 Warden Avenue - Unit 300
Markham ON L6G 1B3 Canada
tel 905 763 2322
www.arcadis.com

Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
G.M.

Drawn by
M.L.

Approved by
N.G.

Project Manager
C.G.

Drawing title

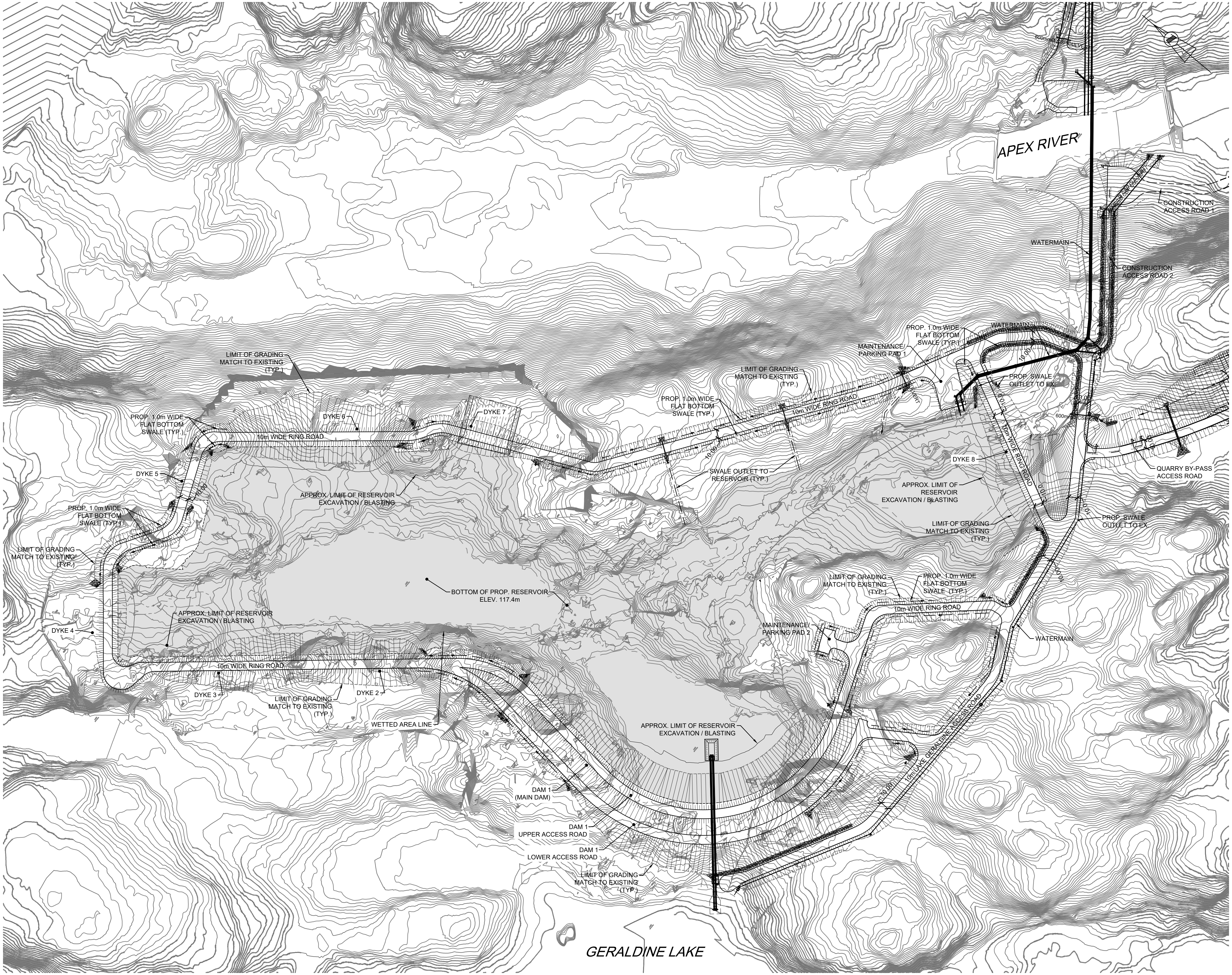
GRADING CUT SHEET
PROPOSED PS2 ACCESS ROAD
FROM STATION 3+470 TO 3+780
AND FROM STATION 3+780 TO 3+831
TEMP. CONSTRUCTION TURNAROUND
FROM STATION 18+060 TO 18+263

Project no.	Drawing no.	Revision no.
30192375	T108	A

C:\Users\ziba\DC\ACCDocs\BI - DT Services\30288139-Iqaluit_LongTermWater C302025\Project Files\7.0_Production\7.03_Design\04_Civil\Sheets\T108.dwg

A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm


600mmØ CSP CULVERT
APEX RIVER
CONSTRUCTION ACCESS ROAD 1
WATERMAIN
CONSTRUCTION ACCESS ROAD 2
600mmØ CSP CULVERT
PROP. 1.0m WIDE FLAT BOTTOM SWALE (TYP.)
WATERMAIN
MAINTENANCE/ PARKING PAD 1
600mmØ CSP CULVERT
PROP. SWALE OUTLET TO EX.
10.00
600mmØ CSP CULVERT
QUARRY BY-PASS ACCESS ROAD
DYKE 8
10m WIDE RING ROAD
APPROX. LIMIT OF RESERVOIR EXCAVATION / BLASTING
LIMIT OF GRADING MATCH TO EXISTING (TYP.)
PROP. SWALE OUTLET TO EX.
LIMIT OF GRADING MATCH TO EXISTING (TYP.)
PROP. 1.0m WIDE FLAT BOTTOM SWALE (TYP.)
10m WIDE RING ROAD
LIMIT OF GRADING MATCH TO EXISTING (TYP.)
SWALE OUTLET TO RESERVOIR (TYP.)
LIMIT OF GRADING MATCH TO EXISTING (TYP.)
DYKE 6
DYKE 7
PROP. 1.0m WIDE FLAT BOTTOM SWALE (TYP.)
10m WIDE RING ROAD
DYKE 5
PROP. 1.0m WIDE FLAT BOTTOM SWALE (TYP.)
APPROX. LIMIT OF RESERVOIR EXCAVATION / BLASTING
LIMIT OF GRADING MATCH TO EXISTING (TYP.)
BOTTOM OF PROP. RESERVOIR ELEV. 117.4m
DYKE 4
APPROX. LIMIT OF RESERVOIR EXCAVATION / BLASTING
LIMIT OF GRADING MATCH TO EXISTING (TYP.)
PROP. 1.0m WIDE FLAT BOTTOM SWALE (TYP.)
10m WIDE RING ROAD
MAINTENANCE/ PARKING PAD 2
WATERMAIN
10m WIDE RING ROAD
DYKE 3
LIMIT OF GRADING MATCH TO EXISTING (TYP.)
DYKE 2
WETTED AREA LINE
APPROX. LIMIT OF RESERVOIR EXCAVATION / BLASTING
10m LAKE GERALDINE ACCESS ROAD
DAM 1 (MAIN DAM)
DAM 1 UPPER ACCESS ROAD
DAM 1 LOWER ACCESS ROAD
LIMIT OF GRADING MATCH TO EXISTING (TYP.)
GERALDINE LAKE

30 0 20 40 80

1:2000 (m)

0 10 20 30 40 50 60 70 80 90 100mm

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A1 - 841X594

Iqaluit

1085 Mivvik Street, P.O. Box 460
Iqaluit NU X0A 0H0 Canada
tel 867 979 5600
www.iqaluit.ca

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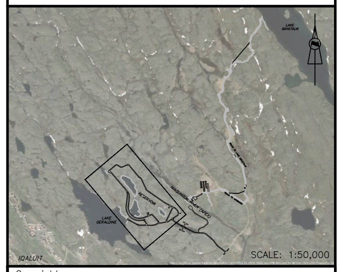
LAKE QIKIQTALIK
ROAD TO LAKE GERALDINE
RESERVOIR
NIAQUNGUK RIVER (APEX)
LAKE GERALDINE
IQALUIT
SCALE: 1:50,000

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

NOTE:

FOR DETAIL WATERMAIN DRAWINGS
REFER TO U201 TO 1205

A	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
Revision	Description	Date

Consultant

ARCADIS

8133 Warden Avenue - Unit 300
Markham ON L6G 1B3 Canada
tel 905 763 2322
www.arcadis.com

Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
G.M.

Drawn by
M.L.

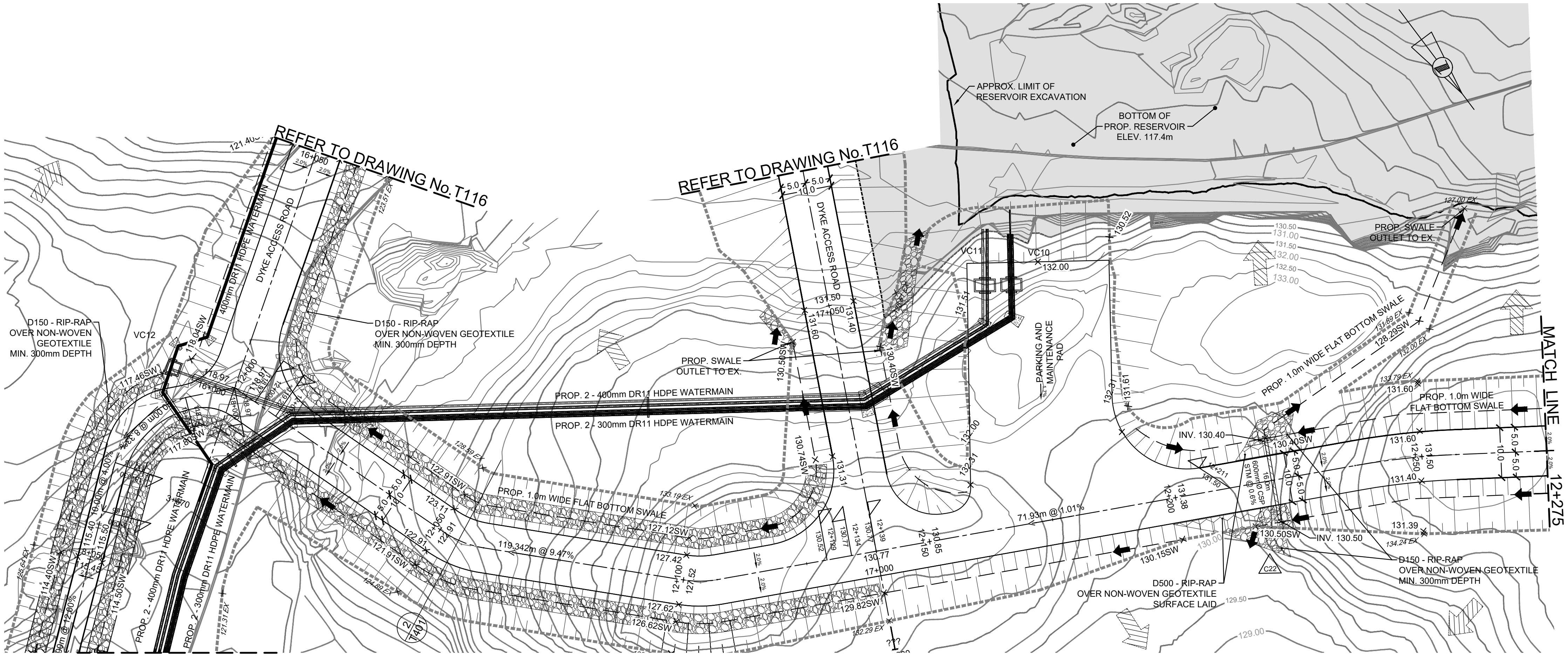
Approved by
N.G.

Project Manager
C.G.

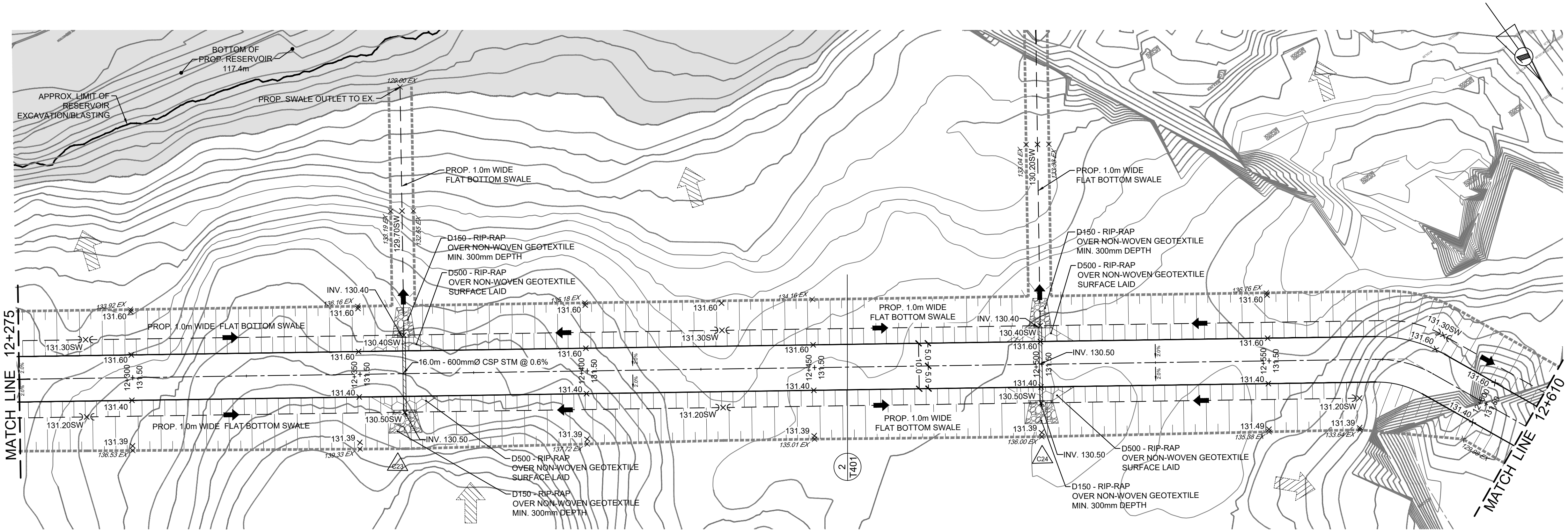
Drawing title

PROPOSED RING ROAD
AND
RESERVOIR PLAN

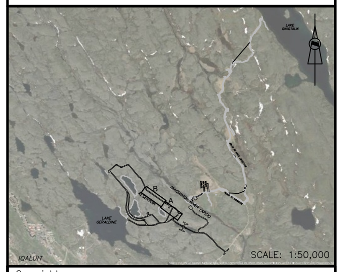
Project no.	Drawing no.	Revision no.
30192375	T109	A


APPROX. LIMIT OF RESERVOIR EXCAVATION
BOTTOM OF PROP. RESERVOIR ELEV. 117.4m
REFER TO DRAWING No.T116
REFER TO DRAWING No.T116
REFER TO DRAWING No.T108
DYKE ACCESS ROAD
DYKE ACCESS ROAD
400mm DR11 HDPE WATERMAIN
PROP. 2 - 400mm DR11 HDPE WATERMAIN
PROP. 2 - 300mm DR11 HDPE WATERMAIN
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
D500 - RIP-RAP OVER NON-WOVEN GEOTEXTILE SURFACE LAID
PROP. SWALE OUTLET TO EX.
PROP. SWALE OUTLET TO EX.
PARKING AND MAINTENANCE PAD
PROP. 1.0m WIDE FLAT BOTTOM SWALE
PROP. 1.0m WIDE FLAT BOTTOM SWALE
PROP. 1.0m WIDE FLAT BOTTOM SWALE
119.342m @ 9.47%
71.93m @ 1.01%
VC10
VC11
VC12
12+100
12+150
12+200
12+250
16+000
16+050
17+000
17+050
INV. 130.40
INV. 130.50
130.40SW
130.50SW
C22
MATCH LINE 12+275
2
T401

PROPOSED RING ROAD


BOTTOM OF PROP. RESERVOIR 117.4m
APPROX. LIMIT OF RESERVOIR EXCAVATION/BLASTING
PROP. SWALE OUTLET TO EX.
PROP. 1.0m WIDE FLAT BOTTOM SWALE
PROP. 1.0m WIDE FLAT BOTTOM SWALE
PROP. 1.0m WIDE FLAT BOTTOM SWALE
PROP. 1.0m WIDE FLAT BOTTOM SWALE
PROP. 1.0m WIDE FLAT BOTTOM SWALE
PROP. 1.0m WIDE FLAT BOTTOM SWALE
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
D500 - RIP-RAP OVER NON-WOVEN GEOTEXTILE SURFACE LAID
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
D500 - RIP-RAP OVER NON-WOVEN GEOTEXTILE SURFACE LAID
D500 - RIP-RAP OVER NON-WOVEN GEOTEXTILE SURFACE LAID
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
D500 - RIP-RAP OVER NON-WOVEN GEOTEXTILE SURFACE LAID
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
16.0m - 600mmØ CSP STM @ 0.6%
INV. 130.40
INV. 130.50
INV. 130.40
INV. 130.50
INV. 130.50
12+300
12+350
12+400
12+450
12+500
12+550
12+600
C23
C24
MATCH LINE 12+275
MATCH LINE 12+610
2
T401

PROPOSED RING ROAD


SCALE: 1:50,000

1085 Mivvik Street, P.O. Box 460
Iqaluit NU X0A 0H0 Canada
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www.iqaluit.ca

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

NOTE:

FOR DETAIL WATERMAIN DRAWINGS
REFER TO U201 TO 1205

Revision	Description	Date
A	ISSUED FOR 50% DESIGN REVIEW	2025-12-19

Consultant

8133 Warden Avenue - Unit 300
Markham ON L6G 1B3 Canada
tel 905 763 2322
www.arcadis.com

Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by G.M.

Drawn by M.L.

Approved by N.G.

Project Manager C.G.

Drawing title

GRADING CUT SHEET
PROPOSED RING ROAD
FROM STATION 12+000 TO 12+275
AND FROM STATION 12+275 TO 12+610

Project no.	Drawing no.	Revision no.
30192375	T110	A

5 0 5 10 20
1:500 (m)

0 10 20 30 40 50 60 70 80 90 100mm

A1 - 841X594

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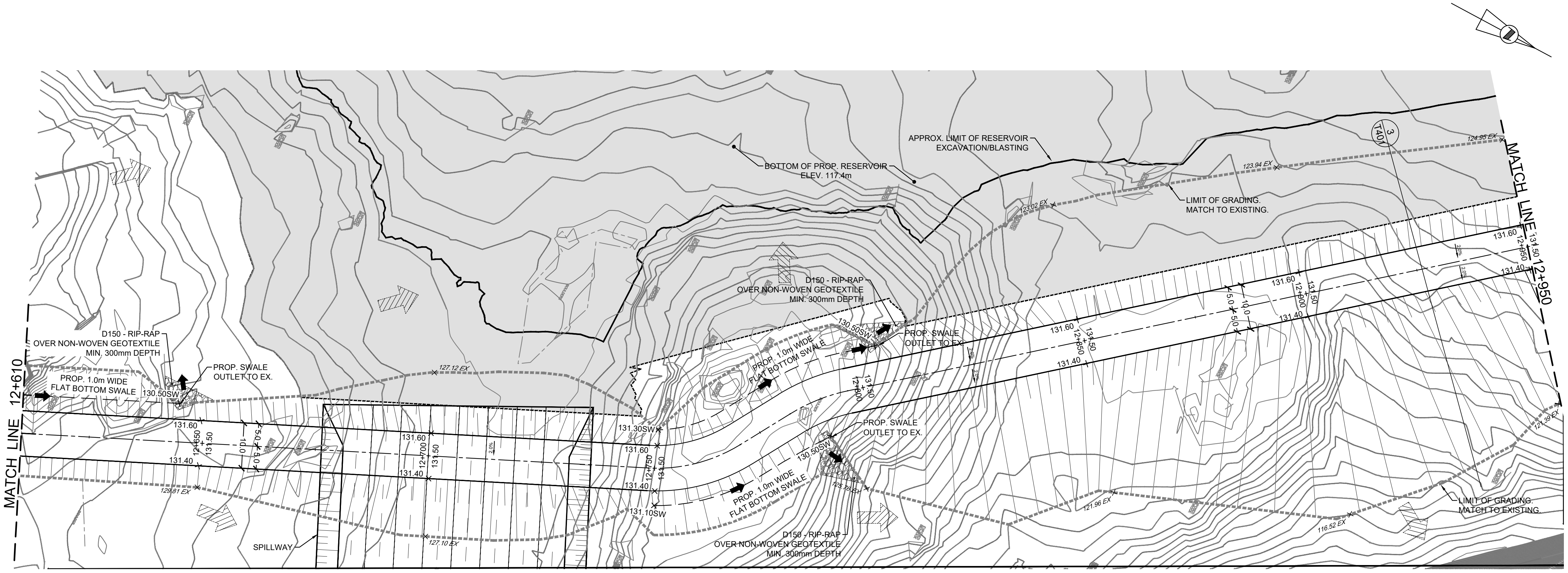
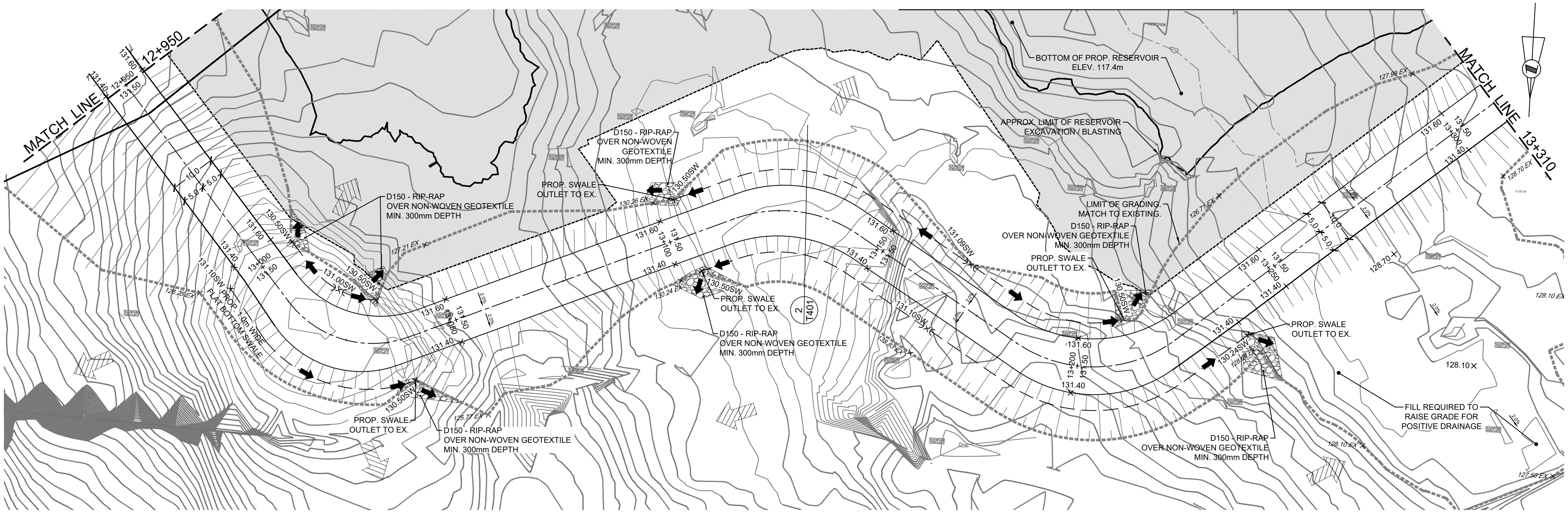

MATCH LINE 12+610
MATCH LINE 12+950
APPROX. LIMIT OF RESERVOIR EXCAVATION/BLASTING
BOTTOM OF PROP. RESERVOIR ELEV. 117.4m
LIMIT OF GRADING. MATCH TO EXISTING.
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
PROP. SWALE OUTLET TO EX.
PROP. 1.0m WIDE FLAT BOTTOM SWALE
130.50SW
131.30SW
131.10SW
SPILLWAY
12+650
12+700
12+750
12+800
12+850
12+900
12+950
131.60
131.50
131.40
5.0
10.0
127.12 EX
128.81 EX
127.10 EX
121.96 EX
116.52 EX
123.94 EX
124.95 EX
121.39 EX
3
T401

PROPOSED RING ROAD


MATCH LINE 12+950
MATCH LINE 13+310
BOTTOM OF PROP. RESERVOIR ELEV. 117.4m
APPROX. LIMIT OF RESERVOIR EXCAVATION / BLASTING
LIMIT OF GRADING. MATCH TO EXISTING.
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
PROP. SWALE OUTLET TO EX.
PROP. 1.0m WIDE FLAT BOTTOM SWALE
FILL REQUIRED TO RAISE GRADE FOR POSITIVE DRAINAGE
130.50SW
131.00SW
131.10SW
131.09SW
130.24SW
13+000
13+050
13+100
13+150
13+200
13+250
13+300
131.60
131.50
131.40
5.0
10.0
127.21 EX
128.25 EX
125.77 EX
128.70
128.10
127.99 EX
128.10 EX
127.50 EX
2
T401

PROPOSED RING ROAD

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1085 Mivvik Street, P.O. Box 460
Iqaluit NU X0A 0H0 Canada
tel 867 979 5600
www.iqaluit.ca

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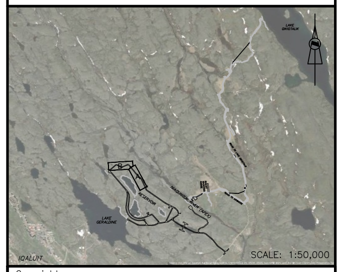
NOT FOR CONSTRUCTION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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

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FOR DETAIL WATERMAIN DRAWINGS
REFER TO U201 TO 1205

Revision	Description	Date
A	ISSUED FOR 50% DESIGN REVIEW	2025-12-19

Consultant
ARCADIS
8133 Warden Avenue - Unit 300
Markham ON L6G 1B3 Canada
tel 905 763 2322
www.arcadis.com

Project title
CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

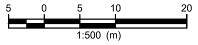
Designed by
G.M.

Drawn by
M.L.

Approved by
N.G.

Project Manager
C.G.

Drawing title
GRADING CUT SHEET
PROPOSED RING ROAD
FROM STATION 12+610 TO 12+950
AND FROM STATION 12+950 TO 13+310


5
0
5
10
20
1:500 (m)

Project no.	Drawing no.	Revision no.
30192375	T111	A

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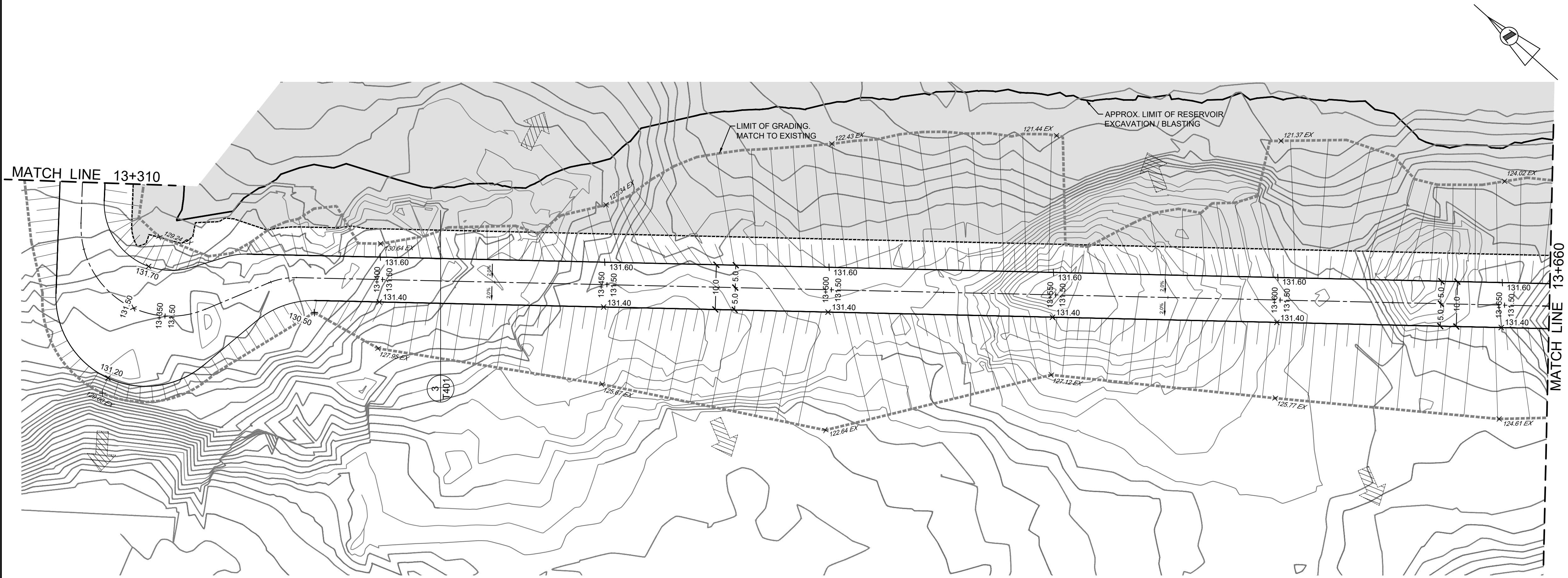
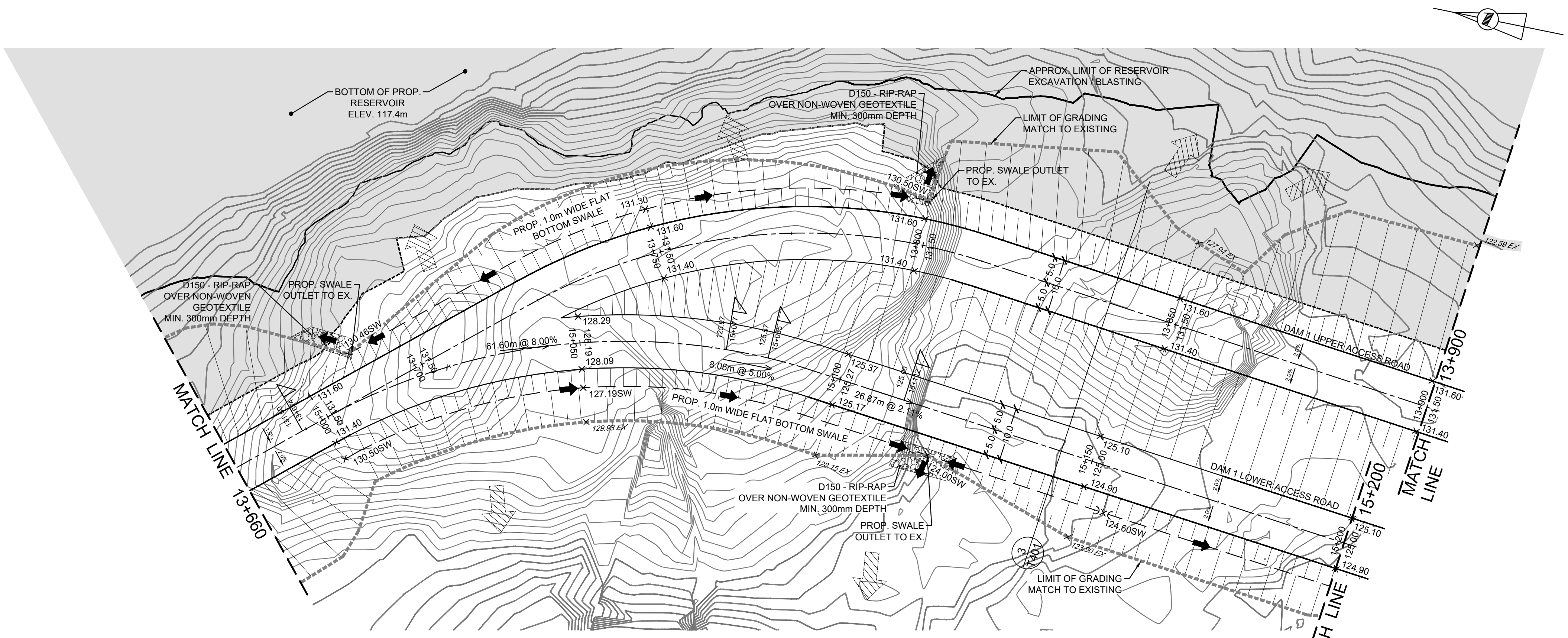
A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm


MATCH LINE 13+310
LIMIT OF GRADING. MATCH TO EXISTING
APPROX. LIMIT OF RESERVOIR EXCAVATION / BLASTING
122.43 EX
121.44 EX
121.37 EX
124.02 EX
127.34 EX
129.24 EX
130.64 EX
131.60
131.40
131.70
131.50
131.20
130.50
127.95 EX
125.87 EX
122.64 EX
127.12 EX
125.77 EX
124.61 EX
128.60 EX
13+350
13+400
13+450
13+500
13+550
13+600
13+650
5.0
10.0
2.0%
3
T401
MATCH LINE 13+660

PROPOSED RING ROAD


BOTTOM OF PROP. RESERVOIR ELEV. 117.4m
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
APPROX. LIMIT OF RESERVOIR EXCAVATION / BLASTING
LIMIT OF GRADING MATCH TO EXISTING
PROP. SWALE OUTLET TO EX.
PROP. 1.0m WIDE FLAT BOTTOM SWALE
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
PROP. SWALE OUTLET TO EX.
130.50SW
131.30
131.60
131.40
130.46SW
61.60m @ 8.00%
8.08m @ 5.00%
26.87m @ 2.11%
128.29
128.19
128.09
127.19SW
129.93 EX
128.15 EX
125.37
125.27
125.17
125.10
124.90
124.60SW
124.00SW
123.60 EX
127.94 EX
122.59 EX
13+700
13+750
13+800
13+850
13+900
15+000
15+050
15+100
15+150
15+200
5.0
10.0
2.0%
DAM 1 UPPER ACCESS ROAD
DAM 1 LOWER ACCESS ROAD
3
T401
LIMIT OF GRADING MATCH TO EXISTING
MATCH LINE 13+660
MATCH LINE 13+900
MATCH LINE 15+200

PROPOSED RING ROAD
(UPPER/LOWER)

5 0 5 10 20
1:500 (m)

Iqaluit
1085 Mivvik Street, P.O. Box 460
Iqaluit NU X0A 0H0 Canada
tel 867 979 5600
www.iqaluit.ca

PRELIMINARY
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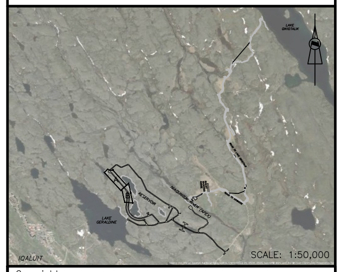
IQALUIT
LAKE GERALDINE
RESERVOIR
NIAQUNGUK RIVER (APEX)
SCALE: 1:50,000

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Project title

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LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
G.M.

Drawn by
M.L.

Approved by
N.G.

Project Manager
C.G.

Drawing title

GRADING CUT SHEET
PROPOSED RING ROAD
FROM STATION 13+310 TO 13+660
AND UPPER FROM STATION 13+660 TO 13+900
AND LOWER FROM STATION 15+000 TO 15+200

Project no.	Drawing no.	Revision no.
30192375	T112	A

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A1 – 841X594

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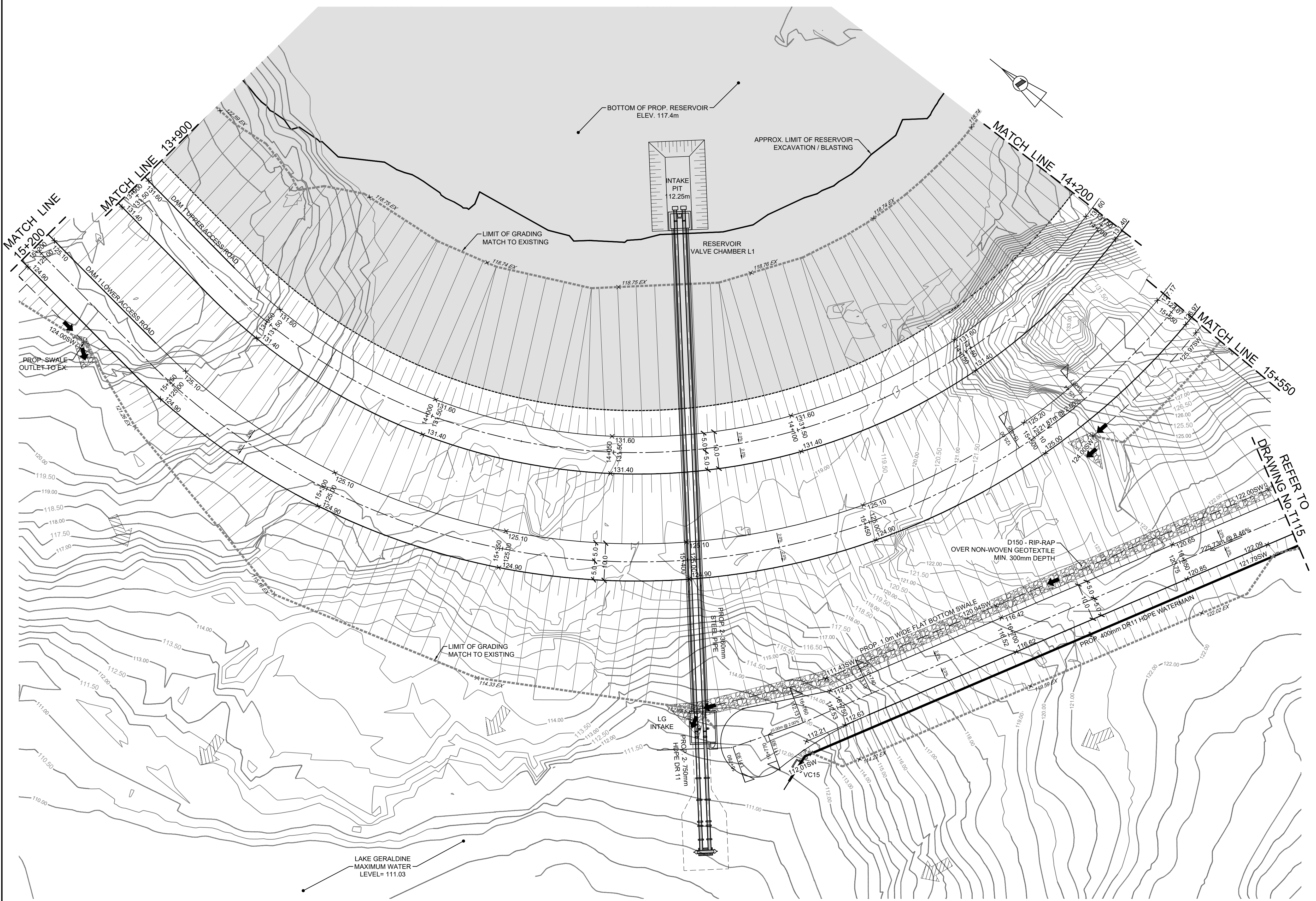
MATCH LINE 15+200
MATCH LINE 13+900
MATCH LINE 14+200
MATCH LINE 15+550
REFER TO DRAWING No.T115
BOTTOM OF PROP. RESERVOIR
ELEV. 117.4m
APPROX. LIMIT OF RESERVOIR
EXCAVATION / BLASTING
INTAKE
PIT
12.25m
RESERVOIR
VALVE CHAMBER L1
LIMIT OF GRADING
MATCH TO EXISTING
DAM 1 UPPER ACCESS ROAD
DAM 1 LOWER ACCESS ROAD
PROP. SWALE
OUTLET TO EX.
124.00SW
118.75 EX
118.74 EX
118.76 EX
122.59 EX
131.60
131.50
131.40
125.10
125.00
124.90
13+900
14+000
14+050
14+100
14+150
15+200
15+250
15+300
15+350
15+400
15+450
15+500
15+550
5.0
10.0
2.0%
121.87m @ 2.00%
125.20
124.00SW
125.97SW
D150 - RIP-RAP
OVER NON-WOVEN GEOTEXTILE
MIN. 300mm DEPTH
PROP. 1.0m WIDE FLAT BOTTOM SWALE
225.73m @ 0.46%
122.00SW
122.09
121.79SW
120.94SW
120.65
120.85
116.42
116.52
116.62
111.43SW
112.43
112.53
112.63
112.21
112.01SW
VC15
PROP. 400mm DR11 HDPE WATERMAIN
PROP. 2- 360mm STEEL PIPE
PROP. 2- 750mm HDPE DR 11
LG
INTAKE
LIMIT OF GRADING
MATCH TO EXISTING
114.33 EX
119.59 EX
122.02 EX
LAKE GERALDINE
MAXIMUM WATER
LEVEL= 111.03

PROPOSED RING ROAD
(UPPER/LOWER)

5 0 5 10 20
1:500 (m)

Iqaluit
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Iqaluit NU X0A 0H0 Canada
tel 867 979 5600
www.iqaluit.ca

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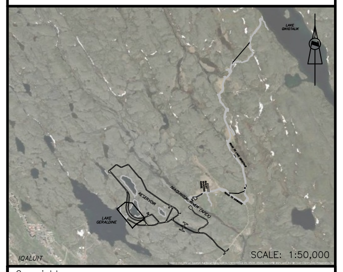
NOT FOR CONSTRUCTION


SCALE: 1:50,000

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

NOTE:
FOR DETAIL WATERMAIN DRAWINGS
REFER TO U201 TO 1205

Revision	Description	Date
A	ISSUED FOR 50% DESIGN REVIEW	2025-12-19

Consultant

ARCADIS
8133 Warden Avenue - Unit 300
Markham ON L6G 1B3 Canada
tel 905 763 2322
www.arcadis.com

Project title
CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
G.M.

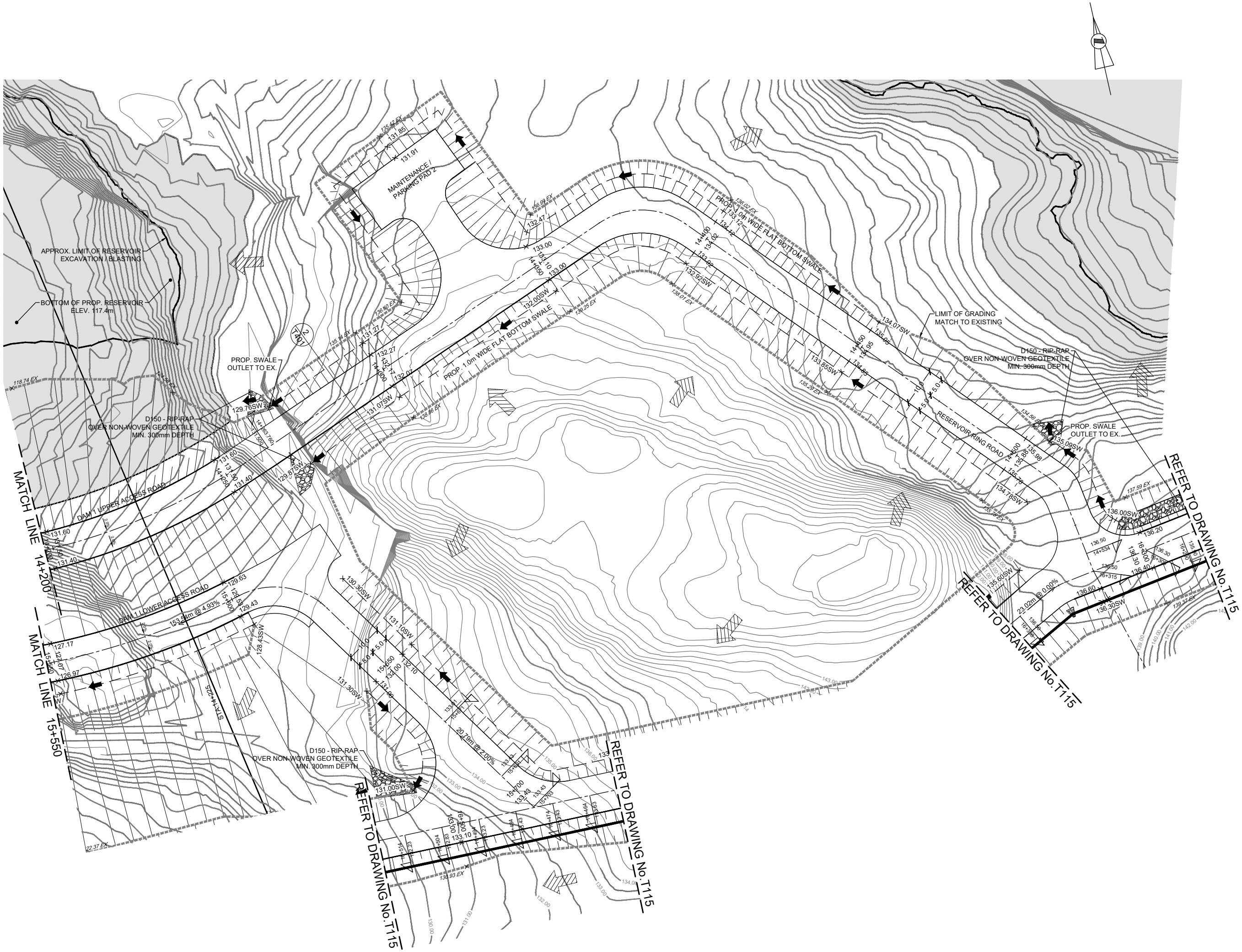
Drawn by
M.L.

Approved by
N.G.

Project Manager
C.G.

Drawing title
GRADING CUT SHEET
PROPOSED RING ROAD
UPPER FROM STATION 13+900 TO 14+200
AND LOWER FROM STATION 15+200 TO 15+550

Project no.	Drawing no.	Revision no.
30192375	T113	


APPROX. LIMIT OF RESERVOIR EXCAVATION / BLASTING
BOTTOM OF PROP. RESERVOIR ELEV. 117.4m
MAINTENANCE / PARKING PAD 2
PROP. SWALE OUTLET TO EX.
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
PROP. 1.0m WIDE FLAT BOTTOM SWALE
RESERVOIR RING ROAD
LIMIT OF GRADING MATCH TO EXISTING
DAM 1 UPPER ACCESS ROAD
DAM 1 LOWER ACCESS ROAD
153.54m @ 4.93%
20.79m @ 2.00%
23.02m @ 0.00%
STA 14+225
MATCH LINE 14+200
MATCH LINE 15+550
REFER TO DRAWING No.T115
2
T401

PROPOSED RING ROAD
(UPPER/LOWER)

5 0 5 10 20
1:500 (m)

0 10 20 30 40 50 60 70 80 90 100mm

1085 Mivvik Street, P.O. Box 460
Iqaluit NU X0A 0H0 Canada
tel 867 979 5600
www.iqaluit.ca

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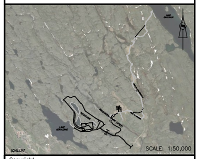
IQALUIT
SCALE: 1:50,000

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

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A	ISSUED FOR 50% DESIGN REVIEW	2025-12-19

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
G.M.

Drawn by
M.L.

Approved by
N.G.

Project Manager
C.G.

Drawing title

GRADING CUT SHEET
PROPOSED RING ROAD
UPPER FROM STATION 14+200 TO 15+538
AND LOWER FROM STATION 15+550 TO 15+703

Project no.	Drawing no.	Revision no.
30192375	T114	A

A1 – 841X594

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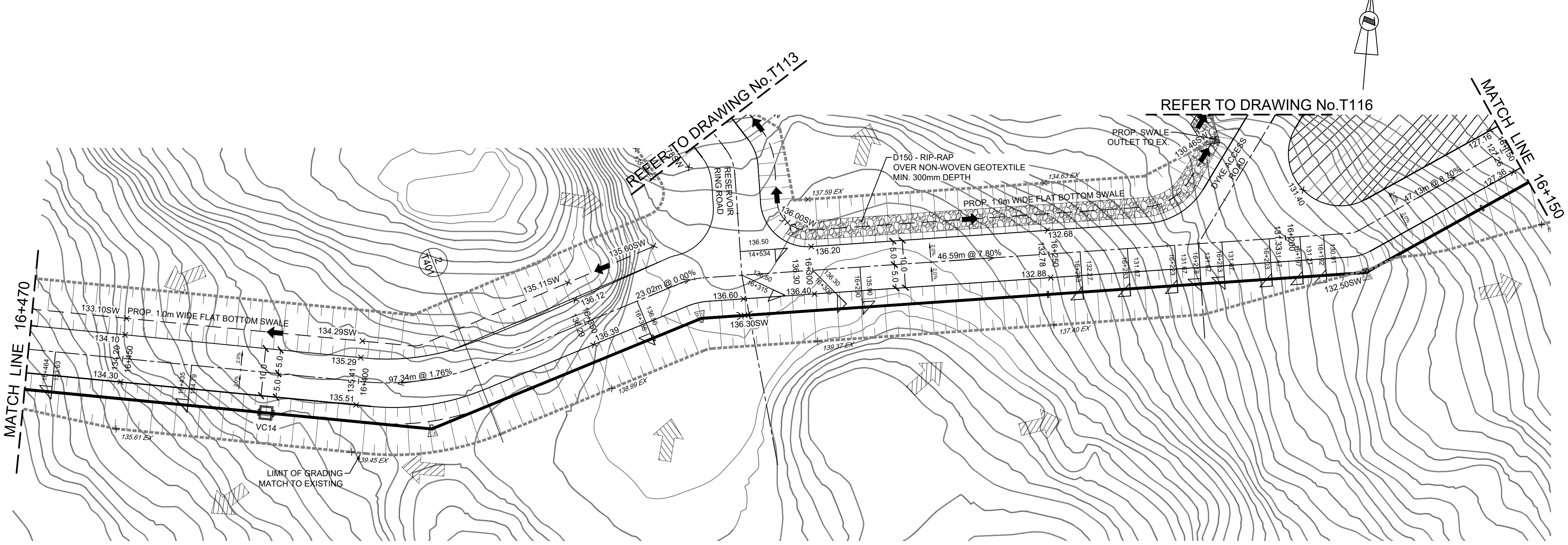
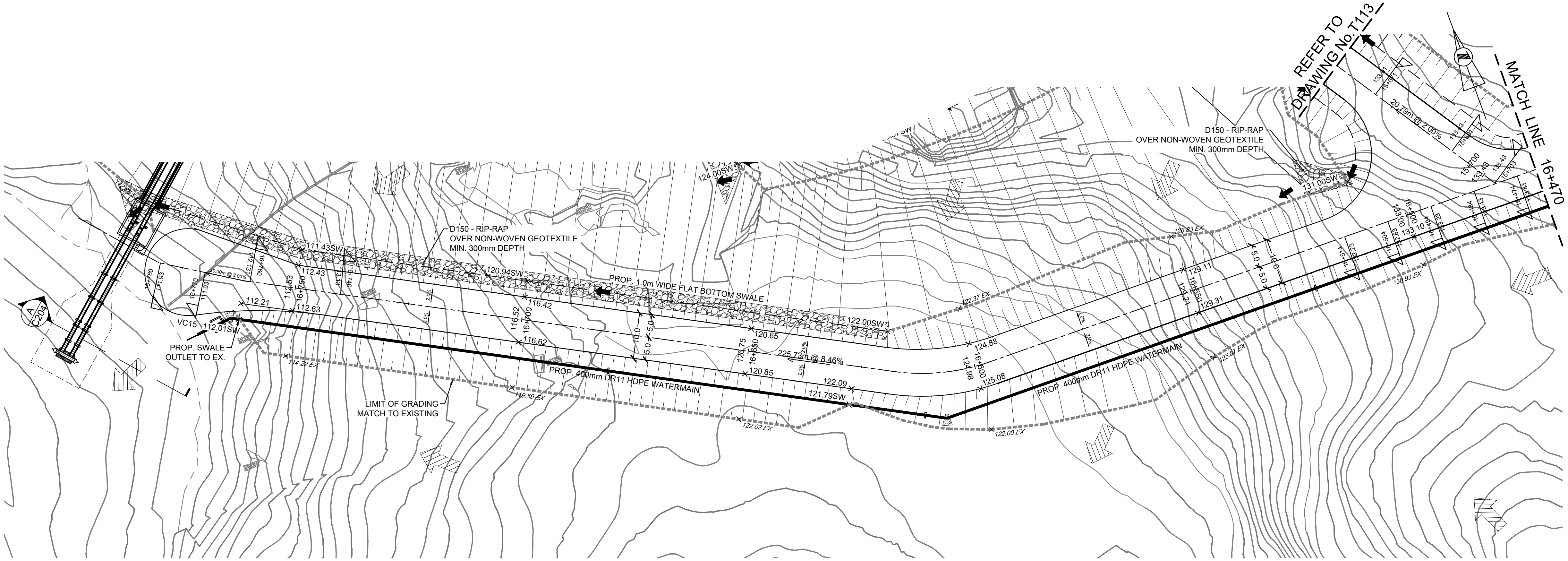

REFER TO DRAWING No.T113
REFER TO DRAWING No.T116
MATCH LINE 16+150
MATCH LINE 16+470
RESERVOIR RING ROAD
DYKE ACCESS ROAD
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
PROP. SWALE OUTLET TO EX.
PROP. 1.0m WIDE FLAT BOTTOM SWALE
47.13m @ 8.70%
46.59m @ 7.80%
23.02m @ 0.00%
97.34m @ 1.76%
LIMIT OF GRADING MATCH TO EXISTING
VC14
2 T401
133.10SW
134.29SW
135.11SW
135.60SW
136.00SW
136.30SW
132.50SW
130.46SW
137.59 EX
134.63 EX
139.37 EX
137.40 EX
138.99 EX
139.45 EX
135.61 EX

NEW RESERVOIR ACCESS ROAD


REFER TO DRAWING No.T113
MATCH LINE 16+470
A C204
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
PROP. 1.0m WIDE FLAT BOTTOM SWALE
PROP. SWALE OUTLET TO EX.
PROP. 400mm DR11 HDPE WATERMAIN
LIMIT OF GRADING MATCH TO EXISTING
225.73m @ 8.46%
20.79m @ 2.00%
VC15
131.00SW
124.00SW
111.43SW
120.94SW
122.00SW
112.01SW
121.79SW
126.93 EX
122.37 EX
114.22 EX
119.59 EX
122.02 EX
122.00 EX
125.87 EX
139.93 EX

NEW RESERVOIR ACCESS ROAD

5 0 5 10 20
1:500 (m)

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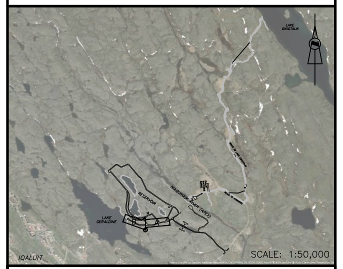
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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

NOTE:
FOR DETAIL WATERMAIN DRAWINGS REFER TO U201 TO 1205

Revision	Description	Date
A	ISSUED FOR 50% DESIGN REVIEW	2025-12-19

Consultant

ARCADIS
8133 Warden Avenue - Unit 300
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Project title
CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
G.M.

Drawn by
M.L.

Approved by
N.G.

Project Manager
C.G.

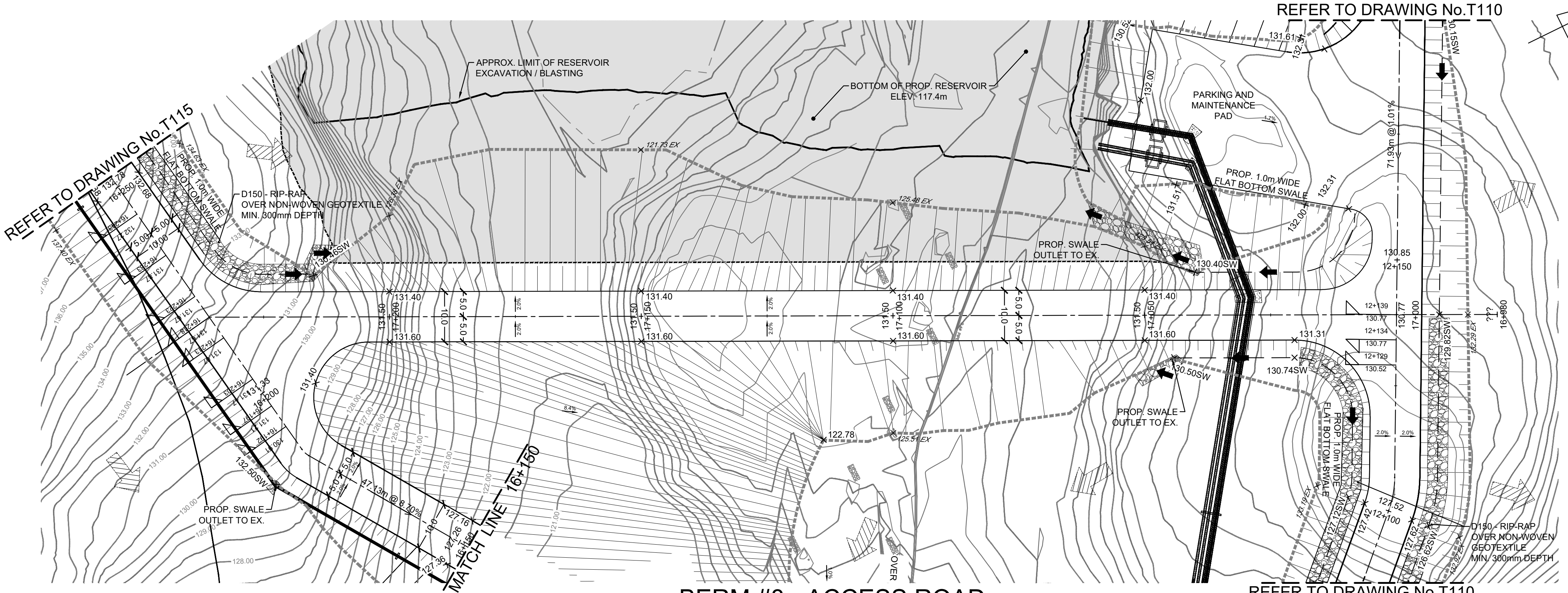
Drawing title
GRADING CUT SHEET NEW RESERVOIR ACCESS ROAD FROM STATION 16+150 TO 16+470 AND FROM STATION 16+470 TO 16+776

Project no.	Drawing no.	Revision no.
30192375	T115	A

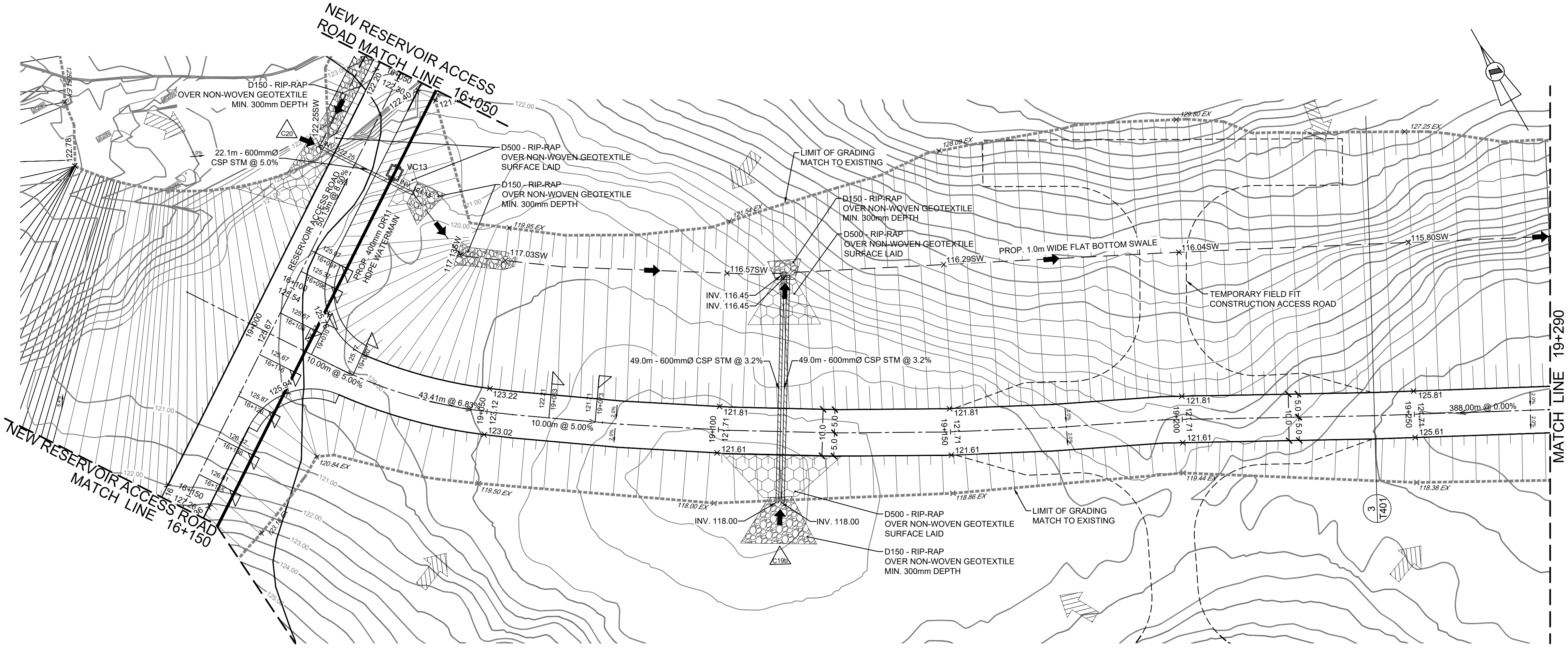
A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

C:\Users\zibo\DC\ACCDocs\BI - DT Services\30288139-Iqaluit_LongTermWater C302025\Project Files\7.0_Production\7.03_Design\04_Civil\Sheets\T115.dwg


REFER TO DRAWING No.T110
REFER TO DRAWING No.T115
APPROX. LIMIT OF RESERVOIR EXCAVATION / BLASTING
BOTTOM OF PROP. RESERVOIR ELEV. 117.4m
PARKING AND MAINTENANCE PAD
PROP. 1.0m WIDE FLAT BOTTOM SWALE
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
PROP. SWALE OUTLET TO EX.
PROP. 1.0m WIDE FLAT BOTTOM SWALE
47.13m @ 8.70%
71.93m @ 1.01%
MATCH LINE 16+150
131.40
131.60
130.40SW
130.50SW
130.74SW
132.50SW
130.16SW
122.78
REFER TO DRAWING No.T110

BERM #8 - ACCESS ROAD


NEW RESERVOIR ACCESS ROAD MATCH LINE 16+050
NEW RESERVOIR ACCESS ROAD MATCH LINE 16+150
RESERVOIR ACCESS ROAD
PROP. 400mm DR11 HDPE WATERMAIN
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
22.1m - 600mmØ CSP STM @ 5.0%
D500 - RIP-RAP OVER NON-WOVEN GEOTEXTILE SURFACE LAID
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
VC13
C20
LIMIT OF GRADING MATCH TO EXISTING
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
D500 - RIP-RAP OVER NON-WOVEN GEOTEXTILE SURFACE LAID
PROP. 1.0m WIDE FLAT BOTTOM SWALE
117.03SW
116.57SW
116.29SW
116.04SW
115.80SW
INV. 116.45
INV. 116.45
TEMPORARY FIELD FIT CONSTRUCTION ACCESS ROAD
49.0m - 600mmØ CSP STM @ 3.2%
49.0m - 600mmØ CSP STM @ 3.2%
43.41m @ 6.83%
10.00m @ 5.00%
10.00m @ 5.00%
388.00m @ 0.00%
123.22
123.02
121.81
121.61
125.81
125.61
INV. 118.00
INV. 118.00
D500 - RIP-RAP OVER NON-WOVEN GEOTEXTILE SURFACE LAID
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
LIMIT OF GRADING MATCH TO EXISTING
C19B
3 T401
MATCH LINE 19+290

QUARRY BY-PASS ROAD

5 0 5 10 20
1:500 (m)

A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

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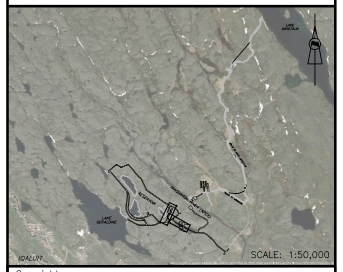
LAKE QIKIQTALIK
ROAD TO LAKE GERALDINE
RESERVOIR
NIAQUNGUK RIVER (APEX)
LAKE GERALDINE
IQALUIT
SCALE: 1:50,000

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

NOTE:

FOR DETAIL WATERMAIN DRAWINGS
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Consultant

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www.arcadis.com

Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
G.M.

Drawn by
M.L.

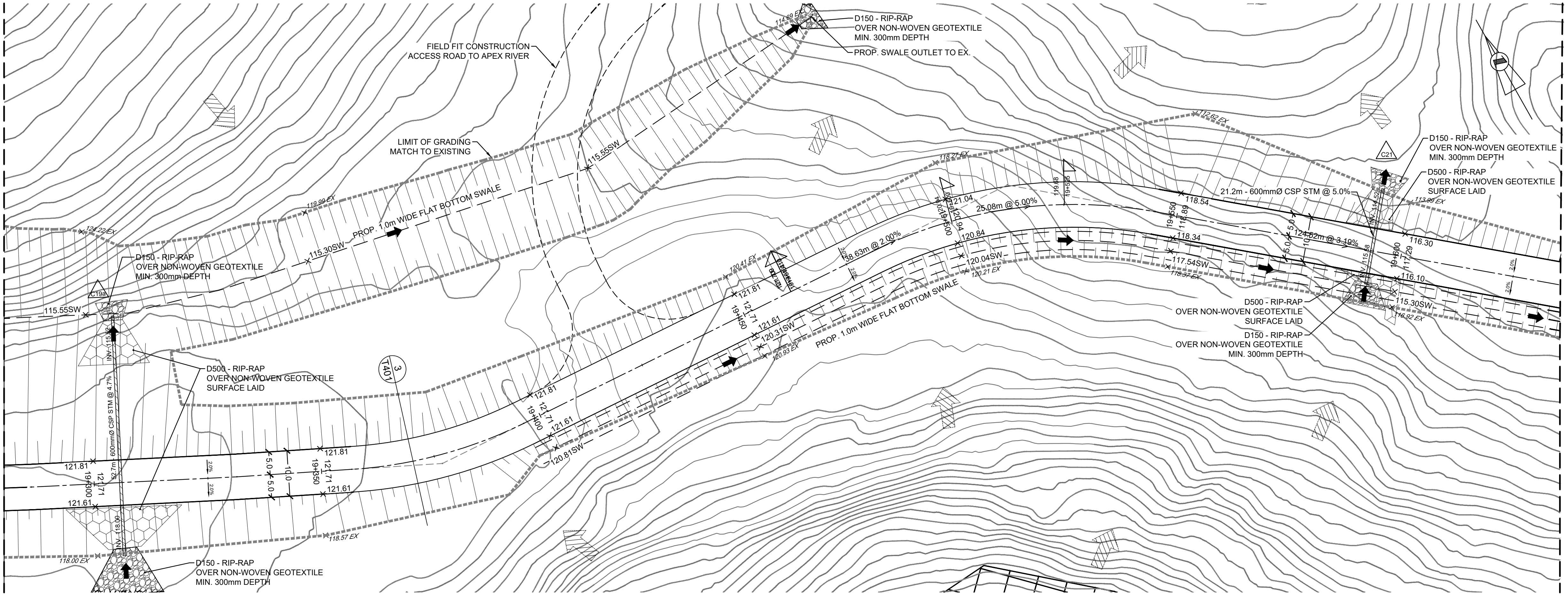
Approved by
N.G.

Project Manager
C.G.

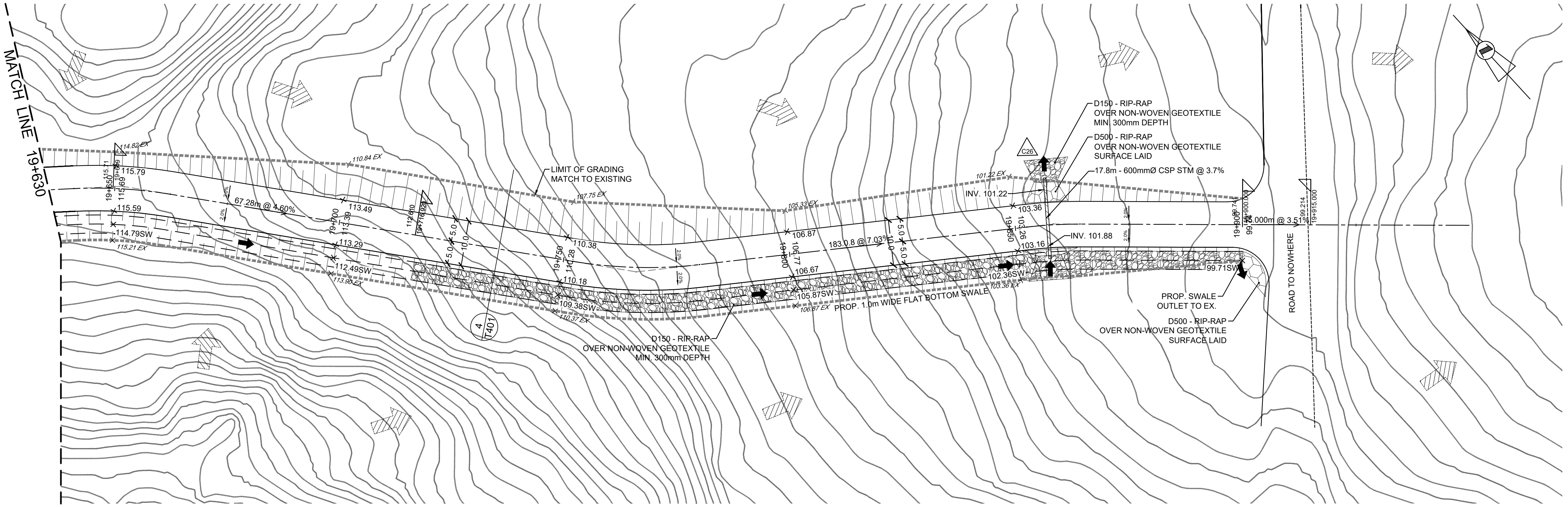
Drawing title

GRADING CUT SHEET
BERM#8 - ACCESS ROAD
FROM STATION 17+000 TO 17+236
QUARRY BY-PASS
FROM STATION 19+000 TO 19+290

Project no.	Drawing no.	Revision no.
30192375	T116	A


MATCH LINE 19+290
FIELD FIT CONSTRUCTION ACCESS ROAD TO APEX RIVER
LIMIT OF GRADING MATCH TO EXISTING
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
PROP. SWALE OUTLET TO EX.
114.69 EX
124.22 EX
119.99 EX
115.55SW
115.30SW
PROP. 1.0m WIDE FLAT BOTTOM SWALE
C19a
INV. 115.52
600mmØ CSP STM @ 4.7%
52.7m
INV. 118.00
D500 - RIP-RAP OVER NON-WOVEN GEOTEXTILE SURFACE LAID
3
T401
121.81
121.71
121.61
19+300
19+350
19+400
19+450
5.0
10.0
2.0%
118.57 EX
118.00 EX
120.81SW
120.41 EX
120.31SW
120.93 EX
38.63m @ 2.00%
25.08m @ 5.00%
121.04
120.94
19+500
120.84
120.04SW
120.21 EX
118.27 EX
119.68
19+525
112.62 EX
118.54
19+550
118.89
118.34
117.54SW
118.37 EX
124.52m @ 3.19%
21.2m - 600mmØ CSP STM @ 5.0%
C21
INV. 114.52
INV. 115.58
113.99 EX
116.30
19+600
117.29
116.10
115.30SW
116.92 EX
MATCH LINE 19+630

QUARRY BY-PASS ROAD


MATCH LINE 19+630
114.82 EX
110.84 EX
19+650
115.71
19+649
115.69
115.79
115.59
114.79SW
115.21 EX
67.28m @ 4.60%
2.0%
113.49
19+700
113.39
113.29
112.49SW
113.90 EX
112.610
19+716.920
5.0
10.0
LIMIT OF GRADING MATCH TO EXISTING
107.75 EX
110.38
19+750
110.28
110.18
109.38SW
110.37 EX
4
T401
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
105.33 EX
106.87
19+800
106.77
106.67
105.87SW
106.87 EX
183.0.8 @ 7.03%
PROP. 1.0m WIDE FLAT BOTTOM SWALE
101.22 EX
C26
D150 - RIP-RAP OVER NON-WOVEN GEOTEXTILE MIN. 300mm DEPTH
D500 - RIP-RAP OVER NON-WOVEN GEOTEXTILE SURFACE LAID
17.8m - 600mmØ CSP STM @ 3.7%
INV. 101.22
103.36
19+850
103.26
103.16
INV. 101.88
102.36SW
103.36 EX
19+900
99.741
19+900.000
15.000m @ 3.51%
99.214
19+915.000
99.71SW
PROP. SWALE OUTLET TO EX.
D500 - RIP-RAP OVER NON-WOVEN GEOTEXTILE SURFACE LAID
ROAD TO NOWHERE

QUARRY BY-PASS ROAD

5 0 5 10 20
1:500 (m)

Iqaluit

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tel 867 979 5600
www.iqaluit.ca

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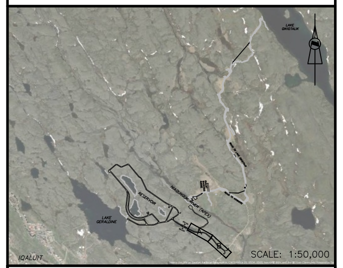
LAKE OIKIQTALIK
ROAD TO LAKE GERALDINE
ROAD TO NOWHERE
NIAQUNGUK RIVER (APEX)
RESERVOIR
LAKE GERALDINE
IQALUIT
SCALE: 1:50,000

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FOR DETAIL WATERMAIN DRAWINGS
REFER TO U201 TO 1205

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Revision	Description	Date

Consultant

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Project title

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LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
G.M.

Drawn by
M.L.

Approved by
N.G.

Project Manager
C.G.

Drawing title

GRADING CUT SHEET
QUARRY BY-PASS
FROM STATION 19+290 TO 19+630
AND FROM STATION 19+630 TO 19+956

Project no.	Drawing no.	Revision no.
30192375	T117	A

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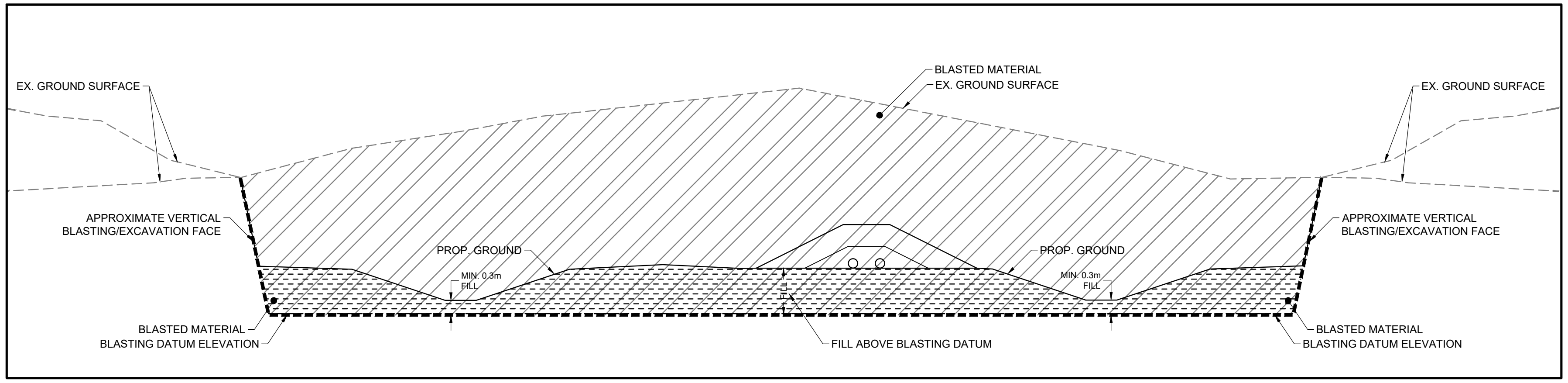
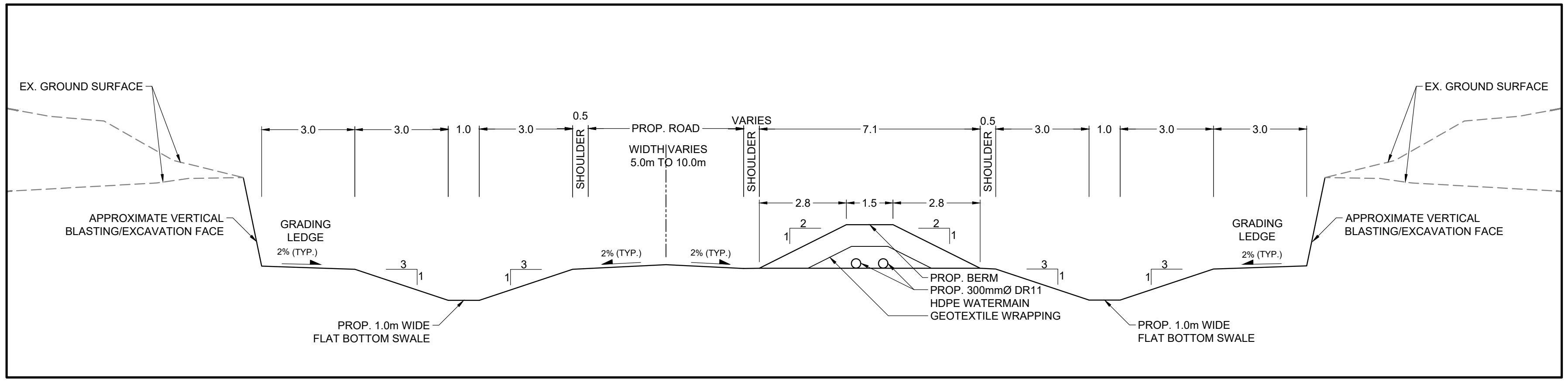
A1 - 841X594

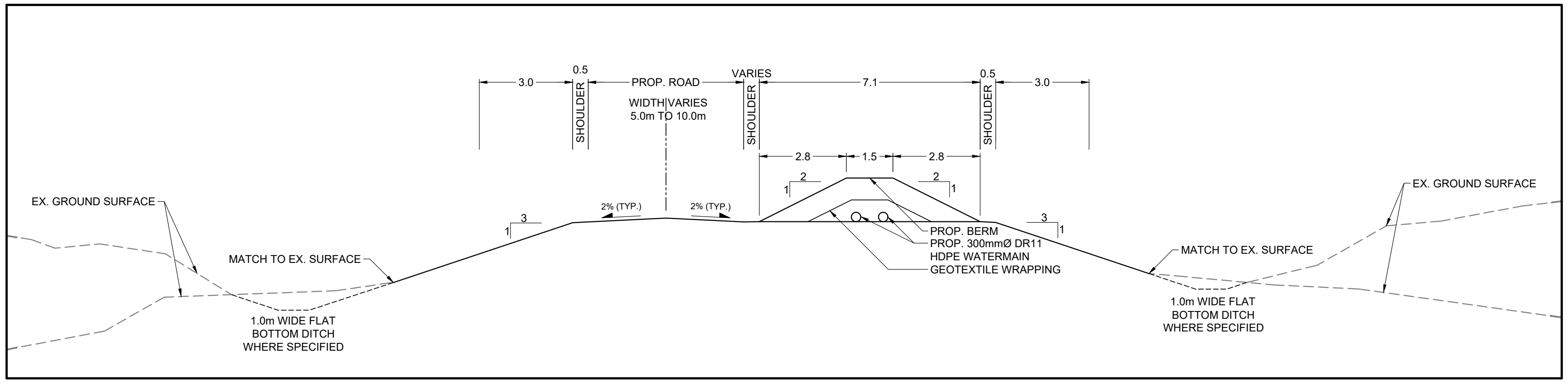
0 10 20 30 40 50 60 70 80 90 100mm


EX. GROUND SURFACE
BLASTED MATERIAL
EX. GROUND SURFACE
EX. GROUND SURFACE
APPROXIMATE VERTICAL
BLASTING/EXCAVATION FACE
PROP. GROUND
PROP. GROUND
APPROXIMATE VERTICAL
BLASTING/EXCAVATION FACE
MIN. 0.3m
FILL
MIN. 0.3m
FILL
BLASTED MATERIAL
BLASTING DATUM ELEVATION
FILL ABOVE BLASTING DATUM
BLASTED MATERIAL
BLASTING DATUM ELEVATION

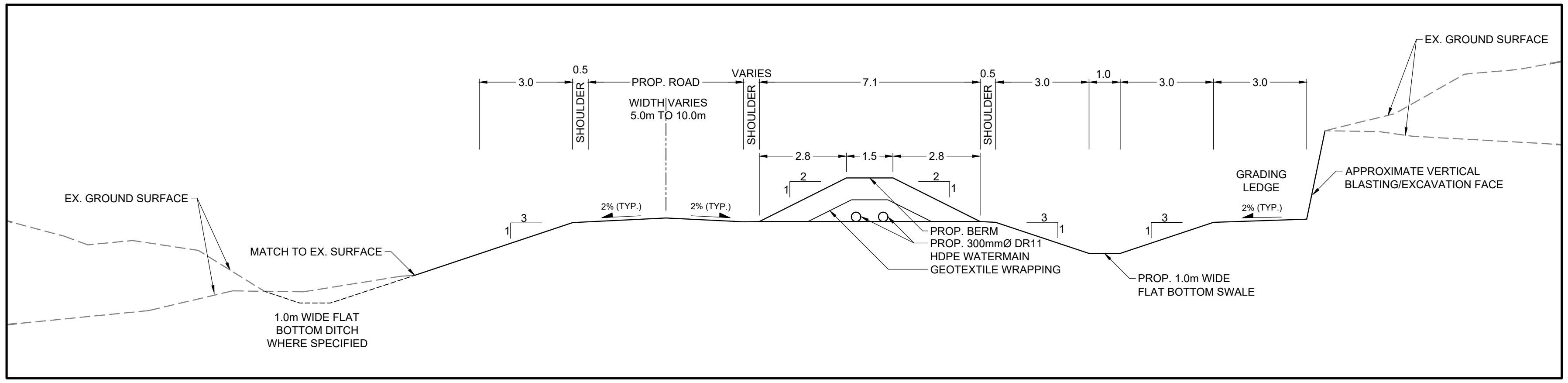
1
T401
TYPICAL BLASTING AND FILL SECTION
1 : 100


EX. GROUND SURFACE
EX. GROUND SURFACE
3.0
3.0
1.0
3.0
0.5
SHOULDER
PROP. ROAD
WIDTH VARIES
5.0m TO 10.0m
VARIES
SHOULDER
7.1
0.5
SHOULDER
3.0
1.0
3.0
3.0
2.8
1.5
2.8
2
1
2
1
APPROXIMATE VERTICAL
BLASTING/EXCAVATION FACE
GRADING
LEDGE
2% (TYP.)
3
1
3
1
2% (TYP.)
2% (TYP.)
GRADING
LEDGE
2% (TYP.)
APPROXIMATE VERTICAL
BLASTING/EXCAVATION FACE
3
1
3
1
PROP. BERM
PROP. 300mmØ DR11
HDPE WATERMAIN
GEOTEXTILE WRAPPING
PROP. 1.0m WIDE
FLAT BOTTOM SWALE
PROP. 1.0m WIDE
FLAT BOTTOM SWALE

2
T401
TYPICAL ROAD AND WATERMAIN WITH SWALES IN CUT CONDITION
1 : 100


3.0
0.5
SHOULDER
PROP. ROAD
WIDTH VARIES
5.0m TO 10.0m
VARIES
SHOULDER
7.1
0.5
SHOULDER
3.0
2.8
1.5
2.8
2
1
2
1
EX. GROUND SURFACE
EX. GROUND SURFACE
3
1
2% (TYP.)
2% (TYP.)
3
1
PROP. BERM
PROP. 300mmØ DR11
HDPE WATERMAIN
GEOTEXTILE WRAPPING
MATCH TO EX. SURFACE
MATCH TO EX. SURFACE
1.0m WIDE FLAT
BOTTOM DITCH
WHERE SPECIFIED
1.0m WIDE FLAT
BOTTOM DITCH
WHERE SPECIFIED

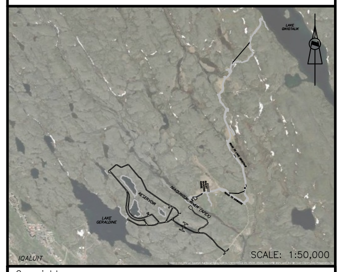
3
T401
TYPICAL ROAD AND WATERMAIN WITH SWALES IN FILL CONDITION
1 : 100


EX. GROUND SURFACE
3.0
0.5
SHOULDER
PROP. ROAD
WIDTH VARIES
5.0m TO 10.0m
VARIES
SHOULDER
7.1
0.5
SHOULDER
3.0
1.0
3.0
3.0
2.8
1.5
2.8
2
1
2
1
GRADING
LEDGE
2% (TYP.)
APPROXIMATE VERTICAL
BLASTING/EXCAVATION FACE
EX. GROUND SURFACE
3
1
2% (TYP.)
2% (TYP.)
3
1
3
1
PROP. BERM
PROP. 300mmØ DR11
HDPE WATERMAIN
GEOTEXTILE WRAPPING
MATCH TO EX. SURFACE
1.0m WIDE FLAT
BOTTOM DITCH
WHERE SPECIFIED
PROP. 1.0m WIDE
FLAT BOTTOM SWALE

4
T401
TYPICAL ROAD AND WATERMAIN WITH SWALES IN TRANSITION CONDITION
1 : 100

Iqaluit
1085 Mivvik Street, P.O. Box 460
Iqaluit NU X0A 0H0 Canada
tel 867 979 5600
www.iqaluit.ca

PRELIMINARY
NOT FOR CONSTRUCTION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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN (REVISED)	2025-09-26

Consultant

ARCADIS
8133 Warden Avenue - Unit 300
Markham ON L6G 1B3 Canada
tel 905 763 2322
www.arcadis.com

Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
G.M.

Drawn by
M.L.

Approved by
N.G.

Project Manager
C.G.

Drawing title

GRADING DETAILS

Project no.	Drawing no.	Revision no.
30192375	T401	B

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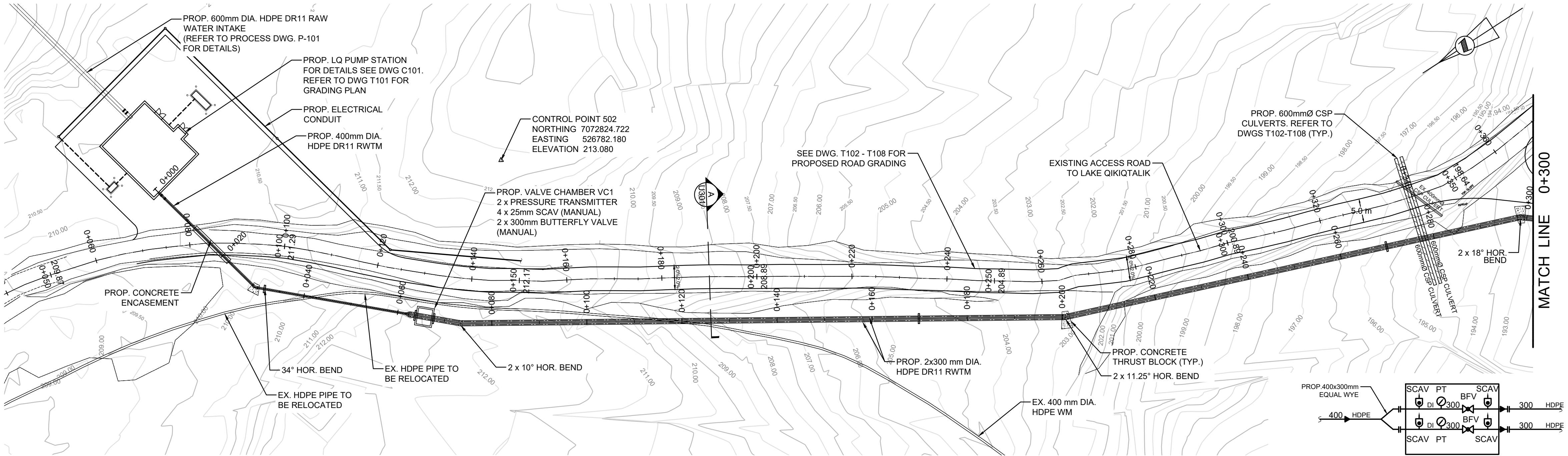
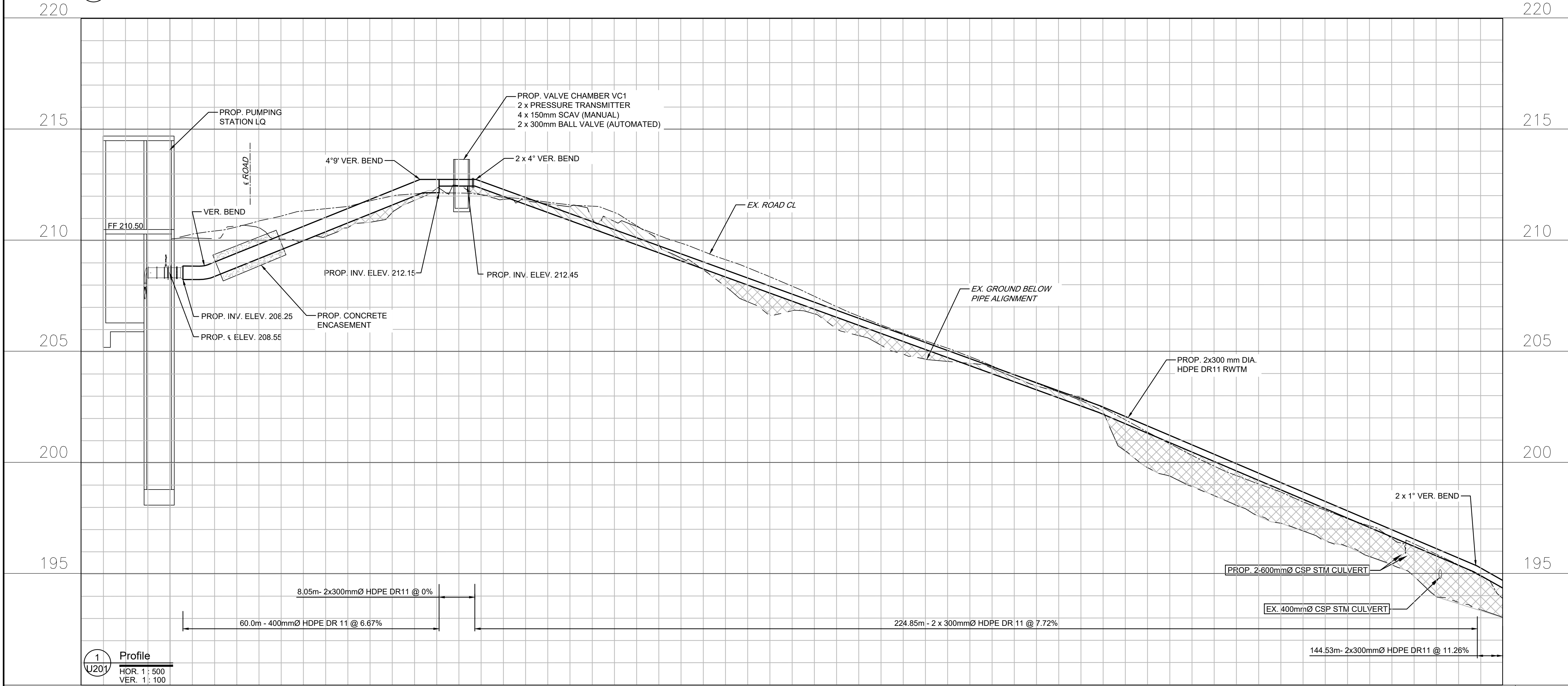
A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm


PROP. 600mm DIA. HDPE DR11 RAW WATER INTAKE (REFER TO PROCESS DWG. P-101 FOR DETAILS)
PROP. LQ PUMP STATION FOR DETAILS SEE DWG C101. REFER TO DWG T101 FOR GRADING PLAN
PROP. ELECTRICAL CONDUIT
PROP. 400mm DIA. HDPE DR11 RWTM
CONTROL POINT 502
NORTHING 7072824.722
EASTING 526782.180
ELEVATION 213.080
PROP. VALVE CHAMBER VC1
2 x PRESSURE TRANSMITTER
4 x 25mm SCAV (MANUAL)
2 x 300mm BUTTERFLY VALVE (MANUAL)
SEE DWG. T102 - T108 FOR PROPOSED ROAD GRADING
EXISTING ACCESS ROAD TO LAKE QIKIQTALIK
PROP. 600mmØ CSP CULVERTS. REFER TO DWGS T102-T108 (TYP.)
600mmØ CSP CULVERT
600mmØ CSP CULVERT
EX. 400mmØ CSP CULVERT
5.0 m
2 x 18° HOR. BEND
MATCH LINE 0+300
PROP. CONCRETE ENCASEMENT
34° HOR. BEND
EX. HDPE PIPE TO BE RELOCATED
EX. HDPE PIPE TO BE RELOCATED
2 x 10° HOR. BEND
PROP. 2x300 mm DIA. HDPE DR11 RWTM
PROP. CONCRETE THRUST BLOCK (TYP.)
2 x 11.25° HOR. BEND
EX. 400 mm DIA. HDPE WM
A U301
0+000
0+020
0+040
0+060
0+080
0+100
0+120
0+140
0+160
0+180
0+200
0+220
0+240
0+260
0+280
0+300
PROP.400x300mm EQUAL WYE
400 HDPE
SCAV
PT
BFV
DI
300
300 HDPE
300 HDPE

A U201 Plan
1 : 500

VALVE CHAMBER VC1 SCHEMATIC


220
215
210
205
200
195
PROP. PUMPING STATION LQ
℄ ROAD
FF 210.50
VER. BEND
PROP. INV. ELEV. 208.25
PROP. ℄ ELEV. 208.55
PROP. CONCRETE ENCASEMENT
4°9' VER. BEND
PROP. VALVE CHAMBER VC1
2 x PRESSURE TRANSMITTER
4 x 150mm SCAV (MANUAL)
2 x 300mm BALL VALVE (AUTOMATED)
2 x 4° VER. BEND
PROP. INV. ELEV. 212.15
PROP. INV. ELEV. 212.45
EX. ROAD CL
EX. GROUND BELOW PIPE ALIGNMENT
PROP. 2x300 mm DIA. HDPE DR11 RWTM
2 x 1° VER. BEND
PROP. 2-600mmØ CSP STM CULVERT
EX. 400mmØ CSP STM CULVERT
8.05m- 2x300mmØ HDPE DR11 @ 0%
60.0m - 400mmØ HDPE DR 11 @ 6.67%
224.85m - 2 x 300mmØ HDPE DR 11 @ 7.72%
144.53m- 2x300mmØ HDPE DR11 @ 11.26%

1 U201 Profile
HOR. 1 : 500
VER. 1 : 100

C/L CHAINAGE	PROP. WATERMAIN INVERT ELEVATION	EXISTING GROUND ELEVATION
0+000	208.25	210.05
0+020	209.19	210.70
0+040	210.79	210.58
0+060	212.15	212.33
0+080	211.62	211.79
0+100	210.17	210.86
0+120	208.72	208.68
0+140	207.27	206.83
0+160	205.81	205.28
0+180	204.36	204.47
0+200	202.90	203.18
0+220	201.32	199.77
0+240	199.62	198.06
0+260	197.92	196.47
0+280	196.22	194.87
0+300	194.34	193.02

0 10 20 30 40 50 60 70 80 90 100mm

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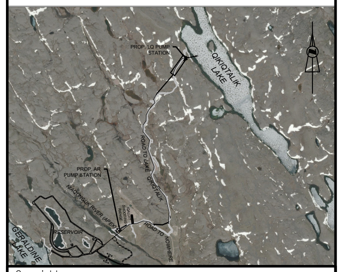
PROP. LQ PUMP STATION
QIKIQTALIK LAKE
ROAD TO LAKE QIKIQTALIK
PROP. AR PUMP STATION
NIAQUNGUK RIVER (APEX)
IQALUIT SHOOTING RANGE
ROAD TO NOWHERE
RESERVOIR
GERALDINE LAKE

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

LEGEND:

- ▨ - GROUND TO BE REMOVED
- ▩ - FILL ON STRIPED GROUND
- SCAV - SANITARY COMBINATION AIR VALVE (MANUAL)
- PT - PRESSURE TRANSMITTER
- BV - BALL VALVE (AUTOMATED)
- ⊣⊢ - FLANGE ADAPTOR

NOTES:

1. CONTROL POINTS 500, 501 AND 502 WERE GENERATED USING A BENCH MARK CCM28, WHICH HAS THE FOLLOWING VALUES :
   NORTHING 7068622.839
   EASTING 525561.325
   ELEVATION 117.298
   (NAD83(CSRS) Ep. 2010.0 and CGVD(2013)

Revision	Description	Date
C	ISSUED FOR 50% DESIGN REVIEW	
B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
A	ISSUED FOR CONCEPT DESIGN	2023-11-27

Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

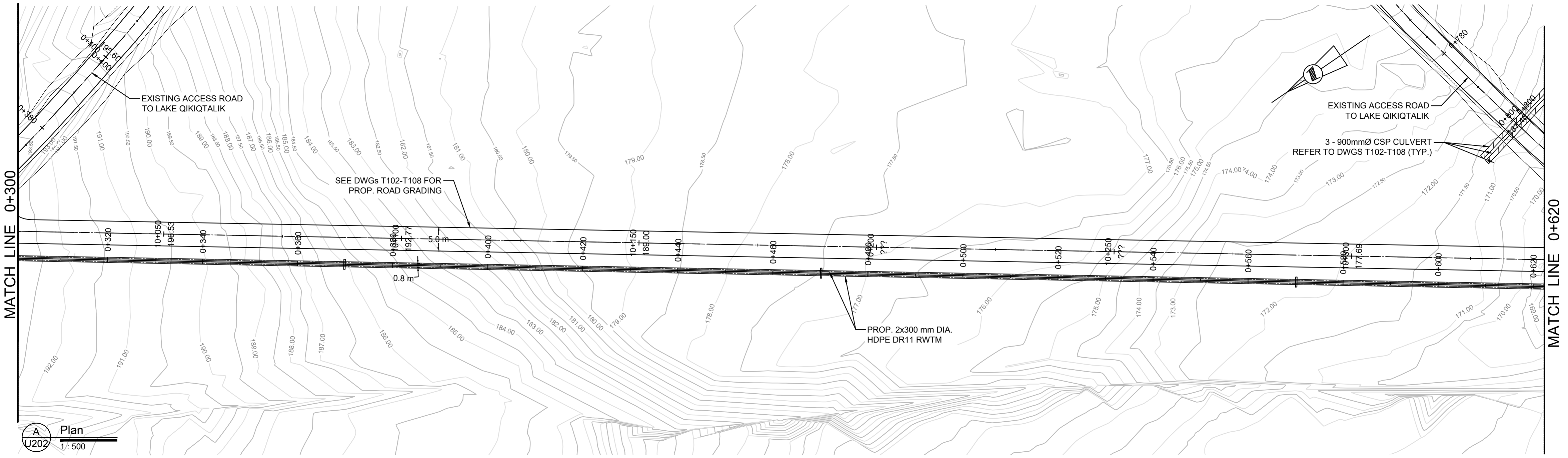
Designed by **J.E.**
Drawn by **N.V.**
Approved by **G.G.**
Project Manager **C.G.**

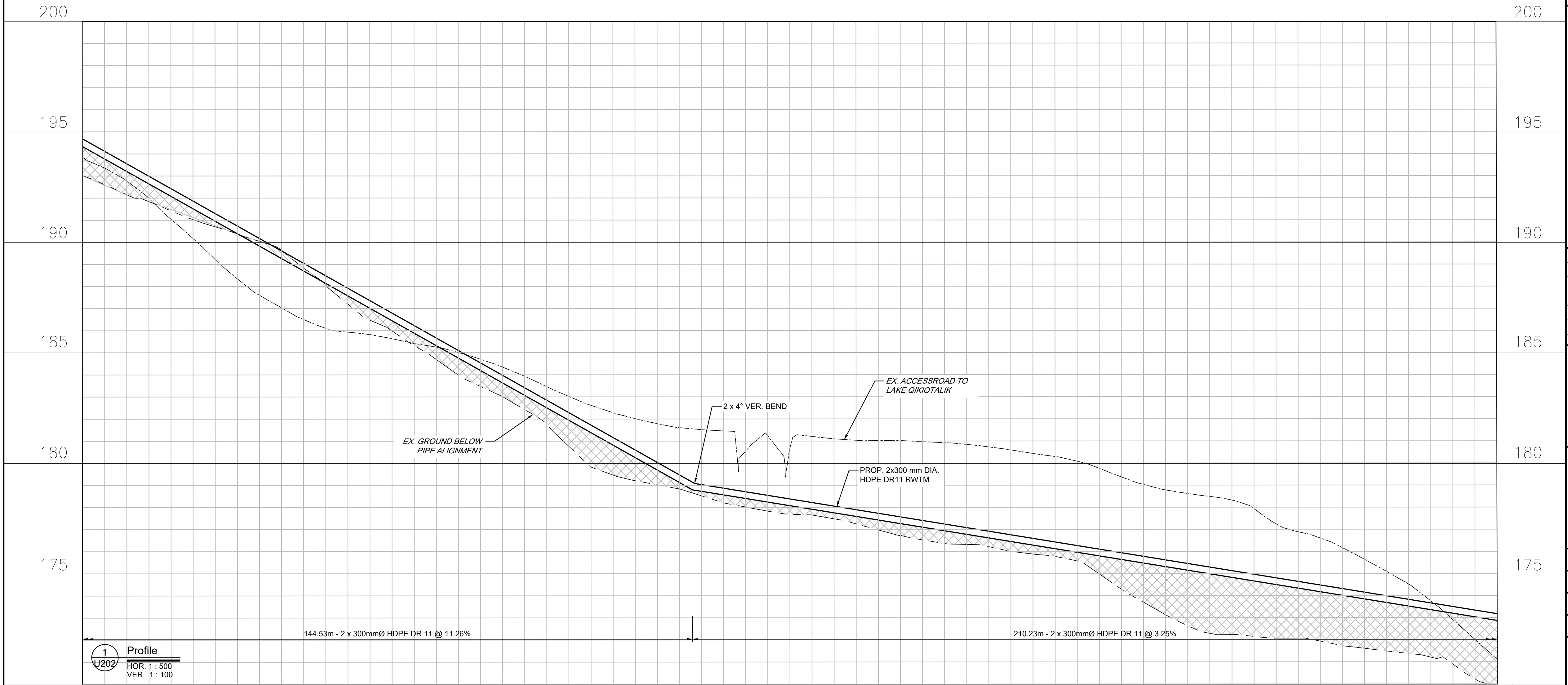
Drawing title

CIVIL

WATERMAIN PLAN AND PROFILE
STA. 0+000 TO STA. 0+300

Project no.	Drawing no.	Revision no.
30192375	U201	C


EXISTING ACCESS ROAD
TO LAKE QIKIQTALIK
SEE DWGs T102-T108 FOR
PROP. ROAD GRADING
5.6 m
0.8 m
PROP. 2x300 mm DIA.
HDPE DR11 RWTM
EXISTING ACCESS ROAD
TO LAKE QIKIQTALIK
3 - 900mmØ CSP CULVERT
REFER TO DWGS T102-T108 (TYP.)
MATCH LINE 0+300
MATCH LINE 0+620
0+320
0+340
0+360
0+380
0+400
0+420
0+440
0+460
0+480
0+500
0+520
0+540
0+560
0+580
0+600
0+620
0+780
A
U202
Plan
1 : 500



PROP. WATERMAIN INVERT ELEVATION	EXISTING GROUND ELEVATION	C/L CHAINAGE
194.34	193.02	0+300
192.08	191.43	0+320
189.83	190.04	0+340
187.58	187.21	0+360
185.32	184.70	0+380
183.07	182.42	0+400
180.82	179.46	0+420
178.73	178.52	0+440
178.08	177.68	0+460
177.43	176.98	0+480
176.77	176.32	0+500
176.12	175.77	0+520
175.47	173.70	0+540
174.82	172.23	0+560
174.17	171.94	0+580
173.52	171.38	0+600
172.87	169.39	0+620

0 10 20 30 40 50 60 70 80 90 100mm

A1 – 841X594

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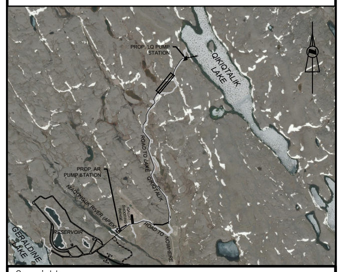

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

LEGEND:

▨	- GROUND TO BE REMOVED
▩	- FILL ON STRIPED GROUND

Revision	Description	Date
C	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
A	ISSUED FOR CONCEPT DESIGN	2023-11-27

Consultant

ARCADIS

8133 Warden Avenue - Unit 300
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tel 905 763 2322
www.arcadis.com

Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
J.E.

Drawn by
N.V.

Approved by
G.G.

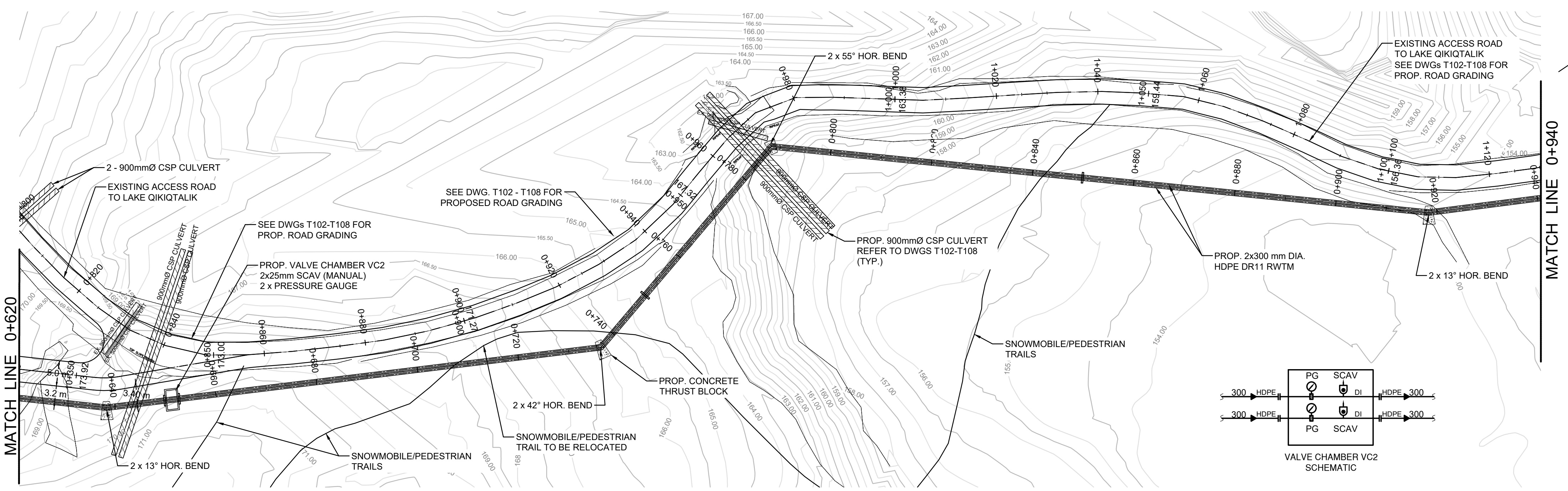
Project Manager
C.G.

Drawing title

CIVIL

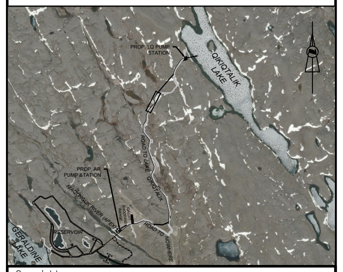
WATERMAIN PLAN AND PROFILE STA. 0+300 TO STA. 0+620

Project no.	Drawing no.	Revision no.
30192375	U202	C


2 - 900mmØ CSP CULVERT
EXISTING ACCESS ROAD TO LAKE QIKIQTALIK
SEE DWGs T102-T108 FOR PROP. ROAD GRADING
PROP. VALVE CHAMBER VC2
2x25mm SCAV (MANUAL)
2 x PRESSURE GAUGE
SEE DWG. T102 - T108 FOR PROPOSED ROAD GRADING
2 x 55° HOR. BEND
EXISTING ACCESS ROAD TO LAKE QIKIQTALIK SEE DWGs T102-T108 FOR PROP. ROAD GRADING
PROP. 900mmØ CSP CULVERT REFER TO DWGS T102-T108 (TYP.)
PROP. 2x300 mm DIA. HDPE DR11 RWTM
2 x 13° HOR. BEND
SNOWMOBILE/PEDESTRIAN TRAILS
PROP. CONCRETE THRUST BLOCK
2 x 42° HOR. BEND
SNOWMOBILE/PEDESTRIAN TRAIL TO BE RELOCATED
SNOWMOBILE/PEDESTRIAN TRAILS
2 x 13° HOR. BEND
MATCH LINE 0+620
MATCH LINE 0+940
0+640
0+660
0+680
0+700
0+720
0+740
0+760
0+780
0+800
0+840
0+860
0+880
0+900
0+920
5.0 m
3.2 m
3.40 m
300 HDPE PG SCAV DI HDPE 300
300 HDPE PG DI HDPE 300
PG SCAV

VALVE CHAMBER VC2
SCHEMATIC

A
U203
Plan
1 : 500



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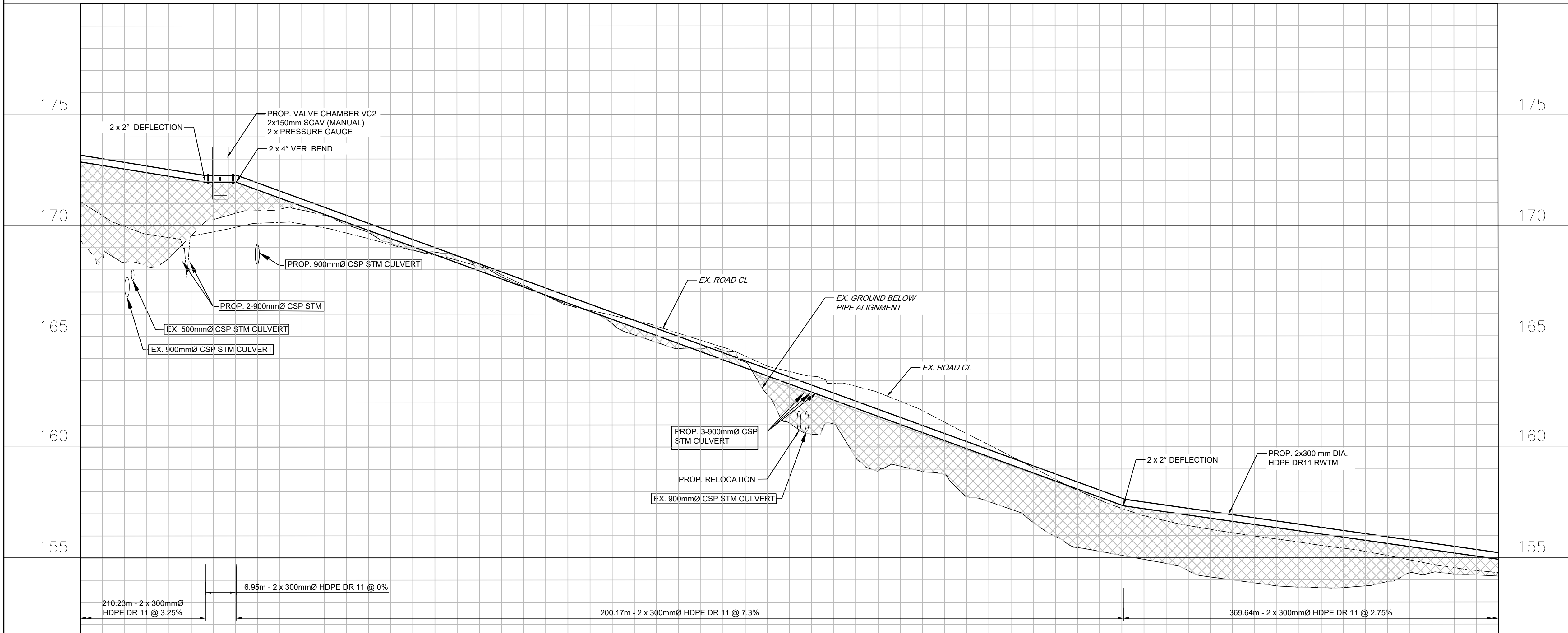
ARCADIS PROFESSIONAL SERVICES (CANADA) INC.


180
175
170
165
160
155
2 x 2° DEFLECTION
PROP. VALVE CHAMBER VC2
2x150mm SCAV (MANUAL)
2 x PRESSURE GAUGE
2 x 4° VER. BEND
PROP. 900mmØ CSP STM CULVERT
PROP. 2-900mmØ CSP STM
EX. 500mmØ CSP STM CULVERT
EX. 900mmØ CSP STM CULVERT
EX. ROAD CL
EX. GROUND BELOW PIPE ALIGNMENT
EX. ROAD CL
PROP. 3-900mmØ CSP STM CULVERT
PROP. RELOCATION
EX. 900mmØ CSP STM CULVERT
2 x 2° DEFLECTION
PROP. 2x300 mm DIA. HDPE DR11 RWTM
210.23m - 2 x 300mmØ HDPE DR 11 @ 3.25%
6.95m - 2 x 300mmØ HDPE DR 11 @ 0%
200.17m - 2 x 300mmØ HDPE DR 11 @ 7.3%
369.64m - 2 x 300mmØ HDPE DR 11 @ 2.75%

1
U203
Profile
HOR. 1 : 500
VER. 1 : 100

C/L CHAINAGE	PROP. WATERMAIN INVERT ELEVATION	EXISTING GROUND ELEVATION
0+620	172.87	169.39
0+640	172.22	168.52
	171.96	
0+660	171.60	170.67
0+680	170.15	170.04
0+700	168.66	168.80
0+720	167.22	167.26
0+740	165.76	165.58
0+760	164.30	164.46
0+780	162.84	161.07
0+800	161.38	158.93
0+820	159.92	157.75
0+840	158.46	155.97
0+860	157.21	154.93
0+880	156.64	153.99
0+900	156.07	153.65
0+920	155.49	154.32
0+940	154.92	154.16

0 10 20 30 40 50 60 70 80 90 100mm

A1 – 841X594

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www.iqaluit.ca

PRELIMINARY
NOT FOR CONSTRUCTION

LEGEND:

- ▨ - GROUND TO BE REMOVED
- ▩ - FILL ON STRIPED GROUND
- SCAV - SANITARY COMBINATION AIR VALVE (MANUAL)
- PG - PRESSURE GAUGE

Revision	Description	Date
C	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
A	ISSUED FOR CONCEPT DESIGN	2023-11-27

Consultant

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Markham ON L6G 1B3 Canada
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www.arcadis.com

Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
J.E.

Drawn by
N.V.

Approved by
G.G.

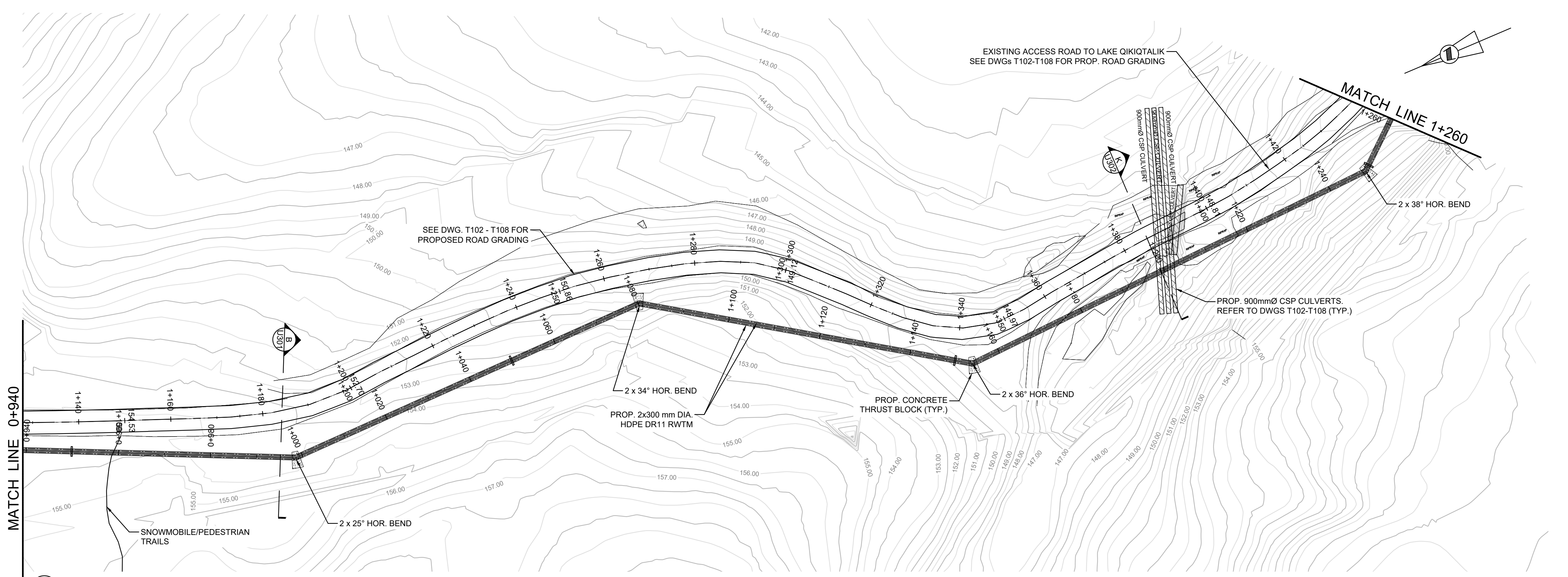
Project Manager
C.G.

Drawing title

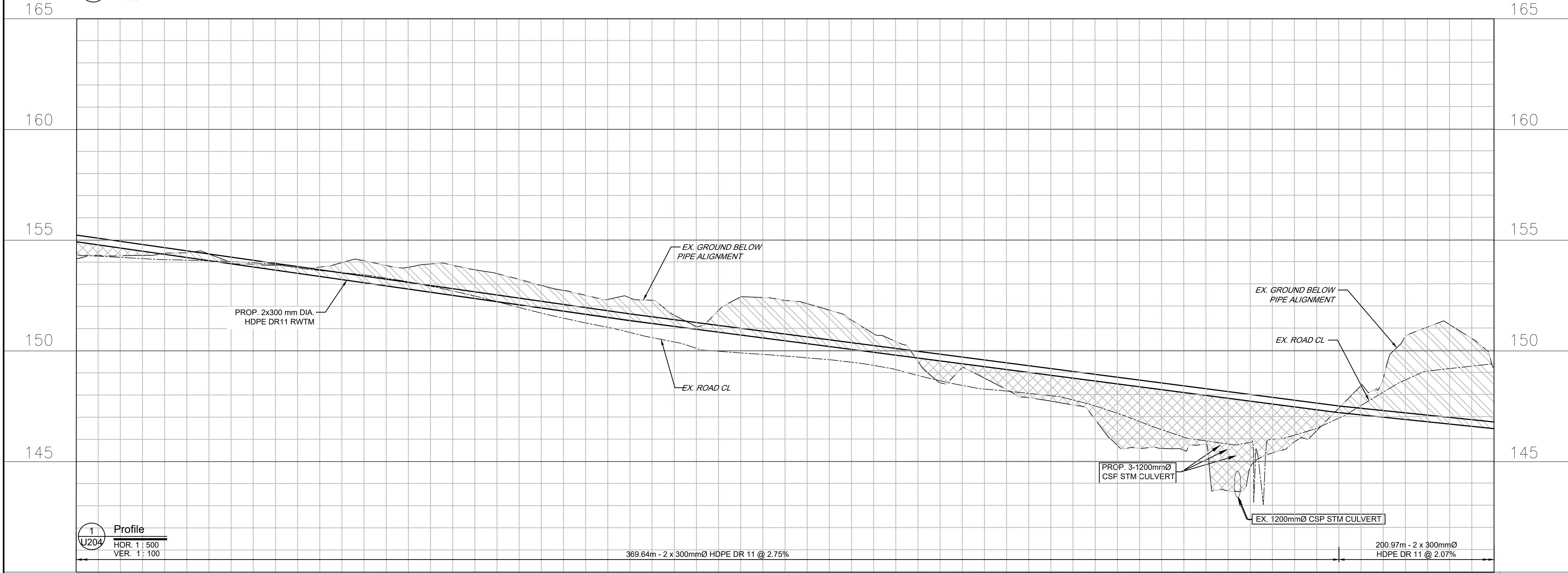
CIVIL

WATERMAIN PLAN AND PROFILE STA. 0+620 TO STA. 0+940

Project no.	Drawing no.	Revision no.
30192375	U203	C


MATCH LINE 0+940
MATCH LINE 1+260
EXISTING ACCESS ROAD TO LAKE QIKIQTALIK
SEE DWGs T102-T108 FOR PROP. ROAD GRADING
SEE DWG. T102 - T108 FOR
PROPOSED ROAD GRADING
900mmØ CSP CULVERT
900mmØ CSP CULVERT
2 x 38° HOR. BEND
PROP. 900mmØ CSP CULVERTS.
REFER TO DWGS T102-T108 (TYP.)
2 x 34° HOR. BEND
PROP. 2x300 mm DIA.
HDPE DR11 RWTM
PROP. CONCRETE
THRUST BLOCK (TYP.)
2 x 36° HOR. BEND
2 x 25° HOR. BEND
SNOWMOBILE/PEDESTRIAN
TRAILS
B
U301
K
U302
1+140
1+160
1+180
1+200
1+220
1+240
1+260
1+280
1+300
1+320
1+340
1+360
1+380
1+400
1+420
0+940
0+960
0+980
1+000
1+020
1+040
1+060
1+080
1+100
1+120
1+140
1+160
1+180
1+200
1+220
1+240
1+260
142.00
143.00
144.00
145.00
146.00
147.00
148.00
149.00
150.00
151.00
152.00
153.00
154.00
155.00
156.00
157.00

A
U204
Plan
1 : 500



1
U204
Profile
HOR. 1 : 500
VER. 1 : 100

369.64m - 2 x 300mmØ HDPE DR 11 @ 2.75%

200.97m - 2 x 300mmØ
HDPE DR 11 @ 2.07%

C/L CHAINAGE	PROP. WATERMAIN INVERT ELEVATION	EXISTING GROUND ELEVATION
0+940	154.92	154.16
0+960	154.35	154.39
0+980	153.78	153.90
1+000	153.21	153.98
1+020	152.64	153.91
1+040	152.06	153.22
1+060	151.52	152.31
1+080	150.96	151.08
1+100	150.44	152.26
1+120	149.92	150.76
1+140	149.39	149.23
1+160	148.87	147.71
1+180	148.35	145.58
1+200	147.83	143.65
1+220	147.31	146.37
1+240	146.87	150.62
1+260	146.46	149.23

0 10 20 30 40 50 60 70 80 90 100mm

A1 – 841X594

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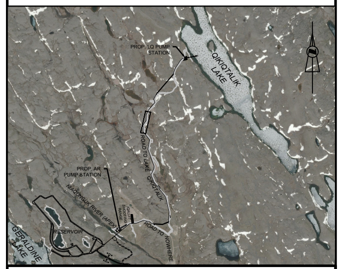

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LEGEND:

▨ - GROUND TO BE REMOVED

▨ - FILL ON STRIPED GROUND

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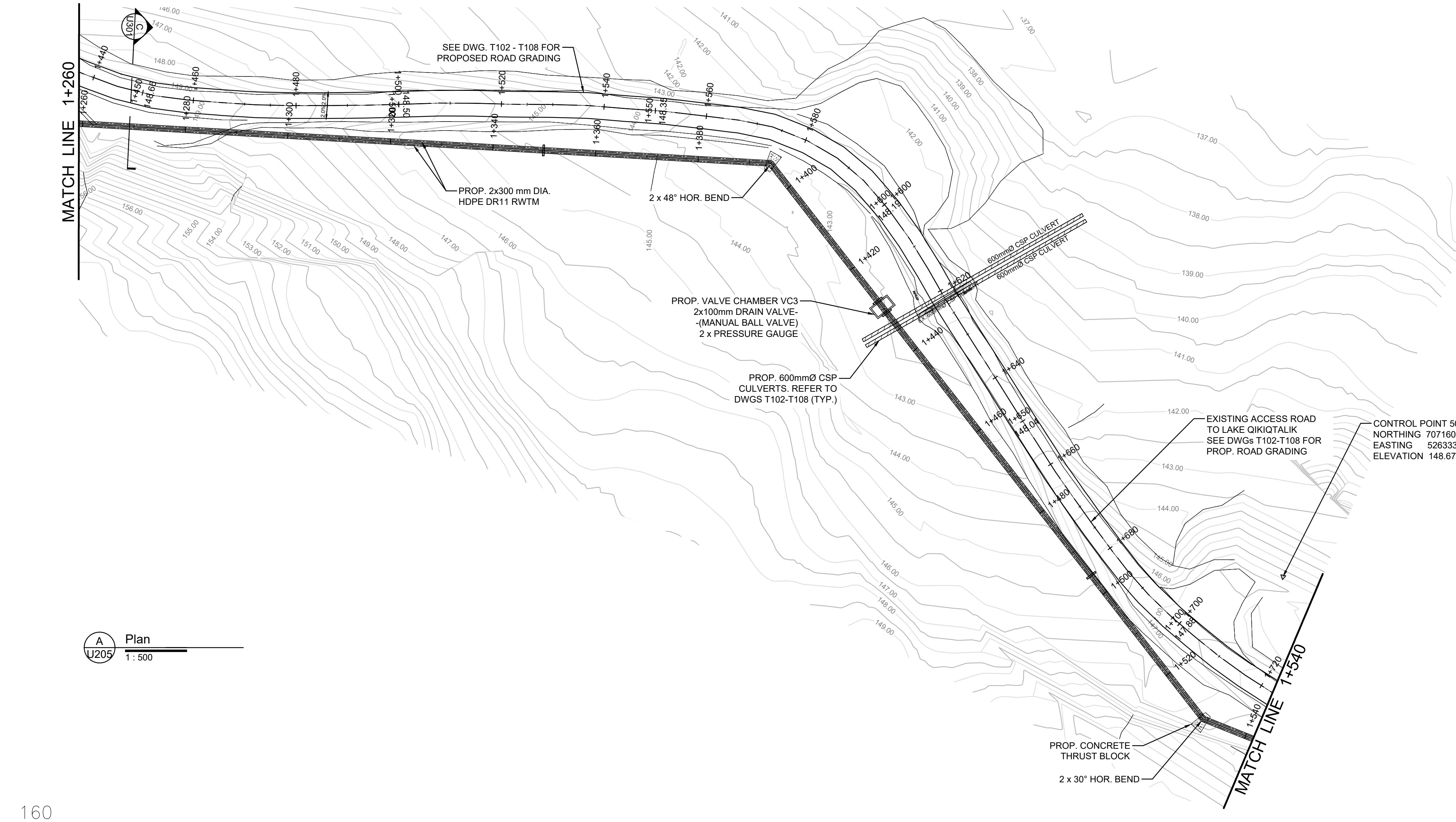
C.G.

Drawing title
CIVIL

WATERMAIN PLAN AND PROFILE
STA. 0+940 TO STA. 1+260

Project no.	Drawing no.	Revision no.
30192375	U204	C


MATCH LINE 1+260
MATCH LINE 1+540
C
U301
1+260
1+280
1+300
1+320
1+340
1+360
1+380
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1+420
1+440
1+460
1+480
1+500
1+520
1+540
1+440
1+450
1+480
1+500
1+520
1+540
1+560
1+580
1+600
1+620
1+640
1+650
1+660
1+680
1+700
1+720
148.00
147.00
146.00
145.00
144.00
143.00
142.00
141.00
140.00
139.00
138.00
137.00
156.00
155.00
154.00
153.00
152.00
151.00
150.00
149.00

SEE DWG. T102 - T108 FOR PROPOSED ROAD GRADING

PROP. 2x300 mm DIA. HDPE DR11 RWTM

2 x 48° HOR. BEND

600mmØ CSP CULVERT

600mmØ CSP CULVERT

PROP. VALVE CHAMBER VC3
2x100mm DRAIN VALVE-
-(MANUAL BALL VALVE)
2 x PRESSURE GAUGE

PROP. 600mmØ CSP CULVERTS. REFER TO DWGS T102-T108 (TYP.)

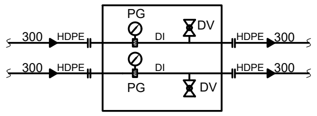
EXISTING ACCESS ROAD TO LAKE QIKIQTALIK SEE DWGs T102-T108 FOR PROP. ROAD GRADING

CONTROL POINT 501
NORTHING 7071609.986
EASTING 526333.626
ELEVATION 148.673

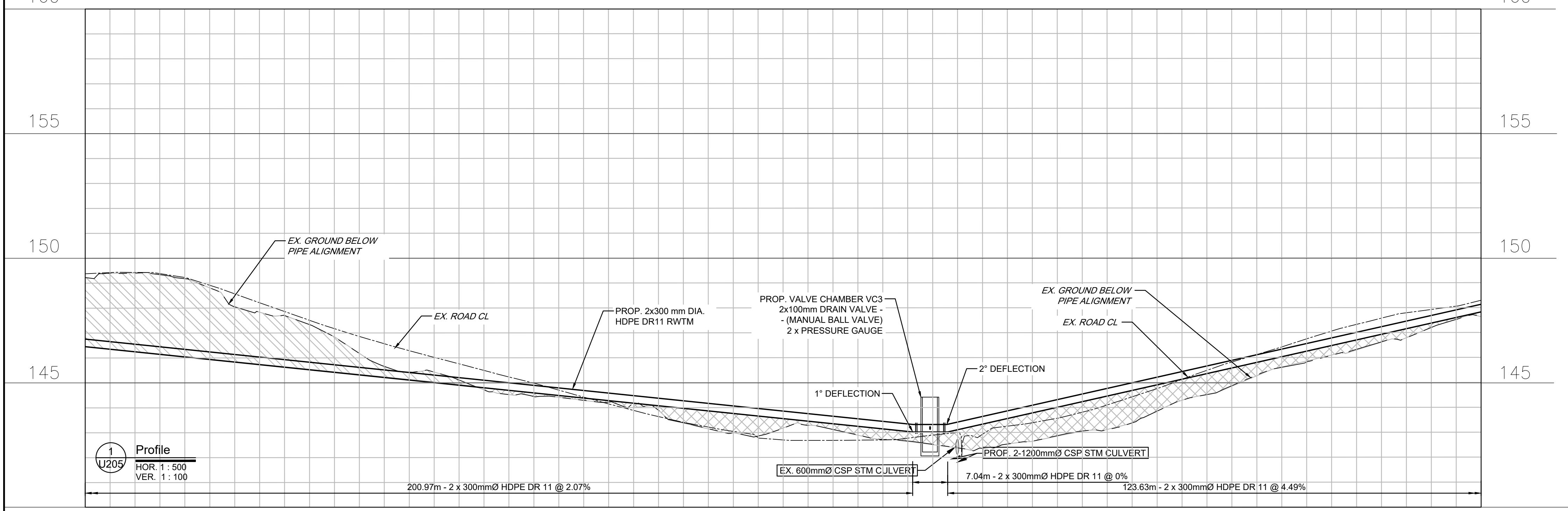
PROP. CONCRETE THRUST BLOCK

2 x 30° HOR. BEND

A
U205
Plan
1 : 500


PG
DV
300
HDPE
DI
HDPE
300
300
HDPE
DI
HDPE
300
PG
DV

VALVE CHAMBER VC3 SCHEMATIC


160
155
150
145
160
155
150
145

EX. GROUND BELOW PIPE ALIGNMENT

EX. ROAD CL

PROP. 2x300 mm DIA. HDPE DR11 RWTM

PROP. VALVE CHAMBER VC3
2x100mm DRAIN VALVE -
- (MANUAL BALL VALVE)
2 x PRESSURE GAUGE

EX. GROUND BELOW PIPE ALIGNMENT

EX. ROAD CL

2° DEFLECTION

1° DEFLECTION

PROP. 2-1200mmØ CSP STM CULVERT

EX. 600mmØ CSP STM CULVERT

7.04m - 2 x 300mmØ HDPE DR 11 @ 0%

200.97m - 2 x 300mmØ HDPE DR 11 @ 2.07%

123.63m - 2 x 300mmØ HDPE DR 11 @ 4.49%

1
U205
Profile
HOR. 1 : 500
VER. 1 : 100

PROP. WATERMAIN INVERT ELEVATION	EXISTING GROUND ELEVATION	C/L CHAINAGE
146.46	149.23	1+260
146.05	149.18	1+280
145.63	147.70	1+300
145.21	145.66	1+320
144.80	144.71	1+340
144.39	144.29	1+360
143.97	143.40	1+380
143.56	143.17	1+400
143.14	142.71	1+420
143.02		
143.33	142.36	1+440
144.23	143.05	1+460
145.13	144.29	1+480
146.03	145.61	1+500
146.93	146.63	1+520
147.82	147.63	1+540

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A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

Iqaluit

1085 Mivvik Street, P.O. Box 460
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tel 867 979 5600
www.iqaluit.ca

PRELIMINARY
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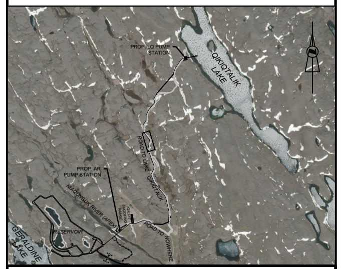

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

LEGEND:

▨	- GROUND TO BE REMOVED
▩	- FILL ON STRIPED GROUND
PG	- PRESSURE GAUGE
DV	- DRAIN VALVE
⊣⊢	- FLANGE ADAPTOR

NOTES:
1. CONTROL POINTS 500, 501 AND 502 WERE GENERATED USING A BENCH MARK CCM28, WHICH HAS THE FOLLOWING VALUES :
NORTHING 7068622.839
EASTING 525561.325
ELEVATION 117.298
(NAD83(CSRS) Ep. 2010.0 and CGVD(2013)

Revision	Description	Date
C	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
A	ISSUED FOR CONCEPT DESIGN	2023-11-27

Consultant

ARCADIS

8133 Warden Avenue - Unit 300
Markham ON L6G 1B3 Canada
tel 905 763 2322
www.arcadis.com

Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
J.E.

Drawn by
N.V.

Approved by
G.G.

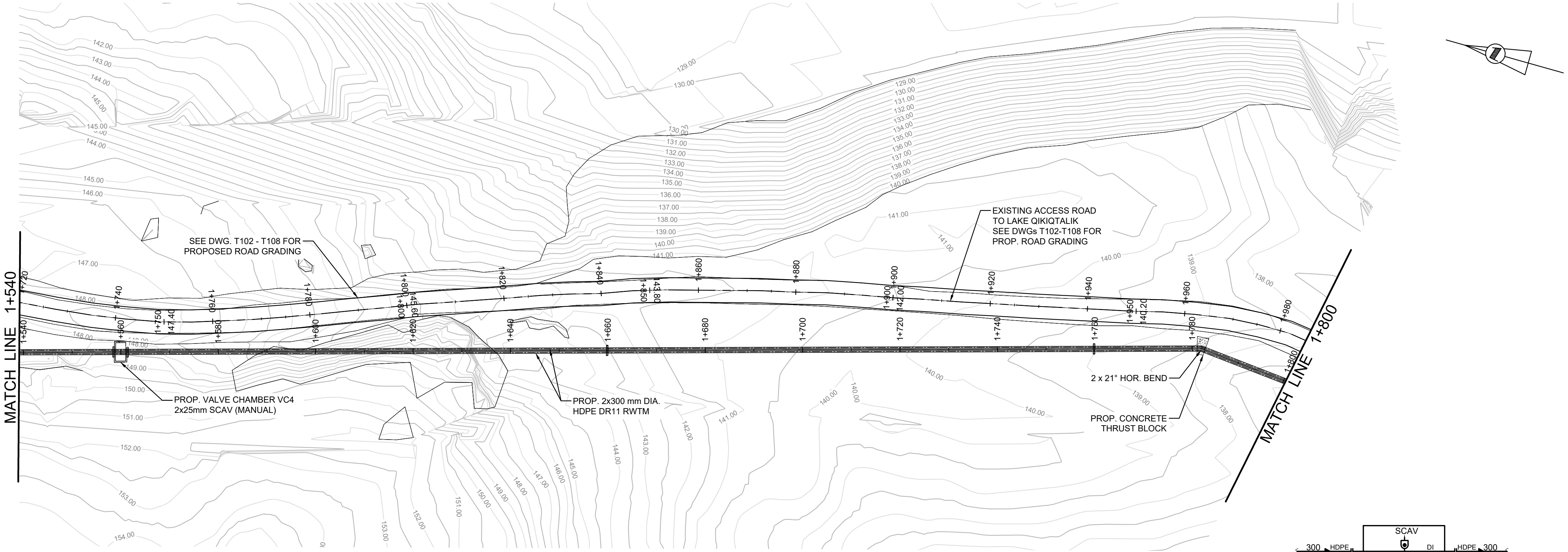
Project Manager
C.G.

Drawing title

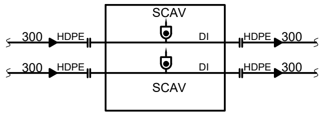
CIVIL

WATERMAIN PLAN AND PROFILE
STA. 1+260 TO STA. 1+540

Project no.	Drawing no.	Revision no.
30192375	U205	C


MATCH LINE 1+540
MATCH LINE 1+800
SEE DWG. T102 - T108 FOR
PROPOSED ROAD GRADING
EXISTING ACCESS ROAD
TO LAKE QIKIQTALIK
SEE DWGs T102-T108 FOR
PROP. ROAD GRADING
PROP. VALVE CHAMBER VC4
2x25mm SCAV (MANUAL)
PROP. 2x300 mm DIA.
HDPE DR11 RWTM
2 x 21° HOR. BEND
PROP. CONCRETE
THRUST BLOCK
1+540
1+560
1+580
1+600
1+620
1+640
1+660
1+680
1+700
1+720
1+740
1+760
1+780
1+800
1+720
1+740
1+760
1+780
1+800
1+820
1+840
1+860
1+880
1+900
1+920
1+940
1+960
1+980
129.00
130.00
140.00
141.00
142.00
145.00
150.00
154.00

A
U206
Plan
1 : 500


SCAV
SCAV
300
HDPE
DI
HDPE
300
300
HDPE
DI
HDPE
300

VALVE CHAMBER VC4
SCHEMATIC

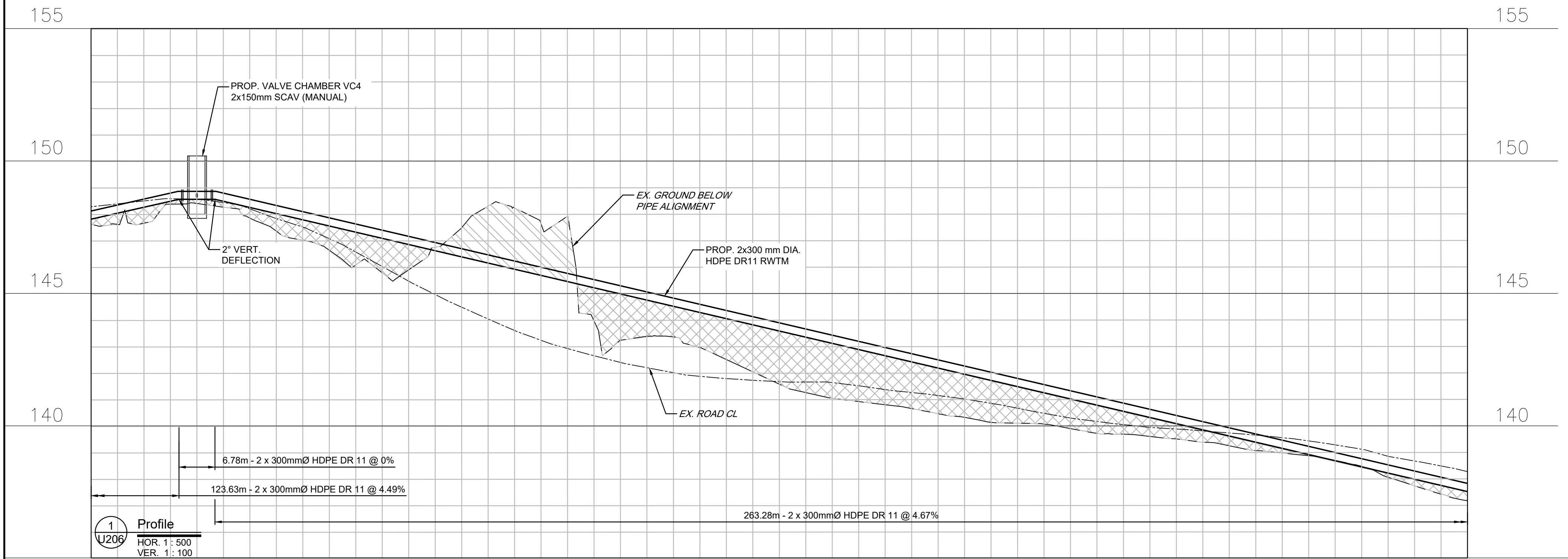
LEGEND:

▨ - GROUND TO BE REMOVED

▩ - FILL ON STRIPED GROUND

SCAV - SANITARY COMBINATION AIR VALVE (MANUAL)

- FLANGE ADAPTOR



1
U206
Profile
HOR. 1 : 500
VER. 1 : 100

147.82	148.57	148.57	147.80	146.86	145.93	144.99	144.06	143.11	142.18	141.26	140.30	139.36	138.46	137.51	PROP. WATERMAIN INVERT ELEVATION
147.63	148.42		147.03	145.91	148.25	143.25	142.52	141.05	140.47	140.07	139.61	139.07	138.48	137.18	EXISTING GROUND ELEVATION
1+540	1+560		1+580	1+600	1+620	1+640	1+660	1+680	1+700	1+720	1+740	1+760	1+780	1+800	C/L CHAINAGE

C:\Users\bensaidf2957\DC\ACCDocs\IBI - DT Services\30288139-Iqaluit_LongTermWater C3D2025\Project Files\7.0_Production\7.03_Design\04_Civil\Sheets\U201-U206.dwg

A1 - 841X594

0 10 20 30 40 50 60 70 80 90 100mm

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Iqaluit NU X0A 0H0 Canada
tel 867 979 5600
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PRELIMINARY
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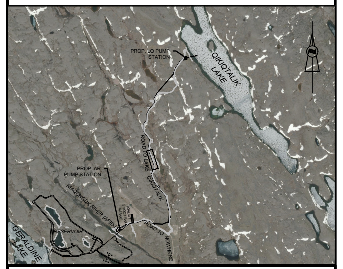
PROP. LQ PUMP STATION
QIKIQTALIK LAKE
ROAD TO LAKE QIKIQTALIK
PROP. AR PUMP STATION
NIAQUNGUK RIVER (APEX)
IQALUIT SHOOTING RANGE
RESERVOIR
ROAD TO NOWHERE
GERALDINE LAKE

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
C	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
A	ISSUED FOR CONCEPT DESIGN	2023-11-27

Consultant

8133 Warden Avenue - Unit 300
Markham ON L6G 1B3 Canada
tel 905 763 2322
www.arcadis.com

Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
J.E.

Drawn by
N.V.

Approved by
G.G.

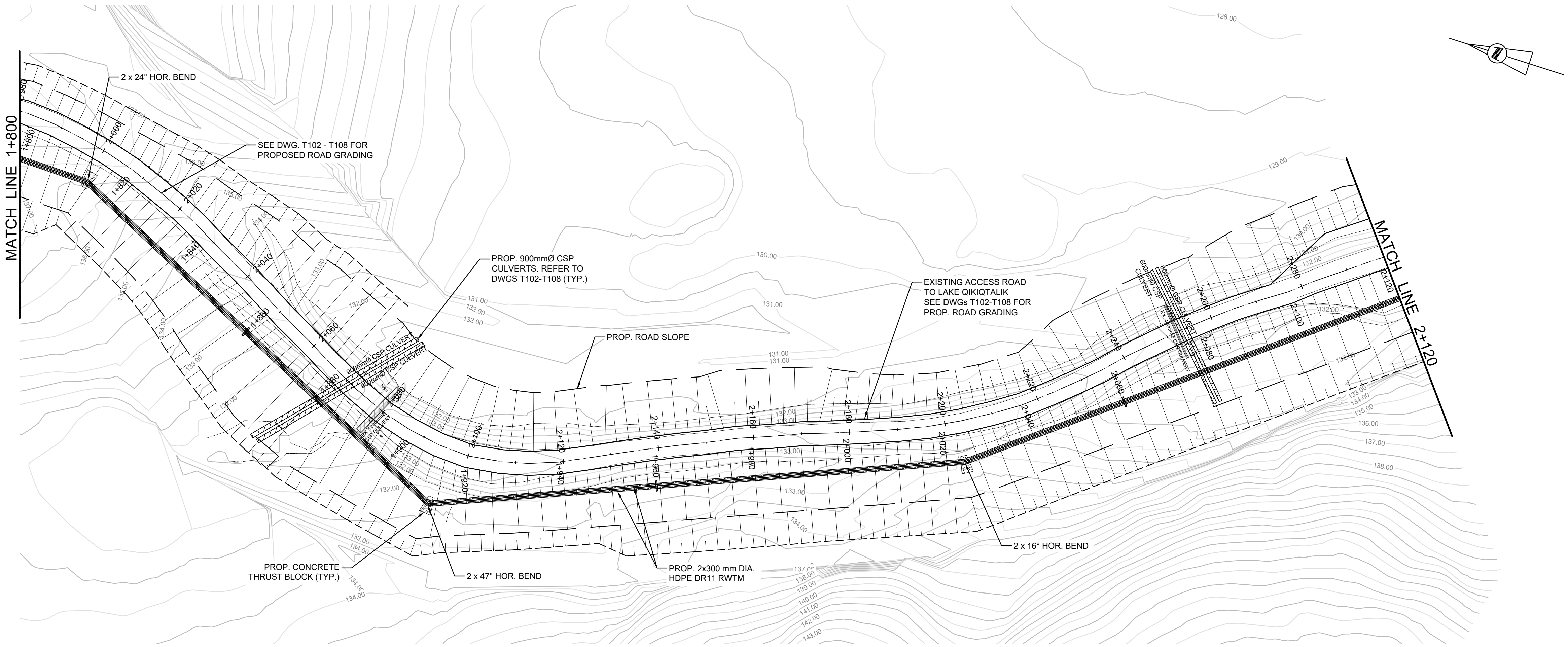
Project Manager
C.G.

Drawing title

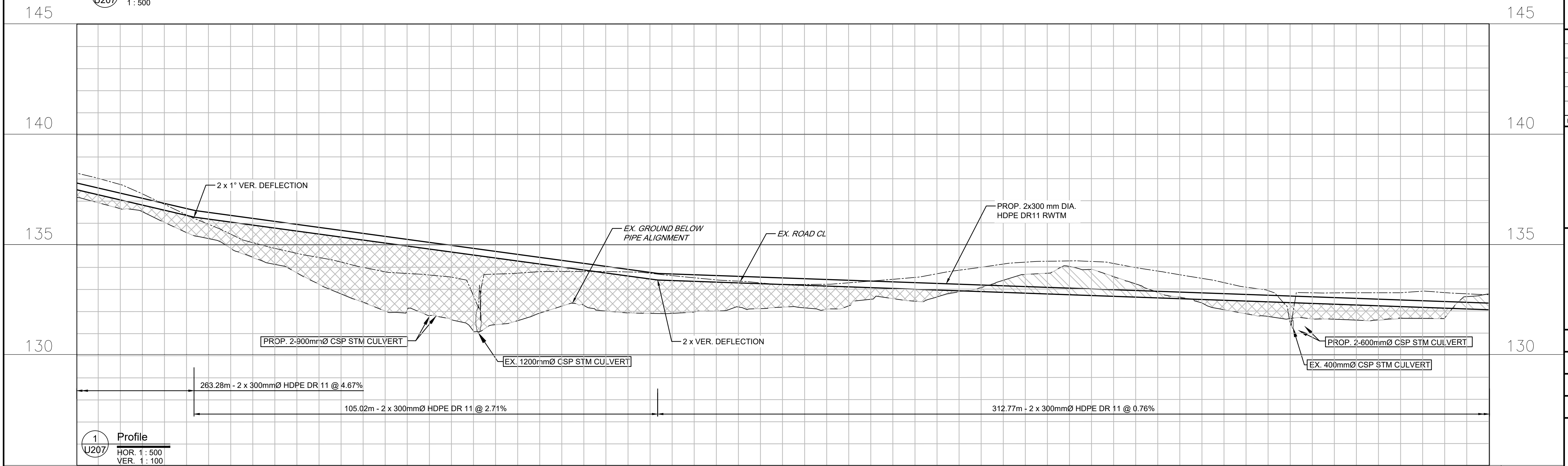
CIVIL

WATERMAIN PLAN AND PROFILE
STA. 1+540 TO STA. 1+800

Project no.	Drawing no.	Revision no.
30192375	U206	C


MATCH LINE 1+800
2 x 24° HOR. BEND
SEE DWG. T102 - T108 FOR
PROPOSED ROAD GRADING
PROP. 900mmØ CSP
CULVERTS. REFER TO
DWGS T102-T108 (TYP.)
PROP. ROAD SLOPE
EXISTING ACCESS ROAD
TO LAKE QIKIQTALIK
SEE DWGs T102-T108 FOR
PROP. ROAD GRADING
MATCH LINE 2+120
PROP. CONCRETE
THRUST BLOCK (TYP.)
2 x 47° HOR. BEND
PROP. 2x300 mm DIA.
HDPE DR11 RWTM
2 x 16° HOR. BEND
600mmØ CSP CULVERT
1+800
1+820
1+840
1+860
1+880
1+900
1+920
1+940
1+960
1+980
2+000
2+020
2+040
2+060
2+080
2+100
2+120
2+000
2+020
2+040
2+060
2+100
2+120
2+140
2+160
2+180
2+200
2+220
2+240
2+260
2+280
128.00
129.00
130.00
131.00
132.00
133.00
134.00
135.00
136.00
137.00
138.00
139.00
140.00
141.00
142.00
143.00

A
U207
Plan
1 : 500


145
140
135
130
2 x 1° VER. DEFLECTION
EX. GROUND BELOW
PIPE ALIGNMENT
EX. ROAD CL
PROP. 2x300 mm DIA.
HDPE DR11 RWTM
PROP. 2-900mmØ CSP STM CULVERT
EX. 1200mmØ CSP STM CULVERT
2 x VER. DEFLECTION
PROP. 2-600mmØ CSP STM CULVERT
EX. 400mmØ CSP STM CULVERT
263.28m - 2 x 300mmØ HDPE DR 11 @ 4.67%
105.02m - 2 x 300mmØ HDPE DR 11 @ 2.71%
312.77m - 2 x 300mmØ HDPE DR 11 @ 0.76%

1
U207
Profile
HOR. 1 : 500
VER. 1 : 100

C/L CHAINAGE	PROP. WATERMAIN INVERT ELEVATION	EXISTING GROUND ELEVATION
1+800	137.51	137.18
1+820	136.59	136.04
1+840	135.91	134.47
1+860	135.37	132.80
1+880	134.82	131.81
1+900	134.28	131.58
1+920	133.74	132.02
1+940	133.36	131.97
1+960	133.21	132.19
1+980	133.07	132.54
2+000	132.92	132.87
2+020	132.78	133.72
2+040	132.63	133.23
2+060	132.49	132.06
2+080	132.34	131.64
2+100	132.20	131.68
2+120	132.06	132.78

0 10 20 30 40 50 60 70 80 90 100mm

A1 – 841X594

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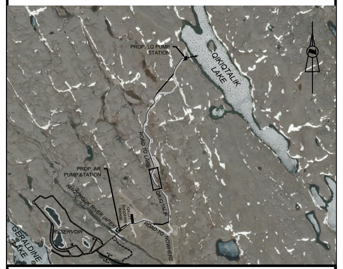

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

LEGEND:

▨	- GROUND TO BE REMOVED
▦	- FILL ON STRIPED GROUND

Revision	Description	Date
C	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
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Consultant

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Markham ON L6G 1B3 Canada
tel 905 763 2322
www.arcadis.com

Project title
CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
J.E.

Drawn by
N.V.

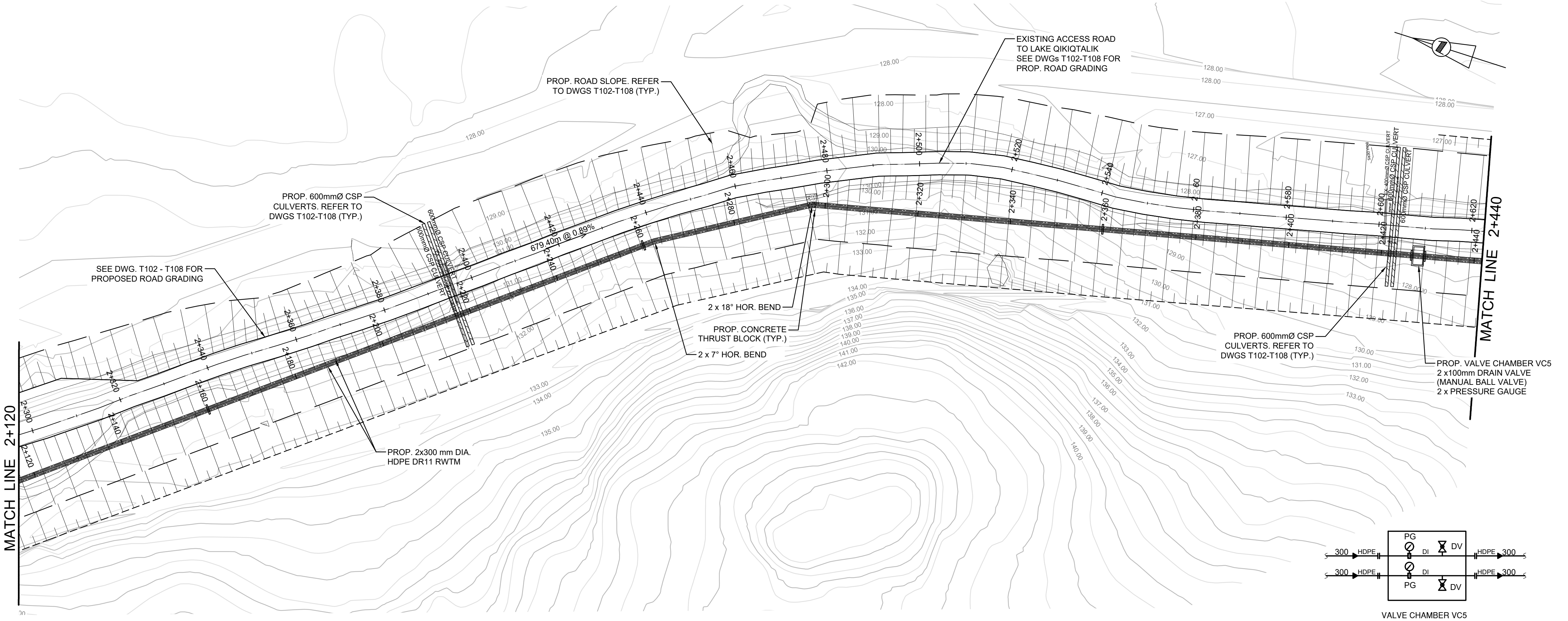
Approved by
G.G.

Project Manager
C.G.

Drawing title
CIVIL

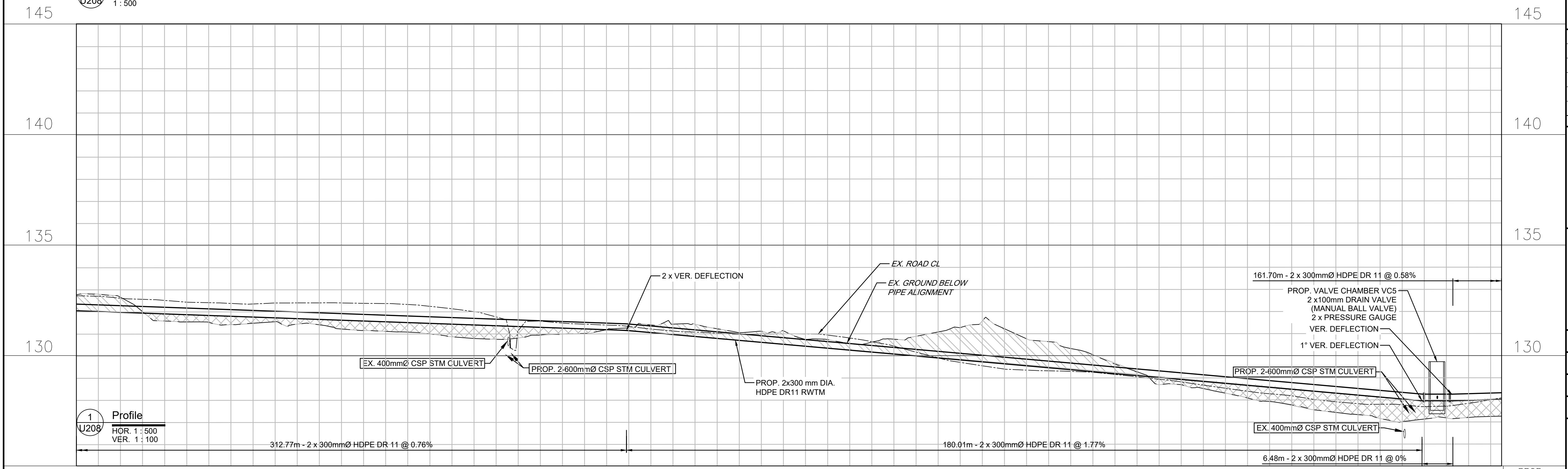
WATERMAIN PLAN AND PROFILE
STA. 1+800 TO STA. 2+120

Project no.	Drawing no.	Revision no.
30192375	U207	C


EXISTING ACCESS ROAD
TO LAKE QIKIQTALIK
SEE DWGs T102-T108 FOR
PROP. ROAD GRADING
PROP. ROAD SLOPE. REFER
TO DWGS T102-T108 (TYP.)
PROP. 600mmØ CSP
CULVERTS. REFER TO
DWGS T102-T108 (TYP.)
SEE DWG. T102 - T108 FOR
PROPOSED ROAD GRADING
679.40m @ 0.89%
2 x 18° HOR. BEND
PROP. CONCRETE
THRUST BLOCK (TYP.)
2 x 7° HOR. BEND
PROP. 2x300 mm DIA.
HDPE DR11 RWTM
PROP. 600mmØ CSP
CULVERTS. REFER TO
DWGS T102-T108 (TYP.)
PROP. VALVE CHAMBER VC5
2 x100mm DRAIN VALVE
(MANUAL BALL VALVE)
2 x PRESSURE GAUGE
MATCH LINE 2+120
MATCH LINE 2+440
128.00
127.00
129.00
130.00
131.00
132.00
133.00
134.00
135.00
136.00
137.00
138.00
139.00
140.00
141.00
142.00
2+120
2+140
2+160
2+180
2+200
2+220
2+240
2+260
2+280
2+300
2+320
2+340
2+360
2+380
2+400
2+420
2+440
2+460
2+480
2+500
2+520
2+540
2+560
2+580
2+600
2+620
300
HDPE
PG
DI
DV

VALVE CHAMBER VC5
SCHEMATIC

A
U208
Plan
1 : 500


145
140
135
130
2 x VER. DEFLECTION
EX. ROAD CL
EX. GROUND BELOW
PIPE ALIGNMENT
161.70m - 2 x 300mmØ HDPE DR 11 @ 0.58%
PROP. VALVE CHAMBER VC5
2 x100mm DRAIN VALVE
(MANUAL BALL VALVE)
2 x PRESSURE GAUGE
VER. DEFLECTION
1° VER. DEFLECTION
EX. 400mmØ CSP STM CULVERT
PROP. 2-600mmØ CSP STM CULVERT
PROP. 2x300 mm DIA.
HDPE DR11 RWTM
PROP. 2-600mmØ CSP STM CULVERT
EX. 400mmØ CSP STM CULVERT
312.77m - 2 x 300mmØ HDPE DR 11 @ 0.76%
180.01m - 2 x 300mmØ HDPE DR 11 @ 1.77%
6.48m - 2 x 300mmØ HDPE DR 11 @ 0%

1
U208
Profile
HOR. 1 : 500
VER. 1 : 100

C/L CHAINAGE	PROP. WATERMAIN INVERT ELEVATION	EXISTING GROUND ELEVATION
2+120	132.06	132.78
2+140	131.91	131.59
2+160	131.77	131.49
2+180	131.62	131.23
2+200	131.48	131.00
2+220	131.33	130.82
2+240	131.19	131.19
2+260	130.87	131.44
2+280	130.52	131.14
2+300	130.17	130.62
2+320	129.85	131.28
2+340	129.46	130.64
2+360	129.10	129.27
2+380	128.75	128.31
2+400	128.39	127.55
2+420	128.04	127.01
2+440	128.01	127.25

LEGEND:

- ▨ - GROUND TO BE REMOVED
- ▩ - FILL ON STRIPED GROUND
- PG - PRESSURE GAUGE
- DV - DRAIN VALVE
- ⊣⊢ - FLANGE ADAPTOR

Iqaluit
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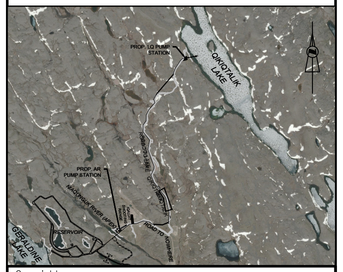

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
C	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
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Project title
CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
J.E.
Drawn by
N.V.
Approved by
G.G.
Project Manager
C.G.

Drawing title
CIVIL

WATERMAIN PLAN AND PROFILE
STA. 2+120 TO STA. 2+440

Project no.	Drawing no.	Revision no.
30192375	U208	C

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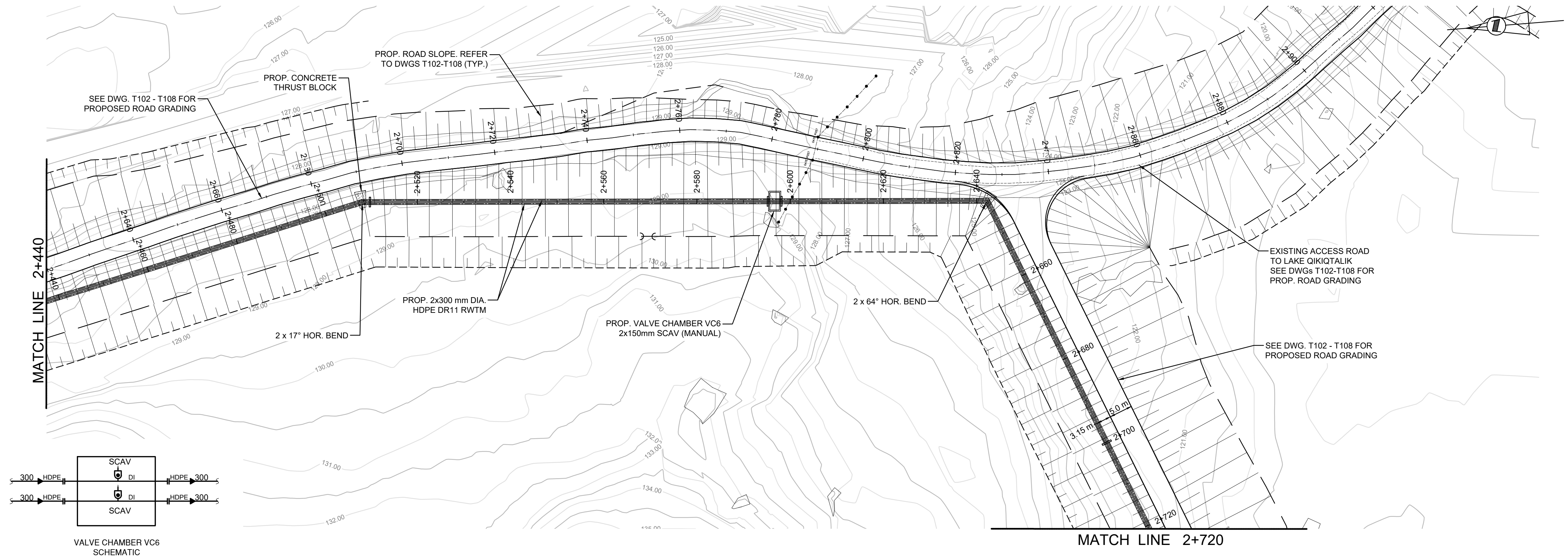
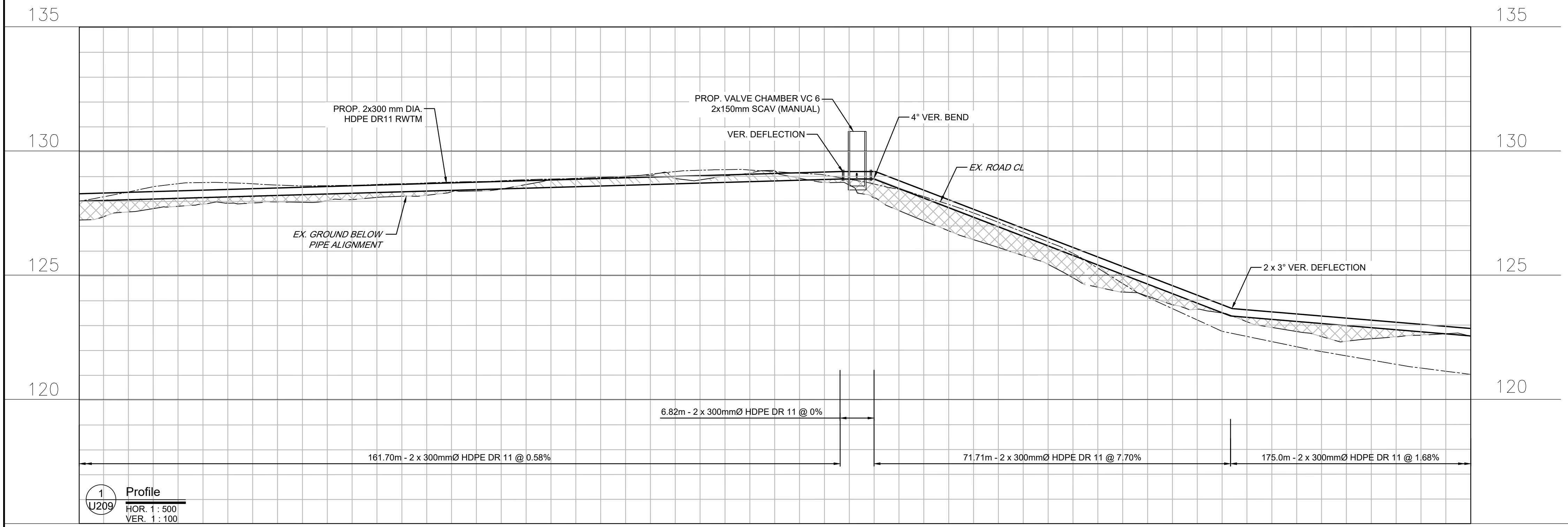
A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm


MATCH LINE 2+440
MATCH LINE 2+720
SEE DWG. T102 - T108 FOR PROPOSED ROAD GRADING
PROP. CONCRETE THRUST BLOCK
PROP. ROAD SLOPE. REFER TO DWGS T102-T108 (TYP.)
PROP. 2x300 mm DIA. HDPE DR11 RWTM
2 x 17° HOR. BEND
PROP. VALVE CHAMBER VC6 2x150mm SCAV (MANUAL)
2 x 64° HOR. BEND
EXISTING ACCESS ROAD TO LAKE QIKIQTALIK SEE DWGs T102-T108 FOR PROP. ROAD GRADING
SEE DWG. T102 - T108 FOR PROPOSED ROAD GRADING
3.15 m
5.0 m
2+460
2+480
2+500
2+520
2+540
2+560
2+580
2+600
2+620
2+640
2+660
2+680
2+700
2+720
2+700
2+720
2+740
2+760
2+780
2+800
2+820
2+840
2+860
2+880
2+900
126.00
127.00
128.00
129.00
130.00
131.00
132.00
133.00
134.00
SCAV
300
HDPE
DI
SCAV

VALVE CHAMBER VC6 SCHEMATIC

A
U209
Plan
1 : 500


135
130
125
120
PROP. 2x300 mm DIA. HDPE DR11 RWTM
PROP. VALVE CHAMBER VC 6 2x150mm SCAV (MANUAL)
VER. DEFLECTION
4° VER. BEND
EX. ROAD CL
EX. GROUND BELOW PIPE ALIGNMENT
2 x 3° VER. DEFLECTION
6.82m - 2 x 300mmØ HDPE DR 11 @ 0%
161.70m - 2 x 300mmØ HDPE DR 11 @ 0.58%
71.71m - 2 x 300mmØ HDPE DR 11 @ 7.70%
175.0m - 2 x 300mmØ HDPE DR 11 @ 1.68%

1
U209
Profile
HOR. 1 : 500
VER. 1 : 100

C/L CHAINAGE	PROP. WATERMAIN INVERT ELEVATION	EXISTING GROUND ELEVATION
2+440	128.01	127.25
2+460	128.12	127.80
2+480	128.24	127.98
2+500	128.35	128.16
2+520	128.47	128.41
2+540	128.58	128.92
2+560	128.70	128.91
2+580	128.81	129.24
2+600	128.89 128.89	128.12
2+620	127.35	126.45
2+640	125.81	124.91
2+660	124.27	123.82
2+680	123.23	122.91
2+700	122.90	122.45
2+720	122.56	122.53

Iqaluit

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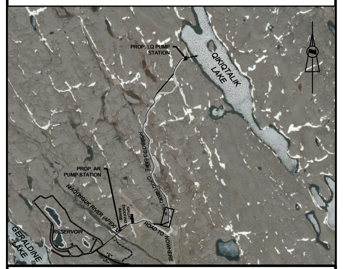

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

LEGEND:

▨ - GROUND TO BE REMOVED
▩ - FILL ON STRIPED GROUND
SCAV - SANITARY COMBINATION AIR VALVE (MANUAL)
-|- - FLANGE ADAPTOR

Revision	Description	Date
C	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
A	ISSUED FOR CONCEPT DESIGN	2023-11-27

Consultant

ARCADIS

8133 Warden Avenue - Unit 300
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tel 905 763 2322
www.arcadis.com

Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
J.E.

Drawn by
N.V.

Approved by
G.G.

Project Manager
C.G.

Drawing title

CIVIL

WATERMAIN PLAN AND PROFILE
STA. 2+440 TO STA. 2+720

Project no.	Drawing no.	Revision no.
30192375	U209	C

C:\Users\bensaidf2957\DC\ACCDocs\IBI - DT Services\30288139-Iqaluit_LongTermWater C3D2025\Project Files\7.0_Production\7.03_Design\04_Civil\Sheets\U207-U213.dwg

A1 - 841X594

0 10 20 30 40 50 60 70 80 90 100mm

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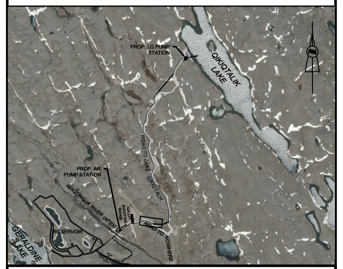
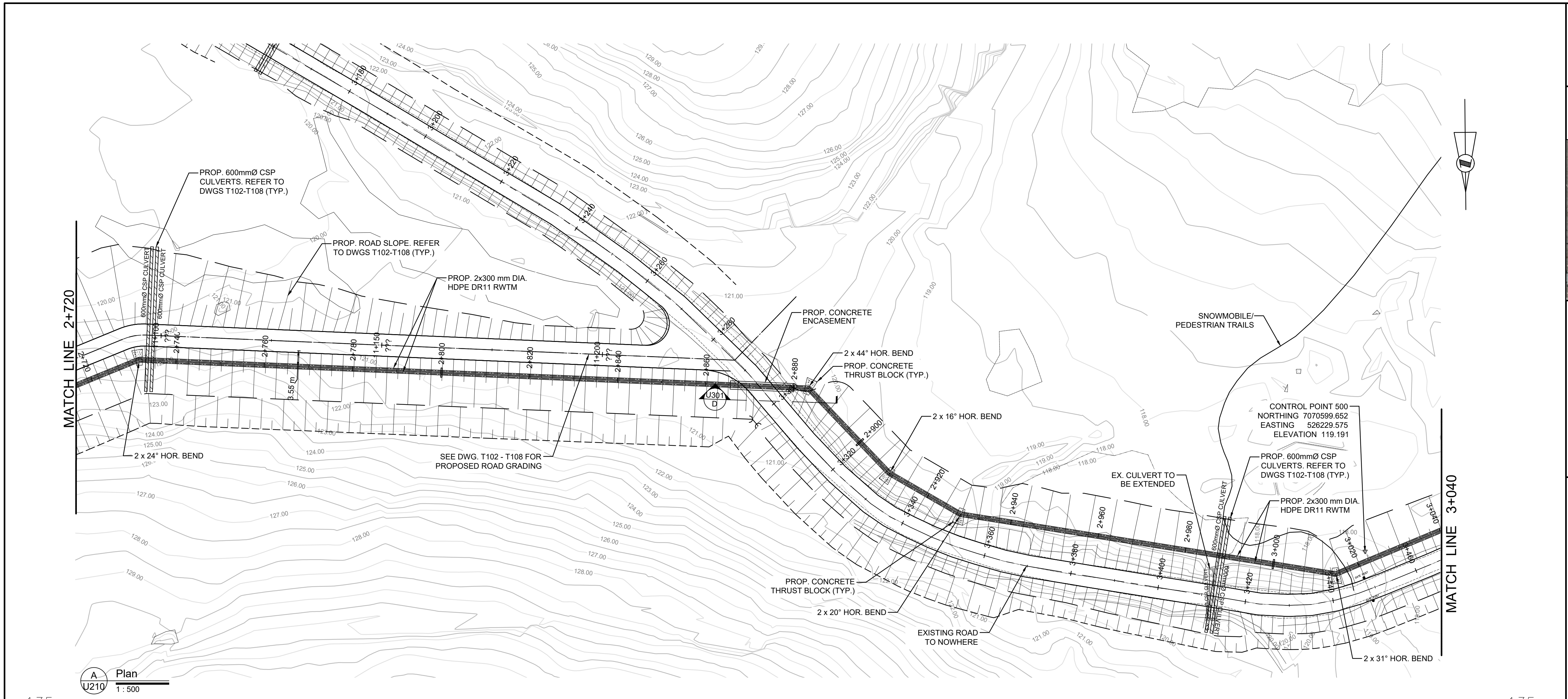
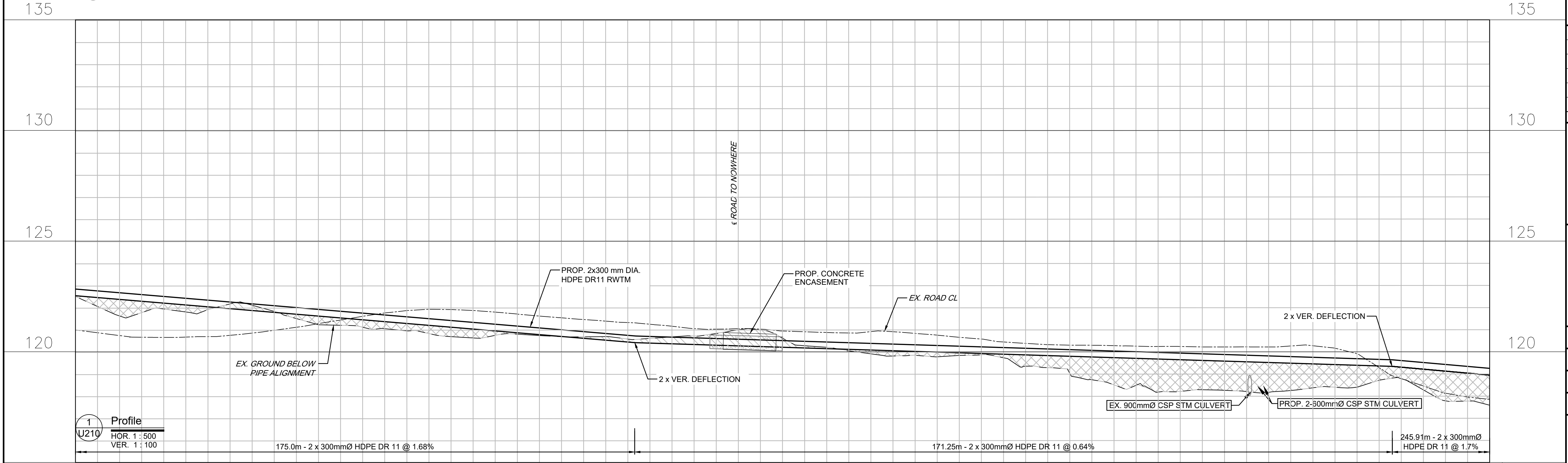
Iqaluit NU X0A 0H0 Canada
tel 867 979 5600
www.iqaluit.ca

PRELIMINARY
NOT FOR CONSTRUCTION


PROP. AR PUMP STATION
NIAQUNGUK RIVER (APEX)
IQALUIT SHOOTING RANGE
LAKE QIKIQTALIK
ROAD TO NOWHERE
RESERVOIR
GERALDINE LAKE


MATCH LINE 2+720
MATCH LINE 3+040
PROP. 600mmØ CSP CULVERTS. REFER TO DWGS T102-T108 (TYP.)
PROP. ROAD SLOPE. REFER TO DWGS T102-T108 (TYP.)
PROP. 2x300 mm DIA. HDPE DR11 RWTM
PROP. CONCRETE ENCASEMENT
2 x 44° HOR. BEND
PROP. CONCRETE THRUST BLOCK (TYP.)
2 x 16° HOR. BEND
2 x 24° HOR. BEND
SEE DWG. T102 - T108 FOR PROPOSED ROAD GRADING
3.55 m
U301
D
SNOWMOBILE/ PEDESTRIAN TRAILS
CONTROL POINT 500
NORTHING 7070599.652
EASTING 526229.575
ELEVATION 119.191
EX. CULVERT TO BE EXTENDED
PROP. 600mmØ CSP CULVERTS. REFER TO DWGS T102-T108 (TYP.)
PROP. 2x300 mm DIA. HDPE DR11 RWTM
PROP. CONCRETE THRUST BLOCK (TYP.)
2 x 20° HOR. BEND
EXISTING ROAD TO NOWHERE
2 x 31° HOR. BEND
600mmØ CSP CULVERT
2+720
2+740
2+760
2+780
2+800
2+820
2+840
2+860
2+880
2+900
2+920
2+940
2+960
2+980
3+000
3+020
3+040
3+180
3+200
3+220
3+240
3+260
3+280
3+320
3+340
3+360
3+380
3+400
3+420
3+440
A
U210
Plan
1 : 500


135
130
125
120
℄ ROAD TO NOWHERE
PROP. 2x300 mm DIA. HDPE DR11 RWTM
PROP. CONCRETE ENCASEMENT
EX. ROAD CL
2 x VER. DEFLECTION
EX. GROUND BELOW PIPE ALIGNMENT
2 x VER. DEFLECTION
EX. 900mmØ CSP STM CULVERT
PROP. 2-600mmØ CSP STM CULVERT
1
U210
Profile
HOR. 1 : 500
VER. 1 : 100
175.0m - 2 x 300mmØ HDPE DR 11 @ 1.68%
171.25m - 2 x 300mmØ HDPE DR 11 @ 0.64%
245.91m - 2 x 300mmØ HDPE DR 11 @ 1.7%

C/L CHAINAGE	PROP. WATERMAIN INVERT ELEVATION	EXISTING GROUND ELEVATION
2+720	122.56	122.53
2+740	122.23	121.96
2+760	121.89	122.13
2+780	121.55	121.22
2+800	121.22	120.85
2+820	120.88	120.82
2+840	120.55	120.71
2+860	120.35	120.73
2+880	120.22	120.63
2+900	120.09	119.92
2+920	119.96	119.85
2+940	119.84	119.30
2+960	119.71	118.50
2+980	119.59	118.27
3+000	119.46	118.38
3+020	119.31	118.80
3+040	118.95	117.59

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A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

LEGEND:

▨ - GROUND TO BE REMOVED

▩ - FILL ON STRIPED GROUND

NOTES:

1. CONTROL POINTS 500, 501 AND 502 WERE GENERATED USING A BENCH MARK CCM28, WHICH HAS THE FOLLOWING VALUES :
   NORTHING 7068622.839
   EASTING 525561.325
   ELEVATION 117.298
   (NAD83(CSRS) Ep. 2010.0 and CGVD(2013)

Revision	Description	Date
C	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
A	ISSUED FOR CONCEPT DESIGN	2023-11-27

Consultant

ARCADIS

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Markham ON L6G 1B3 Canada
tel 905 763 2322
www.arcadis.com

Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
J.E.

Drawn by
N.V.

Approved by
G.G.

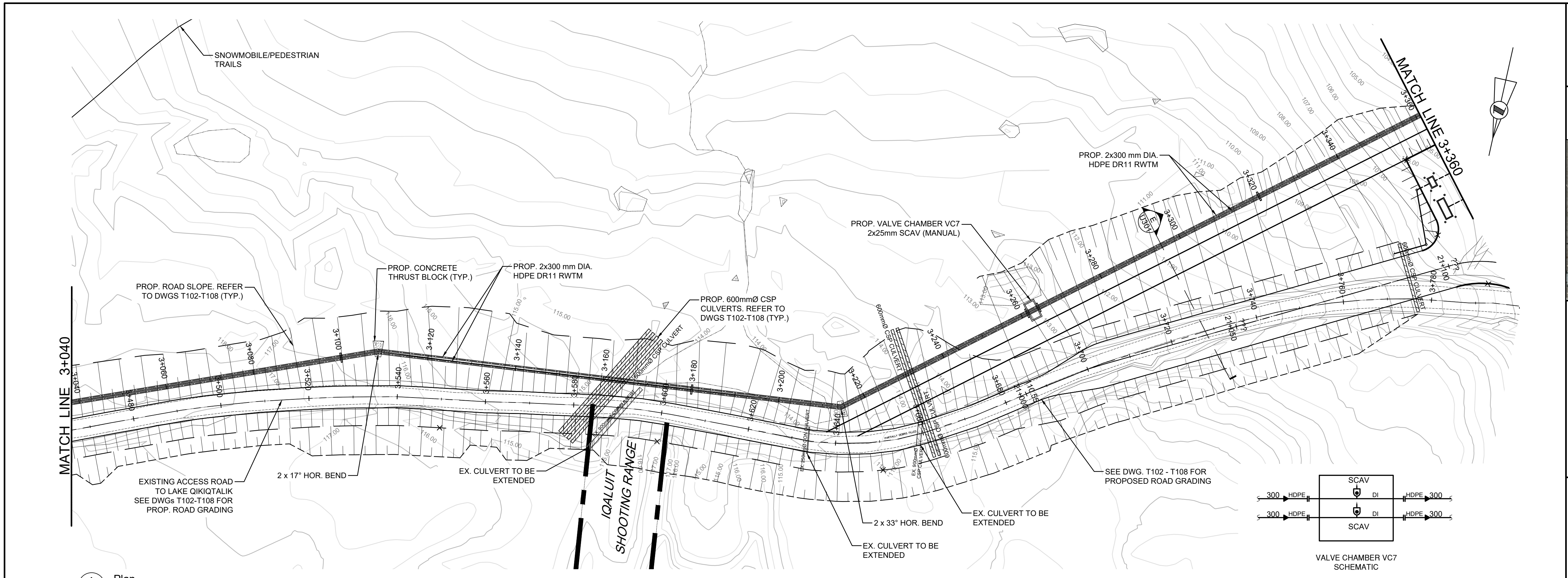
Project Manager
C.G.

Drawing title

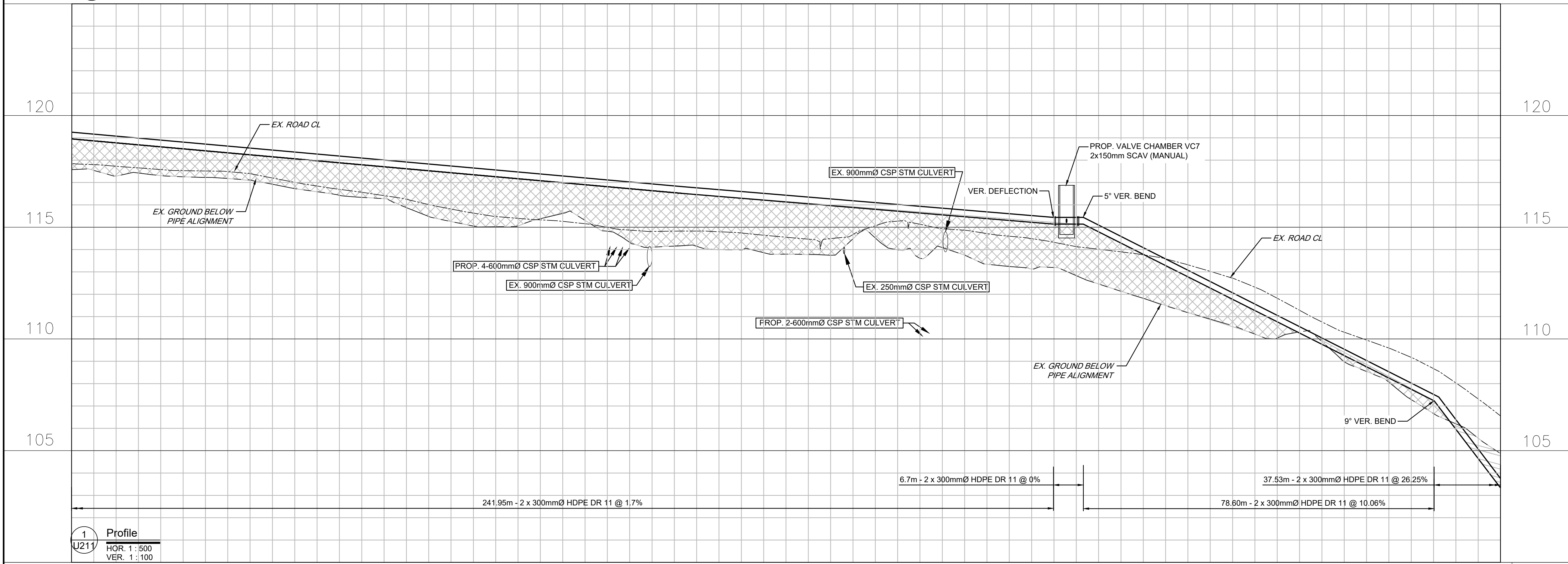
CIVIL

WATERMAIN PLAN AND PROFILE STA. 2+720 TO STA. 3+040

Project no.	Drawing no.	Revision no.
30192375	U210	C


SNOWMOBILE/PEDESTRIAN TRAILS
MATCH LINE 3+040
MATCH LINE 3+360
PROP. ROAD SLOPE. REFER TO DWGS T102-T108 (TYP.)
PROP. CONCRETE THRUST BLOCK (TYP.)
PROP. 2x300 mm DIA. HDPE DR11 RWTM
PROP. 600mmØ CSP CULVERTS. REFER TO DWGS T102-T108 (TYP.)
PROP. VALVE CHAMBER VC7 2x25mm SCAV (MANUAL)
PROP. 2x300 mm DIA. HDPE DR11 RWTM
EXISTING ACCESS ROAD TO LAKE QIKIQTALIK SEE DWGs T102-T108 FOR PROP. ROAD GRADING
2 x 17° HOR. BEND
EX. CULVERT TO BE EXTENDED
IQALUIT SHOOTING RANGE
2 x 33° HOR. BEND
EX. CULVERT TO BE EXTENDED
EX. CULVERT TO BE EXTENDED
SEE DWG. T102 - T108 FOR PROPOSED ROAD GRADING
E U301
3+040
3+060
3+080
3+100
3+120
3+140
3+160
3+180
3+200
3+220
3+240
3+260
3+280
3+300
3+320
3+340
3+360
SCAV
300 HDPE
DI
HDPE 300
SCAV
VALVE CHAMBER VC7 SCHEMATIC

A U211 **Plan**
1 : 500


125
120
115
110
105
EX. ROAD CL
EX. GROUND BELOW PIPE ALIGNMENT
PROP. 4-600mmØ CSP STM CULVERT
EX. 900mmØ CSP STM CULVERT
EX. 900mmØ CSP STM CULVERT
EX. 250mmØ CSP STM CULVERT
PROP. 2-600mmØ CSP STM CULVERT
PROP. VALVE CHAMBER VC7 2x150mm SCAV (MANUAL)
VER. DEFLECTION
5° VER. BEND
EX. ROAD CL
EX. GROUND BELOW PIPE ALIGNMENT
9° VER. BEND
6.7m - 2 x 300mmØ HDPE DR 11 @ 0%
37.53m - 2 x 300mmØ HDPE DR 11 @ 26.25%
241.95m - 2 x 300mmØ HDPE DR 11 @ 1.7%
78.60m - 2 x 300mmØ HDPE DR 11 @ 10.06%

1 U211 **Profile**
HOR. 1 : 500
VER. 1 : 100

PROP. WATERMAIN INVERT ELEVATION	118.95	118.59	118.24	117.88	117.52	117.17	116.81	116.46	116.13	115.80	115.47	115.14	113.79	111.77	109.76	107.75	103.33
EXISTING GROUND ELEVATION	117.59	117.31	117.12	116.43	115.48	115.07	114.82	114.15	113.80	114.52	113.75	113.19	111.82	110.60	109.88	107.29	104.87
C/L CHAINAGE	3+040	3+060	3+080	3+100	3+120	3+140	3+160	3+180	3+200	3+220	3+240	3+260	3+280	3+300	3+320	3+340	3+360

A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

LEGEND:

▨ - GROUND TO BE REMOVED

▩ - FILL ON STRIPED GROUND

SCAV - SANITARY COMBINATION AIR VALVE (MANUAL)

–||– - FLANGE ADAPTOR

Revision	Description	Date
C	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
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Consultant

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www.arcadis.com

Project title
CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
J.E.

Drawn by
N.V.

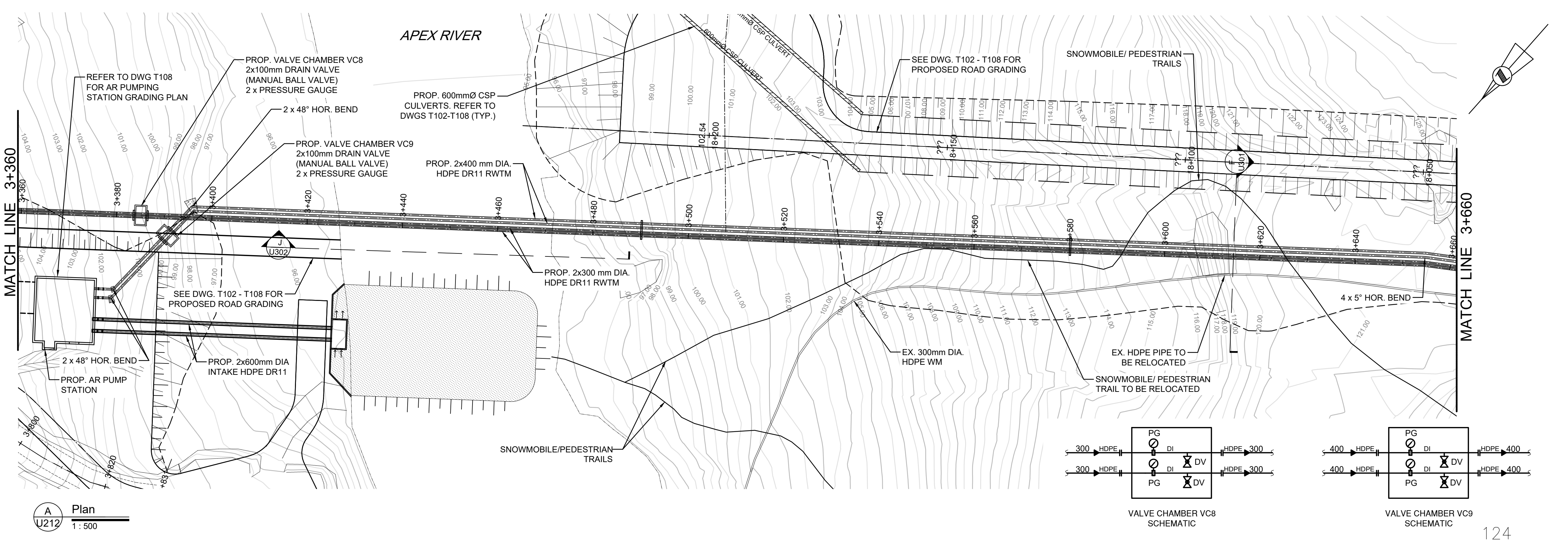
Approved by
G.G.

Project Manager
C.G.

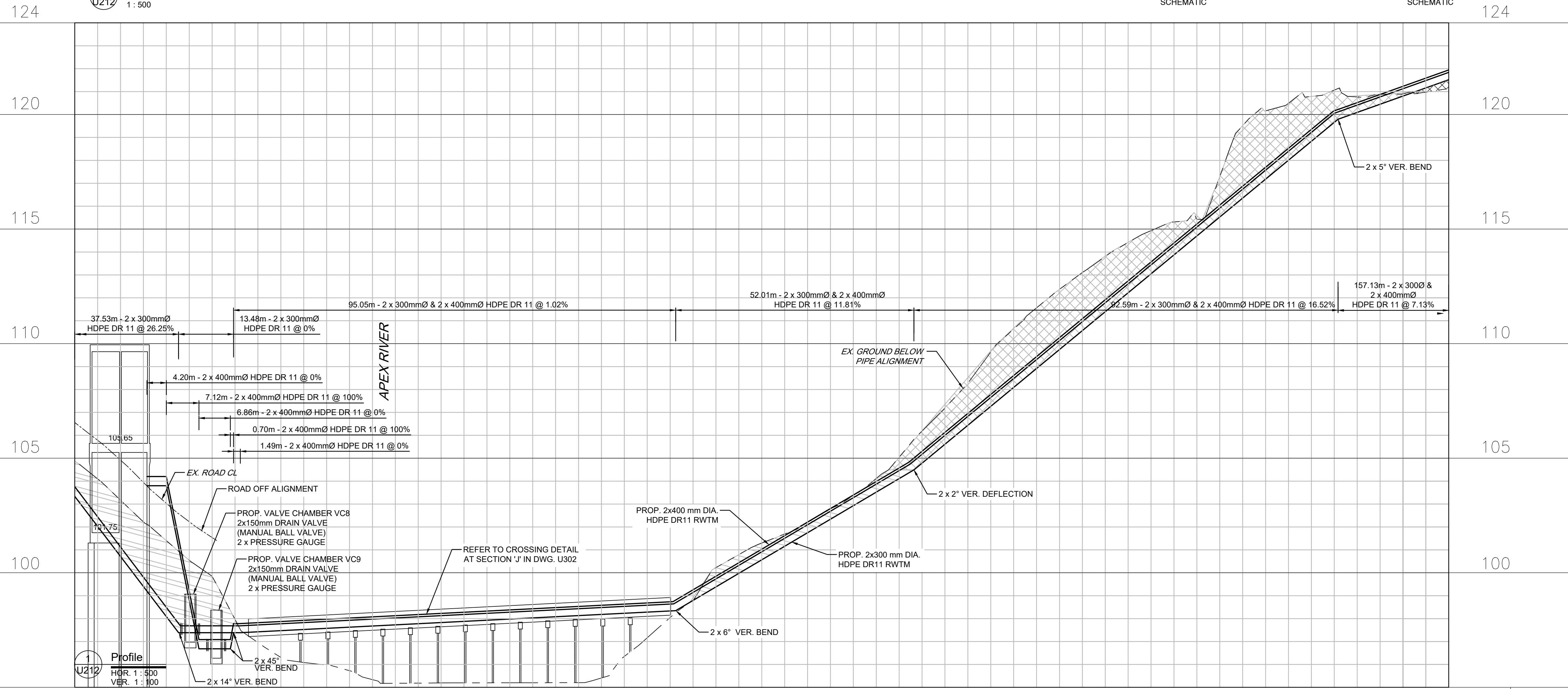
Drawing title
CIVIL

WATERMAIN PLAN AND PROFILE
STA. 3+040 TO STA. 3+360

Project no.	Drawing no.	Revision no.
30192375	U211	C


APEX RIVER
REFER TO DWG T108 FOR AR PUMPING STATION GRADING PLAN
PROP. VALVE CHAMBER VC8 2x100mm DRAIN VALVE (MANUAL BALL VALVE) 2 x PRESSURE GAUGE
2 x 48° HOR. BEND
PROP. VALVE CHAMBER VC9 2x100mm DRAIN VALVE (MANUAL BALL VALVE) 2 x PRESSURE GAUGE
PROP. 600mmØ CSP CULVERTS. REFER TO DWGS T102-T108 (TYP.)
PROP. 2x400 mm DIA. HDPE DR11 RWTM
600mmØ CSP CULVERT
SEE DWG. T102 - T108 FOR PROPOSED ROAD GRADING
SNOWMOBILE/ PEDESTRIAN TRAILS
MATCH LINE 3+360
MATCH LINE 3+660
3+360
3+380
3+400
3+420
3+440
3+460
3+480
3+500
3+520
3+540
3+560
3+580
3+600
3+620
3+640
3+660
8+200
8+150
8+100
8+050
102.54
???
U301
J
U302
SEE DWG. T102 - T108 FOR PROPOSED ROAD GRADING
PROP. 2x300 mm DIA. HDPE DR11 RWTM
2 x 48° HOR. BEND
PROP. AR PUMP STATION
PROP. 2x600mm DIA INTAKE HDPE DR11
SNOWMOBILE/PEDESTRIAN TRAILS
EX. 300mm DIA. HDPE WM
EX. HDPE PIPE TO BE RELOCATED
SNOWMOBILE/ PEDESTRIAN TRAIL TO BE RELOCATED
4 x 5° HOR. BEND
PG
DI
DV
300 HDPE
400 HDPE
VALVE CHAMBER VC8 SCHEMATIC
VALVE CHAMBER VC9 SCHEMATIC

A U212 **Plan**
1 : 500


124
120
115
110
105
100
37.53m - 2 x 300mmØ HDPE DR 11 @ 26.25%
13.48m - 2 x 300mmØ HDPE DR 11 @ 0%
95.05m - 2 x 300mmØ & 2 x 400mmØ HDPE DR 11 @ 1.02%
52.01m - 2 x 300mmØ & 2 x 400mmØ HDPE DR 11 @ 11.81%
92.59m - 2 x 300mmØ & 2 x 400mmØ HDPE DR 11 @ 16.52%
157.13m - 2 x 300Ø & 2 x 400mmØ HDPE DR 11 @ 7.13%
4.20m - 2 x 400mmØ HDPE DR 11 @ 0%
7.12m - 2 x 400mmØ HDPE DR 11 @ 100%
6.86m - 2 x 400mmØ HDPE DR 11 @ 0%
0.70m - 2 x 400mmØ HDPE DR 11 @ 100%
1.49m - 2 x 400mmØ HDPE DR 11 @ 0%
APEX RIVER
105.65
101.75
EX. ROAD CL
ROAD OFF ALIGNMENT
PROP. VALVE CHAMBER VC8 2x150mm DRAIN VALVE (MANUAL BALL VALVE) 2 x PRESSURE GAUGE
PROP. VALVE CHAMBER VC9 2x150mm DRAIN VALVE (MANUAL BALL VALVE) 2 x PRESSURE GAUGE
REFER TO CROSSING DETAIL AT SECTION 'J' IN DWG. U302
PROP. 2x400 mm DIA. HDPE DR11 RWTM
PROP. 2x300 mm DIA. HDPE DR11 RWTM
EX. GROUND BELOW PIPE ALIGNMENT
2 x 2° VER. DEFLECTION
2 x 5° VER. BEND
2 x 6° VER. BEND
2 x 45° VER. BEND
2 x 14° VER. BEND

1 U212 **Profile**
HOR. 1 : 500
VER. 1 : 100

C/L CHAINAGE	PROP. WATERMAIN INVERT ELEVATION	EXISTING GROUND ELEVATION
3+360	103.33	104.87
3+380	98.09 97.38	101.40
3+400	97.42	96.95
3+420	97.63	95.73
3+440	97.83	95.19
3+460	98.03	95.20
3+480	98.23	96.35
3+500	99.38	100.23
3+520	101.75	102.22
3+540	104.11	105.05
3+560	107.26	109.64
3+580	110.57	113.11
3+600	113.87	115.31
3+620	117.18	120.16
3+640	120.09	120.77
3+660	121.52	121.13

0 10 20 30 40 50 60 70 80 90 100mm

A1 – 841X594

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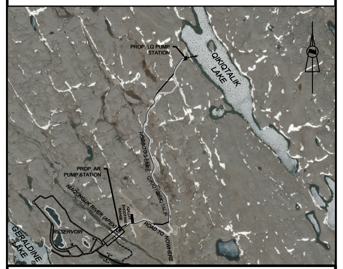

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

LEGEND:

- ▨ - GROUND TO BE REMOVED
- ▩ - FILL ON STRIPED GROUND
- PG - PRESSURE GAUGE
- DV - DRAIN VALVE
- ⊣⊢ - FLANGE ADAPTOR

Revision	Description	Date
C	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
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Project title
CITY OF IQALUIT

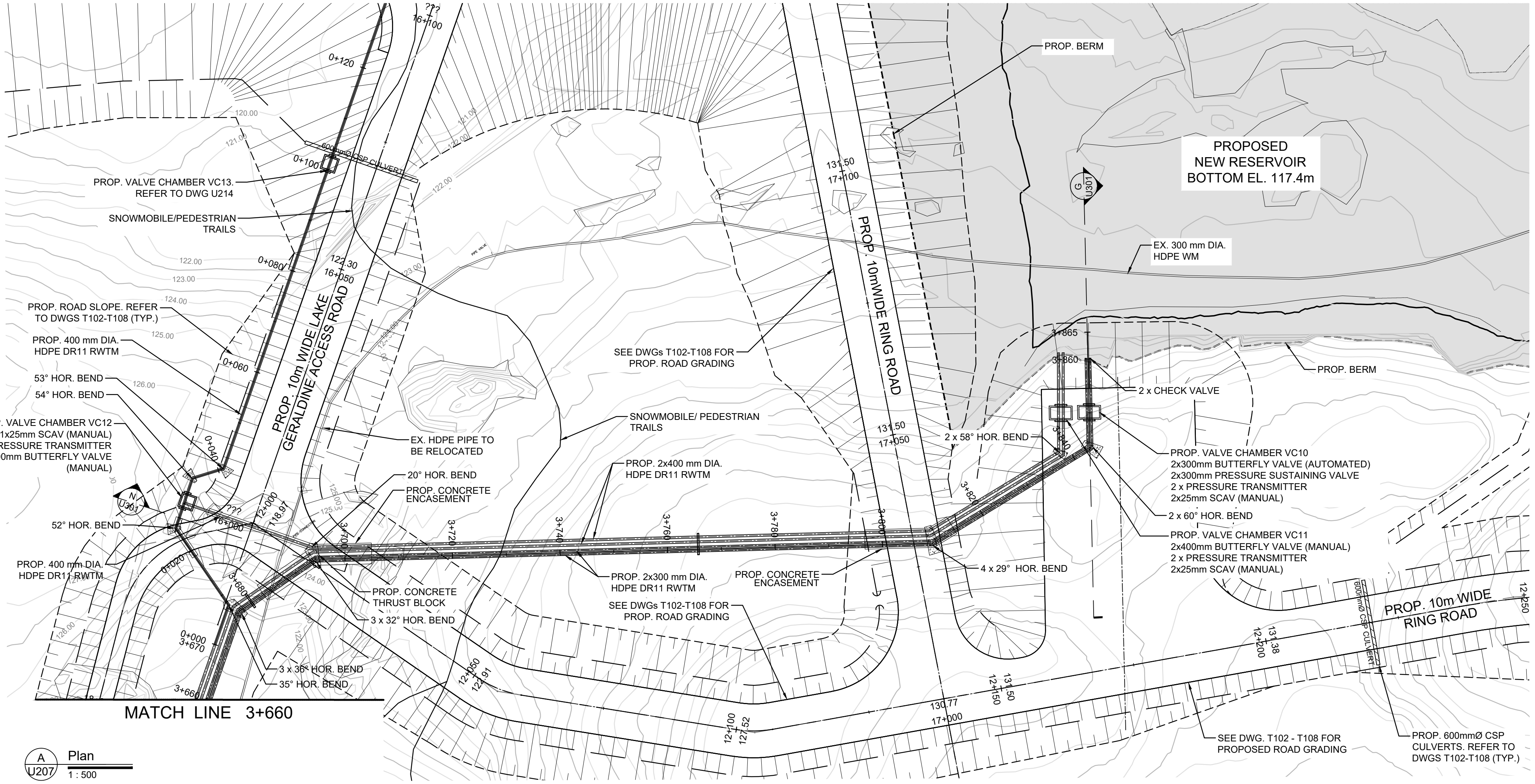
LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
J.E.
Drawn by
N.V.
Approved by
G.G.
Project Manager
C.G.

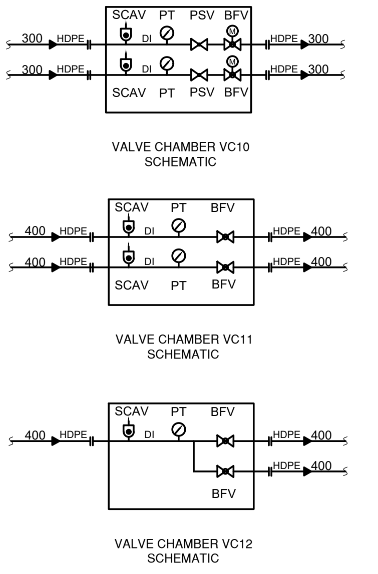
Drawing title
CIVIL

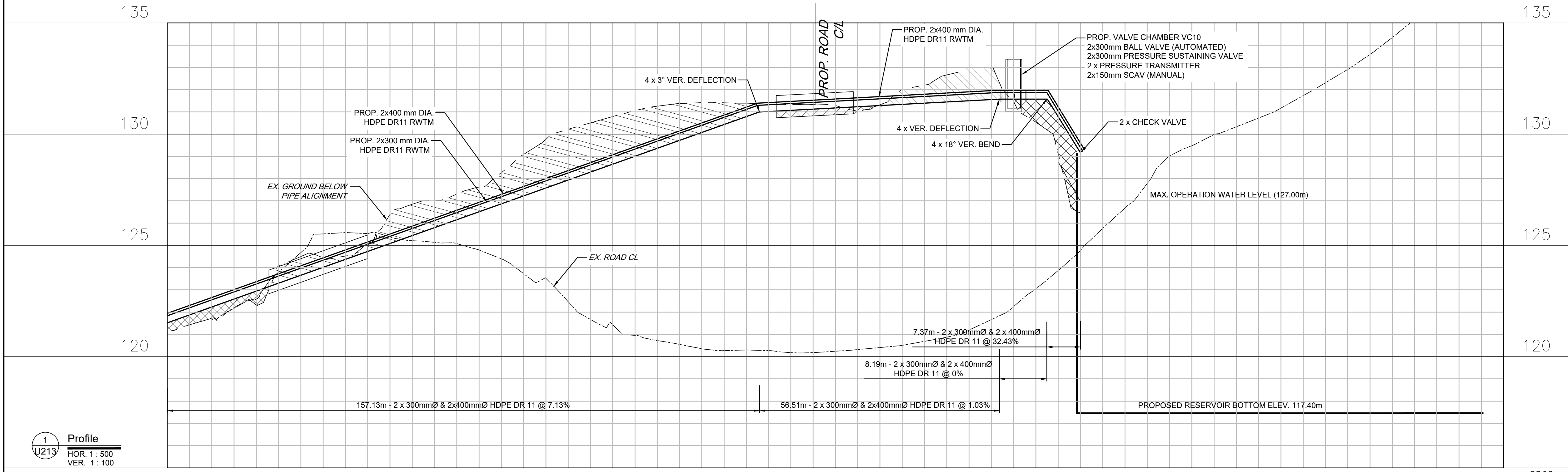
WATERMAIN PLAN AND PROFILE STA. 3+360 TO STA. 3+660

Project no.	Drawing no.	Revision no.
30192375	U212	C


PROP. BERM
PROPOSED NEW RESERVOIR BOTTOM EL. 117.4m
EX. 300 mm DIA. HDPE WM
PROP. VALVE CHAMBER VC13. REFER TO DWG U214
SNOWMOBILE/PEDESTRIAN TRAILS
PROP. ROAD SLOPE. REFER TO DWGS T102-T108 (TYP.)
PROP. 400 mm DIA. HDPE DR11 RWTM
53° HOR. BEND
54° HOR. BEND
PROP. VALVE CHAMBER VC12
1x25mm SCAV (MANUAL)
1x PRESSURE TRANSMITTER
2 x 400mm BUTTERFLY VALVE (MANUAL)
52° HOR. BEND
PROP. 400 mm DIA. HDPE DR11 RWTM
PROP. 10m WIDE LAKE GERALDINE ACCESS ROAD
PROP. 10m WIDE RING ROAD
SEE DWGs T102-T108 FOR PROP. ROAD GRADING
EX. HDPE PIPE TO BE RELOCATED
20° HOR. BEND
PROP. CONCRETE ENCASEMENT
SNOWMOBILE/ PEDESTRIAN TRAILS
PROP. 2x400 mm DIA. HDPE DR11 RWTM
PROP. 2x300 mm DIA. HDPE DR11 RWTM
PROP. CONCRETE ENCASEMENT
PROP. CONCRETE THRUST BLOCK
3 x 32° HOR. BEND
3 x 36° HOR. BEND
35° HOR. BEND
SEE DWGs T102-T108 FOR PROP. ROAD GRADING
2 x CHECK VALVE
2 x 58° HOR. BEND
PROP. VALVE CHAMBER VC10
2x300mm BUTTERFLY VALVE (AUTOMATED)
2x300mm PRESSURE SUSTAINING VALVE
2 x PRESSURE TRANSMITTER
2x25mm SCAV (MANUAL)
2 x 60° HOR. BEND
PROP. VALVE CHAMBER VC11
2x400mm BUTTERFLY VALVE (MANUAL)
2 x PRESSURE TRANSMITTER
2x25mm SCAV (MANUAL)
4 x 29° HOR. BEND
PROP. 10m WIDE RING ROAD
600mmØ CSP CULVERT
SEE DWG. T102 - T108 FOR PROPOSED ROAD GRADING
PROP. 600mmØ CSP CULVERTS. REFER TO DWGS T102-T108 (TYP.)
MATCH LINE 3+660
3+660
3+680
3+700
3+720
3+740
3+760
3+780
3+800
3+820
3+840
3+860
3+865

A
U207
Plan
1 : 500


300 HDPE
SCAV PT PSV BFV
DI
VALVE CHAMBER VC10 SCHEMATIC
400 HDPE
SCAV PT BFV
VALVE CHAMBER VC11 SCHEMATIC
VALVE CHAMBER VC12 SCHEMATIC


PROP. ROAD C/L
PROP. 2x400 mm DIA. HDPE DR11 RWTM
PROP. VALVE CHAMBER VC10
2x300mm BALL VALVE (AUTOMATED)
2x300mm PRESSURE SUSTAINING VALVE
2 x PRESSURE TRANSMITTER
2x150mm SCAV (MANUAL)
4 x 3° VER. DEFLECTION
4 x VER. DEFLECTION
4 x 18° VER. BEND
2 x CHECK VALVE
PROP. 2x400 mm DIA. HDPE DR11 RWTM
PROP. 2x300 mm DIA. HDPE DR11 RWTM
EX. GROUND BELOW PIPE ALIGNMENT
EX. ROAD CL
MAX. OPERATION WATER LEVEL (127.00m)
7.37m - 2 x 300mmØ & 2 x 400mmØ HDPE DR 11 @ 32.43%
8.19m - 2 x 300mmØ & 2 x 400mmØ HDPE DR 11 @ 0%
157.13m - 2 x 300mmØ & 2x400mmØ HDPE DR 11 @ 7.13%
56.51m - 2 x 300mmØ & 2x400mmØ HDPE DR 11 @ 1.03%
PROPOSED RESERVOIR BOTTOM ELEV. 117.40m
135
130
125
120

1
U213
Profile
HOR. 1 : 500
VER. 1 : 100

PROP. WATERMAIN INVERT ELEVATION	121.52	122.95	124.37	125.80	127.22	128.65	130.09	131.07	131.27	131.48	131.58	129.18
EXISTING GROUND ELEVATION	121.13	122.32	124.52	127.01	129.09	130.79	131.42	131.33	131.32	133.00	129.12	126.46
C/L CHAINAGE	3+660	3+680	3+700	3+720	3+740	3+760	3+780	3+800	3+820	3+840	3+860	

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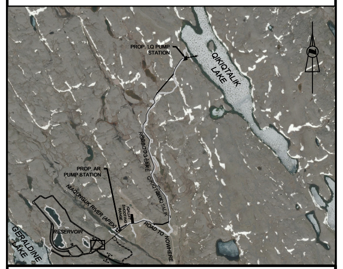

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

LEGEND:

▨	- GROUND TO BE REMOVED
▩	- FILL ON STRIPED GROUND
SCAV	- SANITARY COMBINATION AIR VALVE (MANUAL)
PT	- PRESSURE TRANSMITTER
BV	- BALL VALVE (AUTOMATED)
PSV	- PRESSURE SUSTAINING VALVE
⊣⊢	- FLANGE ADAPTOR

Revision	Description	Date
C	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
A	ISSUED FOR CONCEPT DESIGN	2023-11-27

Consultant

ARCADIS

8133 Warden Avenue - Unit 300
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www.arcadis.com

Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
J.E.

Drawn by
N.V.

Approved by
G.G.

Project Manager
C.G.

Drawing title

CIVIL

WATERMAIN PLAN AND PROFILE STA. 3+660 TO STA. 3+860

Project no.	Drawing no.	Revision no.
30192375	U213	C

A1 - 841X594

0 10 20 30 40 50 60 70 80 90 100mm

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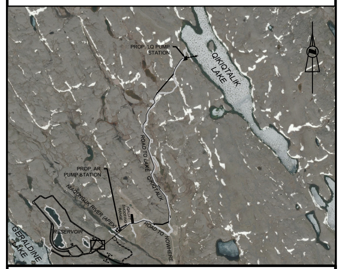
PRELIMINARY
NOT FOR CONSTRUCTION



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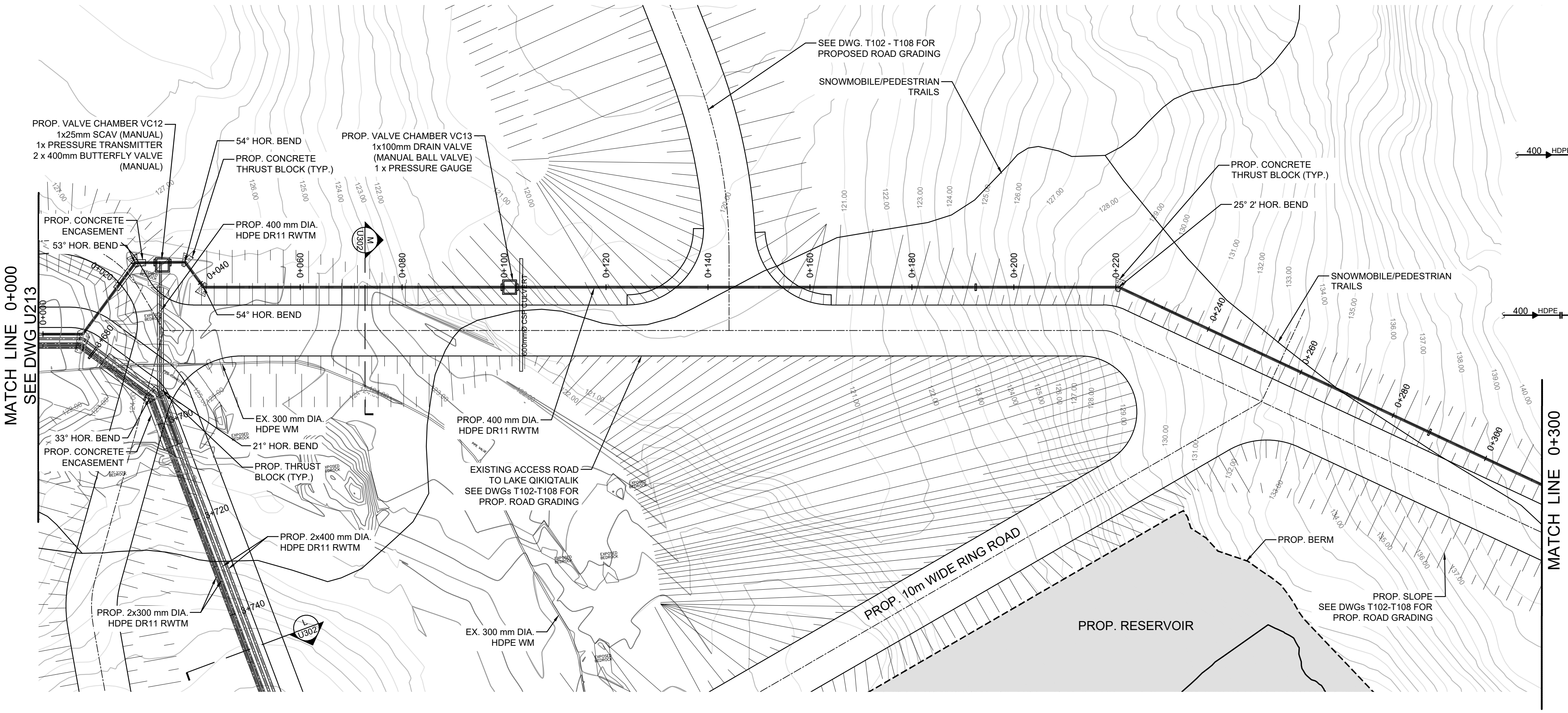
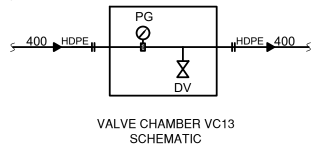
ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

LEGEND:

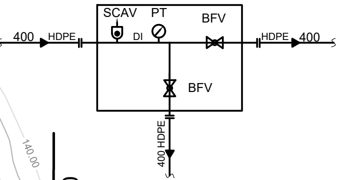
▨	- GROUND TO BE REMOVED
▩	- FILL ON STRIPED GROUND


MATCH LINE 0+000
SEE DWG U213
PROP. VALVE CHAMBER VC12
1x25mm SCAV (MANUAL)
1x PRESSURE TRANSMITTER
2 x 400mm BUTTERFLY VALVE (MANUAL)
54° HOR. BEND
PROP. CONCRETE THRUST BLOCK (TYP.)
PROP. VALVE CHAMBER VC13
1x100mm DRAIN VALVE (MANUAL BALL VALVE)
1 x PRESSURE GAUGE
SEE DWG. T102 - T108 FOR PROPOSED ROAD GRADING
SNOWMOBILE/PEDESTRIAN TRAILS
PROP. CONCRETE ENCASEMENT
53° HOR. BEND
PROP. 400 mm DIA. HDPE DR11 RWTM
54° HOR. BEND
PROP. CONCRETE THRUST BLOCK (TYP.)
25° 2' HOR. BEND
SNOWMOBILE/PEDESTRIAN TRAILS
EX. 300 mm DIA. HDPE WM
21° HOR. BEND
PROP. THRUST BLOCK (TYP.)
33° HOR. BEND
PROP. CONCRETE ENCASEMENT
PROP. 400 mm DIA. HDPE DR11 RWTM
EXISTING ACCESS ROAD TO LAKE QIKIQTALIK
SEE DWGs T102-T108 FOR PROP. ROAD GRADING
PROP. 2x400 mm DIA. HDPE DR11 RWTM
PROP. 2x300 mm DIA. HDPE DR11 RWTM
EX. 300 mm DIA. HDPE WM
PROP. 10m WIDE RING ROAD
PROP. RESERVOIR
PROP. BERM
PROP. SLOPE
SEE DWGs T102-T108 FOR PROP. ROAD GRADING
MATCH LINE 0+300
M U302
L U302
0+000
0+020
0+040
0+060
0+080
0+100
0+120
0+140
0+160
0+180
0+200
0+220
0+240
0+260
0+280
0+300
0+700
0+720
0+740
600mmØ CSP CULVERT

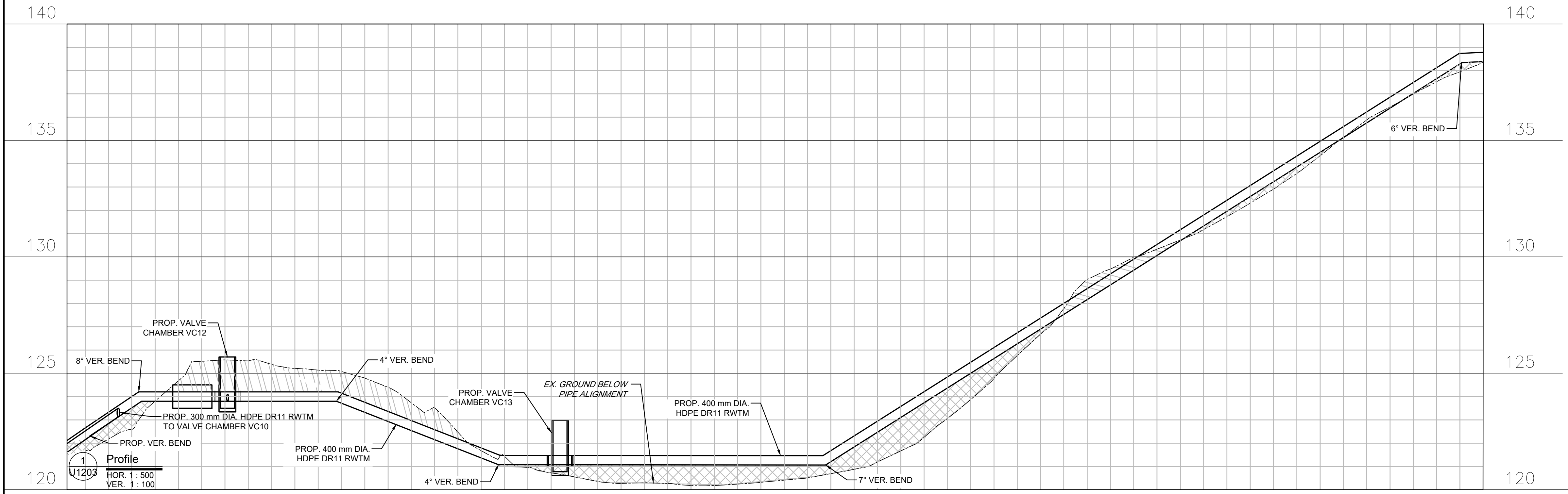
A U1203 **Plan**
1 : 500


400
HDPE
PG
DV
HDPE
400

VALVE CHAMBER VC13
SCHEMATIC


400
HDPE
SCAV
PT
BFV
DI
BFV
400 HDPE
HDPE
400

VALVE CHAMBER VC12
SCHEMATIC


140
135
130
125
120
8° VER. BEND
PROP. VALVE CHAMBER VC12
4° VER. BEND
PROP. 300 mm DIA. HDPE DR11 RWTM TO VALVE CHAMBER VC10
PROP. VER. BEND
PROP. 400 mm DIA. HDPE DR11 RWTM
4° VER. BEND
PROP. VALVE CHAMBER VC13
EX. GROUND BELOW PIPE ALIGNMENT
PROP. 400 mm DIA. HDPE DR11 RWTM
7° VER. BEND
6° VER. BEND

1 U1203 **Profile**
HOR. 1 : 500
VER. 1 : 100

PROP. WATERMAIN INVERT ELEVATION	122.30	123.80	123.80	123.33	121.75	121.07	121.07	121.07	121.07	121.06	123.73	126.26	128.79	131.32	133.85	136.39	138.34
EXISTING GROUND ELEVATION	121.97	125.13	125.45	124.78	122.34		120.72	120.30	120.24	120.69	122.25	125.76	129.48	131.17	133.58	136.44	138.35
C/L CHAINAGE	0+000	0+020	0+040	0+060	0+080		0+100	0+120	0+140	0+160	0+180	0+200	0+220	0+240	0+260	0+280	0+300

A	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
Revision	Description	Date

Consultant

ARCADIS

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Project title
CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
J.E.

Drawn by
N.V.

Approved by
G.G.

Project Manager
C.G.

Drawing title
CIVIL

AR PUMP STATION
WATERMAIN PLAN AND PROFILE
STA. 0+000 TO STA. 0+300

Project no.	Drawing no.	Revision no.
30192375	U214	A

C:\Users\bensaidf2957\DC\ACCDocs\IBI - DT Services\30288139-Iqaluit_LongTermWater C3D2025\Project Files\7.0_Production\7.03_Design\04_Civil\Sheets\U214-U216_PS2.dwg

A1 – 841X594

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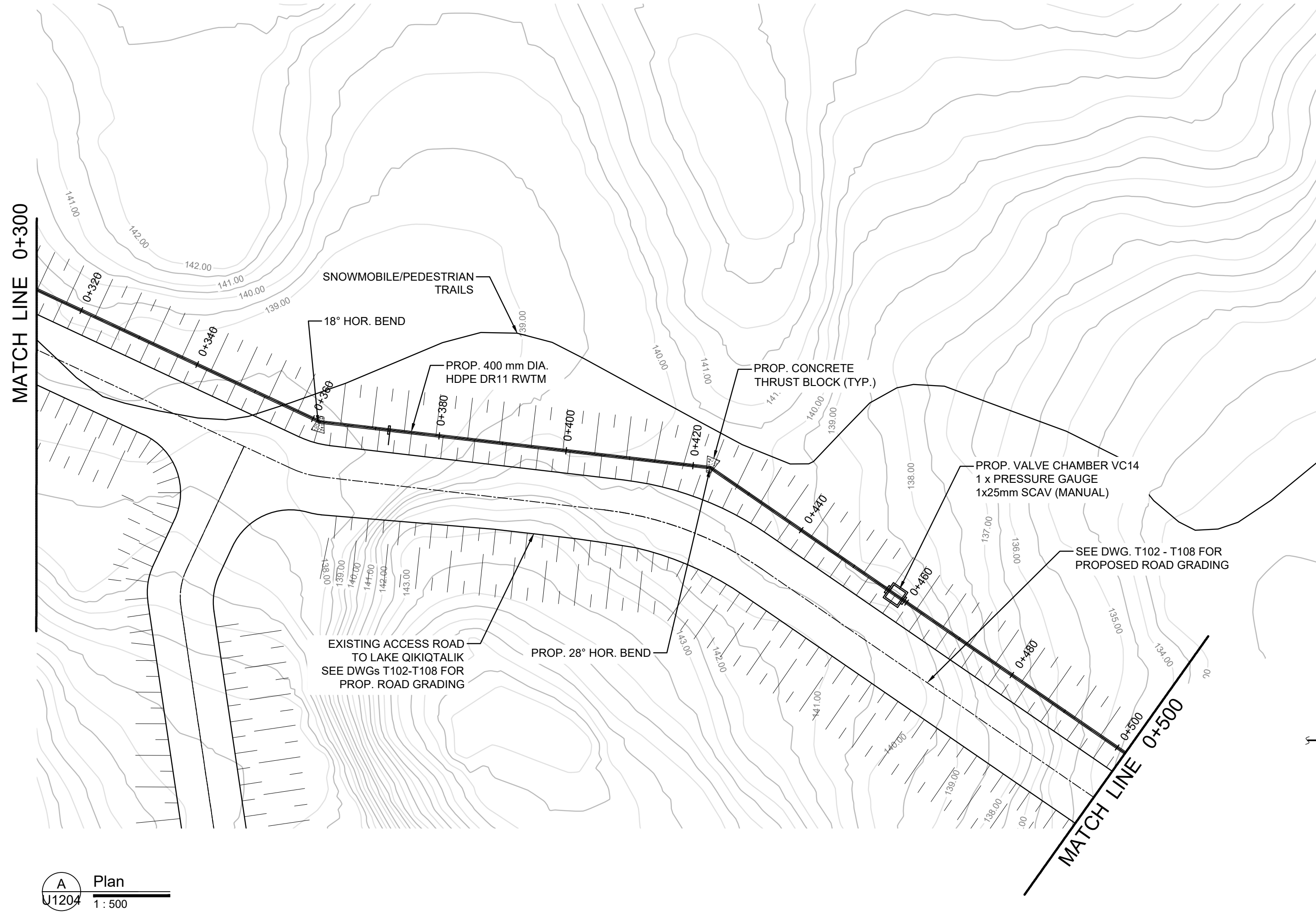
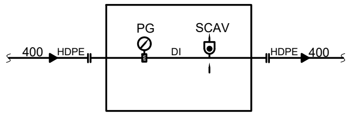
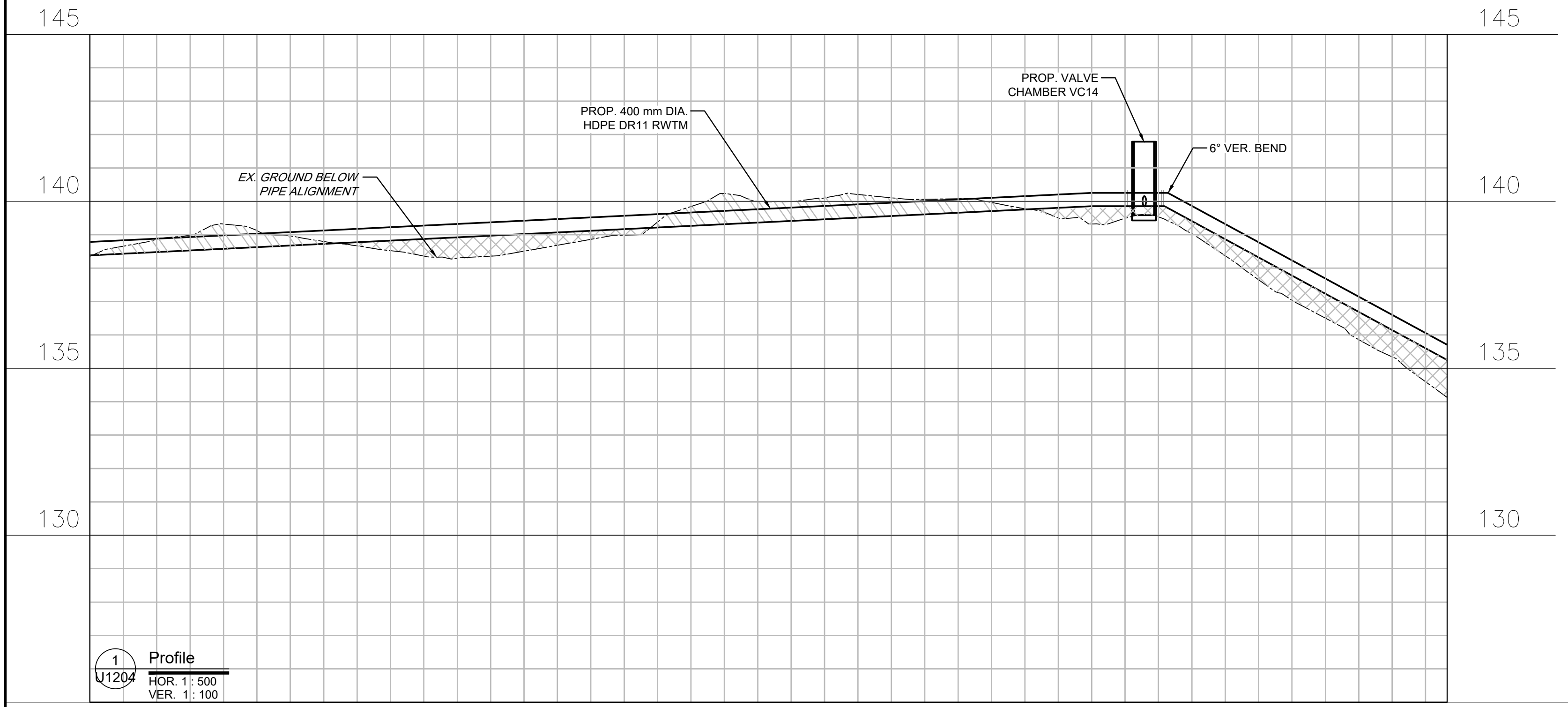

MATCH LINE 0+300
0+320
0+340
0+360
0+380
0+400
0+420
0+440
0+460
0+480
0+500
MATCH LINE 0+500
SNOWMOBILE/PEDESTRIAN TRAILS
18° HOR. BEND
PROP. 400 mm DIA. HDPE DR11 RWTM
PROP. CONCRETE THRUST BLOCK (TYP.)
PROP. VALVE CHAMBER VC14
1 x PRESSURE GAUGE
1x25mm SCAV (MANUAL)
SEE DWG. T102 - T108 FOR PROPOSED ROAD GRADING
EXISTING ACCESS ROAD TO LAKE QIKIQTALIK SEE DWGs T102-T108 FOR PROP. ROAD GRADING
PROP. 28° HOR. BEND
141.00
142.00
142.00
141.00
140.00
139.00
140.00
141.00
140.00
139.00
138.00
137.00
136.00
135.00
134.00
143.00
142.00
141.00
140.00
139.00
138.00

A
U1204
Plan
1 : 500


400
HDPE
PG
DI
SCAV
HDPE
400

VALVE CHAMBER VC14
SCHEMATIC



1
U1204
Profile
HOR. 1 : 500
VER. 1 : 100

PROP. WATERMAIN INVERT ELEVATION		138.60	138.80	138.97	139.17	139.36	139.56	139.76	139.85	139.85	137.77	135.60
EXISTING GROUND ELEVATION	138.35	139.32	138.67	138.36	138.99	140.00	140.11	139.77		139.53	137.04	134.60
C/L CHAINAGE	0+300	0+320	0+340	0+360	0+380	0+400	0+420	0+440		0+460	0+480	0+500

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A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

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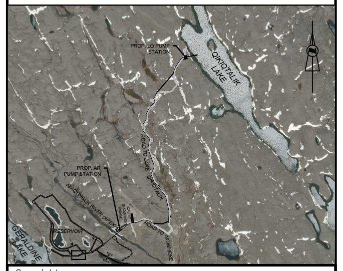

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

LEGEND:

- ▨ - GROUND TO BE REMOVED
- ▩ - FILL ON STRIPED GROUND

Revision	Description	Date
A	ISSUED FOR 50% DESIGN REVIEW	2025-12-19

Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
J.E.

Drawn by
N.V.

Approved by
G.G.

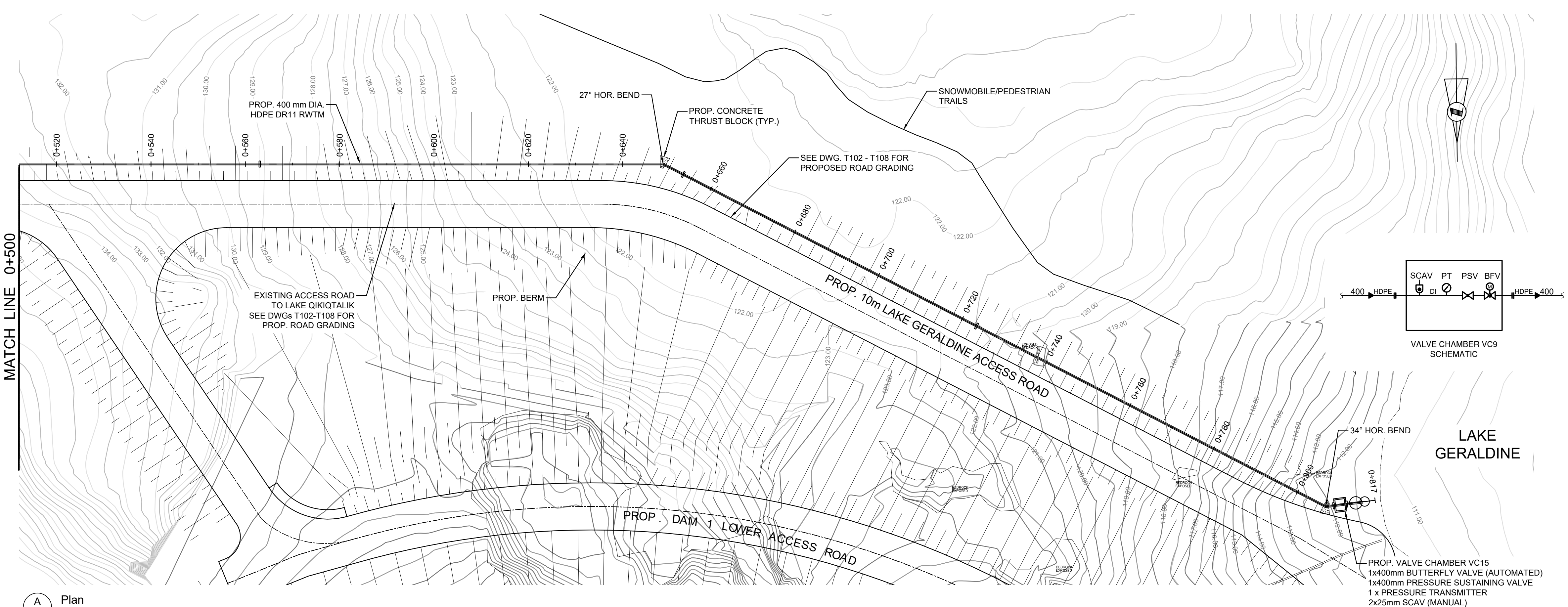
Project Manager
C.G.

Drawing title

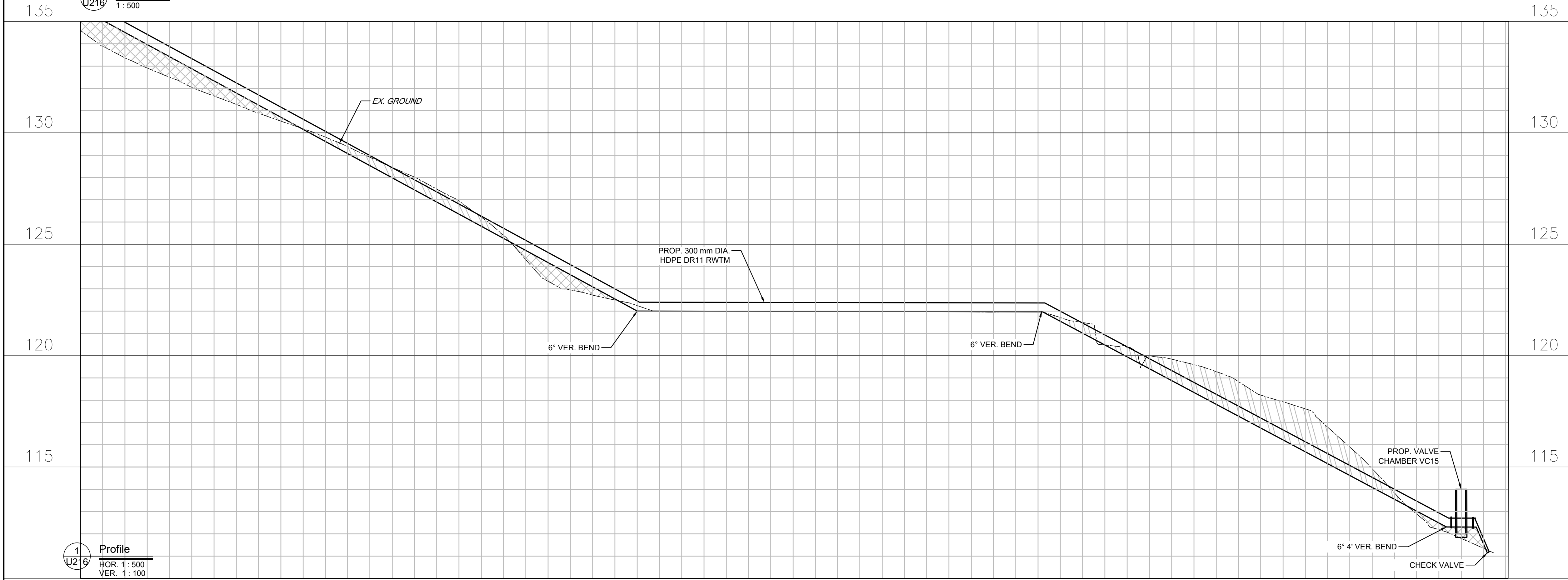
CIVIL

AR PUMP STATION
WATERMAIN PLAN AND PROFILE
STA. 0+300 TO STA. 0+500

Project no.	Drawing no.	Revision no.
30192375	U215	A


MATCH LINE 0+500
0+520
0+540
0+560
0+580
0+600
0+620
0+640
0+660
0+680
0+700
0+720
0+740
0+760
0+780
0+800
0+817
PROP. 400 mm DIA. HDPE DR11 RWTM
27° HOR. BEND
PROP. CONCRETE THRUST BLOCK (TYP.)
SNOWMOBILE/PEDESTRIAN TRAILS
SEE DWG. T102 - T108 FOR PROPOSED ROAD GRADING
EXISTING ACCESS ROAD TO LAKE QIKIQTALIK SEE DWGs T102-T108 FOR PROP. ROAD GRADING
PROP. BERM
PROP. 10m LAKE GERALDINE ACCESS ROAD
PROP. DAM 1 LOWER ACCESS ROAD
34° HOR. BEND
BEDROCK EXPOSED
LAKE GERALDINE
PROP. VALVE CHAMBER VC15
1x400mm BUTTERFLY VALVE (AUTOMATED)
1x400mm PRESSURE SUSTAINING VALVE
1 x PRESSURE TRANSMITTER
2x25mm SCAV (MANUAL)
400
HDPE
SCAV
PT
PSV
BFV
DI
M
VALVE CHAMBER VC9 SCHEMATIC

A U216 **Plan**
1 : 500


135
130
125
120
115
EX. GROUND
PROP. 300 mm DIA. HDPE DR11 RWTM
6° VER. BEND
6° VER. BEND
PROP. VALVE CHAMBER VC15
6° 4' VER. BEND
CHECK VALVE

1 U216 **Profile**
HOR. 1 : 500
VER. 1 : 100

C/L CHAINAGE	PROP. WATERMAIN INVERT ELEVATION	EXISTING GROUND ELEVATION
0+500	135.60	134.60
0+520	133.41	132.50
0+540	131.25	130.88
0+560	129.07	129.38
0+580	126.90	127.48
0+600	124.72	124.30
0+620	122.54	122.50
	122.00	
0+640	122.00	122.00
0+660	121.99	121.99
0+680	121.99	121.99
0+700	121.96	121.96
	121.97	
0+720	121.54	121.71
0+740	119.41	120.22
0+760	117.28	119.05
0+780	115.15	117.20
0+800	113.02	13.44
	112.31	
	112.31	
0+820		

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www.iqaluit.ca

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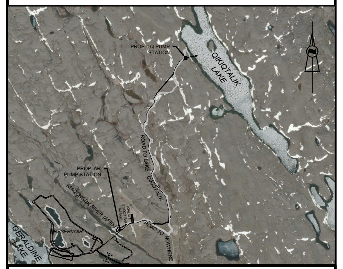
PROP. LQ PUMP STATION
QIKIQTALIK LAKE
ROAD TO LAKE QIKIQTALIK
PROP. AR PUMP STATION
NIAQUNGUK RIVER (APEX)
IQALUIT SHOOTING RANGE
ROAD TO NOWHERE
RESERVOIR
GERALDINE LAKE

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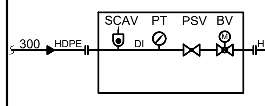
ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

LEGEND:

▨ - GROUND TO BE REMOVED
▩ - FILL ON STRIPED GROUND


300
HDPE
SCAV
PT
PSV
BV
DI
M

VALVE CHAMBER VC15
SCHEMATIC

Revision	Description	Date
A	ISSUED FOR 50% DESIGN REVIEW	2025-12-19

Consultant

ARCADIS
8133 Warden Avenue - Unit 300
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tel 905 763 2322
www.arcadis.com

Project title
CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
J.E.

Drawn by
N.V.

Approved by
G.G.

Project Manager
C.G.

Drawing title
CIVIL

AR PUMP STATION
WATERMAIN PLAN AND PROFILE
STA. 0+500 TO STA. 0+800

Project no.	Drawing no.	Revision no.
30192375	U216	A

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A1 - 841X594

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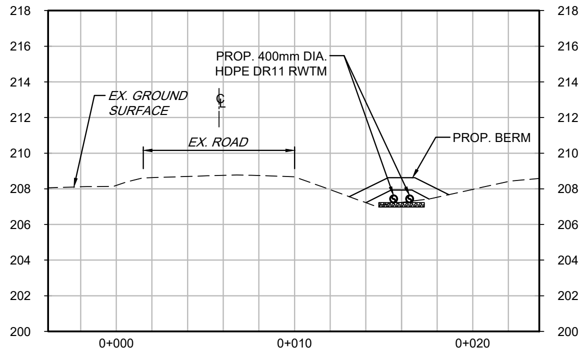
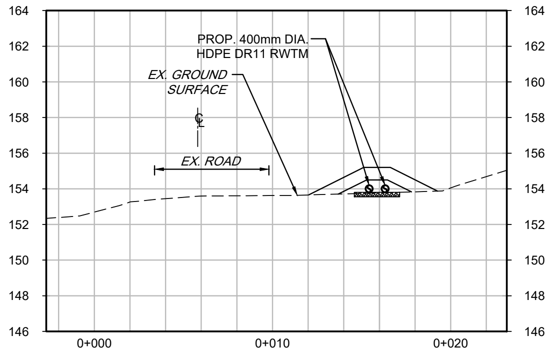
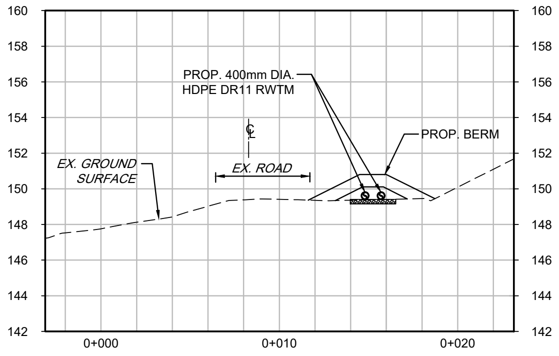

218
216
214
212
210
208
206
204
202
200
PROP. 400mm DIA.
HDPE DR11 RWTM
EX. GROUND
SURFACE
℄
EX. ROAD
PROP. BERM
0+000
0+010
0+020

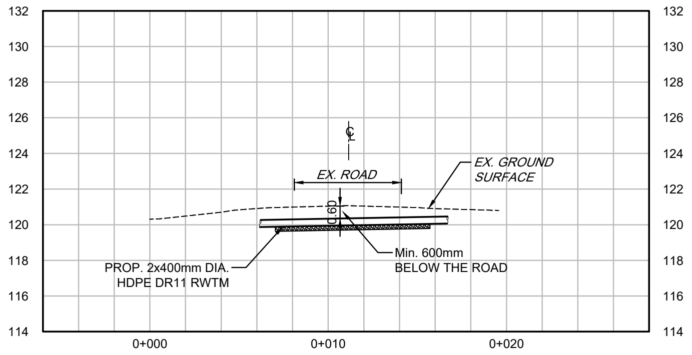
A
U201
SECTION @ STA. 0+130.00
1 : 200


164
162
160
158
156
154
152
150
148
146
PROP. 400mm DIA.
HDPE DR11 RWTM
EX. GROUND
SURFACE
℄
EX. ROAD
0+000
0+010
0+020

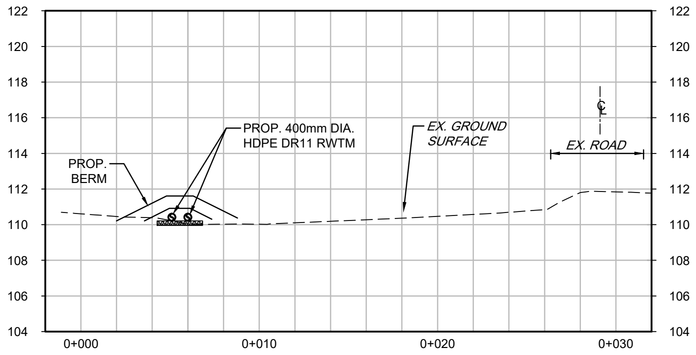
B
U204
SECTION @ STA. 0+995.00
1 : 200


160
158
156
154
152
150
148
146
144
142
PROP. 400mm DIA.
HDPE DR11 RWTM
PROP. BERM
℄
EX. GROUND
SURFACE
EX. ROAD
0+000
0+010
0+020

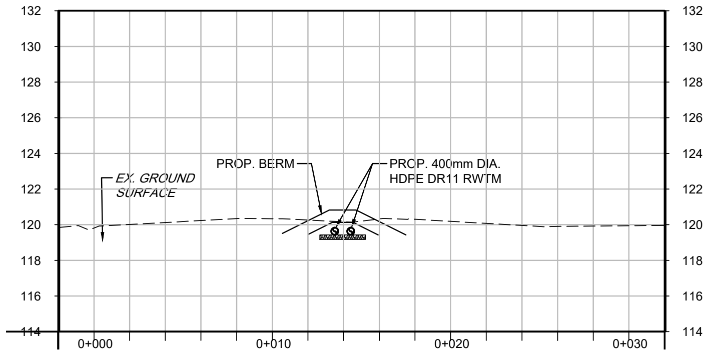
C
U205
SECTION @ STA. 1+270.00
1 : 200


132
130
128
126
124
122
120
118
116
114
℄
EX. ROAD
EX. GROUND
SURFACE
0.60
PROP. 2x400mm DIA.
HDPE DR11 RWTM
Min. 600mm
BELOW THE ROAD
0+000
0+010
0+020

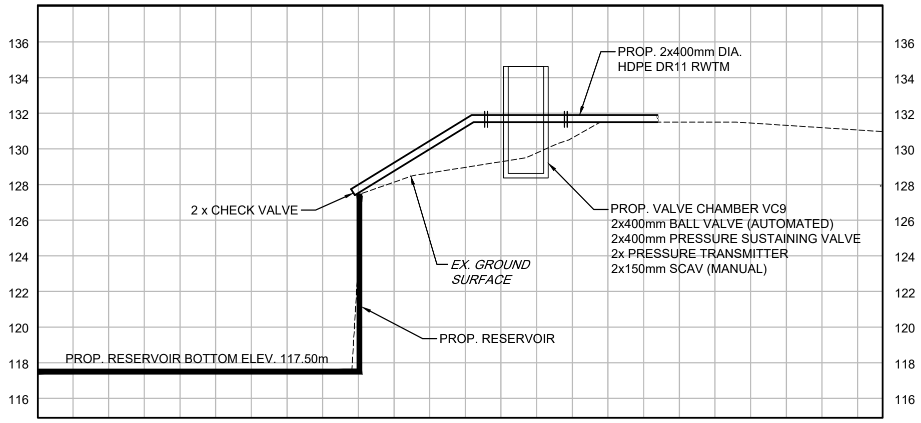
D
U210
SECTION @ STA. 2+880.00
1 : 200


122
120
118
116
114
112
110
108
106
104
PROP. 400mm DIA.
HDPE DR11 RWTM
EX. GROUND
SURFACE
℄
EX. ROAD
PROP.
BERM
0+000
0+010
0+020
0+030

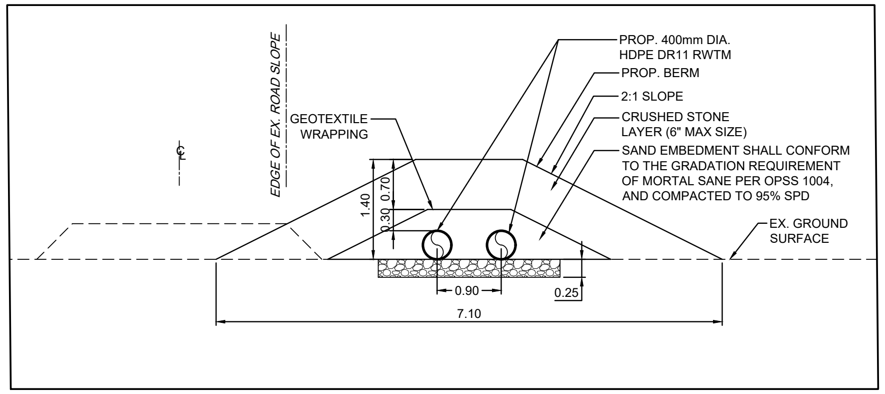
E
U211
SECTION STA. 3+310.00
1 : 200


132
130
128
126
124
122
120
118
116
114
PROP. BERM
PRCP. 400mm DIA.
HDPE DR11 RWTM
EX. GROUND
SURFACE
0+000
0+010
0+020
0+030

F
U212
SECTION @ STA. 3+845.00
1 : 200


136
134
132
130
128
126
124
122
120
118
116
PROP. 2x400mm DIA.
HDPE DR11 RWTM
2 x CHECK VALVE
PROP. VALVE CHAMBER VC9
2x400mm BALL VALVE (AUTOMATED)
2x400mm PRESSURE SUSTAINING VALVE
2x PRESSURE TRANSMITTER
2x150mm SCAV (MANUAL)
EX. GROUND
SURFACE
PROP. RESERVOIR
PROP. RESERVOIR BOTTOM ELEV. 117.50m

G
U213
SECTION @ RESERVOIR OUTLET
1 : 200


℄
EDGE OF EX. ROAD SLOPE
GEOTEXTILE
WRAPPING
PROP. 400mm DIA.
HDPE DR11 RWTM
PROP. BERM
2:1 SLOPE
CRUSHED STONE
LAYER (6" MAX SIZE)
SAND EMBEDMENT SHALL CONFORM
TO THE GRADATION REQUIREMENT
OF MORTAL SANE PER OPSS 1004,
AND COMPACTED TO 95% SPD
EX. GROUND
SURFACE
1.40
0.70
0.30
0.90
0.25
7.10

-
-
TYPICAL SECTION
1 : 50

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
C	ISSUED FOR 50% DESIGN REVIEW	
B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
A	ISSUED FOR CONCEPT DESIGN	2023-11-27

Consultant

8133 Warden Avenue - Unit 300
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tel 905 763 2322
www.arcadis.com

Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
J.E.

Drawn by
L.E.

Approved by
G.G.

Project Manager
C.G.

Drawing title

CIVIL

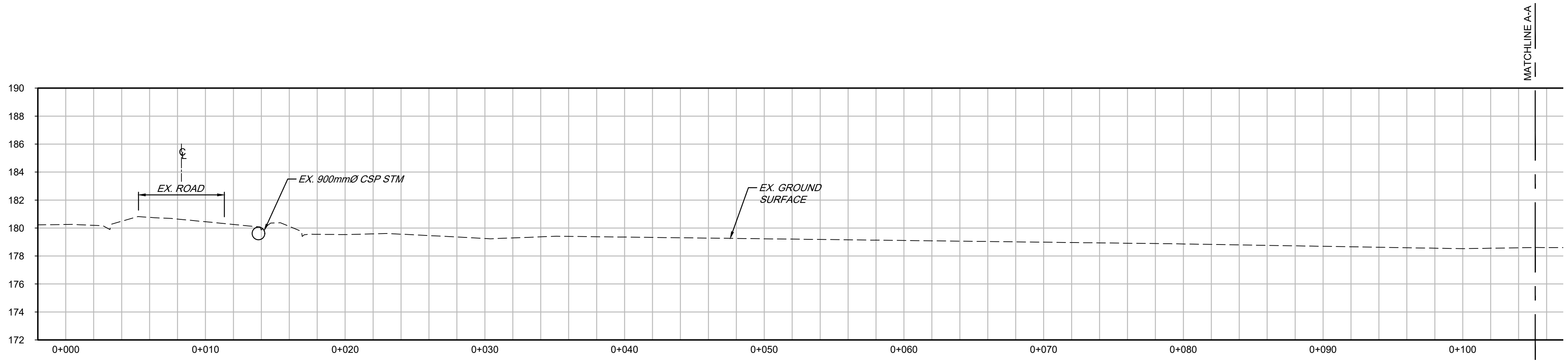
WATERMAIN CROSS SECTIONS
1 OF 2

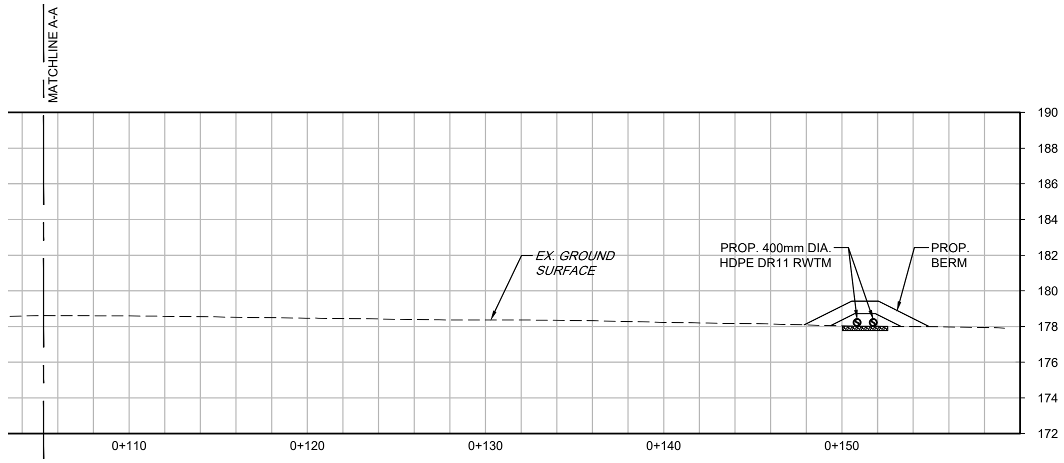
Project no.	Drawing no.	Revision no.
30192375	U301	C

C:\Users\bensaidf2957\DC\ACCDocs\IBI - DT Services\30288139-Iqaluit_LongTermWater C3D2025\Project Files\7.0_Production\7.03_Design\04_Civil\Sheets\U301-U302.dwg

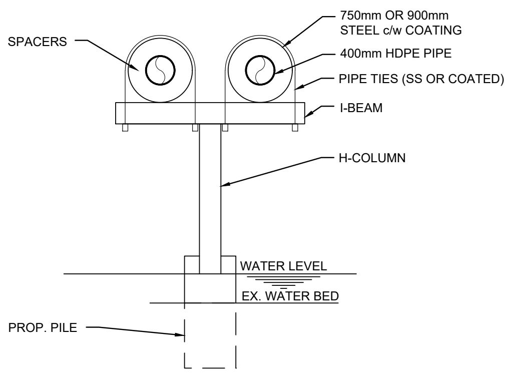
A1 - 841X594

0 10 20 30 40 50 60 70 80 90 100mm

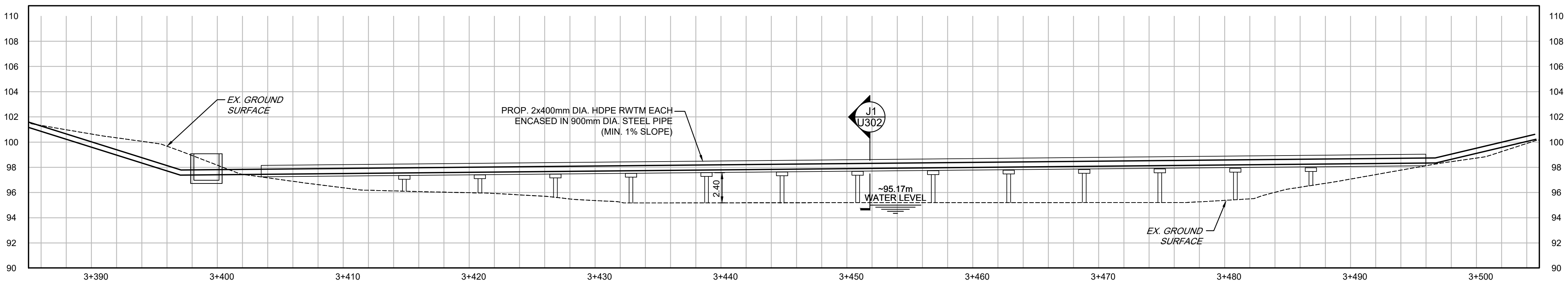

MATCHLINE A-A
190
188
186
184
182
180
178
176
174
172
℄
EX. ROAD
EX. 900mmØ CSP STM
EX. GROUND SURFACE
0+000
0+010
0+020
0+030
0+040
0+050
0+060
0+070
0+080
0+090
0+100


MATCHLINE A-A
190
188
186
184
182
180
178
176
174
172
EX. GROUND SURFACE
PROP. 400mm DIA. HDPE DR11 RWTM
PROP. BERM
0+110
0+120
0+130
0+140
0+150

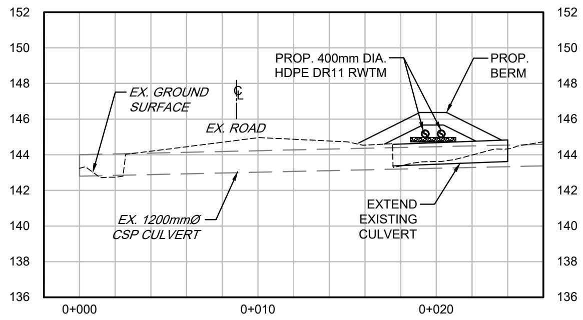
I
U202
SECTION @ STA. 0+450.00
1 : 200


SPACERS
750mm OR 900mm STEEL c/w COATING
400mm HDPE PIPE
PIPE TIES (SS OR COATED)
I-BEAM
H-COLUMN
WATER LEVEL
EX. WATER BED
PROP. PILE

J1
U302
SECTION
N.T.S.


110
108
106
104
102
100
98
96
94
92
90
EX. GROUND SURFACE
PROP. 2x400mm DIA. HDPE RWTM EACH ENCASED IN 900mm DIA. STEEL PIPE (MIN. 1% SLOPE)
J1
U302
2.40
~95.17m WATER LEVEL
EX. GROUND SURFACE
3+390
3+400
3+410
3+420
3+430
3+440
3+450
3+460
3+470
3+480
3+490
3+500

J
U212
SECTION ALONG APEX RIVER
1 : 200


152
150
148
146
144
142
140
138
136
EX. GROUND SURFACE
℄
EX. ROAD
PROP. 400mm DIA. HDPE DR11 RWTM
PROP. BERM
EX. 1200mmØ CSP CULVERT
EXTEND EXISTING CULVERT
0+000
0+010
0+020

K
U204
TYPICAL SECTION CROSSING OVER CULVERT (STA. 1+200)
1 : 200

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A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

C	ISSUED FOR 50% DESIGN REVIEW	
B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
A	ISSUED FOR CONCEPT DESIGN	2023-11-27
Revision	Description	Date

Consultant

ARCADIS

8133 Warden Avenue - Unit 300
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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
J.E.

Drawn by
L.E.

Approved by
G.G.

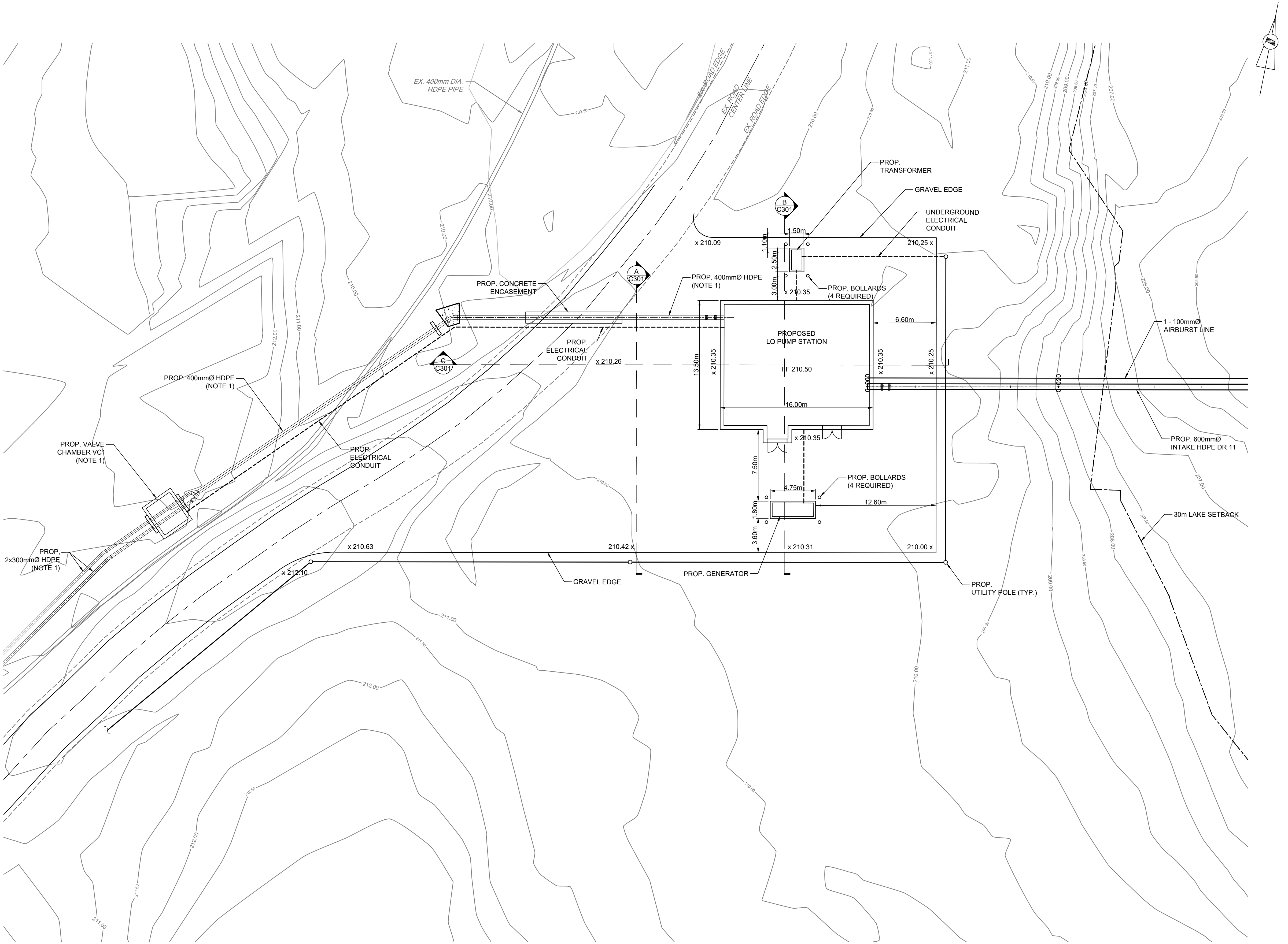
Project Manager
C.G.

Drawing title

CIVIL

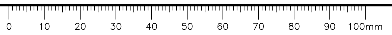
WATERMAIN CROSS SECTIONS 2 OF 2

Project no.	Drawing no.	Revision no.
30192375	**U302**	**C**


EX. 400mm DIA.
HDPE PIPE
EX. ROAD EDGE
EX. ROAD CENTER LINE
EX. ROAD EDGE
PROP. TRANSFORMER
GRAVEL EDGE
UNDERGROUND ELECTRICAL CONDUIT
B C301
1.50m
1.10m
2.50m
3.00m
x 210.09
210.25 x
x 210.35
PROP. BOLLARDS (4 REQUIRED)
A C301
PROP. CONCRETE ENCASEMENT
PROP. 400mmØ HDPE (NOTE 1)
PROPOSED LQ PUMP STATION
FF 210.50
6.60m
13.50m
x 210.35
x 210.35
x 210.25
16.00m
PROP. ELECTRICAL CONDUIT
x 210.26
C C301
1 - 100mmØ AIRBURST LINE
PROP. 400mmØ HDPE (NOTE 1)
PROP. VALVE CHAMBER VC1 (NOTE 1)
PROP. ELECTRICAL CONDUIT
x 210.35
PROP. 600mmØ INTAKE HDPE DR 11
7.50m
4.75m
PROP. BOLLARDS (4 REQUIRED)
12.60m
1.80m
3.60m
30m LAKE SETBACK
PROP. 2x300mmØ HDPE (NOTE 1)
x 210.63
210.42 x
x 210.31
210.00 x
x 212.10
GRAVEL EDGE
PROP. GENERATOR
PROP. UTILITY POLE (TYP.)
209.50
210.00
211.00
212.00
211.50
210.50
208.00
207.00
206.00
205.50
206.50
207.50
208.50
209.00

A
C101

Site Plan
1 : 200


0
10
20
30
40
50
60
70
80
90
100mm

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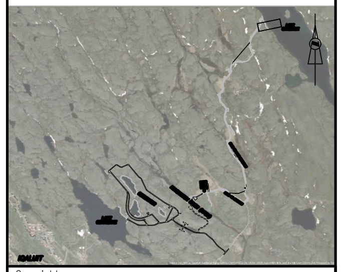

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

NOTES:

1. REFER TO UTILITY DRAWINGS FOR RAW WATERMAINS PLAN AND PROFILES.
2. REFER TO GRADING DRAWINGS T1010 - T117 FOR ROAD AND DRAINAGE DESIGN.

Revision	Description	Date
C	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
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Consultant

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www.arcadis.com

Project title
CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
A.P.

Drawn by
L.E.

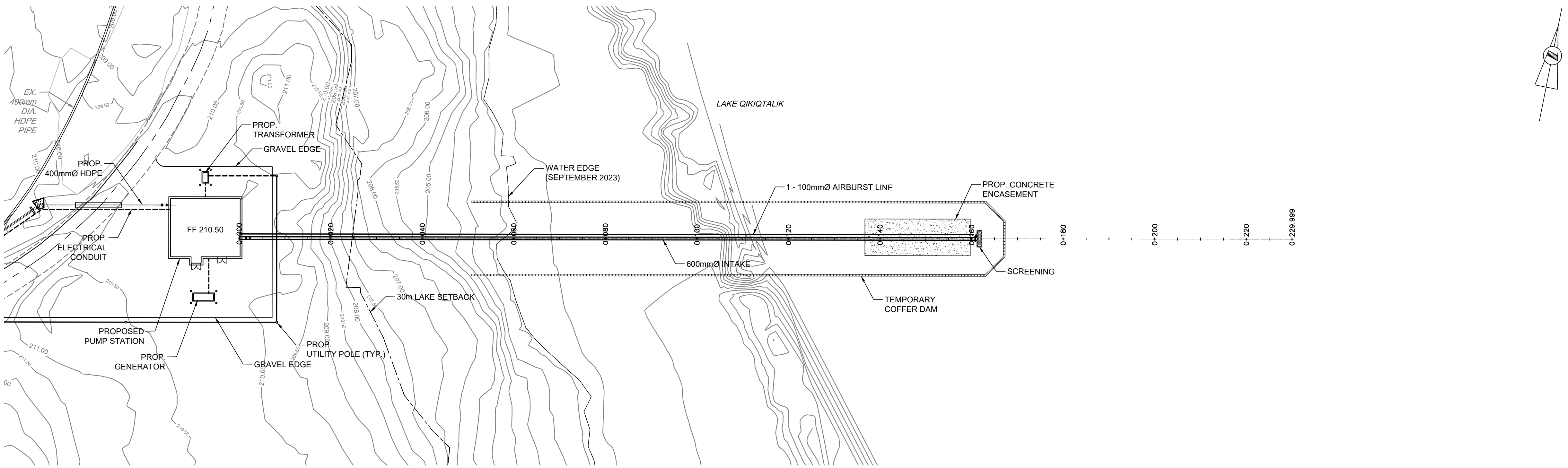
Approved by
G.G.

Project Manager
C.G.

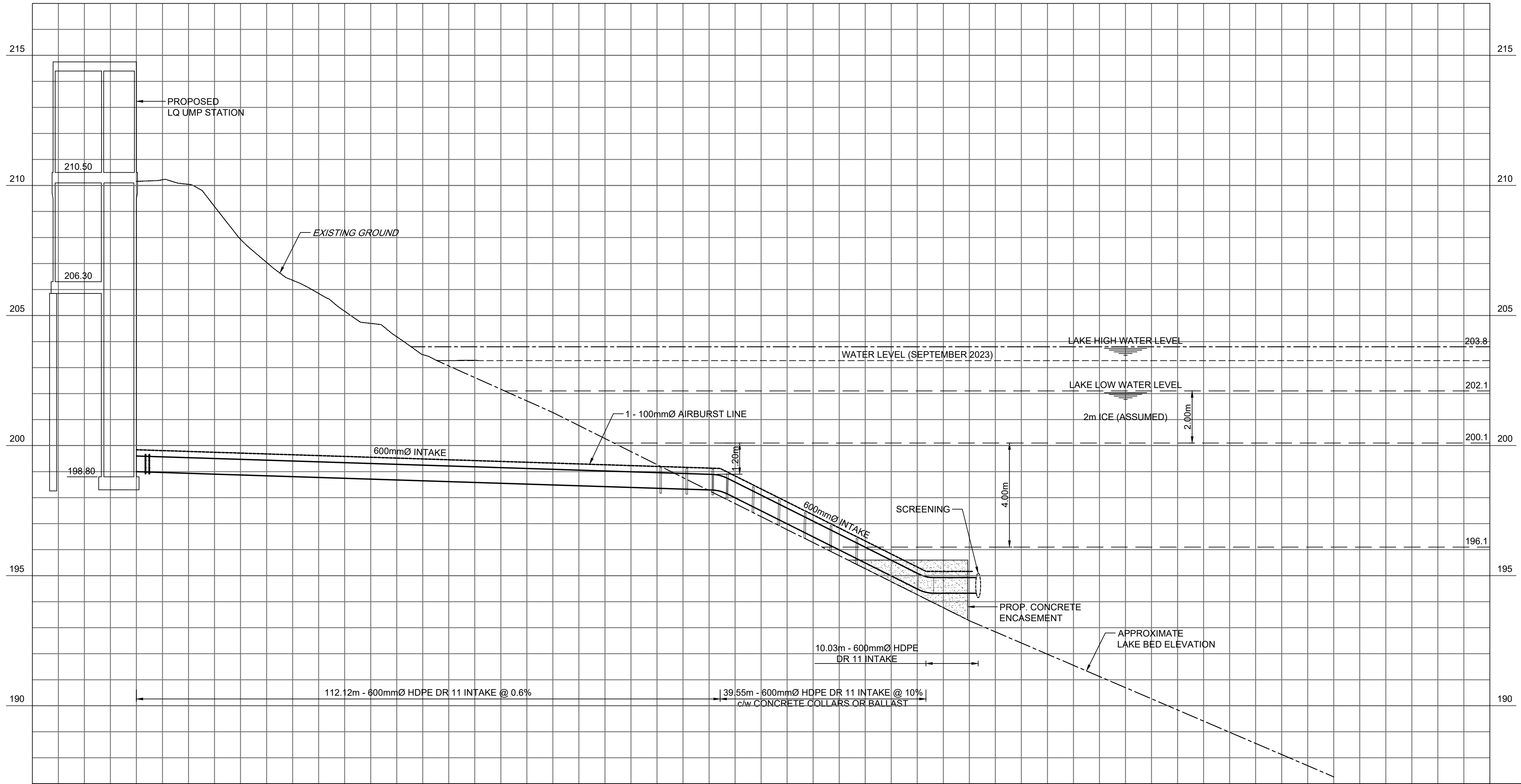
Drawing title
CIVIL

LQ PUMP STATION
SITE PLAN

Project no.	Drawing no.	Revision no.
30192375	C101	C


EX.
400mm
DIA.
HDPE
PIPE
PROP.
400mmØ HDPE
PROP.
ELECTRICAL
CONDUIT
PROP.
TRANSFORMER
GRAVEL EDGE
FF 210.50
PROPOSED
PUMP STATION
PROP.
GENERATOR
GRAVEL EDGE
PROP.
UTILITY POLE (TYP.)
30m LAKE SETBACK
WATER EDGE
(SEPTEMBER 2023)
LAKE QIKIQTALIK
1 - 100mmØ AIRBURST LINE
600mmØ INTAKE
PROP. CONCRETE
ENCASEMENT
SCREENING
TEMPORARY
COFFER DAM
0+000
0+020
0+040
0+060
0+080
0+100
0+120
0+140
0+160
0+180
0+200
0+220
0+229.999
209.00
209.50
210.00
210.50
211.00
211.50
208.00
208.50
207.00
207.50
206.00
206.50
205.00
205.50

A
C201
Plan
1 : 500


215
210
205
200
195
190
PROPOSED
LQ UMP STATION
210.50
206.30
198.80
EXISTING GROUND
LAKE HIGH WATER LEVEL
203.8
WATER LEVEL (SEPTEMBER 2023)
LAKE LOW WATER LEVEL
202.1
2m ICE (ASSUMED)
2.00m
200.1
1 - 100mmØ AIRBURST LINE
600mmØ INTAKE
1.20m
600mmØ INTAKE
4.00m
196.1
SCREENING
PROP. CONCRETE
ENCASEMENT
APPROXIMATE
LAKE BED ELEVATION
10.03m - 600mmØ HDPE
DR 11 INTAKE
112.12m - 600mmØ HDPE DR 11 INTAKE @ 0.6%
39.55m - 600mmØ HDPE DR 11 INTAKE @ 10%
c/w CONCRETE COLLARS OR BALLAST

C/L CHAINAGE	PROPOSED WATERMAIN INVERT ELEVATION	EXISTING GROUND ELEVATION
0+000	199.00	210.16
0+020	198.90	207.93
0+040	198.80	205.16
0+060	198.70	203.26
0+080	198.60	201.27
0+100	198.50	199.27
0+110 0+112.1	198.28	198.06
0+120	197.49	197.27
0+140	195.49	195.27
	194.32	
0+157.5 0+160	194.32	193.52 193.27
0+180		191.55
0+200		189.84
0+220		188.12
0+240		
0+260		

2
C201
Profile
HOR. 1 : 500
VER. 1 : 100

0 10 20 30 40 50 60 70 80 90 100mm

A1 – 841X594

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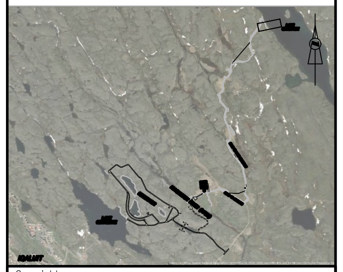

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Consultant

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Project title
CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
A.P.

Drawn by
L.E.

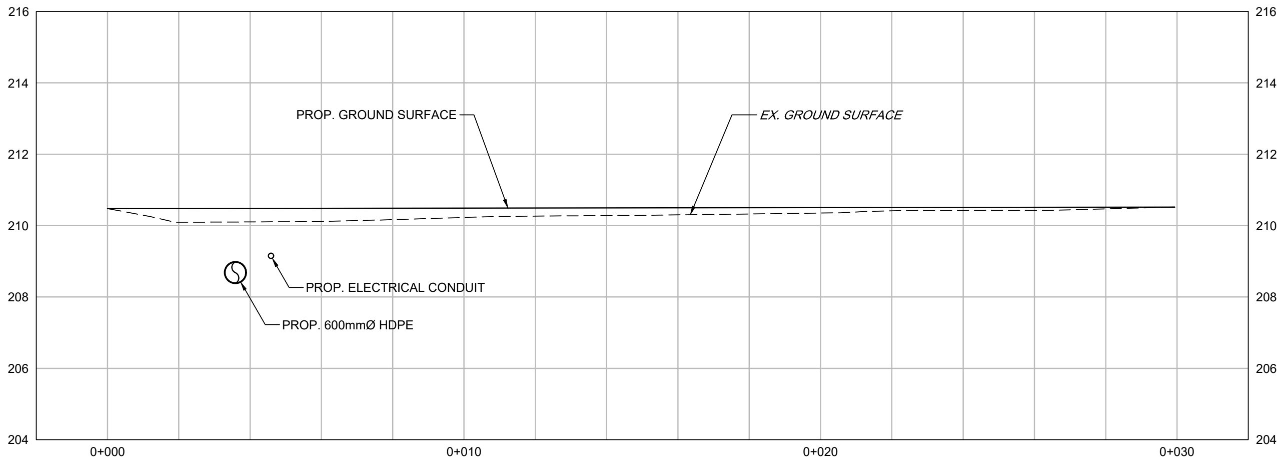
Approved by
G.G.

Project Manager
C.G.

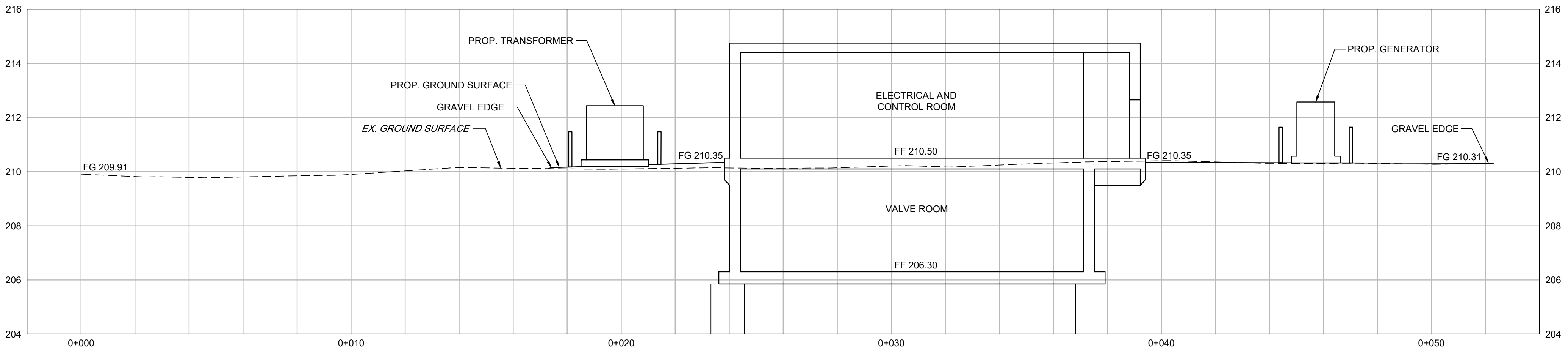
Drawing title
CIVIL

LQ PUMP STATION
INTAKE

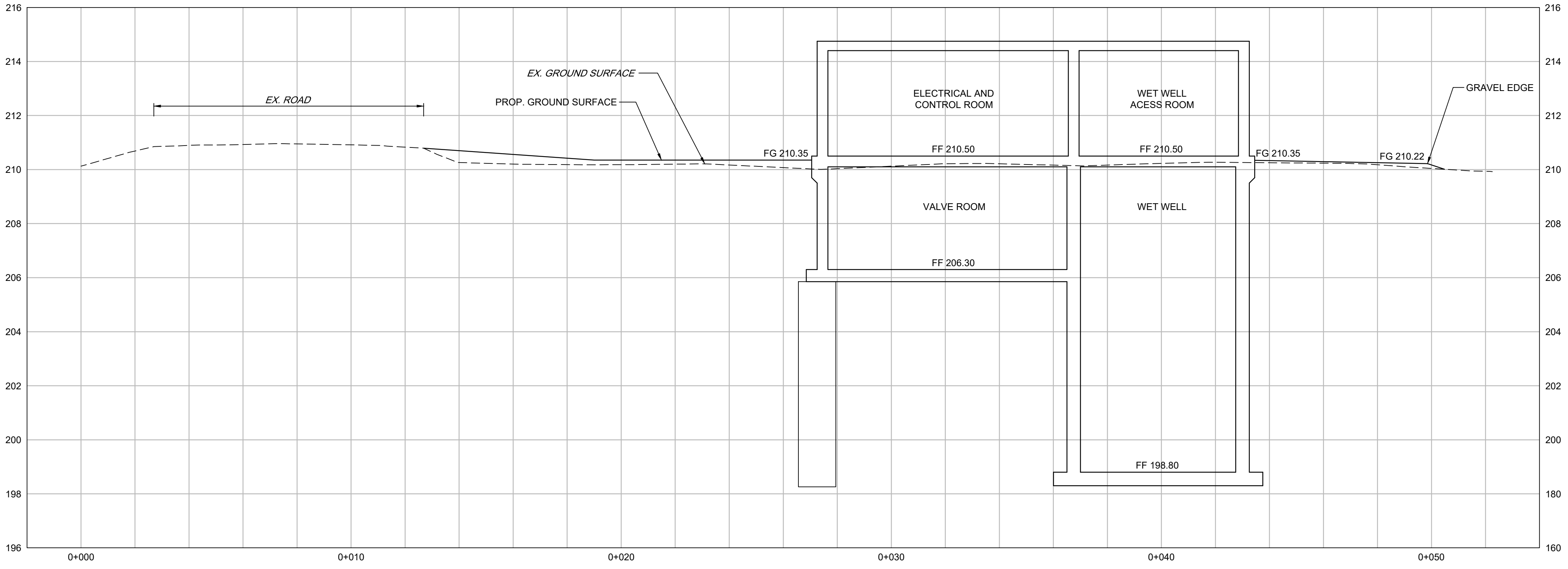
Project no.	Drawing no.	Revision no.
30192375	C201	C


216
214
212
210
208
206
204
PROP. GROUND SURFACE
EX. GROUND SURFACE
PROP. ELECTRICAL CONDUIT
PROP. 600mmØ HDPE
0+000
0+010
0+020
0+030

A
-
SECTION
1 : 100


216
214
212
210
208
206
204
PROP. TRANSFORMER
PROP. GROUND SURFACE
GRAVEL EDGE
EX. GROUND SURFACE
FG 209.91
FG 210.35
ELECTRICAL AND
CONTROL ROOM
FF 210.50
VALVE ROOM
FF 206.30
FG 210.35
PROP. GENERATOR
GRAVEL EDGE
FG 210.31
0+000
0+010
0+020
0+030
0+040
0+050

B
-
SECTION
1 : 100


216
214
212
210
208
206
204
202
200
198
196
180
160
EX. ROAD
EX. GROUND SURFACE
PROP. GROUND SURFACE
FG 210.35
ELECTRICAL AND
CONTROL ROOM
FF 210.50
VALVE ROOM
FF 206.30
WET WELL
ACESS ROOM
FF 210.50
WET WELL
FF 198.80
FG 210.35
FG 210.22
GRAVEL EDGE
0+000
0+010
0+020
0+030
0+040
0+050

C
-
SECTION
1 : 100

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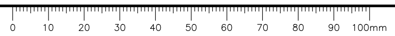
A1 – 841X594


0
10
20
30
40
50
60
70
80
90
100mm

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
Revision	Description	Date

Consultant

ARCADIS

8133 Warden Avenue - Unit 300
Markham ON L6G 1B3 Canada
tel 905 763 2322
www.arcadis.com

Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
A.P.

Drawn by
L.E.

Approved by
P.D.

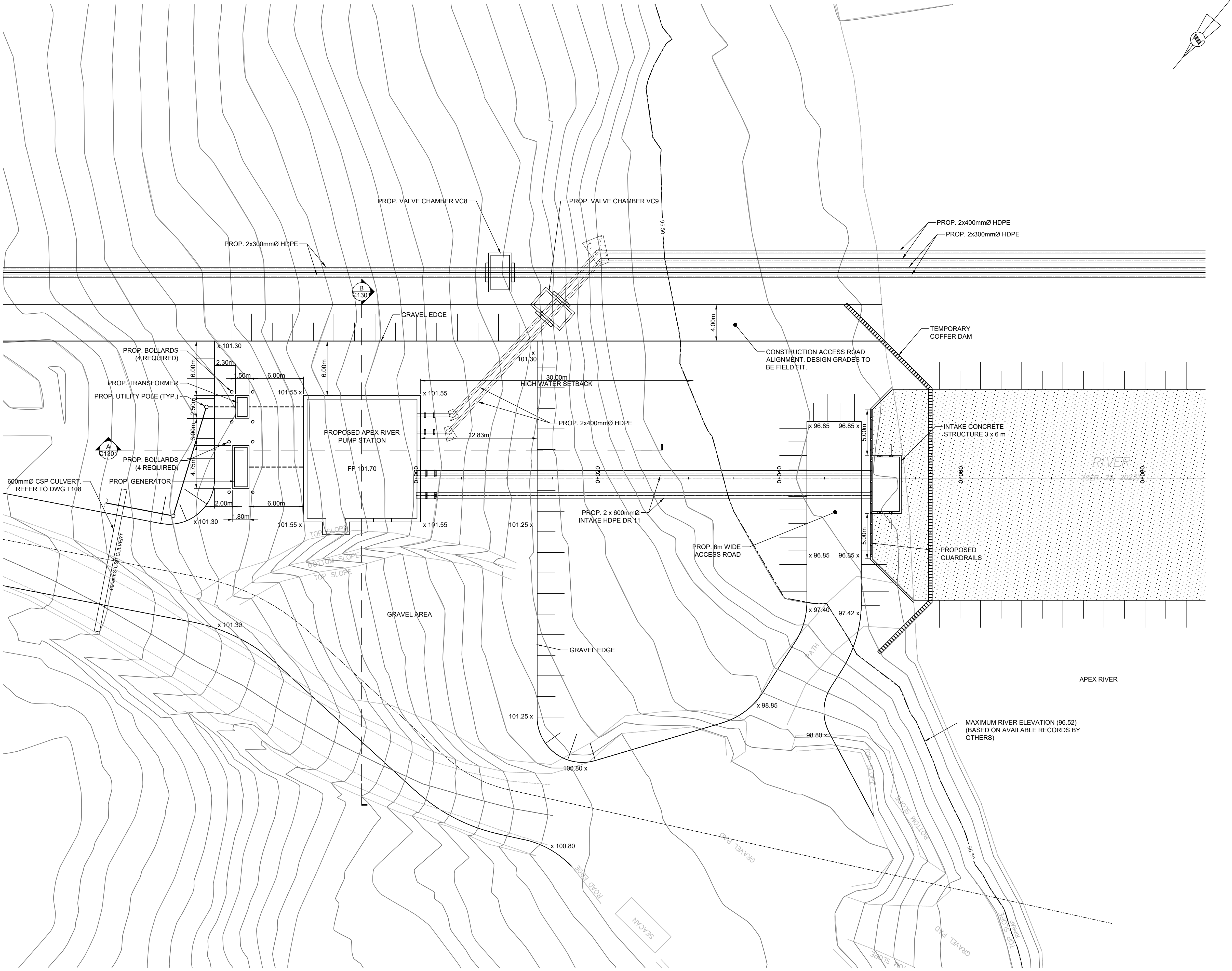
Project Manager
C.G.

Drawing title

CIVIL

LQ PUMP STATION SITE PLAN SECTIONS

Project no.	Drawing no.	Revision no.
30192375	C301	B


PROP. VALVE CHAMBER VC8
PROP. VALVE CHAMBER VC9
PROP. 2x300mmØ HDPE
PROP. 2x400mmØ HDPE
PROP. 2x300mmØ HDPE
96.50
B
C1301
GRAVEL EDGE
4.00m
TEMPORARY COFFER DAM
CONSTRUCTION ACCESS ROAD ALIGNMENT. DESIGN GRADES TO BE FIELD FIT.
x 101.30
PROP. BOLLARDS (4 REQUIRED)
2.30m
1.50m
6.00m
6.00m
6.00m
PROP. TRANSFORMER
PROP. UTILITY POLE (TYP.)
2.50m
3.00m
4.75m
101.55 x
x 101.55
x 101.30
30.00m
HIGH WATER SETBACK
PROP. 2x400mmØ HDPE
12.83m
PROPOSED APEX RIVER PUMP STATION
FF 101.70
A
C1301
PROP. BOLLARDS (4 REQUIRED)
PROP. GENERATOR
600mmØ CSP CULVERT. REFER TO DWG T108
2.00m
1.80m
6.00m
x 101.30
101.55 x
x 101.55
101.25 x
0+000
0+020
0+040
0+060
0+080
x 96.85
96.85 x
5.00m
INTAKE CONCRETE STRUCTURE 3 x 6 m
RIVER
PROP. 2 x 600mmØ INTAKE HDPE DR 11
PROP. 6m WIDE ACCESS ROAD
x 96.85
96.85 x
5.00m
PROPOSED GUARDRAILS
TOP SLOPE
BOTTOM SLOPE
TOP SLOPE
600mmØ CSP CULVERT
GRAVEL AREA
x 101.30
x 97.40
97.42 x
GRAVEL EDGE
PATH
APEX RIVER
x 98.85
101.25 x
98.80 x
MAXIMUM RIVER ELEVATION (96.52) (BASED ON AVAILABLE RECORDS BY OTHERS)
100.80 x
TOP SLOPE
BOTTOM SLOPE
GRAVEL PAD
x 100.80
ROAD EDGE
SEACAN
96.50
GRAVEL PAD
TOP SLOPE

A
C102
Site Plan
1 : 200

0 10 20 30 40 50 60 70 80 90 100mm

A1 – 841X594

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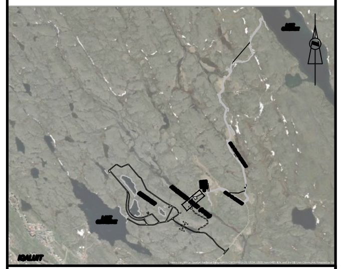

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

NOTES:

1. REFER TO UTILITY DRAWINGS FOR RAW WATERMAINS PLAN AND PROFILES.
2. REFER TO GRADING DRAWINGS T1010 - T117 FOR ROAD AND DRAINAGE DESIGN.

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN (REVISED)	2025-09-26

Consultant

ARCADIS
8133 Warden Avenue - Unit 300
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tel 905 763 2322
www.arcadis.com

Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
A.P.

Drawn by
L.E.

Approved by
P.D.

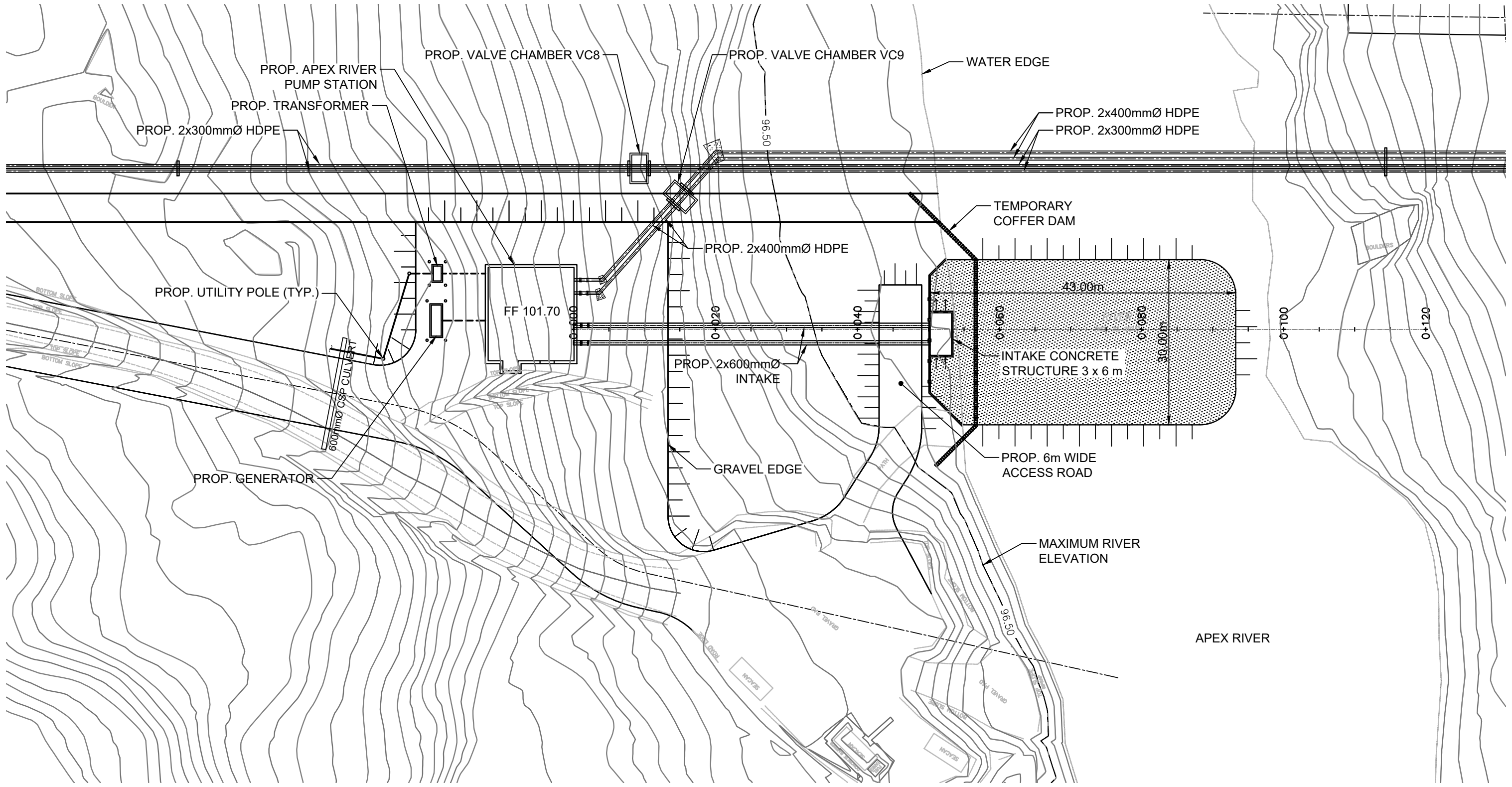
Project Manager
C.G.

Drawing title

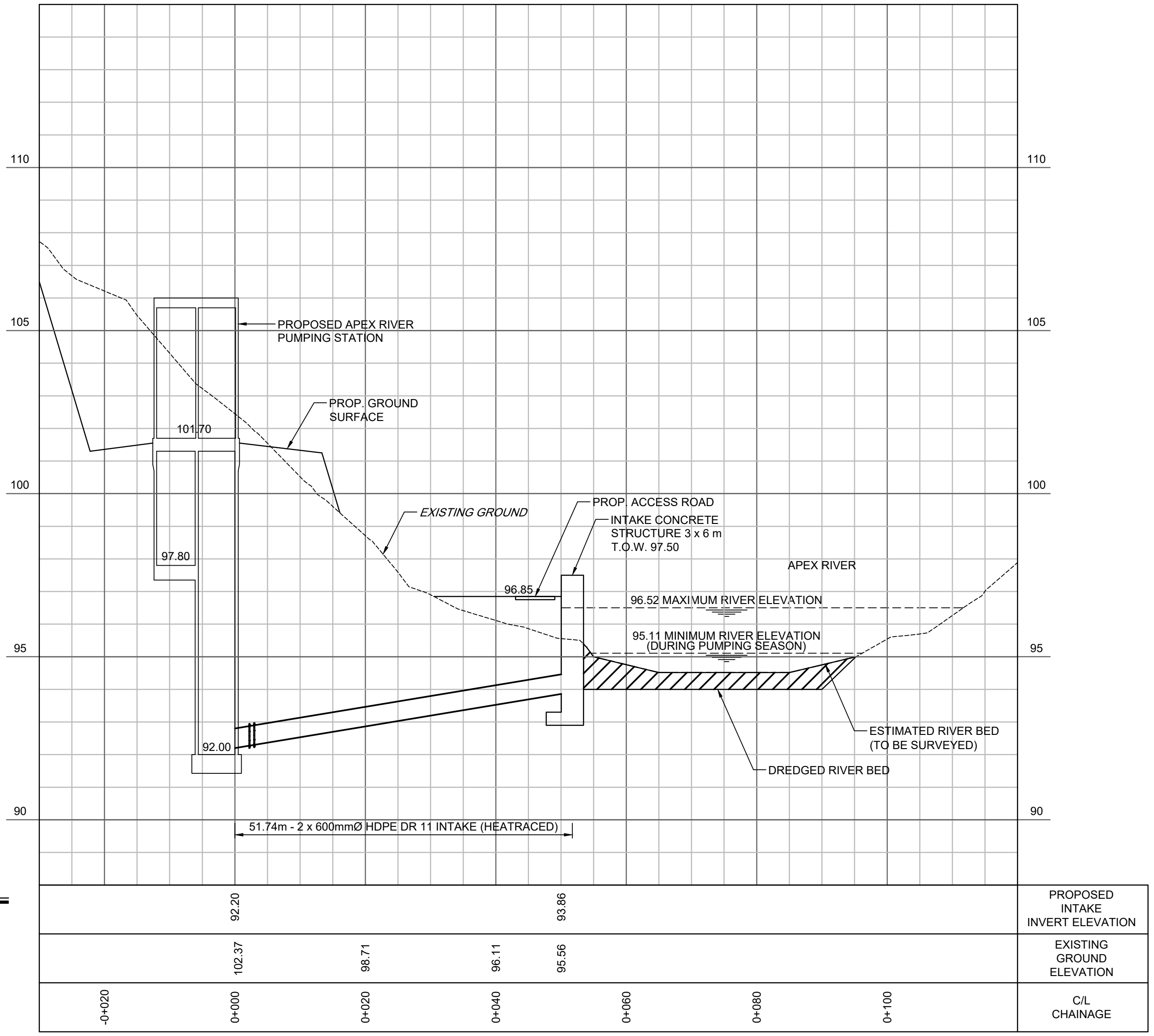
CIVIL

AR PUMP STATION
SITE PLAN

Project no.	Drawing no.	Revision no.
30192375	C1101	B


PROP. VALVE CHAMBER VC8
PROP. VALVE CHAMBER VC9
WATER EDGE
PROP. APEX RIVER PUMP STATION
PROP. TRANSFORMER
PROP. 2x300mmØ HDPE
PROP. 2x400mmØ HDPE
PROP. 2x300mmØ HDPE
96.50
TEMPORARY COFFER DAM
PROP. 2x400mmØ HDPE
PROP. UTILITY POLE (TYP.)
FF 101.70
0+000
0+020
0+040
0+060
0+080
0+100
0+120
43.00m
30.00m
PROP. 2x600mmØ INTAKE
INTAKE CONCRETE STRUCTURE 3 x 6 m
600mmØ CSP CULVERT
PROP. GENERATOR
GRAVEL EDGE
PROP. 6m WIDE ACCESS ROAD
MAXIMUM RIVER ELEVATION
96.50
APEX RIVER

A
C205
Plan
1 : 500


110
105
100
95
90
PROPOSED APEX RIVER PUMPING STATION
PROP. GROUND SURFACE
101.70
97.80
EXISTING GROUND
92.00
PROP. ACCESS ROAD
INTAKE CONCRETE STRUCTURE 3 x 6 m T.O.W. 97.50
96.85
APEX RIVER
96.52 MAXIMUM RIVER ELEVATION
95.11 MINIMUM RIVER ELEVATION (DURING PUMPING SEASON)
ESTIMATED RIVER BED (TO BE SURVEYED)
DREDGED RIVER BED
51.74m - 2 x 600mmØ HDPE DR 11 INTAKE (HEATRACED)
PROPOSED INTAKE INVERT ELEVATION
92.20
93.86
EXISTING GROUND ELEVATION
102.37
98.71
96.11
95.56
C/L CHAINAGE
-0+020
0+000
0+020
0+040
0+060
0+080
0+100

2
C205
Profile
HOR. 1 : 500
VER. 1 : 100

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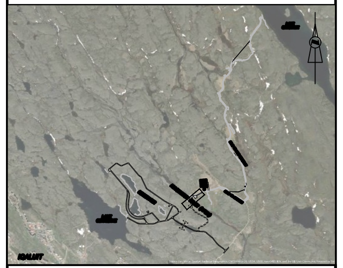

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN (REVISED)	2025-09-26

Consultant

ARCADIS
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Project title
CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
A.P.

Drawn by
L.E.

Approved by
P.D.

Project Manager
C.G.

Drawing title
CIVIL

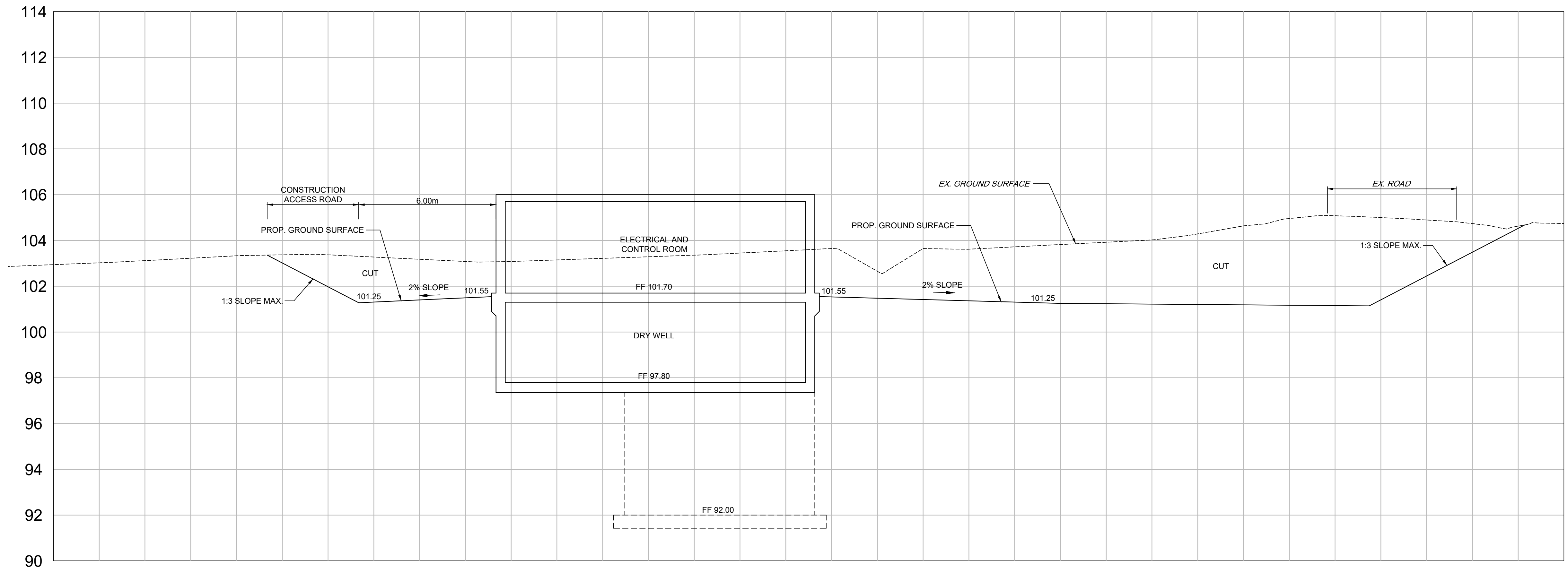
AR PUMP STATION INTAKE

Project no.	Drawing no.	Revision no.
30192375	C1201	B

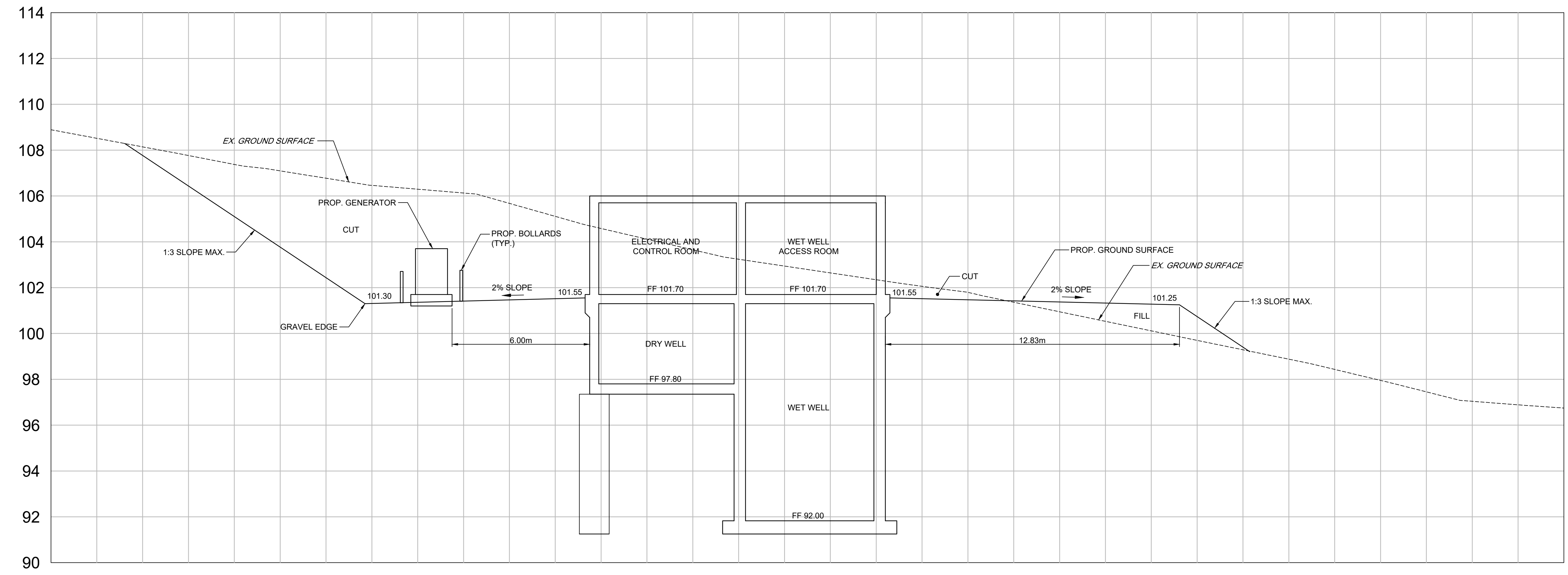
C:\Users\patelh2754\DC\ACCDocs\IBI - DT Services\30192375-Iqaluit_LongTermWater C3D2023\Project Files\7.0_Production\7.03_Design\04_Civil\Sheets\C1101-C1201.dwg

A1 - 841X594

0 10 20 30 40 50 60 70 80 90 100mm


114
112
110
108
106
104
102
100
98
96
94
92
90
CONSTRUCTION ACCESS ROAD
6.00m
PROP. GROUND SURFACE
CUT
1:3 SLOPE MAX.
101.25
2% SLOPE
101.55
ELECTRICAL AND CONTROL ROOM
FF 101.70
DRY WELL
FF 97.80
FF 92.00
101.55
EX. GROUND SURFACE
PROP. GROUND SURFACE
2% SLOPE
101.25
CUT
EX. ROAD
1:3 SLOPE MAX.

B
C1101 **SECTION**
1 : 100


114
112
110
108
106
104
102
100
98
96
94
92
90
EX. GROUND SURFACE
PROP. GENERATOR
CUT
1:3 SLOPE MAX.
PROP. BOLLARDS (TYP.)
101.30
GRAVEL EDGE
2% SLOPE
101.55
6.00m
ELECTRICAL AND CONTROL ROOM
FF 101.70
DRY WELL
FF 97.80
WET WELL ACCESS ROOM
FF 101.70
WET WELL
FF 92.00
101.55
CUT
PROP. GROUND SURFACE
EX. GROUND SURFACE
2% SLOPE
101.25
FILL
12.83m
1:3 SLOPE MAX.

A
C1101 **SECTION**
1 : 100

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN (REVISED)	2025-09-26

Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
A.P.

Drawn by
L.E.

Approved by
P.D.

Project Manager
C.G.

Drawing title

CIVIL

AR PUMP STATION SITE PLAN SECTIONS

Project no.	Drawing no.	Revision no.
30192375	**C1301**	**B**

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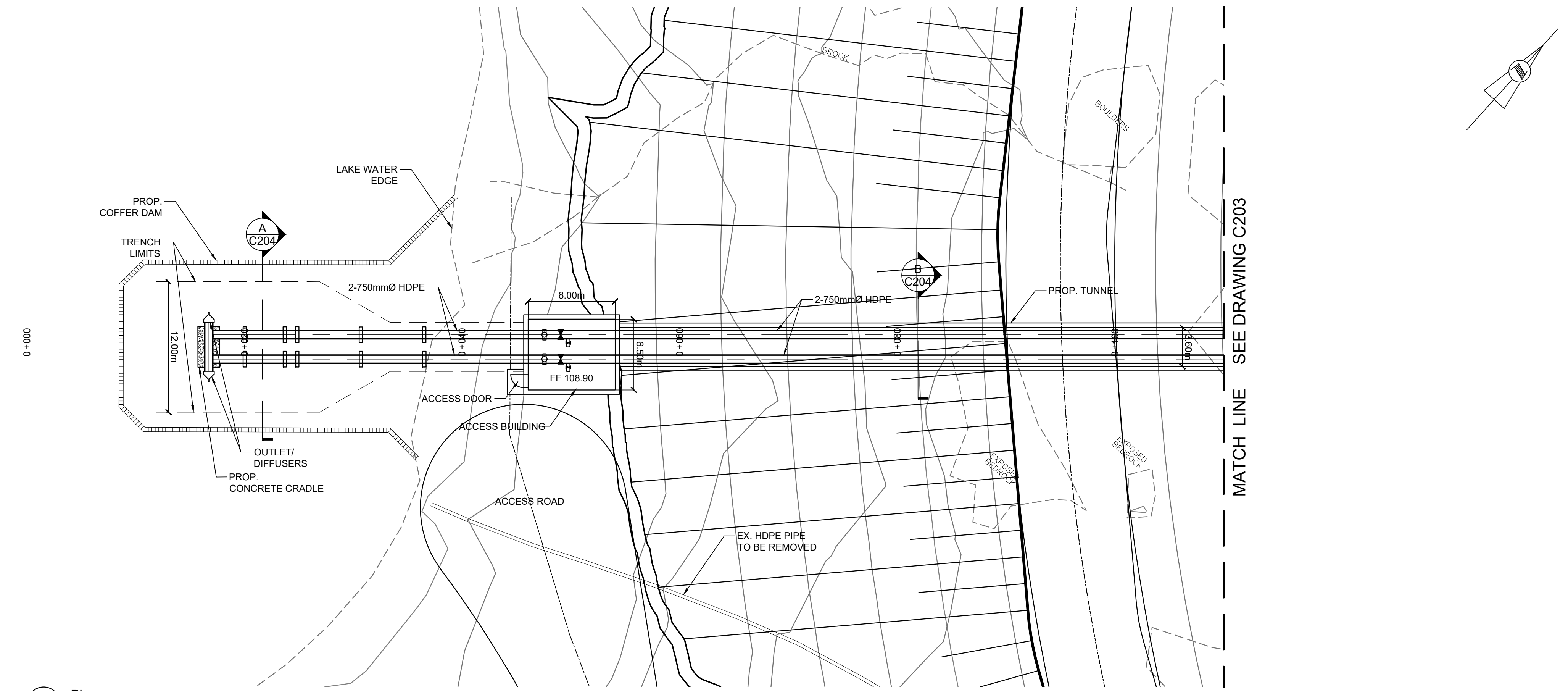
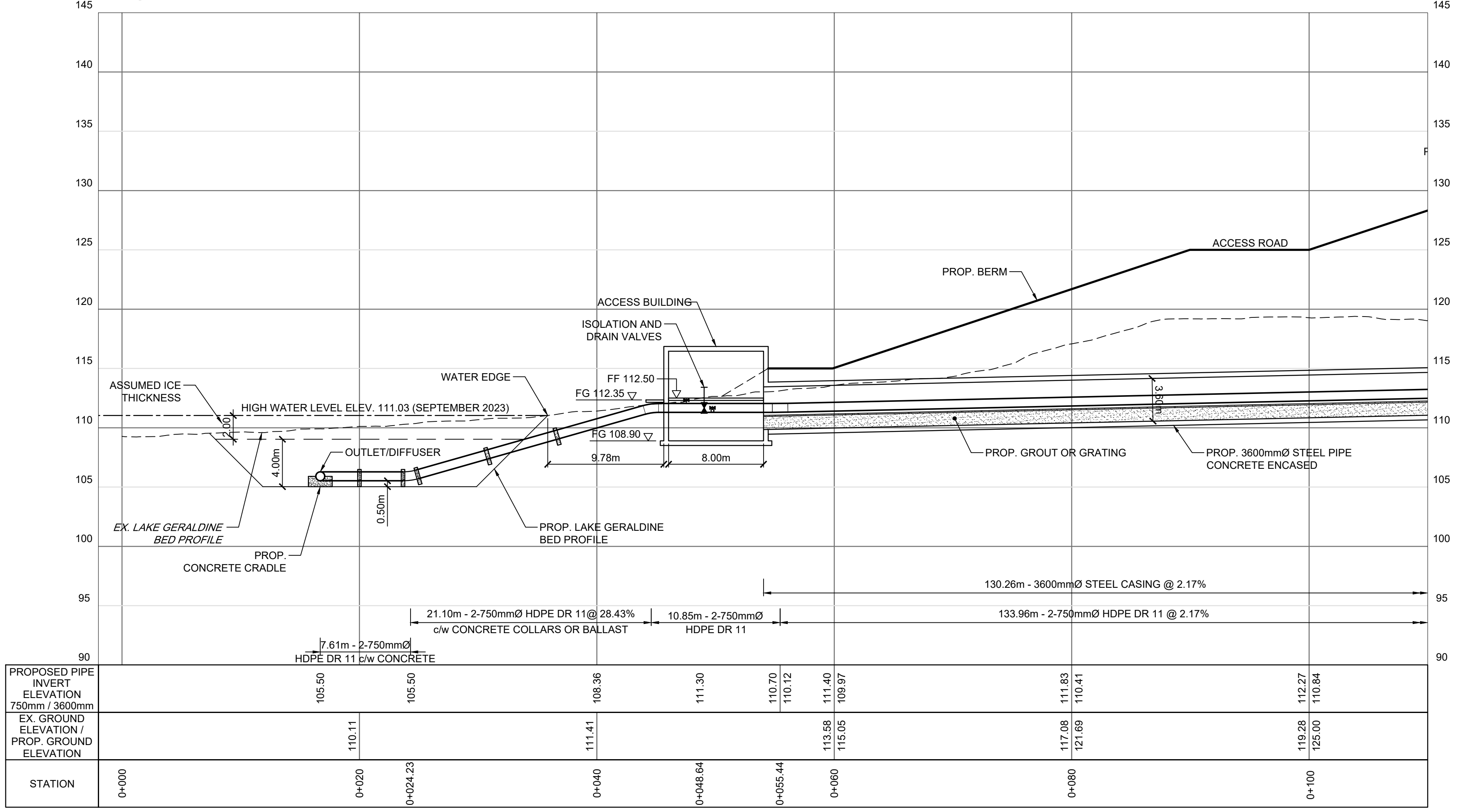
A1 - 841X594

0 10 20 30 40 50 60 70 80 90 100mm


LAKE WATER EDGE
PROP. COFFER DAM
TRENCH LIMITS
A C204
2-750mmØ HDPE
12.00m
0+000
0+040
8.00m
6.50m
FF 108.90
0+060
0+080
0+100
2-750mmØ HDPE
B C204
PROP. TUNNEL
2.60m
SEE DRAWING C203
MATCH LINE
ACCESS DOOR
ACCESS BUILDING
OUTLET/ DIFFUSERS
PROP. CONCRETE CRADLE
ACCESS ROAD
EX. HDPE PIPE TO BE REMOVED
BROOK
BOULDERS
EXPOSED BEDROCK

A C202 **Plan**
1 : 250


145
140
135
130
125
120
115
110
105
100
95
90
ACCESS ROAD
PROP. BERM
ACCESS BUILDING
ISOLATION AND DRAIN VALVES
WATER EDGE
FF 112.50
FG 112.35
ASSUMED ICE THICKNESS
HIGH WATER LEVEL ELEV. 111.03 (SEPTEMBER 2023)
1.00
FG 108.90
4.00m
OUTLET/DIFFUSER
9.78m
8.00m
3.60m
PROP. GROUT OR GRATING
PROP. 3600mmØ STEEL PIPE CONCRETE ENCASED
0.50m
EX. LAKE GERALDINE BED PROFILE
PROP. LAKE GERALDINE BED PROFILE
PROP. CONCRETE CRADLE
130.26m - 3600mmØ STEEL CASING @ 2.17%
21.10m - 2-750mmØ HDPE DR 11@ 28.43% c/w CONCRETE COLLARS OR BALLAST
10.85m - 2-750mmØ HDPE DR 11
133.96m - 2-750mmØ HDPE DR 11 @ 2.17%
7.61m - 2-750mmØ HDPE DR 11 c/w CONCRETE
PROPOSED PIPE INVERT ELEVATION 750mm / 3600mm
105.50
105.50
108.36
111.30
110.70
110.12
111.40
109.97
111.83
110.41
112.27
110.84
EX. GROUND ELEVATION / PROP. GROUND ELEVATION
110.11
111.41
113.58
115.05
117.08
121.69
119.28
125.00
STATION
0+000
0+020
0+024.23
0+040
0+048.64
0+055.44
0+060
0+080
0+100

1 C202 **Profile**
HOR. 1 : 250
VER. 1 : 250

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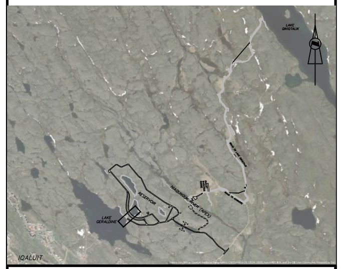

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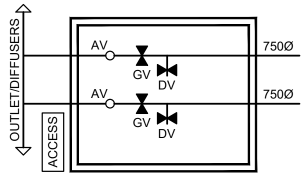
ARCADIS PROFESSIONAL SERVICES (CANADA) INC.


OUTLET/DIFFUSERS
ACCESS
AV
GV
DV
750Ø
AV
GV
DV
750Ø

INTAKE STATION 5.50m x 8.00m
SCHEMATIC

SCALE 1:250
5.0 0 5.0m

Revision	Description	Date
C	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
A	ISSUED FOR CONCEPT DESIGN	2023-11-27

Consultant

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8133 Warden Avenue - Unit 300
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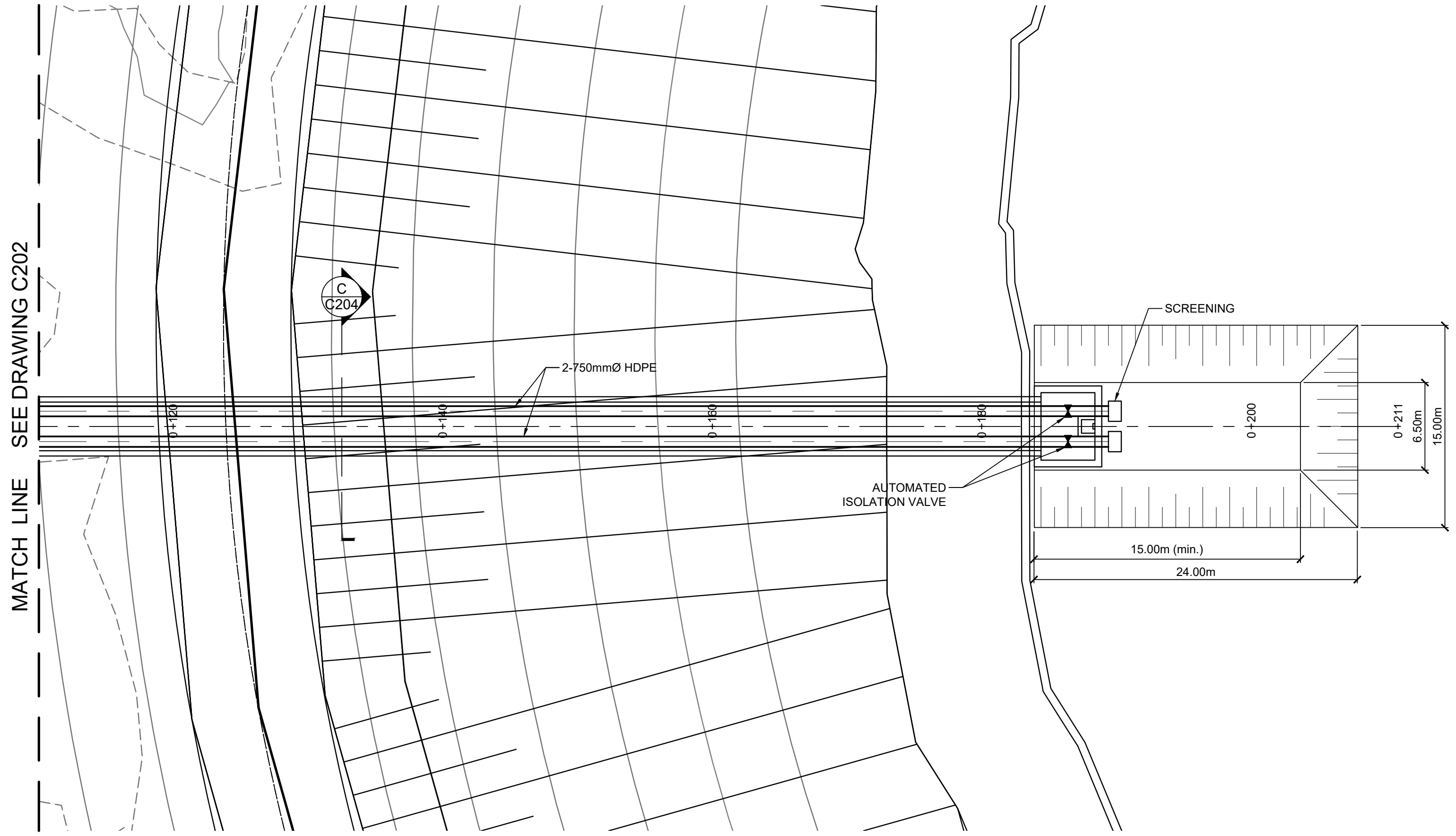
Project title
CITY OF IQALUIT
LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
O.N.
Drawn by
L.E.
Approved by
G.G.
Project Manager
C.G.

Drawing title
CIVIL
SERVICE CORRIDOR BETWEEN RESERVOIR AND LAKE GERALDINE 1 OF 2

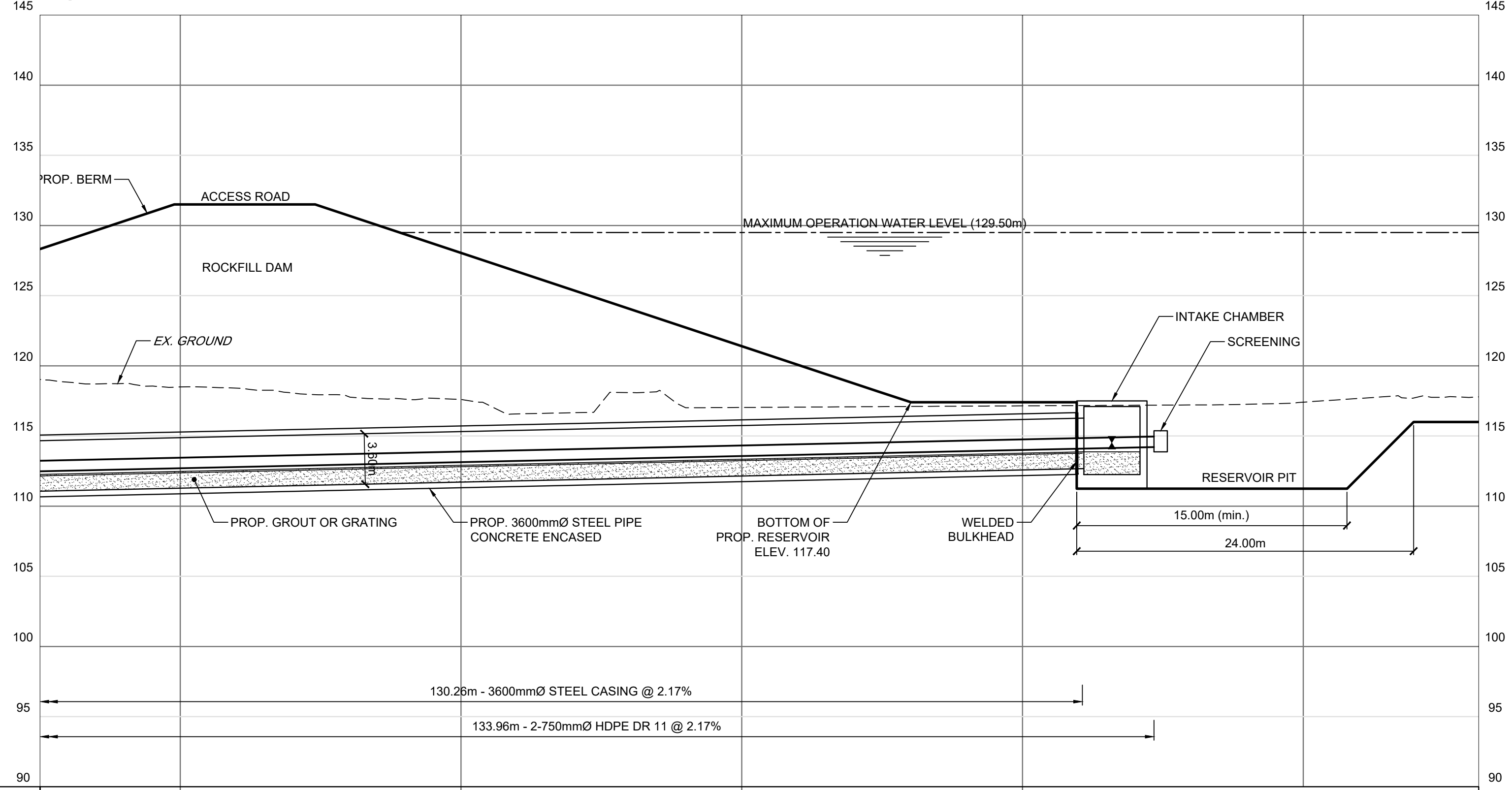
Project no.	Drawing no.	Revision no.
30192375	C202	C

C:\Users\pateh2754\Downloads\C202_v2.dwg
A1 – 841X594
0 10 20 30 40 50 60 70 80 90 100mm



MATCH LINE SEE DRAWING C202
C
C204
2-750mmØ HDPE
0+120
0+140
0+160
0+180
0+200
0+211
SCREENING
AUTOMATED ISOLATION VALVE
6.50m
15.00m
15.00m (min.)
24.00m

A
C202
Plan
1 : 250



145
140
135
130
125
120
115
110
105
100
95
90
PROP. BERM
ACCESS ROAD
ROCKFILL DAM
MAXIMUM OPERATION WATER LEVEL (129.50m)
EX. GROUND
INTAKE CHAMBER
SCREENING
3.50m
RESERVOIR PIT
PROP. GROUT OR GRATING
PROP. 3600mmØ STEEL PIPE CONCRETE ENCASED
BOTTOM OF PROP. RESERVOIR ELEV. 117.40
WELDED BULKHEAD
15.00m (min.)
24.00m
130.26m - 3600mmØ STEEL CASING @ 2.17%
133.96m - 2-750mmØ HDPE DR 11 @ 2.17%

PROPOSED PIPE INVERT ELEVATION 750mm / 3600mm	112.70 111.28	113.14 111.71	113.57 112.15	114.01 112.58	114.21		
EX. GROUND ELEVATION / PROP. GROUND ELEVATION	118.50 131.50	117.61 128.05	117.03 121.40	117.15 117.40		117.41 112.39	
STATION	0+120	0+140	0+160	0+180	0+189.36	0+200	0+211

1
C202
Profile
HOR. 1 : 250
VER. 1 : 250

Iqaluit

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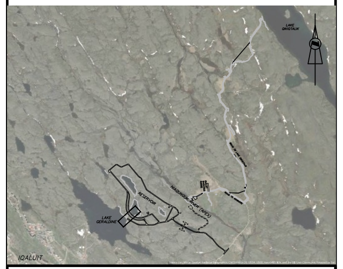

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

SCALE 1:250
5.0 0 5.0m

Revision	Description	Date
A	ISSUED FOR 50% DESIGN REVIEW	2025-12-19

Consultant

ARCADIS

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
O.N.

Drawn by
L.E.

Approved by
G.G.

Project Manager
C.G.

Drawing title

CIVIL

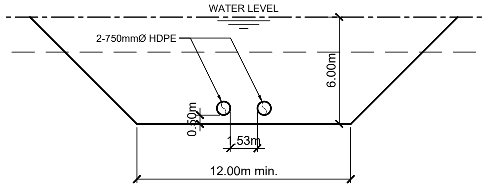
SERVICE CORRIDOR BETWEEN RESERVOIR AND LAKE GERALDINE 2 OF 2

Project no.	Drawing no.	Revision no.
30192375	C203	A

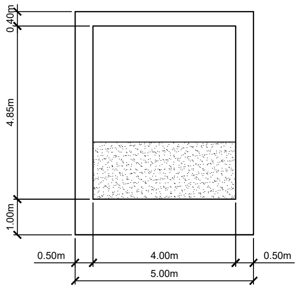
C:\Users\patelh2754\Downloads\C202__v2.dwg

A1 – 841X594

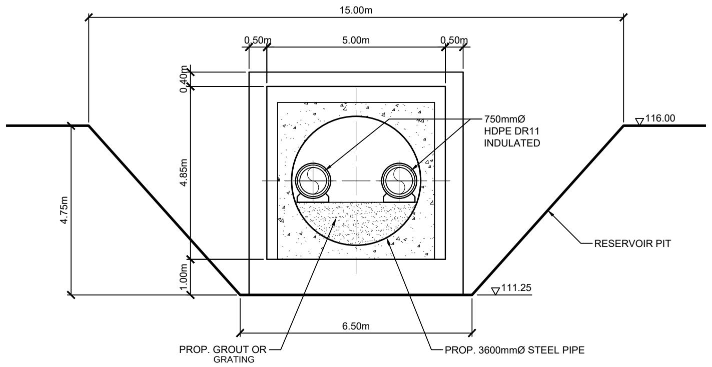
0 10 20 30 40 50 60 70 80 90 100mm


WATER LEVEL
2-750mmØ HDPE
6.00m
0.50m
1.53m
12.00m min.

A
C202
SECTION
1 : 300


0.40m
4.85m
1.00m
0.50m
4.00m
0.50m
5.00m

2
-
SECTION
1 : 100


15.00m
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0.50m
0.40m
4.85m
1.00m
4.75m
750mmØ
HDPE DR11
INDULATED
116.00
RESERVOIR PIT
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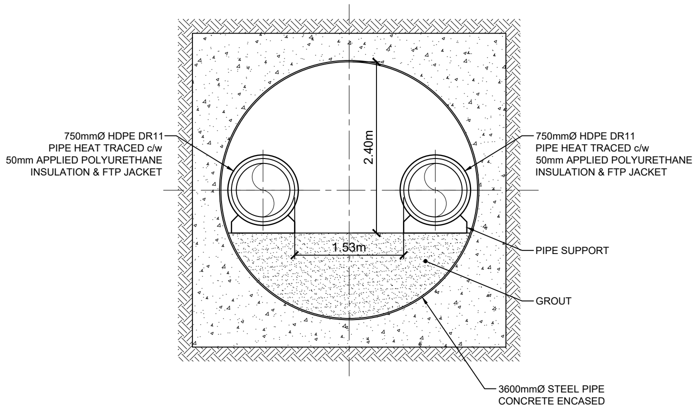
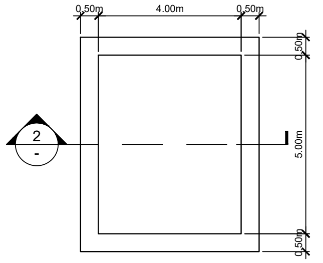
6.50m
PROP. GROUT OR
GRATING
PROP. 3600mmØ STEEL PIPE

C
C203
SECTION
1 : 100


750mmØ HDPE DR11
PIPE HEAT TRACED c/w
50mm APPLIED POLYURETHANE
INSULATION & FTP JACKET
750mmØ HDPE DR11
PIPE HEAT TRACED c/w
50mm APPLIED POLYURETHANE
INSULATION & FTP JACKET
2.40m
1.53m
PIPE SUPPORT
GROUT
3600mmØ STEEL PIPE
CONCRETE ENCASED

B
C202
SECTION
1 : 50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PLAN
1 : 100

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
A	ISSUED FOR 50% DESIGN REVIEW	2025-12-19

Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
O.N.

Drawn by
L.E.

Approved by
P.D.

Project Manager
C.G.

Drawing title

CIVIL

SERVICE CORRIDOR BETWEEN RESERVOIR AND LAKE GERALDINE SECTIONS

Project no.	Drawing no.	Revision no.
30192375	C204	A

C:\Users\patelh2754\Downloads\C202_v2.dwg

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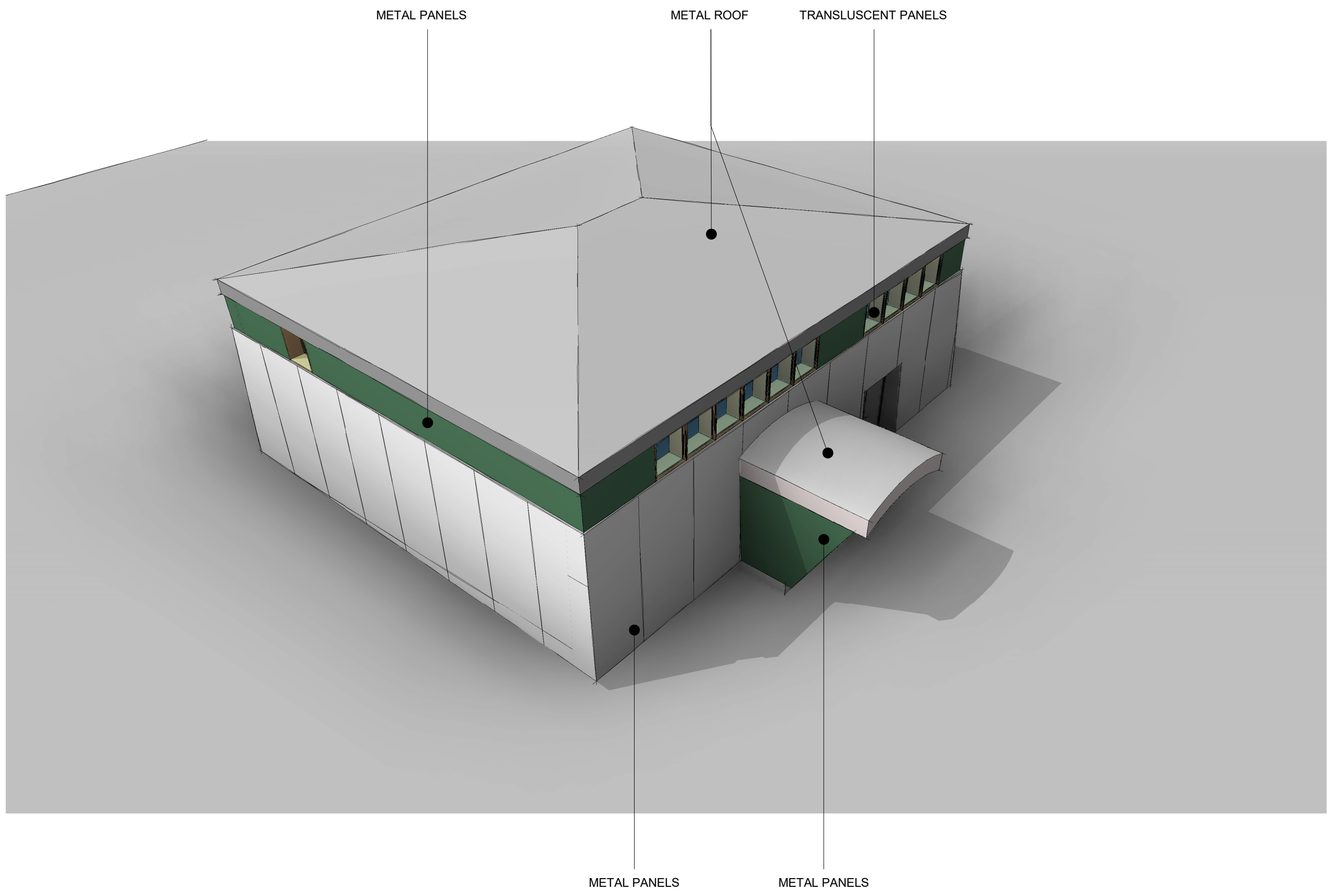
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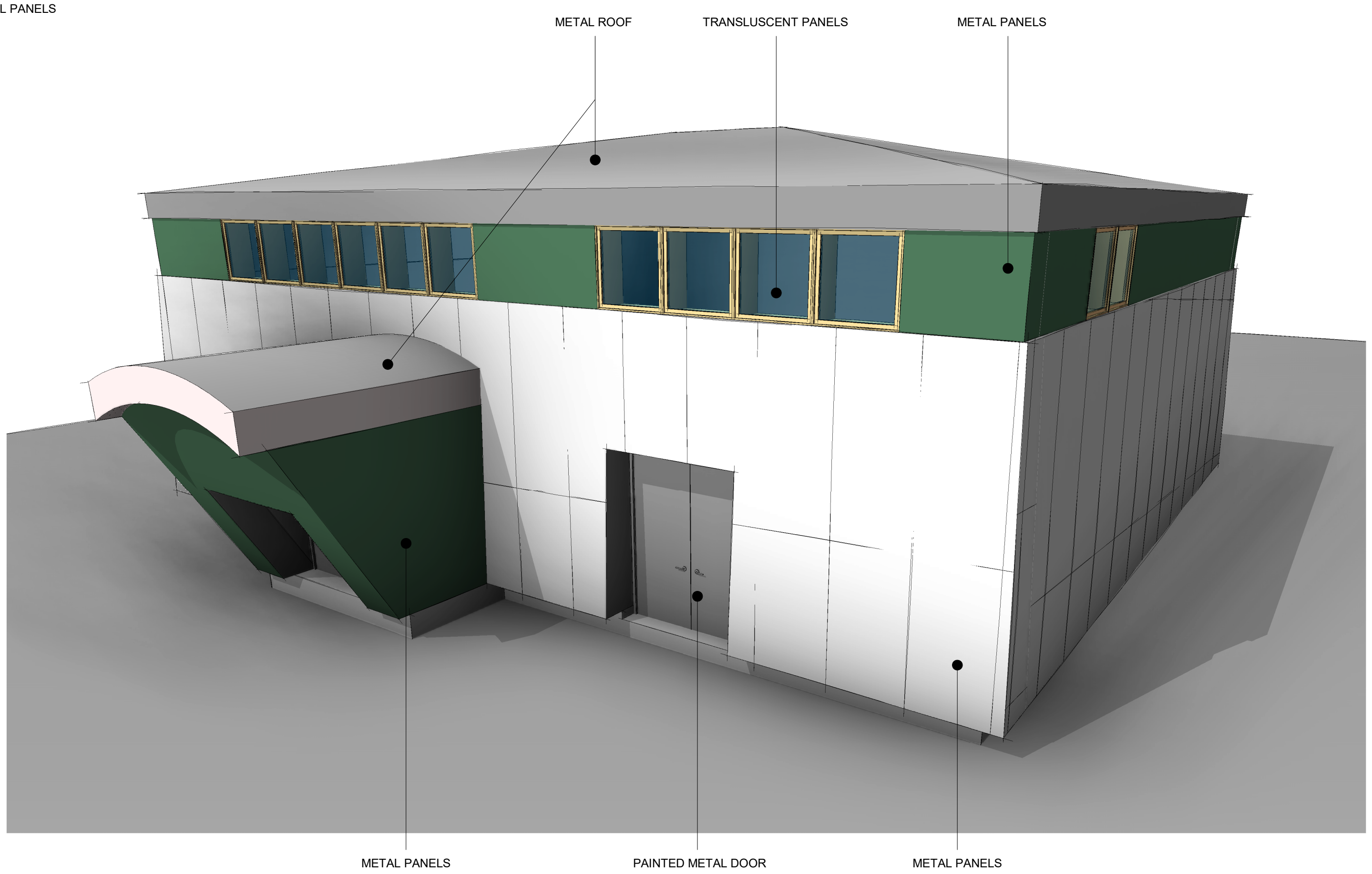
METAL ROOF
TRANSLUSCENT PANELS
METAL PANELS
METAL PANELS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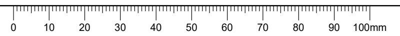
TRANSLUSCENT PANELS
METAL PANELS
METAL PANELS
PAINTED METAL DOOR
METAL PANELS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100mm

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A1 - 841X594

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ARCADIS ARCHITECTS (CANADA) INC.

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FRO CONEPT DESIGN	2023-03-22

Consultant

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Project title

CITY IF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

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M.K.

Drawn by
M.K.

Approved by
M.K.

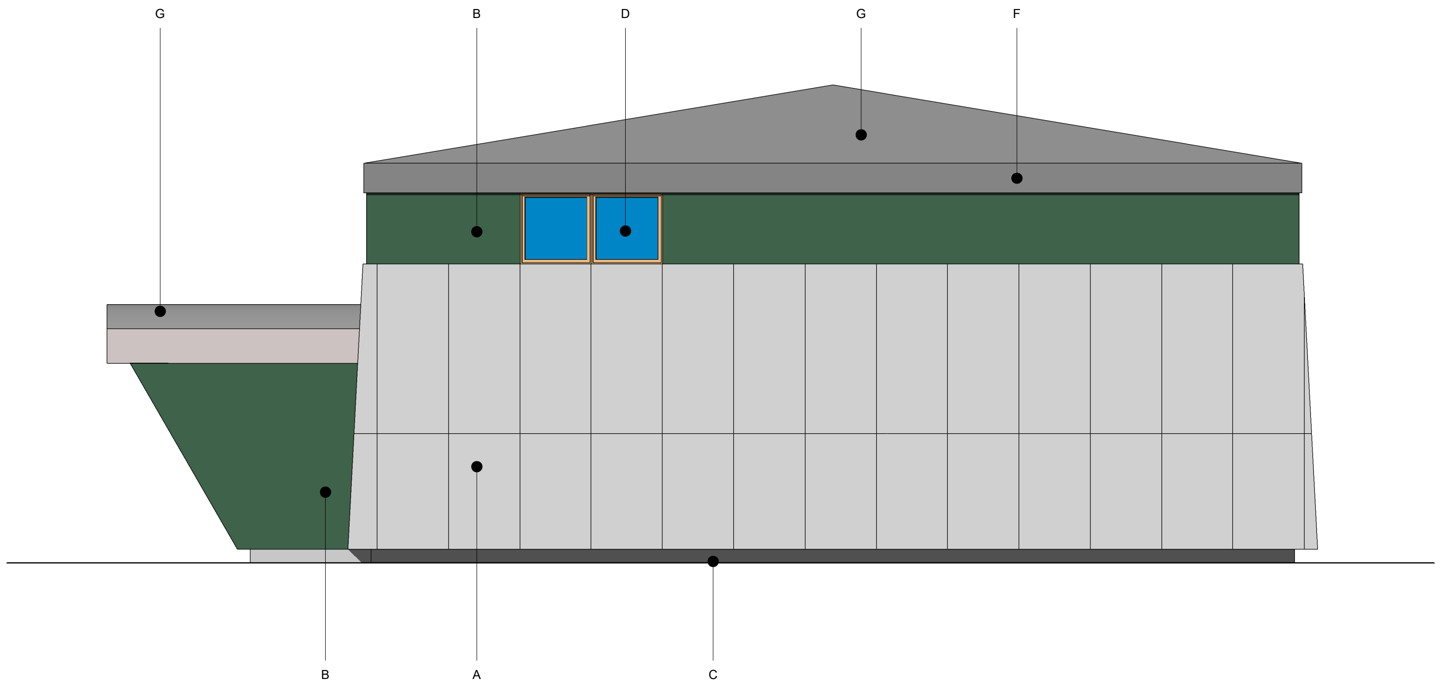
Project Manager
C.G.

Drawing Title

ARCHITECTURAL

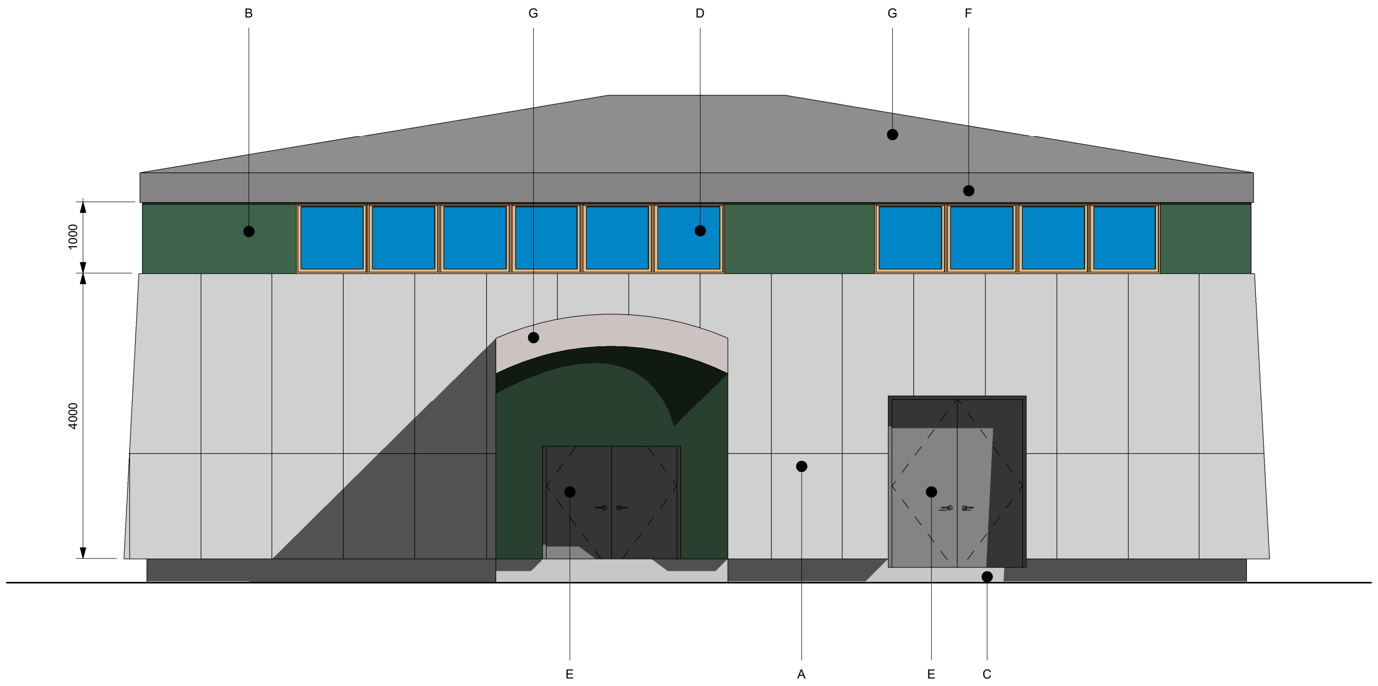
LQ PUMP STATION CONCEPTUAL EXTERIOR VIEWS

Project no.	Drawing no.	Revision no.
30192375	A002	B



2 EAST ELEVATION

1 : 50



1 SOUTH ELEVATION

1 : 50

ELEVATION LEGEND

A	METAL PANELS
B	METAL PANELS
C	CONCRETE
D	TRANSLUCENT PANELS
E	H.M. DOOR
F	METAL FASCIA
G	METAL ROOF

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Project title

CITY IF IQALUIT

**LONG TERM WATER PROGRAM
SUPPLY AND STORAGE**

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Drawn by
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Project Manager
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Drawing Title

ARCHITECTURAL

**LQ PUMP STATION
CONCEPTUAL ELEVATIONS**

Project no.	Drawing no.	Revision no.
30192375	A201	B

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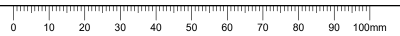

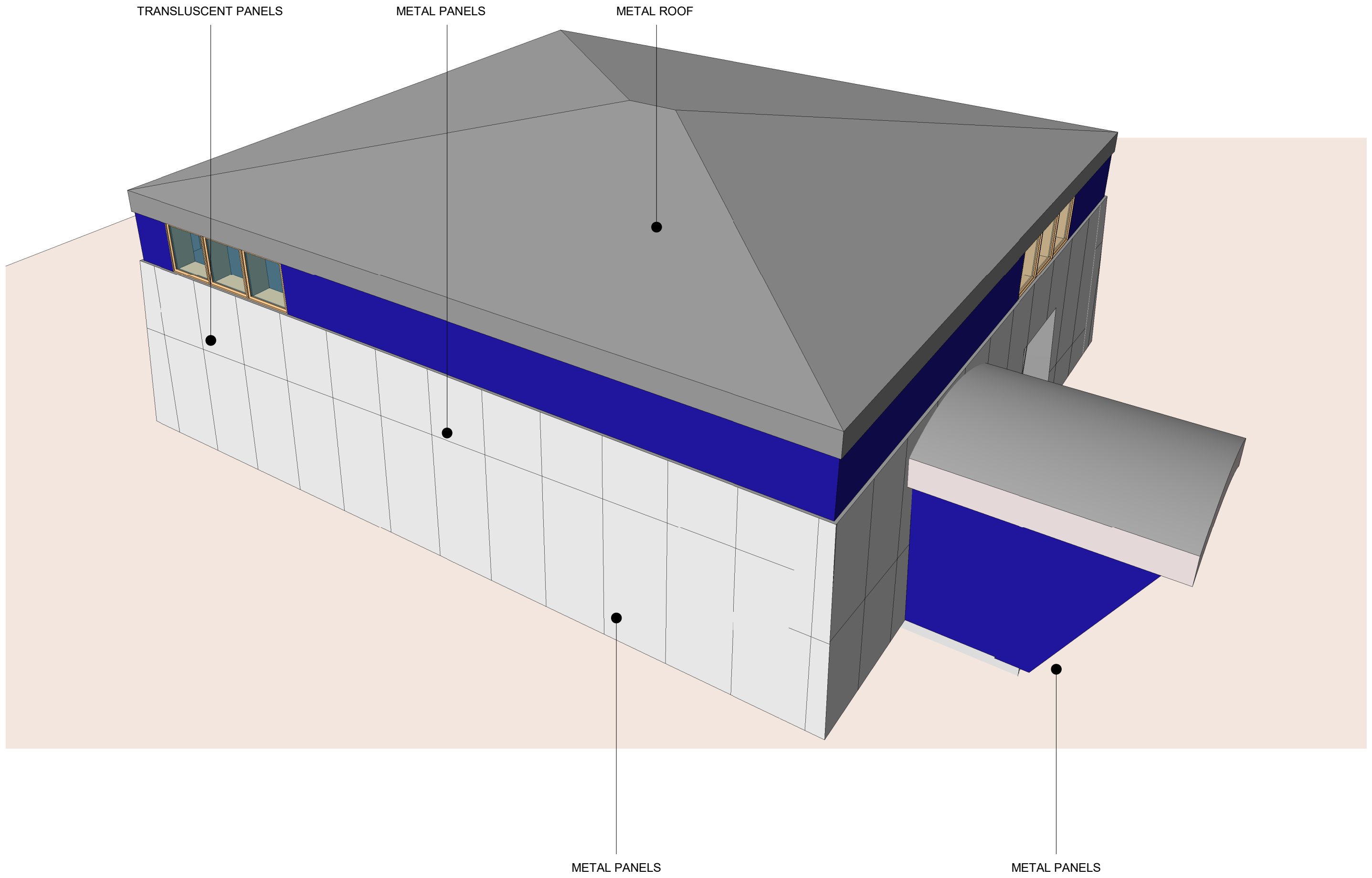
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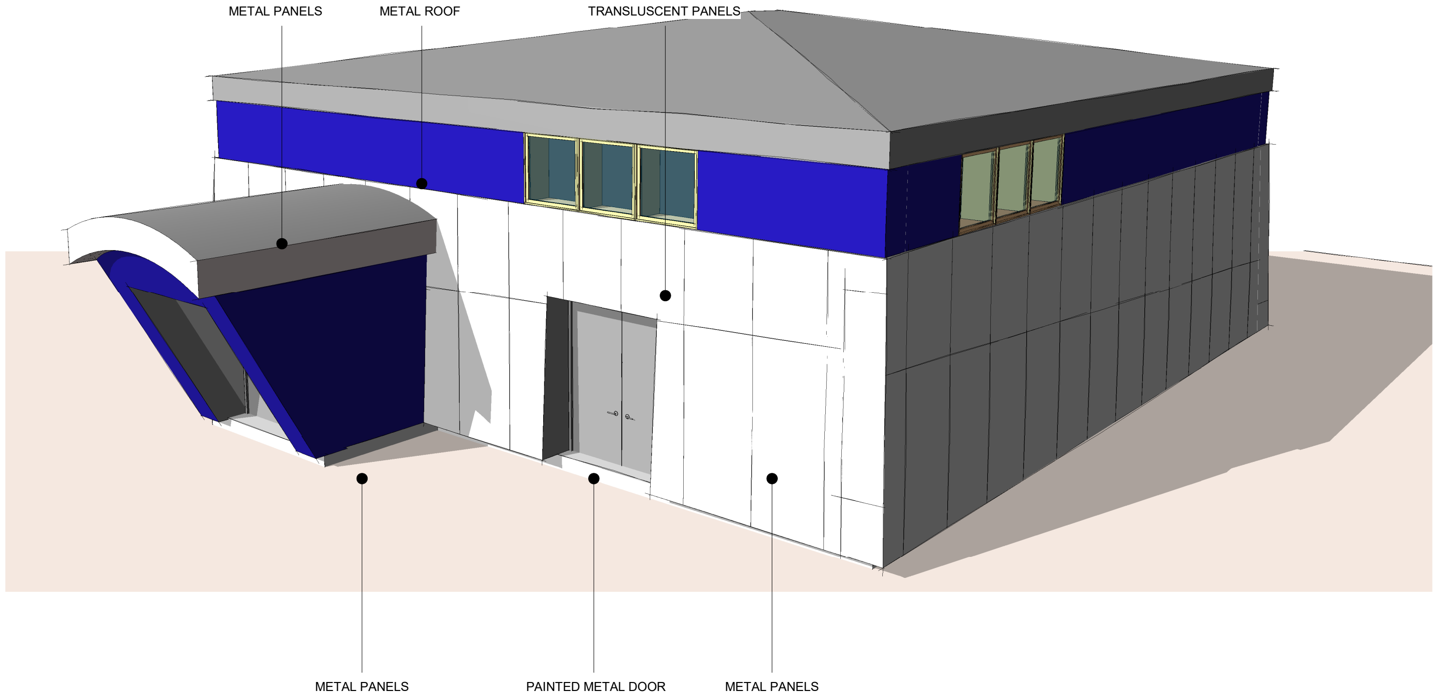
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METAL PANELS
PAINTED METAL DOOR
METAL PANELS

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ARCADIS ARCHITECTS (CANADA) INC.

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIG (REVISED)	2025-09-26

Consultant

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Project title

City of Iqaluit

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
M.K.

Drawn by
M.K.

Approved by
M.K.

Project Manager
C.G.

Drawing Title

ARCHITECTURAL

AR PUMP STATION
CONCEPTUAL EXTERIOR VIEWS

Project no.	Drawing no.	Revision no.
30192375	A-1001	B

Autodesk Docs://30288139-Iqaluit_LongTermWater C3D2025/Iqaluit_Apex River PS.rvt

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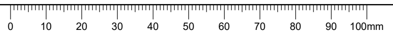
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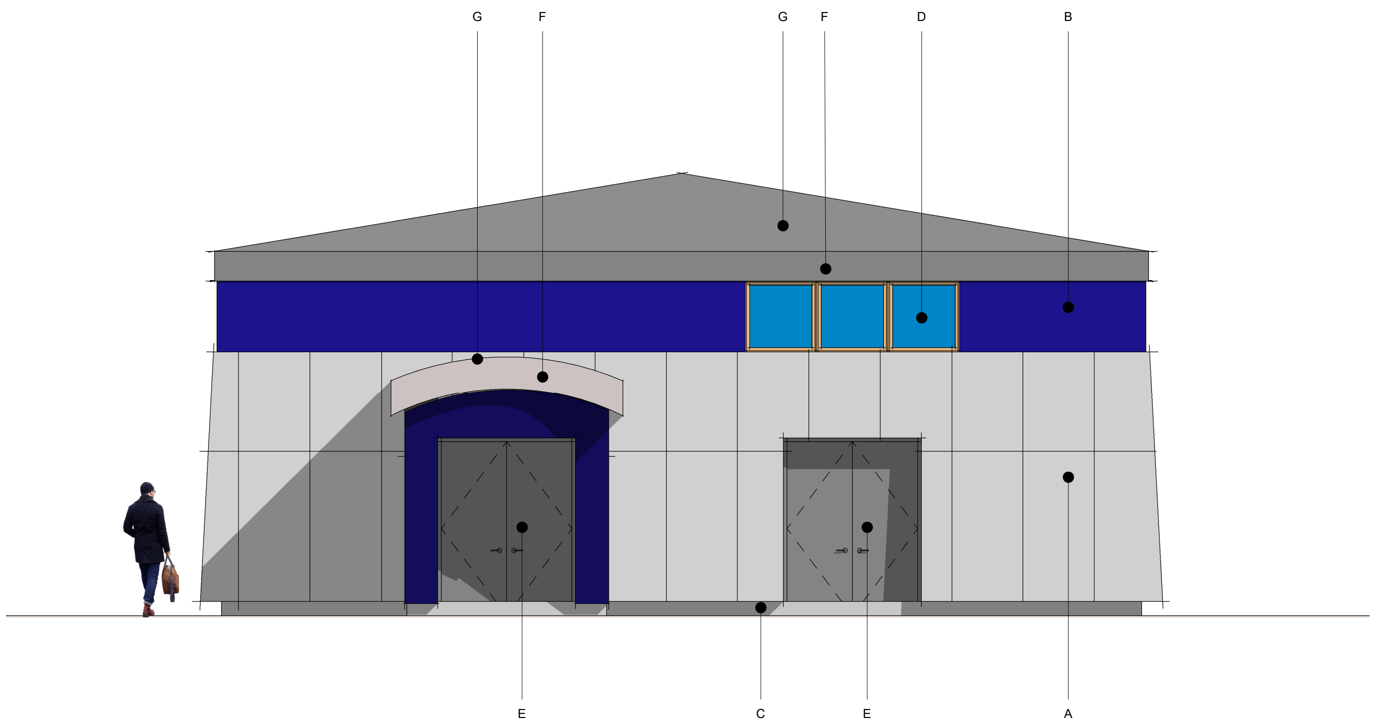
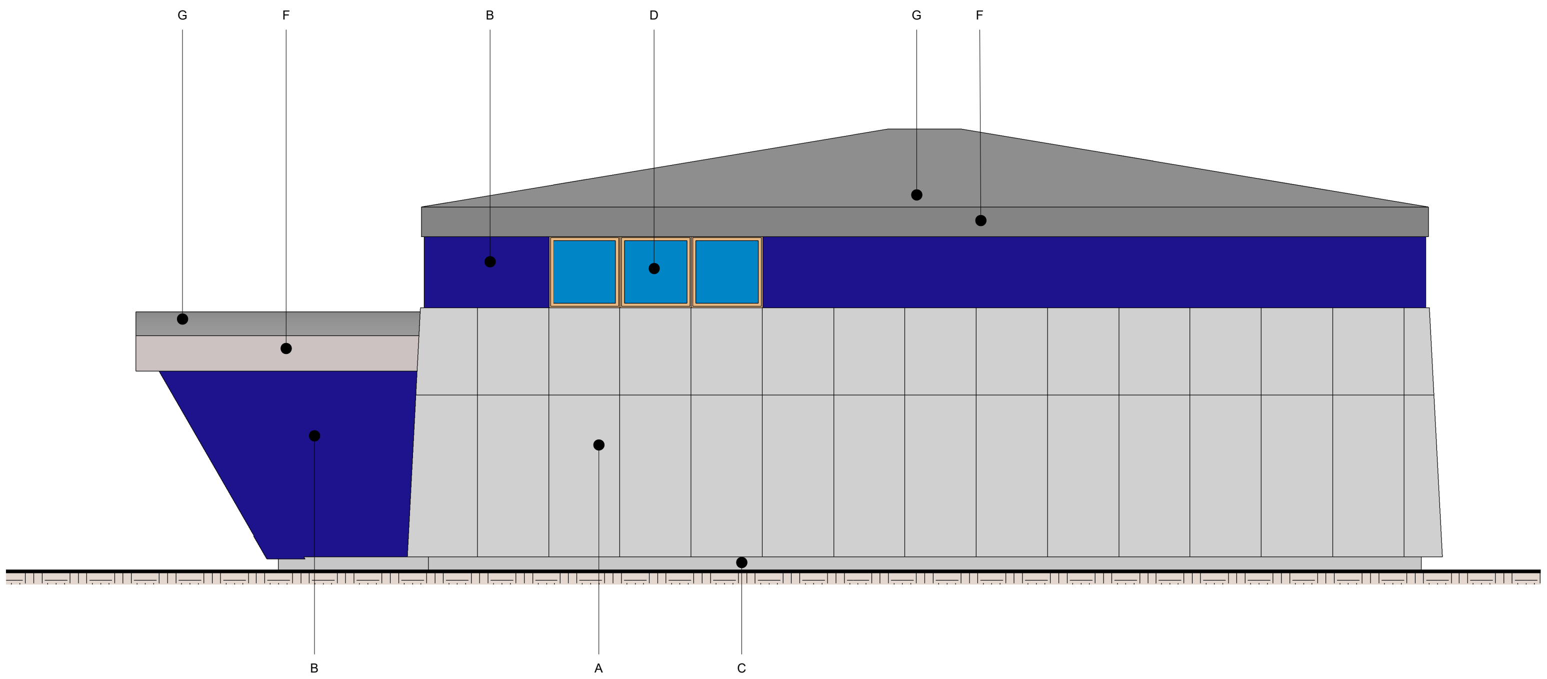


1 SOUTH ELEVATION
1 : 50



2 EAST ELEVATION
1 : 50

ELEVATION LEGEND

A	METAL PANELS
B	METAL PANELS
C	CONCRETE
D	TRANSLUCENT PANELS
E	H.M. DOOR
F	METAL FASCIA
G	METAL ROOF

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ARCADIS ARCHITECTS (CANADA) INC.

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIG (REVISED)	2025-09-26

Consultant

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Project title

City of Iqaluit

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
M.K.

Drawn by
M.K.

Approved by
M.K.

Project Manager
C.G.

Drawing Title

ARCHITECTURAL

AR PUMP STATION
CONCEPTUAL ELEVATIONS

Project no.	Drawing no.	Revision no.
30192375	A-1201	B

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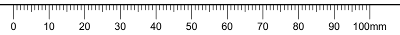


GENERAL:

1. THE GENERAL NOTES AND STRUCTURAL TYPICAL DETAILS ARE GENERAL AND APPLY TO THE ENTIRE PROJECT, EXCEPT WHERE THERE ARE SPECIFIC INDICATIONS TO THE CONTRARY.
2. CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE NUNAVUT BUILDING CODE AT TIME OF TENDER. THE ABOVE TO GOVERN EXCEPT WHERE OTHER APPLICABLE CODES OR THE CONTRACT DOCUMENTS ARE MORE RESTRICTIVE.
3. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE NUNAVUT OCCUPATIONAL HEALTH AND SAFETY ACT, INCLUDING ERECTION, ALTERATION, REPAIR, DISMANTLING, DEMOLITION, STRUCTURAL MAINTENANCE, PAINTING, LAND CLEARING, EARTH MOVING, GRADING, EXCAVATING, TRENCHING, DIGGING, BORING, DRILLING, BLASTING, OR CONCRETING, THE INSTALLATION OF ANY MACHINERY OR PLANT, AND ANY WORK OR UNDERTAKING IN CONNECTION WITH THE PROJECT.
4. THE CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY BRACING AND SUPPORTS FOR ALL SLABS, BEAMS, WALLS AND FRAMES. TEMPORARY BRACING AND SUPPORTS MUST BE CAPABLE OF TRANSFERRING ALL IMPOSED CONSTRUCTION AND DEAD LOADS TO THE STRUCTURE WITHOUT EXCEEDING SPECIFIED DESIGN LOADS.
5. BUILDING CONTROL LINES, REFERENCE LINES, GRID LINES AND TEMPORARY BENCH MARKS SHALL BE CLEARLY IDENTIFIED AND MAINTAINED THROUGHOUT THE ENTIRE CONSTRUCTION PERIOD.
6. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL EXISTING UNDERGROUND AND OVERHEAD UTILITIES. THE CITY AND THE ENGINEER ASSUME NO RESPONSIBILITY FOR THE ACCURACY OF UTILITIES INDICATED ON THE DRAWINGS.
7. READ ALL STRUCTURAL DRAWINGS IN CONJUNCTION WITH ALL RELATED AMEP, CIVIL AND PROCESS DRAWINGS, AND OTHER CONTRACT DOCUMENTS.
8. STRUCTURAL DIMENSIONS CONTROLLED BY OR RELATED TO ALL EQUIPMENT SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
9. ALL EQUIPMENT SUPPORTS, PADS, CURBS, ANCHORAGES, OPENINGS, RECESSES AND REVEALS REQUIRED BY OTHER CONTRACT DRAWINGS SHALL BE CO-ORDINATED AND VERIFIED FOR SIZE AND LOCATION PRIOR TO CASTING CONCRETE. REINFORCEMENT MAY ALSO BE SHOWN ON OTHER DISCIPLINE DRAWINGS.
10. SEE OTHER CONTRACT DRAWINGS AND COORDINATE FOR ACTUAL SIZES, LOCATIONS AND DETAILS OF OPENINGS FOR PIPES, SLEEVES, DUCTS, FLOOR DRAINS, CONDUITS, AND OTHER PENETRATIONS NOT SHOWN ON STRUCTURAL DRAWINGS.
11. SEE AMEP DRAWINGS AND COORDINATE FOR ACTUAL SIZES, LOCATIONS, AND DETAILS OF EQUIPMENT BASES, SLIDE GATES AND SIMILAR ITEMS.
12. SEE ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS FOR SIZES, REINFORCING, AND LOCATIONS OF CONCRETE ENCASED CABLES, CONDUITS, DUCT BANKS, AND CONCRETE PADS FOR ALL EQUIPMENT NOT SHOWN ON STRUCTURAL DRAWINGS.
13. OPENINGS LARGER THAN 300mm, OR GROUPS OF OPENINGS NOT SHOWN ON STRUCTURAL DRAWINGS, SHALL BE REVIEWED AND APPROVED BY THE ENGINEER PRIOR TO CASTING CONCRETE.
14. NO SLEEVES, DUCTS, PIPES OR OTHER OPENINGS SHALL PASS THROUGH JOISTS, BEAMS OR COLUMNS, EXCEPT WHERE DETAILED ON THE STRUCTURAL DRAWINGS.
15. BEFORE CASTING CONCRETE, THE CONTRACTOR SHALL ENSURE THAT ALL EMBEDDED ITEMS, SUCH AS ANCHOR BOLTS, SLEEVES AND WATERSTOPS ARE IN POSITION AND SECURELY FASTENED IN PLACE TO THE SATISFACTION OF THE ENGINEER.
16. INTERNAL WATERSTOPS, AS SPECIFIED IN THE CONTRACT DOCUMENTS, ARE REQUIRED IN ALL JOINTS OF WATER-RETAINING STRUCTURES AND IN ALL JOINTS OF ALL BASE SLABS AND EXTERIOR WALLS BELOW GRADE. TERMINATE INTERNAL WATERSTOPS AT GRADE IN NON-WATER-RETAINING EXTERIOR WALLS.
17. THE CONTRACTOR SHALL SUBMIT PROPOSED CONSTRUCTION JOINT LOCATIONS, OTHER THAN THOSE SHOWN ON STRUCTURAL DRAWINGS, TO THE ENGINEER FOR REVIEW AND APPROVAL.
18. STRUCTURAL MEMBERS SHALL NOT BE CUT OR MODIFIED UNLESS SPECIFICALLY DETAILED OR APPROVED IN WRITING BY THE ENGINEER.
19. ALL LIQUID-RETAINING STRUCTURES AND STRUCTURES BELOW GRADE SHALL BE WATERTIGHT.
20. DESIGN DETAILS, SECTIONS, AND TYPICAL DETAILS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO SIMILAR SITUATIONS AND LOCATIONS OCCURRING THROUGHOUT THE PROJECT, WHETHER OR NOT THEY ARE INDIVIDUALLY CALLED OUT ON DRAWINGS.
21. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL STRUCTURES FROM FLOTATION DURING CONSTRUCTION.

ROCK SOCKET PILES

GENERAL NOTES – ROCK SOCKET PILES

1. DESIGN BASIS
ROCK SOCKET PILES SHALL BE DESIGNED IN ACCORDANCE WITH CSA A23.3-19 DESIGN OF CONCRETE STRUCTURES AND CSA S6-19 CANADIAN HIGHWAY BRIDGE DESIGN CODE.
PILE CAPACITIES ARE BASED ON END BEARING IN COMPETENT ROCK AND SIDE SHEAR ALONG THE SOCKET LENGTH.
MINIMUM SOCKET LENGTH AND DIAMETER SHALL BE AS SHOWN ON DRAWINGS OR AS DIRECTED BY THE ENGINEER.

2. MATERIALS
CONCRETE: CSA A23.1-19, EXPOSURE CLASS C-1, MINIMUM 35 MPa AT 28 DAYS.
REINFORCING STEEL: CSA G30.18, GRADE 400W.
STEEL CASING (IF REQUIRED): ASTM A252 GRADE 3 OR EQUIVALENT.

3. CONSTRUCTION REQUIREMENTS
DRILL PILES TO COMPETENT ROCK AS VERIFIED BY SITE INSPECTION.
ROCK SOCKET SHALL BE CLEANED OF LOOSE MATERIAL, SLURRY, AND DEBRIS PRIOR TO PLACING REINFORCEMENT AND CONCRETE.
SOCKET LENGTH SHALL BE CONFIRMED BY ENGINEER BASED ON INSPECTION AND TESTING.
REINFORCEMENT CAGES SHALL BE CENTERED AND SUPPORTED TO MAINTAIN COVER.
CONCRETE SHALL BE PLACED BY TREMIE METHOD OR PUMP TO AVOID SEGREGATION AND WASHOUT.
MAINTAIN CONTINUOUS CONCRETE PLACEMENT TO PREVENT COLD JOINTS.

4. INSPECTION AND TESTING
ROCK QUALITY SHALL BE VERIFIED BY CORING OR ENGINEER'S INSPECTION.
PILE INSTALLATION RECORDS SHALL INCLUDE DEPTH TO ROCK, SOCKET LENGTH, AND CONCRETE VOLUME.
LOAD TESTING MAY BE REQUIRED TO CONFIRM DESIGN CAPACITY.

5. TOLERANCES
PILE LOCATION: ±75 MM.
VERTICALITY: ≤ 1:100.
SOCKET LENGTH: NOT LESS THAN SPECIFIED MINIMUM.

6. SAFETY AND COORDINATION
CONTRACTOR SHALL COORDINATE DRILLING OPERATIONS WITH ADJACENT STRUCTURES AND UTILITIES.
ENSURE STABILITY OF EXCAVATION AND CASING DURING DRILLING.
FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR TREMIE PLACEMENT AND ADMIXTURES.

DESIGN CRITERIA:

1. STRUCTURE HAS BEEN DESIGNED TO RESIST WIND AND SEISMIC LOADS WHICH ARE IN ACCORDANCE WITH THE USER'S GUIDE - NBC 2020 STRUCTURAL COMMENTARIES (PART 4 OF DIVISION B), FOR THE IMPORTANCE CATEGORY TERRITORYD IN NOTE #9, THE WIND AND SEISMIC PARAMETERS FOUND IN NOTE #10, AND FOR SITE CLASS **C**, F_a = **1.0**, F_v = **1.0**, $I_E F_a S_a(0.2)$ = **1.5*1*0.202=0.303**, R_d = **2.0**, R_o = **1.3** (CONVENTIONAL CONSTRUCTION OF CONCRETE SHEAR WALLS), AND NO IRREGULARITIES, USING STATIC AND DYNAMIC ANALYSIS IN BOTH DIRECTIONS.
2. ROOF ELEMENTS SUCH AS JOISTS, JOISTS GIRDERS, METAL DECK, ETC. AND THEIR CONNECTIONS TO THE SUPPORTING STRUCTURE ARE TO BE DESIGNED FOR UPWARD SUCTION DUE TO WIND. THE GROSS UPWARD DESIGN PRESSURES ARE SHOWN ON THE ROOF LOADING PLAN.
3. ADDITIONAL SNOW ACCUMULATIONS ADJACENT TO ROOFS ARE SHOWN ON THE ROOF PLAN DRAWING IN ACCORDANCE WITH THE USER'S GUIDE - NBC 2020 STRUCTURAL COMMENTARIES (PART 4 OF DIVISION B). FOR CLARITY, NOT ALL ACCUMULATIONS ARE SHOWN ON THE PLAN.
4. AS A MINIMUM, WIND LOADS SHALL BE CALCULATED ON THE BASIS OF OPEN TERRAIN AND BUILDING CATEGORY 3 AS DEFINED IN THE USER'S GUIDE - NBC 2020 STRUCTURAL COMMENTARIES (PART 4 OF DIVISION B). IF OTHER PROVISIONS OF SAID COMMENTARIES RESULT IN HIGHER WIND LOADS AND/OR MORE STRINGENT WIND EFFECTS, THESE LOADS AND EFFECTS SHALL BE CONSIDERED IN THE DESIGN.
5. ALL LOADS SHOWN ON DRAWINGS ARE SPECIFIED (NO LOAD FACTOR APPLIED) LOADS UNLESS NOTED OTHERWISE. HOWEVER, (ULS) IMPORTANCE FACTORS ARE APPLIED, UNLESS NOTED OTHERWISE.
6. ALL LOAD EFFECTS (AXIAL FORCES, SHEARS. MOMENTS AND TORSIONS) ARE FACTORED, UNLESS OTHERWISE NOTED.
7. STRUCTURES ARE NOT STABLE UNTIL ALL COMPONENTS (INCLUDING BUT NOT LIMITED TO MOMENT CONNECTIONS, BRACING, FLOOR & ROOF DECK AND SHEATHING) ARE CONSTRUCTED.
8. MATERIALS:

STRUCTURAL STEEL: CAN/CSA-G40.20/G40.21.
GRADE 350W FOR W-SECTIONS. GRADE 300W FOR OTHERS.

COLD-FORMED STEEL: YIELD STRENGTH = 350 MPa MIN.

HOLLOW STRUCTURAL SECTIONS (HSS): CONFORM TO CAN/CSA G40-20/G40.21-M GRADE 350W, CLASS C.

WELDING: E49XX ELECTRODES.

BOLTS, NUTS AND WASHERS: CONFORM TO ASTM A325.

ANCHOR BOLTS: CONFORM TO ASTM F1554 GRADE 36, UNLESS NOTED OTHERWISE.

PRIMER: SEE SPECIFICATION.

REINFORCING STEEL: DEFORMED CONCRETE REINFORCING BARS CONFORMING TO CAN/CSA-G30.18, GRADE 400R OR 400W, UNLESS NOTED OTHERWISE. WHERE WELDABLE REINFORCING STEEL IS SPECIFIED, IT SHALL BE GRADE 400W, UNLESS NOTED OTHERWISE.

WOOD: LUMBER: GRADED TO NLGA RULES NO.1/NO.2 S-DRY, UNLESS NOTED OTHERWISE. MSR GRADE FOR TRUSSES AS REQUIRED.

GLULAM: CSA 0122 SP GRADE 20FE BENDING STRESS, UNLESS NOTED OTHERWISE. 12CE COMPRESSION STRESS, UNLESS NOTED OTHERWISE.

PLYWOOD: CSA 0151 SOFTWOOD EXTERIOR GRADE.

9. STRUCTURE HAS BEEN ASSIGNED THE **POST-DISASTER** IMPORTANCE CATEGORY, AS DEFINED IN THE APPLICABLE EDITION OF THE NATIONAL BUILDING CODE 2020 (INCORPORATING 2025 UPDATES).
10. STRUCTURES HAVE BEEN DESIGNED CONSIDERING THE FOLLOWING CLIMATIC AND SEISMIC DATA:

WIND, kPa	SEISMIC	SNOW, kPa	RAIN, mm
q 1/50 = **0.65**	Sa(0.2) = **0.202** Sa(0.5) = **0.225** Sa(1.0) = **0.143** Sa(2.0) = **0.0709** Sa(5.0) = **0.0191** Sa(10.0) = **0.00609** PGA = **0.112** PGV = **0.144**	Ss = **2.9** Sr = **0.2**	ONE DAY = **58.0**

11. NO STRUCTURES HAVE BEEN DESIGNED FOR FUTURE EXPANSION.

EMBEDDED ITEMS IN CONCRETE

1. GC SHALL COORDINATE WITH ALL DISCIPLINES SUB-CONTRACTOR FOR PROCURING AND INSTALLING SLEEVES OR PENETRATIONS IN THE CONCRETE/REINFORCEMENT AREA.
2. ALL SUB SHALL REQUIRE TO DO SHOP ON EMBEDDED ITEMS IN WRITING, BEFORE CONCRETE POUR PLANNING. EXCEPTIONS SHALL REQUIRE WRITTEN APPROVAL OF STRUCTURAL ENGINEER IF DECIDED FOR EXECUTION.
3. ALL GROUNDING WIRE SHALL BE EMBEDDED INSIDE THE CONCRETE. NO POST-INSTALLATION OF GROUNDING WIRE AND THEIR CONNECTION IS ALLOWED WITHOUT WRITTEN APPROVAL OF STRUCTURAL ENGINEER IF DECIDED FOR GOOD REASON.
4. GENERAL:
   - WHEN APPROVED BY EOR, PIPES, CONDUITS, AND SLEEVES EMBEDDED IN CONCRETE SHALL BE INSTALLED IN ACCORDANCE WITH ACI 318, CLAUSE 6.3 AND THE FOLLOWING GUIDELINES.
   - EMBEDDED ITEMS SHALL BE FREE FROM OIL, GREASE, LOOSE RUST, SCALING AND NON-METALLIC COATINGS. ITEMS SHALL NOT IMPAIR THE STRUCTURAL CAPACITY AND DURABILITY OF CONCRETE.
   - WHERE SLEEVES, PIPES, ETC. SHALL NOT AFFECT THE STRUCTURAL CAPACITY AND DURABILITY OF CONCRETE, EMBEDDED ITEMS UP TO 50 MM IN SLAB THICKNESS MAY BE ALLOWED. FOR SLAB THICKNESS GREATER THAN 200 MM SLEEVE SHALL BE ALLOWED UP TO 100 MM.
   - EXCEPT CASES IN COMMON CONDUITS WHERE PERMITTED BY CODES AND APPROVED BY EOR, SLEEVES SHALL NOT BE PLACED IN BEAMS.
   - FOR REINFORCED CONCRETE SLABS, PIPES AND SLEEVES SHALL NOT LIE LESS THAN 25 MM BELOW THE TOP OR ABOVE UNDERSIDE OF SLAB UNLESS NOTED OTHERWISE.
   - HORIZONTAL EMBEDDED ITEMS SHALL PROVIDE CONTINUOUS STRAIGHT SHAFTS.
   - ADD ADDITIONAL REINFORCEMENT AMOUNTS OR ORIENTATIONS AS DIRECTED BY THE EOR.
   - FOR PIPES OR CONDUITS GREATER THAN 100 MM DIAMETER EMBEDDED IN SLABS, BEAMS OR WALLS, PROVIDE TWO #5 BARS PARALLEL TO THE PIPE ON EACH SIDE WITHIN 150 MM FROM PIPE EDGE. FOR PIPES OR CONDUITS GREATER THAN 200 MM DIAMETER EMBEDDED IN SLABS, BEAMS OR WALLS, PROVIDE TWO #5 BARS PARALLEL TO THE PIPE ON EACH SIDE WITHIN 150 MM FROM PIPE EDGE AND TWO #5 BARS PERPENDICULAR TO THE PIPE ON EACH SIDE WITHIN 150 MM FROM PIPE EDGE.
   - FOR PIPES OR CONDUITS GREATER THAN 300 MM DIAMETER, EMBED AT LEAST 150 MM EACH SIDE OF CENTER WITHIN THE MIDDLE THIRD DEPTH OF SLABS.
5. BEAMS:
   - MAXIMUM SIZE OF HORIZONTAL CONDUITS PARALLEL TO THE BEAM LENGTH SHALL NOT EXCEED 1/3 OF THE CROSS SECTIONAL AREA OF BEAM.
   - CONDUITS SHALL BE AVOIDED OR EMBEDDED CLOSE TO ANY BEAMS OR SLAB BANDS UNLESS APPROVED IN WRITING BY EOR.
6. FOR WALLS:
   - SLEEVES IN SHEAR WALLS, CONDUIT SLEEVES OR EMBEDDED PIPES ARE NOT ALLOWED WITHOUT THE WRITTEN APPROVAL OF EOR.
7. FOR SHEAR WALLS – GENERALLY, SLEEVES OR EMBEDDED PIPES:
   - MAXIMUM DIAMETER = 100 MM, WHERE PERMITTED.
   - HORIZONTAL RUNS = MINIMUM WALL THICKNESS PERMITTED.
   - VERTICAL RUNS = SHALL BE LOCATED IN CENTER OF WALL AND SHALL HAVE A MINIMUM OF 150 MM CLEAR SPACING TO ANY REINFORCEMENT.
   - SLEEVES SHALL BE LOCATED GREATER THAN 300 MM TO SHEAR WALLS OR SHEAR WALL ZONES.
8. FOR REINFORCED CONCRETE SLABS – CONDUITS IN THE MIDDLE OF THE SLAB:
   - EMBEDDED ITEMS SHALL BE LOCATED IN THE CENTER 1/3 OF THE SLAB.
   - PLACE PIPES IN ONE LAYER AND PARALLEL TO THE SLAB EDGE.
   - PLACING PIPES IN TWO LAYERS OR CROSSING NOT PERMITTED.
9. GUIDELINES FOR SLEEVES THROUGH SLABS AND EMBEDDED ITEMS IN SLABS:
   - FOR SLABS LESS THAN 200 MM THICKNESS, EMBEDDED ITEMS SHALL BE LOCATED IN CENTER OF SLAB.
   - FOR SLABS GREATER THAN 200 MM THICKNESS, EMBEDDED ITEMS TO BE 100 MM BELOW TOP OF SLAB AND 100 MM ABOVE BOTTOM OF SLAB.
   - EMBEDDED ITEMS SHALL BE LOCATED GREATER THAN 300 MM TO BEAM AND STUD ZONES.
10. GUIDELINES FOR HVAC CONDUITS AND PIPES:
    - HVAC CONDUITS AND PIPES WITHIN 100 MM OF SLAB THICKNESS OF HEADED STUD ZONES, SLAB BANDS OR BEAMS NOT PERMITTED.
    - HVAC CONDUITS AND PIPES GREATER THAN 100 MM DIAMETER SHALL NOT BE LOCATED IN SLABS LESS THAN 200 MM THICKNESS. HVAC CONDUITS AND PIPES MAY ASK EOR TO HEAD SLAB OUT OF SLAB BAND IF SLAB HICKNESS IS 200 MM.
    - HVAC CONDUIT LOCATED LESS THAN 300 MM TO SLAB THICKNESS FROM FACE OF SLAB BAND OR BEAM NOT PERMITTED.
    - HVAC CONDUIT PARALLEL TO DROP OF CAPITAL OR DROP CLOSER TO EDGE THAN 300 MM NOT PERMITTED UNLESS APPROVED IN WRITING.
11. GUIDELINES FOR RIGID DUCTS:
    - RIGID DUCTS SHALL BE SUPPORTED WITH LAYOUT & CONCENTRATED STIRRUPS TO BE PROVIDED IN SLAB BEFORE POUR OF CONSTRUCTION.
    - MINIMUM CLEAR SPACING = 100 MM BETWEEN EMBEDDED ITEMS.
    - MINIMUM CLEAR SPACING TO COLUMNS AND WALLS = 150 MM UNLESS NOTED OTHERWISE IN STRUCTURAL DRAWINGS.
12. VERTICAL DUCT PENETRATION TO BE MIN. 300 CLEAR OF FREE SLAB EDGE.

CONCRETE:

1. THE DESIGN AND CONSTRUCTION OF ALL WORK ON THIS PROJECT SHALL CONFORM TO THE APPLICABLE EDITION OF THE FOLLOWING CSA STANDARDS:
CSA-A23.1 "CONCRETE MATERIALS AND METHODS OF CONCRETE CONSTRUCTION";
CSA-A23.2 "TEST METHODS AND STANDARD PRACTICES FOR CONCRETE";
CSA-A23.3 "DESIGN OF CONCRETE STRUCTURES";
CAN/CSA-G30.18 "BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT".
2. UNLESS NOTED OTHERWISE, MINIMUM CONCRETE COMPRESSIVE STRENGTH AT 28 DAYS SHALL BE AS FOLLOWS:

- LEAN CONCRETE FILL	0.4 MPa
- MUD SLAB	5 MPa (EXPOSURE CLASS F-1)
- FOOTINGS	35 MPa (EXPOSURE CLASS C-1)
- PIERS, WALLS & CURBS	35 MPa (EXPOSURE CLASS C-1)
- SLABS ON GRADE	SEE FOUNDATION AND SLAB ON GRADE PLANS AND SPEC.
- EXTERIOR APRONS	35 MPa (EXPOSURE CLASS C-1)

3. MINIMUM CONCRETE COVER TO REINFORCING BARS:

CONCRETE CLEAR COVER (CSA A23.1)			
EXPOSURE CONDITION	EXPOSURE CLASS		
	N	F-1	C-1
CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH, INCLUDING FOOTINGS AND PILES	75 mm	75 mm	75 mm
BEAMS, GIRDERS, COLUMNS AND PILES	30 mm (#1)	40 mm	60 mm
SLABS, WALLS, JOISTS, SHELLS AND FOLDED PLATES	20 mm (#1)	40 mm	60 mm
RATIO OF COVER TO NOMINAL BAR DIAMETER (#2)	1.0 (#1)	1.5	2.0
RATIO OF COVER TO NOMINAL MAXIMUM AGGREGATE SIZE	1.0 (#1 & #3)	1.5	2.0

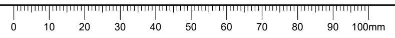
NOTES:

#1. THIS REFERS ONLY TO CONCRETE THAT WILL BE CONTINUALLY DRY WITHIN THE CONDITIONED SPACE (i.e., MEMBERS ENTIRELY WITHIN THE VAPOUR BARRIER OF THE BUILDING ENVELOPE).

#2. THE COVER FOR A BUNDLE OF BARS SHALL BE THE SAME AS THAT FOR A SINGLE BAR WITH AN EQUIVALENT AREA.

#3. THE SPECIFIED COVER FROM SCREEDED SURFACES SHALL BE AT LEAST 1.5 TIMES THE NOMINAL MAXIMUM AGGREGATE SIZE TO REDUCE INTERFERENCE BETWEEN AGGREGATE AND REINFORCEMENT WHERE VARIATIONS IN BAR PLACEMENT RESULT IN A COVER SMALLER THAN SPECIFIED.

4. DETAIL, BEND, PLACE AND SUPPORT REINFORCING STEEL IN CONFORMANCE WITH THE LATEST RSIC MANUAL OF STANDARD PRACTICE, UNLESS NOTED OTHERWISE.
5. ALTERNATE 90° HOOKS OF CROSSTIES END FOR END OVER HEIGHT OF ALL MEMBERS IN WHICH CROSSTIES ARE SPECIFIED.
6. ALL LAP SPLICES SHALL BE CLASS B TENSION SPLICES. FOR HORIZONTAL REINFORCEMENT THAT WILL BE PLACED IN SUCH A WAY THAT MORE THAN 300 mm OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE SPLICE, BAR LOCATION FACTOR (k/1) EQUAL TO 1.3 SHALL BE APPLIED IN DETERMINING CLASS B TENSION SPLICE LENGTH, IN ACCORDANCE WITH APPLICABLE EDITION OF CSA-A23.3.
7. PLAIN (UNREINFORCED) CONCRETE EXPOSED TO FREEZE–THAW AND MOISTURE SHALL MEET EXPOSURE CLASS F-2 IN ACCORDANCE WITH THE APPLICABLE EDITION OF CSA A23.1.
8. REINFORCED CONCRETE SUBJECT TO CHLORIDES, FREEZE–THAW, OR CONTINUOUS MOISTURE EXPOSURE SHALL MEET EXPOSURE CLASSIFICATION C-1 OR F-2, AS APPLICABLE, IN ACCORDANCE WITH THE APPLICABLE EDITION OF CSA A23.1.
9. PROVIDE CORROSION INHIBITOR IN ALL CONCRETE OF EXPOSURE CLASS C-1 OR WHERE CHLORIDE EXPOSURE IS EXPECTED. REFER TO SPECIFICATIONS FOR CORROSION INHIBITOR DOSAGE RATE.
10. USE TYPE HS OR TYPE HE PORTLAND CEMENT, OR APPROVED BLENDED CEMENT, FOR ALL CONCRETE SUBJECT TO FREEZE–THAW, SULFATES, OR EARLY-AGE COLD-WEATHER PLACEMENT. TYPE GU IS NOT PERMITTED FOR EXTERIOR OR WATER-EXPOSED CONCRETE.
11. ALL HORIZONTAL WALL AND GRADE BEAM REINFORCING SHALL BE CONTINUOUS THROUGH PIERS. UNLESS NOTED OTHERWISE, SPLICE TOP BARS AT MID-SPAN AND BOTTOM BARS AT SUPPORTS FOR ALL GRADE BEAMS.
12. WHEREVER OPENINGS OCCUR, INTERRUPTING ONE OR MORE REINFORCING BARS IN SLABS OR WALLS, PROVIDE ADDITIONAL REINFORCING STEEL EQUAL TO THE REINFORCING STEEL DISPLACED BY THE OPENING UNLESS OTHERWISE SHOWN. DISTRIBUTE REINFORCEMENT EQUALLY ON EACH SIDE OF THE OPENING AND EXTEND THE FULL SPAN LENGTH.
13. NO SLEEVES, PIPES, HOLES OR NOTCHES SHALL BE PLACED IN OR THROUGH WALLS, COLUMNS, PIERS, BEAMS, GRADE BEAMS, SLABS, FOOTINGS, OR ANY OTHER CONCRETE MEMBER, EXCEPT AS SHOWN ON THE STRUCTURAL DRAWINGS OR APPROVED BY THE ENGINEER.
14. DO NOT PLACE CONCRETE FOOTINGS OR ANY OTHER CONCRETE MEMBER UNTIL ALL DESIGNATED REINFORCING STEEL HAS BEEN PLACED AND INSPECTED AND ANY CONDUITS, PIPING OR OTHER EMBEDDED ITEMS ARE INSTALLED AND VERIFIED.
15. MAXIMUM WATER-TO-CEMENTING MATERIALS RATIO (w/cm) SHALL BE 0.45, AND MINIMUM 28-DAY COMPRESSIVE STRENGTH SHALL BE 32 MPa FOR ALL EXTERIOR SLABS AND ANY CONCRETE SUBJECT TO FREEZE–THAW OR MOISTURE EXPOSURE. AIR-ENTRAINMENT SHALL BE PROVIDED IN ACCORDANCE WITH CSA A23.1 FOR SEVERE EXPOSURE CONDITIONS.
16. WATERPROOF CONCRETE SHALL BE USED FOR ALL STRUCTURAL ELEMENTS LOCATED IN OR BELOW WATER LEVEL. CONCRETE MIX SHALL BE DESIGNED FOR LOW PERMEABILITY, CONTINUOUS WATER EXPOSURE, FREEZE–THAW DURABILITY, AND SHALL MEET CSA A23.1 REQUIREMENTS FOR IMMERSION CONDITIONS. PROVIDE APPROVED WATERPROOFING ADMIXTURES, PROPER CURING, AND JOINT TREATMENT TO ENSURE WATER TIGHTNESS UNDER HYDROSTATIC PRESSURE.



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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
D	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
C	ISSUED FOR PRELIMINARY DESIGN (REVISED)	2025-09-26
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A	ISSUED FOR CONCEPT DESIGN	2023-11-27

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Project title
CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
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Drawn by
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Approved by
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Project Manager
C.G.

Drawing Title
STRUCTURAL

LQ PUMP STATION
GENERAL NOTES

Project no.	Drawing no.	Revision no.
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FOUNDATION:

1. ALL FOOTINGS SHALL BEAR ON SUITABLE FOUNDING MATERIAL WITH MINIMUM SLS BEARING RESISTANCE OF **1000** kPa, MINIMUM ULS BEARING RESISTANCE OF **1500** kPa, FRICTION ANGLE OF AT LEAST **30**° AND MINIMUM FACTORED SLIDING RESISTANCE OF **100**. MAX. ALLOWABLE TOTAL SETTLEMENT TO BE **50** mm. MAX. ALLOWABLE DIFFERENTIAL SETTLEMENT TO BE **25** mm.
2. ALL BEARING VALUES AND GEOTECHNICAL INFORMATION ARE BASED ON GEOTECHNICAL REPORTS:
   - **PRELIMINARY GEOTECHNICAL INVESTIGATION REPORT - DRAFT. LONG TERM WATER PROGRAM - SUPPLY AND STORAGE. IQALUIT, NUNAVUT. JANUARY 2025 (NEED TO BE UPDATE WITH FINAL GEOTECHNICAL INVESTIGATION REPORT).**
   - **GEOTECHNICAL INVESTIGATION APEX RIVER LTWP PUMO STATION AND PIPELINE CROSSING (FINAL REPORT). JUNE 27, 2025.**
3. THE CONTRACTOR SHALL PROTECT SOIL FROM WATER AND FREEZING ADJACENT TO AND BELOW ALL FOOTINGS, GRADE BEAMS AND OTHER CONCRETE POURS WITH MINIMUM XXXX mm SOIL COVER OR EQUIVALENT.
4. ALL EXCAVATIONS AND FOUNDING MATERIAL SHALL BE INSPECTED AND APPROVED BY A QUALIFIED SOILS ENGINEER PRIOR TO CONCRETE PLACEMENT.
5. THE CONTRACTOR SHALL PROVIDE ALL SHORING WHERE REQUIRED DURING EXCAVATION TO PREVENT CAVE-IN.
6. THE EXCAVATION SLOPE WILL BE DETERMINED LATER IN ACCORDANCE WITH THE SUPPLEMENTARY GEOTECHNICAL REPORT.
7. ANY OVER EXCAVATION NECESSITATED BY LOCAL SOFT AREAS OR OTHER DELETERIOUS CONDITIONS SHALL BE MADE GOOD WITH 5 MPa LEAN CONCRETE FILL.
8. FOUNDATION WALL BACKFILL SHALL BE OPSS TYPE 1 GRANULAR 'B' OR APPROVED FREE-DRAINING, IN-SITU MATERIAL COMPACTED, IN LAYERS NOT TO EXCEED 200 mm, TO 98% STANDARD PROCTOR MAXIMUM DRY DENSITY.
9. BACKFILL TO PROCEED SIMULTANEOUSLY ON BOTH SIDES OF FOUNDATION WALLS UNLESS TEMPORARY SUPPORT IS PROVIDED. DO NOT BACKFILL UNTIL CONCRETE HAS ATTAINED 75% OF ITS SPECIFIED 28-DAY COMPRESSIVE STRENGTH.
10. CONSTRUCTION JOINTS AND CONTROL JOINTS IN REINFORCED FOUNDATION WALLS SHALL BE LOCATED AT THE EDGE OF PIERS (WHERE PIERS ARE PRESENT). MAXIMUM SPACING OF CONSTRUCTION JOINTS SHALL BE AS REQUIRED, BUT NOT GREATER THAN 20 m. UNLESS NOTED
    OTHERWISE. MAXIMUM SPACING OF CONTROL JOINTS SHALL BE 6 m, AND 3 m FROM CORNERS.
11. ALL EARTH-RETAINING WALLS HAVE BEEN DESIGNED ASSUMING FREE-DRAINING BACKFILL.
12. FOUNDATIONS SHALL BE CONSTRUCTED AS SHOWN ON THE DRAWINGS. CONTRACTOR SHALL INCLUDE IN THEIR WORK ALL PROVISIONS, INCLUDING BUT NOT LIMITED TO EXCAVATION AND FORMING, AS REQUIRED TO CONSTRUCT FOUNDATIONS THUS.

REINFORCING STEEL:

1. ALL REINFORCING STEEL SHALL CONFORM TO CSA-G30.18-21, GRADE 400W.
2. MINIMUM CLEAR SPACING BETWEEN PARALLEL REINFORCING BARS SHALL BE 1.4 TIMES THE BAR DIAMETER, 1.4 TIMES THE MAX. AGGREGATE SIZE OR 30 mm WHICHEVER IS GREATER. PROVIDE 75 mm MINIMUM LAPPED REBAR CLEARANCE FOR CONCRETE VIBRATOR ACCESS.
3. DEVELOPMENT LENGTHS AND LAP SPLICES SHALL BE IN ACCORDANCE WITH THE REINFORCING STEEL INSTITUTE OF CANADA, MANUAL OF STANDARD PRACTICE UNLESS INDICATED OTHERWISE. ALL LAP SPLICES SHALL BE CLASS 'B' TENSION LAP SPLICES AND CLASS 'B' TENSION LAP SPLICES SHALL BE PROVIDED FOR ALL SHRINKAGE AND TEMPERATURE BARS. WHERE TWO BARS OF DIFFERENT DIAMETERS ARE LAPPED, PROVIDE CLASS 'B' TENSION LAP LENGTH CORRESPONDING TO THE SMALLER BAR BUT NO LESS THAN FULL TENSION DEVELOPMENT LENGTH OF THE LARGER BAR.
4. PROVIDE EMBEDMENT LENGTH FOR FULL TENSION DEVELOPMENT IN ACCORDANCE WITH CSA A23.3-19.
5. DEVELOPMENT LENGTH AND SPLICE LENGTH TO BE AS PER TABLE (SEE TYPICAL DETAILS), UNLESS OTHERWISE SHOWN ON DRAWINGS.
6. TANDARD 90° HOOK TO CONFORM TO A23.3 AND THE TABLE (SEE TYPICAL DETAILS), WHICHEVER IS MORE STRINGENT, UNLESS OTHERWISE SHOWN ON DRAWINGS.
7. STANDARD 180° HOOK TO CONFORM TO A23.3 CLAUSE 12.5
8. ALL REINFORCING BAR TYING AND PLACING SHALL BE IN ACCORDANCE WITH CSA A23.1 AND CSA G30.18, WITH CONSIDERATION FOR CORROSION PROTECTION.
9. REINFORCING STEEL MUST MEET BEND TEST REQUIREMENTS FOR RESPECTIVE REBAR GRADES PER CSA STANDARD G30.18:21.
10. WHERE REINFORCING BARS ARE SHOWN CONTINUOUS, SPLICE BOTTOM BARS OVER SUPPORTS AND TOP BARS AT CENTRE OF SPAN U.N.O. ALL OTHER LAP SPLICES SHALL BE IN ACCORDANCE WITH CSA A23.3-19, U.N.O.
11. PROVIDE DOWELS (STARTER BARS) FOR WALLS AND COLUMNS SIMILAR IN NUMBER, SIZE AND SPACING TO THE VERTICAL REINFORCEMENT IN THE WALLS OR COLUMNS ABOVE, U.N.O. ALL DOWELS SHALL CONFORM TO CSA A23.3-19 REQUIREMENTS FOR DEVELOPMENT AND SPLICE LENGTHS.

EXCAVATION AND SUPPORT OF EXCAVATION:

1. THE CONTRACTOR SHALL CHECK AND VERIFY THE LOCATION OF ANY UNDERGROUND UTILITIES OR OTHER EXISTING SERVICES WHICH MAY INTERFERE WITH THE WORK OF THIS PROJECT AND COORDINATE WITH THE AUTHORITIES AS MAY BE REQUIRED FOR RELOCATION, REMOVAL OR TEMPORARY SUPPORT.
2. THE CONTRACTOR SHALL PROVIDE ADEQUATE MEANS OF DEWATERING TO ENSURE EXCAVATIONS ARE DRY AT ALL TIMES. PLACEMENT OF CONCRETE SHALL ONLY BE MADE IN DRY EXCAVATIONS. THE METHOD OF DEWATERING SHALL BE SUCH AS TO PREVENT SETTLEMENT OF, AND DAMAGE TO, ANY ADJACENT STRUCTURES.
3. SHOULD THE PROPOSED CONSTRUCTION REQUIRE THE DISCHARGE OF GROUND WATER OR ACCUMULATED RAIN WATER OR SNOW MELT TO THE CITY'S STORM SEWER SYSTEM, AN APPROVAL FOR TEMPORARY STORM SEWER DISCHARGE MUST BE ACQUIRED, IN ACCORDANCE WITH SCHEDULE 15-2 PART 2 SECTION 4.11 (A)(VIII). A DEWATERING AND DISCHARGE PLAN MUST BE SUBMITTED FOR REVIEW AND APPROVAL TO ENSURE COMPLIANCE WITH THE CITY'S STORM SEWER BY-LAW.
4. THE CONTRACTOR SHALL PROVIDE ALL SHORING WHERE REQUIRED DURING EXCAVATION TO PREVENT CAVE-IN.

TEMPORARY EARTH RETENTION SYSTEM

1. CONTRACTOR SHALL FURNISH, ERECT, AND REMOVE AS NOTED ALL ELEMENTS OF THE TEMPORARY EARTH RETENTION SYSTEM NECESSARY TO SAFELY MAINTAIN THE REQUIRED OPEN-CUT EXCAVATION DURING THE CONSTRUCTION OF ALL BELOW GROUND WORK. ACTUAL SIZE AND LOCATION OF ALL ELEMENTS OF SYSTEM SHALL BE DETERMINED BY CONTRACTOR AND INDICATED ON SHOP DRAWINGS. CONTRACTOR DESIGN SHALL BE PERFORMED UNDER THE DIRECTION OF, AND SEALED BY, A LICENSED PROFESSIONAL ENGINEER EXPERIENCED IN THIS TYPE OF WORK. SHOP DRAWINGS, INCLUDING DETAILED SEQUENCE OF WORK, SHALL BE SUBMITTED TO ARCHITECT-ENGINEER FOR REVIEW PRIOR TO COMMENCEMENT OF ANY WORK.
2. VERIFY LOCATION OF ALL UNDERGROUND UTILITIES. ELEMENTS OF RETENTION WALL SHALL BE DESIGNED, INSTALLED, AND REMOVED SO AS TO AVOID DAMAGE TO ANY EXISTING UTILITIES. CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORT AND/OR PROTECTION OF EXISTING UTILITIES WITHIN OR ADJACENT TO EXCAVATED AREA DURING CONSTRUCTION PERIOD.
3. PROVIDE SUFFICIENT CLEARANCE AROUND RETENTION SYSTEM TO ALLOW COMPLETION OF ALL WORK WITHIN EXCAVATION WITHOUT INTERFERENCE FROM ELEMENTS OF RETENTION SYSTEM.
4. PROVIDE TIEBACKS AND WALES, AS REQUIRED, OF SUFFICIENT SIZE AND SPACING TO RESIST ALL LOADS.

BACKFILL REQUIREMENTS:

1. CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES AND COORDINATE WITH AUTHORITIES FOR RELOCATION, REMOVAL, OR TEMPORARY SUPPORT AS REQUIRED.
2. CONTRACTOR SHALL PROVIDE ADEQUATE MEANS OF DEWATERING TO KEEP EXCAVATIONS DRY AT ALL TIMES. CONCRETE SHALL ONLY BE PLACED IN DRY CONDITIONS. DEWATERING METHODS MUST PREVENT SETTLEMENT OR DAMAGE TO ADJACENT STRUCTURES.
3. CONTRACTOR SHALL PROVIDE ALL REQUIRED SHORING TO PREVENT CAVE-IN DURING EXCAVATION.
4. CONTRACTOR SHALL DESIGN, FURNISH, INSTALL, AND REMOVE ALL ELEMENTS OF THE TEMPORARY EARTH RETENTION SYSTEM TO SAFELY MAINTAIN OPEN-CUT EXCAVATION. DESIGN MUST BE SEALED BY A LICENSED PROFESSIONAL ENGINEER EXPERIENCED IN THIS TYPE OF WORK. SHOP DRAWINGS AND SEQUENCE OF WORK SHALL BE SUBMITTED FOR REVIEW PRIOR TO COMMENCEMENT.
5. PROVIDE SUFFICIENT CLEARANCE AROUND RETENTION SYSTEM TO ALLOW COMPLETION OF ALL WORK WITHIN EXCAVATION WITHOUT INTERFERENCE.
6. PROVIDE TIEBACKS AND WALES OF ADEQUATE SIZE AND SPACING TO RESIST ALL LOADS.
7. BACKFILL SHALL BE PLACED SIMULTANEOUSLY BEHIND BOTH WALLS IN MAXIMUM 8" UNIFORM LIFTS. DIFFERENTIAL ELEVATION BETWEEN SIDES SHALL NOT EXCEED 18".
8. DIFFERENCE IN HEIGHT OF FILL BETWEEN ADJACENT SPANS IN INDIVIDUAL UNITS SHALL NOT EXCEED 500 mm IN EACH DIRECTION.
9. BACKFILL MUST BE PLACED SIMULTANEOUSLY BEHIND BOTH WALLS OF EACH UNIT, KEEPING THE BACKFILL HEIGHT APPROXIMATELY THE SAME. AT NO TIME SHALL THE DIFFERENCE IN ELEVATION BE GREATER THAN 600 mm.
10. DO NOT BACKFILL AGAINST WALLS RETAINING EARTH (OTHER THAN CANTILEVER WALLS) UNTIL THE WALLS AND THE FLOOR CONSTRUCTION AT TOP AND BOTTOM OF THE WALLS HAVE BEEN CAST AND ATTAINED 100% OF DESIGN STRENGTH, U/N.

EQUIPMENT AND UTILITY SUPPORT:

1. MECHANICAL EQUIPMENT LOADS INDICATED ARE BASED ON THE UNITS SHOWN ON THE MECHANICAL DRAWINGS AND ARE TOTAL OPERATING WEIGHTS UNLESS OTHERWISE NOTED. ANY CHANGES IN TYPE, SIZE, ORIENTATION OR NUMBER OF PIECES OF EQUIPMENT SHALL BE REPORTED TO THE OWNER'S REPRESENTATIVE FOR VERIFICATION OF THE ADEQUACY OF SUPPORTING MEMBERS PRIOR TO THE PLACEMENT OF SUCH EQUIPMENT.
2. EQUIPMENT LOADS SHALL BE SUPPORTED FROM THE FRAMING TO AVOID OVERSTRESS. EQUIPMENT CONTRACTORS WILL BE REQUIRED TO COORDINATE THEIR LOADS WITH THE FRAMING TO AVOID OVERSTRESS.
3. EQUIPMENT CONTRACTORS SHALL SUBMIT FOR REVIEW AND APPROVAL BY THE OWNER'S REPRESENTATIVE DETAILS FOR ALL ROOF MOUNTED EQUIPMENT SUPPORTS. THEY SHALL SHOWING THEIR MAGNITUDE AND LOCATION ALONG WITH DETAILS ON THE CONNECTIONS AND CALCULATIONS INDICATING THAT THE SUPPORTING STRUCTURE IS ADEQUATE TO SUPPORT THE LOADS. THE OWNER'S REPRESENTATIVE SHALL BE RESPONSIBLE FOR REVIEWING AND CHECKING CONNECTIONS TO THE STRUCTURE. THE OWNER'S REPRESENTATIVE SHALL NOT BE RESPONSIBLE FOR THE ADEQUACY OF THE EQUIPMENT SUPPORTS.
4. EXTREME CARE SHALL BE TAKEN IN THE DESIGN AND LOCATION OF EQUIPMENT SUPPORTS TO AVOID OVERSTRESSING THE STRUCTURE. LOADS SHALL BE DISTRIBUTED TO THE STRUCTURE WHEREVER POSSIBLE. SUPPORTS SHALL BE DESIGNED TO AVOID LOCALIZED STRESSING OF THE STRUCTURE OR FRAMING MEMBERS.
5. FOR MECHANICAL UTILITY (PIPES, DUCTS, ETC.) SUPPORT GENERAL NOTES SEE UTILITY DRAWINGS.
6. FOR ELECTRICAL UTILITY (CABLE TRAY, BUS DUCT, ETC.) SUPPORT GENERAL NOTES SEE ELECTRICAL DRAWINGS.

TIMBER:

1. ALL WOOD MATERIALS, FABRICATION AND ERECTION SHALL BE IN ACCORDANCE WITH APPLICABLE
   EDITION OF CAN/CSA-086. ALL TIMBER GRADING TO BE IN ACCORDANCE WITH NLGA.
2. ALL TIMBER FOR TRUSSES, LINTELS, BEAMS, AND STUDS SHALL BE S-P-F No.1/No.2 IN ACCORDANCE WITH NLGA GRADING RULES AND CSA O86-19, U.N.O.
3. ALL TIMBER SHALL CONFORM TO CSA O141 NOMINAL SIZES AND NLGA STRESS GRADING FOR THE SPECIFIED SPECIES, AS REQUIRED BY THE NATIONAL BUILDING CODE OF CANADA AND THE NUNAVUT BUILDING CODE REGULATIONS. NO TIMBER SHALL BE USED THAT DOES NOT MEET THESE DIMENSIONAL AND SPECIES REQUIREMENTS.
4. ALL TRUSSES SHALL BE FABRICATED IN ACCORDANCE WITH NBC PART 4 AND TRUSS PLATE INSTITUTE REQUIREMENTS. ACCOUNT FOR PARTIAL LOADING PATTERNS AS SPECIFIED IN THE CODE.
5. TRUSS FABRICATOR SHALL SUPPLY ERECTION DRAWINGS SHOWING LOCATION, LOADING, FACTORED STRESSES, WIND UPLIFT FORCES, REQUIRED BEARING, TEMPORARY AND PERMANENT BRACING, AND CONNECTIONS. THESE ERECTION DRAWINGS SHALL BEAR THE SEAL OF A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE PROVINCE OF NUNAVUT.
6. ALL HANDLING AND ERECTION OF TRUSSES SHALL BE IN ACCORDANCE WITH TRUSS SUPPLIER'S/FABRICATOR'S REQUIREMENTS.
7. ALL TRUSSES SHALL BE ANCHORED TO SUPPORTS WITH TIE-DOWN STEEL ANCHORS.
8. PROVIDE ALL TEMPORARY AND PERMANENT BRACING AND BRIDGING/BLOCKING NECESSARY FOR PROPER PERFORMANCE OF ROOF SYSTEM.

9. ALL HANGER CONNECTIONS SHALL BE DESIGNED BY THE TRUSS-DESIGN ENGINEER AND SUPPLIED BY THE TRUSS FABRICATOR. ERECTION DRAWINGS SHALL COORDINATE ALL CONNECTIONS AND TRUSSES WITH APPROPRIATE HARDWARE AND FASTENING DETAILS. STEEL CONNECTORS SHALL BE SIMPSON STRONG-TIE OR APPROVED EQUAL.

10. HEADERS AND PLATES SHALL BE SPLICED TO REMAIN CONTINUOUS AT ALL LOCATIONS, UNLESS OTHERWISE NOTED.

11. ALL WALLS AND ROOFS SHALL BE FULLY BLOCKED.

12. MAXIMUM BLOCKING SPACING: WALLS AND ROOFS = 1200 MM (±), ALIGNED WITH SHEATHING JOINTS.

13. FRAMING INTO FLUSH BEAMS SHALL BE FASTENED WITH STEEL JOIST OR BEAM HANGERS.

14. BUILT-UP SAWN LUMBER BEAMS SHALL BE SPIKED AT 300 MM C/C, IN ROWS NOT EXCEEDING 75 MM C/C.

15. BUILT-UP STUDS AND COLUMNS SHALL BE SPIKED AND GLUED AT 150 MM C/C, IN ROWS NOT EXCEEDING 75 MM C/C.

16. ALL PLYWOOD SHEATHING SHALL BE FASTENED TO WOOD FRAMING WITH COMMON WIRE NAILS.

17. ALL WOOD IN CONTACT WITH CONCRETE SHALL BE PRESSURE TREATED IN ACCORDANCE WITH CSA O80 REQUIREMENTS.

18. PREMANUFACTURED SPECIALTY WOOD PRODUCTS (PARALLAM PSL, MICROLLAM LVL, TIMBERSTRAND LSL, WOOD I-JOISTS, TRUSS-JOIST I-JOISTS) SHALL BE STORED, HANDLED, MODIFIED, AND ERECTED STRICTLY PER MANUFACTURER'S DETAILED DIRECTIONS. CERTIFICATION DOCUMENTS SHALL BE PROVIDED BY AN INDEPENDENT INSPECTION AND TESTING COMPANY RETAINED BY THE MANUFACTURER.

19. ALL FASTENERS, ANCHORS, AND CONNECTIONS SHALL BE HOT-DIP GALVANIZED IN ACCORDANCE WITH CSA G164.

STRUCTURAL STEEL:

1. SUBMIT DRAWINGS AND CALCULATIONS OF TYPICAL CONNECTION DETAILS FOR APPROVAL PRIOR TO THE PRE-DETAILING MEETING AND PRIOR TO PROCEEDING WITH DETAILING.
2. UNLESS OTHERWISE NOTED OR DETAILED, DESIGN ALL BEAM CONNECTIONS TO CONFORM TO AISC STANDARD TWO ANGLE WEB CONNECTIONS CAPABLE OF SUPPORTING 50 PERCENT (75 PERCENT FOR COMPOSITE BEAMS) OF THE BEAMS TOTAL UNIFORM LOAD CAPACITY (SPAN TIMES AISC TABULATED VALUE FOR ALLOWABLE UNIFORM LOAD IN kN FOR BEAMS LATERALLY SUPPORTED). CONNECTION ANGLES SHALL BE 8 mm MINIMUM THICKNESS.
3. THE MINIMUM END CONNECTION OF ANY MEMBER SHALL BE MADE WITH TWO A325M BOLTS OR EQUIVALENT WELD. MINIMUM BOLT DIAMETER SHALL BE 20 mm UNLESS NOTED.
4. DESIGN HORIZONTAL AND VERTICAL BRACING END CONNECTIONS FOR LOADS INDICATED ON DRAWINGS OR 50% OF THE TENSILE CAPACITY OF THE MEMBER, WHICHEVER IS GREATER.
5. ALL STRUCTURAL STEEL BOLTING SHALL USE ASTM A325-N HIGH STRENGTH BEARING TYPE BOLTS (THREADS ASSUMED IN THE SHEAR PLANE) THAT ARE FULLY PRE-TENSIONED USING THE "TURN OF THE NUT METHOD" WITH A HARDENED WASHER UNDER THE TURNED ELEMENT. USING LOCK WASHERS, LOCK NUTS OR MACHINE BOLTS FOR STRUCTURAL CONNECTIONS IS NOT PERMITTED. THE USE OF "SNUG TIGHT" BOLTS IS NOT PERMITTED, EXCEPT AT TOP OF WIND COLUMNS.
6. MAKE FIELD CONNECTIONS WITH ASTM A325-N TYPE 1 HIGH STRENGTH BEARING TYPE BOLTS (THREADS ASSUMED IN THE SHEAR PLANE) UNLESS OTHERWISE NOTED.
7. FOR THE DESIGN OF SLIP-CRITICAL CONNECTIONS, USE BOLT VALUES FOR A CLASS "A" SURFACE (CLEAN MILL SCALE), REGARDLESS OF CLEANING AND OR FINISHES THAT EXCEED THE CLASS "A" REQUIREMENTS.
8. PERFORM ALL WELDING BY ELECTRIC ARC METHOD IN ACCORDANCE WITH THE AWS STRUCTURAL WELDING CODE D1.1. WELDING ELECTRODE SHALL BE LOW HYDROGEN E70XX.
9. GUSSET PLATES FOR DIAGONAL BRACING SHALL BE CONNECTED TO ALL INTERSECTING MEMBERS UNLESS NOTED OTHERWISE.
10. VERTICAL BRACING SHALL BE ON THE CENTERLINE OF COLUMNS.
11. THE BEARING ENDS OF ALL COLUMNS SHALL BE FINISHED.
12. STEEL SURFACES TO BE ENCASED IN CONCRETE, TO RECEIVE SPRAYED-ON FIREPROOFING OR SHALL NOT BE PAINTED.

13. DESIGN, DETAILING, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF THE FOLLOWING CANADIAN PUBLICATIONS EXCEPT AS SPECIFICALLY INDICATED IN THE CONTRACT DOCUMENTS:
a. CANADIAN INSTITUTE OF STEEL CONSTRUCTION (CISC) HANDBOOK OF STEEL CONSTRUCTION
b. CSA S16 – DESIGN OF STEEL STRUCTURES
c. CSA S136 – NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS
d. CISC CODE OF STANDARD PRACTICE FOR STRUCTURAL STEEL
e. CSA S832 – SEISMIC DESIGN REQUIREMENTS FOR BUILDINGS
f. CSA S16 ANNEXES – REQUIREMENTS FOR CONNECTIONS AND SEISMIC APPLICATIONS
g. CISC DETAILING GUIDE FOR STEEL CONSTRUCTION
h. CSA W59 – WELDED STEEL CONSTRUCTION (METRIC EDITION)

14. MATERIALS SHALL CONFORM TO THE FOLLOWING CANADIAN SPECIFICATIONS U.N.O.:
a. STRUCTURAL WIDE FLANGE MEMBERS AND TEES (W & WT) .... CSA G40.21 350W
b. ALL OTHER STRUCTURAL SHAPES (L, C, MC, S, ST, M, MT, HP & PLATE) .... CSA G40.21 300W OR 350W
c. HOLLOW STRUCTURAL SECTIONS (HSS) .... CSA G40.21 350W, Fy = 350 MPa
d. STEEL PIPE .... CSA G40.21 350W OR CSA Z245.1 (PIPE), Fy = 350 MPa

15. SUBMIT STRUCTURAL CALCULATIONS FOR STEEL TO STEEL CONNECTIONS THAT ARE INDICATED AS DELEGATED DESIGNS ON THE DRAWINGS. REFER TO PLANS, SECTIONS AND GENERAL NOTES FOR SERVICE LEVEL CONNECTION DESIGN FORCES AND LOAD COMBINATIONS. CALCULATIONS SHALL BE SIGNED AND SEALED BY A LICENSED PROFESSIONAL ENGINEER IN THE TERRITORY OF **NUNAVUT** AND SUBMITTED TO THE ARCHITECT/ENGINEER FOR REVIEW AND APPROVAL. DELEGATED CONNECTION DESIGNS INCLUDE THE FOLLOWING:
a. VERTICAL BRACING CONNECTIONS
b. HORIZONTAL BRACING CONNECTIONS
c. BEAM AND GIRDER SIMPLE SHEAR END CONNECTIONS
d. GIRDER END CONNECTIONS

16. PROVIDE SLIP-CRITICAL BOLTING, USING CLASS "A" SURFACE VALUES (CLEAN MILL SCALE), IN ACCORDANCE WITH CSA S16 REQUIREMENTS, AT ALL AREAS WHERE SLIPPAGE CAN CAUSE DISTRESS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING CONNECTIONS:
a. OVERSIZED HOLES
b. SLOTTED HOLES WHERE FORCE IS IN DIRECTION OF SLOTS
c. COLUMN SPLICES
d. CONNECTIONS WITH FASTENERS NOTED AS TYPE ASTM A325M-SC OR ASTM A490M-SC (CSA EQUIVALENT)

STRUCTURAL DRAWING ABBREVIATIONS:

ACI	AMERICAN CONCRETE INSTITUTE
ADD	ADDENDUM
ADJ	ADJACENT
AFF	ABOVE FINISHED FLOOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALT	ALTERNATE
ANC	ANCHOR
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APPROX	APPROXIMATE
AR	ANCHOR ROD
ARCH	ARCHITECTURAL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIAL
B/B	BACK TO BACK
BC	BOTTOM CHORD
BET	BETWEEN
BLDG	BUILDING
BLK	BLOCK
BM	BEAM
BOF	BOTTOM OF FOOTING
BOS	BOTTOM OF STEEL
BOT	BOTTOM
BRCG	BRACING
BRG	BEARING
BRKT	BRACKET
BSMT	BASEMENT
BULL	BULLETIN
C/C	CENTER TO CENTER
CERT	CERTIFIED
CHKD PL	CHECKERED PLATE
CJ	CONSTRUCTION JOINT
CL	CENTERLINE
CLJ	CONTROL JOINT
CLR	CLEAR
CM	CENTIMETER
CIP	CAST IN PLACE
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONSTR	CONSTRUCTION
CONT	CONTINUATION (CONTINUOUS)
CONTR	CONTRACT(OR)
CTR	CENTER
DET	DETAIL
DH	DOOR HEADER
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DJ	DOOR JAMB
DL	DEAD LOAD
DN	DOWN
DO	DOOR OPENING
DWG	DRAWING
DWL	DOWEL
EA	EACH
EF	EACH FACE
EL	ELEVATION
ELEC	ELECTRICAL
EMB	EMBEDMENT
EOD	EDGE OF DECK
EOS	EDGE OF SLAB
EQ	EQUAL
EQPT	EQUIPMENT
EW	EACH WAY
EXP JT	EXPANSION JOINT
EXP	EXPANSION
EXST	EXISTING
EXT	EXTERIOR
FDN	FOUNDATION
FDNC	FOUNDATION CONTRACT
FIN	FINISH
FL	FLOOR
FLG	FLANGE
FS	FAR SIDE
FT	FEET
FTG	FOOTING
FUT	FUTURE
GA	GAGE
GC	GENERAL CONTRACT
GALV	GALVANIZED
GENL	GENERAL
GOL	GAGE OUTSTANDING LEG
GR	GRADE
GRT	GRATING
H	HIGH
HGR	HANGER
HGT	HEIGHT
HORIZ	HORIZONTAL
HP	HIGH POINT
HS	HIGH STRENGTH
HSS	HOLLOW STRUCTURAL SECTION
ID	INSIDE DIAMETER
IE	INVERT ELEVATION
IN	INCHES
INCL	INCLUDE
INFO	INFORMATION
INT JT	INTERIOR JOINT
k	KIPS
KSF	KIPS PER SQUARE FOOT
KSI	KIPS PER SQUARE INCH
L	LENGTH
LB	POUND
LG	LONG
LH	LOUVER HEAD
LJ	LOUVER JAMB
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LO	LOUVER OPENING
LP	LOW POINT
LS	LOUVER SILL
M	METER
MACH	MACHINE
MATL	MATERIAL
MAX	MAXIMUM
MECH	MECHANICAL
MEZZ	MEZZANINE
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MM	MILLIMETER
MT	METRIC TON
NIC	NOT IN CONTRACT
NO	NUMBER
NS	NEAR SIDE
NTS	NOT TO SCALE
O/O	OUT TO OUT
OC	ON CENTER
OPNG	OPENING
OPP	OPPOSITE
PC	PIECE
PEMB	PRE-ENGINEERED METAL BUILDING
PEN	PENETRATION
PL	PLATE
PROJ	PROJECTION
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
R	RADIUS
R	RISER
REF	REFERENCE
REINF	REINFORCEMENT
REMV	REMOVABLE
REQD	REQUIRED
RR	RAILROAD
SCH	SCHEDULE
SECT	SECTION
SFRC	STEEL FIBER REINFORCED CONCRETE
SIM	SIMILAR
SP	SPACE
SPEC	SPECIFICATIONS
SQ	SQUARE
SSC	STRUCTURAL STEEL CONTRACT
STAGG	STAGGERED
STD	STANDARD
STIFF	STIFFENER
STL	STEEL
STRU	STRUCTURAL
SYM	SYMMETRICAL
t	THICKNESS
T	TREAD
T/	TOP OF
T&B	TOP AND BOTTOM
TC	TOP CHORD
TC BOLTS	TENSION CONTROLLED BOLTS
TEMP	TEMPERATURE
THK	THICK
TL	TOTAL LOAD
TOC	TOP OF CONCRETE
TOF	TOP OF FOOTING
TOP	TOP OF PIER
TOS	TOP OF STEEL
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
VERT	VERTICAL
VSC	VERTICAL SLOTTED CONNECTION
W	WIDTH (WIDE)
W/	WITH
W/O	WITHOUT
WH	WINDOW HEAD
WJ	WINDOW JAMB
WL	WIND LOAD
WO	WINDOW OPENING
WP	WORKING POINT
WS	WINDOW SILL
WS	WATER STOP
WT	WEIGHT
WWR	WELDED WIRE REINFORCEMENT
WWF	WELDED WIRE FABRIC

SPECIAL CONSTRUCTION NOTES FOR WET WELL:

1. DESIGN OF BENCHING LAYOUT AND ELEVATION SHOWN ON STRUCTURAL DRAWINGS ARE BASED ON PROCESS DESIGN. COORDINATE WITH PROCESS FOR ANY CHANGES IN THE LAYOUT OF BENCHING.

2. ALL CONCRETE IN WET WELL AND VALVE CHAMBER STRUCTURE SHALL HAVE CRYSTALINE WATERPROOFING COMPOUND IN THE MIX DESIGN, AS SPECIFIED.

3. ALL SHORING SHALL BE DESIGNED BY THE CONTRACTOR, SIGNED AND SEALED BY A PROFESSIONAL ENGINEER OF NUNAVUT. SUBMIT CALCULATION & SHOP FOR REVIEW.

4. SEE PROCESS DRAWINGS FOR THE DETAIL OF SLIDING GATE FRAME EMBEDDING INTO THE WALL AND SLAB, INCLUDING BOX OUT AND SEALING OF THE GATE FRAME ON THE SIDES AND BOTTOM.

5. ACCESS HATCH DIMENSIONS ARE BASED ON PROCESS REQUIREMENTS. REFER TO PROCESS DRAWINGS FOR ANY CHANGES.

6. WATERPROOFING OF THE WET WELL PUMP STATION SHALL BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF THE CANADIAN NATIONAL STANDARD CSA S900.2:21 STRUCTURAL DESIGN OF WASTEWATER TREATMENT PLANTS, INCLUDING THE FOLLOWING PROVISIONS:

- CLAUSE 4.5.2: BELOW-GRADE STRUCTURES SUCH AS PUMP STATIONS SHALL BE DESIGNED AS LIQUID-TIGHT ENVIRONMENTAL CONCRETE STRUCTURES, ACCOUNTING FOR UPLIFT PRESSURES FROM GROUNDWATER.
- CLAUSE 4.5.3.1: LIQUID-CONTAINING STRUCTURES SHALL BE DESIGNED AND CONSTRUCTED TO BE REASONABLY LIQUID-TIGHT, WITH MINIMAL LEAKAGE UNDER NORMAL OPERATING CONDITIONS.
- CLAUSE 4.5.9.6: ALL JOINTS IN LIQUID-CONTACTING STRUCTURES SHALL BE EQUIPPED WITH APPROPRIATE WATERSTOPS TO ENSURE WATERTIGHTNESS.
- CLAUSE 4.6.4: STRUCTURES SHALL BE HYDROSTATICALLY TESTED FOR LEAKAGE IN ACCORDANCE WITH ACI 350.1M, WITH A MAXIMUM INITIAL FILLING RATE OF 1.2 m/h.
- CLAUSE 6.1.7.6.2: INTERNAL HDPE LINERS WITH MONOLITHICALLY EXTRUDED ANCHOR STUDS CAST INTO CONCRETE SHALL BE CONSIDERED PRIMARY PROTECTION AGAINST WASTEWATER AND GAS INGRESS.

THESE MEASURES ARE INTENDED TO ENSURE LONG-TERM DURABILITY, PREVENT ENVIRONMENTAL CONTAMINATION, AND COMPLY WITH THE MINIMUM DESIGN SERVICE LIFE REQUIREMENT OF NOT LESS THAN 80 YEARS (SEE TABLE 1, CLAUSE 4.1)

0 10 20 30 40 50 60 70 80 90 100mm

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
D	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
C	ISSUED FOR PRELIMINARY DESIGN (REVISED)	2025-09-26
B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
A	ISSUED FOR CONCEPT DESIGN	2023-11-27

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Project title
CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
M.S.

Drawn by
Y.N.

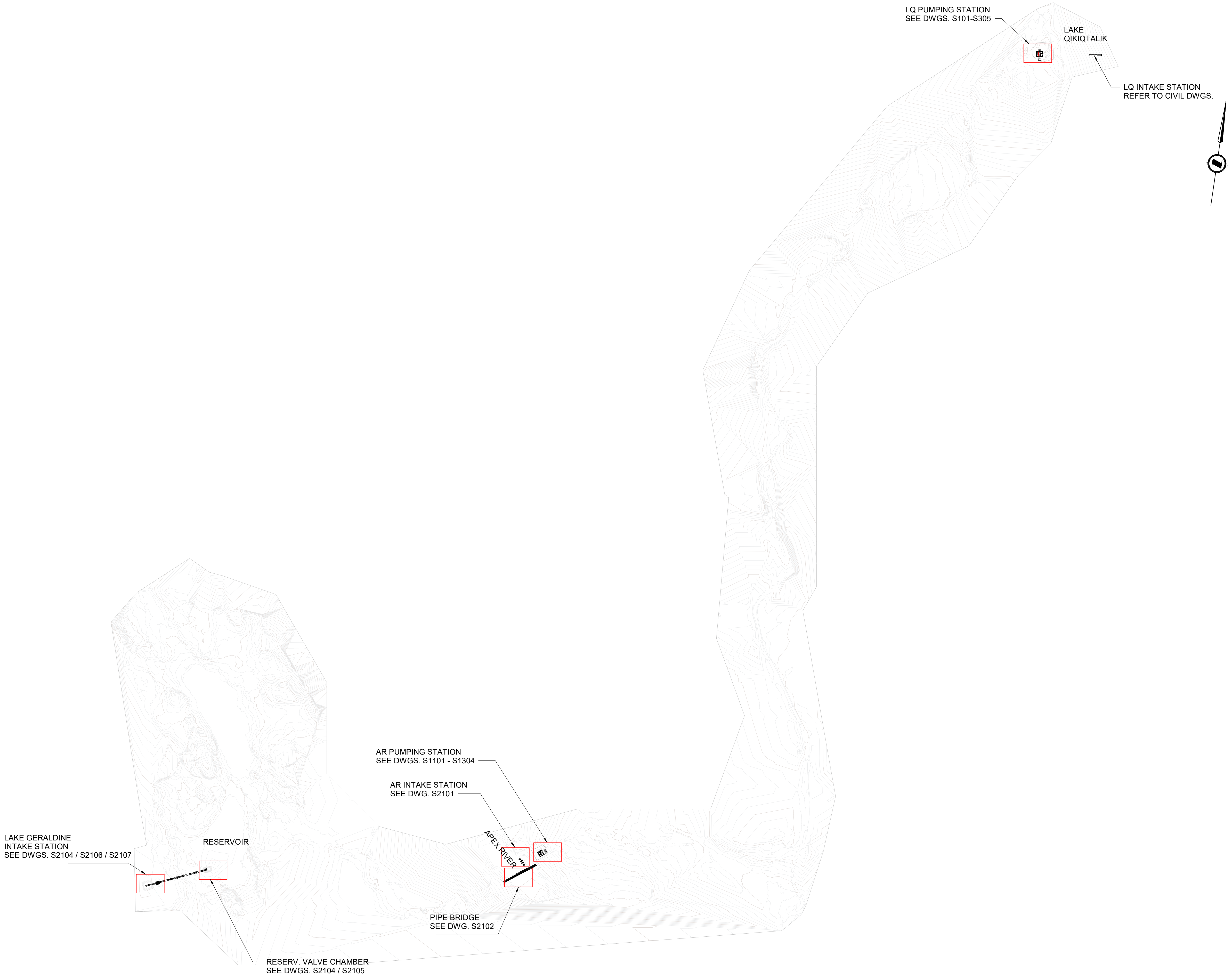
Approved by
K.A.

Project Manager
C.G.

Drawing Title
STRUCTURAL

LQ PUMP STATION
GENERAL NOTES

Project no.	Drawing no.	Revision no.
30192375	**S002**	**D**


LQ PUMPING STATION
SEE DWGS. S101-S305
LAKE
QIKIQTALIK
LQ INTAKE STATION
REFER TO CIVIL DWGS.
AR PUMPING STATION
SEE DWGS. S1101 - S1304
AR INTAKE STATION
SEE DWG. S2101
APEX RIVER
LAKE GERALDINE
INTAKE STATION
SEE DWGS. S2104 / S2106 / S2107
RESERVOIR
PIPE BRIDGE
SEE DWG. S2102
RESERV. VALVE CHAMBER
SEE DWGS. S2104 / S2105

1 S003 **GENERAL SITE PLAN**
Scale: 1 : 5000

0 10 20 30 40 50 60 70 80 90 100mm

A1 - 841X594

Autodesk Docs://30288139-Iqaluit_LongTermWater C3D2025/IQL-ARCA-S-INFRASTRUCTURE-23.rvt

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
A	ISSUED FOR 50% DESIGN REVIEW	2025-12-19

Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
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Drawn by
Y.N.

Approved by
K.A.

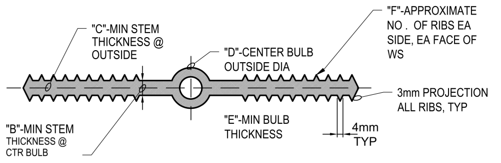
Project Manager
C.G.

Drawing Title

STRUCTURAL INFRASTRUCTURE

GENERAL SITE PLAN

Project no.	Drawing no.	Revision no.
30192375	**S003**	**A**


"C"-MIN STEM THICKNESS @ OUTSIDE
"D"-CENTER BULB OUTSIDE DIA
"F"-APPROXIMATE NO . OF RIBS EA SIDE, EA FACE OF WS
3mm PROJECTION ALL RIBS, TYP
"B"-MIN STEM THICKNESS @ CTR BULB
"E"-MIN BULB THICKNESS
4mm TYP

SIZE	"A"	"B"	"C"	"D"	"E"	"F"
150mmx10mm	150mm	10mm	10mm	22mm	6mm	6
225mmx10mm	225mm	10mm	10mm	25mm	6mm	8

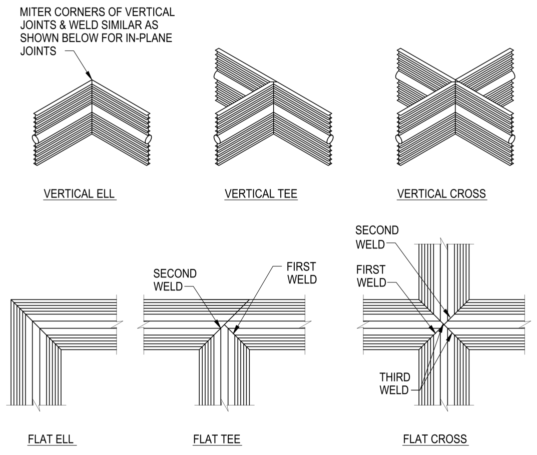
NOTES:

1. NON-ROUND CENTER BULBS SHALL HAVE A MINIMUM OUTSIDE DIMENSION OF 'D'. SEE SPLICE DETAIL (0315–002)
2. BULB TYPE WATERSTOP SHOWN IS REQUIRED FOR EXPANSION AND CONTROL JOINTS SIMILAR WATERSTOPS WITHOUT CENTER BULB MAY BE SUBSTITUTED AT CONSTRUCTION JOINTS.
3. USE 150mm WATERSTOPS IN ALL CONSTRUCTION JOINTS UNLESS SPECIFICALLY SHOWN OTHERWISE.

PLASTIC WATERSTOP

NTS

(0315–001)


MITER CORNERS OF VERTICAL JOINTS & WELD SIMILAR AS SHOWN BELOW FOR IN-PLANE JOINTS
SECOND WELD
FIRST WELD
SECOND WELD
FIRST WELD
THIRD WELD

VERTICAL ELL

VERTICAL TEE

VERTICAL CROSS

FLAT ELL

FLAT TEE

FLAT CROSS

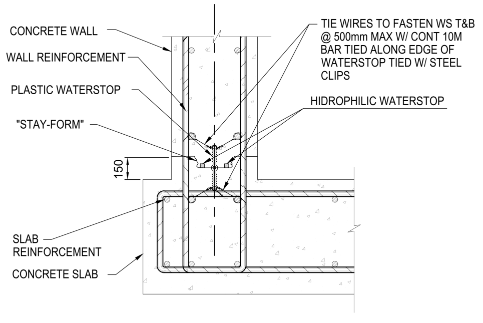
NOTE:

ALL WELDS SHALL BE PER WATERSTOP MANUFACTURER'S RECOMMENDATIONS.

WATERSTOP JOINTS

NTS

(0315–002)


CONCRETE WALL
WALL REINFORCEMENT
PLASTIC WATERSTOP
"STAY-FORM"
150
SLAB REINFORCEMENT
CONCRETE SLAB
TIE WIRES TO FASTEN WS T&B @ 500mm MAX W/ CONT 10M BAR TIED ALONG EDGE OF WATERSTOP TIED W/ STEEL CLIPS
HIDROPHILIC WATERSTOP

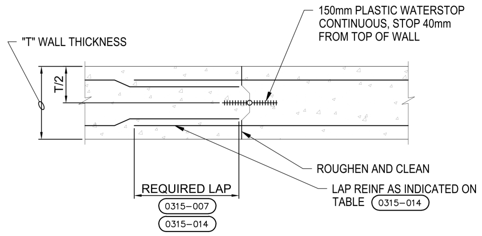
NOTES:

1. STARTER WALL REQUIRED FOR ALL CONSTRUCTION JOINTS WITH WATERSTOPS, UNLESS SPECIFICALLY NOTED OTHERWISE.
2. FOR WALLS WITH SINGLE MAT OF REINFORCING, LOCATE WATERSTOP ON LIQUID FACE, 25mm CLEAR OF REINFORCING.
3. SECURE WATERSTOP IN-PLACE AS SPECIFIED.
4. PROVIDE DEDICATED VIBRATOR TO CONSOLIDATE CONCRETE ON EITHER SIDE OF WATERSTOP.

WALL BASE CONSTRUCTION JOINT*

NTS

(0315–003)


"T" WALL THICKNESS
T/2
150mm PLASTIC WATERSTOP CONTINUOUS, STOP 40mm FROM TOP OF WALL
ROUGHEN AND CLEAN
LAP REINF AS INDICATED ON TABLE (0315–014)
REQUIRED LAP
(0315–007)
(0315–014)

PLAN

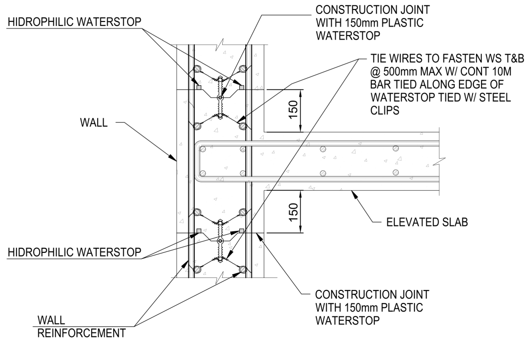
NOTES:

1. ALL REINFORCING CONTINUOUS ACROSS JOINT (0315–009)
2. FOR LOCATIONS, SEE (0315–009)

WALL VERTICAL CONSTRUCTION JOINT

NTS

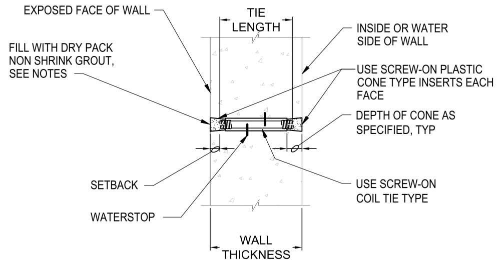
(0315–004)


HIDROPHILIC WATERSTOP
CONSTRUCTION JOINT WITH 150mm PLASTIC WATERSTOP
TIE WIRES TO FASTEN WS T&B @ 500mm MAX W/ CONT 10M BAR TIED ALONG EDGE OF WATERSTOP TIED W/ STEEL CLIPS
WALL
150
150
ELEVATED SLAB
HIDROPHILIC WATERSTOP
WALL REINFORCEMENT
CONSTRUCTION JOINT WITH 150mm PLASTIC WATERSTOP

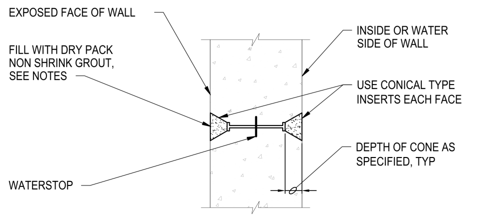
WALL CONSTRUCTION JOINT AT ELEVATED SLAB

NTS

(0315–005)


EXPOSED FACE OF WALL
TIE LENGTH
FILL WITH DRY PACK NON SHRINK GROUT, SEE NOTES
INSIDE OR WATER SIDE OF WALL
USE SCREW-ON PLASTIC CONE TYPE INSERTS EACH FACE
DEPTH OF CONE AS SPECIFIED, TYP
SETBACK
WATERSTOP
USE SCREW-ON COIL TIE TYPE
WALL THICKNESS

TYPE A


EXPOSED FACE OF WALL
FILL WITH DRY PACK NON SHRINK GROUT, SEE NOTES
INSIDE OR WATER SIDE OF WALL
USE CONICAL TYPE INSERTS EACH FACE
DEPTH OF CONE AS SPECIFIED, TYP
WATERSTOP

TYPE B

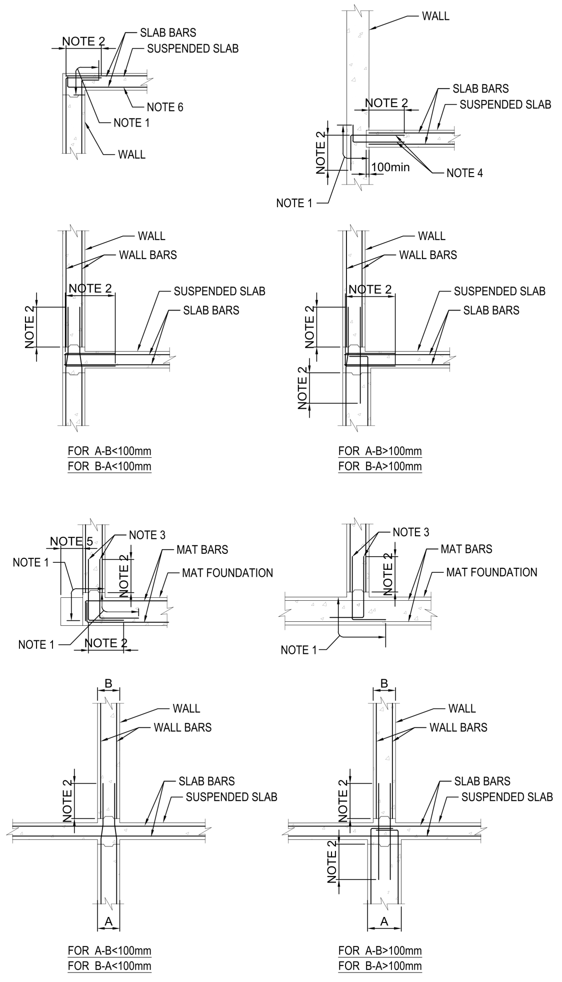
NOTES:

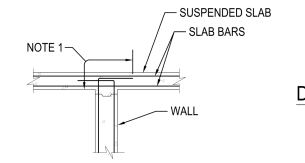
1. THE SPACING OF FORM TIES ON EXPOSED PORTIONS OF WALLS SHALL BE APPROXIMATELY EQUAL HORIZONTALLY AND VERTICALLY AND SHALL BE UNIFORM IN EACH DIRECTION.
2. DRY PACK METHOD SHALL BE AS SPECIFIED USING STEEL TOOLS.

FORM TIE HOLE

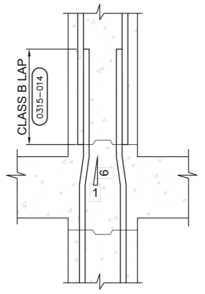
NTS

(0315–006)


NOTE 2
SLAB BARS
SUSPENDED SLAB
NOTE 6
NOTE 1
WALL
WALL
SLAB BARS
SUSPENDED SLAB
NOTE 2
NOTE 2
100min
NOTE 4
NOTE 1
WALL
WALL BARS
NOTE 2
NOTE 2
SUSPENDED SLAB
SLAB BARS
FOR A-B<100mm
FOR B-A<100mm
WALL
WALL BARS
NOTE 2
NOTE 2
NOTE 2
SUSPENDED SLAB
SLAB BARS
FOR A-B>100mm
FOR B-A>100mm
NOTE 5
NOTE 3
NOTE 1
NOTE 2
MAT BARS
MAT FOUNDATION
NOTE 1
NOTE 2
NOTE 3
NOTE 2
MAT BARS
MAT FOUNDATION
NOTE 1
B
WALL
WALL BARS
NOTE 2
SLAB BARS
SUSPENDED SLAB
A
FOR A-B<100mm
FOR B-A<100mm
B
WALL
WALL BARS
NOTE 2
NOTE 2
SLAB BARS
SUSPENDED SLAB
A
FOR A-B>100mm
FOR B-A>100mm


SUSPENDED SLAB
SLAB BARS
NOTE 1
WALL

DOWEL REBAR BENDING RULE


CLASS B LAP
(0315–014)
6
1

NOTES:

1. EMBEDMENT LENGTH L=CLASS A LAP LENGTH (OTHER BARS) BUT NOT LESS THAN A STANDARD HOOK. SEE DETAIL (0315–013)
2. CLASS B LAP UNLESS NOTED OTHERWISE.
3. DOWELS TO MATCH WALL REINFORCING UNLESS NOTED OTHERWISE.
4. DOWELS TO MATCH SLAB REINFORCING UNLESS NOTED OTHERWISE.
5. APPLY DETAIL TO EXTERIOR WALLS WITH UP TO 300mm OF FOOTING PROJECTION.
6. PROVIDE SLAB BOTTOM BARS WITH STANDARD HOOK WHERE INDICATED.

REINFORCING AT WALL AND SLAB INTERSECTIONS*

NTS

(0315–007)

* UNLESS OTHERWISE SPECIFIED IN THE DRAWINGS

0 10 20 30 40 50 60 70 80 90 100mm

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A1 - 841X594

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN (REVISED)	2025-09-26

Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
M.S.

Drawn by
Y.N.

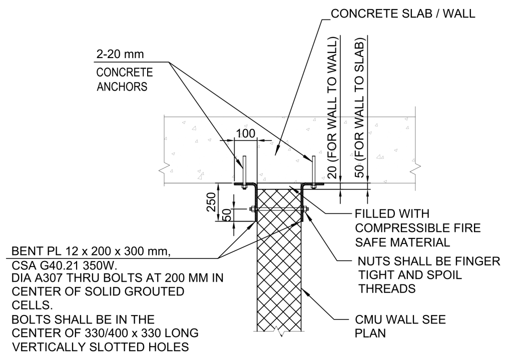
Approved by
K.A.

Project Manager
C.G.

Drawing Title

TYPICAL DETAILS -1

Project no.	Drawing no.	Revision no.
30192375	S401	B


CONCRETE SLAB / WALL
2-20 mm
CONCRETE ANCHORS
100
20 (FOR WALL TO WALL)
50 (FOR WALL TO SLAB)
250
50
FILLED WITH COMPRESSIBLE FIRE SAFE MATERIAL
NUTS SHALL BE FINGER TIGHT AND SPOIL THREADS
CMU WALL SEE PLAN
BENT PL 12 x 200 x 300 mm, CSA G40.21 350W.
DIA A307 THRU BOLTS AT 200 MM IN CENTER OF SOLID GROUTED CELLS.
BOLTS SHALL BE IN THE CENTER OF 330/400 x 330 LONG VERTICALLY SLOTTED HOLES

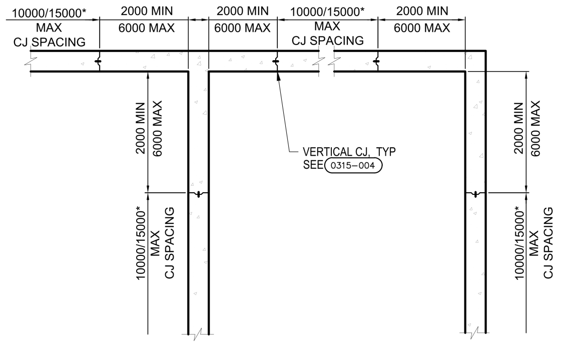
NOTE:

PROVIDE ASSEMBLIES AT 300 MM OC MIN

MASONRY EXPANCION JOINT 20 mm/ DEFLECTION GAP 50 mm

NTS

0315–008


10000/15000* MAX CJ SPACING
2000 MIN 6000 MAX
2000 MIN 6000 MAX
10000/15000* MAX CJ SPACING
2000 MIN 6000 MAX
2000 MIN 6000 MAX
VERTICAL CJ, TYP SEE 0315–004
10000/15000* MAX CJ SPACING
2000 MIN 6000 MAX
10000/15000* MAX CJ SPACING

PLAN

* - 10000 FOR WALLS FORMING PART OF LIQUID HOLDING STRUCTURE. 15000 FOR ALL OTHER WALLS.

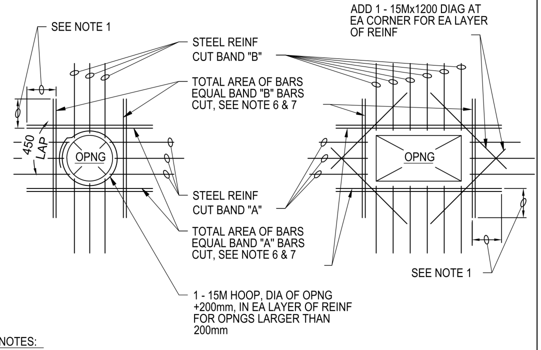
NOTES:

1. COORDINATE CONSTRUCTION JOINT LOCATIONS AND TIME BETWEEN CONCRETE POURS WITH SPECIFICATION.
2. LOCATE WALL CONSTRUCTION JOINTS AS SHOWN, UNLESS INDICATED OTHERWISE.

WALL CONSTRUCTION JOINT SPACING

NTS

0315–009


SEE NOTE 1
STEEL REINF CUT BAND "B"
TOTAL AREA OF BARS EQUAL BAND "B" BARS CUT, SEE NOTE 6 & 7
450 LAP
OPNG
STEEL REINF CUT BAND "A"
TOTAL AREA OF BARS EQUAL BAND "A" BARS CUT, SEE NOTE 6 & 7
1 - 15M HOOP, DIA OF OPNG +200mm, IN EA LAYER OF REINF FOR OPNGS LARGER THAN 200mm
ADD 1 - 15Mx1200 DIAG AT EA CORNER FOR EA LAYER OF REINF
OPNG
SEE NOTE 1

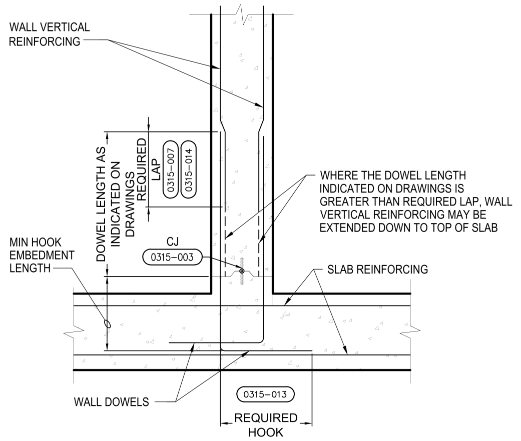
NOTES:

1. PROVIDE MINIMUM LAP, SEE TABLE DETAIL 0315–014
2. TYPICAL FOR ALL OPENINGS IN CONCRETE WALLS OF BELOW GRADE AND HYDRAULIC STRUCTURES AND ALL STRUCTURAL CONCRETE SLABS UNLESS INDICATED OTHERWISE ON PLANS.
3. DO NOT WELD REINFORCEMENT TO PIPE SLEEVES AND INSERTS.
4. PROVIDE A MINIMUM OF 2 "A" BARS AND 2 "B" BARS EACH SIDE OF OPENING (1 EACH FACE), INCLUDING DOWELS AND CORNER BARS, TYPICAL.
5. FOR OPENINGS LARGER THAN 2400mm, REINFORCE SAME AS FOR 2400mm OPENINGS.
6. SPACE AT 3 BAR DIAMETERS R 75mm MINIMUM) ON CENTER LOCATE HALF OF TOTAL AREA ON EACH SIDE OF OPENING.
7. AT OPENINGS WITHIN 300mm OF AN INTERSECTING WALL OR SLAB, PROVIDE ONLY THE EXTRA REINFORCEMENT WHICH WILL FIT, AT THE BAR SPACING IN NOTE 6.

OPENING REINFORCING

NTS

0315–010


WALL VERTICAL REINFORCING
DOWEL LENGTH AS INDICATED ON DRAWINGS
REQUIRED LAP
0315–007
0315–014
WHERE THE DOWEL LENGTH INDICATED ON DRAWINGS IS GREATER THAN REQUIRED LAP, WALL VERTICAL REINFORCING MAY BE EXTENDED DOWN TO TOP OF SLAB
MIN HOOK EMBEDMENT LENGTH
CJ
0315–003
SLAB REINFORCING
WALL DOWELS
0315–013
REQUIRED HOOK

WALL SECTION

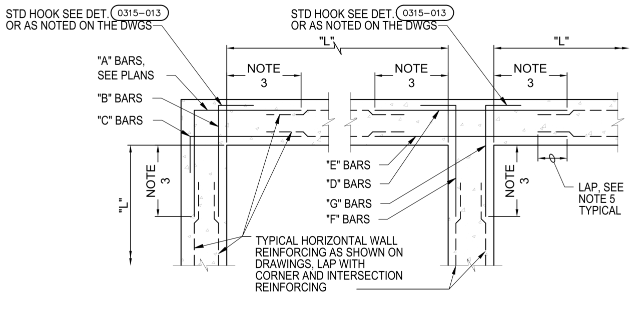
NOTE:

1. UNLESS NOTED OTHERWISE, ALL DOWEL HOOKS SHALL EXTEND TO AND BE TIED OFF TO BOTTOM MAT OF SLAB REINFORCING.

VERTICAL WALL REINFORCEMENT*/ DOWEL PLACEMENT*

NTS

0315–011


STD HOOK SEE DET. 0315–013 OR AS NOTED ON THE DWGS
STD HOOK SEE DET. 0315–013 OR AS NOTED ON THE DWGS
"L"
"L"
"A" BARS, SEE PLANS
"B" BARS
"C" BARS
NOTE 3
NOTE 3
NOTE 3
"E" BARS
"D" BARS
"G" BARS
"F" BARS
NOTE 3
"L"
NOTE 3
LAP, SEE NOTE 5 TYPICAL
TYPICAL HORIZONTAL WALL REINFORCING AS SHOWN ON DRAWINGS, LAP WITH CORNER AND INTERSECTION REINFORCING

DOUBLE REINFORCING MAT

NOTES:

1. TYPICAL HORIZONTAL WALL CORNER AND INTERSECTION REINFORCING LAYOUT IS SHOWN TO AVOID CONGESTION AND PERMIT PROPER PLACEMENT, FOR SIZE AND SPACING SEE PLANS. ALL HORIZONTAL REINFORCING AT CORNERS AND INTERSECTIONS SHALL BE FABRICATED AND INSTALLED WITH SPLICES LOCATED WHERE SHOWN REGARDLESS OF BAR SIZE AND SPACING.
2. WHERE THE CORNER OR INTERSECTION REINFORCING SIZE AND SPACING IS NOT SHOWN, NOTED OR TABULATED ON THE PLANS, THE SIZE AND SPACING SHALL BE THE SAME AS THE WALL HORIZONTAL REINFORCING SHOWN ON THE WALL SECTIONS OR AS NOTED FOR THE REINFORCING BETWEEN THE CORNERS OR INTERSECTIONS.
3. EXCEPT WHERE OTHERWISE SHOWN ON THE DRAWINGS, THE LENGTH INDICATED AS "NOTE 3" SHALL BE THE LESSER OF L/4, 3000mm, OR 1.0 TIMES THE HEIGHT OF THE WALL, EXCEPT THAT IN NO CASE SHALL IT BE LESS THAN 600mm.
4. L = LENGTH OF WALL PARALLEL TO THE BAR LENGTH IN QUESTION.
5. EXCEPT WHERE OTHERWISE SHOWN ON THE DRAWINGS, THE LENGTH INDICATED AS "NOTE 5" SHALL BE EQUAL TO ONE "LAP LENGTH" AS REQUIRED BY THE GENERAL STRUCTURAL NOTES. USE THE LAP LENGTH AS REQUIRED FOR THE SMALLER OF THE TWO REINFORCING BARS BEING SPLICED.
6. UNLESS OTHERWISE NOTED, "B" AND "C" BARS ARE THE SAME SIZE AND SPACING AND "F" AND "G" BARS ARE THE SAME SIZE AND SPACING.

TYPICAL WALL CORNER AND INTERSECTION REINFORCING*

NTS

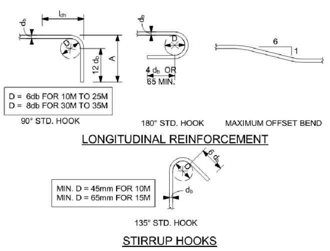
0315–012

STANDARD 90° HOOK TO CONFORM TO CSA A23.3-19 AND THE FOLLOWING TABLE, WHICHEVER IS MORE STRINGENT, UNLESS OTHERWISE SHOWN ON DRAWINGS.
ALL HOOK ENGAGE PERIPHERAL MAIN BARS, 90° HOOKS OF SUCCESSIVE CROSSTIES ENGAGING THE SAME BARS ARE ALTERNATED END FOR END.

STANDARD 90° HOOK DIMENSION

		fy = 400 MPa	
BAR SIZE (mm)	D*** (mm)	A (mm)	l_{dh}**** (mm)
10 M	60	180	150
15 M	90	250	190
20 M	100	300	240
25 M	150	400	300
30 M	200	490	360
35 M	250	590	430

90° HOOK SEE A23.3-19
db= MAX. OF NOMINAL AND ACTUAL BAR DIAMETER
*** SEE CSA A23.1-19, TABLE 16
**** SEE CSA A23.3-19, §12.5.1, §12.5.3 (b), l_{dh} (tension development length).


d_b
l_{dh}
D
12 d_b
A
d_b
D
4 d_b OR 65 MIN.
6
1
6 d_b
D
d_b

D = 6db FOR 10M TO 25M
D = 8db FOR 30M TO 35M

90° STD. HOOK

180° STD. HOOK

MAXIMUM OFFSET BEND

LONGITUDINAL REINFORCEMENT

MIN. D = 45mm FOR 10M
MIN. D = 65mm FOR 15M

135° STD. HOOK

STIRRUP HOOKS

STANDARD HOOKS DIMENSION DETAIL

NTS

0315–013

REINFORCING BAR YIELD STRENGTH = 400MPa

SPECIFIED CONCRETE STRENGTH	BAR LOCATION	LAP TYPE	BAR SIZE					
			10M	15M	20M	25M	30M	35M
Fc=20MPa	TOP	CLASS A	450	650	850	1350	1600	2000
		CLASS B	550	850	1100	1750	2050	2600
	OTHER	CLASS A	350	500	650	1050	1250	1550
		CLASS B	450	650	850	1350	1600	2000
Fc=25MPa	TOP	CLASS A	400	600	750	1200	1450	1800
		CLASS B	500	750	1000	1550	1850	2300
	OTHER	CLASS A	300	450	600	900	1100	1400
		CLASS B	400	600	750	1200	1450	1800
Fc=30MPa 32MPa	TOP	CLASS A	350	550	700	1100	1300	1650
		CLASS B	450	700	900	1400	1700	2100
	OTHER	CLASS A	300	400	550	850	1000	1250
		CLASS B	350	550	700	1100	1300	1650
Fc=35MPa	TOP	CLASS A	360	510	620	1000	1200	1500
		CLASS B	470	670	810	1300	1550	1850
	OTHER	CLASS A	280	390	480	770	950	1150
		CLASS B	370	510	630	1010	1200	1500
Fc=40MPa	TOP	CLASS A	300	450	600	950	1150	1400
		CLASS B	400	600	800	1250	1450	1850
	OTHER	CLASS A	300	350	500	750	900	1100
		CLASS B	300	450	600	950	1150	1400

NOTES:

1. TOP BARS ARE:
   - 1.1. ALL BARS IN CONCRETE WITH MORE THAN 300mm CONCRETE BELOW.
   - 1.2. ALL HORIZONTAL BARS IN WALLS.
2. PROVIDE CLASS B LAP UNLESS NOTED OTHERWISE.
3. LAP SPLICE LENGTHS SHOWN IN THE TABLE ARE BASED ON HEAVIER CONFINED BARS.
4. TABLE APPLIES UNLESS SHOWN OTHERWISE.
5. DEVELOPMENT LENGTHS ARE EQUAL TO CLASS B LAP SPLICES.
6. CLASS A VS CLASS B LAP SPLICES IN CSA A23.3:
   - 6.1. CLASS A LAP SPLICES ARE SHORTER AND PERMITTED ONLY WHEN LESS THAN HALF OF THE BARS AT A SECTION ARE SPLICED.
   - 6.2. CLASS B LAP SPLICES ARE LONGER AND REQUIRED WHEN MORE THAN HALF OF THE BARS AT A SECTION ARE SPLICED, OR WHEN CONDITIONS ARE LESS FAVORABLE (E.G., TOP BARS, POOR CONFINEMENT).

REINFORCING BAR TENSION LAP SPLICE TABLE

NTS

0315–014

* UNLESS OTHERWISE SPECIFIED IN THE DRAWINGS

Autodesk Docs://30288139-Iqaluit_LongTermWater C3D2025/IQL-ARCA-S-BUILDING-23.rvt

A1 - 841X594

0 10 20 30 40 50 60 70 80 90 100mm

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
M.S.

Drawn by
Y.N.

Approved by
K.A.

Project Manager
C.G.

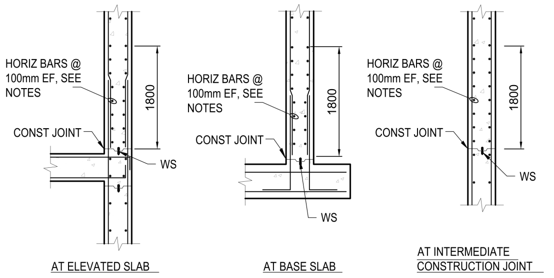
Drawing Title

TYPICAL DETAILS -2

Project no.
30192375

Drawing no.
S402

Revision no.
B


HORIZ BARS @ 100mm EF, SEE NOTES
CONST JOINT
WS
1800
AT ELEVATED SLAB
HORIZ BARS @ 100mm EF, SEE NOTES
CONST JOINT
WS
1800
AT BASE SLAB
HORIZ BARS @ 100mm EF, SEE NOTES
CONST JOINT
WS
1800
AT INTERMEDIATE CONSTRUCTION JOINT

NOTES:

1. PROVIDE HORIZONTAL BARS AT 100 mm SPACING EACH FACE IN THE FIRST 1800 mm ABOVE ALL HORIZONTAL WALL CONSTRUCTION JOINTS IN LIQUID CONTAINING AND BELOW-GRADE STRUCTURES WHERE TYPICAL WALL HORIZONTAL BARS ARE AT 200mm SPACING, PROVIDE ADDITIONAL BARS FOR 100mm SPACING.
2. HORIZONTAL BAR SIZE FOR THE 1800mm ZONE SHALL BE THE TYPICAL WALL HORIZONTAL BAR SIZE SHOWN ON THE DRAWINGS OR THE MINIMUM BAR SIZE IN THE TABLE BELOW, WHICHEVER IS GREATER.

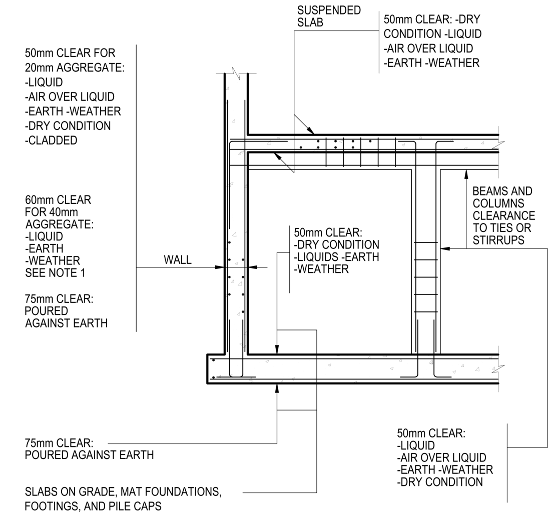
WALL THICKNESS (mm)	MINIMUM BAR SIZE
250	15M
300, 350	20M
400, 450	20M
>=500	25M

3. PROVIDE CORNER BARS SPACING EACH FACE TO LAP WITH THE BARS SHOWN ABOVE, SEE (0315–012)

REINFORCING AT HORIZONTAL CONSTRUCTION JOINT

NTS

(0315–015)


SUSPENDED SLAB
50mm CLEAR: -DRY CONDITION -LIQUID -AIR OVER LIQUID -EARTH -WEATHER
50mm CLEAR FOR 20mm AGGREGATE: -LIQUID -AIR OVER LIQUID -EARTH -WEATHER -DRY CONDITION -CLADDED
60mm CLEAR FOR 40mm AGGREGATE: -LIQUID -EARTH -WEATHER SEE NOTE 1
75mm CLEAR: POURED AGAINST EARTH
WALL
50mm CLEAR: -DRY CONDITION -LIQUIDS -EARTH -WEATHER
BEAMS AND COLUMNS CLEARANCE TO TIES OR STIRRUPS
75mm CLEAR: POURED AGAINST EARTH
50mm CLEAR: -LIQUID -AIR OVER LIQUID -EARTH -WEATHER -DRY CONDITION
SLABS ON GRADE, MAT FOUNDATIONS, FOOTINGS, AND PILE CAPS

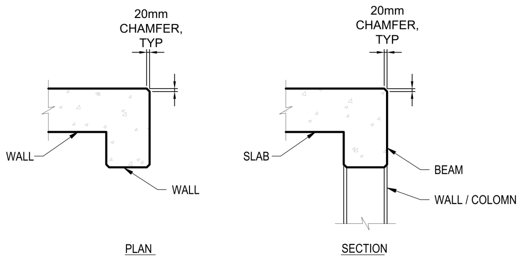
NOTES:

1. PROVIDE 50mm CLEARANCE ON FACE EXPOSED TO DRY CONDITION.
2. SPECIFIED COVER WILL PROVIDE MINIMUM 3 HOUR FIRE RATING. WHERE 4 HOUR FIRE RATING IS REQUIRED, AS NOTED ON DRAWINGS, INCREASE CLEAR COVER FOR WALLS AND COLUMNS TO 62.5mm.

CONCRETE COVER TO REINFORCING

NTS

(0315–016)


20mm CHAMFER, TYP
WALL
WALL
PLAN
20mm CHAMFER, TYP
SLAB
BEAM
WALL / COLOMN
SECTION

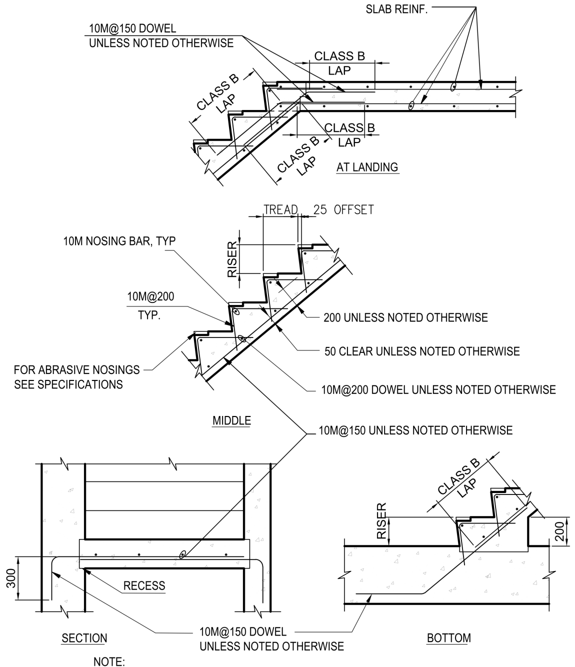
NOTE:

PROVIDE CHAMFER ALONG EXPOSED EDGES ON CONCRETE SLABS, BEAMS, CURBS, COLUMNS, WALL OPENINGS AND SIMILAR ITEMS UNLESS OTHERWISE NOTED OR DIRECTED.

CHAMFERS

NTS

(0315–017)

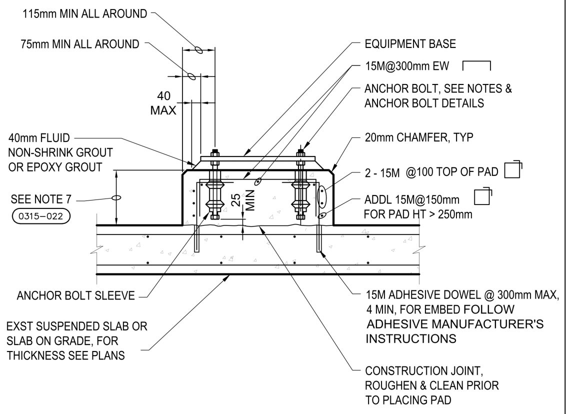

SLAB REINF.
10M@150 DOWEL UNLESS NOTED OTHERWISE
CLASS B LAP
CLASS B LAP
CLASS B LAP
CLASS B LAP
AT LANDING
TREAD
25 OFFSET
RISER
10M NOSING BAR, TYP
10M@200 TYP.
200 UNLESS NOTED OTHERWISE
50 CLEAR UNLESS NOTED OTHERWISE
FOR ABRASIVE NOSINGS SEE SPECIFICATIONS
10M@200 DOWEL UNLESS NOTED OTHERWISE
MIDDLE
10M@150 UNLESS NOTED OTHERWISE
300
RECESS
SECTION
10M@150 DOWEL UNLESS NOTED OTHERWISE
CLASS B LAP
RISER
200
BOTTOM

NOTE:
LAPPING SEE DETAIL (0315–014)

TYPICAL CONCRETE STAIR REINFORCING

NTS

(0315–018)


115mm MIN ALL AROUND
75mm MIN ALL AROUND
40 MAX
40mm FLUID NON-SHRINK GROUT OR EPOXY GROUT
SEE NOTE 7 (0315–022)
EQUIPMENT BASE
15M@300mm EW
ANCHOR BOLT, SEE NOTES & ANCHOR BOLT DETAILS
20mm CHAMFER, TYP
2 - 15M @100 TOP OF PAD
ADDL 15M@150mm FOR PAD HT > 250mm
25 MIN
ANCHOR BOLT SLEEVE
EXST SUSPENDED SLAB OR SLAB ON GRADE, FOR THICKNESS SEE PLANS
15M ADHESIVE DOWEL @ 300mm MAX, 4 MIN, FOR EMBED FOLLOW ADHESIVE MANUFACTURER'S INSTRUCTIONS
CONSTRUCTION JOINT, ROUGHEN & CLEAN PRIOR TO PLACING PAD

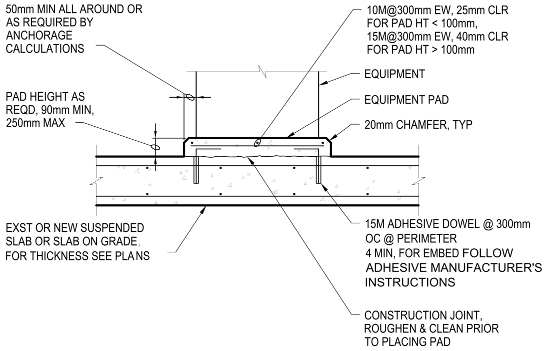
NOTE:

1. FOR GENERAL NOTES SEE DETAIL (0315–022)

CONCRETE EQUIPMENT PAD - TYPE F

NTS

DETAIL 1 OF 4
(0315–019)


50mm MIN ALL AROUND OR AS REQUIRED BY ANCHORAGE CALCULATIONS
PAD HEIGHT AS REQD, 90mm MIN, 250mm MAX
10M@300mm EW, 25mm CLR FOR PAD HT < 100mm, 15M@300mm EW, 40mm CLR FOR PAD HT > 100mm
EQUIPMENT
EQUIPMENT PAD
20mm CHAMFER, TYP
EXST OR NEW SUSPENDED SLAB OR SLAB ON GRADE, FOR THICKNESS SEE PLANS
15M ADHESIVE DOWEL @ 300mm OC @ PERIMETER 4 MIN, FOR EMBED FOLLOW ADHESIVE MANUFACTURER'S INSTRUCTIONS
CONSTRUCTION JOINT, ROUGHEN & CLEAN PRIOR TO PLACING PAD

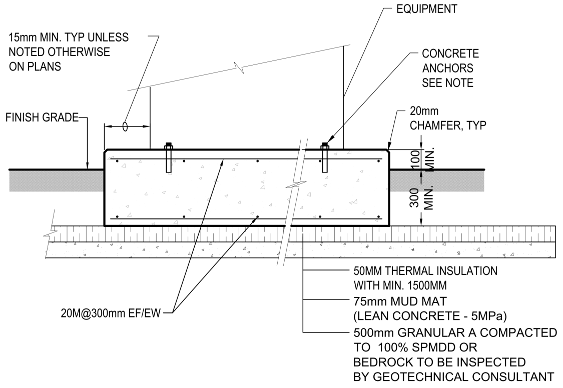
NOTES:

1. WHEN ANCHORAGE OF EQUIPMENT TO PAD IS REQUIRED, USE CONCRETE ANCHORS SPECIFIED.
2. CONCRETE PADS FOR ELECTRICAL EQUIPMENT SHALL BE 90mm HIGH, UNLESS NOTED OTHERWISE.
3. FOR GENERAL NOTES SEE DETAIL (0315–022)

CONCRETE EQUIPMENT PAD - TYPE E

NTS

DETAIL 2 OF 4
(0315–020)


EQUIPMENT
15mm MIN. TYP UNLESS NOTED OTHERWISE ON PLANS
CONCRETE ANCHORS SEE NOTE
FINISH GRADE
20mm CHAMFER, TYP
100 MIN.
300 MIN.
20M@300mm EF/EW
50MM THERMAL INSULATION WITH MIN. 1500MM
75mm MUD MAT (LEAN CONCRETE - 5MPa)
500mm GRANULAR A COMPACTED TO 100% SPMDD OR BEDROCK TO BE INSPECTED BY GEOTECHNICAL CONSULTANT

NOTES:

1. WHEN ANCHORAGE OF EQUIPMENT TO PAD IS REQUIRED, USE CONCRETE ANCHORS SPECIFIED.
2. FOR PAD LOCATION AND DIMENSIONS SEE CIVIL/ELECTRICAL/MECHANICAL DRAWINGS.
3. FOR GENERAL NOTES SEE DETAIL (0315–022)

CONCRETE EQUIPMENT PAD - TYPE H**

NTS

DETAIL 3 OF 4
(0315–021)

NOTES:

1. PAD SIZE SHALL BE MINIMUM INDICATED OR AS SHOWN ON THE PLANS OR AS INDICATED BY THE MANUFACTURER AND APPROVED BY THE CONTRACT ADMINISTRATOR.
2. THE SIZE, NUMBER, TYPE, LOCATION, AND THREAD PROJECTION OF THE ANCHOR BOLTS SHALL BE DETERMINED BY THE EQUIPMENT MANUFACTURER AND AS APPROVED BY THE ENGINEER. ANCHOR BOLTS SHALL BE HELD IN POSITION WITH A TEMPLATE OR OTHER ACCEPTABLE MEANS, MATCHING THE BASE PLATE, WHILE PAD IS BEING PLACED.
3. ANCHOR BOLT SLEEVES SHALL BE USED TO PROVIDE MINIMUM ANCHOR BOLT MOVEMENT OF 13mm IN ALL HORIZONTAL DIRECTIONS. THE MINIMUM SLEEVE LENGTH SHALL BE 8 TIMES THE BOLT DIAMETER.
4. ANCHOR BOLT SLEEVES SHALL HAVE A MINIMUM INTERNAL DIAMETER 25mm GREATER THAN BOLT DIAMETER AND A MAXIMUM INTERNAL DIAMETER 75mm GREATER THAN ANCHOR BOLT DIAMETER. SLEEVES SHALL BE FILLED WITH NON-SHRINK GROUT AFTER BOLTS ARE ALIGNED. SEE (0315–019).
5. EQUIPMENT BASES SHALL BE INSTALLED LEVEL UNLESS INDICATED OTHERWISE.
6. WEDGES, SHIMS, OR LEVELING NUTS SHALL BE USED TO SUPPORT THE BASE WHILE THE GROUT IS PLACED. WEDGES OR SHIMS SHALL BE REMOVED AFTER GROUT IS SET AND PACK VOID WITH GROUT.
7. HEIGHT OF PADS SHALL BE MINIMUM REQUIRED FOR ANCHOR BOLT CLEARANCE TO KEEP ANCHOR BOLT ABOVE SUPPORTING SLAB (SEE TABLE BELOW). WHERE EQUIPMENT OR PIPING ELEVATION REQUIRE A PAD HEIGHT LESS THAN THE MINIMUM SHOWN, USE TYPE "E" EQUIPMENT PAD WITH BLOCKOUT.
8. AT CONTRACTOR'S OPTION, CONCRETE ANCHORS MAY BE USED IN LIEU OF CAST-IN-PLACE ANCHOR BOLTS FOR EQUIPMENT ANCHOR BOLTS LESS THAN 20mm DIAMETER WHEN APPROVED BY THE EQUIPMENT MANUFACTURER AND APPROVED BY THE CONTRACT ADMINISTRATOR. ANCHORS SHALL BE INSTALLED WITH 100mm MINIMUM EDGE DISTANCE IN EACH DIRECTION.

AB DIA (mm)	12	16	20	22	25	33	35	38	44	50
MIN PAD HT (mm)	175	215	250	275	320	380	420	450	535	600

CONCRETE EQUIPMENT PAD - NOTES

NTS

DETAIL 4 OF 4
(0315–022)

* UNLESS OTHERWISE SPECIFIED IN THE DRAWINGS

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN (REVISED)	2025-09-26

Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
M.S.

Drawn by
Y.N.

Approved by
K.A.

Project Manager
C.G.

Drawing Title

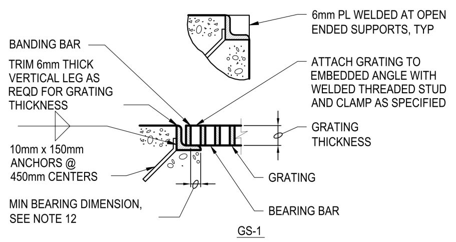
TYPICAL DETAILS -3

Project no.	Drawing no.	Revision no.
30192375	S403	B

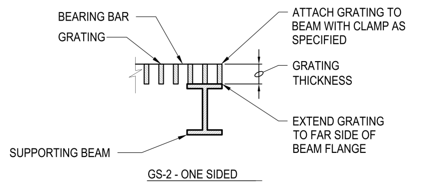
Autodesk Docs://30288139-Iqaluit_LongTermWater C3D2025/IQL-ARCA-S-BUILDING-23.rvt

A1 - 841X594

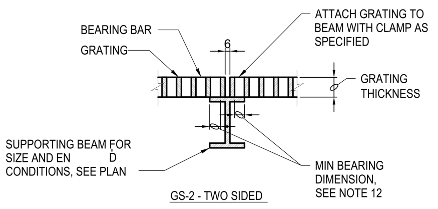
0 10 20 30 40 50 60 70 80 90 100mm


6mm PL WELDED AT OPEN ENDED SUPPORTS, TYP
BANDING BAR
TRIM 6mm THICK VERTICAL LEG AS REQD FOR GRATING THICKNESS
ATTACH GRATING TO EMBEDDED ANGLE WITH WELDED THREADED STUD AND CLAMP AS SPECIFIED
GRATING THICKNESS
10mm x 150mm ANCHORS @ 450mm CENTERS
GRATING
MIN BEARING DIMENSION, SEE NOTE 12
BEARING BAR

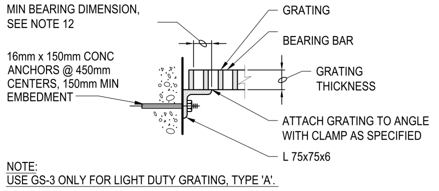
GS-1


BEARING BAR
GRATING
ATTACH GRATING TO BEAM WITH CLAMP AS SPECIFIED
GRATING THICKNESS
EXTEND GRATING TO FAR SIDE OF BEAM FLANGE
SUPPORTING BEAM

GS-2 - ONE SIDED


BEARING BAR
GRATING
6
ATTACH GRATING TO BEAM WITH CLAMP AS SPECIFIED
GRATING THICKNESS
SUPPORTING BEAM FOR SIZE AND EN D CONDITIONS, SEE PLAN
MIN BEARING DIMENSION, SEE NOTE 12

GS-2 - TWO SIDED

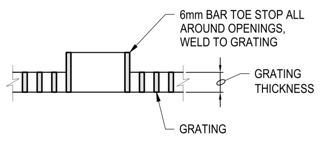

MIN BEARING DIMENSION, SEE NOTE 12
GRATING
BEARING BAR
16mm x 150mm CONC ANCHORS @ 450mm CENTERS, 150mm MIN EMBEDMENT
GRATING THICKNESS
ATTACH GRATING TO ANGLE WITH CLAMP AS SPECIFIED
L 75x75x6

NOTE:
USE GS-3 ONLY FOR LIGHT DUTY GRATING, TYPE 'A'.

GS-3

GENERAL NOTES:

1. GRATING SHALL BE LIGHT DUTY GRATING UNLESS OTHERWISE NOTED ON DRAWINGS.
2. GRATING SPAN SEE PLAN.
3. INDIVIDUAL GRATING SECTIONS SHALL NOT EXCEED 900mm IN WIDTH OR AT WEIGH MORE THAN 40 kg, UNLESS INDIC ED OTHERWISE FOR TYPES 'A' & 'B' GRATING. TYPE 'C' GRATING SHALL HA'VE A MINIMUM WIDTH OF 600mm REGARDLESS OF WEIGHT.
4. SHOP DRAWINGS BASED ON FIELD DIMENSIONS SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO FABRICATION.
5. MATERIAL FOR SUPPORTS OF STEEL AND ALUMINUM GRATING TO BE SAME AS GRATING, EXCEPT METAL SUPPORTS THAT ARE TO BE EMBEDDED IN CONCRETE SHALL BE TYPE 316 STAINLESS STEEL.
6. UNLESS NOTED OTHERWISE ON PLANS, GRATING THICKNESS SHALL BE AS TABULATED IN "GRATING THICKNESS TABLE" FOR APPLICABLE GRATING TYPE.
7. FOR SERRATED BEARING BARS, INCREASE GRATING THICKNESSES SHOWN IN TABLES BY 6mm.
8. BEARING BAR THICKNESS FOR GRATING TO BE 5mm MINIMUM. SEE SPECIFICATIONS FOR SPACING OF BEARING AND CROSS BARS.
9. BAND ALL EDGES. MATCH DEPTH OF BEARING BAR.
10. TYPE OF MATERIAL USED SHALL BE AS SHOWN ON PLANS OR AS SPECIFIED. THIS STANDARD DETAIL INCLUDES 2 TYPES, ALTHOUGH BOTH MAY NOT BE INCLUDED IN PROJECT.
11. THE HORIZONTAL CLEARANCE BETWEEN THE GRATING AND GRATING SUPPORTS SHALL NOT BE LESS THAN 6mm NOR GREATER THAN 13mm AND AS SPECIFIED.
12. FOR TYPE A & B MIN BEARING HORIZONTAL DIMENSION = 25mm FOR GRATING DEPTH 57mm OR LESS, MIN BEARING HORIZONTAL = 50mm FOR GRATING DEPTH GREATER THAN 57mm.


6mm BAR TOE STOP ALL AROUND OPENINGS, WELD TO GRATING
GRATING THICKNESS
GRATING

EQUIPMENT OPENINGS

LIGHT DUTY GRATING
TYPE 'A'
(4.8 kPa)

MINIMUM GRATING THICKNESS TABLE

MAXIMUM SPAN	STEEL	ALUMINUM
1050	25	32
1200	25	38
1350	25	44
1500	32	44
1650	32	51
1800	38	57
1950	38	57
2100	44	64
UP T0 2500	51	64

MEDIUM DUTY GRATING
TYPE 'B'
(24 kPa)

MINIMUM GRATING THICKNESS TABLE

MAXIMUM SPAN	STEEL	ALUMINUM
< 600	25	25
750	25	32
900	32	38
1050	32	44
1200	38	51
1350	44	57
1500	44	64
1650	51	DO NOT USE ALUMINUM GRATING
1800	57	
1950	64	

HEAVY DUTY GRATING
TYPE 'C'
(H 20 WHEEL LOAD)

MINIMUM GRATING THICKNESS TABLE

MAXIMUM SPAN	STEEL	ALUMINUM
300	51x4.8	DO NOT USE ALUMINUM GRATING
500	64x6.4	
600	64x9.5 OR 76x6.4	
750	76x9.5 OR 102x6.4	
1000	89x9.5	
1200	102x9.5	
1500	114x9.5	

STANDARD GRATING
NTS

(0315–023)

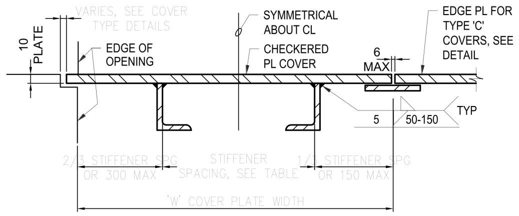

10 PLATE
VARIES, SEE COVER TYPE DETAILS
EDGE OF OPENING
SYMMETRICAL ABOUT CL
CHECKERED PL COVER
6 MAX
EDGE PL FOR TYPE 'C' COVERS, SEE DETAIL
5
50-150
TYP
2/3 STIFFENER SPG OR 300 MAX
STIFFENER SPACING, SEE TABLE
1/3 STIFFENER SPG OR 150 MAX
'W' COVER PLATE WIDTH

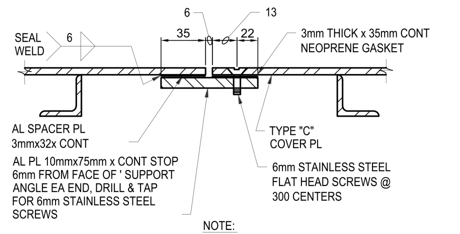
TABLE FOR CHECKERED FLOOR PLATE - ALUMINUM

TABLE

OPENING SPAN LENGTH 'L'	STIFFENER SIZE	MAX STIFFENER SPACING	MAX PLATE WIDTH 'W'
L<750	NONE	-	1500
750<L<1050	L51x38x6.4	450	1200
1050<L<1200	L64x38x6.4	450	1200
1200<L<1350	L64x38x6.4	375	1200
1350<L<1500	L76x51x6.4	450	1200
1500<L<1650	L76x51x6.4	375	900
1650<L<1800	L89x64x6.4	450	900
1800<L<1950	L89x64x6.4	375	750
1950<L<2100	L102x76x6.4	375	750
2100<L<2250	L102x76x6.4	300	600

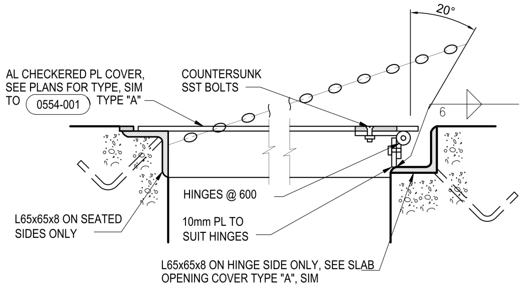
NOTES FOR CHECKERED FLOOR PLATE - ALUMINUM

1. STIFFENERS TO BE PLACED LONG LEG VERTICAL.
2. SPAN DIRECTION OF PLATE TO BE PARALLEL TO STIFFENERS, AND SHALL BE SHORT DIMENSION OF OPENING UNLESS NOTED OTHERWISE ON PLANS.
3. MAXIMUM ALLOWABLE UNIFORM DESIGN LOAD = 15 kPa.
4. MAXIMUM WEIGHT OF COVER PLATE TO BE 55 kg.
5. COVER PLATES AND STIFFENERS ARE ALUMINUM PLATES AND ANGLES.
6. ALL COVER PLATES TO HAVE A MINIMUM OF TWO EYES AS SHOWN IN LIFTING EYE DETAILS, EXCEPT AT COVER PLATES ABOVE STOP LOGS OR GATES.


SEAL WELD
6
35
13
22
3mm THICK x 35mm CONT NEOPRENE GASKET
AL SPACER PL 3mmx32x CONT
AL PL 10mmx75mm x CONT STOP 6mm FROM FACE OF ' SUPPORT ANGLE EA END, DRILL & TAP FOR 6mm STAINLESS STEEL SCREWS
TYPE "C" COVER PL
6mm STAINLESS STEEL FLAT HEAD SCREWS @ 300 CENTERS

NOTE:
THIS DETAIL APPLIES AT TYPE "C" COVERS AND OTHER AIRTIGHT COVERS.

EDGE PLATE DETAIL

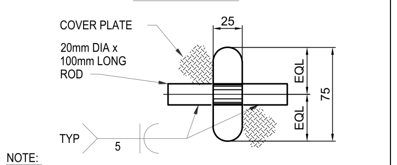

20°
AL CHECKERED PL COVER, SEE PLANS FOR TYPE, SIM TO 0554-001 TYPE "A"
COUNTERSUNK SST BOLTS
6
HINGES @ 600
L65x65x8 ON SEATED SIDES ONLY
10mm PL TO SUIT HINGES
L65x65x8 ON HINGE SIDE ONLY, SEE SLAB OPENING COVER TYPE "A", SIM

NOTES FOR CHECKERED ALUMINUM HINGED FLOOR PLATE:

1. INSTALL SST CHAIN. TACK WELD OR BOLT TO PLATE AND FRAME. CHAIN TO STOP PLATE AT 20° PAST VERTICAL.
2. HINGES TO BE STAINLESS STEEL FULL MORTISE BUTT HINGES WITH STAINLESS STEEL BOLTS.
3. MAX WEIGHT TO BE 35 kg.
4. SEE LIFTING EYE DETAILS AND PLANS FOR TYPE.

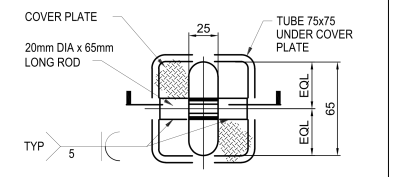
CHECKERED ALUMINUM FLOOR PLATE
NTS

COVER STIFFENERS

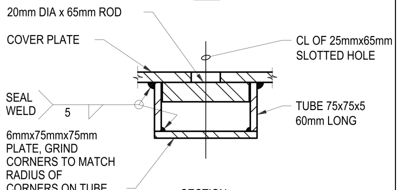

COVER PLATE
20mm DIA x 100mm LONG ROD
25
EQL
EQL
75
TYP
5

NOTE:
THIS DETAIL IS APPLICABLE TO TYPES "A" AND "B" COVERS AND OTHER COVERS NOT INTENDED TO BE AIRTIGHT.

LIFTING EYE TYPE "A"


COVER PLATE
20mm DIA x 65mm LONG ROD
25
TUBE 75x75 UNDER COVER PLATE
EQL
EQL
65
TYP
5

PLAN

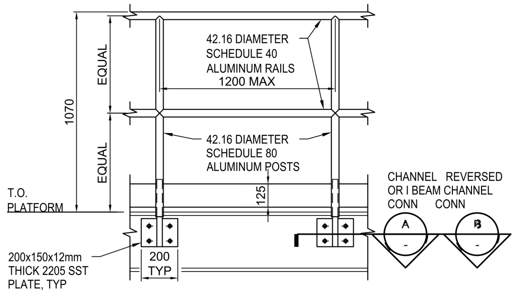

20mm DIA x 65mm ROD
COVER PLATE
CL OF 25mmx65mm SLOTTED HOLE
SEAL WELD
5
TUBE 75x75x5 60mm LONG
6mmx75mmx75mm PLATE, GRIND CORNERS TO MATCH RADIUS OF CORNERS ON TUBE

SECTION

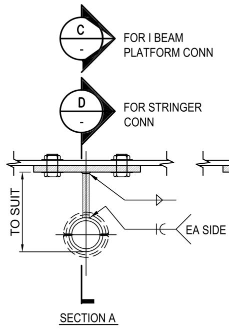
NOTE:
THE DETAIL IS APPLICABLE TO TYPE "C" COVERS AND OTHER AIR TIGHT COVERS.

LIFTING EYE TYPE "B"

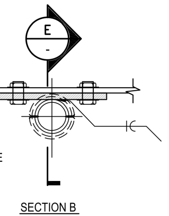
(0315–025)


1070
EQUAL
EQUAL
42.16 DIAMETER SCHEDULE 40 ALUMINUM RAILS
1200 MAX
42.16 DIAMETER SCHEDULE 80 ALUMINUM POSTS
125
T.O. PLATFORM
200x150x12mm THICK 2205 SST PLATE, TYP
200 TYP
CHANNEL OR I BEAM CONN
REVERSED CHANNEL CONN
A
B

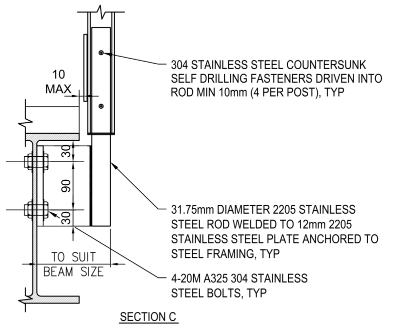
SIDE MOUNT ON PLATFORM


C
FOR I BEAM PLATFORM CONN
D
FOR STRINGER CONN
TO SUIT
EA SIDE

SECTION A

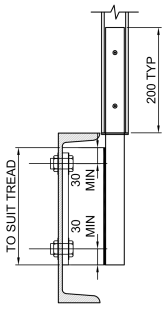


SECTION B

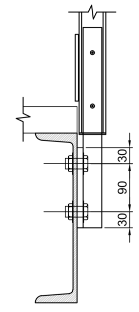

304 STAINLESS STEEL COUNTERSUNK SELF DRILLING FASTENERS DRIVEN INTO ROD MIN 10mm (4 PER POST), TYP
10 MAX
30
90
30
31.75mm DIAMETER 2205 STAINLESS STEEL ROD WELDED TO 12mm 2205 STAINLESS STEEL PLATE ANCHORED TO STEEL FRAMING, TYP
TO SUIT BEAM SIZE
4-20M A325 304 STAINLESS STEEL BOLTS, TYP

SECTION C

NOTE:
MINIMUM YIELD STRENGTH OF STAINLESS STEEL ROD AND PLATE TO BE 450 KPa. WELD ROD AND PLATE WITH A FILLER METAL OF MATCHING OR GREATER YIELD STRENGTH.


200 TYP
TO SUIT TREAD
30 MIN
30 MIN

SECTION D



SECTION E

SIDE MOUNT GUARD ON STEEL RAILING
NTS

(0315–024)

* UNLESS OTHERWISE SPECIFIED IN THE DRAWINGS

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN (REVISED)	2025-09-26

Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
M.S.

Drawn by
Y.N.

Approved by
K.A.

Project Manager
C.G.

Drawing Title

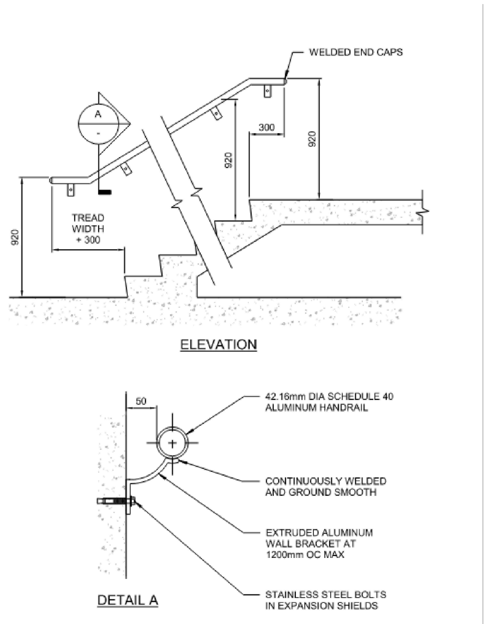
TYPICAL DETAILS -4

Project no. **30192375**
Drawing no. **S404**
Revision no. **B**

Autodesk Docs://30288139-Iqaluit_LongTermWater C3D2025/IQL-ARCA-S-BUILDING-23.rvt

A1 - 841X594

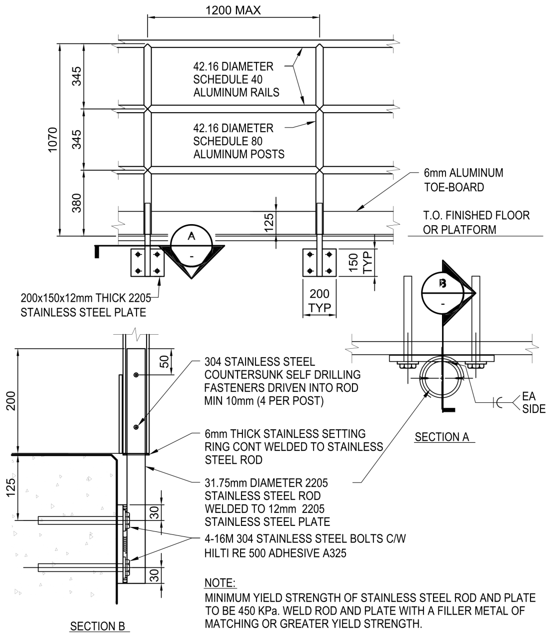
0 10 20 30 40 50 60 70 80 90 100mm


WELDED END CAPS
A
-
300
920
920
920
TREAD
WIDTH
+ 300
ELEVATION
50
42.16mm DIA SCHEDULE 40
ALUMINUM HANDRAIL
CONTINUOUSLY WELDED
AND GROUND SMOOTH
EXTRUDED ALUMINUM
WALL BRACKET AT
1200mm OC MAX
STAINLESS STEEL BOLTS
IN EXPANSION SHIELDS
DETAIL A

WALL MOUNTED PIPE HANDRAIL

NTS

(0315–025)


1200 MAX
42.16 DIAMETER
SCHEDULE 40
ALUMINUM RAILS
42.16 DIAMETER
SCHEDULE 80
ALUMINUM POSTS
1070
345
345
380
125
6mm ALUMINUM
TOE-BOARD
T.O. FINISHED FLOOR
OR PLATFORM
A
-
150
TYP
200
TYP
200x150x12mm THICK 2205
STAINLESS STEEL PLATE
B
-
EA
SIDE
SECTION A
200
50
125
30
30
304 STAINLESS STEEL
COUNTERSUNK SELF DRILLING
FASTENERS DRIVEN INTO ROD
MIN 10mm (4 PER POST)
6mm THICK STAINLESS SETTING
RING CONT WELDED TO STAINLESS
STEEL ROD
31.75mm DIAMETER 2205
STAINLESS STEEL ROD
WELDED TO 12mm 2205
STAINLESS STEEL PLATE
4-16M 304 STAINLESS STEEL BOLTS C/W
HILTI RE 500 ADHESIVE A325
SECTION B

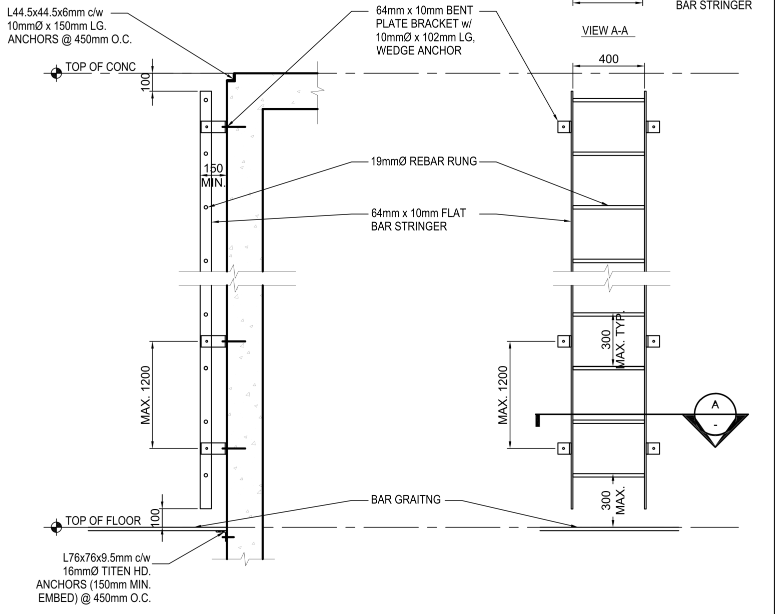
NOTE:
MINIMUM YIELD STRENGTH OF STAINLESS STEEL ROD AND PLATE TO BE 450 KPa. WELD ROD AND PLATE WITH A FILLER METAL OF MATCHING OR GREATER YIELD STRENGTH.

SIDE MOUNTED GUARD ON CONCRETE

NTS

(0315–026)

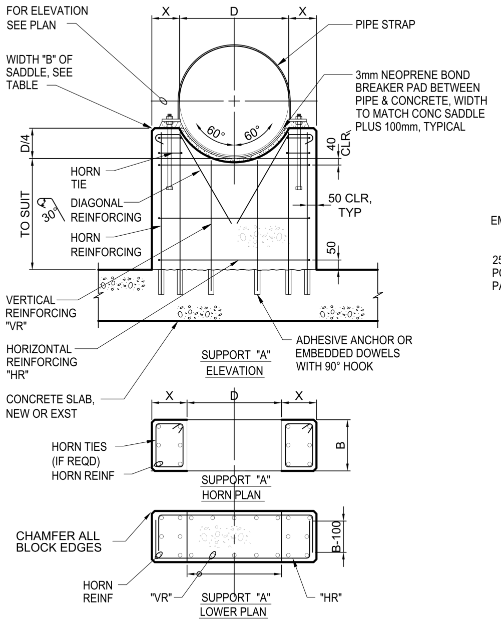
NOTES:
1. FIXED ACCESS LADDER TO COMPLY WITH CSA CAN3-Z11 AND SOR/86-304.
2. PROVIDE REST PLATFORM EVERY 6.0 m.
3. FIXED LADDER TO BE PROVIDED WITH SAFETY CAGE ABOVE 3.0 m UNLESS FALL ARREST SYSTEM IS SPECIFIED.
4. FIXED ACCESS LADDERS TO BE DESIGNED, SUPPLIED, AND INSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH APPLICABLE CANADIAN CODES AND STANDARDS, INCLUDING CSA Z11 AND NUNAVUT OHS REGULATIONS.

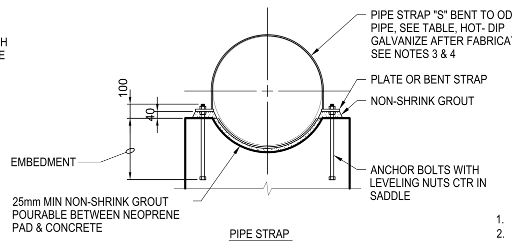

64mm x 10mm BENT
PLATE BRACKET w/
10mmØ x 102mm LG,
WEDGE ANCHOR
19mmØ REBAR RUNG
150
MIN.
400
64mm x 10mm FLAT
BAR STRINGER
VIEW A-A
L44.5x44.5x6mm c/w
10mmØ x 150mm LG.
ANCHORS @ 450mm O.C.
TOP OF CONC
100
64mm x 10mm BENT
PLATE BRACKET w/
10mmØ x 102mm LG,
WEDGE ANCHOR
400
150
MIN.
19mmØ REBAR RUNG
64mm x 10mm FLAT
BAR STRINGER
MAX. 1200
300
MAX. TYP.
MAX. 1200
A
-
300
MAX.
BAR GRAITNG
TOP OF FLOOR
100
L76x76x9.5mm c/w
16mmØ TITEN HD.
ANCHORS (150mm MIN.
EMBED) @ 450mm O.C.

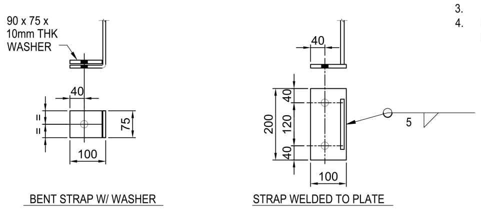
ACCESS LADDER ELEVATION

NTS FINISH: HDG

(0315–027)


FOR ELEVATION
SEE PLAN
X
D
X
PIPE STRAP
WIDTH "B" OF
SADDLE, SEE
TABLE
3mm NEOPRENE BOND
BREAKER PAD BETWEEN
PIPE & CONCRETE, WIDTH
TO MATCH CONC SADDLE
PLUS 100mm, TYPICAL
60°
60°
D/4
40
CLR.
HORN
TIE
TO SUIT
30°
DIAGONAL
REINFORCING
50 CLR,
TYP
HORN
REINFORCING
50
VERTICAL
REINFORCING
"VR"
HORIZONTAL
REINFORCING
"HR"
ADHESIVE ANCHOR OR
EMBEDDED DOWELS
WITH 90° HOOK
SUPPORT "A"
ELEVATION
CONCRETE SLAB,
NEW OR EXST
X
D
X
HORN TIES
(IF REQD)
HORN REINF
B
SUPPORT "A"
HORN PLAN
CHAMFER ALL
BLOCK EDGES
B-100
HORN
REINF
"VR"
"HR"
SUPPORT "A"
LOWER PLAN


100
40
PIPE STRAP "S" BENT TO OD OF
PIPE, SEE TABLE, HOT- DIP
GALVANIZE AFTER FABRICATION,
SEE NOTES 3 & 4
PLATE OR BENT STRAP
NON-SHRINK GROUT
EMBEDMENT
ANCHOR BOLTS WITH
LEVELING NUTS CTR IN
SADDLE
25mm MIN NON-SHRINK GROUT
POURABLE BETWEEN NEOPRENE
PAD & CONCRETE
PIPE STRAP

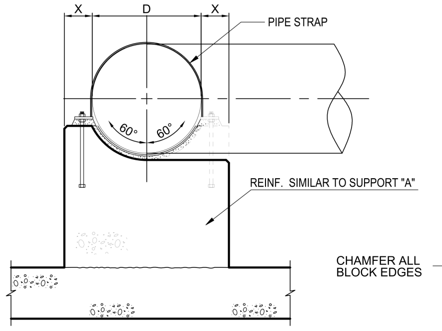

90 x 75 x
10mm THK
WASHER
40
75
100
BENT STRAP W/ WASHER
40
200
40
120
40
100
5
STRAP WELDED TO PLATE

NOTES:

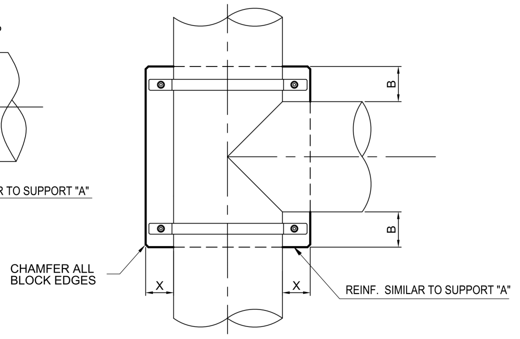
PIPE SADDLE TABLE												
PIPE DIAMETER	SADDLE WIDTH	LAYERS OF REINFORCING	VERTICAL REINFORCING	HORIZONTAL REINFORCING	DIAGONAL REINFORCING	HORN			PIPE STRAP			
						LENGTH	REINFORCING	TIES	STRAP SIZE	PLATE	ANCHOR	
D (mm)	B (mm)		VR	HR	(EACH SIDE)	X (mm)			S (mm)	PL (mm)	BOLT	EMBED (mm)
75 TO 300	200	1 CTRD	15M@300	15M@300	-	150	1-15M EF	-	5 x 75	-	1-16M	400
350 TO 600	250	2 EF	15M@200	15M@200	1-10M	200	1-15M EF	-	6 x 75	-	1-16M	400
650 TO 1200	300	2 EF	20M@200	20M@200	2-15M	300	2-20M EF	3-10M@200	8 x 75	-	1-25M	600
1250 TO 2400	350	2 EF	25M@250	20M@200	2-20M	350	3-25M EF	4-10M@200	10 x 140	PL100x200x20	2-25M	600

NOTES:

1. FORM 20mm BEVEL ON ALL EXPOSED CORNERS OF SUPPORT.
2. PROVIDE PIPE STRAP AT ALL PIPES. UNLESS INDICATED OTHERWISE A STRAP IS NOT REQUIRED.
3. AT SUBMERGED CONDITIONS, STRAP SHALL BE STAINLESS STEEL.
4. PROVIDE 3mm NEOPRENE BOND BREAKER PAD BETWEEN PIPE & METAL STRAP, WIDTH TO MATCH STRAP PLUS 100mm, TYPICAL. 5. ANCHOR BOLTS TYPE A325 GALVANIZED.


X
D
X
PIPE STRAP
60°
60°
REINF. SIMILAR TO SUPPORT "A"

SUPPORT "B"
ELEVATION
DETAIL FOR TWO PIPES INTERSECTION SUPPORT BLOCK


B
B
CHAMFER ALL
BLOCK EDGES
X
X
REINF. SIMILAR TO SUPPORT "A"

SUPPORT "B"
PLAN
DETAIL FOR TWO PIPES INTERSECTION SUPPORT BLOCK

**STEEL SUPPORT DETAILS SEE PROCESS DRAWINGS

PIPE SUPPORT - CONCRETE SADDLE

NTS

(0315–028)

* UNLESS OTHERWISE SPECIFIED IN THE DRAWINGS

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN (REVISED)	2025-09-26

Consultant
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Project title
CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
M.S.

Drawn by
Y.N.

Approved by
K.A.

Project Manager
C.G.

Drawing Title

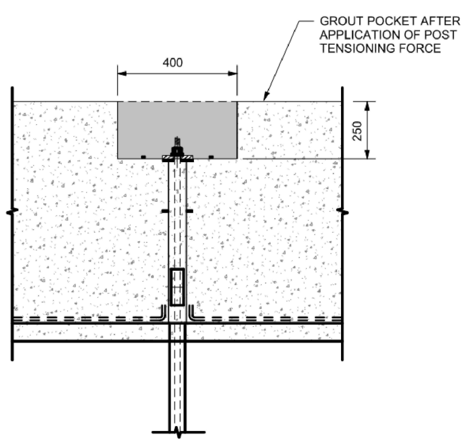
TYPICAL DETAILS -5

Project no.	Drawing no.	Revision no.
30192375	S405	B

Autodesk Docs://30288139-Iqaluit_LongTermWater C3D2025/IQL-ARCA-S-BUILDING-23.rvt

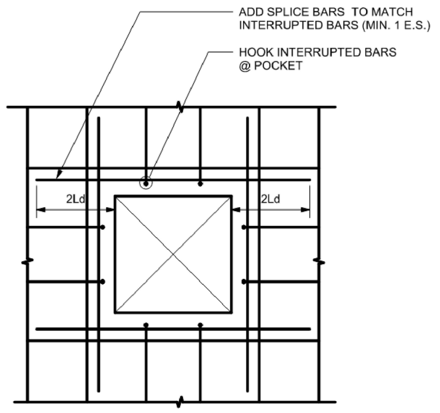
A1 - 841X594

0 10 20 30 40 50 60 70 80 90 100mm


GROUT POCKET AFTER APPLICATION OF POST TENSIONING FORCE
400
250

ROCK ANCHOR DETAIL (RA-1)

Scale: NTS


ADD SPLICE BARS TO MATCH INTERRUPTED BARS (MIN. 1 E.S.)
HOOK INTERRUPTED BARS @ POCKET
2Ld
2Ld

ROCK ANCHOR DETAIL (RA-1) REINFORCING - PLAN

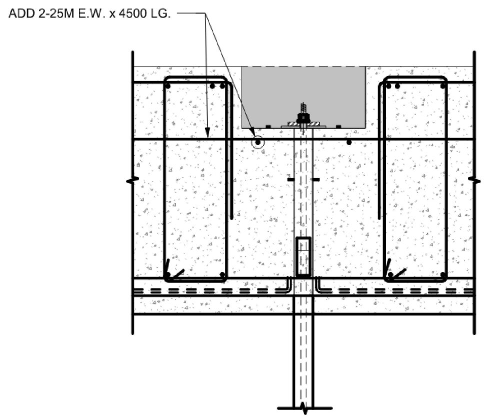
Scale: NTS

ANCHOR INSTALLATION NOTES:

1. ALL ANCHORS TO BE POST TENSIONED DYWIDAG (OR APPROVED EQUAL) GRADE 1035 MPa DOUBLE CORROSION PROTECTED, SHOP ASSEMBLED AND SHOP GROUTED W/TYPE 20 CEMENT GROUT.
2. PRIOR TO INSTALLATION OF ANCHORS, TEST ANCHORS SHALL BE INSTALLED TO VERIFY DESIGN CAPACITY ASSUMED.
3. ROCK ANCHOR ORIENTATION SHALL VERIFY DRILL HOLE DIAMETER AND ANCHOR EMBEDMENT LENGTH, INCLUDING FREE STRESSING LENGTH AND BONDED LENGTH.
4. PRIOR TO INSTALLATION OF THE ANCHORS, THE DRILL HOLE SHALL BE TESTED IN ACCORDANCE WITH THE ANCHOR TEST REQUIREMENTS AS INDICATED ON THE DRAWINGS AND IN ACCORDANCE WITH THE DRILL ROCK ANCHOR DRILL HOLES FROM TOP OF MUD SLAB.
5. PRIOR TO STRESSING AND WATERSTOP SYSTEM INSTALLATION, THE CONCRETE AFTER STRESSING ITS 28-DAY COMPRESSIVE STRENGTH SHALL BE VERIFIED TO BE GREATER THAN 30 MPa.
6. DRILL ROCK ANCHOR DRILL HOLES FROM TOP OF MUD SLAB.
7. AFTER STRESSING AND WATERSTOP SYSTEM SHOWN DIAGRAMMATICALLY ONLY.
8. CONTRACTOR TO VERIFY SITE CONDITIONS AND CAPACITIES.

ROCK ANCHOR SCHEDULE (FOR LQ PUMP STATION):
ANCHOR DIAMETER (MIN.): 57 mm
ANCHOR INSTALLATION DIAMETER (MIN.): 150 mm
PIPE SLEEVE SIZE (EXT. DIAMETER MIN.): 200 mm
TOP PLATE SIZE: 200X200X30
DESIGN CAPACITY: 640 (ULS)
POST-TENSIONING FORCE: 450 kN (ULS)
POCKET DETAIL: 2/5S100

ROCK ANCHOR SCHEDULE (FOR AR PUMP STATION):
ANCHOR DIAMETER (MIN.): 57 mm
ANCHOR INSTALLATION DIAMETER (MIN.): 150 mm
PIPE SLEEVE SIZE (EXT. DIAMETER MIN.): 200 mm
TOP PLATE SIZE: 200X200X30
DESIGN CAPACITY: 733 kN (ULS)
POST-TENSIONING FORCE: 520 kN (ULS)
POCKET DETAIL: 2/5S100


ADD 2-25M E.W. x 4500 LG.

ROCK ANCHOR DETAIL (RA-1) REINFORCING - SECTION

Scale: NTS

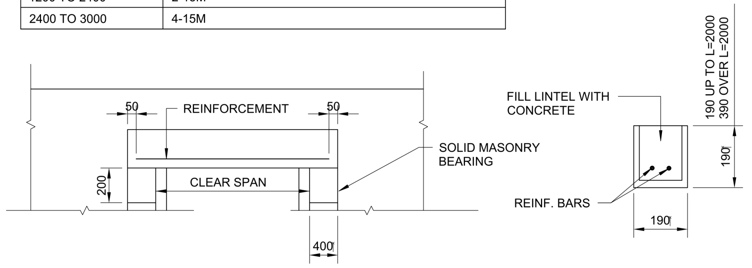
ROCK ANCHOR DETAILS

NTS

(0315–029)

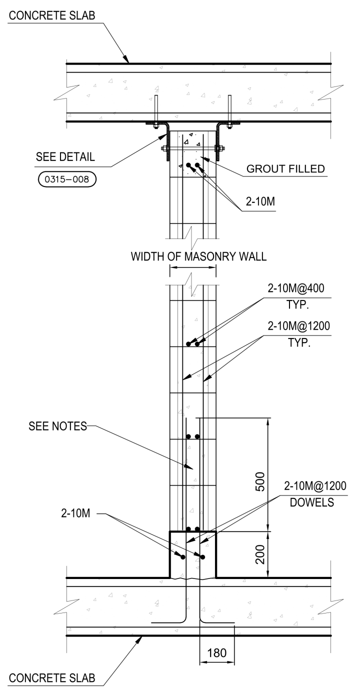
BLOCK LINTEL

CLEAR SPAN	REINFORCEMENT FOR MASONRY LINTEL
	REINF. IN BOND BEAM/STEEL LINTEL
UP TO 900	1-10M
900 TO 1200	1-15M
1200 TO 2400	2-15M
2400 TO 3000	4-15M


50
REINFORCEMENT
50
SOLID MASONRY BEARING
CLEAR SPAN
200
400
FILL LINTEL WITH CONCRETE
190 UP TO L=2000
390 OVER L=2000
190
REINF. BARS
190

LINTEL DETAIL

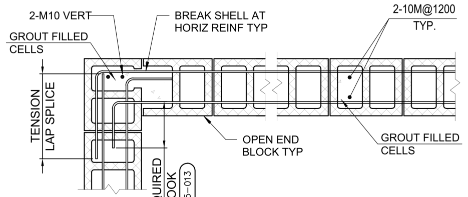
NTS


CONCRETE SLAB
SEE DETAIL
0315–008
GROUT FILLED
2-10M
WIDTH OF MASONRY WALL
2-10M@400 TYP.
2-10M@1200 TYP.
SEE NOTES
500
2-10M@1200 DOWELS
2-10M
200
180
CONCRETE SLAB

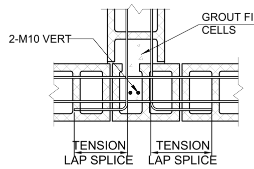
INTERIOR WALL

WALL SECTION

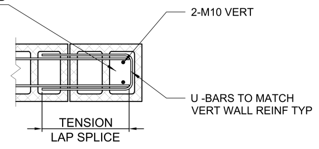
NTS


2-M10 VERT
GROUT FILLED CELLS
BREAK SHELL AT HORIZ REINF TYP
2-10M@1200 TYP.
TENSION LAP SPLICE
OPEN END BLOCK TYP
GROUT FILLED CELLS
REQUIRED HOOK
0315–013

CORNER


2-M10 VERT
GROUT FILLED CELLS
TENSION LAP SPLICE
TENSION LAP SPLICE

INTERSECTION


2-M10 VERT
U -BARS TO MATCH VERT WALL REINF TYP
TENSION LAP SPLICE

ENDING

NOTES:

1. VERTICAL REINFORCEMENT (ALONG WALL LENGTH):
   - a. PROVIDE VERTICAL REINFORCEMENT 10M @ 1200 mm O.C. ALONG FULL LENGTH OF WALL, UNLESS NOTED OTHERWISE.
   - b. PROVIDE ADDITIONAL VERTICAL BARS 10M EACH SIDE OF DOOR AND LARGE OPENINGS AND AT ALL WALL ENDS, CORNERS AND INTERSECTIONS (MIN. 2–10M PER JAMB/END).
   - c. VERTICAL BARS SHALL BE ANCHORED INTO THE CONCRETE FLOOR WITH CAST-IN-PLACE 10M DOWELS @ 1200 mm O.C., MATCHING BAR LOCATIONS IN WALL.
   - d. MINIMUM DOWEL EMBEDMENT INTO CONCRETE FLOOR SHALL NOT BE LESS THAN THE DEVELOPMENT LENGTH REQUIRED BY CSA A23.3 / CSA S304-14 (TYP. 500 mm).
   - e. MINIMUM EMBEDMENT OF DOWELS INTO FIRST CMU CELL ABOVE FLOOR: 400 mm OR FULL DEVELOPMENT LENGTH, WITH CELLS FULLY GROUTED.
   - f. VERTICAL BARS SHALL BE CONTINUOUS TO TOP OF WALL WITH LAP SPLICES AS REQUIRED (TYP. 40–60 BAR DIAMETERS).

2. HORIZONTAL REINFORCEMENT (ALONG WALL HEIGHT):
   - a. PROVIDE HORIZONTAL REINFORCEMENT 2–10M @ 400 mm VERTICALLY (TYP. EVERY SECOND COURSE), CONTINUOUS ALONG WALL.
   - b. PROVIDE CONTINUOUS HORIZONTAL REINFORCEMENT ABOVE AND BELOW ALL OPENINGS (MIN. 2–10M BARS IN A GROUTED COURSE OR NARROW BOND BEAM).
   - c. PROVIDE CONTINUOUS HORIZONTAL REINFORCEMENT AT TOP OF WALL: MIN. 2–10M BARS IN A GROUTED COURSE OR BOND BEAM.
   - d. PROVIDE MINIMUM 25 mm COVER TO HORIZONTAL REINFORCEMENT FROM EXPOSED FACE OF MASONRY.

3. LINTEL NOTES:
   - a. BLOCKS ABOVE LINTELS TO BE FILLED SOLID WITH GROUT FOR HEIGHT EQUAL TO SPAN.
   - b. SHORE LINTELS UNTIL GROUT REACHES DESIGN STRENGTH.

MASONRY DETAILS

NTS

(0315–030)

* UNLESS OTHERWISE SPECIFIED IN THE DRAWINGS

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN (REVISED)	2025-09-26

Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
M.S.

Drawn by
Y.N.

Approved by
K.A.

Project Manager
C.G.

Drawing Title

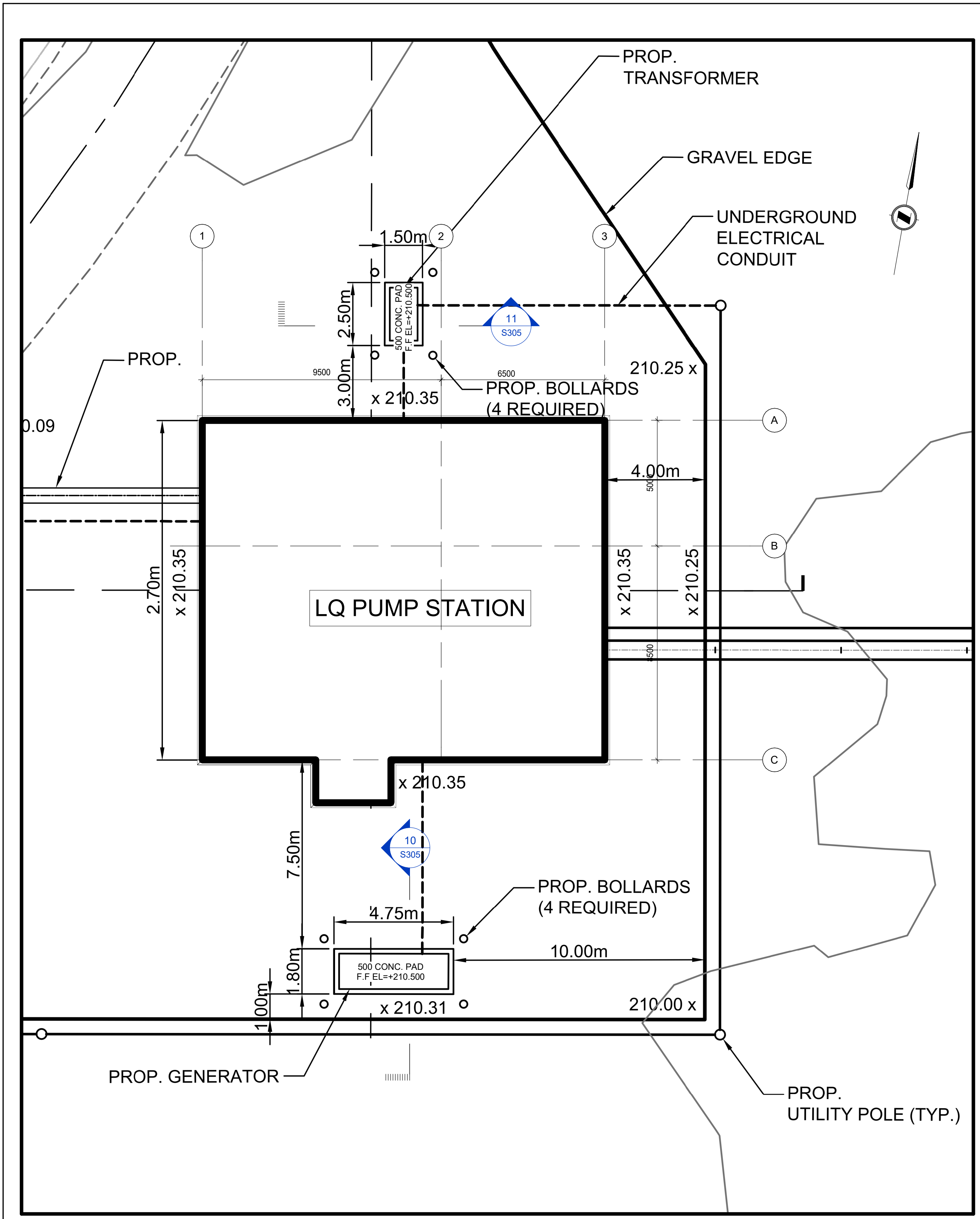
TYPICAL DETAILS -6

Project no.	Drawing no.	Revision no.
30192375	S406	B

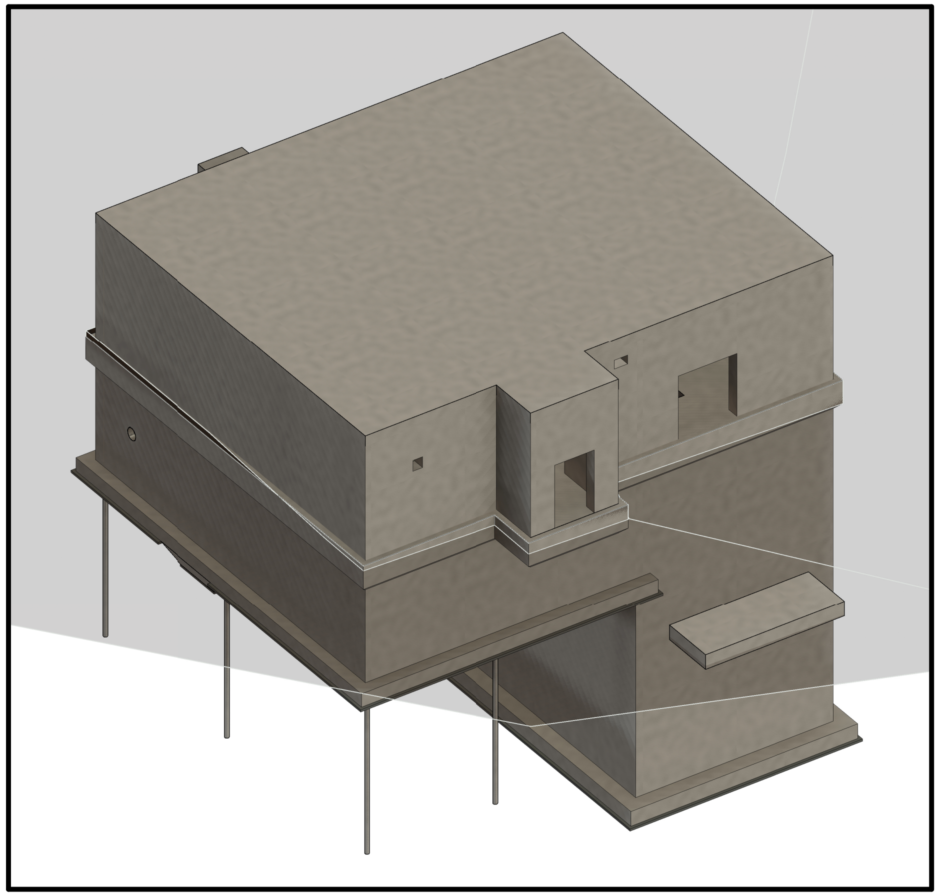
Autodesk Docs://30288139-Iqaluit_LongTermWater C3D2025/IQL-ARCA-S-BUILDING-23.rvt

A1 - 841X594

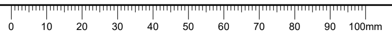
0 10 20 30 40 50 60 70 80 90 100mm


PROP.
TRANSFORMER
GRAVEL EDGE
UNDERGROUND
ELECTRICAL
CONDUIT
1
2
3
1.50m
2.50m
3.00m
500 CONC. PAD
F.F EL=+210.500
11
S305
PROP.
0.09
9500
6500
x 210.35
PROP. BOLLARDS
(4 REQUIRED)
210.25 x
A
B
C
4.00m
500
2.70m
x 210.35
LQ PUMP STATION
x 210.35
x 210.25
x 210.35
7.50m
10
S305
PROP. BOLLARDS
(4 REQUIRED)
4.75m
500 CONC. PAD
F.F EL=+210.500
10.00m
1.80m
1.00m
x 210.31
210.00 x
PROP. GENERATOR
PROP.
UTILITY POLE (TYP.)

1 S100 BUILDING SITE PLAN
Scale: 1 : 100



2 S100 3D VIEW
Scale:


0
10
20
30
40
50
60
70
80
90
100mm

Autodesk Docs://30288139-Iqaluit_LongTermWater C3D2025/IQL-ARCA-S-BUILDING-23.rvt

A1 - 841X594

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
D	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
C	ISSUED FOR PRELIMINARY DESIGN (REVISED)	2025-09-26
B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
A	ISSUED FOR CONCEPT DESIGN	2023-11-27

Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
M.S.

Drawn by
Y.N.

Approved by
K.A.

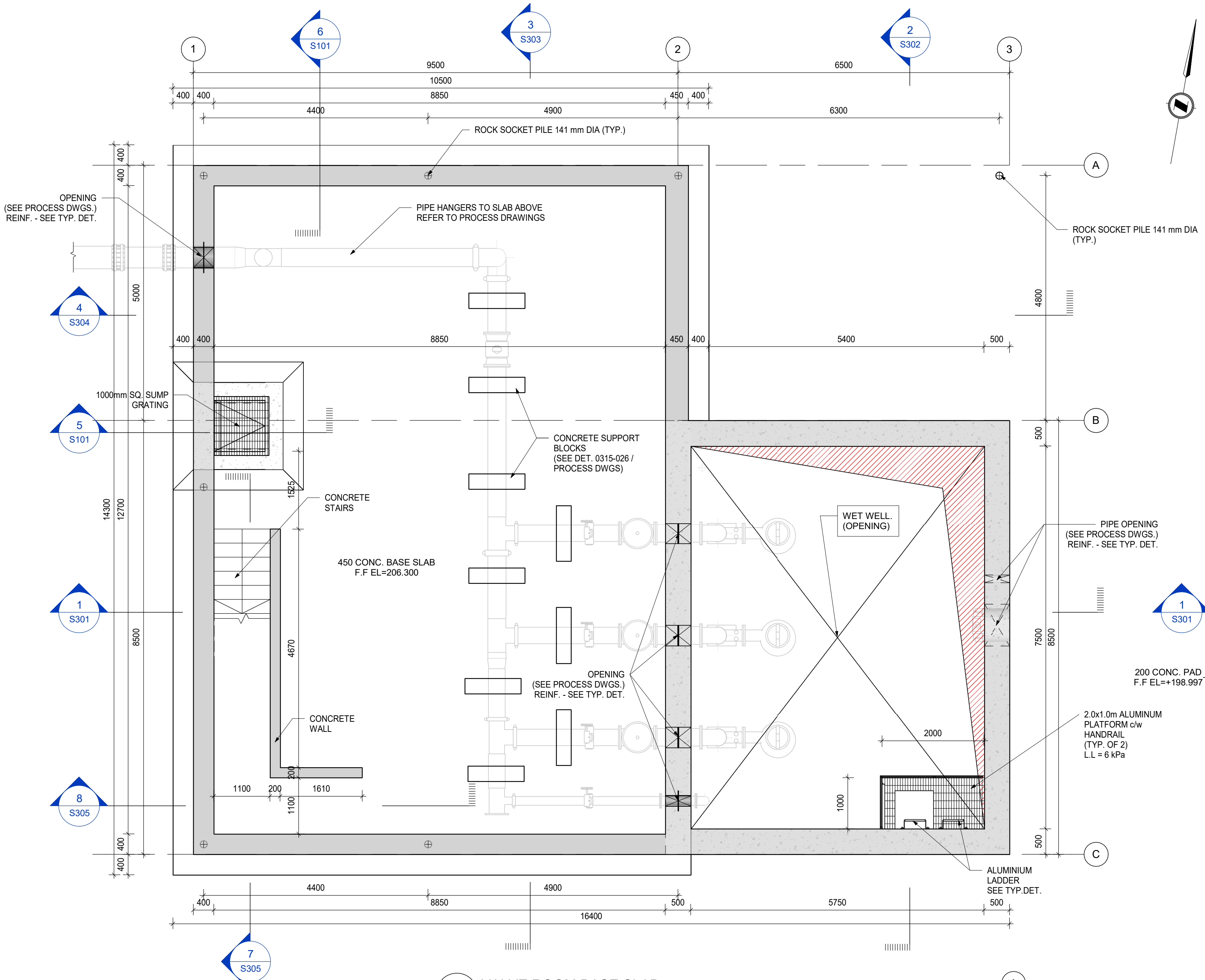
Project Manager
C.G.

Drawing Title

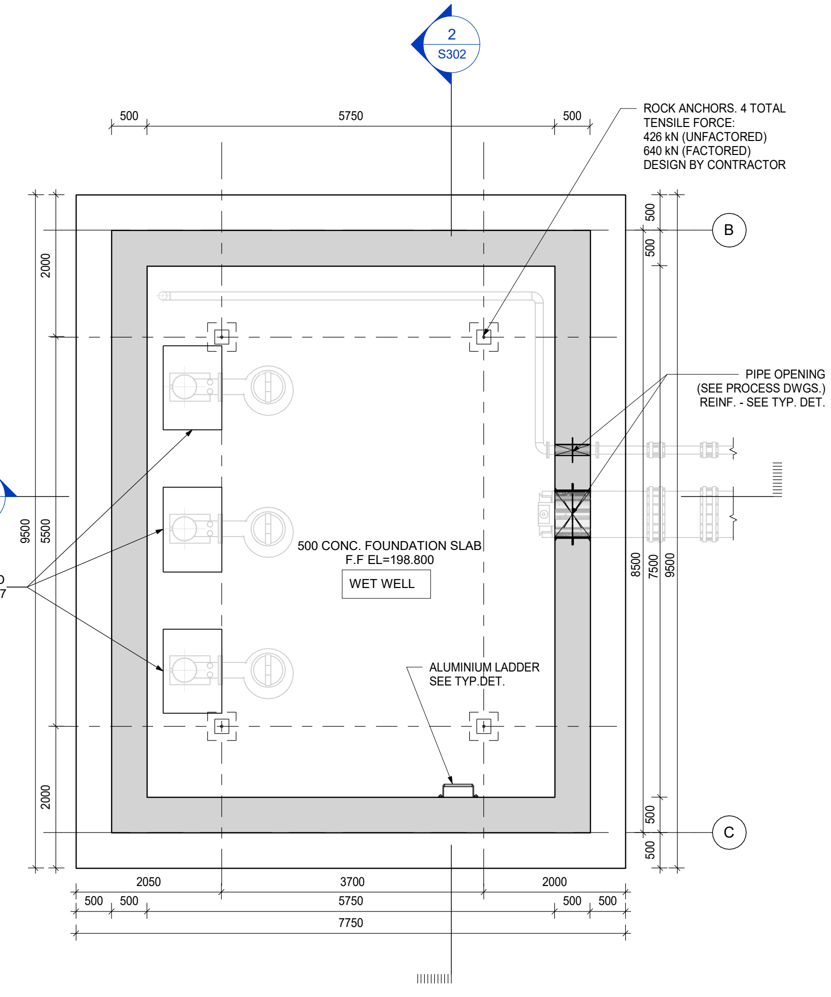
STRUCTURAL

LQ PUMP STATION
BUILDING SITE PLAN

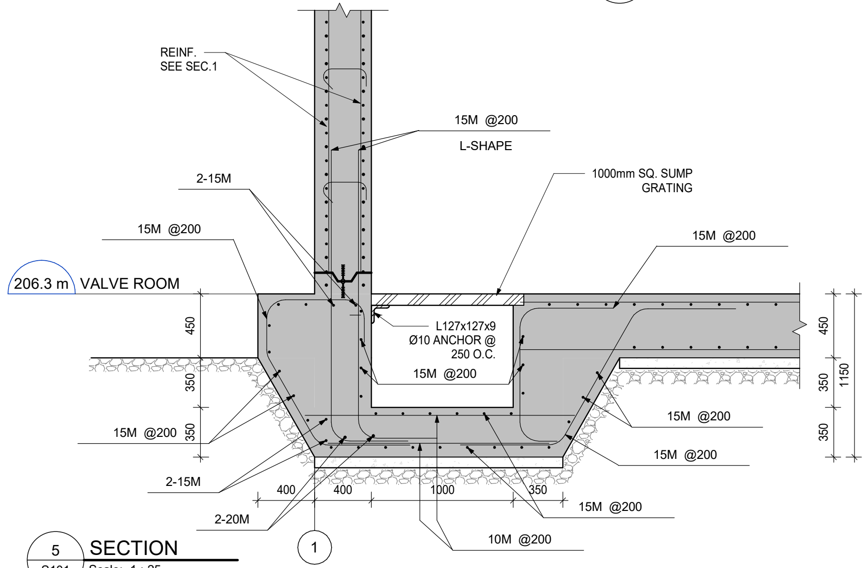
Project no.	Drawing no.	Revision no.
30192375	S100	D


1
2
3
6
S101
3
S303
2
S302
9500
6500
10500
400
400
8850
450
400
4400
4900
6300
ROCK SOCKET PILE 141 mm DIA (TYP.)
A
B
C
ROCK SOCKET PILE 141 mm DIA
(TYP.)
OPENING
(SEE PROCESS DWGS.)
REINF. - SEE TYP. DET.
PIPE HANGERS TO SLAB ABOVE
REFER TO PROCESS DRAWINGS
4
S304
5000
4800
400
400
8850
450
400
5400
500
1000mm SQ. SUMP
GRATING
5
S101
CONCRETE SUPPORT
BLOCKS
(SEE DET. 0315-026 /
PROCESS DWGS)
CONCRETE
STAIRS
1525
14300
12700
WET WELL.
(OPENING)
PIPE OPENING
(SEE PROCESS DWGS.)
REINF. - SEE TYP. DET.
450 CONC. BASE SLAB
F.F EL=206.300
1
S301
8500
4670
7500
8500
500
OPENING
(SEE PROCESS DWGS.)
REINF. - SEE TYP. DET.
CONCRETE
WALL
2000
2.0x1.0m ALUMINUM
PLATFORM c/w
HANDRAIL
(TYP. OF 2)
L.L = 6 kPa
8
S305
1100
200
1610
200
1100
1000
400
400
500
ALUMINIUM
LADDER
SEE TYP.DET.
4400
4900
400
8850
500
5750
500
16400
7
S305

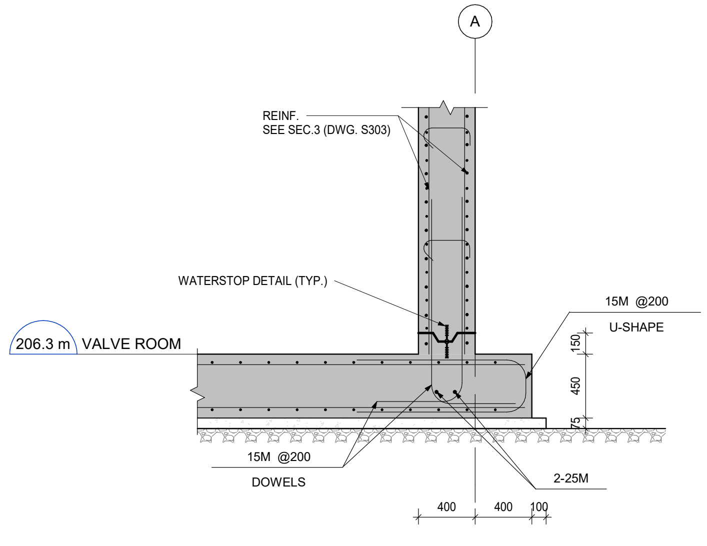
1 S101 VALVE ROOM BASE SLAB
Scale: 1 : 50


2
S302
500
5750
500
ROCK ANCHORS. 4 TOTAL
TENSILE FORCE:
426 kN (UNFACTORED)
640 kN (FACTORED)
DESIGN BY CONTRACTOR
B
C
500
500
2000
PIPE OPENING
(SEE PROCESS DWGS.)
REINF. - SEE TYP. DET.
1
S301
9500
5500
200 CONC. PAD
F.F EL=+198.997
500 CONC. FOUNDATION SLAB
F.F EL=198.800
WET WELL
8500
7500
9500
ALUMINIUM LADDER
SEE TYP.DET.
2000
500
500
2050
3700
2000
500
500
5750
500
500
7750

2 S101 WET WELL BASE SLAB
Scale: 1 : 50


REINF.
SEE SEC.1
15M @200
L-SHAPE
2-15M
1000mm SQ. SUMP
GRATING
15M @200
15M @200
206.3 m VALVE ROOM
450
L127x127x9
Ø10 ANCHOR @
250 O.C.
15M @200
450
350
1150
350
15M @200
15M @200
350
15M @200
2-15M
400
400
1000
350
15M @200
2-20M
1
10M @200

5 S101 SECTION
Scale: 1 : 25


A
REINF.
SEE SEC.3 (DWG. S303)
WATERSTOP DETAIL (TYP.)
15M @200
U-SHAPE
206.3 m VALVE ROOM
150
450
75
15M @200
DOWELS
2-25M
400
400
100

6 S101 SECTION
Scale: 1 : 25

NOTES FOR VALVE ROOM BASE SLAB:

1. REFER TO GENERAL NOTES / TYPICAL DETAILS FOR CONCRETE STRENGTH AND REINFORCING LAPPING AND COVER.
2. MINIMUM SUBGRADE BEARING CAPACITY 1500 kPa (ULS) — TO BE VERIFIED ON SITE BY CONTRACTOR.
3. TEMPORARY SHORING TO BE PROVIDED BY CONTRACTOR WHERE REQUIRED.
4. SERVICE LOADS: D.L.=3.6 kPa; L.L.=12.0 kPa.
5. REFER TO ARCHITECTURAL PLANS AND SECTIONS FOR EXACT LOCATIONS AND PLAN DIMENSIONS.
6. REFER TO PROCESS / MECHANICAL / ELECTRICAL DRAWINGS FOR OPENING SIZE, LOCATION, AND COORDINATION REQUIREMENTS.

NOTES FOR WET WELL BASE SLAB:

1. REFER TO GENERAL NOTES / TYPICAL DETAILS FOR CONCRETE STRENGTH AND REINFORCING LAPPING AND COVER.
2. MINIMUM SUBGRADE BEARING CAPACITY 1500 kPa (ULS) — TO BE VERIFIED ON SITE BY CONTRACTOR.
3. TEMPORARY SHORING TO BE PROVIDED BY CONTRACTOR WHERE REQUIRED.
4. SERVICE LOADS: D.L.=3.6 kPa; L.L.=110.0 (50.0) kPa (Water).
5. REFER TO ARCHITECTURAL PLANS AND SECTIONS FOR EXACT LOCATIONS AND PLAN DIMENSIONS.
6. REFER TO PROCESS / MECHANICAL / ELECTRICAL DRAWINGS FOR OPENING SIZE, LOCATION, AND COORDINATION REQUIREMENTS.

WALL HATCHING LEGEND

- ▨ - CONCRETE CAST UP TO SLAB SOFFIT
- ▨ - CONCRETE CAST UP TO SLAB AND CONTINUING ABOVE
- ■ - CONCRETE CONTINUING ABOVE THE SLAB
- ☐ - MASONRY BUILT UP TO SLAB SOFFIT
- ☒ - MASONRY UP TO SLAB AND CONTINUING ABOVE
- ☒ - MASONRY CONTINUING ABOVE THE SLAB

REBAR PLACEMENT IN SLAB

- ↔ TUL (TOP UPPER LAYER)
- ↕ TLL (TOP LOWER LAYER)
- ↕ BUL (BOTTOM UPPER LAYER)
- ↔ BLL (BOTTOM LOWER LAYER)

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A1 - 841X594

0 10 20 30 40 50 60 70 80 90 100mm

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
D	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
C	ISSUED FOR PRELIMINARY DESIGN (REVISED)	2025-09-26
B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
A	ISSUED FOR CONCEPT DESIGN	2023-11-27

Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
M.S.

Drawn by
Y.N.

Approved by
K.A.

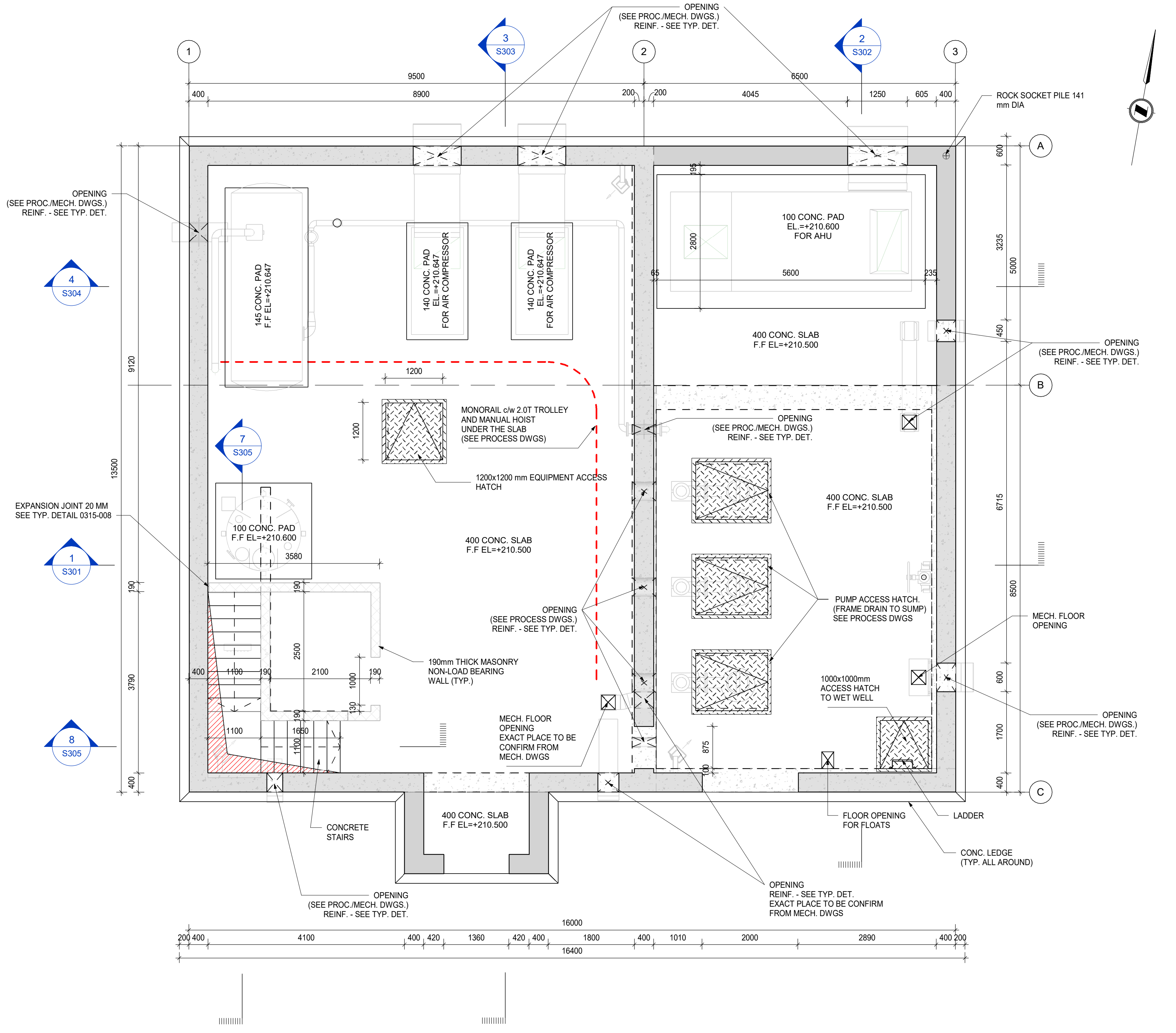
Project Manager
C.G.

Drawing Title

STRUCTURAL

LQ PUMP STATION PLAN AT EL. 198.800/206.300 m

Project no.	Drawing no.	Revision no.
30192375	**S101**	**D**


OPENING
(SEE PROC./MECH. DWGS.)
REINF. - SEE TYP. DET.
1
2
3
3
S303
2
S302
9500
6500
400
8900
200
200
4045
1250
605
400
ROCK SOCKET PILE 141 mm DIA
A
B
C
600
3235
5000
450
6715
8500
600
1700
400
9120
13500
190
3790
400
4
S304
7
S305
1
S301
8
S305
145 CONC. PAD
F.F EL=+210.647
140 CONC. PAD
EL.=+210.647
FOR AIR COMPRESSOR
140 CONC. PAD
EL.=+210.647
FOR AIR COMPRESSOR
100 CONC. PAD
EL.=+210.600
FOR AHU
195
2800
65
5600
235
400 CONC. SLAB
F.F EL=+210.500
1200
1200
MONORAIL c/w 2.0T TROLLEY
AND MANUAL HOIST
UNDER THE SLAB
(SEE PROCESS DWGS)
1200x1200 mm EQUIPMENT ACCESS
HATCH
OPENING
(SEE PROC./MECH. DWGS.)
REINF. - SEE TYP. DET.
400 CONC. SLAB
F.F EL=+210.500
EXPANSION JOINT 20 MM
SEE TYP. DETAIL 0315-008
100 CONC. PAD
F.F EL=+210.600
3580
400 CONC. SLAB
F.F EL=+210.500
OPENING
(SEE PROCESS DWGS.)
REINF. - SEE TYP. DET.
190mm THICK MASONRY
NON-LOAD BEARING
WALL (TYP.)
PUMP ACCESS HATCH.
(FRAME DRAIN TO SUMP)
SEE PROCESS DWGS
MECH. FLOOR
OPENING
1000x1000mm
ACCESS HATCH
TO WET WELL
OPENING
(SEE PROC./MECH. DWGS.)
REINF. - SEE TYP. DET.
2500
190
400
1100
190
2100
190
1000
130
190
1100
1650
1100
MECH. FLOOR
OPENING
EXACT PLACE TO BE
CONFIRM FROM
MECH. DWGS
875
100
400 CONC. SLAB
F.F EL=+210.500
CONCRETE
STAIRS
FLOOR OPENING
FOR FLOATS
LADDER
CONC. LEDGE
(TYP. ALL AROUND)
OPENING
(SEE PROC./MECH. DWGS.)
REINF. - SEE TYP. DET.
OPENING
REINF. - SEE TYP. DET.
EXACT PLACE TO BE CONFIRM
FROM MECH. DWGS
16000
200
400
4100
400
420
1360
420
400
1800
400
1010
2000
2890
400
200
16400

1 FINISHED FLOOR SLAB
S102 Scale: 1 : 50

WALL HATCHING LEGEND

⬚	- CONCRETE CAST UP TO SLAB SOFFIT
▦	- CONCRETE CAST UP TO SLAB AND CONTINUING ABOVE
▒	- CONCRETE CONTINUING ABOVE THE SLAB
⬚	- MASONRY BUILT UP TO SLAB SOFFIT
▨	- MASONRY UP TO SLAB AND CONTINUING ABOVE
▨	- MASONRY CONTINUING ABOVE THE SLAB

REBAR PLACEMENT IN SLAB

↔	TUL (TOP UPPER LAYER)
↕	TLL (TOP LOWER LAYER)
↕	BUL (BOTTOM UPPER LAYER)
↔	BLL (BOTTOM LOWER LAYER)

NOTES FOR FINISHED FLOOR SLAB:

1. REFER TO GENERAL NOTES / TYPICAL DETAILS FOR CONCRETE STRENGTH AND REINFORCING LAPPING AND COVER.
2. MINIMUM SUBGRADE BEARING CAPACITY 1500 kPa (ULS) — TO BE VERIFIED ON SITE BY CONTRACTOR.
3. TEMPORARY SHORING TO BE PROVIDED BY CONTRACTOR WHERE REQUIRED.
4. SERVICE LOADS: D.L.=3.6 kPa; L.L.=12.0 kPa.
5. REFER TO ARCHITECTURAL PLANS AND SECTIONS FOR EXACT LOCATIONS AND PLAN DIMENSIONS.
6. REFER TO PROCESS / MECHANICAL / ELECTRICAL DRAWINGS FOR OPENING SIZE, LOCATION, AND COORDINATION REQUIREMENTS.

0 10 20 30 40 50 60 70 80 90 100mm

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

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D	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
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Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
M.S.

Drawn by
Y.N.

Approved by
K.A.

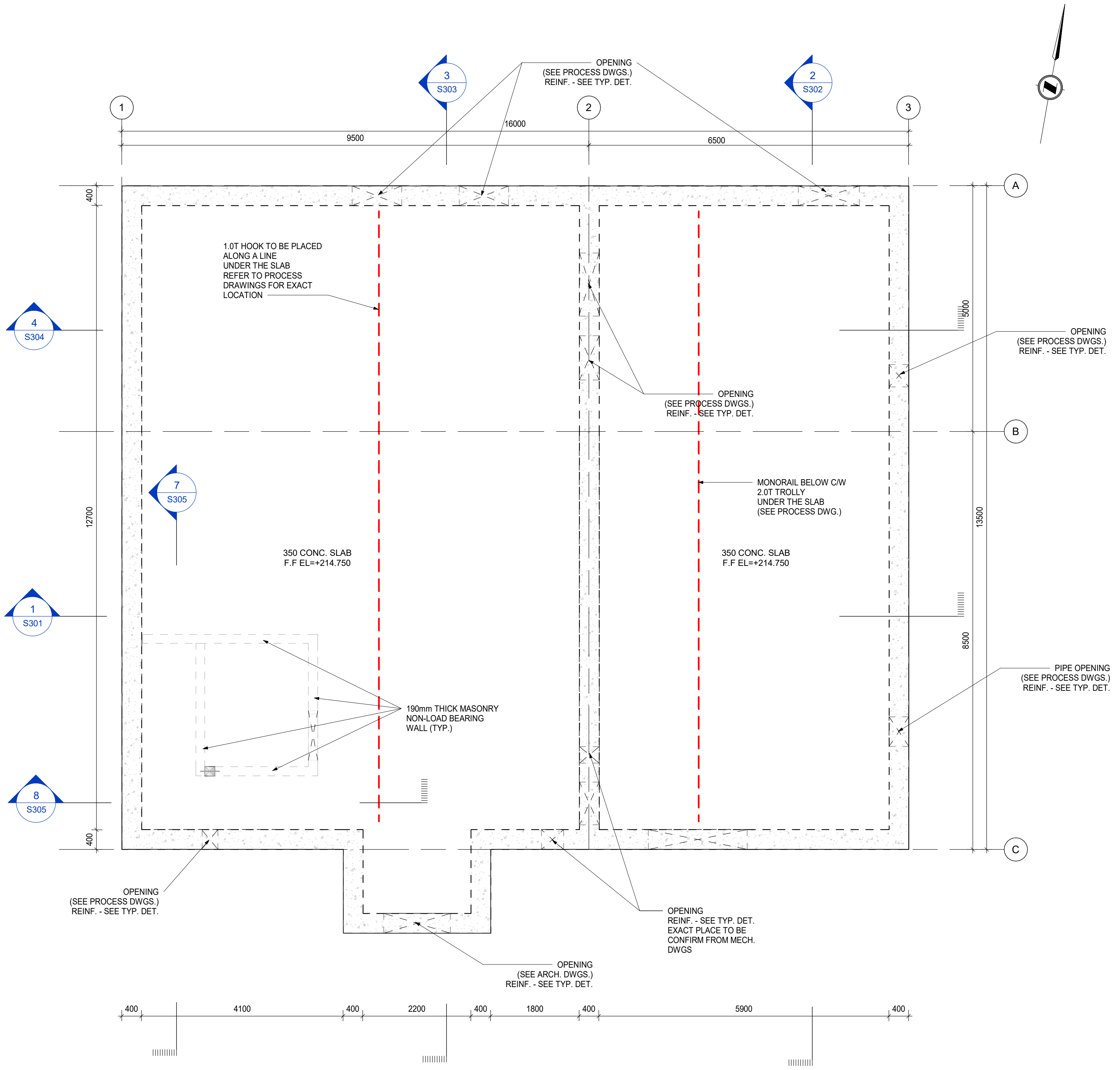
Project Manager
C.G.

Drawing Title

STRUCTURAL

LQ PUMP STATION
PLAN AT EL. 210.500 m

Project no.	Drawing no.	Revision no.
30192375	S102	D


OPENING
(SEE PROCESS DWGS.)
REINF. - SEE TYP. DET.
3
S303
2
S302
1
2
3
16000
9500
6500
A
B
C
400
12700
400
5000
13500
8500
4
S304
7
S305
1
S301
8
S305
1.0T HOOK TO BE PLACED
ALONG A LINE
UNDER THE SLAB
REFER TO PROCESS
DRAWINGS FOR EXACT
LOCATION
OPENING
(SEE PROCESS DWGS.)
REINF. - SEE TYP. DET.
OPENING
(SEE PROCESS DWGS.)
REINF. - SEE TYP. DET.
MONORAIL BELOW C/W
2.0T TROLLY
UNDER THE SLAB
(SEE PROCESS DWG.)
350 CONC. SLAB
F.F EL=+214.750
350 CONC. SLAB
F.F EL=+214.750
190mm THICK MASONRY
NON-LOAD BEARING
WALL (TYP.)
PIPE OPENING
(SEE PROCESS DWGS.)
REINF. - SEE TYP. DET.
OPENING
(SEE PROCESS DWGS.)
REINF. - SEE TYP. DET.
OPENING
REINF. - SEE TYP. DET.
EXACT PLACE TO BE
CONFIRM FROM MECH.
DWGS
OPENING
(SEE ARCH. DWGS.)
REINF. - SEE TYP. DET.
400
4100
400
2200
400
1800
400
5900
400

1 ROOF PLAN
S103 Scale: 1 : 50

NOTES FOR ROOF SLAB:

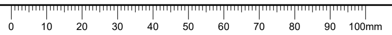
1. REFER TO GENERAL NOTES / TYPICAL DETAILS FOR CONCRETE STRENGTH AND REINFORCING LAPPING AND COVER.
2. TEMPORARY SHORING TO BE PROVIDED BY CONTRACTOR WHERE REQUIRED.
3. SERVICE LOADS: D.L.=1.0 kPa; L.L.=1.0 kPa. SNOW LOAD ON ROOF: 2.27 kPa.
4. REFER TO ARCHITECTURAL PLANS AND SECTIONS FOR EXACT LOCATIONS AND PLAN DIMENSIONS.
5. REFER TO PROCESS / MECHANICAL / ELECTRICAL DRAWINGS FOR OPENING SIZE, LOCATION, AND COORDINATION REQUIREMENTS.

WALL HATCHING LEGEND

┆	- CONCRETE CAST UP TO SLAB SOFFIT
▨	- CONCRETE CAST UP TO SLAB AND CONTINUING ABOVE
■	- CONCRETE CONTINUING ABOVE THE SLAB
┆	- MASONRY BUILT UP TO SLAB SOFFIT
☒	- MASONRY UP TO SLAB AND CONTINUING ABOVE
☒	- MASONRY CONTINUING ABOVE THE SLAB

REBAR PLACEMENT IN SLAB

↔	TUL (TOP UPPER LAYER)
↕	TLL (TOP LOWER LAYER)
↕	BUL (BOTTOM UPPER LAYER)
↔	BLL (BOTTOM LOWER LAYER)


0
10
20
30
40
50
60
70
80
90
100mm

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A	ISSUED FOR CONCEPT DESIGN	2023-11-27

Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
M.S.

Drawn by
Y.N.

Approved by
K.A.

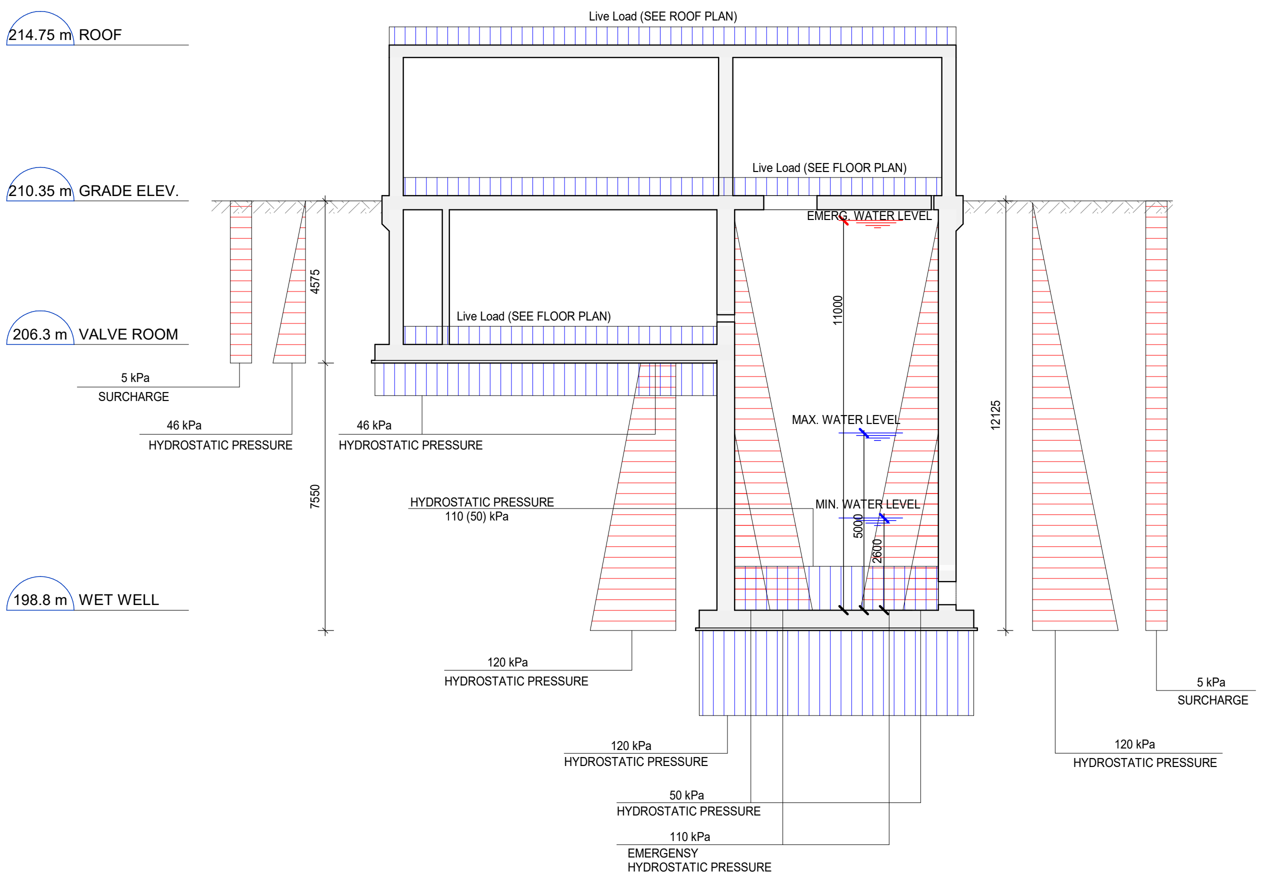
Project Manager
C.G.

Drawing Title

STRUCTURAL

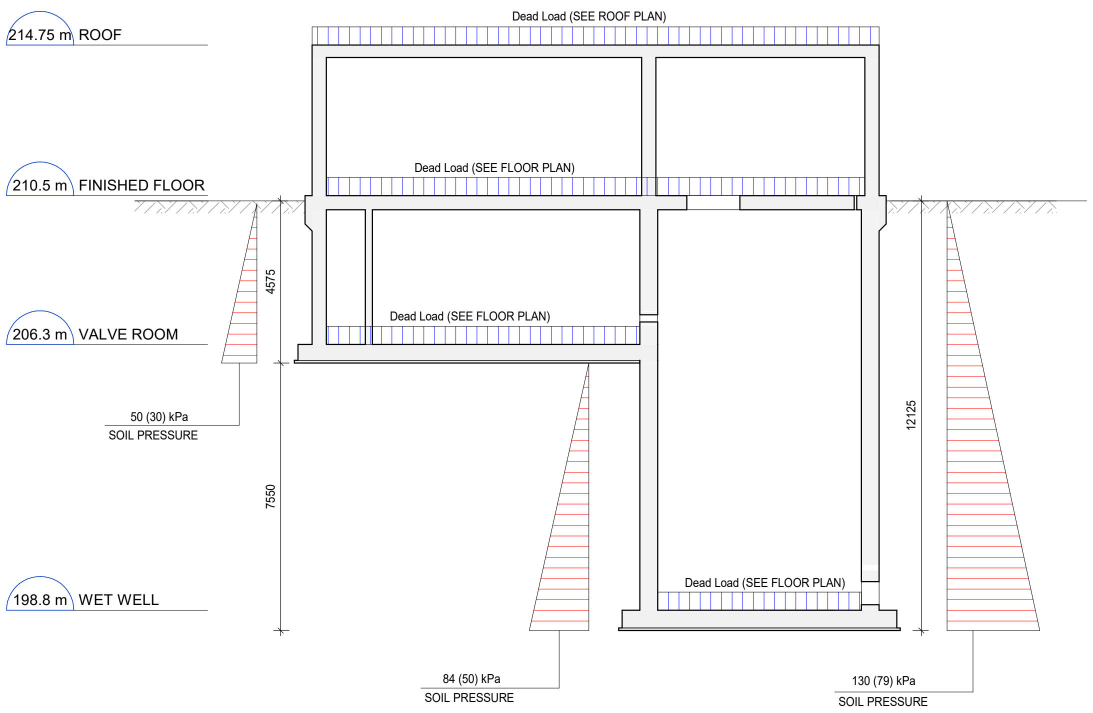
LQ PUMP STATION
PLAN AT EL. 214.750 m

Project no.	Drawing no.	Revision no.
30192375	**S103**	**D**


214.75 m ROOF
210.35 m GRADE ELEV.
206.3 m VALVE ROOM
198.8 m WET WELL
Live Load (SEE ROOF PLAN)
Live Load (SEE FLOOR PLAN)
Live Load (SEE FLOOR PLAN)
EMERG. WATER LEVEL
MAX. WATER LEVEL
MIN. WATER LEVEL
4575
7550
11000
12125
5000
2600
5 kPa
SURCHARGE
46 kPa
HYDROSTATIC PRESSURE
46 kPa
HYDROSTATIC PRESSURE
HYDROSTATIC PRESSURE
110 (50) kPa
120 kPa
HYDROSTATIC PRESSURE
120 kPa
HYDROSTATIC PRESSURE
50 kPa
HYDROSTATIC PRESSURE
110 kPa
EMERGENSY
HYDROSTATIC PRESSURE
5 kPa
SURCHARGE
120 kPa
HYDROSTATIC PRESSURE

1 LIVE LOAD DIAGRAM

SCALE: 1 : 100


214.75 m ROOF
210.5 m FINISHED FLOOR
206.3 m VALVE ROOM
198.8 m WET WELL
Dead Load (SEE ROOF PLAN)
Dead Load (SEE FLOOR PLAN)
Dead Load (SEE FLOOR PLAN)
Dead Load (SEE FLOOR PLAN)
4575
7550
12125
50 (30) kPa
SOIL PRESSURE
84 (50) kPa
SOIL PRESSURE
130 (79) kPa
SOIL PRESSURE

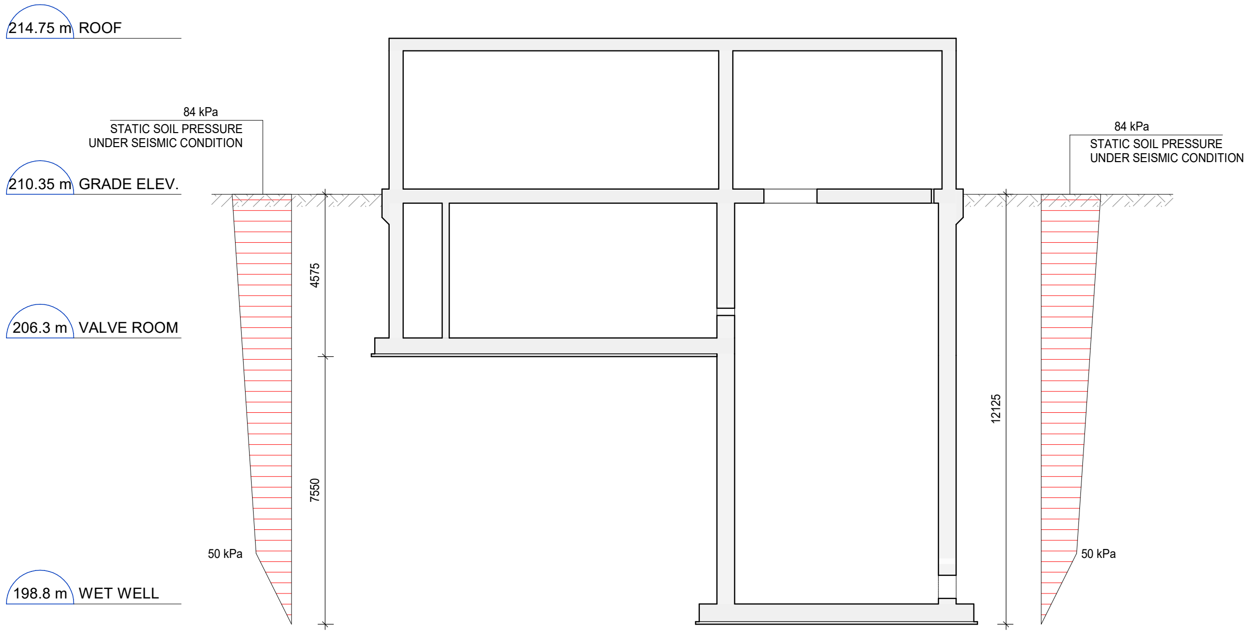
NOTE:

At-rest pressure
Active pressure
xx.xx (xx.xx)

- for the balanced case, at-rest pressure should be applied on both sides of the structure.
- for the unbalanced case, at-rest pressure should be applied on one side and active pressure on the opposite side.

2 DEAD LOAD DIAGRAM

SCALE: 1 : 100

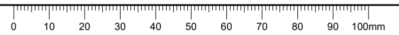

214.75 m ROOF
210.35 m GRADE ELEV.
206.3 m VALVE ROOM
198.8 m WET WELL
84 kPa
STATIC SOIL PRESSURE
UNDER SEISMIC CONDITION
84 kPa
STATIC SOIL PRESSURE
UNDER SEISMIC CONDITION
4575
7550
12125
50 kPa
50 kPa

3 SNOW AND SEISMIC LOAD DIAGRAM

SCALE: 1 : 100

NOTE:

GROUNDWATER LEVEL IS SPECIFIED AT THE ELEVATION OF THE EXISTING BEDROCK SURFACE IN ACCORDANCE WITH THE GEOTECHNICAL REPORT


0
10
20
30
40
50
60
70
80
90
100mm

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
A	ISSUED FOR 50% DESIGN REVIEW	2025-12-19

Consultant

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www.arcadis.com

Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

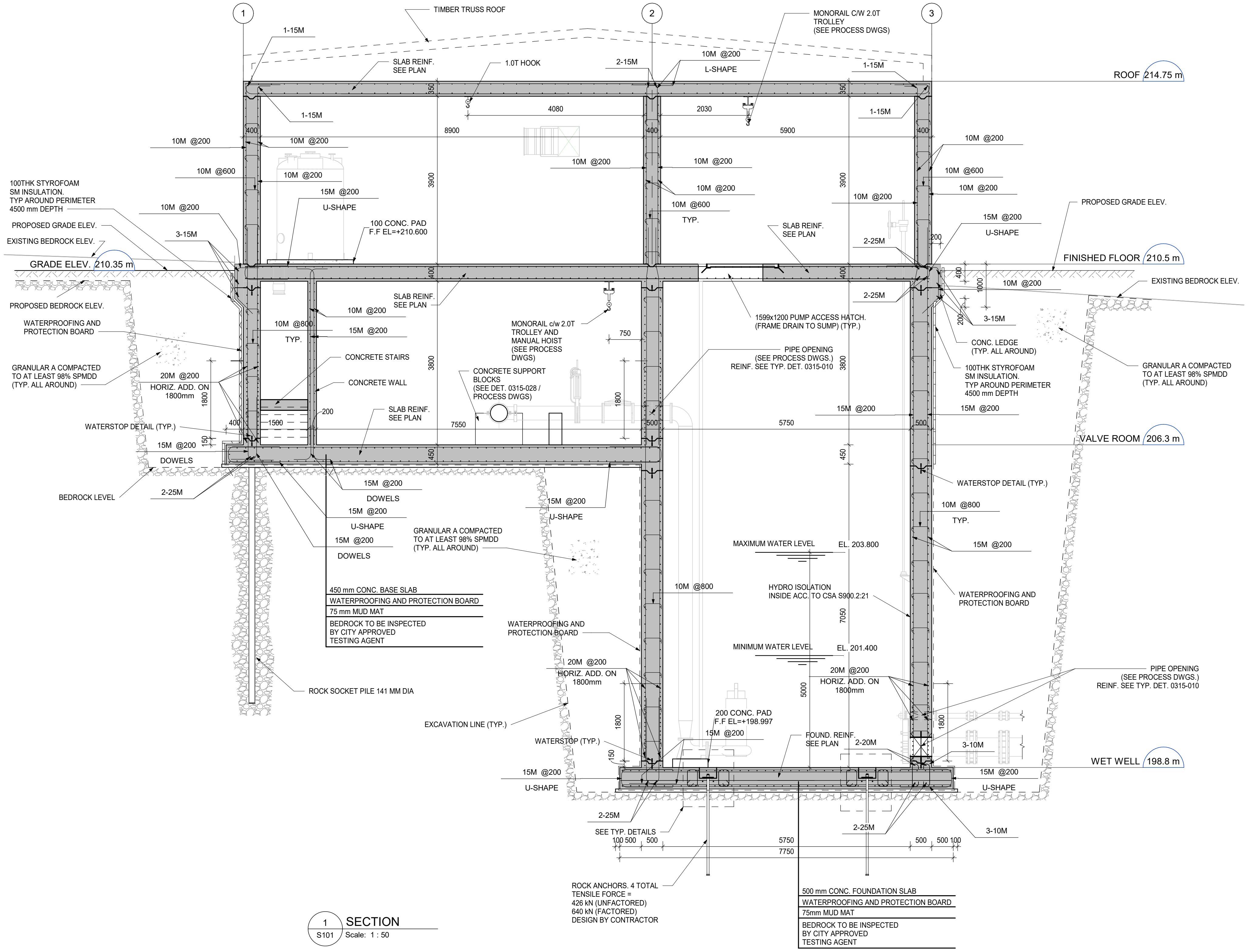
Designed by: M.S.
Drawn by: Y.N.
Approved by: K.A.
Project Manager: C.G.

Drawing Title

STRUCTURAL

LQ PUMP STATION SECTIONS - LOADING

Project no.	Drawing no.	Revision no.
30192375	S300	A


1
2
3
TIMBER TRUSS ROOF
1-15M
SLAB REINF.
SEE PLAN
1.0T HOOK
2-15M
10M @200
L-SHAPE
MONORAIL C/W 2.0T
TROLLEY
(SEE PROCESS DWGS)
1-15M
ROOF 214.75 m
350
4080
2030
1-15M
1-15M
400
8900
400
5900
400
10M @200
10M @200
10M @200
10M @600
10M @200
10M @200
10M @200
10M @600
10M @200
10M @600
10M @200
15M @200
U-SHAPE
3900
3900
TYP.
10M @200
100THK STYROFOAM
SM INSULATION.
TYP AROUND PERIMETER
4500 mm DEPTH
10M @200
PROPOSED GRADE ELEV.
100 CONC. PAD
F.F EL=+210.600
3-15M
EXISTING BEDROCK ELEV.
SLAB REINF.
SEE PLAN
15M @200
U-SHAPE
PROPOSED GRADE ELEV.
2-25M
200
GRADE ELEV. 210.35 m
FINISHED FLOOR 210.5 m
400
400
400
1000
10M @200
EXISTING BEDROCK ELEV.
PROPOSED BEDROCK ELEV.
SLAB REINF.
SEE PLAN
2-25M
10M @200
WATERPROOFING AND
PROTECTION BOARD
10M @800
TYP.
15M @200
MONORAIL c/w 2.0T
TROLLEY AND
MANUAL HOIST
(SEE PROCESS
DWGS)
750
1599x1200 PUMP ACCESS HATCH.
(FRAME DRAIN TO SUMP) (TYP.)
200
3-15M
CONC. LEDGE
(TYP. ALL AROUND)
GRANULAR A COMPACTED
TO AT LEAST 98% SPMDD
(TYP. ALL AROUND)
CONCRETE STAIRS
PIPE OPENING
(SEE PROCESS DWGS.)
REINF. SEE TYP. DET. 0315-010
3800
3800
100THK STYROFOAM
SM INSULATION.
TYP AROUND PERIMETER
4500 mm DEPTH
GRANULAR A COMPACTED
TO AT LEAST 98% SPMDD
(TYP. ALL AROUND)
GRANULAR A COMPACTED
TO AT LEAST 98% SPMDD
(TYP. ALL AROUND)
20M @200
HORIZ. ADD. ON
1800mm
CONCRETE WALL
CONCRETE SUPPORT
BLOCKS
(SEE DET. 0315-028 /
PROCESS DWGS)
1800
1800
200
SLAB REINF.
SEE PLAN
15M @200
15M @200
WATERSTOP DETAIL (TYP.)
400
1500
7550
500
5750
500
150
15M @200
DOWELS
450
450
VALVE ROOM 206.3 m
BEDROCK LEVEL
2-25M
15M @200
DOWELS
15M @200
U-SHAPE
WATERSTOP DETAIL (TYP.)
15M @200
U-SHAPE
10M @800
TYP.
15M @200
DOWELS
GRANULAR A COMPACTED
TO AT LEAST 98% SPMDD
(TYP. ALL AROUND)
MAXIMUM WATER LEVEL
EL. 203.800
15M @200
450 mm CONC. BASE SLAB
WATERPROOFING AND PROTECTION BOARD
75 mm MUD MAT
BEDROCK TO BE INSPECTED
BY CITY APPROVED
TESTING AGENT
10M @800
HYDRO ISOLATION
INSIDE ACC. TO CSA S900.2:21
WATERPROOFING AND
PROTECTION BOARD
7050
WATERPROOFING AND
PROTECTION BOARD
MINIMUM WATER LEVEL
EL. 201.400
20M @200
HORIZ. ADD. ON
1800mm
20M @200
HORIZ. ADD. ON
1800mm
PIPE OPENING
(SEE PROCESS DWGS.)
REINF. SEE TYP. DET. 0315-010
5000
ROCK SOCKET PILE 141 MM DIA
EXCAVATION LINE (TYP.)
1800
200 CONC. PAD
F.F EL=+198.997
1800
WATERSTOP (TYP.)
15M @200
FOUND. REINF.
SEE PLAN
2-20M
3-10M
150
WET WELL 198.8 m
15M @200
U-SHAPE
15M @200
U-SHAPE
2-25M
SEE TYP. DETAILS
2-25M
3-10M
100 500
500
5750
500
500 100
7750
ROCK ANCHORS. 4 TOTAL
TENSILE FORCE =
426 kN (UNFACTORED)
640 kN (FACTORED)
DESIGN BY CONTRACTOR
500 mm CONC. FOUNDATION SLAB
WATERPROOFING AND PROTECTION BOARD
75mm MUD MAT
BEDROCK TO BE INSPECTED
BY CITY APPROVED
TESTING AGENT

1 SECTION
S101 Scale: 1 : 50

NOTE:

1. REFER TO GENERAL NOTES / TYPICAL DETAILS FOR CONCRETE STRENGTH AND REINFORCING LAPPING AND COVER.

Autodesk Docs://30288139-Iqaluit_LongTermWater C3D2025/IQL-ARCA-S-BUILDING-23.rvt

A1 - 841X594

0 10 20 30 40 50 60 70 80 90 100mm

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
D	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
C	ISSUED FOR PRELIMINARY DESIGN (REVISED)	2025-09-26
B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
A	ISSUED FOR CONCEPT DESIGN	2023-11-27

Consultant

ARCADIS

8133 Warden Avenue - Unit 300
Markham ON L6G 1B3 Canada
tel 905 763 2322
www.arcadis.com

Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
M.S.

Drawn by
Y.N.

Approved by
K.A.

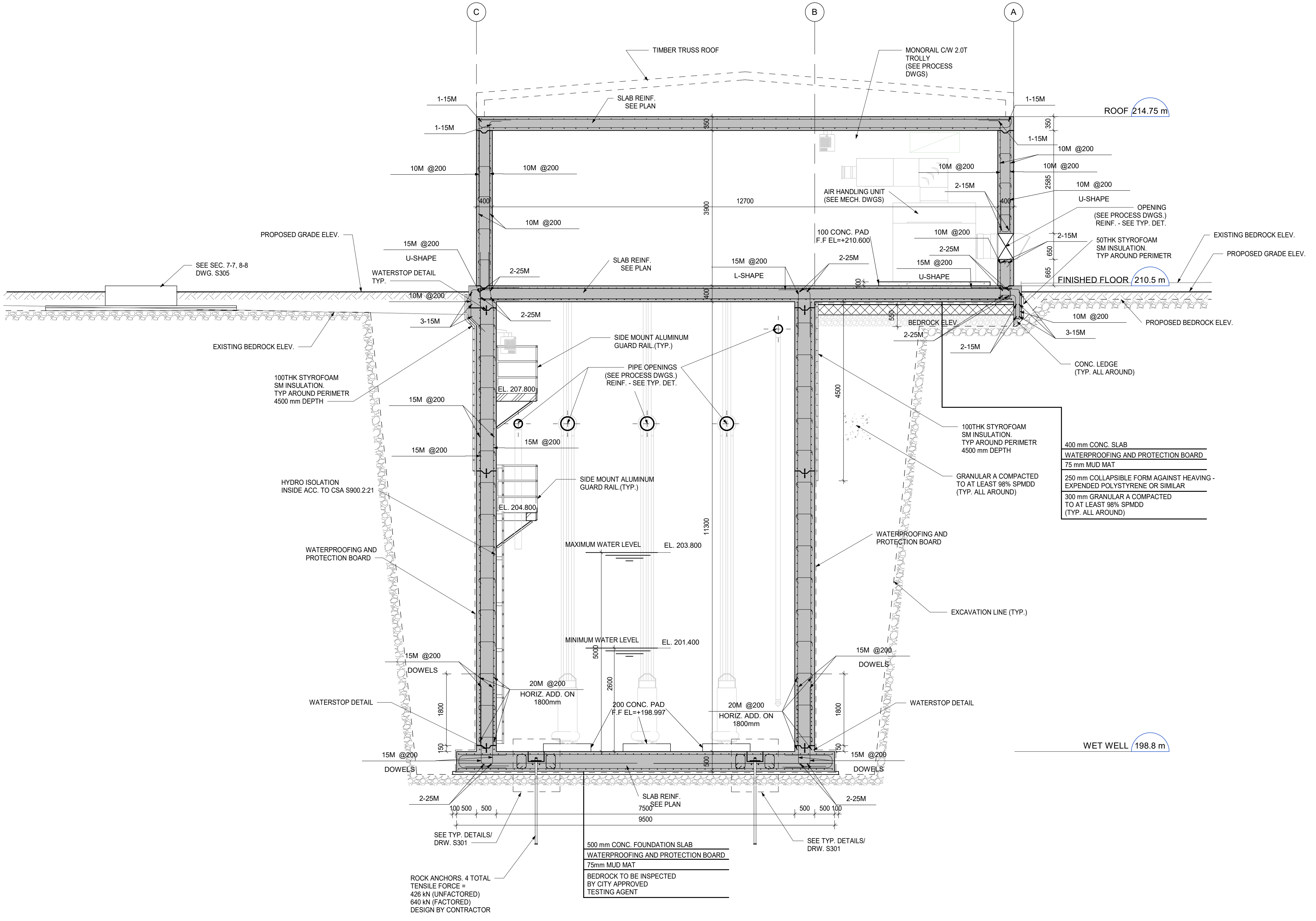
Project Manager
C.G.

Drawing Title

STRUCTURAL

LQ PUMP STATION SECTION 1-1

Project no.	Drawing no.	Revision no.
30192375	S301	D


C
B
A
TIMBER TRUSS ROOF
MONORAIL C/W 2.0T TROLLY (SEE PROCESS DWGS)
1-15M
SLAB REINF. SEE PLAN
1-15M
ROOF 214.75 m
1-15M
350
850
1-15M
10M @200
10M @200
10M @200
10M @200
10M @200
2585
10M @200
2-15M
400
12700
3900
400
AIR HANDLING UNIT (SEE MECH. DWGS)
U-SHAPE
OPENING (SEE PROCESS DWGS.) REINF. - SEE TYP. DET.
10M @200
100 CONC. PAD F.F EL=+210.600
2-15M
50THK STYROFOAM SM INSULATION. TYP AROUND PERIMETR
650
EXISTING BEDROCK ELEV.
PROPOSED GRADE ELEV.
2-25M
15M @200
U-SHAPE
665
FINISHED FLOOR 210.5 m
PROPOSED GRADE ELEV.
SEE SEC. 7-7, 8-8 DWG. S305
15M @200
U-SHAPE
WATERSTOP DETAIL TYP.
2-25M
SLAB REINF. SEE PLAN
15M @200
L-SHAPE
2-25M
100
10M @200
400
2-25M
550
BEDROCK ELEV.
10M @200
PROPOSED BEDROCK ELEV.
3-15M
2-25M
3-15M
EXISTING BEDROCK ELEV.
2-15M
CONC. LEDGE (TYP. ALL AROUND)
SIDE MOUNT ALUMINUM GUARD RAIL (TYP.)
PIPE OPENINGS (SEE PROCESS DWGS.) REINF. - SEE TYP. DET.
100THK STYROFOAM SM INSULATION. TYP AROUND PERIMETR 4500 mm DEPTH
EL. 207.800
4500
15M @200
100THK STYROFOAM SM INSULATION. TYP AROUND PERIMETR 4500 mm DEPTH
400 mm CONC. SLAB
WATERPROOFING AND PROTECTION BOARD
75 mm MUD MAT
250 mm COLLAPSIBLE FORM AGAINST HEAVING - EXPENDED POLYSTYRENE OR SIMILAR
300 mm GRANULAR A COMPACTED TO AT LEAST 98% SPMDD (TYP. ALL AROUND)
15M @200
15M @200
GRANULAR A COMPACTED TO AT LEAST 98% SPMDD (TYP. ALL AROUND)
HYDRO ISOLATION INSIDE ACC. TO CSA S900.2:21
SIDE MOUNT ALUMINUM GUARD RAIL (TYP.)
EL. 204.800
11300
WATERPROOFING AND PROTECTION BOARD
MAXIMUM WATER LEVEL
EL. 203.800
WATERPROOFING AND PROTECTION BOARD
EXCAVATION LINE (TYP.)
MINIMUM WATER LEVEL
EL. 201.400
5000
15M @200
DOWELS
15M @200
DOWELS
20M @200
HORIZ. ADD. ON 1800mm
2600
1800
1800
WATERSTOP DETAIL
200 CONC. PAD F.F EL=+198.997
20M @200
HORIZ. ADD. ON 1800mm
WATERSTOP DETAIL
WET WELL 198.8 m
150
150
15M @200
DOWELS
500
15M @200
DOWELS
2-25M
SLAB REINF. SEE PLAN
2-25M
100 500
500
7500
500
500 100
9500
SEE TYP. DETAILS/ DRW. S301
SEE TYP. DETAILS/ DRW. S301
500 mm CONC. FOUNDATION SLAB
WATERPROOFING AND PROTECTION BOARD
75mm MUD MAT
BEDROCK TO BE INSPECTED BY CITY APPROVED TESTING AGENT
ROCK ANCHORS. 4 TOTAL TENSILE FORCE = 426 kN (UNFACTORED) 640 kN (FACTORED) DESIGN BY CONTRACTOR

2 SECTION
S101 Scale: 1 : 50

NOTE:

1. REFER TO GENERAL NOTES / TYPICAL DETAILS FOR CONCRETE STRENGTH AND REINFORCING LAPPING AND COVER.

0 10 20 30 40 50 60 70 80 90 100mm

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

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D	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
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B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
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Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
M.S.

Drawn by
Y.N.

Approved by
K.A.

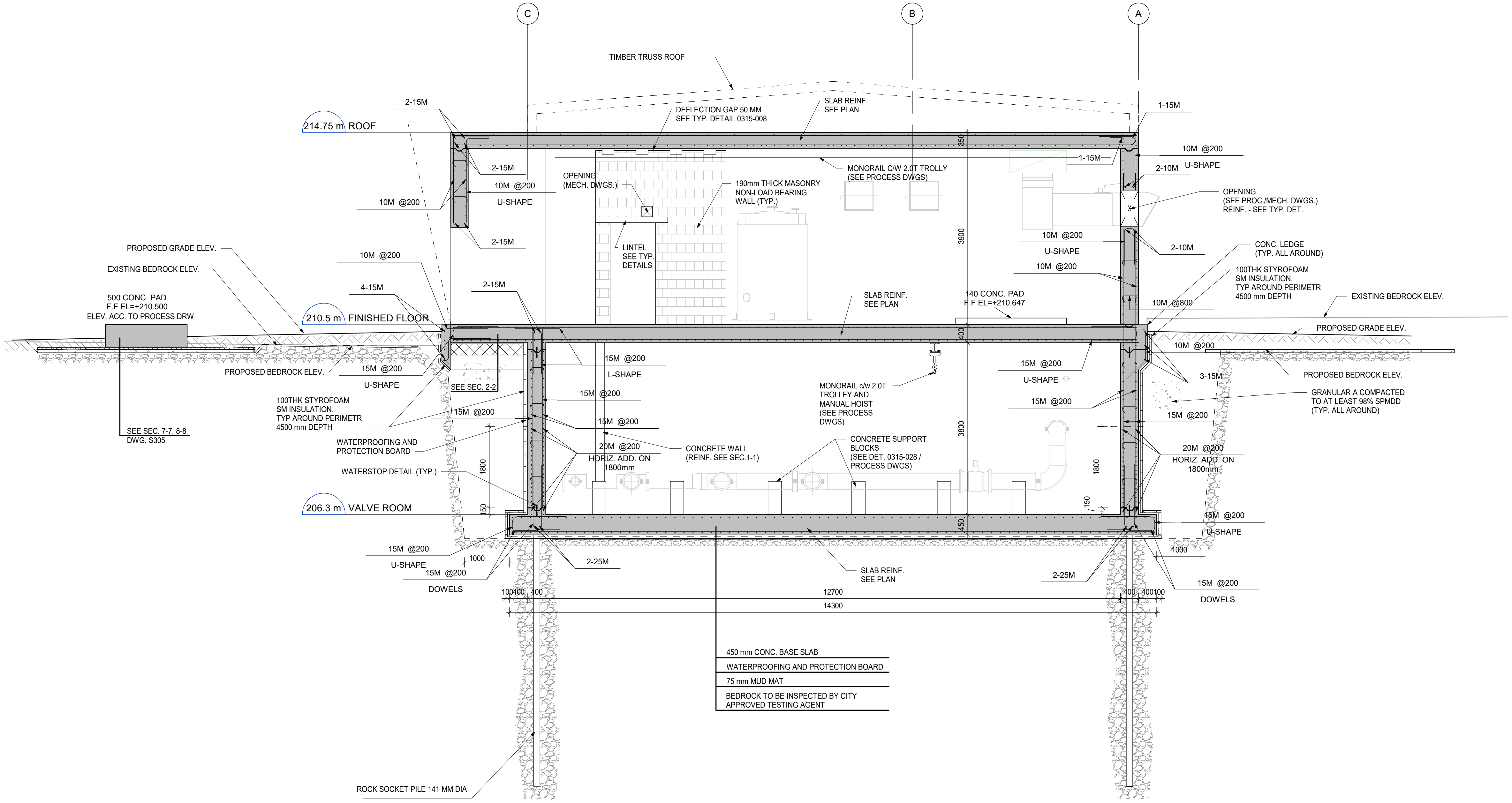
Project Manager
C.G.

Drawing Title

STRUCTURAL

LQ PUMP STATION SECTION 2-2

Project no.	Drawing no.	Revision no.
30192375	S302	D


C
B
A
TIMBER TRUSS ROOF
2-15M
214.75 m ROOF
DEFLECTION GAP 50 MM
SEE TYP. DETAIL 0315-008
SLAB REINF.
SEE PLAN
1-15M
850
2-15M
10M @200
U-SHAPE
10M @200
OPENING
(MECH. DWGS.)
190mm THICK MASONRY
NON-LOAD BEARING
WALL (TYP.)
MONORAIL C/W 2.0T TROLLY
(SEE PROCESS DWGS)
1-15M
10M @200
2-10M U-SHAPE
OPENING
(SEE PROC./MECH. DWGS.)
REINF. - SEE TYP. DET.
2-15M
LINTEL
SEE TYP.
DETAILS
3900
10M @200
U-SHAPE
10M @200
2-10M
CONC. LEDGE
(TYP. ALL AROUND)
100THK STYROFOAM
SM INSULATION.
TYP AROUND PERIMETR
4500 mm DEPTH
EXISTING BEDROCK ELEV.
PROPOSED GRADE ELEV.
EXISTING BEDROCK ELEV.
10M @200
4-15M
2-15M
500 CONC. PAD
F.F EL=+210.500
ELEV. ACC. TO PROCESS DRW.
SLAB REINF.
SEE PLAN
140 CONC. PAD
F.F EL=+210.647
10M @800
210.5 m FINISHED FLOOR
400
PROPOSED GRADE ELEV.
10M @200
PROPOSED BEDROCK ELEV.
15M @200
U-SHAPE
SEE SEC. 2-2
15M @200
L-SHAPE
15M @200
U-SHAPE
3-15M
PROPOSED BEDROCK ELEV.
GRANULAR A COMPACTED
TO AT LEAST 98% SPMDD
(TYP. ALL AROUND)
100THK STYROFOAM
SM INSULATION.
TYP AROUND PERIMETR
4500 mm DEPTH
15M @200
15M @200
MONORAIL c/w 2.0T
TROLLEY AND
MANUAL HOIST
(SEE PROCESS
DWGS)
15M @200
15M @200
SEE SEC. 7-7, 8-8
DWG. S305
15M @200
3800
WATERPROOFING AND
PROTECTION BOARD
20M @200
HORIZ. ADD. ON
1800mm
CONCRETE WALL
(REINF. SEE SEC.1-1)
CONCRETE SUPPORT
BLOCKS
(SEE DET. 0315-028 /
PROCESS DWGS)
20M @200
HORIZ. ADD. ON
1800mm
1800
1800
WATERSTOP DETAIL (TYP.)
150
150
206.3 m VALVE ROOM
450
15M @200
U-SHAPE
15M @200
U-SHAPE
1000
1000
15M @200
DOWELS
2-25M
SLAB REINF.
SEE PLAN
2-25M
15M @200
DOWELS
100
400
400
12700
400
100
14300
450 mm CONC. BASE SLAB
WATERPROOFING AND PROTECTION BOARD
75 mm MUD MAT
BEDROCK TO BE INSPECTED BY CITY
APPROVED TESTING AGENT
ROCK SOCKET PILE 141 MM DIA

3 SECTION
S101 Scale: 1 : 50

NOTE:

1. REFER TO GENERAL NOTES / TYPICAL DETAILS FOR CONCRETE STRENGTH AND REINFORCING LAPPING AND COVER.

0 10 20 30 40 50 60 70 80 90 100mm

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN (REVISED)	2025-09-26

Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
M.S.

Drawn by
Y.N.

Approved by
K.A.

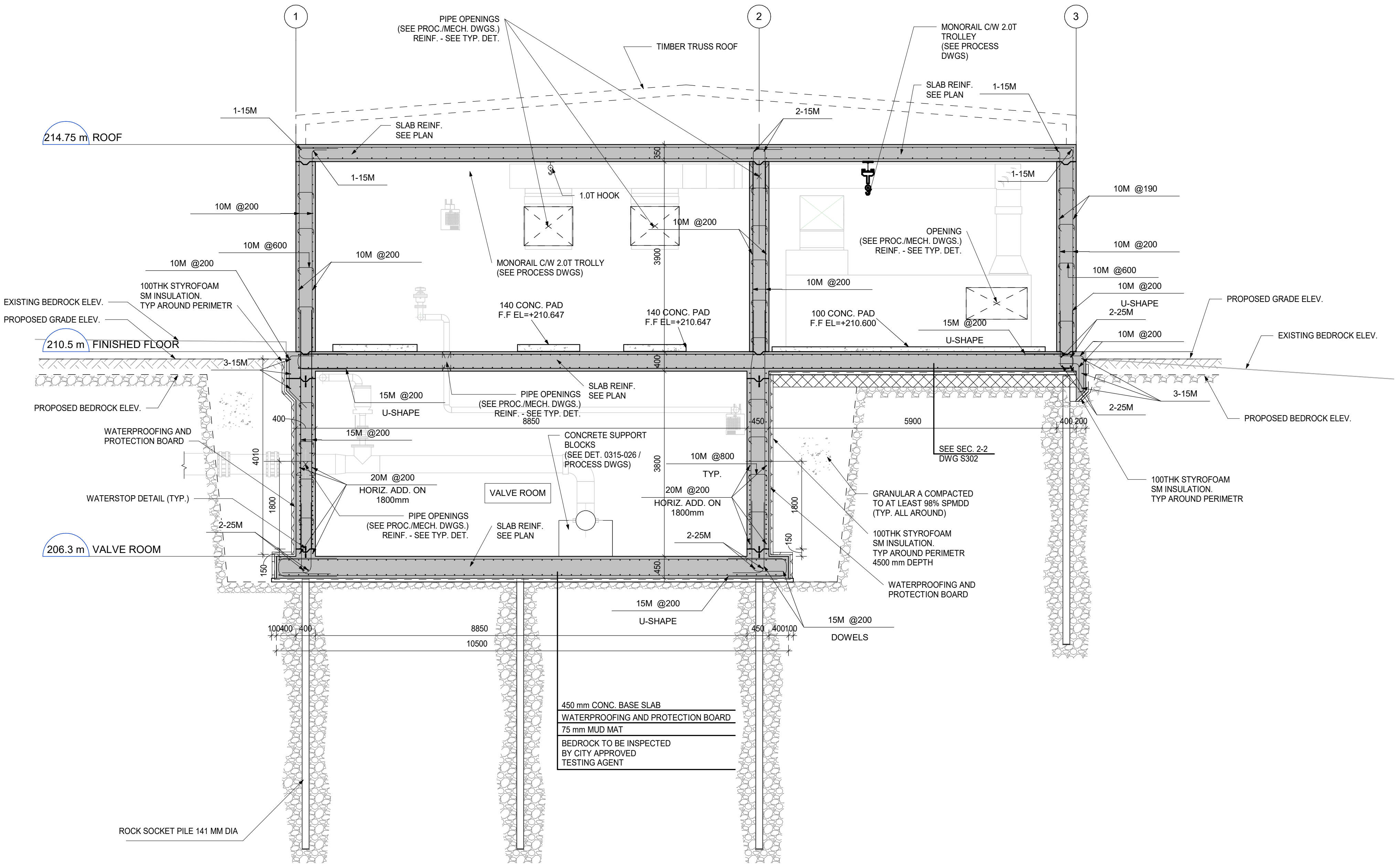
Project Manager
C.G.

Drawing Title

STRUCTURAL

LQ PUMP STATION
SECTION 3-3

Project no.	Drawing no.	Revision no.
30192375	S303	B



1
2
3
PIPE OPENINGS
(SEE PROC./MECH. DWGS.)
REINF. - SEE TYP. DET.
TIMBER TRUSS ROOF
MONORAIL C/W 2.0T
TROLLEY
(SEE PROCESS
DWGS)
SLAB REINF.
SEE PLAN
1-15M
2-15M
1-15M
214.75 m ROOF
SLAB REINF.
SEE PLAN
1-15M
1.0T HOOK
1-15M
10M @190
10M @200
10M @200
OPENING
(SEE PROC./MECH. DWGS.)
REINF. - SEE TYP. DET.
10M @200
10M @600
10M @200
10M @200
MONORAIL C/W 2.0T TROLLY
(SEE PROCESS DWGS)
10M @200
10M @600
10M @200
100THK STYROFOAM
SM INSULATION.
TYP AROUND PERIMETR
U-SHAPE
2-25M
PROPOSED GRADE ELEV.
EXISTING BEDROCK ELEV.
140 CONC. PAD
F.F EL=+210.647
140 CONC. PAD
F.F EL=+210.647
100 CONC. PAD
F.F EL=+210.600
15M @200
U-SHAPE
10M @200
EXISTING BEDROCK ELEV.
PROPOSED GRADE ELEV.
210.5 m FINISHED FLOOR
3-15M
SLAB REINF.
SEE PLAN
PIPE OPENINGS
(SEE PROC./MECH. DWGS.)
REINF. - SEE TYP. DET.
15M @200
U-SHAPE
3-15M
2-25M
PROPOSED BEDROCK ELEV.
PROPOSED BEDROCK ELEV.
400
8850
450
5900
400 200
15M @200
CONCRETE SUPPORT
BLOCKS
(SEE DET. 0315-026 /
PROCESS DWGS)
SEE SEC. 2-2
DWG S302
WATERPROOFING AND
PROTECTION BOARD
4010
10M @800
TYP.
100THK STYROFOAM
SM INSULATION.
TYP AROUND PERIMETR
20M @200
HORIZ. ADD. ON
1800mm
VALVE ROOM
20M @200
HORIZ. ADD. ON
1800mm
GRANULAR A COMPACTED
TO AT LEAST 98% SPMDD
(TYP. ALL AROUND)
WATERSTOP DETAIL (TYP.)
1800
1800
PIPE OPENINGS
(SEE PROC./MECH. DWGS.)
REINF. - SEE TYP. DET.
SLAB REINF.
SEE PLAN
100THK STYROFOAM
SM INSULATION.
TYP AROUND PERIMETR
4500 mm DEPTH
2-25M
2-25M
150
206.3 m VALVE ROOM
150
450
WATERPROOFING AND
PROTECTION BOARD
15M @200
U-SHAPE
15M @200
DOWELS
100400 400
8850
450 400100
10500
350
3900
400
3800
450
450 mm CONC. BASE SLAB
WATERPROOFING AND PROTECTION BOARD
75 mm MUD MAT
BEDROCK TO BE INSPECTED
BY CITY APPROVED
TESTING AGENT
ROCK SOCKET PILE 141 MM DIA

4 SECTION
S101 Scale: 1 : 50

NOTE:

1. REFER TO GENERAL NOTES / TYPICAL DETAILS FOR CONCRETE STRENGTH AND REINFORCING LAPPING AND COVER.

0 10 20 30 40 50 60 70 80 90 100mm

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN (REVISED)	2025-09-26
Revision	Description	Date

Consultant

ARCADIS

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
M.S.

Drawn by
Y.N.

Approved by
K.A.

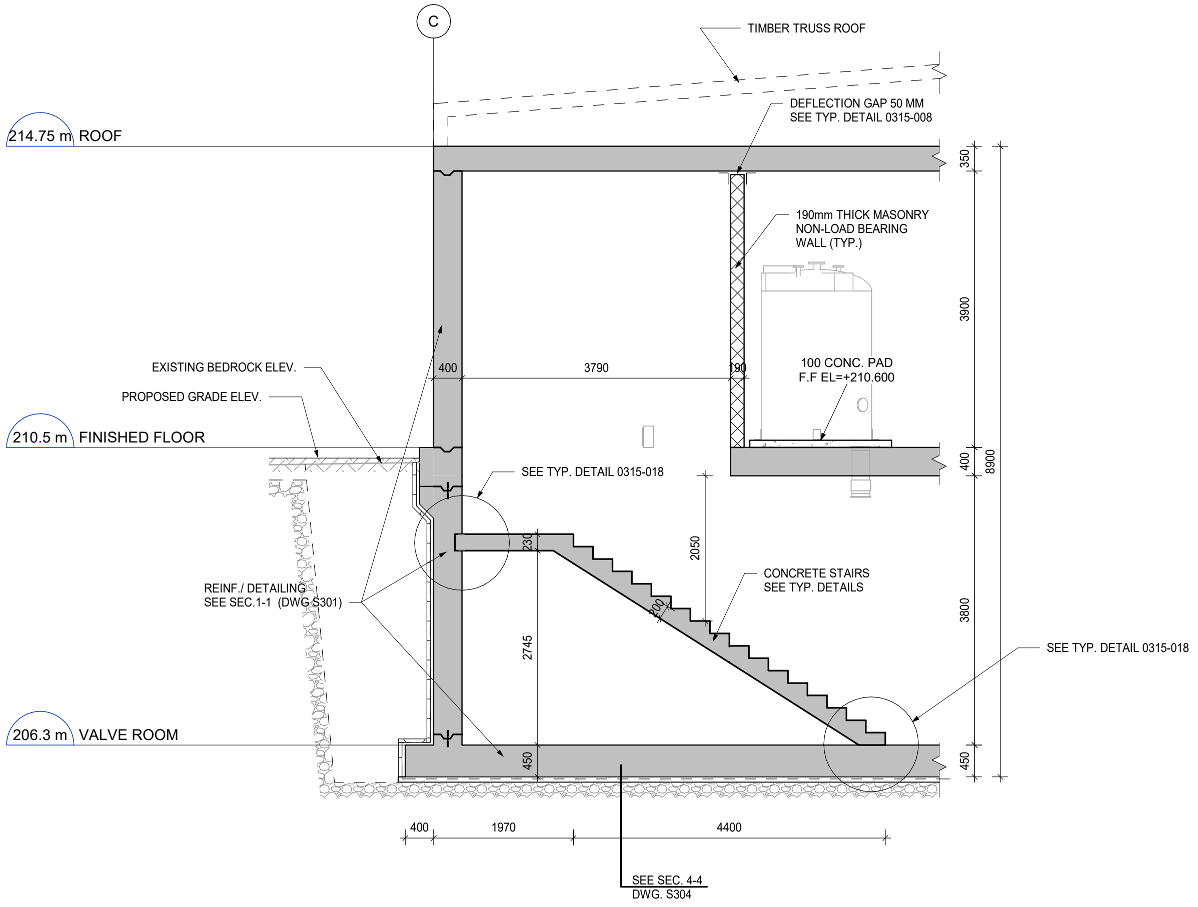
Project Manager
C.G.

Drawing Title

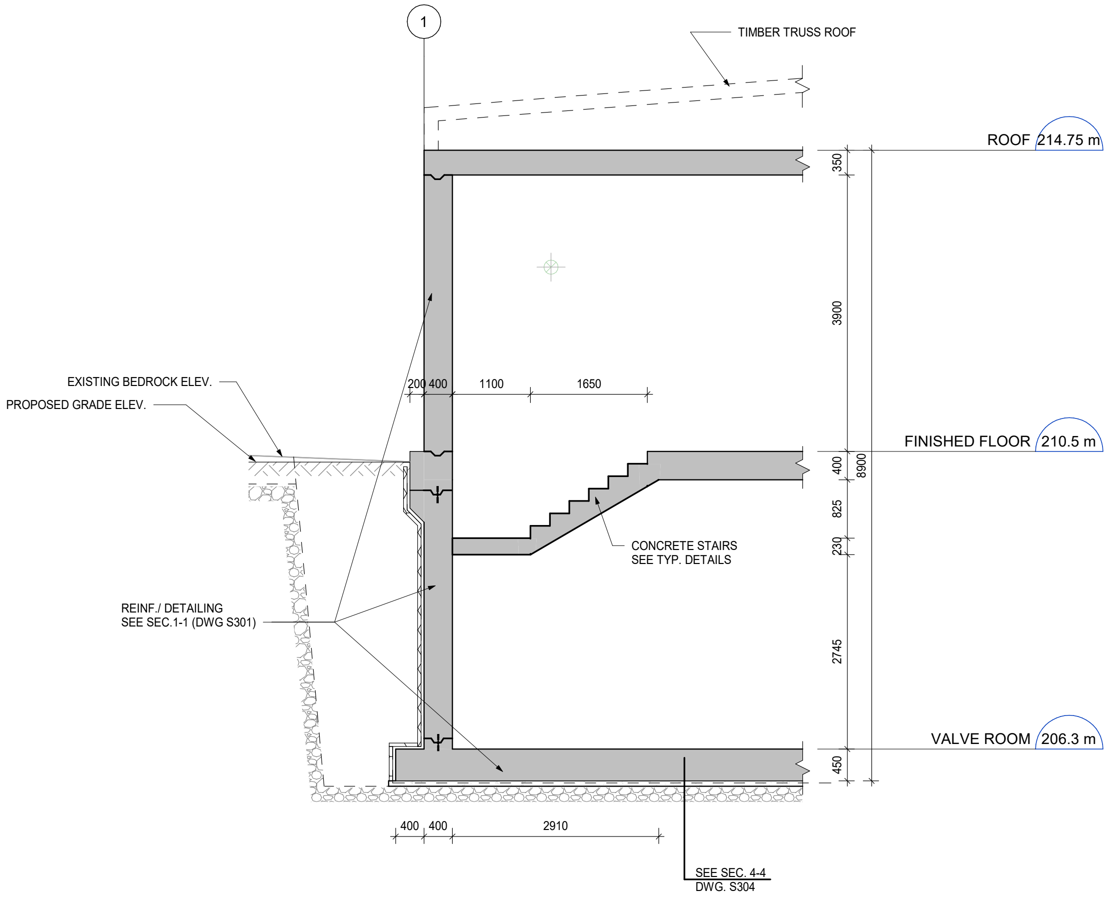
STRUCTURAL

LQ PUMP STATION SECTION 4-4

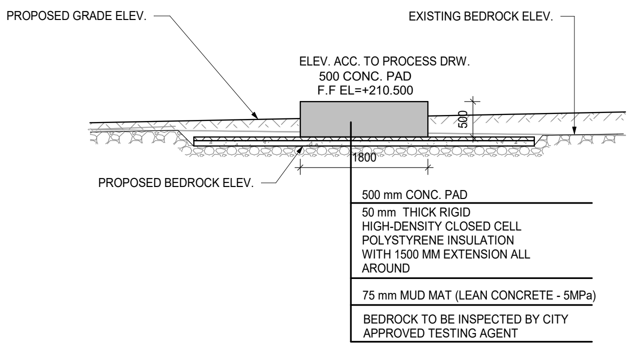
Project no.	Drawing no.	Revision no.
30192375	S304	B


C
TIMBER TRUSS ROOF
DEFLECTION GAP 50 MM
SEE TYP. DETAIL 0315-008
214.75 m ROOF
350
190mm THICK MASONRY
NON-LOAD BEARING
WALL (TYP.)
3900
8900
400
3790
190
100 CONC. PAD
F.F EL=+210.600
EXISTING BEDROCK ELEV.
PROPOSED GRADE ELEV.
210.5 m FINISHED FLOOR
400
SEE TYP. DETAIL 0315-018
230
2050
CONCRETE STAIRS
SEE TYP. DETAILS
200
REINF./ DETAILING
SEE SEC.1-1 (DWG S301)
3800
2745
SEE TYP. DETAIL 0315-018
206.3 m VALVE ROOM
450
450
400
1970
4400
SEE SEC. 4-4
DWG. S304

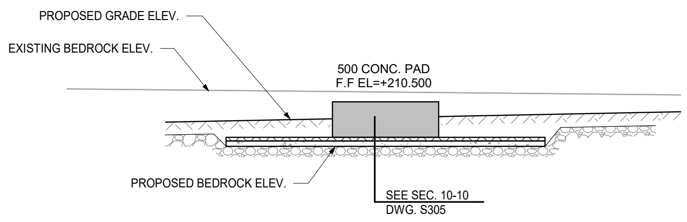
7
S101
SECTION
Scale: 1 : 50


1
TIMBER TRUSS ROOF
ROOF 214.75 m
350
3900
8900
EXISTING BEDROCK ELEV.
PROPOSED GRADE ELEV.
200 400
1100
1650
FINISHED FLOOR 210.5 m
400
825
CONCRETE STAIRS
SEE TYP. DETAILS
230
REINF./ DETAILING
SEE SEC.1-1 (DWG S301)
2745
VALVE ROOM 206.3 m
450
400
400
2910
SEE SEC. 4-4
DWG. S304

8
S101
SECTION
Scale: 1 : 50


PROPOSED GRADE ELEV.
EXISTING BEDROCK ELEV.
ELEV. ACC. TO PROCESS DRW.
500 CONC. PAD
F.F EL=+210.500
500
1800
PROPOSED BEDROCK ELEV.
500 mm CONC. PAD
50 mm THICK RIGID
HIGH-DENSITY CLOSED CELL
POLYSTYRENE INSULATION
WITH 1500 MM EXTENSION ALL
AROUND
75 mm MUD MAT (LEAN CONCRETE - 5MPa)
BEDROCK TO BE INSPECTED BY CITY
APPROVED TESTING AGENT

10
S100
SECTION
Scale: 1 : 50


PROPOSED GRADE ELEV.
EXISTING BEDROCK ELEV.
500 CONC. PAD
F.F EL=+210.500
PROPOSED BEDROCK ELEV.
SEE SEC. 10-10
DWG. S305

11
S100
SECTION
Scale: 1 : 50

NOTE:

1. REFER TO GENERAL NOTES / TYPICAL DETAILS FOR CONCRETE STRENGTH AND REINFORCING LAPPING AND COVER.

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Revision	Description	Date
A	ISSUED FOR 50% DESIGN REVIEW	2025-12-19

Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
M.S.

Drawn by
Y.N.

Approved by
K.A.

Project Manager
C.G.

Drawing Title

STRUCTURAL

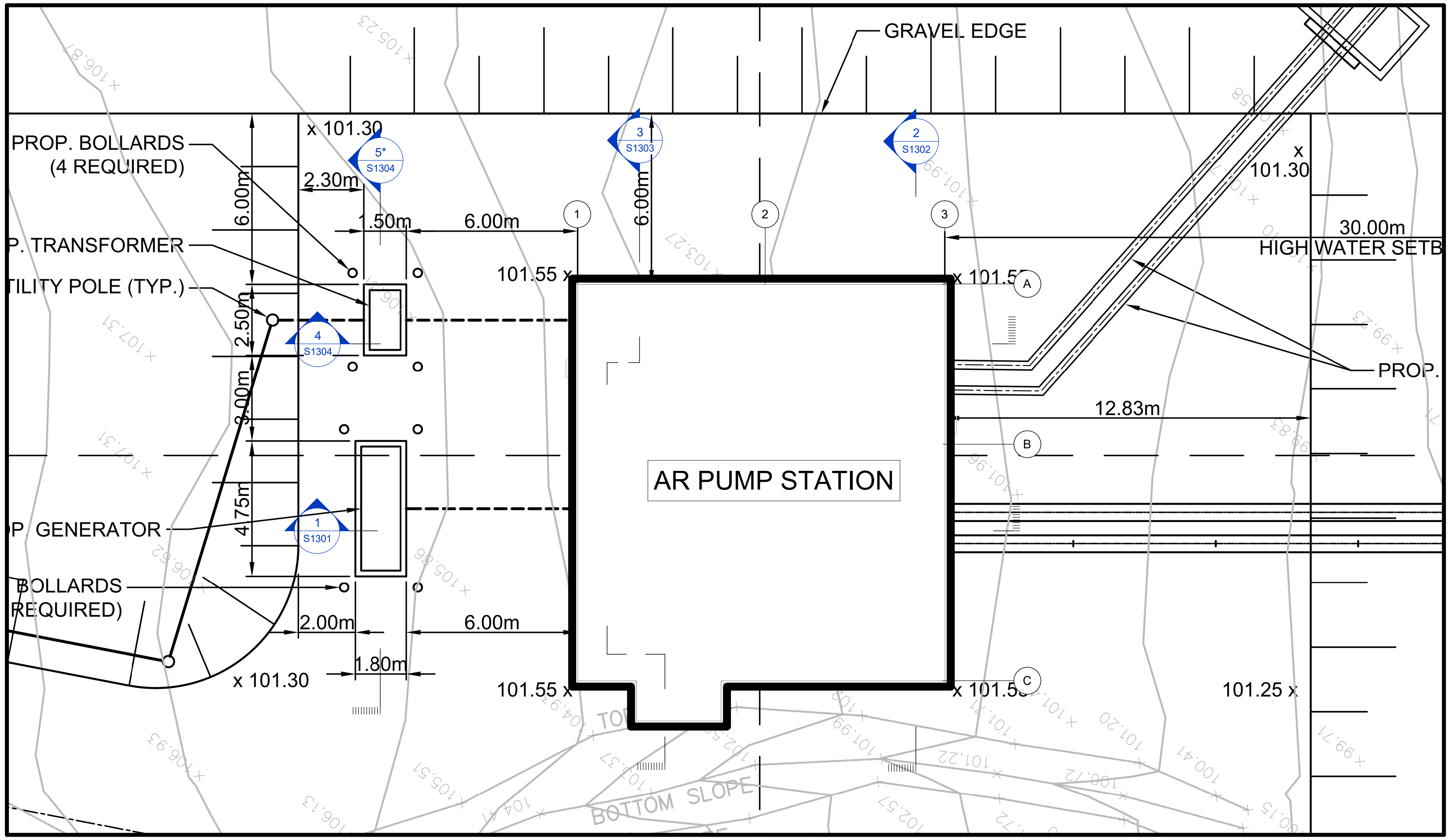
LQ PUMP STATION
SECTIONS 7-7, 8-8

Project no.	Drawing no.	Revision no.
30192375	**S305**	**A**

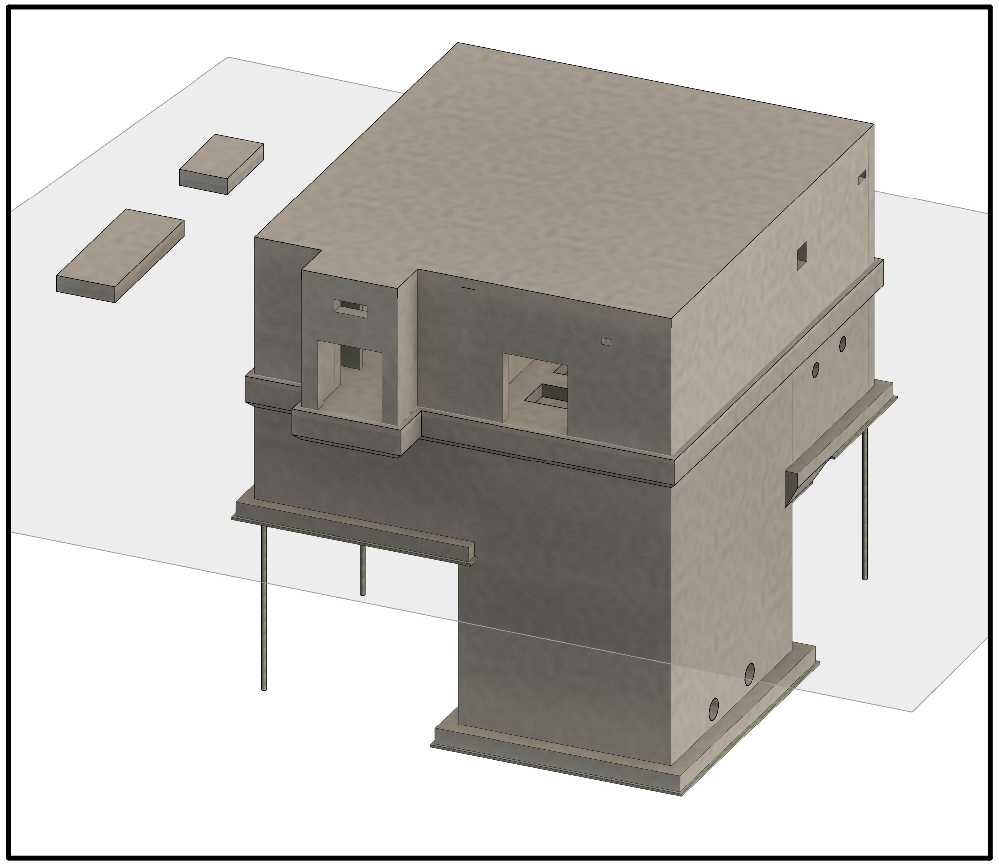
Autodesk Docs://30288139-Iqaluit_LongTermWater C3D2025/IQL-ARCA-S-BUILDING-23.rvt

A1 - 841X594

0 10 20 30 40 50 60 70 80 90 100mm


GRAVEL EDGE
PROP. BOLLARDS
(4 REQUIRED)
P. TRANSFORMER
TILITY POLE (TYP.)
P. GENERATOR
BOLLARDS
REQUIRED)
AR PUMP STATION
HIGH WATER SETB
PROP.
BOTTOM SLOPE
TO
x 101.30
x 101.30
x 101.30
101.55 x
101.55 x
x 101.55
x 101.55
101.25 x
6.00m
2.30m
1.50m
6.00m
6.00m
2.50m
3.00m
4.75m
2.00m
6.00m
1.80m
30.00m
12.83m
1
2
3
A
B
C
5* S1304
3 S1303
2 S1302
4 S1304
1 S1301

1 S1100 **BUILDING SITE PLAN**
Scale: 1 : 100



2 S1100 **3D VIEW**
Scale:

Iqaluit
1085 Mivvik Street, P. O. Box 460
Iqaluit NU X0A 0H0 Canada
tel 867 679 5600
www.iqaluit.ca

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN (REVISED)	2025-09-26

Consultant

ARCADIS
8133 Warden Avenue - Unit 300
Markham ON L6G 1B3 Canada
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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
M.S.

Drawn by
Y.N.

Approved by
K.A.

Project Manager
C.G.

Drawing Title

STRUCTURAL

AR PUMP STATION BUILDING SITE PLAN

Project no.	Drawing no.	Revision no.
30192375	S1100	B

Autodesk Docs://30288139-Iqaluit_LongTermWater C3D2025/IQL-ARCA-S-APXPUMP-23.rvt

A1 - 841X594

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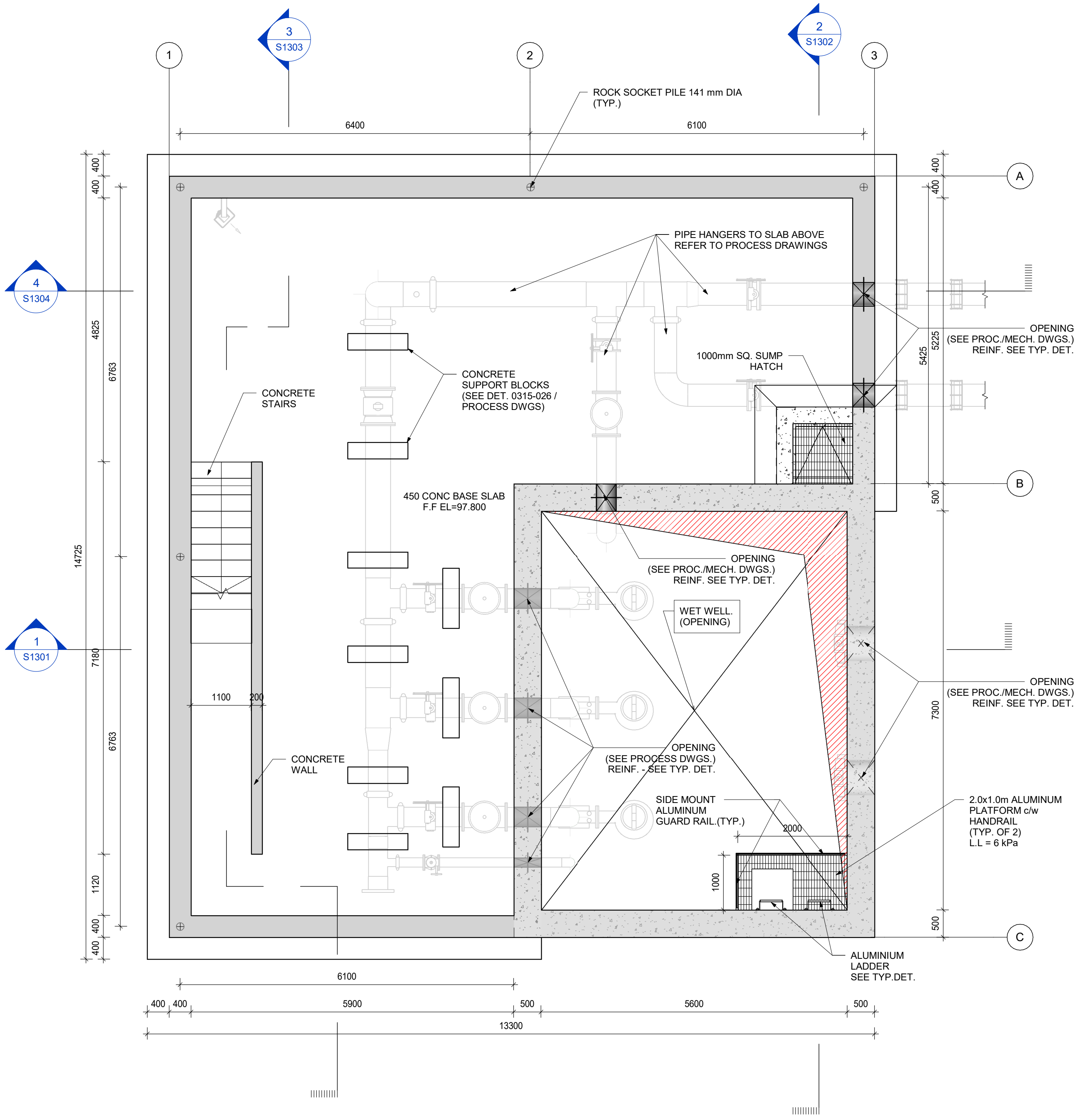
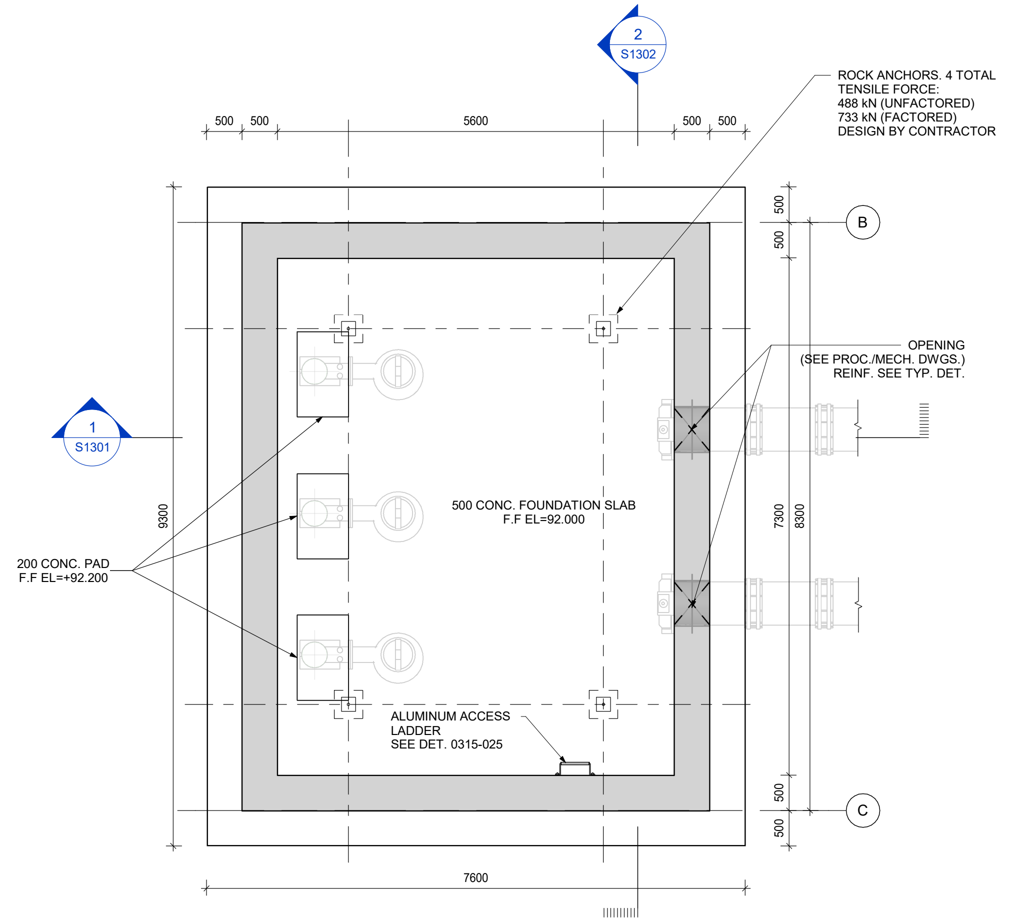

1
2
3
3
S1303
2
S1302
4
S1304
1
S1301
ROCK SOCKET PILE 141 mm DIA
(TYP.)
6400
6100
400
400
4825
6763
14725
7180
6763
1120
400
400
5425
5225
500
7300
500
A
B
C
PIPE HANGERS TO SLAB ABOVE
REFER TO PROCESS DRAWINGS
OPENING
(SEE PROC./MECH. DWGS.)
REINF. SEE TYP. DET.
1000mm SQ. SUMP
HATCH
CONCRETE
SUPPORT BLOCKS
(SEE DET. 0315-026 /
PROCESS DWGS)
CONCRETE
STAIRS
450 CONC BASE SLAB
F.F EL=97.800
OPENING
(SEE PROC./MECH. DWGS.)
REINF. SEE TYP. DET.
WET WELL.
(OPENING)
OPENING
(SEE PROC./MECH. DWGS.)
REINF. SEE TYP. DET.
1100
200
CONCRETE
WALL
OPENING
(SEE PROCESS DWGS.)
REINF. - SEE TYP. DET.
SIDE MOUNT
ALUMINUM
GUARD RAIL.(TYP.)
2000
1000
2.0x1.0m ALUMINUM
PLATFORM c/w
HANDRAIL
(TYP. OF 2)
L.L = 6 kPa
ALUMINIUM
LADDER
SEE TYP.DET.
6100
400
400
5900
500
5600
500
13300

1
S1101

VALVE ROOM FLOOR PLAN

Scale: 1 : 50


2
S1302
1
S1301
ROCK ANCHORS. 4 TOTAL
TENSILE FORCE:
488 kN (UNFACTORED)
733 kN (FACTORED)
DESIGN BY CONTRACTOR
500
500
5600
500
500
B
C
OPENING
(SEE PROC./MECH. DWGS.)
REINF. SEE TYP. DET.
200 CONC. PAD
F.F EL=+92.200
500 CONC. FOUNDATION SLAB
F.F EL=92.000
9300
7300
8300
500
500
500
500
ALUMINUM ACCESS
LADDER
SEE DET. 0315-025
7600

2
S1101

WET WELL FLOOR PLAN

Scale: 1 : 50

WALL HATCHING LEDGEND

▨	- CONCRETE CAST UP TO SLAB SOFFIT
▨	- CONCRETE CAST UP TO SLAB AND CONTINUING ABOVE
▨	- CONCRETE CONTINUING ABOVE THE SLAB
☐	- MASONRY BUILT UP TO SLAB SOFFIT
☒	- MASONRY UP TO SLAB AND CONTINUING ABOVE
☒	- MASONRY CONTINUING ABOVE THE SLAB

REBAR PLACEMENT IN SLAB

↔	TUL (TOP UPPER LAYER)
↕	TLL (TOP LOWER LAYER)
↕	BUL (BOTTOM UPPER LAYER)
↔	BLL (BOTTOM LOWER LAYER)

NOTES FOR VALVE ROOM BASE SLAB:

1. REFER TO GENERAL NOTES / TYPICAL DETAILS FOR CONCRETE STRENGTH AND REINFORCING LAPPING AND COVER.
2. MINIMUM SUBGRADE BEARING CAPACITY 1500 kPa (ULS) — TO BE VERIFIED ON SITE BY CONTRACTOR.
3. TEMPORARY SHORING TO BE PROVIDED BY CONTRACTOR WHERE REQUIRED.
4. SERVICE LOADS: D.L.=3.6 kPa; L.L.=12.0 kPa.
5. REFER TO ARCHITECTURAL PLANS AND SECTIONS FOR EXACT LOCATIONS AND PLAN DIMENSIONS.
6. REFER TO PROCESS / MECHANICAL / ELECTRICAL DRAWINGS FOR OPENING SIZE, LOCATION, AND COORDINATION REQUIREMENTS.

NOTES FOR WET WELL BASE SLAB:

1. REFER TO GENERAL NOTES / TYPICAL DETAILS FOR CONCRETE STRENGTH AND REINFORCING LAPPING AND COVER.
2. MINIMUM SUBGRADE BEARING CAPACITY 1500 kPa (ULS) — TO BE VERIFIED ON SITE BY CONTRACTOR.
3. TEMPORARY SHORING TO BE PROVIDED BY CONTRACTOR WHERE REQUIRED
4. SERVICE LOADS: D.L.=3.6 kPa; L.L.=90.0 (35.0) kPa (Water).
5. REFER TO ARCHITECTURAL PLANS AND SECTIONS FOR EXACT LOCATIONS AND PLAN DIMENSIONS.
6. REFER TO PROCESS / MECHANICAL / ELECTRICAL DRAWINGS FOR OPENING SIZE, LOCATION, AND COORDINATION REQUIREMENTS.

0 10 20 30 40 50 60 70 80 90 100mm

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SUPPLY AND STORAGE

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Drawn by
Y.N.

Approved by
K.A.

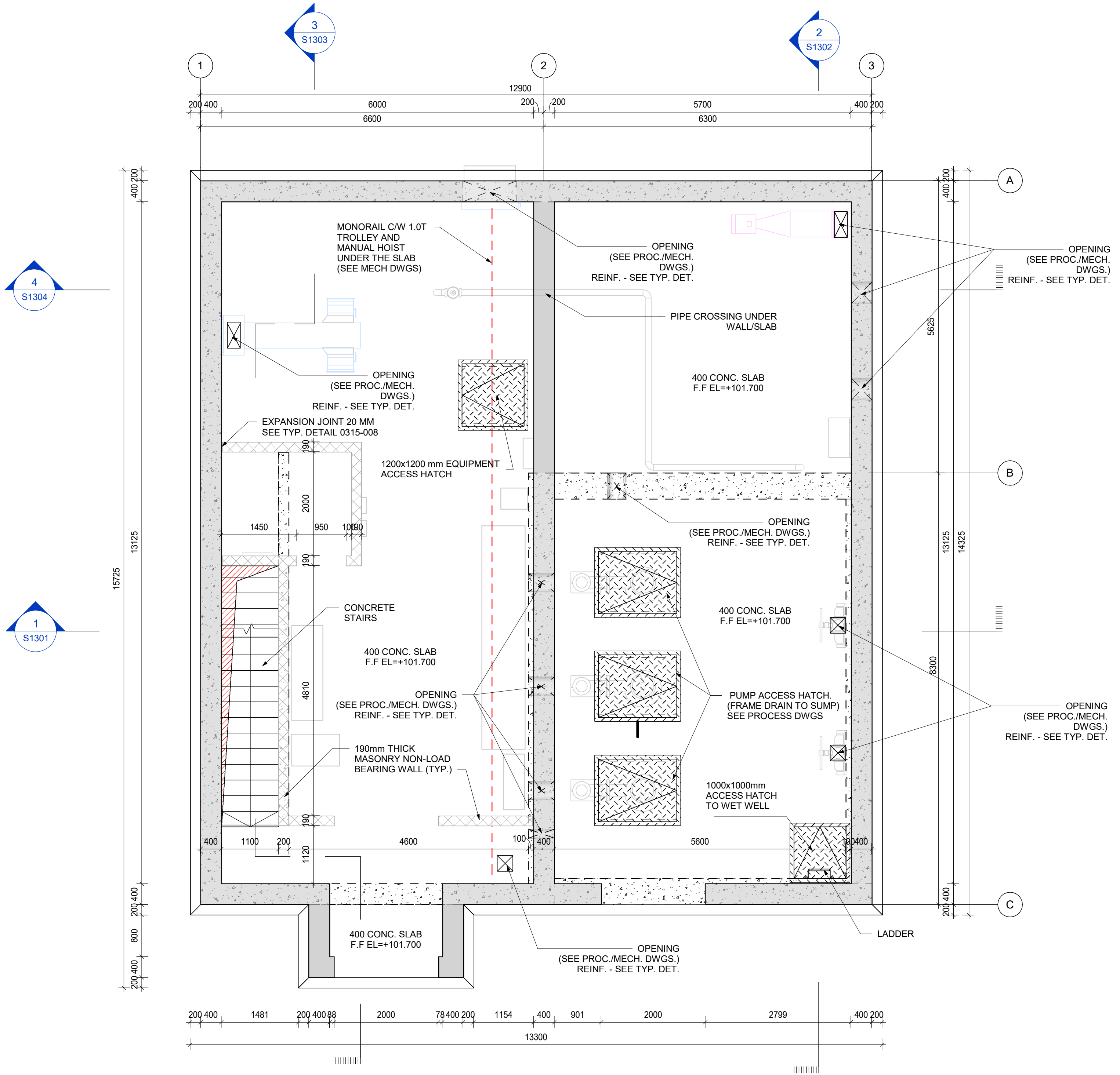
Project Manager
C.G.

Drawing Title

STRUCTURAL

AR PUMP STATION
PLAN AT EL. 92.000/97.800 m

Project no.	Drawing no.	Revision no.
30192375	**S1101**	**B**


3
S1303
2
S1302
4
S1304
1
S1301
1
2
3
A
B
C
12900
200 400
6000
200
200
5700
400 200
6600
6300
400 200
13125
15725
5625
8300
13125
14325
200 400
800
200 400
MONORAIL C/W 1.0T
TROLLEY AND
MANUAL HOIST
UNDER THE SLAB
(SEE MECH DWGS)
OPENING
(SEE PROC./MECH.
DWGS.)
REINF. - SEE TYP. DET.
PIPE CROSSING UNDER
WALL/SLAB
400 CONC. SLAB
F.F EL=+101.700
EXPANSION JOINT 20 MM
SEE TYP. DETAIL 0315-008
1200x1200 mm EQUIPMENT
ACCESS HATCH
190
2000
1450
950
100
190
190
CONCRETE
STAIRS
4810
190mm THICK
MASONRY NON-LOAD
BEARING WALL (TYP.)
(SEE PROC./MECH. DWGS.)
PUMP ACCESS HATCH.
(FRAME DRAIN TO SUMP)
SEE PROCESS DWGS
1000x1000mm
ACCESS HATCH
TO WET WELL
400
1100
200
4600
100
400
5600
400
1120
LADDER
200 400
1481
200 400 88
2000
78 400 200
1154
400
901
2000
2799
400 200
13300

1
S1102

FINISHED FLOOR PLAN

Scale: 1 : 50

WALL HATCHING LEGEND

- ⬚ - CONCRETE CAST UP TO SLAB SOFFIT
- ▒ - CONCRETE CAST UP TO SLAB AND CONTINUING ABOVE
- ▇ - CONCRETE CONTINUING ABOVE THE SLAB
- ⬚ - MASONRY BUILT UP TO SLAB SOFFIT
- ▨ - MASONRY UP TO SLAB AND CONTINUING ABOVE
- ▨ - MASONRY CONTINUING ABOVE THE SLAB

REBAR PLACEMENT IN SLAB

- ← TUL (TOP UPPER LAYER)
- ↓ TLL (TOP LOWER LAYER)
- ↓ BUL (BOTTOM UPPER LAYER)
- ← BLL (BOTTOM LOWER LAYER)

NOTES FOR FINISHED FLOOR SLAB:

1. REFER TO GENERAL NOTES / TYPICAL DETAILS FOR CONCRETE STRENGTH AND REINFORCING LAPPING AND COVER.
2. MINIMUM SUBGRADE BEARING CAPACITY 1500 kPa (ULS) — TO BE VERIFIED ON SITE BY CONTRACTOR.
3. TEMPORARY SHORING TO BE PROVIDED BY CONTRACTOR WHERE REQUIRED.
4. SERVICE LOADS: D.L.=3.6 kPa; L.L.=12.0 kPa.
5. REFER TO ARCHITECTURAL PLANS AND SECTIONS FOR EXACT LOCATIONS AND PLAN DIMENSIONS.
6. REFER TO PROCESS / MECHANICAL / ELECTRICAL DRAWINGS FOR OPENING SIZE, LOCATION, AND COORDINATION REQUIREMENTS.

0 10 20 30 40 50 60 70 80 90 100mm

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A1 - 841X594

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CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
M.S.

Drawn by
Y.N.

Approved by
K.A.

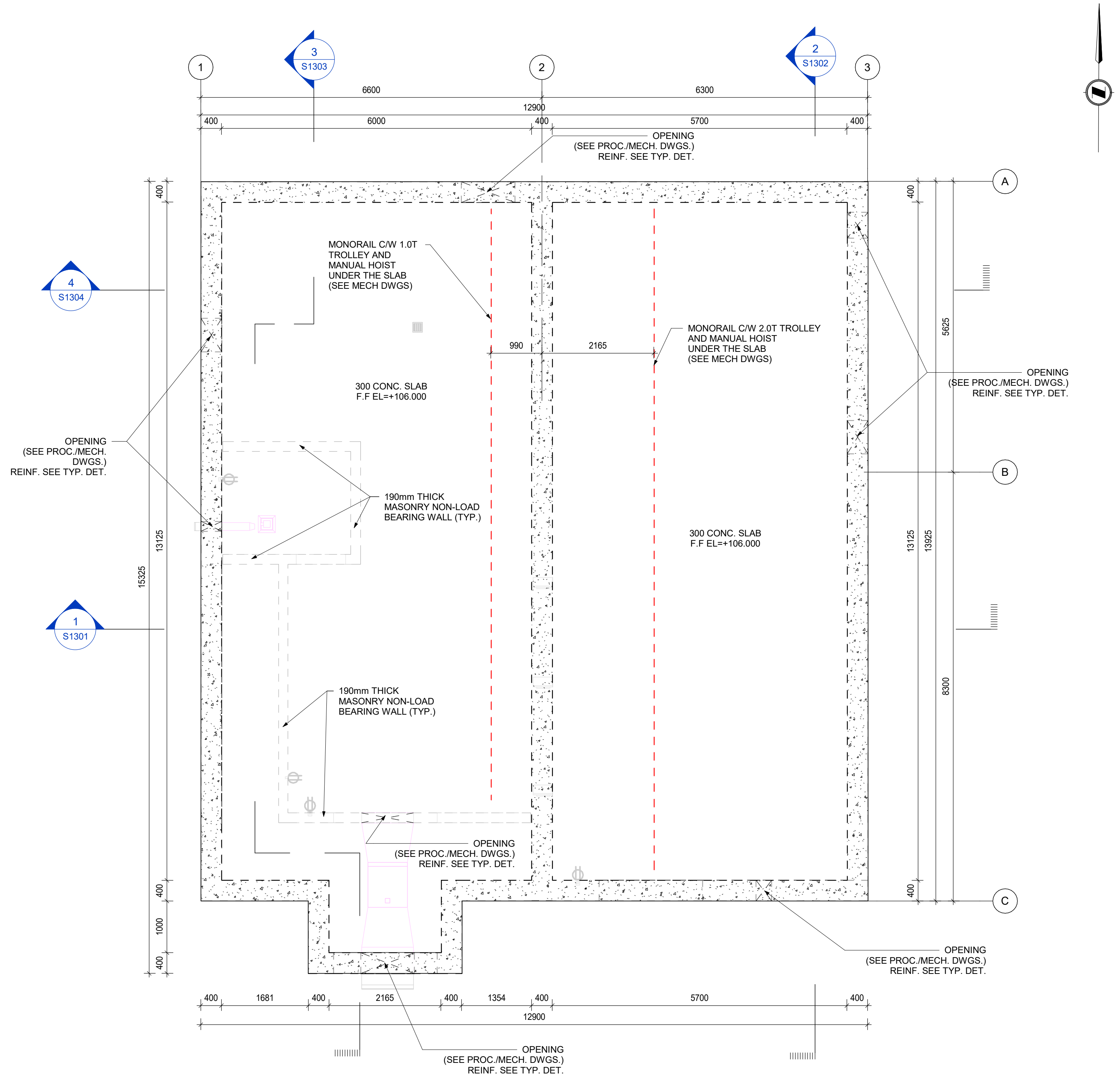
Project Manager
C.G.

Drawing Title

STRUCTURAL

AR PUMP STATION
PLAN AT EL. 101.700 m

Project no.	Drawing no.	Revision no.
30192375	S1102	B


1
2
3
3
S1303
2
S1302
6600
6300
12900
400
6000
400
5700
400
OPENING
(SEE PROC./MECH. DWGS.)
REINF. SEE TYP. DET.
A
B
C
4
S1304
1
S1301
400
13125
15325
400
1000
400
400
5625
13125
13925
8300
400
MONORAIL C/W 1.0T
TROLLEY AND
MANUAL HOIST
UNDER THE SLAB
(SEE MECH DWGS)
MONORAIL C/W 2.0T TROLLEY
AND MANUAL HOIST
UNDER THE SLAB
(SEE MECH DWGS)
990
2165
300 CONC. SLAB
F.F EL=+106.000
OPENING
(SEE PROC./MECH. DWGS.)
REINF. SEE TYP. DET.
OPENING
(SEE PROC./MECH.
DWGS.)
REINF. SEE TYP. DET.
190mm THICK
MASONRY NON-LOAD
BEARING WALL (TYP.)
300 CONC. SLAB
F.F EL=+106.000
190mm THICK
MASONRY NON-LOAD
BEARING WALL (TYP.)
OPENING
(SEE PROC./MECH. DWGS.)
REINF. SEE TYP. DET.
OPENING
(SEE PROC./MECH. DWGS.)
REINF. SEE TYP. DET.
400
1681
400
2165
400
1354
400
5700
400
12900
OPENING
(SEE PROC./MECH. DWGS.)
REINF. SEE TYP. DET.

1 ROOF PLAN
S1103 Scale: 1 : 50

NOTES FOR ROOF SLAB:

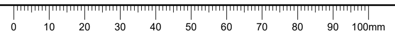
1. REFER TO GENERAL NOTES / TYPICAL DETAILS FOR CONCRETE STRENGTH AND REINFORCING LAPPING AND COVER.
2. TEMPORARY SHORING TO BE PROVIDED BY CONTRACTOR WHERE REQUIRED.
3. SERVICE LOADS: D.L.=1.0 kPa; L.L.=1.0 kPa. SNOW LOAD ON ROOF: 2.27 kPa.
4. REFER TO ARCHITECTURAL PLANS AND SECTIONS FOR EXACT LOCATIONS AND PLAN DIMENSIONS.
5. REFER TO PROCESS / MECHANICAL / ELECTRICAL DRAWINGS FOR OPENING SIZE, LOCATION, AND COORDINATION REQUIREMENTS.

WALL HATCHING LEGEND

▨ - CONCRETE CAST UP TO SLAB SOFFIT
▨ - CONCRETE CAST UP TO SLAB AND CONTINUING ABOVE
▨ - CONCRETE CONTINUING ABOVE THE SLAB
☐ - MASONRY BUILT UP TO SLAB SOFFIT
▨ - MASONRY UP TO SLAB AND CONTINUING ABOVE
▨ - MASONRY CONTINUING ABOVE THE SLAB

REBAR PLACEMENT IN SLAB

↔ TUL (TOP UPPER LAYER)
↕ TLL (TOP LOWER LAYER)
↕ BUL (BOTTOM UPPER LAYER)
↔ BLL (BOTTOM LOWER LAYER)


0
10
20
30
40
50
60
70
80
90
100mm

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SUPPLY AND STORAGE

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M.S.
Drawn by
Y.N.
Approved by
K.A.
Project Manager
C.G.

Drawing Title

STRUCTURAL

AR PUMP STATION
PLAN AT EL. 106.000 m

Project no.	Drawing no.	Revision no.
30192375	**S1103**	**B**

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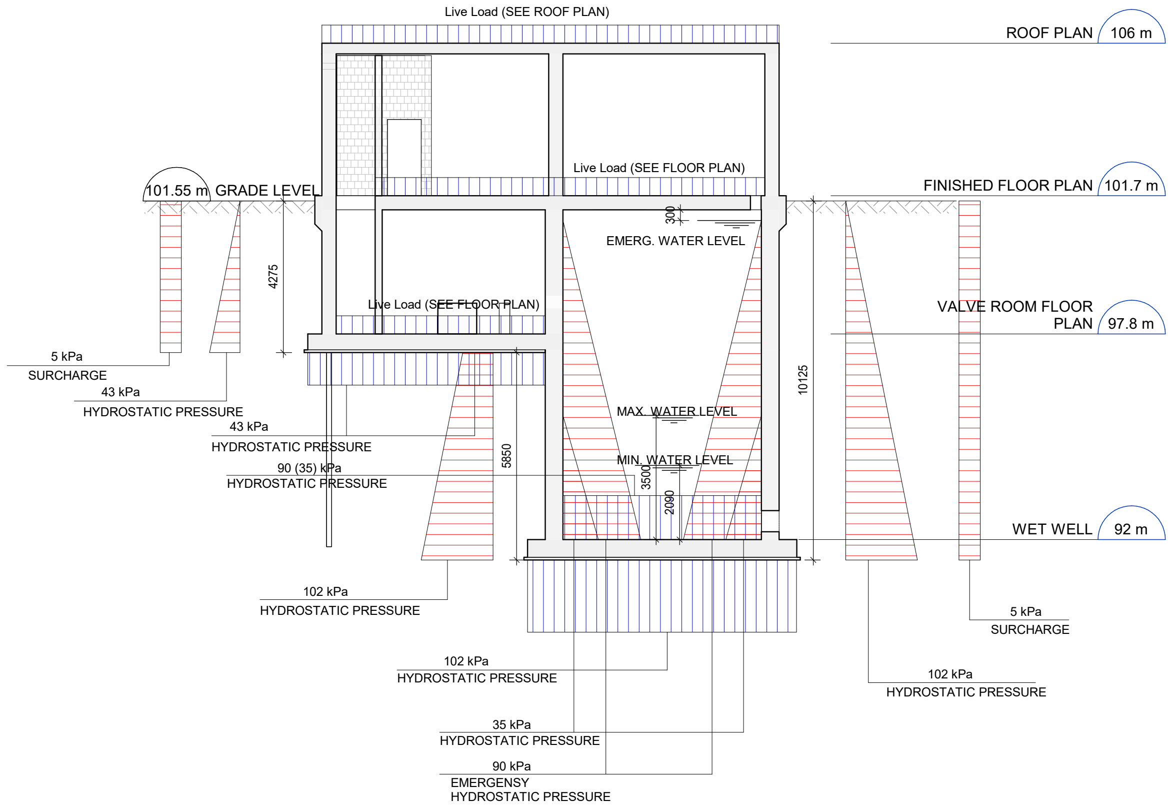
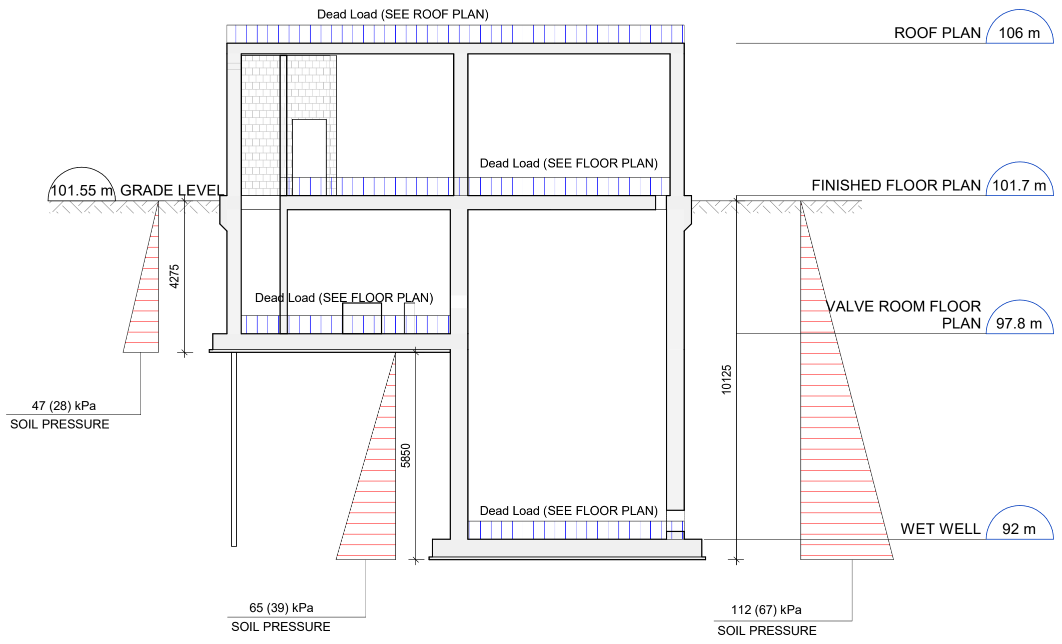

Live Load (SEE ROOF PLAN)
ROOF PLAN 106 m
Live Load (SEE FLOOR PLAN)
101.55 m GRADE LEVEL
FINISHED FLOOR PLAN 101.7 m
300
EMERG. WATER LEVEL
4275
Live Load (SEE FLOOR PLAN)
VALVE ROOM FLOOR PLAN 97.8 m
5 kPa
SURCHARGE
43 kPa
HYDROSTATIC PRESSURE
10125
43 kPa
HYDROSTATIC PRESSURE
MAX. WATER LEVEL
90 (35) kPa
HYDROSTATIC PRESSURE
5850
MIN. WATER LEVEL
3500
2060
WET WELL 92 m
102 kPa
HYDROSTATIC PRESSURE
5 kPa
SURCHARGE
102 kPa
HYDROSTATIC PRESSURE
102 kPa
HYDROSTATIC PRESSURE
35 kPa
HYDROSTATIC PRESSURE
90 kPa
EMERGENSY
HYDROSTATIC PRESSURE

1 LIVE LOAD DIAGRAM

SCALE: 1 : 100


Dead Load (SEE ROOF PLAN)
ROOF PLAN 106 m
Dead Load (SEE FLOOR PLAN)
101.55 m GRADE LEVEL
FINISHED FLOOR PLAN 101.7 m
4275
Dead Load (SEE FLOOR PLAN)
VALVE ROOM FLOOR PLAN 97.8 m
10125
47 (28) kPa
SOIL PRESSURE
5850
Dead Load (SEE FLOOR PLAN)
WET WELL 92 m
65 (39) kPa
SOIL PRESSURE
112 (67) kPa
SOIL PRESSURE

NOTE:

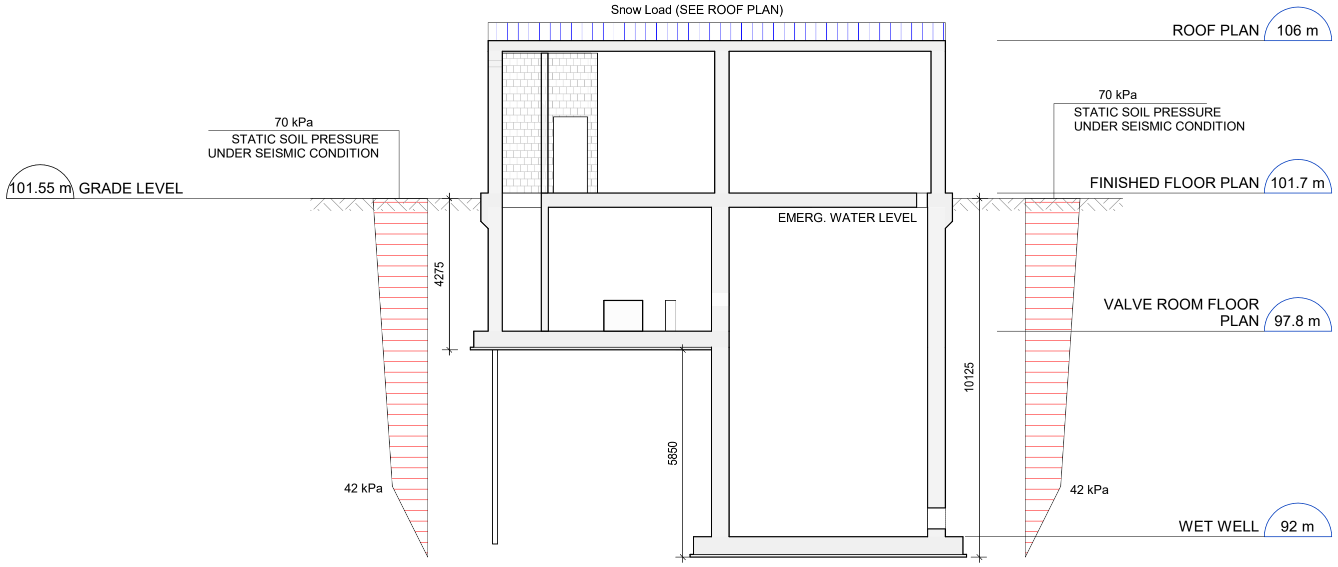
At-rest pressure   Active pressure

xx.xx (xx.xx)

- for the balanced case, at-rest pressure should be applied on both sides of the structure.
- for the unbalanced case, at-rest pressure should be applied on one side and active pressure on the opposite side.

2 DEAD LOAD DIAGRAM

SCALE: 1 : 100


Snow Load (SEE ROOF PLAN)
ROOF PLAN 106 m
70 kPa
STATIC SOIL PRESSURE
UNDER SEISMIC CONDITION
70 kPa
STATIC SOIL PRESSURE
UNDER SEISMIC CONDITION
101.55 m GRADE LEVEL
FINISHED FLOOR PLAN 101.7 m
EMERG. WATER LEVEL
4275
VALVE ROOM FLOOR PLAN 97.8 m
10125
5850
42 kPa
42 kPa
WET WELL 92 m

3 SNOW AND SEISMIC LOAD DIAGRAM

SCALE: 1 : 100

NOTE:

GROUNDWATER LEVEL IS SPECIFIED AT THE ELEVATION OF THE EXISTING BEDROCK SURFACE IN ACCORDANCE WITH THE GEOTECHNICAL REPORT

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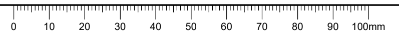
A1 - 841X594


0
10
20
30
40
50
60
70
80
90
100mm

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CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
M.S.

Drawn by
Y.N.

Approved by
K.A.

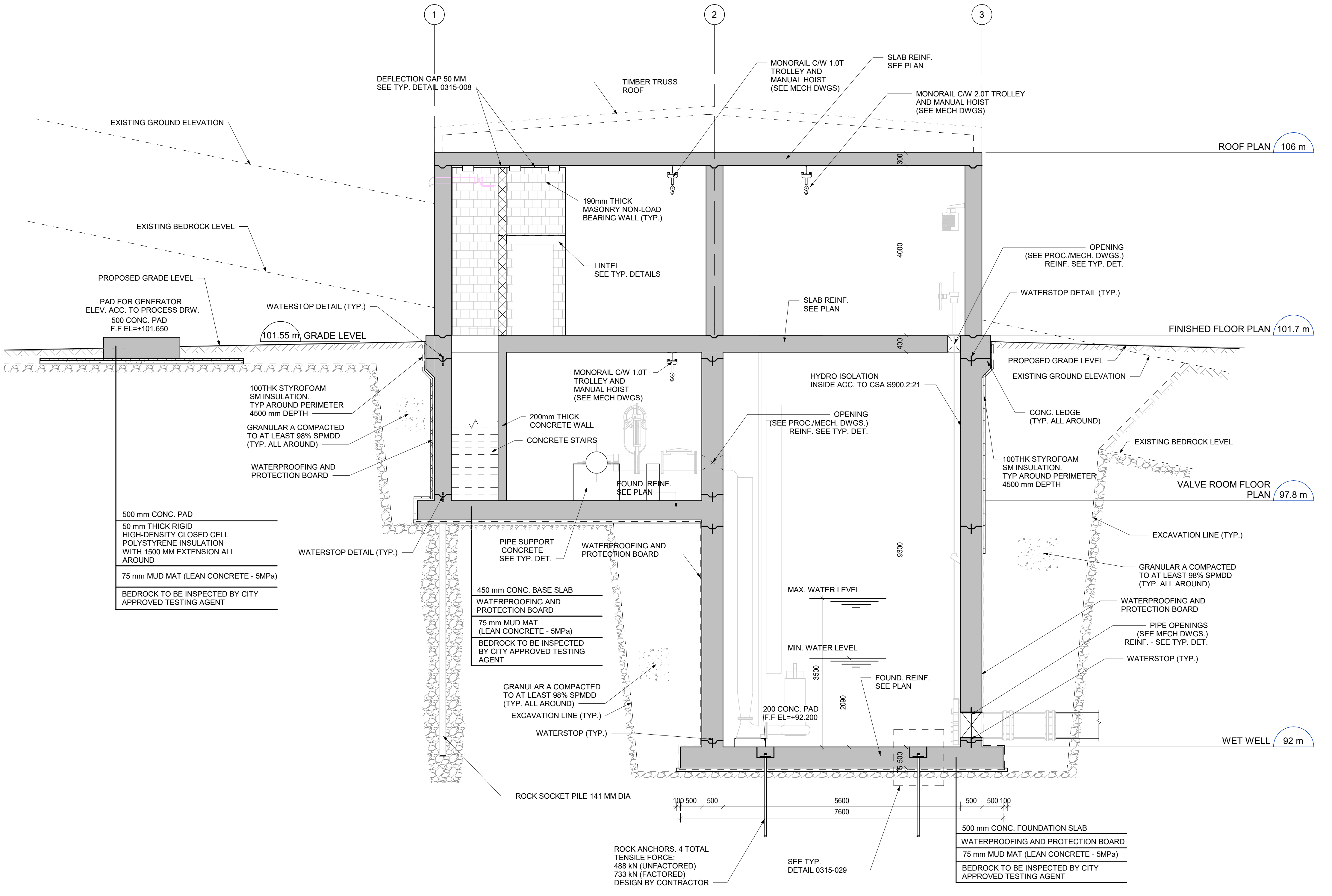
Project Manager
C.G.

Drawing Title

STRUCTURAL

AR PUMP STATION
SECTIONS - LOADING

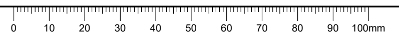
Project no.	Drawing no.	Revision no.
30192375	S1300	A


1
2
3
DEFLECTION GAP 50 MM
SEE TYP. DETAIL 0315-008
TIMBER TRUSS
ROOF
MONORAIL C/W 1.0T
TROLLEY AND
MANUAL HOIST
(SEE MECH DWGS)
SLAB REINF.
SEE PLAN
MONORAIL C/W 2.0T TROLLEY
AND MANUAL HOIST
(SEE MECH DWGS)
EXISTING GROUND ELEVATION
ROOF PLAN
106 m
300
190mm THICK
MASONRY NON-LOAD
BEARING WALL (TYP.)
EXISTING BEDROCK LEVEL
LINTEL
SEE TYP. DETAILS
4000
OPENING
(SEE PROC./MECH. DWGS.)
REINF. SEE TYP. DET.
PROPOSED GRADE LEVEL
WATERSTOP DETAIL (TYP.)
SLAB REINF.
SEE PLAN
WATERSTOP DETAIL (TYP.)
PAD FOR GENERATOR
ELEV. ACC. TO PROCESS DRW.
500 CONC. PAD
F.F EL=+101.650
101.55 m
GRADE LEVEL
400
FINISHED FLOOR PLAN
101.7 m
PROPOSED GRADE LEVEL
EXISTING GROUND ELEVATION
MONORAIL C/W 1.0T
TROLLEY AND
MANUAL HOIST
(SEE MECH DWGS)
HYDRO ISOLATION
INSIDE ACC. TO CSA S900.2:21
100THK STYROFOAM
SM INSULATION.
TYP AROUND PERIMETER
4500 mm DEPTH
200mm THICK
CONCRETE WALL
OPENING
(SEE PROC./MECH. DWGS.)
REINF. SEE TYP. DET.
CONC. LEDGE
(TYP. ALL AROUND)
GRANULAR A COMPACTED
TO AT LEAST 98% SPMDD
(TYP. ALL AROUND)
CONCRETE STAIRS
EXISTING BEDROCK LEVEL
WATERPROOFING AND
PROTECTION BOARD
100THK STYROFOAM
SM INSULATION.
TYP AROUND PERIMETER
4500 mm DEPTH
FOUND. REINF.
SEE PLAN
VALVE ROOM FLOOR
PLAN
97.8 m
500 mm CONC. PAD
50 mm THICK RIGID
HIGH-DENSITY CLOSED CELL
POLYSTYRENE INSULATION
WITH 1500 MM EXTENSION ALL
AROUND
75 mm MUD MAT (LEAN CONCRETE - 5MPa)
BEDROCK TO BE INSPECTED BY CITY
APPROVED TESTING AGENT
EXCAVATION LINE (TYP.)
WATERSTOP DETAIL (TYP.)
PIPE SUPPORT
CONCRETE
SEE TYP. DET.
WATERPROOFING AND
PROTECTION BOARD
9300
GRANULAR A COMPACTED
TO AT LEAST 98% SPMDD
(TYP. ALL AROUND)
450 mm CONC. BASE SLAB
WATERPROOFING AND
PROTECTION BOARD
75 mm MUD MAT
(LEAN CONCRETE - 5MPa)
BEDROCK TO BE INSPECTED
BY CITY APPROVED TESTING
AGENT
MAX. WATER LEVEL
WATERPROOFING AND
PROTECTION BOARD
PIPE OPENINGS
(SEE MECH DWGS.)
REINF. - SEE TYP. DET.
MIN. WATER LEVEL
WATERSTOP (TYP.)
GRANULAR A COMPACTED
TO AT LEAST 98% SPMDD
(TYP. ALL AROUND)
EXCAVATION LINE (TYP.)
3500
FOUND. REINF.
SEE PLAN
2090
200 CONC. PAD
F.F EL=+92.200
WATERSTOP (TYP.)
WET WELL
92 m
75
500
ROCK SOCKET PILE 141 MM DIA
100
500
500
5600
500
500
100
7600
500 mm CONC. FOUNDATION SLAB
WATERPROOFING AND PROTECTION BOARD
75 mm MUD MAT (LEAN CONCRETE - 5MPa)
BEDROCK TO BE INSPECTED BY CITY
APPROVED TESTING AGENT
ROCK ANCHORS. 4 TOTAL
TENSILE FORCE:
488 kN (UNFACTORED)
733 kN (FACTORED)
DESIGN BY CONTRACTOR
SEE TYP.
DETAIL 0315-029

1 SECTION
S1100 Scale: 1 : 50

NOTE:

1. REFER TO GENERAL NOTES / TYPICAL DETAILS FOR CONCRETE STRENGTH AND REINFORCING LAPPING AND COVER.


0
10
20
30
40
50
60
70
80
90
100mm

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A1 - 841X594

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN (REVISED)	2025-09-26

Consultant

ARCADIS

8133 Warden Avenue - Unit 300
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tel 905 763 2322
www.arcadis.com

Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
M.S.

Drawn by
Y.N.

Approved by
K.A.

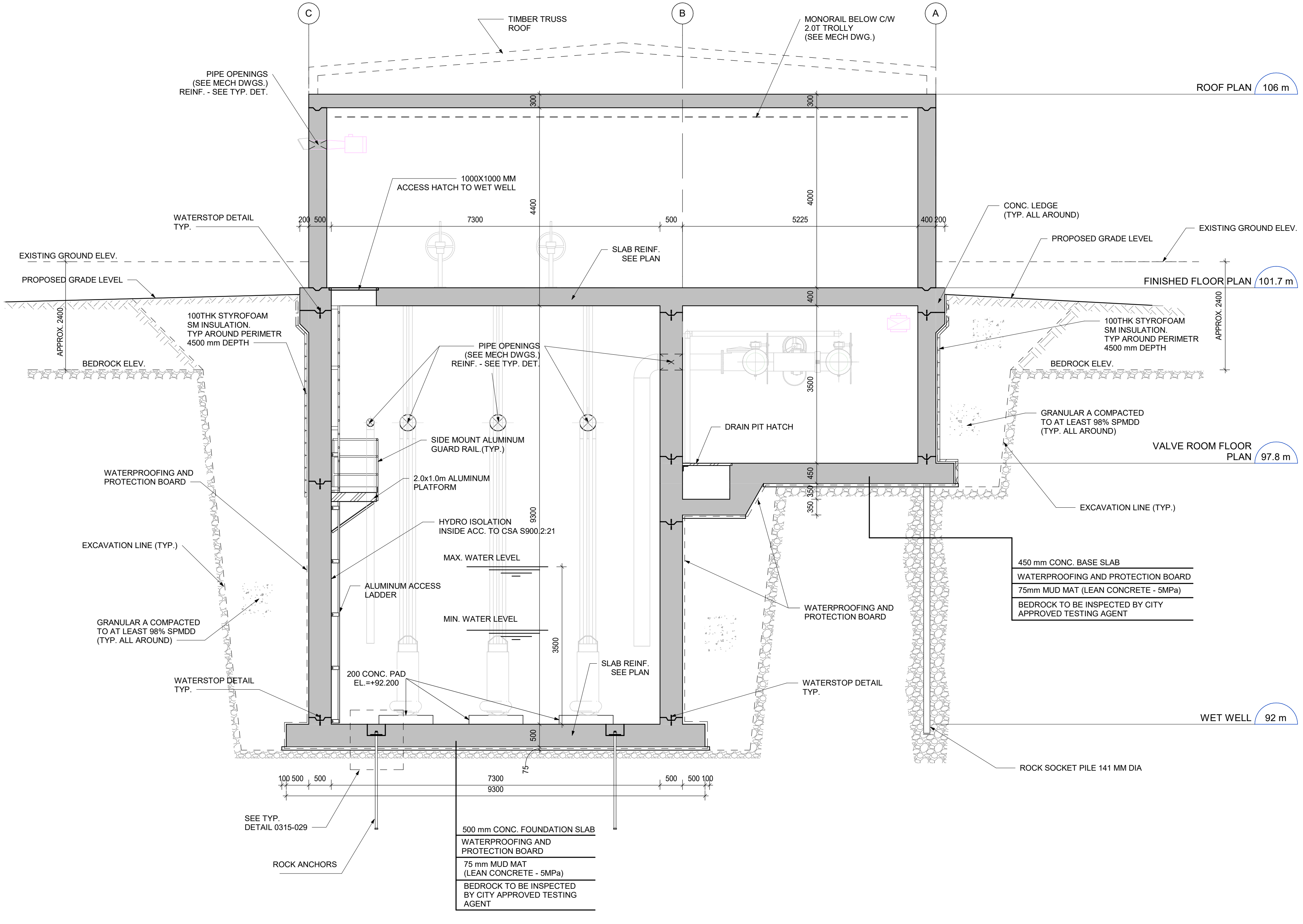
Project Manager
C.G.

Drawing Title

STRUCTURAL

AR PUMP STATION
SECTION 1-1

Project no.	Drawing no.	Revision no.
30192375	S1301	B


C
B
A
TIMBER TRUSS
ROOF
MONORAIL BELOW C/W
2.0T TROLLY
(SEE MECH DWG.)
PIPE OPENINGS
(SEE MECH DWGS.)
REINF. - SEE TYP. DET.
ROOF PLAN
106 m
300
300
1000X1000 MM
ACCESS HATCH TO WET WELL
4400
4000
CONC. LEDGE
(TYP. ALL AROUND)
WATERSTOP DETAIL
TYP.
200
500
7300
500
5225
400
200
EXISTING GROUND ELEV.
PROPOSED GRADE LEVEL
EXISTING GROUND ELEV.
SLAB REINF.
SEE PLAN
PROPOSED GRADE LEVEL
FINISHED FLOOR PLAN
101.7 m
APPROX. 2400
400
APPROX. 2400
100THK STYROFOAM
SM INSULATION.
TYP AROUND PERIMETR
4500 mm DEPTH
100THK STYROFOAM
SM INSULATION.
TYP AROUND PERIMETR
4500 mm DEPTH
BEDROCK ELEV.
PIPE OPENINGS
(SEE MECH DWGS.)
REINF. - SEE TYP. DET.
BEDROCK ELEV.
3500
DRAIN PIT HATCH
GRANULAR A COMPACTED
TO AT LEAST 98% SPMDD
(TYP. ALL AROUND)
SIDE MOUNT ALUMINUM
GUARD RAIL.(TYP.)
VALVE ROOM FLOOR
PLAN
97.8 m
WATERPROOFING AND
PROTECTION BOARD
2.0x1.0m ALUMINUM
PLATFORM
450
350
350
EXCAVATION LINE (TYP.)
HYDRO ISOLATION
INSIDE ACC. TO CSA S900.2:21
9300
EXCAVATION LINE (TYP.)
MAX. WATER LEVEL
450 mm CONC. BASE SLAB
WATERPROOFING AND PROTECTION BOARD
75mm MUD MAT (LEAN CONCRETE - 5MPa)
BEDROCK TO BE INSPECTED BY CITY
APPROVED TESTING AGENT
ALUMINUM ACCESS
LADDER
GRANULAR A COMPACTED
TO AT LEAST 98% SPMDD
(TYP. ALL AROUND)
MIN. WATER LEVEL
WATERPROOFING AND
PROTECTION BOARD
3500
SLAB REINF.
SEE PLAN
WATERSTOP DETAIL
TYP.
200 CONC. PAD
EL.=+92.200
WATERSTOP DETAIL
TYP.
WET WELL
92 m
500
ROCK SOCKET PILE 141 MM DIA
75
100
500
500
7300
500
500
100
9300
SEE TYP.
DETAIL 0315-029
500 mm CONC. FOUNDATION SLAB
WATERPROOFING AND
PROTECTION BOARD
75 mm MUD MAT
(LEAN CONCRETE - 5MPa)
BEDROCK TO BE INSPECTED
BY CITY APPROVED TESTING
AGENT
ROCK ANCHORS

2 **SECTION**
S1100 Scale: 1 : 50

NOTE:

1. REFER TO GENERAL NOTES / TYPICAL DETAILS FOR CONCRETE STRENGTH AND REINFORCING LAPPING AND COVER.

0 10 20 30 40 50 60 70 80 90 100mm

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN (REVISED)	2025-09-26

Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
M.S.

Drawn by
Y.N.

Approved by
K.A.

Project Manager
C.G.

Drawing Title

STRUCTURAL

AR PUMP STATION
SECTION 2-2

Project no.	Drawing no.	Revision no.
30192375	S1302	B

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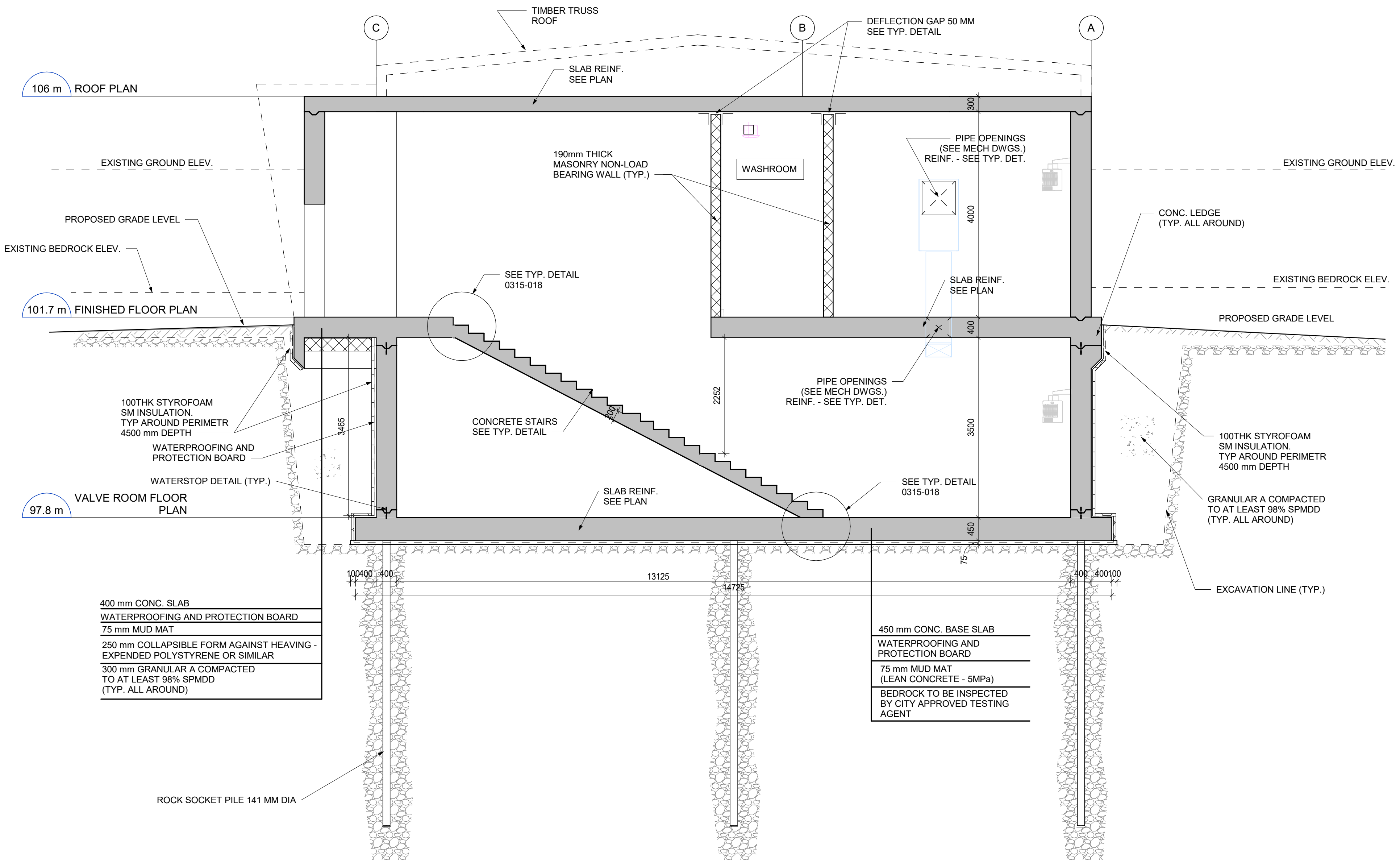
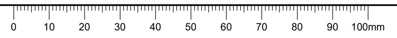

TIMBER TRUSS
ROOF
C
B
A
DEFLECTION GAP 50 MM
SEE TYP. DETAIL
SLAB REINF.
SEE PLAN
106 m ROOF PLAN
300
EXISTING GROUND ELEV.
EXISTING GROUND ELEV.
190mm THICK
MASONRY NON-LOAD
BEARING WALL (TYP.)
WASHROOM
PIPE OPENINGS
(SEE MECH DWGS.)
REINF. - SEE TYP. DET.
PROPOSED GRADE LEVEL
EXISTING BEDROCK ELEV.
4000
CONC. LEDGE
(TYP. ALL AROUND)
SEE TYP. DETAIL
0315-018
SLAB REINF.
SEE PLAN
EXISTING BEDROCK ELEV.
101.7 m FINISHED FLOOR PLAN
400
PROPOSED GRADE LEVEL
100THK STYROFOAM
SM INSULATION.
TYP AROUND PERIMETR
4500 mm DEPTH
3465
2252
PIPE OPENINGS
(SEE MECH DWGS.)
REINF. - SEE TYP. DET.
CONCRETE STAIRS
SEE TYP. DETAIL
WATERPROOFING AND
PROTECTION BOARD
3500
100THK STYROFOAM
SM INSULATION.
TYP AROUND PERIMETR
4500 mm DEPTH
WATERSTOP DETAIL (TYP.)
SEE TYP. DETAIL
0315-018
VALVE ROOM FLOOR
97.8 m PLAN
SLAB REINF.
SEE PLAN
GRANULAR A COMPACTED
TO AT LEAST 98% SPMDD
(TYP. ALL AROUND)
450
75
100
400
400
13125
14725
400
400
100
EXCAVATION LINE (TYP.)
400 mm CONC. SLAB
WATERPROOFING AND PROTECTION BOARD
75 mm MUD MAT
250 mm COLLAPSIBLE FORM AGAINST HEAVING -
EXPENDED POLYSTYRENE OR SIMILAR
300 mm GRANULAR A COMPACTED
TO AT LEAST 98% SPMDD
(TYP. ALL AROUND)
450 mm CONC. BASE SLAB
WATERPROOFING AND
PROTECTION BOARD
75 mm MUD MAT
(LEAN CONCRETE - 5MPa)
BEDROCK TO BE INSPECTED
BY CITY APPROVED TESTING
AGENT
ROCK SOCKET PILE 141 MM DIA

3 SECTION
S1100 Scale: 1 : 50

NOTE:

1. REFER TO GENERAL NOTES / TYPICAL DETAILS FOR CONCRETE STRENGTH AND REINFORCING LAPPING AND COVER.


0
10
20
30
40
50
60
70
80
90
100mm

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN (REVISED)	2025-09-26

Consultant

ARCADIS

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Project title

CITY OF IQALUIT

**LONG TERM WATER PROGRAM
SUPPLY AND STORAGE**

Designed by
M.S.

Drawn by
Y.N.

Approved by
K.A.

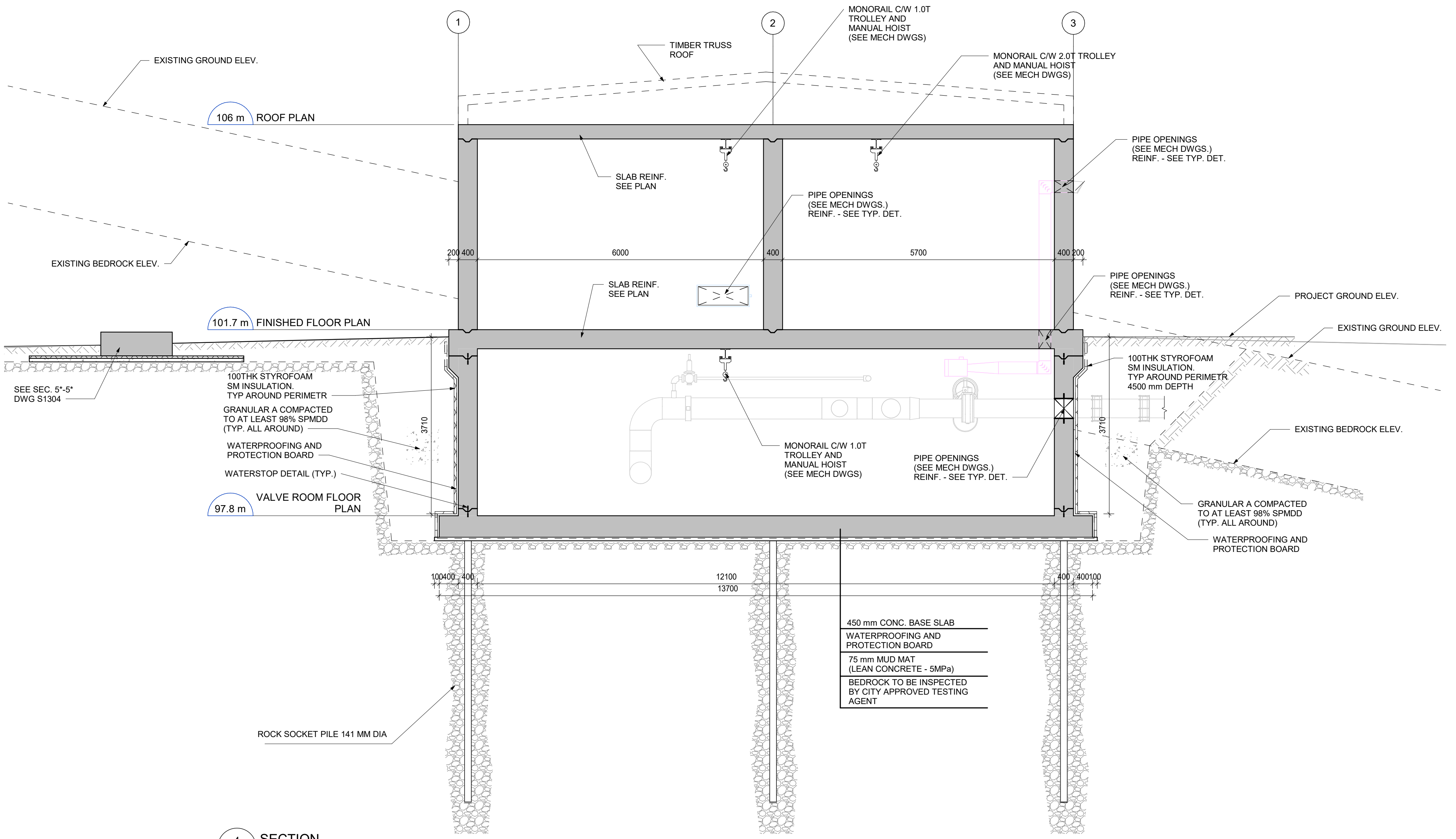
Project Manager
C.G.

Drawing Title

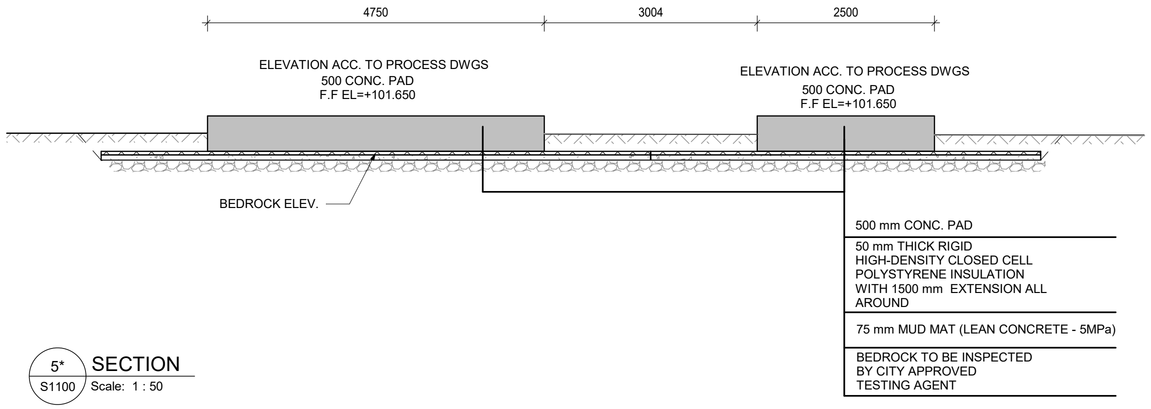
STRUCTURAL

**AR PUMP STATION
SECTION 3-3**

Project no.	Drawing no.	Revision no.
30192375	S1303	B


1
2
3
MONORAIL C/W 1.0T TROLLEY AND MANUAL HOIST (SEE MECH DWGS)
TIMBER TRUSS ROOF
MONORAIL C/W 2.0T TROLLEY AND MANUAL HOIST (SEE MECH DWGS)
EXISTING GROUND ELEV.
106 m ROOF PLAN
PIPE OPENINGS (SEE MECH DWGS.) REINF. - SEE TYP. DET.
SLAB REINF. SEE PLAN
PIPE OPENINGS (SEE MECH DWGS.) REINF. - SEE TYP. DET.
200 400
6000
400
5700
400 200
EXISTING BEDROCK ELEV.
SLAB REINF. SEE PLAN
PIPE OPENINGS (SEE MECH DWGS.) REINF. - SEE TYP. DET.
PROJECT GROUND ELEV.
101.7 m FINISHED FLOOR PLAN
EXISTING GROUND ELEV.
SEE SEC. 5*-5* DWG S1304
100THK STYROFOAM SM INSULATION. TYP AROUND PERIMETR
100THK STYROFOAM SM INSULATION. TYP AROUND PERIMETR 4500 mm DEPTH
GRANULAR A COMPACTED TO AT LEAST 98% SPMDD (TYP. ALL AROUND)
3710
3710
EXISTING BEDROCK ELEV.
WATERPROOFING AND PROTECTION BOARD
MONORAIL C/W 1.0T TROLLEY AND MANUAL HOIST (SEE MECH DWGS)
PIPE OPENINGS (SEE MECH DWGS.) REINF. - SEE TYP. DET.
WATERSTOP DETAIL (TYP.)
VALVE ROOM FLOOR PLAN 97.8 m
GRANULAR A COMPACTED TO AT LEAST 98% SPMDD (TYP. ALL AROUND)
WATERPROOFING AND PROTECTION BOARD
100400 400
12100
13700
400 400100
450 mm CONC. BASE SLAB
WATERPROOFING AND PROTECTION BOARD
75 mm MUD MAT (LEAN CONCRETE - 5MPa)
BEDROCK TO BE INSPECTED BY CITY APPROVED TESTING AGENT
ROCK SOCKET PILE 141 MM DIA

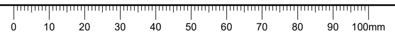
4 SECTION
S1100 Scale: 1 : 50


4750
3004
2500
ELEVATION ACC. TO PROCESS DWGS
500 CONC. PAD
F.F EL=+101.650
ELEVATION ACC. TO PROCESS DWGS
500 CONC. PAD
F.F EL=+101.650
BEDROCK ELEV.
500 mm CONC. PAD
50 mm THICK RIGID HIGH-DENSITY CLOSED CELL POLYSTYRENE INSULATION WITH 1500 mm EXTENSION ALL AROUND
75 mm MUD MAT (LEAN CONCRETE - 5MPa)
BEDROCK TO BE INSPECTED BY CITY APPROVED TESTING AGENT

5* SECTION
S1100 Scale: 1 : 50

NOTE:

1. REFER TO GENERAL NOTES / TYPICAL DETAILS FOR CONCRETE STRENGTH AND REINFORCING LAPPING AND COVER.


0
10
20
30
40
50
60
70
80
90
100mm

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SUPPLY AND STORAGE

Designed by
M.S.

Drawn by
Y.N.

Approved by
K.A.

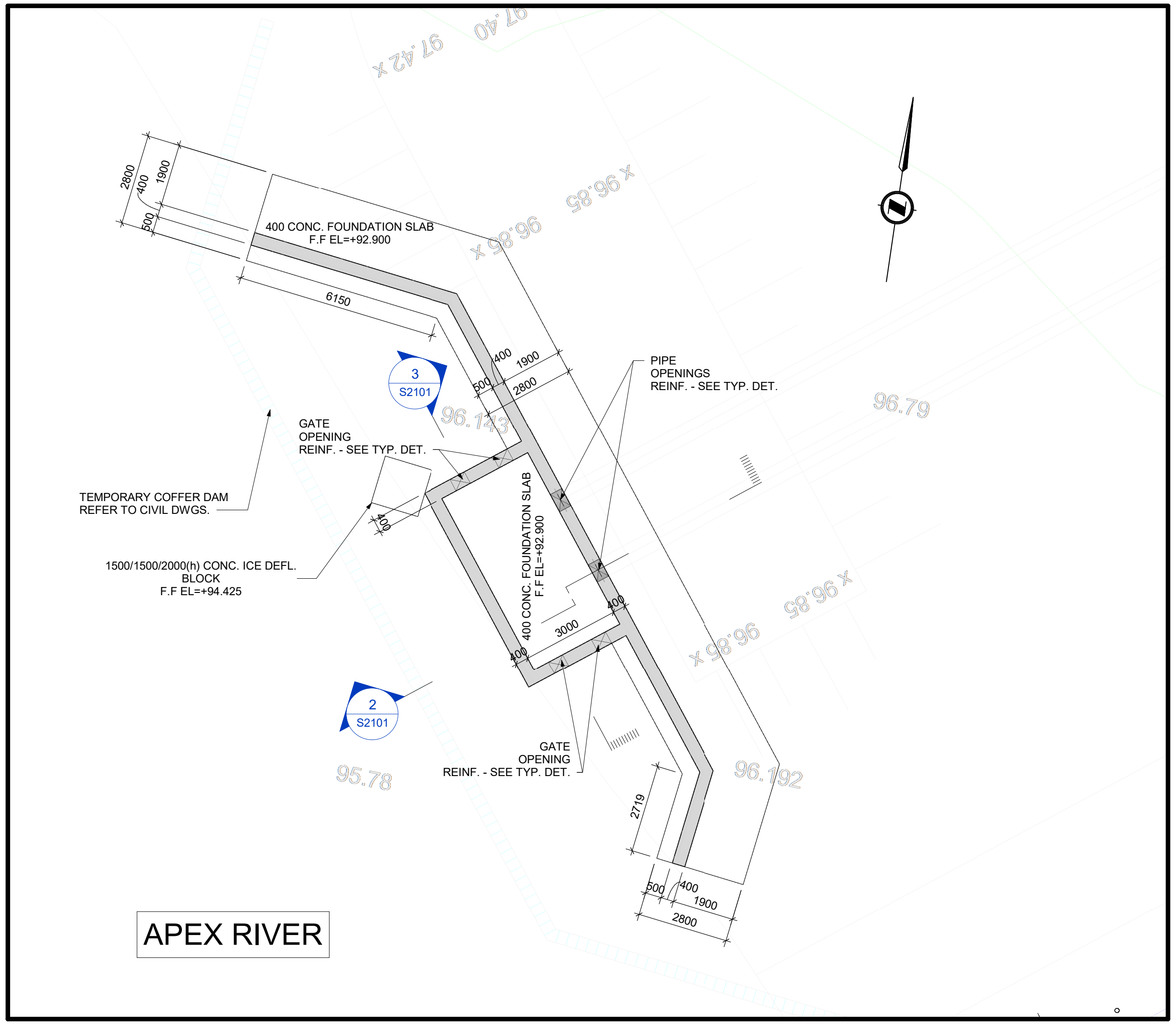
Project Manager
C.G.

Drawing Title

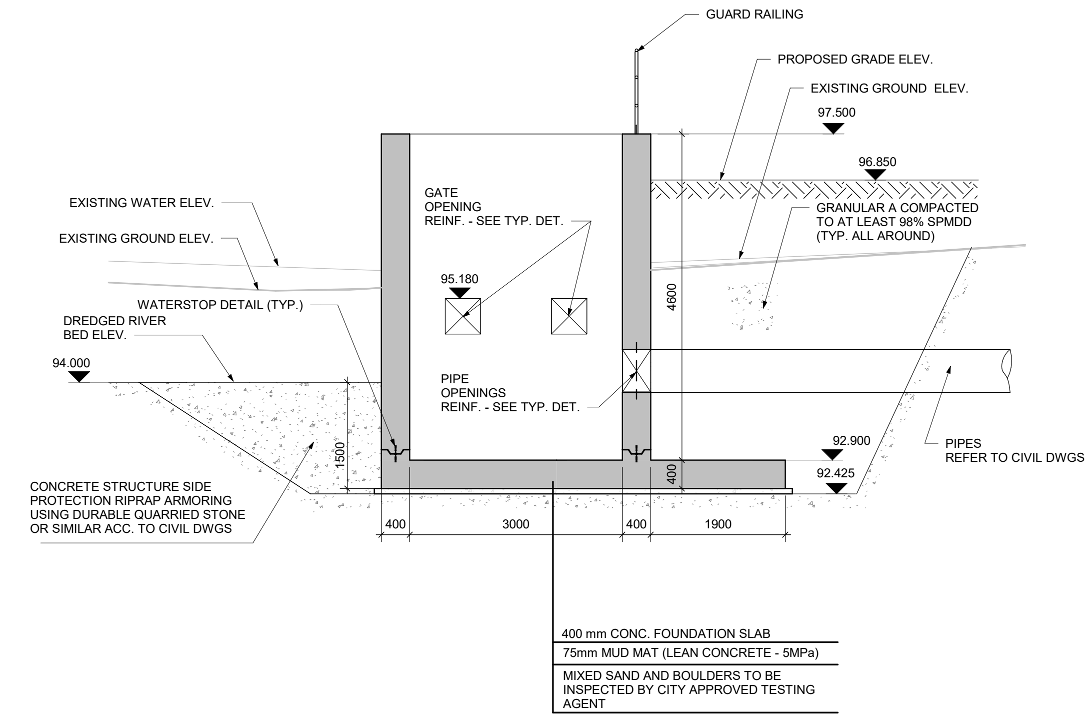
STRUCTURAL

AR PUMP STATION
SECTION 4-4, 5*-5*

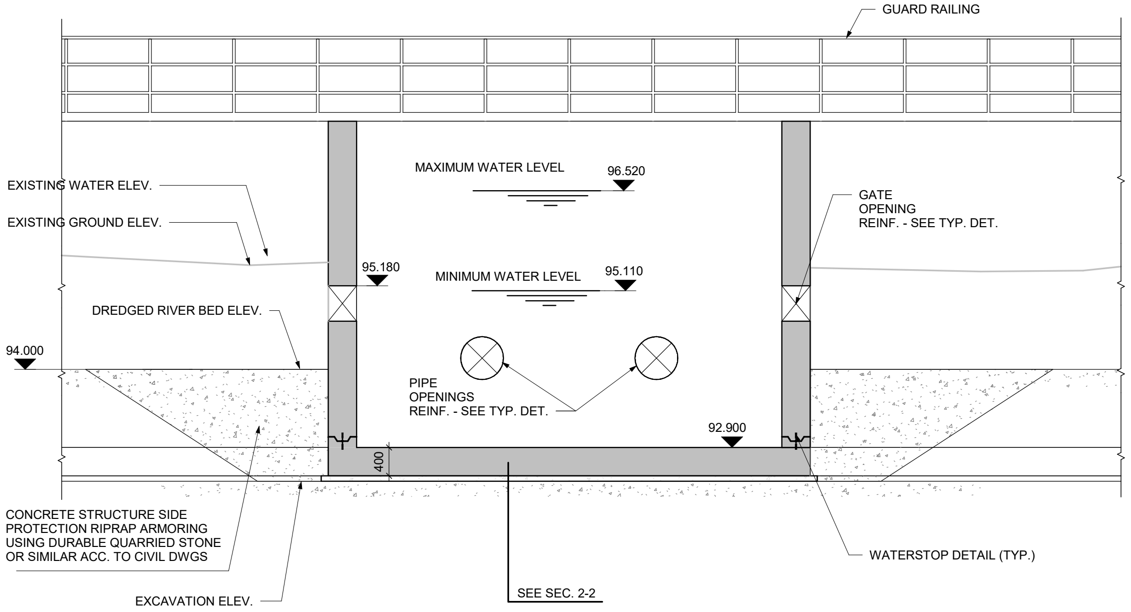
Project no.	Drawing no.	Revision no.
30192375	S1304	B


APEX RIVER
400 CONC. FOUNDATION SLAB
F.F EL=+92.900
2800
400
1900
500
6150
PIPE
OPENINGS
REINF. - SEE TYP. DET.
GATE
OPENING
REINF. - SEE TYP. DET.
TEMPORARY COFFER DAM
REFER TO CIVIL DWGS.
1500/1500/2000(h) CONC. ICE DEFL.
BLOCK
F.F EL=+94.425
400 CONC. FOUNDATION SLAB
F.F EL=+92.900
3000
2719
3
S2101
2
S2101
x 96.85
x 96.86
96.79
96.143
96.192
95.78
97.42 x
97.40

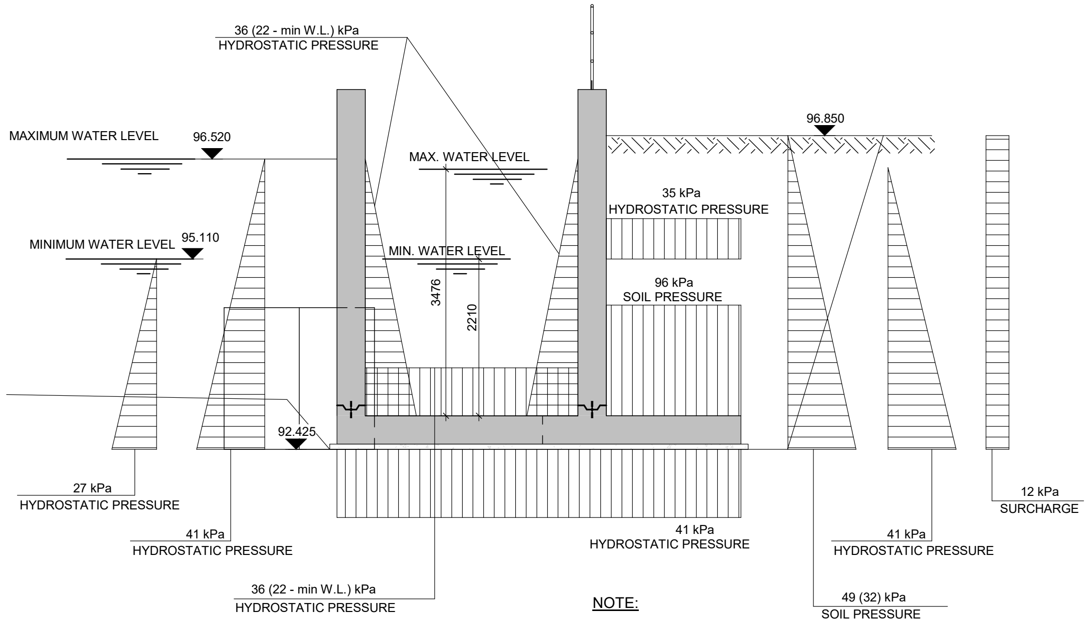
1 INTAKE FOUNDATION PLAN
S2101 Scale: 1 : 100


GUARD RAILING
PROPOSED GRADE ELEV.
EXISTING GROUND ELEV.
97.500
96.850
GRANULAR A COMPACTED
TO AT LEAST 98% SPMDD
(TYP. ALL AROUND)
EXISTING WATER ELEV.
EXISTING GROUND ELEV.
GATE
OPENING
REINF. - SEE TYP. DET.
95.180
4600
WATERSTOP DETAIL (TYP.)
DREDGED RIVER
BED ELEV.
94.000
PIPE
OPENINGS
REINF. - SEE TYP. DET.
PIPES
REFER TO CIVIL DWGS
92.900
92.425
1500
400
CONCRETE STRUCTURE SIDE
PROTECTION RIPRAP ARMORING
USING DURABLE QUARRIED STONE
OR SIMILAR ACC. TO CIVIL DWGS
400
3000
400
1900
400 mm CONC. FOUNDATION SLAB
75mm MUD MAT (LEAN CONCRETE - 5MPa)
MIXED SAND AND BOULDERS TO BE
INSPECTED BY CITY APPROVED TESTING
AGENT

2 SECTION
S2101 Scale: 1 : 50


GUARD RAILING
EXISTING WATER ELEV.
EXISTING GROUND ELEV.
MAXIMUM WATER LEVEL
96.520
GATE
OPENING
REINF. - SEE TYP. DET.
95.180
MINIMUM WATER LEVEL
95.110
DREDGED RIVER BED ELEV.
94.000
PIPE
OPENINGS
REINF. - SEE TYP. DET.
92.900
400
CONCRETE STRUCTURE SIDE
PROTECTION RIPRAP ARMORING
USING DURABLE QUARRIED STONE
OR SIMILAR ACC. TO CIVIL DWGS
EXCAVATION ELEV.
SEE SEC. 2-2
WATERSTOP DETAIL (TYP.)

3 SECTION
S2101 Scale: 1 : 50


36 (22 - min W.L.) kPa
HYDROSTATIC PRESSURE
MAXIMUM WATER LEVEL
96.520
MAX. WATER LEVEL
96.850
35 kPa
HYDROSTATIC PRESSURE
MINIMUM WATER LEVEL
95.110
MIN. WATER LEVEL
3476
2210
96 kPa
SOIL PRESSURE
92.425
27 kPa
HYDROSTATIC PRESSURE
41 kPa
HYDROSTATIC PRESSURE
41 kPa
HYDROSTATIC PRESSURE
41 kPa
HYDROSTATIC PRESSURE
12 kPa
SURCHARGE
36 (22 - min W.L.) kPa
HYDROSTATIC PRESSURE
49 (32) kPa
SOIL PRESSURE

NOTE:

At-rest pressure
Active pressure
xx.xx (xx.xx)

- for the balanced case, at-rest pressure should be applied on both sides of the structure.
- for the unbalanced case, at-rest pressure should be applied on one side and active pressure on the opposite side.

4 LOAD DIAGRAM
S2101 Scale: 1 : 50

NOTES:

1. REFER TO GENERAL NOTES / TYPICAL DETAILS FOR CONCRETE STRENGTH AND REINFORCING LAPPING AND COVER.
2. MINIMUM SUBGRADE BEARING CAPACITY 1500 kPa (ULS) — TO BE VERIFIED ON SITE BY CONTRACTOR.
3. TEMPORARY SHORING TO BE PROVIDED BY CONTRACTOR WHERE REQUIRED.
4. SERVICE LOADS SEE LOAD DIAGRAM.
5. REFER TO PROCESS / MECHANICAL / ELECTRICAL DRAWINGS FOR OPENING SIZE, LOCATION, AND COORDINATION REQUIREMENTS.

0 10 20 30 40 50 60 70 80 90 100mm

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
A	ISSUED FOR 50% DESIGN REVIEW	2025-12-19

Consultant

8133 Warden Avenue - Unit 300
Markham ON L6G 1B3 Canada
tel 905 763 2322
www.arcadis.com

Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
M.S.

Drawn by
Y.N.

Approved by
K.A.

Project Manager
C.G.

Drawing Title

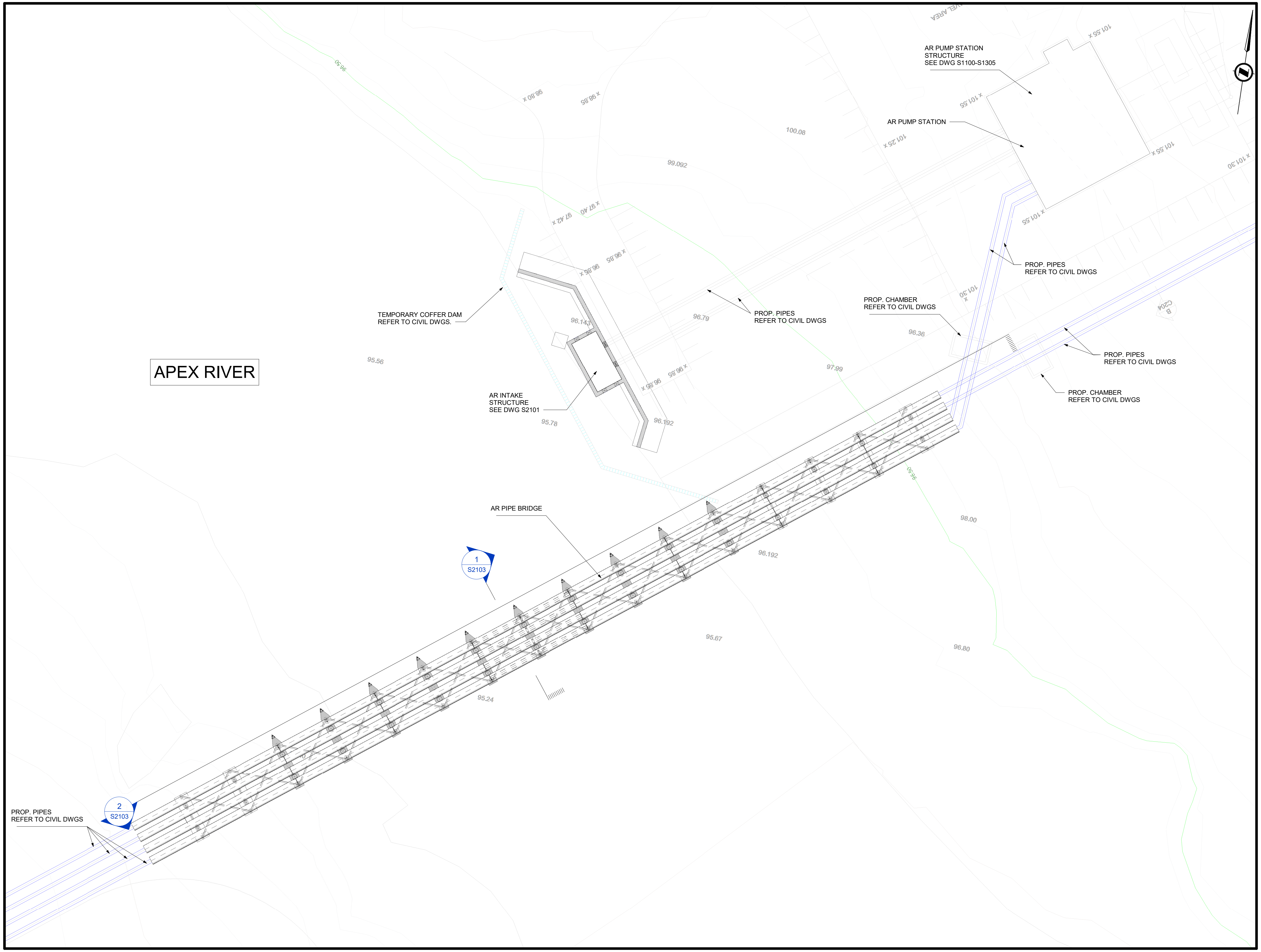
STRUCTURAL INFRASTRUCTURE

AR INTAKE

Project no.	Drawing no.	Revision no.
30192375	S2101	A

Autodesk Docs://30288139-Iqaluit_LongTermWater C3D2025/IQL-ARCA-S-INFRASTRUCTURE-23.rvt

A1 - 841X594


APEX RIVER
AR PUMP STATION
STRUCTURE
SEE DWG S1100-S1305
AR PUMP STATION
PROP. PIPES
REFER TO CIVIL DWGS
TEMPORARY COFFER DAM
REFER TO CIVIL DWGS.
PROP. PIPES
REFER TO CIVIL DWGS
PROP. CHAMBER
REFER TO CIVIL DWGS
PROP. PIPES
REFER TO CIVIL DWGS
PROP. CHAMBER
REFER TO CIVIL DWGS
AR INTAKE
STRUCTURE
SEE DWG S2101
AR PIPE BRIDGE
1
S2103
2
S2103
PROP. PIPES
REFER TO CIVIL DWGS
100.08
99.092
96.79
96.143
96.36
97.99
95.56
95.78
96.192
98.00
96.192
95.67
96.80
95.24

1 AR PIPE BRIDGE
S2102 Scale: 1 : 200

NOTE:
1. REFER TO GENERAL NOTES / TYPICAL DETAILS FOR CONCRETE STRENGTH AND REINFORCING LAPPING AND COVER.
2. ALL EXISTING / NEW SOIL ELEVATIONS VERIFY IN ACCORDANCE WITH CIVIL DWGS.

0 10 20 30 40 50 60 70 80 90 100mm

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
M.S.

Drawn by
Y.N.

Approved by
K.A.

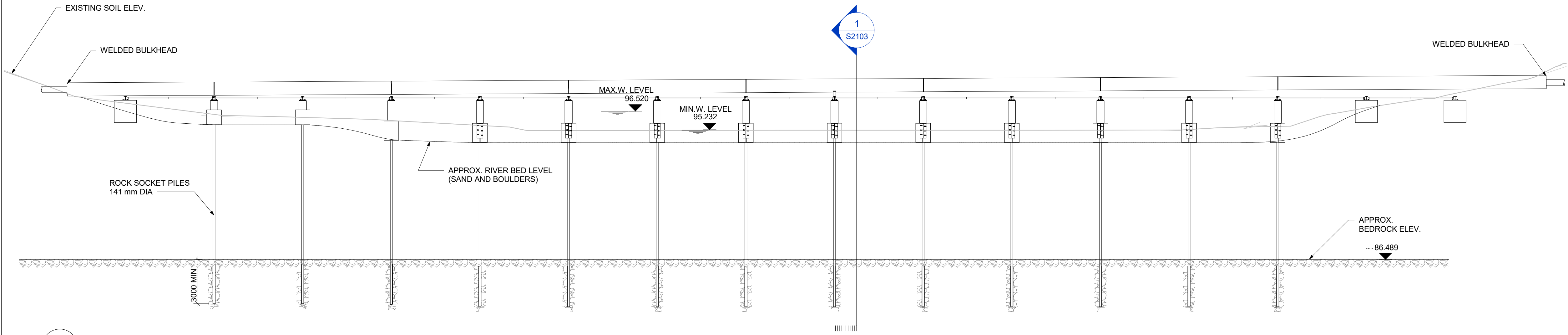
Project Manager
C.G.

Drawing Title

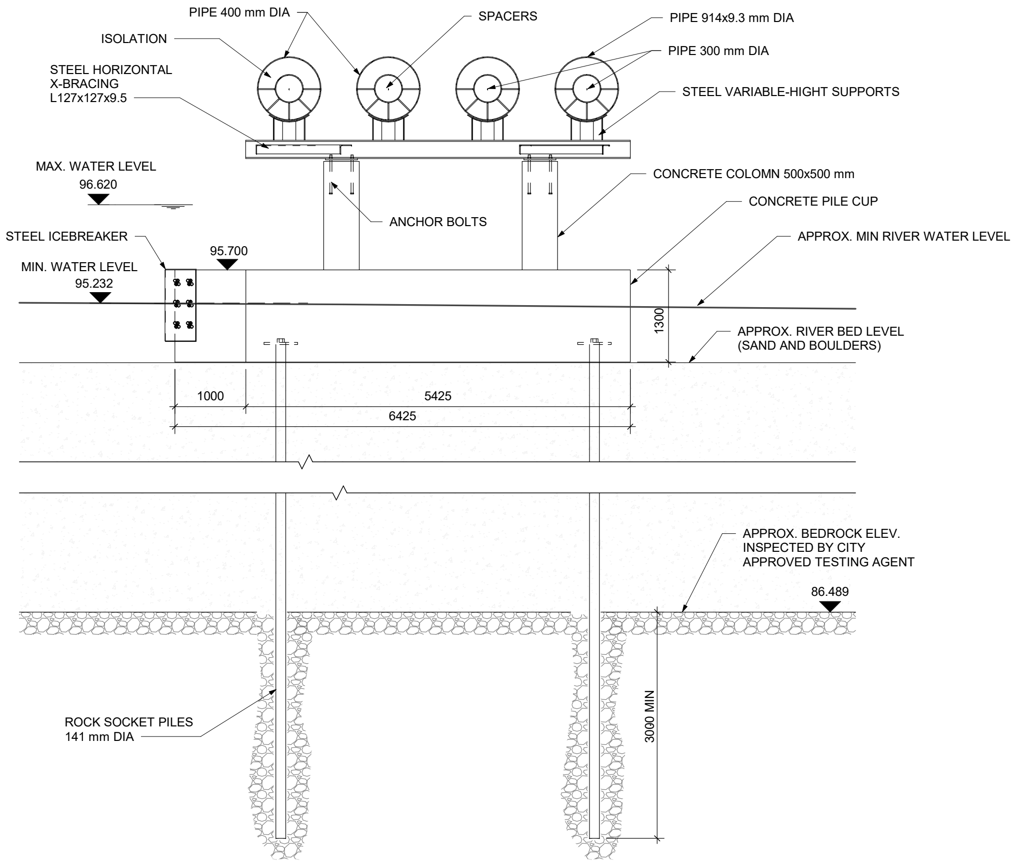
STRUCTURAL INFRASTRUCTURE

AR PIPE BRIDGE

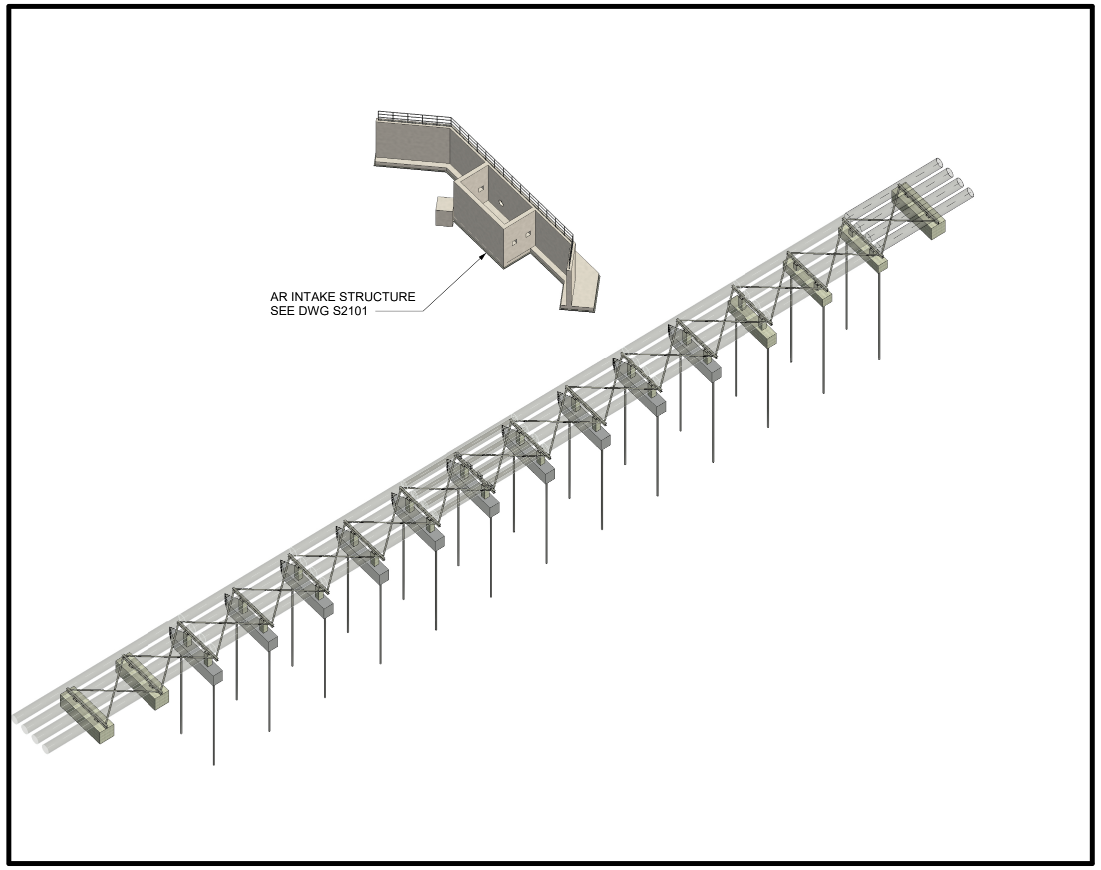
Project no.	Drawing no.	Revision no.
30192375	S2102	A


EXISTING SOIL ELEV.
WELDED BULKHEAD
1
S2103
WELDED BULKHEAD
MAX.W. LEVEL
96.520
MIN.W. LEVEL
95.232
APPROX. RIVER BED LEVEL
(SAND AND BOULDERS)
ROCK SOCKET PILES
141 mm DIA
APPROX.
BEDROCK ELEV.
86.489
3000 MIN

2
S2103
Elevation 9
Scale: 1 : 150


PIPE 400 mm DIA
SPACERS
PIPE 914x9.3 mm DIA
ISOLATION
PIPE 300 mm DIA
STEEL HORIZONTAL
X-BRACING
L127x127x9.5
STEEL VARIABLE-HIGHT SUPPORTS
MAX. WATER LEVEL
96.620
CONCRETE COLOMN 500x500 mm
CONCRETE PILE CUP
ANCHOR BOLTS
STEEL ICEBREAKER
95.700
APPROX. MIN RIVER WATER LEVEL
MIN. WATER LEVEL
95.232
1300
APPROX. RIVER BED LEVEL
(SAND AND BOULDERS)
1000
5425
6425
APPROX. BEDROCK ELEV.
INSPECTED BY CITY
APPROVED TESTING AGENT
86.489
ROCK SOCKET PILES
141 mm DIA
3000 MIN

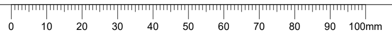
1
S2103
Section 4
Scale: 1 : 50


AR INTAKE STRUCTURE
SEE DWG S2101

3
S2103
3D AR BRIDGE
Scale:

NOTE:

1. REFER TO GENERAL NOTES / TYPICAL DETAILS FOR CONCRETE STRENGTH AND REINFORCING LAPPING AND COVER.
2. ALL EXISTING / NEW SOIL ELEVATIONS VERIFY IN ACCORDANCE WITH CIVIL DWGS.
3. FACTORED ULS AXIAL LOAD PER PILE: 193 kN (COMP.)
FACTORED GEOTECHNICAL RESISTANCE (ROCK SOCKET, Ø141 mm): 800 kN (COMPRESSION).


0
10
20
30
40
50
60
70
80
90
100mm

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
M.S.

Drawn by
Y.N.

Approved by
K.A.

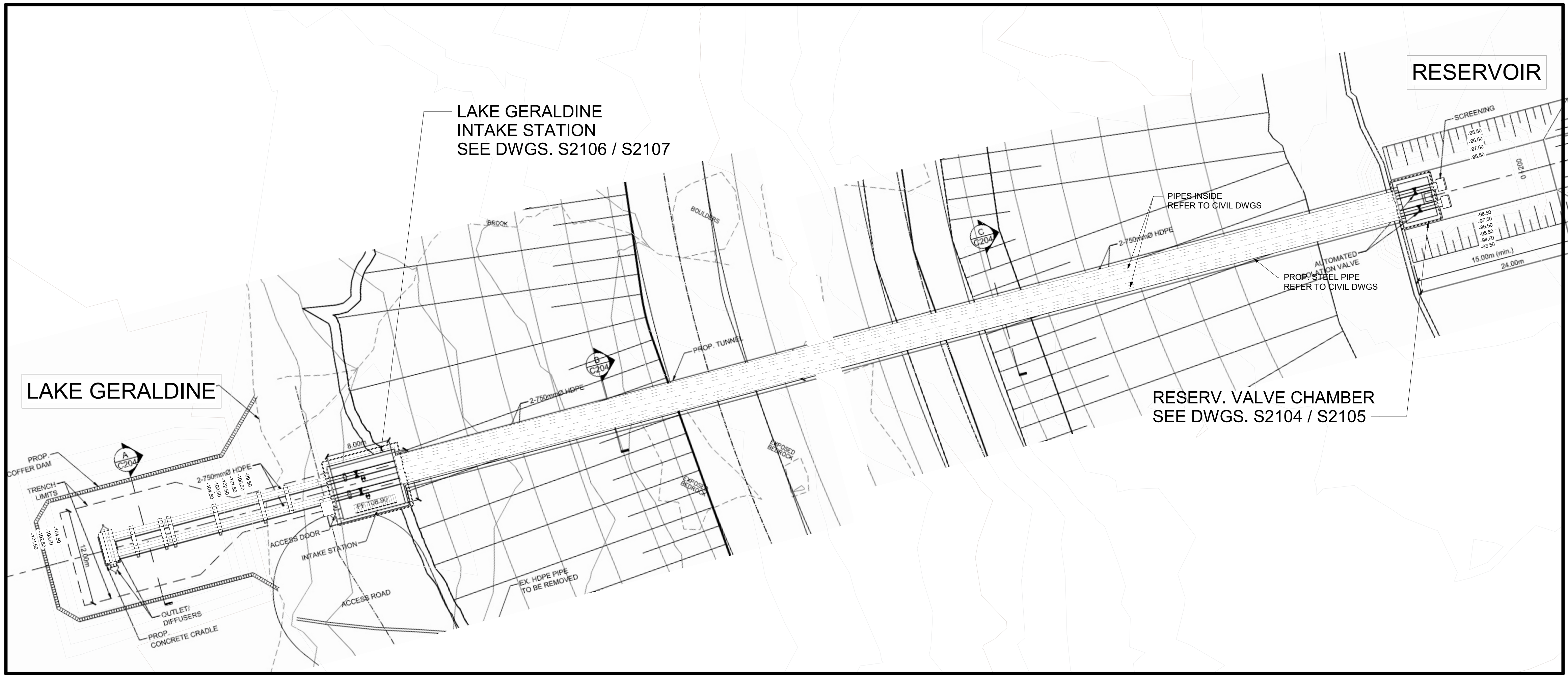
Project Manager
C.G.

Drawing Title

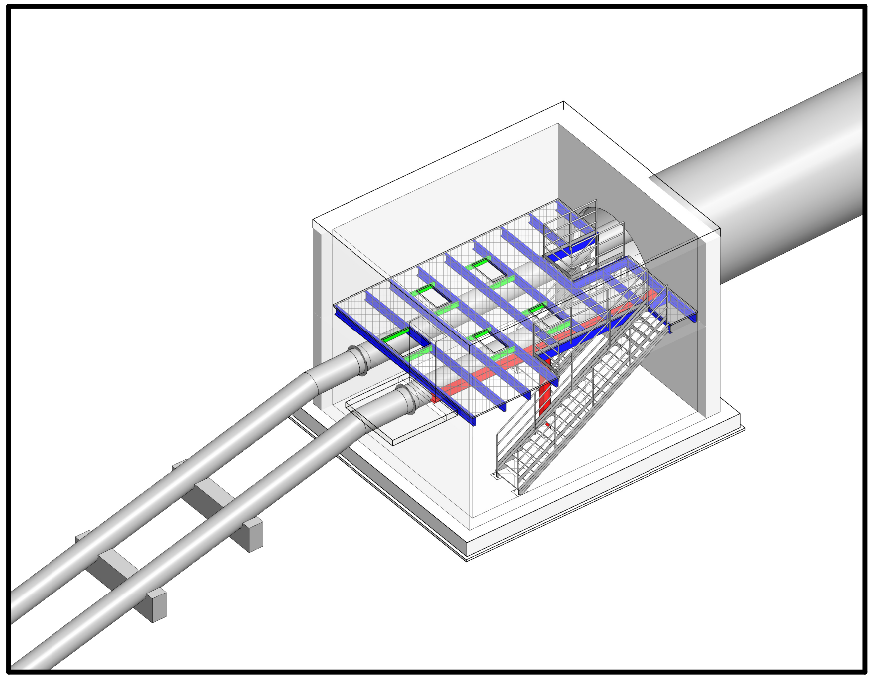
STRUCTURAL INFRASTRUCTURE

AR PIPE BRIDGE. SECTIONS

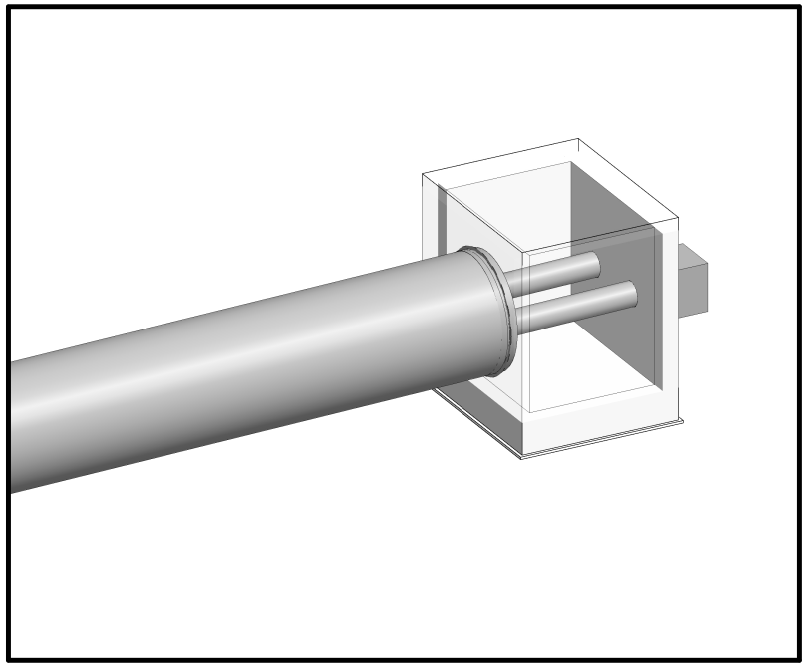
Project no.	Drawing no.	Revision no.
30192375	**S2103**	**A**


RESERVOIR
LAKE GERALDINE
INTAKE STATION
SEE DWGS. S2106 / S2107
LAKE GERALDINE
RESERV. VALVE CHAMBER
SEE DWGS. S2104 / S2105
PIPES INSIDE
REFER TO CIVIL DWGS
PROP. STEEL PIPE
REFER TO CIVIL DWGS
AUTOMATED
ISOLATION VALVE
SCREENING
-95.50
-96.50
-97.50
-98.50
0+200
-98.50
-97.50
-96.50
-95.50
-94.50
-93.50
15.00m (min.)
24.00m
2-750mmØ HDPE
C
C204
PROP. TUNNEL
B
C204
2-750mmØ HDPE
BROOK
BOULDERS
EXPOSED
BEDROCK
EXPOSED
BEDROCK
EX. HDPE PIPE
TO BE REMOVED
ACCESS ROAD
INTAKE STATION
ACCESS DOOR
FF 108.90
8.00m
2-750mmØ HDPE
-99.50
-100.50
-101.50
-102.50
-103.50
-104.50
A
C204
PROP.
COFFER DAM
TRENCH
LIMITS
-104.50
-103.50
-102.50
-101.50
12.00m
OUTLET/
DIFFUSERS
PROP.
CONCRETE CRADLE

1 / S2104 LG INTAKE AND CONVEYANCE STRUCTURE
Scale: 1 : 300



2 / S2104 3D VIEW - INTAKE STATION
Scale:



3 / S2104 3D VIEW - RESERV. VALVE CHAMBER
Scale:

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0 10 20 30 40 50 60 70 80 90 100mm

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LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
M.S.

Drawn by
Y.N.

Approved by
K.A.

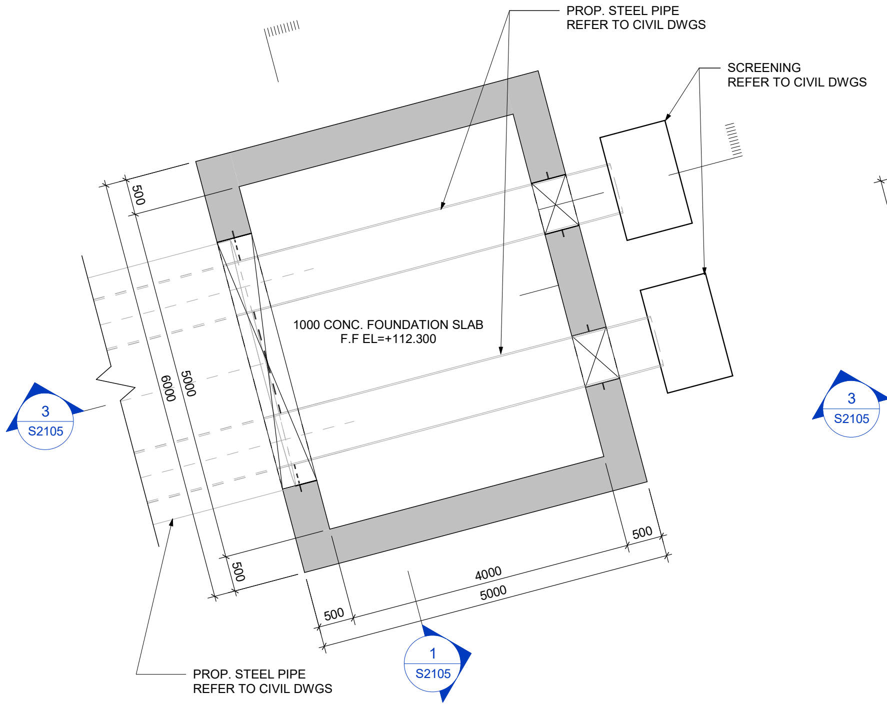
Project Manager
C.G.

Drawing Title

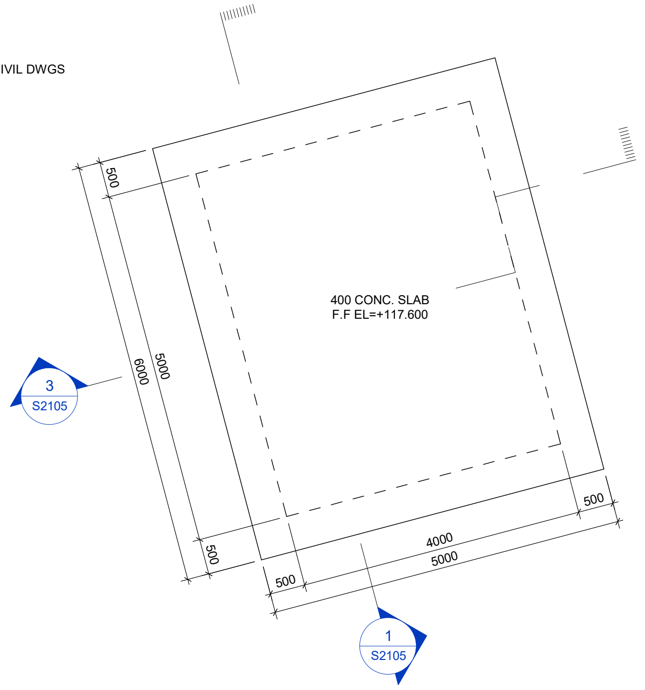
STRUCTURAL INFRASTRUCTURE

LG INTAKE AND CONVEYANCE STRUCTURE

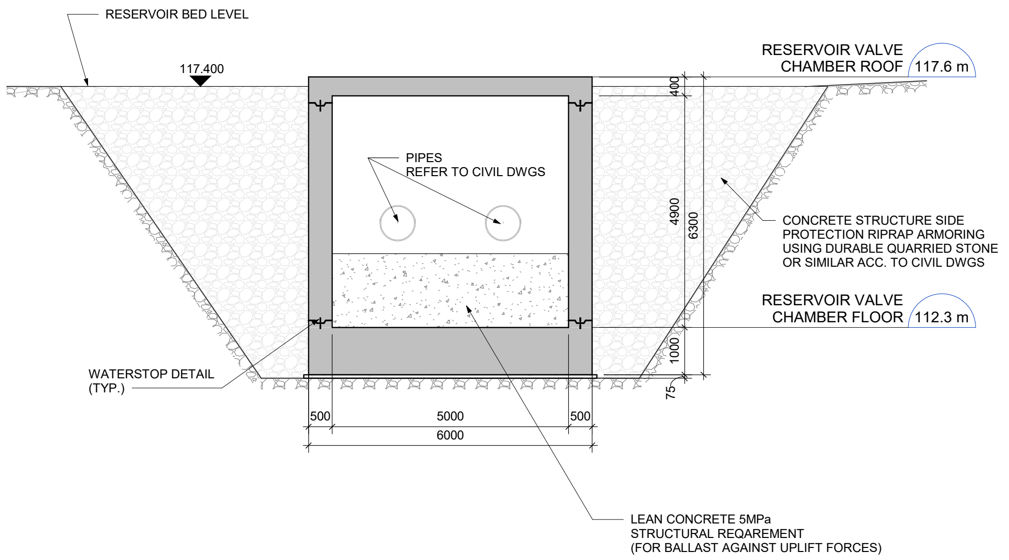
Project no.	Drawing no.	Revision no.
30192375	S2104	A


PROP. STEEL PIPE
REFER TO CIVIL DWGS
SCREENING
REFER TO CIVIL DWGS
1000 CONC. FOUNDATION SLAB
F.F EL=+112.300
500
6000
5000
500
4000
5000
500
500
3
S2105
1
S2105
PROP. STEEL PIPE
REFER TO CIVIL DWGS

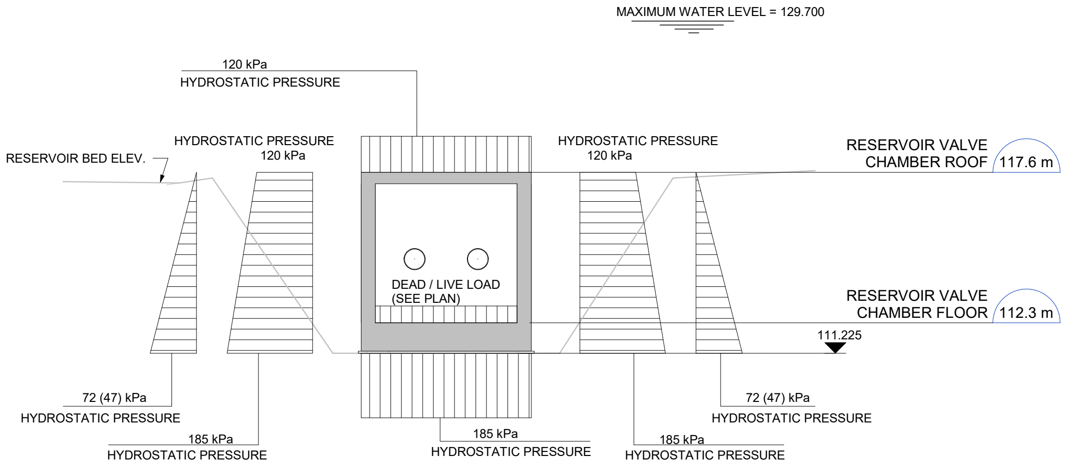
4 S2105 **RESERVOIR VALVE CHAMBER FLOOR**
Scale: 1 : 50


400 CONC. SLAB
F.F EL=+117.600
500
6000
5000
500
4000
5000
500
500
3
S2105
1
S2105

5 S2105 **RESERVOIR VALVE CHAMBER ROOF**
Scale: 1 : 50


RESERVOIR BED LEVEL
117.400
RESERVOIR VALVE
CHAMBER ROOF 117.6 m
PIPES
REFER TO CIVIL DWGS
400
4900
6300
1000
75
CONCRETE STRUCTURE SIDE
PROTECTION RIPRAP ARMORING
USING DURABLE QUARRIED STONE
OR SIMILAR ACC. TO CIVIL DWGS
RESERVOIR VALVE
CHAMBER FLOOR 112.3 m
WATERSTOP DETAIL
(TYP.)
500
5000
500
6000
LEAN CONCRETE 5MPa
STRUCTURAL REQAREMENT
(FOR BALLAST AGAINST UPLIFT FORCES)

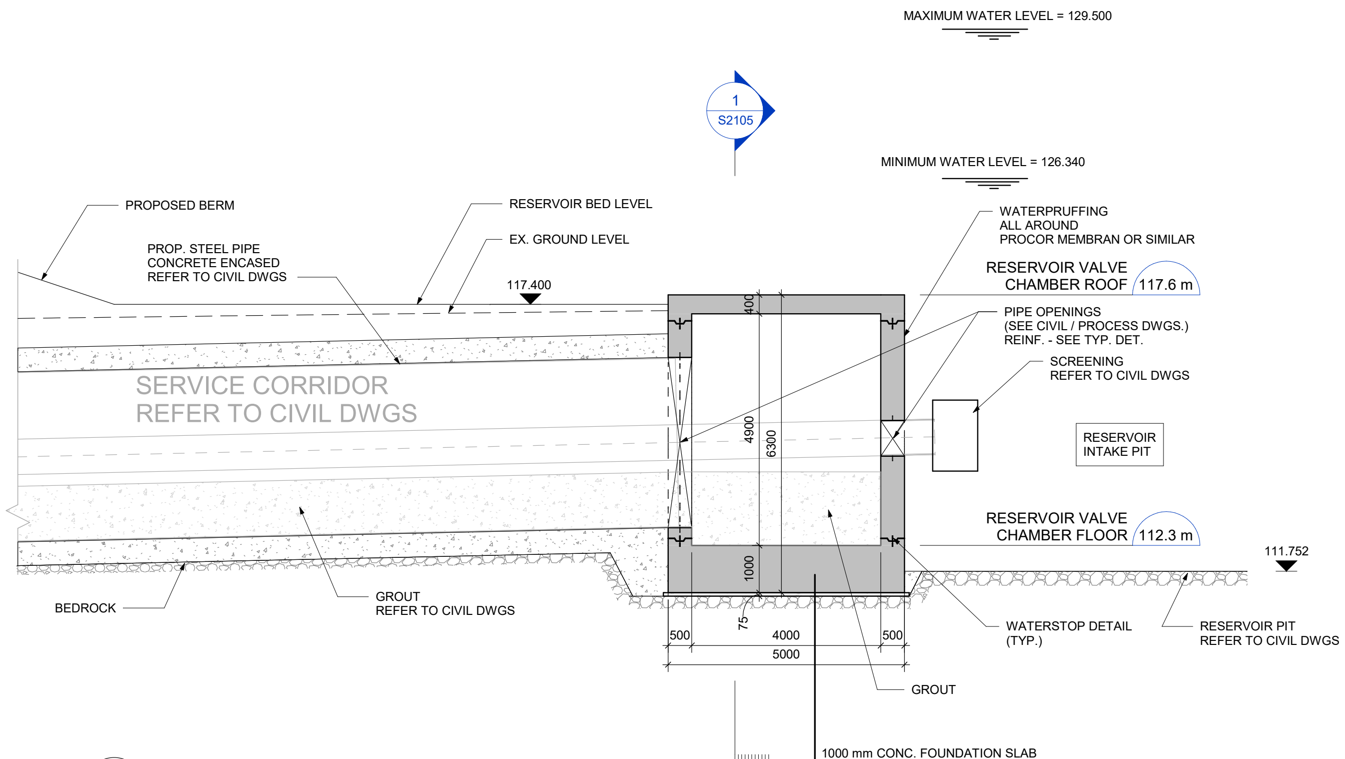
1 S2105 **RESERVOIR VALVE CHAMBER**
Scale: 1 : 75


MAXIMUM WATER LEVEL = 129.700
120 kPa
HYDROSTATIC PRESSURE
HYDROSTATIC PRESSURE
120 kPa
HYDROSTATIC PRESSURE
120 kPa
RESERVOIR BED ELEV.
RESERVOIR VALVE
CHAMBER ROOF 117.6 m
DEAD / LIVE LOAD
(SEE PLAN)
RESERVOIR VALVE
CHAMBER FLOOR 112.3 m
111.225
72 (47) kPa
HYDROSTATIC PRESSURE
185 kPa
HYDROSTATIC PRESSURE
185 kPa
HYDROSTATIC PRESSURE
185 kPa
HYDROSTATIC PRESSURE
72 (47) kPa
HYDROSTATIC PRESSURE

NOTE:

At-rest pressure Active pressure
xx.xx (xx.xx)
- for the balanced case, at-rest pressure should be applied on both sides of the structure.
- for the unbalanced case, at-rest pressure should be applied on one side and active pressure on the opposite side.

2 S2105 **LOAD DIAGRAM**
Scale: 1 : 125


MAXIMUM WATER LEVEL = 129.500
1
S2105
MINIMUM WATER LEVEL = 126.340
PROPOSED BERM
RESERVOIR BED LEVEL
EX. GROUND LEVEL
PROP. STEEL PIPE
CONCRETE ENCASED
REFER TO CIVIL DWGS
117.400
WATERPRUFFING
ALL AROUND
PROCOR MEMBRAN OR SIMILAR
RESERVOIR VALVE
CHAMBER ROOF 117.6 m
PIPE OPENINGS
(SEE CIVIL / PROCESS DWGS.)
REINF. - SEE TYP. DET.
SCREENING
REFER TO CIVIL DWGS
SERVICE CORRIDOR
REFER TO CIVIL DWGS
400
4900
6300
1000
75
RESERVOIR
INTAKE PIT
RESERVOIR VALVE
CHAMBER FLOOR 112.3 m
111.752
BEDROCK
GROUT
REFER TO CIVIL DWGS
WATERSTOP DETAIL
(TYP.)
RESERVOIR PIT
REFER TO CIVIL DWGS
500
4000
500
5000
GROUT
1000 mm CONC. FOUNDATION SLAB
75 mm MUD MAT (LEAN CONCRETE - 5MPa)
BEDROCK TO BE INSPECTED BY CITY
APPROVED TESTING AGENT

3 S2105 **RESERVOIR VALVE CHAMBER**
Scale: 1 : 75

NOTES:

1. REFER TO GENERAL NOTES / TYPICAL DETAILS FOR CONCRETE STRENGTH AND REINFORCING LAPPING AND COVER.
2. MINIMUM SUBGRADE BEARING CAPACITY 1500 kPa (ULS) — TO BE VERIFIED ON SITE BY CONTRACTOR.
3. TEMPORARY SHORING TO BE PROVIDED BY CONTRACTOR WHERE REQUIRED.
4. SERVICE LOADS ON FOUNDATION SLAB: D.L.=3.6 kPa; L.L.=12.0 kPa.
   SERVICE LOADS ON ROOF: D.L.=0.0 kPa; L.L. (HYDROSTATIC)=120.0 kPa.
5. REFER TO ARCHITECTURAL PLANS AND SECTIONS FOR EXACT LOCATIONS AND PLAN DIMENSIONS.
6. REFER TO PROCESS / MECHANICAL / ELECTRICAL DRAWINGS FOR OPENING SIZE, LOCATION, AND COORDINATION REQUIREMENTS.

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0 10 20 30 40 50 60 70 80 90 100mm

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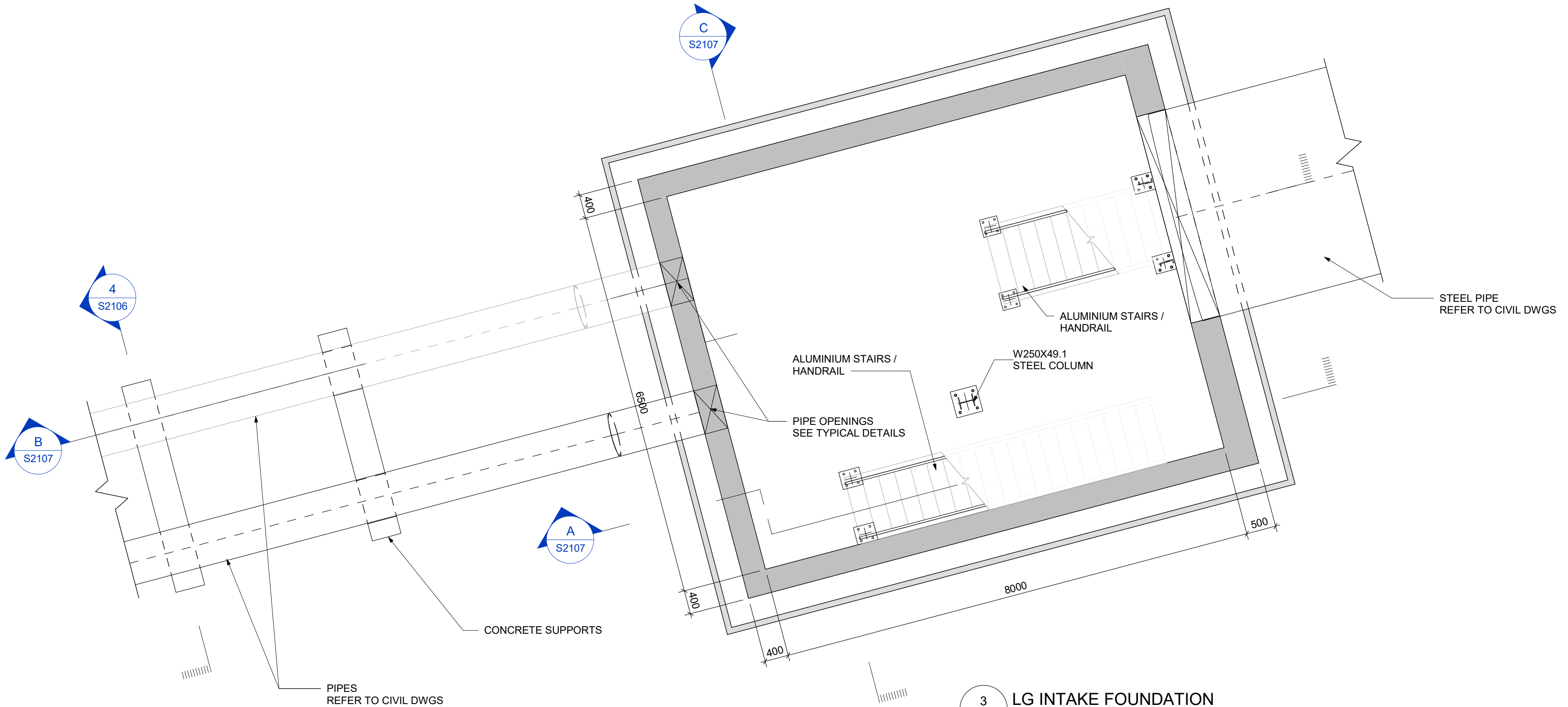
CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

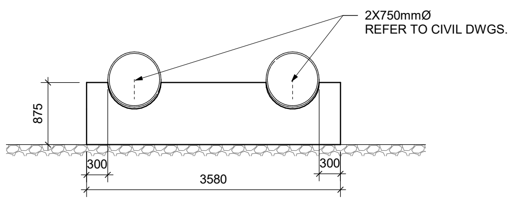
Designed by
M.S.
Drawn by
Y.N.
Approved by
K.A.
Project Manager
C.G.
Drawing Title
STRUCTURAL INFRASTRUCTURE

RESERVOIR VALVE CHAMBER

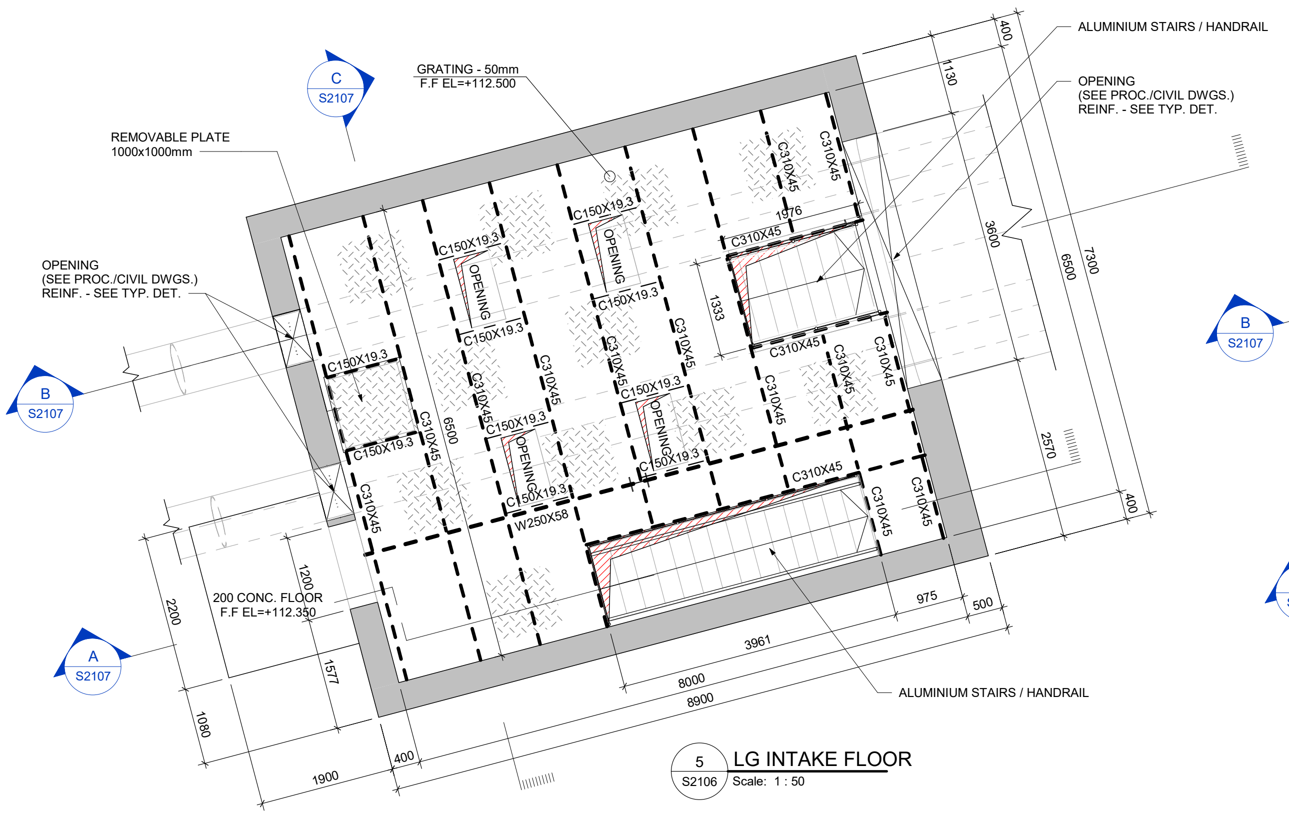
Project no.	Drawing no.	Revision no.
30192375	S2105	A


C
S2107
4
S2106
B
S2107
A
S2107
400
6500
400
8000
400
500
ALUMINIUM STAIRS / HANDRAIL
ALUMINIUM STAIRS / HANDRAIL
W250X49.1
STEEL COLUMN
PIPE OPENINGS
SEE TYPICAL DETAILS
STEEL PIPE
REFER TO CIVIL DWGS
CONCRETE SUPPORTS
PIPES
REFER TO CIVIL DWGS

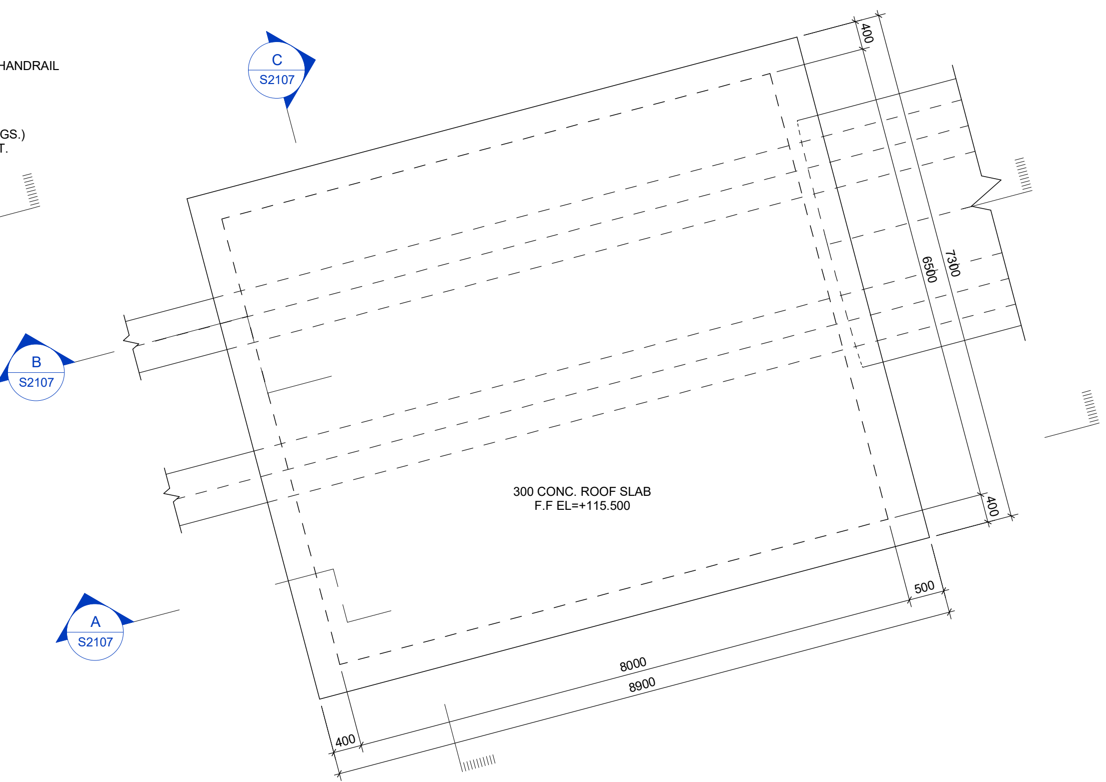
3 S2106 **LG INTAKE FOUNDATION**
Scale: 1 : 50


2X750mmØ
REFER TO CIVIL DWGS.
875
300
300
3580

4 S2106 **CONCRETE SUPPORT DETAIL**
Scale: 1 : 50


C
S2107
B
S2107
A
S2107
GRATING - 50mm
F.F EL=+112.500
REMOVABLE PLATE
1000x1000mm
OPENING
(SEE PROC./CIVIL DWGS.)
REINF. - SEE TYP. DET.
ALUMINIUM STAIRS / HANDRAIL
OPENING
(SEE PROC./CIVIL DWGS.)
REINF. - SEE TYP. DET.
C150X19.3
C310X45
W250X58
OPENING
1976
1333
3600
6500
7300
2570
400
400
1130
975
500
3961
8000
8900
6500
200 CONC. FLOOR
F.F EL=+112.350
1200
2200
1577
1080
1900
400
ALUMINIUM STAIRS / HANDRAIL

5 S2106 **LG INTAKE FLOOR**
Scale: 1 : 50


C
S2107
B
S2107
A
S2107
400
6500
7300
400
500
300 CONC. ROOF SLAB
F.F EL=+115.500
8000
8900
400

1 S2106 **LG INTAKE ROOF**
Scale: 1 : 50

NOTES:

1. REFER TO GENERAL NOTES / TYPICAL DETAILS FOR CONCRETE STRENGTH AND REINFORCING LAPPING AND COVER.
2. MINIMUM SUBGRADE BEARING CAPACITY 1500 kPa (ULS) — TO BE VERIFIED ON SITE BY CONTRACTOR.
3. TEMPORARY SHORING TO BE PROVIDED BY CONTRACTOR WHERE REQUIRED.
4. SERVICE LOADS ON FOUNDATION SLAB / GRATING: D.L.=3.6 kPa; L.L.=12.0 kPa.
   SERVICE LOADS ON ROOF: D.L.=1.0 kPa; L.L.=1.0 kPa; SNOW LOAD = 2.27 kPa.
5. REFER TO ARCHITECTURAL PLANS AND SECTIONS FOR EXACT LOCATIONS AND PLAN DIMENSIONS.
6. REFER TO PROCESS / MECHANICAL / ELECTRICAL DRAWINGS FOR OPENING SIZE, LOCATION, AND COORDINATION REQUIREMENTS.

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
A	ISSUED FOR 50% DESIGN REVIEW	2025-12-19

Consultant

ARCADIS
8133 Warden Avenue - Unit 300
Markham ON L6G 1B3 Canada
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Project title
CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
M.S.
Drawn by
Y.N.
Approved by
K.A.
Project Manager
C.G.
Drawing Title
STRUCTURAL INFRASTRUCTURE

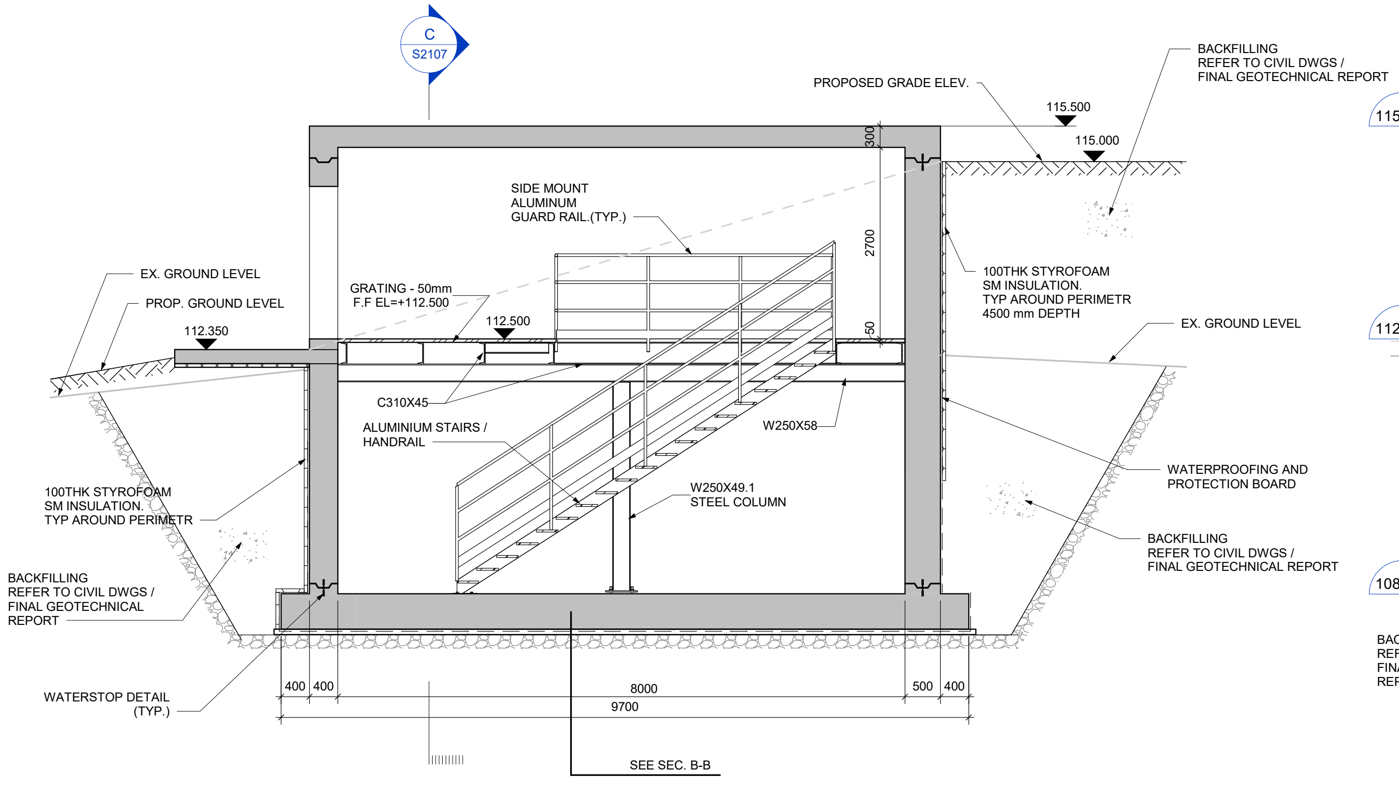
LG INTAKE

Project no.	Drawing no.	Revision no.
30192375	S2106	A

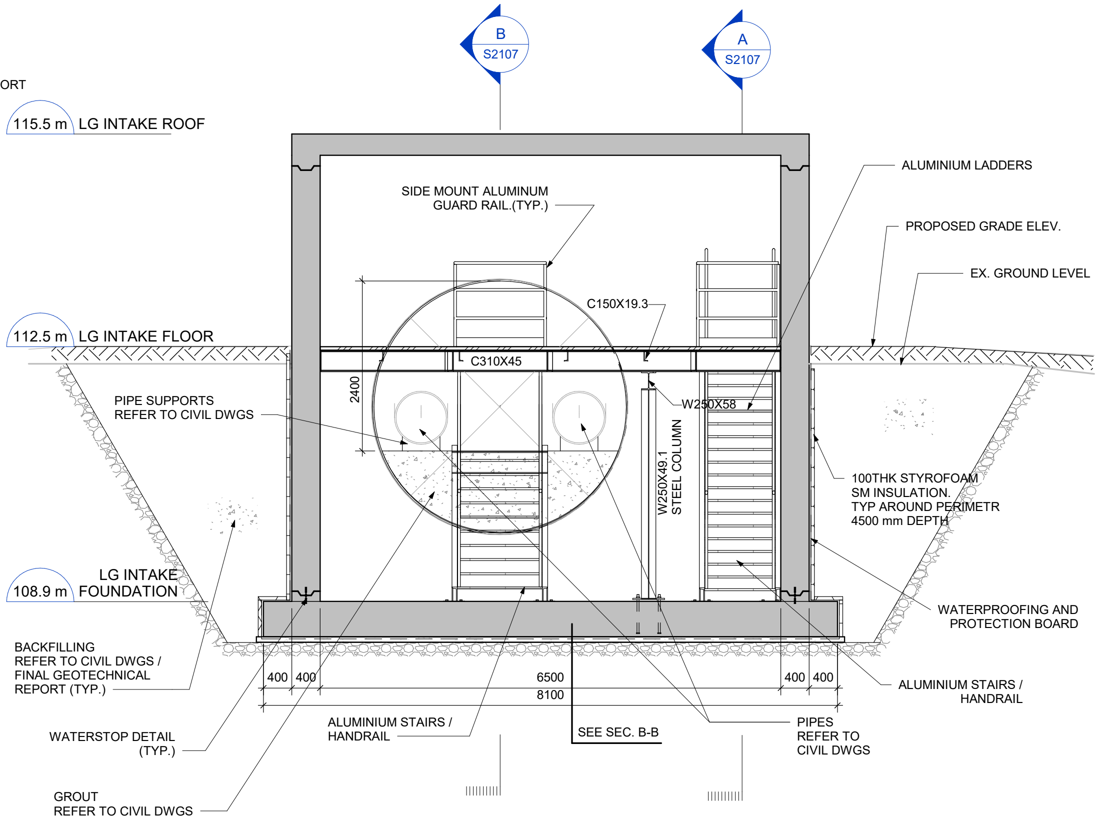
0 10 20 30 40 50 60 70 80 90 100mm

Autodesk Docs://30288139-Iqaluit_LongTermWater C3D2025/IQL-ARCA-S-INFRASTRUCTURE-23.rvt

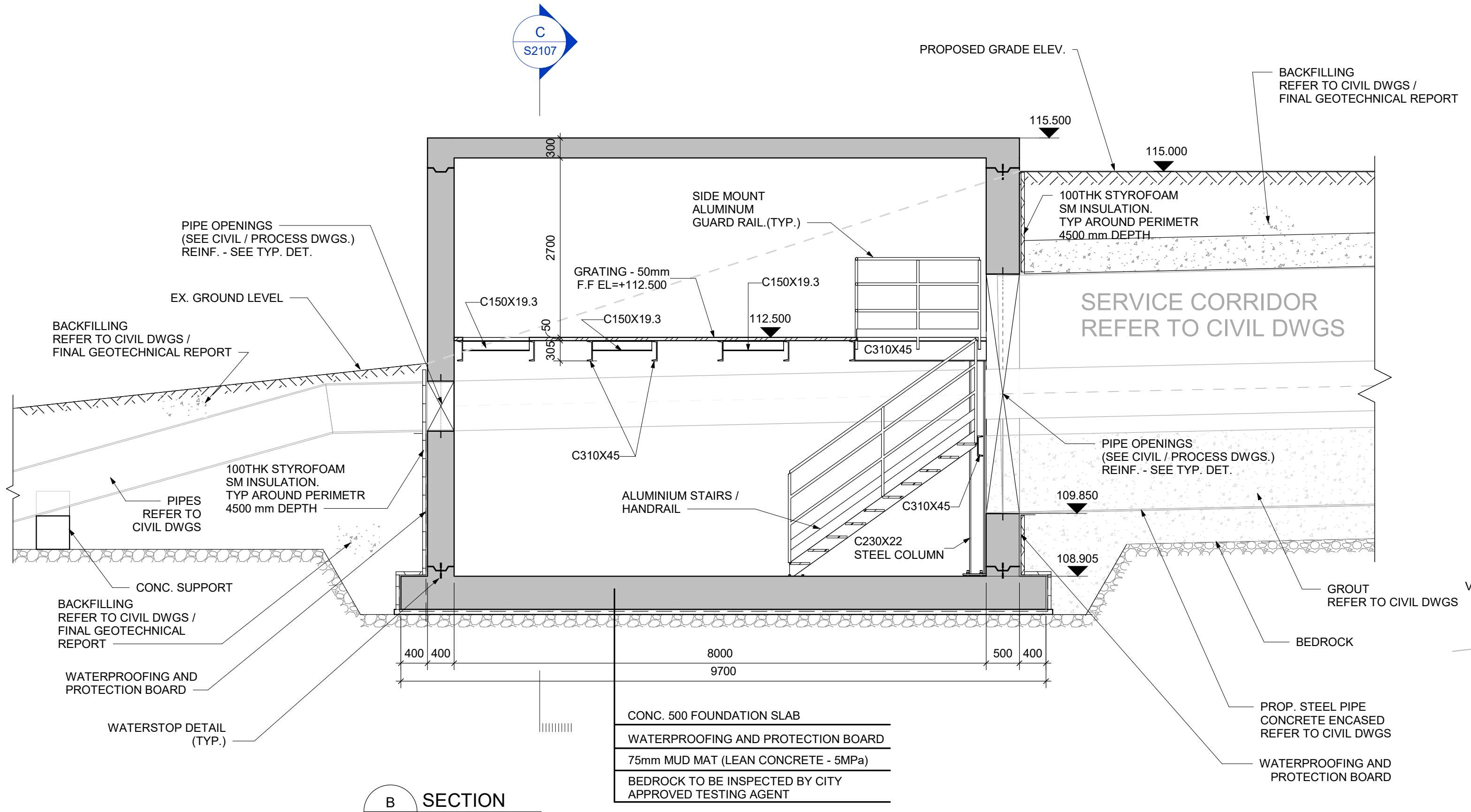
A1 - 841X594


C
S2107
PROPOSED GRADE ELEV.
115.500
115.000
BACKFILLING
REFER TO CIVIL DWGS /
FINAL GEOTECHNICAL REPORT
300
2700
50
SIDE MOUNT
ALUMINUM
GUARD RAIL (TYP.)
EX. GROUND LEVEL
PROP. GROUND LEVEL
112.350
GRATING - 50mm
F.F EL=+112.500
112.500
100THK STYROFOAM
SM INSULATION.
TYP AROUND PERIMETR
4500 mm DEPTH
EX. GROUND LEVEL
C310X45
ALUMINIUM STAIRS /
HANDRAIL
W250X58
W250X49.1
STEEL COLUMN
WATERPROOFING AND
PROTECTION BOARD
100THK STYROFOAM
SM INSULATION.
TYP AROUND PERIMETR
BACKFILLING
REFER TO CIVIL DWGS /
FINAL GEOTECHNICAL REPORT
BACKFILLING
REFER TO CIVIL DWGS /
FINAL GEOTECHNICAL
REPORT
WATERSTOP DETAIL
(TYP.)
400
400
8000
500
400
9700
SEE SEC. B-B

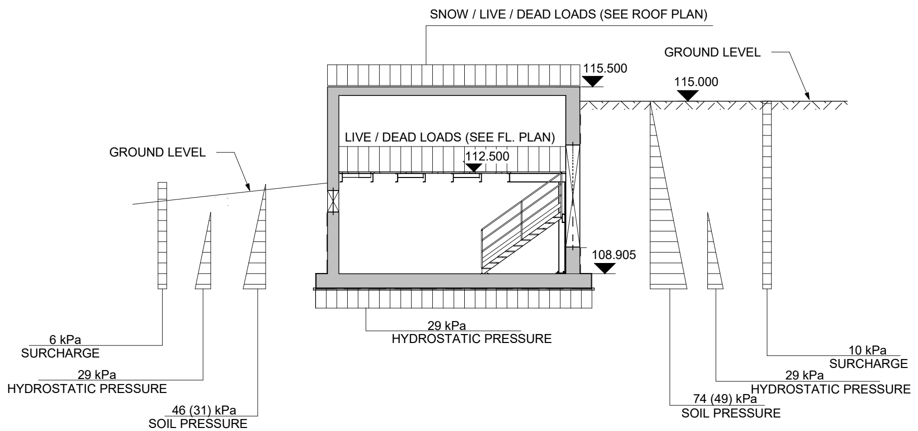
A
S2107
SECTION
Scale: 1 : 50


B
S2107
A
S2107
115.5 m LG INTAKE ROOF
ALUMINIUM LADDERS
SIDE MOUNT ALUMINUM
GUARD RAIL (TYP.)
PROPOSED GRADE ELEV.
EX. GROUND LEVEL
C150X19.3
112.5 m LG INTAKE FLOOR
C310X45
2400
W250X58
PIPE SUPPORTS
REFER TO CIVIL DWGS
W250X49.1
STEEL COLUMN
100THK STYROFOAM
SM INSULATION.
TYP AROUND PERIMETR
4500 mm DEPTH
LG INTAKE
108.9 m FOUNDATION
WATERPROOFING AND
PROTECTION BOARD
BACKFILLING
REFER TO CIVIL DWGS /
FINAL GEOTECHNICAL
REPORT (TYP.)
400
400
6500
400
400
8100
ALUMINIUM STAIRS /
HANDRAIL
ALUMINIUM STAIRS /
HANDRAIL
WATERSTOP DETAIL
(TYP.)
SEE SEC. B-B
PIPES
REFER TO
CIVIL DWGS
GROUT
REFER TO CIVIL DWGS

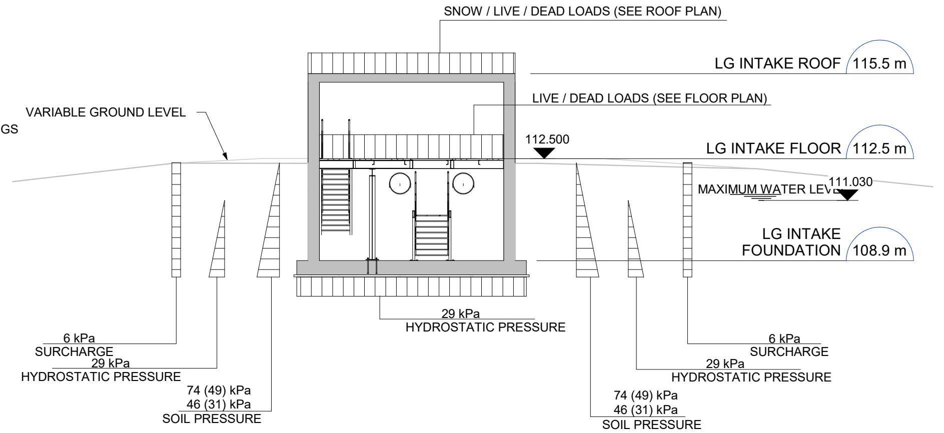
C
S2107
SECTION
Scale: 1 : 50


C
S2107
PROPOSED GRADE ELEV.
BACKFILLING
REFER TO CIVIL DWGS /
FINAL GEOTECHNICAL REPORT
115.500
115.000
300
2700
SIDE MOUNT
ALUMINUM
GUARD RAIL (TYP.)
100THK STYROFOAM
SM INSULATION.
TYP AROUND PERIMETR
4500 mm DEPTH
PIPE OPENINGS
(SEE CIVIL / PROCESS DWGS.)
REINF. - SEE TYP. DET.
SERVICE CORRIDOR
REFER TO CIVIL DWGS
EX. GROUND LEVEL
C150X19.3
GRATING - 50mm
F.F EL=+112.500
C150X19.3
C150X19.3
112.500
50
305
C310X45
BACKFILLING
REFER TO CIVIL DWGS /
FINAL GEOTECHNICAL REPORT
C310X45
PIPE OPENINGS
(SEE CIVIL / PROCESS DWGS.)
REINF. - SEE TYP. DET.
100THK STYROFOAM
SM INSULATION.
TYP AROUND PERIMETR
4500 mm DEPTH
PIPES
REFER TO
CIVIL DWGS
ALUMINIUM STAIRS /
HANDRAIL
109.850
C310X45
C230X22
STEEL COLUMN
108.905
CONC. SUPPORT
GROUT
REFER TO CIVIL DWGS
BACKFILLING
REFER TO CIVIL DWGS /
FINAL GEOTECHNICAL
REPORT
BEDROCK
400
400
8000
500
400
9700
WATERPROOFING AND
PROTECTION BOARD
PROP. STEEL PIPE
CONCRETE ENCASED
REFER TO CIVIL DWGS
WATERSTOP DETAIL
(TYP.)
WATERPROOFING AND
PROTECTION BOARD
CONC. 500 FOUNDATION SLAB
WATERPROOFING AND PROTECTION BOARD
75mm MUD MAT (LEAN CONCRETE - 5MPa)
BEDROCK TO BE INSPECTED BY CITY
APPROVED TESTING AGENT

B
S2107
SECTION
Scale: 1 : 50


SNOW / LIVE / DEAD LOADS (SEE ROOF PLAN)
GROUND LEVEL
115.500
115.000
GROUND LEVEL
LIVE / DEAD LOADS (SEE FL. PLAN)
112.500
108.905
6 kPa
SURCHARGE
29 kPa
HYDROSTATIC PRESSURE
29 kPa
HYDROSTATIC PRESSURE
46 (31) kPa
SOIL PRESSURE
10 kPa
SURCHARGE
29 kPa
HYDROSTATIC PRESSURE
74 (49) kPa
SOIL PRESSURE

1
S2107
LOAD DIAGRAM-2
Scale: 1 : 125


SNOW / LIVE / DEAD LOADS (SEE ROOF PLAN)
LG INTAKE ROOF 115.5 m
LIVE / DEAD LOADS (SEE FLOOR PLAN)
VARIABLE GROUND LEVEL
112.500
LG INTAKE FLOOR 112.5 m
MAXIMUM WATER LEVEL 111.030
LG INTAKE
FOUNDATION 108.9 m
29 kPa
HYDROSTATIC PRESSURE
6 kPa
SURCHARGE
29 kPa
HYDROSTATIC PRESSURE
74 (49) kPa
46 (31) kPa
SOIL PRESSURE
6 kPa
SURCHARGE
29 kPa
HYDROSTATIC PRESSURE
74 (49) kPa
46 (31) kPa
SOIL PRESSURE

NOTE:
At-rest pressure Active pressure
xx.xx (xx.xx)
- for the balanced case, at-rest pressure should be applied on both sides of the structure.
- for the unbalanced case, at-rest pressure should be applied on one side and active pressure on the opposite side.

3
S2107
LOAD DIAGRAM-1
Scale: 1 : 125

NOTES:

1. REFER TO GENERAL NOTES / TYPICAL DETAILS FOR CONCRETE STRENGTH AND REINFORCING LAPPING AND COVER.
2. MINIMUM SUBGRADE BEARING CAPACITY 1500 kPa (ULS) — TO BE VERIFIED ON SITE BY CONTRACTOR.
3. TEMPORARY SHORING TO BE PROVIDED BY CONTRACTOR WHERE REQUIRED.
4. SERVICE LOADS ON FOUNDATION SLAB / GRATING: D.L.=3.6 kPa; L.L.=12.0 kPa.
   SERVICE LOADS ON ROOF: D.L.=1.0 kPa; L.L.=1.0 kPa; SNOW LOAD = 2.27 kPa.
5. REFER TO ARCHITECTURAL PLANS AND SECTIONS FOR EXACT LOCATIONS AND PLAN DIMENSIONS.
6. REFER TO PROCESS / MECHANICAL / ELECTRICAL DRAWINGS FOR OPENING SIZE, LOCATION, AND COORDINATION REQUIREMENTS.
7. ROOF WATERPROOFING AND ISOLATION SEE ARCHITECTURAL DWGS.

0 10 20 30 40 50 60 70 80 90 100mm

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A1 - 841X594

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A	ISSUED FOR 50% DESIGN REVIEW	2025-12-19

Consultant

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Markham ON L6G 1B3 Canada
tel 905 763 2322
www.arcadis.com

Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
M.S.

Drawn by
Y.N.

Approved by
K.A.

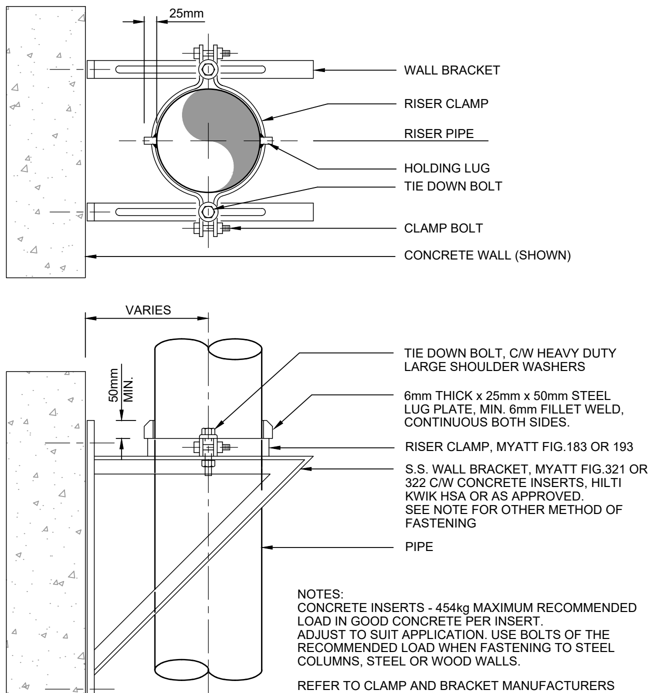
Project Manager
C.G.

Drawing Title

STRUCTURAL INFRASTRUCTURE

LG INTAKE. SECTIONS

Project no.	Drawing no.	Revision no.
30192375	S2107	A


25mm
WALL BRACKET
RISER CLAMP
RISER PIPE
HOLDING LUG
TIE DOWN BOLT
CLAMP BOLT
CONCRETE WALL (SHOWN)
VARIES
50mm MIN.
TIE DOWN BOLT, C/W HEAVY DUTY LARGE SHOULDER WASHERS
6mm THICK x 25mm x 50mm STEEL LUG PLATE, MIN. 6mm FILLET WELD, CONTINUOUS BOTH SIDES.
RISER CLAMP, MYATT FIG.183 OR 193
S.S. WALL BRACKET, MYATT FIG.321 OR 322 C/W CONCRETE INSERTS, HILTI KWIK HSA OR AS APPROVED. SEE NOTE FOR OTHER METHOD OF FASTENING
PIPE

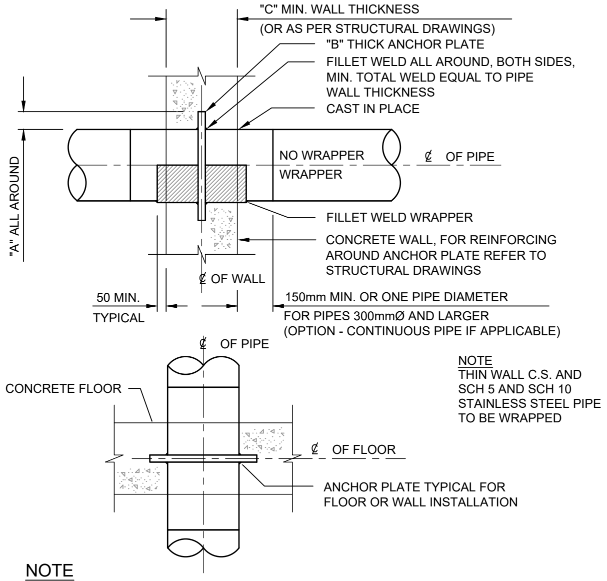
NOTES:
CONCRETE INSERTS - 454kg MAXIMUM RECOMMENDED LOAD IN GOOD CONCRETE PER INSERT.
ADJUST TO SUIT APPLICATION. USE BOLTS OF THE RECOMMENDED LOAD WHEN FASTENING TO STEEL COLUMNS, STEEL OR WOOD WALLS.

REFER TO CLAMP AND BRACKET MANUFACTURERS DATA FOR CORRECT SIZE AND RECOMMENDED LOAD.

LUG PLATES MAY BE REPLACED BY TACK WELDING (EQUAL STRENGTH) CLAMP TO PIPE, IF APPROVED BY ENGINEER.

MUELLER CLAMPS AND BRACKETS MAY BE USED AS AN APPROVED ALTERNATE.

DETAIL 1
RISER PIPE SUPPORT

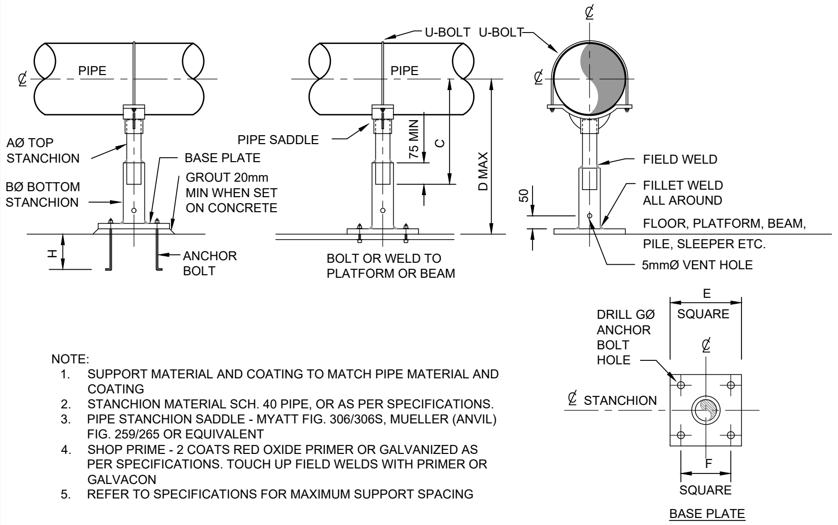

"C" MIN. WALL THICKNESS
(OR AS PER STRUCTURAL DRAWINGS)
"B" THICK ANCHOR PLATE
FILLET WELD ALL AROUND, BOTH SIDES, MIN. TOTAL WELD EQUAL TO PIPE WALL THICKNESS
CAST IN PLACE
NO WRAPPER
WRAPPER
℄ OF PIPE
"A" ALL AROUND
FILLET WELD WRAPPER
CONCRETE WALL, FOR REINFORCING AROUND ANCHOR PLATE REFER TO STRUCTURAL DRAWINGS
℄ OF WALL
50 MIN.
TYPICAL
150mm MIN. OR ONE PIPE DIAMETER
FOR PIPES 300mmØ AND LARGER
(OPTION - CONTINUOUS PIPE IF APPLICABLE)
℄ OF PIPE
CONCRETE FLOOR
℄ OF FLOOR
ANCHOR PLATE TYPICAL FOR FLOOR OR WALL INSTALLATION

NOTE
THIN WALL C.S. AND SCH 5 AND SCH 10 STAINLESS STEEL PIPE TO BE WRAPPED

NOTE
ANCHOR RING CHART INFORMATION BASED AWWA M-11 FIGURE 13-19 AND TABLE 13-3 BEARING LOADS FOR ANCHOR RINGS IN CONCRETE IS BASED ON MAXIMUM PIPE PRESSURE 1724 kPa (250 PSI)

PIPE SIZE	50 TO 200	250 & 300	350 & 450	500 & 600	750 & 900	1050 & LARGER
A	25	40	50	76	102	CUSTOM DESIGN FOR EACH APPLICATION
B	10	10	13	15	22	
C	200	300	350	400	AS PER DESIGN	
PERMISSIBLE LOAD ON RING	414 kg	904 kg	1425 kg	3200 kg	7214 kg	

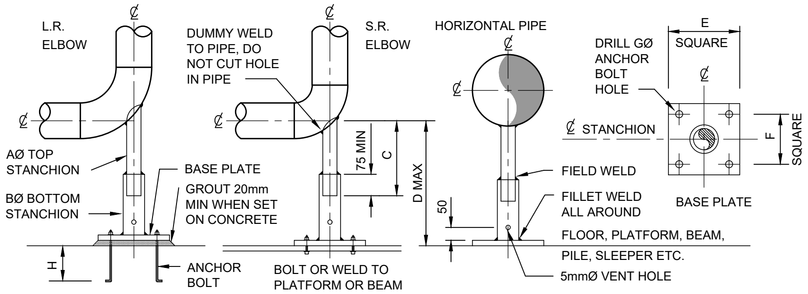
DETAIL 2
NEW STRUCTURAL WALL / FLOOR PIPE ANCHOR


PIPE
℄
AØ TOP STANCHION
BØ BOTTOM STANCHION
BASE PLATE
GROUT 20mm MIN WHEN SET ON CONCRETE
H
ANCHOR BOLT
PIPE SADDLE
U-BOLT
U-BOLT
75 MIN
C
D MAX
BOLT OR WELD TO PLATFORM OR BEAM
50
FIELD WELD
FILLET WELD ALL AROUND
FLOOR, PLATFORM, BEAM, PILE, SLEEPER ETC.
5mmØ VENT HOLE
DRILL GØ ANCHOR BOLT HOLE
E SQUARE
℄ STANCHION
F SQUARE
BASE PLATE

NOTE:
1. SUPPORT MATERIAL AND COATING TO MATCH PIPE MATERIAL AND COATING
2. STANCHION MATERIAL SCH. 40 PIPE, OR AS PER SPECIFICATIONS.
3. PIPE STANCHION SADDLE - MYATT FIG. 306/306S, MUELLER (ANVIL) FIG. 259/265 OR EQUIVALENT
4. SHOP PRIME - 2 COATS RED OXIDE PRIMER OR GALVANIZED AS PER SPECIFICATIONS. TOUCH UP FIELD WELDS WITH PRIMER OR GALVACON
5. REFER TO SPECIFICATIONS FOR MAXIMUM SUPPORT SPACING

PIPE SIZE	100	125	150	200	250	300	350	400	450	500	600	750	900
A	80	80	80	80	80	80	80	80	90	90	100	100	100
B	100	100	100	100	100	100	100	100	150	150	150	150	150
C MIN	240	255	270	310	350	370	380	425	485	510	590	670	745
C MAX	350	370	390	425	460	485	515	540	600	625	705	785	860
D MAX	1200	1200	1200	1200	1200	1200	1200	1200	1850	1850	1850	1850	1850
THICK x E SQUARE	10mm x 250	10mm x 250	10mm x 250	10mm x 250	10mm x 250	10mm x 250	10mm x 250	10mm x 250	10mm x 250	10mm x 250	10mm x 250	10mm x 250	10mm x 250
F SQUARE	200	200	200	200	200	200	200	200	200	200	200	200	200

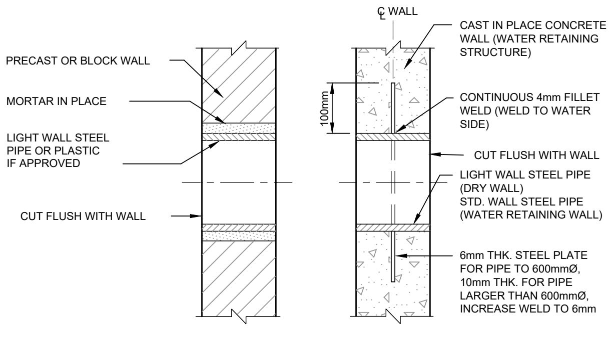
DETAIL 3
HORIZONTAL PIPE SUPPORT


L.R. ELBOW
℄
AØ TOP STANCHION
BØ BOTTOM STANCHION
BASE PLATE
GROUT 20mm MIN WHEN SET ON CONCRETE
H
ANCHOR BOLT
DUMMY WELD TO PIPE, DO NOT CUT HOLE IN PIPE
S.R. ELBOW
75 MIN
C
D MAX
BOLT OR WELD TO PLATFORM OR BEAM
HORIZONTAL PIPE
50
FIELD WELD
FILLET WELD ALL AROUND
FLOOR, PLATFORM, BEAM, PILE, SLEEPER ETC.
5mmØ VENT HOLE
DRILL GØ ANCHOR BOLT HOLE
E SQUARE
℄ STANCHION
F SQUARE
BASE PLATE

NOTES: STANCHION MATERIAL SCH. 40 PIPE, OR AS PER SPECIFICATIONS.
BASE PLATE - CARBON STEEL
SHOP PRIME - 2 COATS RED OXIDE PRIMER OR GALVANIZED AS PER SPECIFICATIONS
TOUCH UP FIELD WELDS WITH PRIMER OR GALVICON
STANCHIONS - MAY BE MYATT FIG. 308 OR MUELLER (ANVIL) FIG. 62

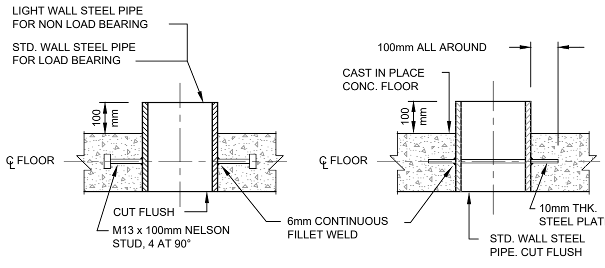
PIPE SIZE	50	65	80	100	125	150	200	250	300	350	400	450	500	600
A	40	40	65	65	100	100	100	125	125	125	125	125	-	-
B	65	65	80	80	125	125	125	150	150	150	150	150	-	-
C MIN	200	200	210	235	250	270	300	350	380	410	450	500	-	-
C MAX	330	330	340	350	375	390	420	460	500	530	570	610	-	-
D MAX	1000	1000	1000	1200	1200	1500	1500	1850	1850	2000	3000	3000	-	-
THICK x E SQUARE	10mm x 150	10mm x 150	10mm x 250	10mm x 250	10mm x 250	10mm x 250	10mm x 250	10mm x 250	10mm x 250	10mm x 250	10mm x 250	10mm x 300	- -	- -
F SQUARE	110	110	200	200	200	200	200	200	200	200	200	240	-	-
G DIAM. x No. HOLES	15 DIAMETER x 2 OPPOSITE CORNERS		20 DIAMETER x 4							25 DIAMETER x 4				
BOLT DIAM. x H	M12x50 HSL HILTI OR AS APPROVED		M16x100 GALVANIZED OR AS APPROVED EXIST. CONCRETE USE M16 HSL HILTI							M20x150 (MIN) GALVANIZED BOLT CAST IN PLACE OR AS APPROVED				

DETAIL 4
PIPE SUPPORT
VERTICAL PIPE SUPPORT


PRECAST OR BLOCK WALL
MORTAR IN PLACE
LIGHT WALL STEEL PIPE OR PLASTIC IF APPROVED
CUT FLUSH WITH WALL
℄ WALL
CAST IN PLACE CONCRETE WALL (WATER RETAINING STRUCTURE)
100mm
CONTINUOUS 4mm FILLET WELD (WELD TO WATER SIDE)
CUT FLUSH WITH WALL
LIGHT WALL STEEL PIPE (DRY WALL)
STD. WALL STEEL PIPE (WATER RETAINING WALL)
6mm THK. STEEL PLATE FOR PIPE TO 600mmØ, 10mm THK. FOR PIPE LARGER THAN 600mmØ, INCREASE WELD TO 6mm

WALL SLEEVE IN BLOCK OR PRECAST WALL

WALL SLEEVE IN CONCRETE WALL

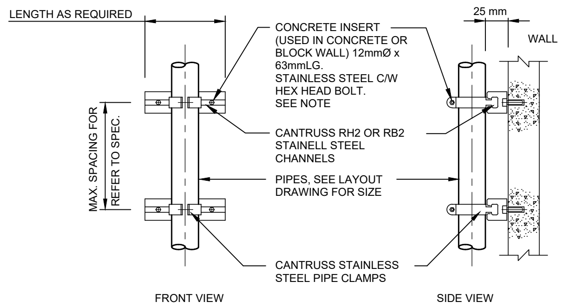

LIGHT WALL STEEL PIPE FOR NON LOAD BEARING
STD. WALL STEEL PIPE FOR LOAD BEARING
100 mm
℄ FLOOR
CUT FLUSH
M13 x 100mm NELSON STUD, 4 AT 90°
6mm CONTINUOUS FILLET WELD
100mm ALL AROUND
CAST IN PLACE CONC. FLOOR
100 mm
℄ FLOOR
10mm THK. STEEL PLATE
STD. WALL STEEL PIPE. CUT FLUSH

FLOOR SLEEVE 250mmØ & SMALLER

FLOOR SLEEVE 300mmØ & LARGER

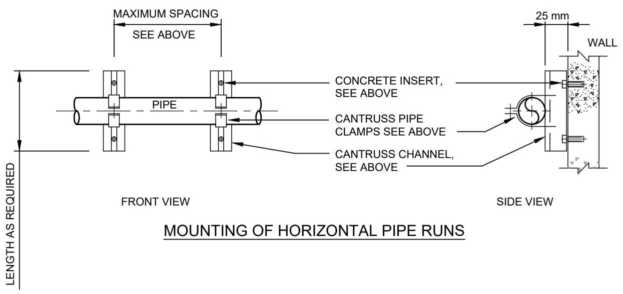
NOTES:
- SLEEVE TO BE NEXT PIPE DIAMETER LARGER THAN OUTSIDE DIAMETER OF PIPE PASSING THROUGH, OR AS SPECIFIED ON THE DRAWINGS.
- THE STEEL RETAINING PLATE MAY BE ROUND, SQUARE OR OCTAGON.
- SHOP PRIME EXPOSED SURFACE WITH 2 COATS RED OXIDE PRIMER.
- SLEEVES IN A WET ENVIRONMENT TO BE EPOXY LINED AND COATED.

DETAIL 5
PIPE PENETRATION SLEEVE


LENGTH AS REQUIRED
MAX. SPACING FOR REFER TO SPEC.
CONCRETE INSERT (USED IN CONCRETE OR BLOCK WALL) 12mmØ x 63mmLG. STAINLESS STEEL C/W HEX HEAD BOLT. SEE NOTE
CANTRUSS RH2 OR RB2 STAINELL STEEL CHANNELS
PIPES, SEE LAYOUT DRAWING FOR SIZE
CANTRUSS STAINLESS STEEL PIPE CLAMPS
25 mm
WALL
FRONT VIEW
SIDE VIEW

MOUNTING OF VERTICAL PIPE

NOTE: CONCRETE INSERTS - 454kg. MAXIMUM RECOMMENDED LOAD IN GOOD CONCRETE PER INSERT ADJUST TO SUIT APPLICATION. USE BOLTS OF THE SAME RECOMMENDED LOAD WHEN FASTENING TO STEEL COLUMNS, STEEL OR WOOD WALLS.


MAXIMUM SPACING
SEE ABOVE
PIPE
LENGTH AS REQUIRED
CONCRETE INSERT, SEE ABOVE
CANTRUSS PIPE CLAMPS SEE ABOVE
CANTRUSS CHANNEL, SEE ABOVE
25 mm
WALL
FRONT VIEW
SIDE VIEW

MOUNTING OF HORIZONTAL PIPE RUNS

DETAIL 6
PIPE SUPPORT
SINGLE PIPE CANTRUSS CHANNEL

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www.iqaluit.ca

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN	2024-03-22

Consultant
ARCADIS
8133 Warden Avenue - Unit 300
Markham ON L6G 1B3 Canada
tel 905 763 2322
www.arcadis.com

Project title
CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
P.D.

Drawn by
C.W.

Approved by
M.J.

Project Manager
C.G.

Drawing title
PROCESS

PUMP STATION
DETAILS - 1

Project no.	Drawing no.	Revision no.
30192375	**P401**	**B**

0 10 20 30 40 50 60 70 80 90 100mm

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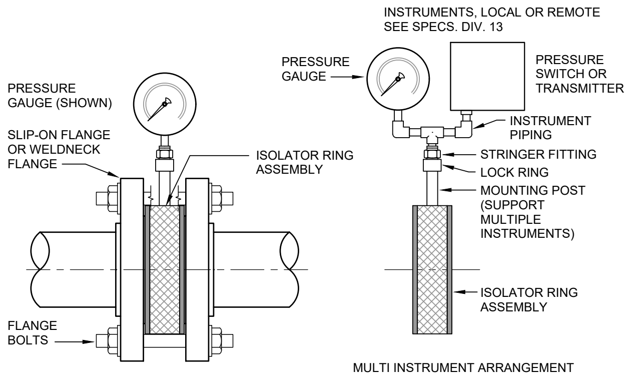
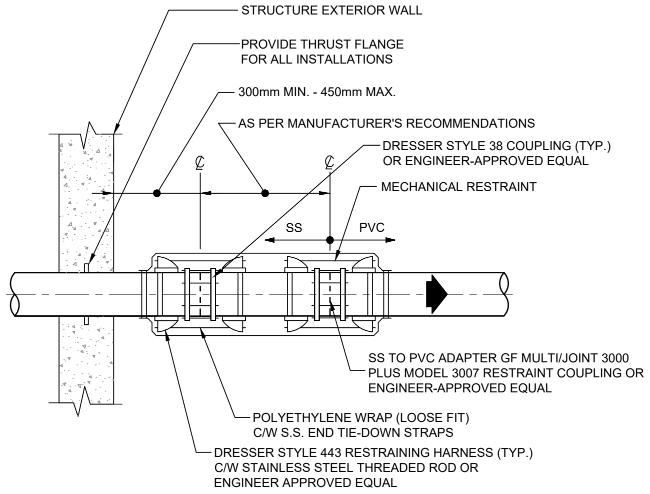
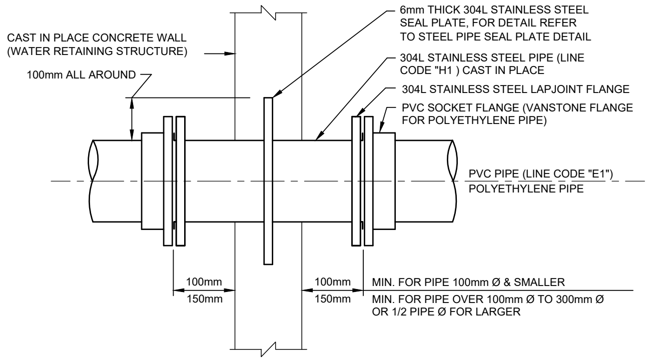
A1 - 841X594


PRESSURE GAUGE (SHOWN)
SLIP-ON FLANGE OR WELDNECK FLANGE
ISOLATOR RING ASSEMBLY
FLANGE BOLTS
INSTRUMENTS, LOCAL OR REMOTE SEE SPECS. DIV. 13
PRESSURE GAUGE
PRESSURE SWITCH OR TRANSMITTER
INSTRUMENT PIPING
STRINGER FITTING
LOCK RING
MOUNTING POST (SUPPORT MULTIPLE INSTRUMENTS)
ISOLATOR RING ASSEMBLY
MULTI INSTRUMENT ARRANGEMENT

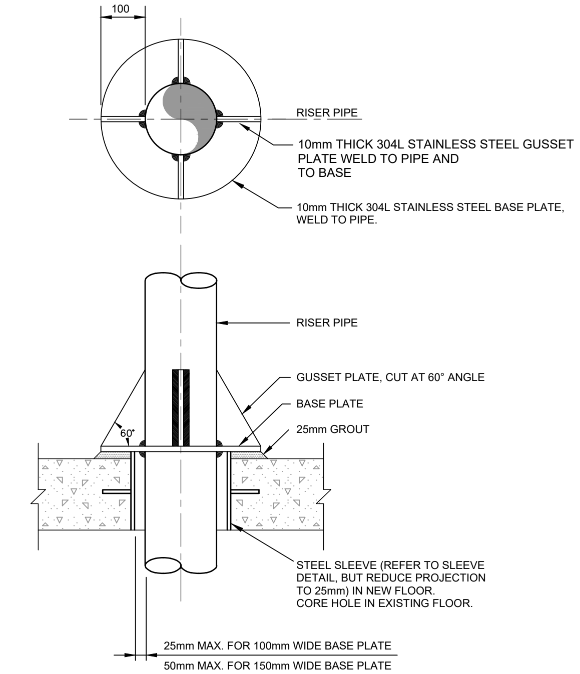
DETAIL 7
PRESSURE SENSOR RING


STRUCTURE EXTERIOR WALL
PROVIDE THRUST FLANGE FOR ALL INSTALLATIONS
300mm MIN. - 450mm MAX.
AS PER MANUFACTURER'S RECOMMENDATIONS
DRESSER STYLE 38 COUPLING (TYP.) OR ENGINEER-APPROVED EQUAL
MECHANICAL RESTRAINT
℄
℄
SS
PVC
SS TO PVC ADAPTER GF MULTI/JOINT 3000 PLUS MODEL 3007 RESTRAINT COUPLING OR ENGINEER-APPROVED EQUAL
POLYETHYLENE WRAP (LOOSE FIT) C/W S.S. END TIE-DOWN STRAPS
DRESSER STYLE 443 RESTRAINING HARNESS (TYP.) C/W STAINLESS STEEL THREADED ROD OR ENGINEER APPROVED EQUAL

DETAIL 8
DOUBLE DRESSER COUPLING & HARNESS ASSEMBLY

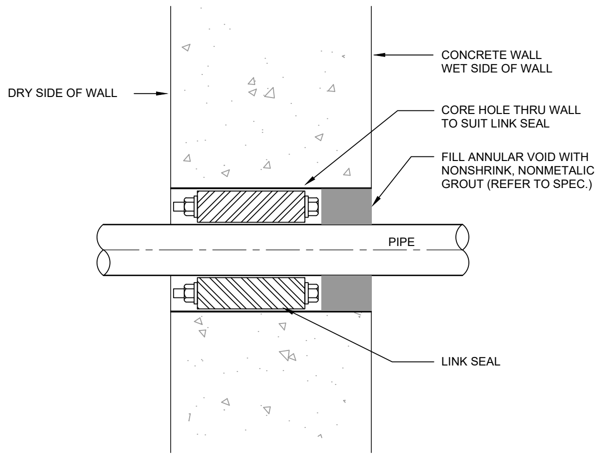

CAST IN PLACE CONCRETE WALL (WATER RETAINING STRUCTURE)
100mm ALL AROUND
6mm THICK 304L STAINLESS STEEL SEAL PLATE, FOR DETAIL REFER TO STEEL PIPE SEAL PLATE DETAIL
304L STAINLESS STEEL PIPE (LINE CODE "H1) CAST IN PLACE
304L STAINLESS STEEL LAPJOINT FLANGE
PVC SOCKET FLANGE (VANSTONE FLANGE FOR POLYETHYLENE PIPE)
PVC PIPE (LINE CODE "E1") POLYETHYLENE PIPE
100mm
150mm
100mm
150mm
MIN. FOR PIPE 100mm Ø & SMALLER
MIN. FOR PIPE OVER 100mm Ø TO 300mm Ø OR 1/2 PIPE Ø FOR LARGER

DETAIL 9
PVC OR POLYETHYLENE PIPE PASSING
THROUGH A LIQUID RETAINING STRUCTURE


100
RISER PIPE
10mm THICK 304L STAINLESS STEEL GUSSET PLATE WELD TO PIPE AND TO BASE
10mm THICK 304L STAINLESS STEEL BASE PLATE, WELD TO PIPE.
RISER PIPE
GUSSET PLATE, CUT AT 60° ANGLE
BASE PLATE
25mm GROUT
60°
STEEL SLEEVE (REFER TO SLEEVE DETAIL, BUT REDUCE PROJECTION TO 25mm) IN NEW FLOOR. CORE HOLE IN EXISTING FLOOR.
25mm MAX. FOR 100mm WIDE BASE PLATE
50mm MAX. FOR 150mm WIDE BASE PLATE

NOTE: WELDS MIN. 6mm CONTINUOUS FILLET, BOTH SIDES
PRIME WITH 2 COATS RED OXIDE, SEE SPECS.

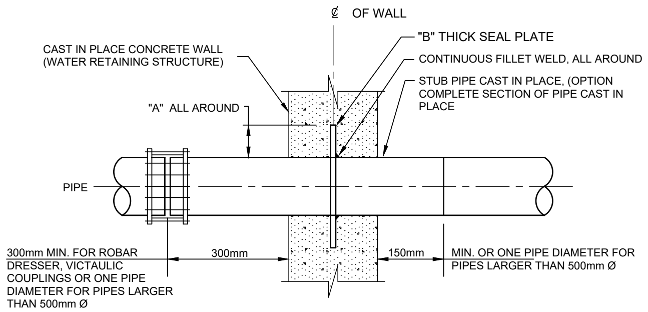
DETAIL 10
PIPE RISER SUPPORT 300mmØ AND SMALLER


DRY SIDE OF WALL
CONCRETE WALL WET SIDE OF WALL
CORE HOLE THRU WALL TO SUIT LINK SEAL
FILL ANNULAR VOID WITH NONSHRINK, NONMETALIC GROUT (REFER TO SPEC.)
PIPE
LINK SEAL

CORED HOLE THROUGH WALL

NOTE
IF WALL IS DRY ON BOTH SIDES, GROUT MAY BE DELETED

DETAIL 11
PIPE PASSING THROUGH WALL LINK SEAL


℄ OF WALL
"B" THICK SEAL PLATE
CONTINUOUS FILLET WELD, ALL AROUND
CAST IN PLACE CONCRETE WALL (WATER RETAINING STRUCTURE)
STUB PIPE CAST IN PLACE, (OPTION COMPLETE SECTION OF PIPE CAST IN PLACE
"A" ALL AROUND
PIPE
300mm MIN. FOR ROBAR DRESSER, VICTAULIC COUPLINGS OR ONE PIPE DIAMETER FOR PIPES LARGER THAN 500mm Ø
300mm
150mm
MIN. OR ONE PIPE DIAMETER FOR PIPES LARGER THAN 500mm Ø

FOR PIPES 50mm Ø & LARGER

NOTES: THE SEAL PLATE SHALL BE ROUND
BARE STEEL PIPE OR REMOVE COATING FROM PORTION OF PIPE CAST IN WALL.

PIPE SIZE	50 TO 100	125 TO 200	250 TO 400	450 TO 600	750 & LARGER
A	75	100	125	150	200
B	6	10	10	12	12

DETAIL 12
WATER STOP SEAL PLATE (2)

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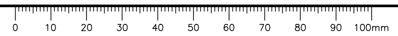
A1 – 841X594


0
10
20
30
40
50
60
70
80
90
100mm

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Project title
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LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
P.D.

Drawn by
C.W.

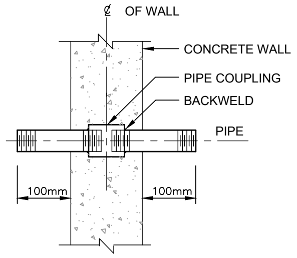
Approved by
M.J.

Project Manager
C.G.

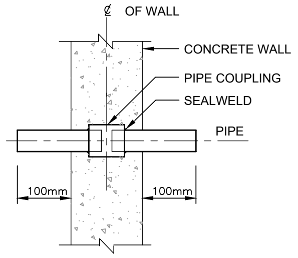
Drawing title
PROCESS

PUMP STATION
DETAILS - 2

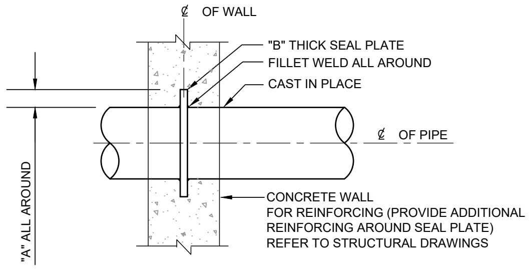
Project no.	Drawing no.	Revision no.
30192375	P402	B


℄ OF WALL
CONCRETE WALL
PIPE COUPLING
BACKWELD
PIPE
100mm
100mm

FOR THREADED PIPES
100mm DIA. & SMALLER


℄ OF WALL
CONCRETE WALL
PIPE COUPLING
SEALWELD
PIPE
100mm
100mm

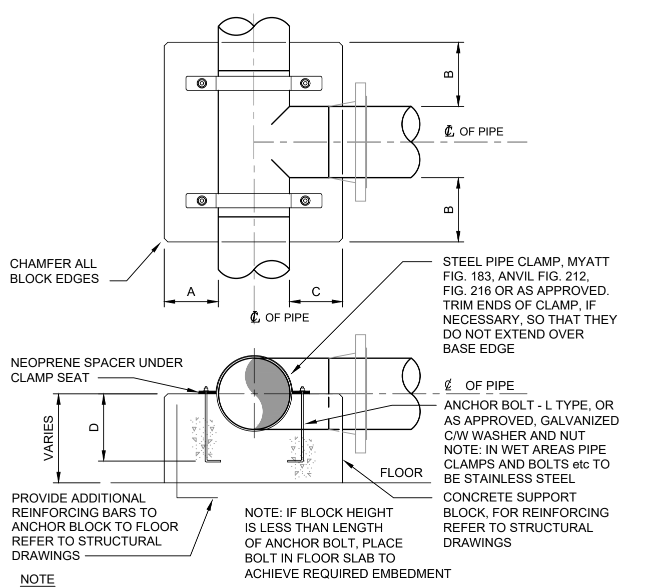
FOR WELDED PIPES
40mm DIA. & SMALLER


℄ OF WALL
"B" THICK SEAL PLATE
FILLET WELD ALL AROUND
CAST IN PLACE
℄ OF PIPE
"A" ALL AROUND
CONCRETE WALL
FOR REINFORCING (PROVIDE ADDITIONAL
REINFORCING AROUND SEAL PLATE)
REFER TO STRUCTURAL DRAWINGS

PIPE SIZE	50 TO 100	125 TO 200	250 TO 400	450 TO 600	750 & 900	1050 & LARGER
A	50	50	75	75	100	CUSTOM DESIGN FOR EACH APPLICATION
B	6	10	10	12	12	

FOR PIPES 50mm DIA. & LARGER

DETAIL 13
WATER STOP SEAL PLATE

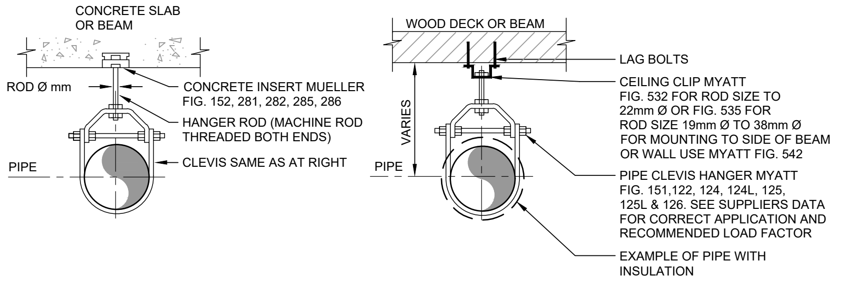

B
℄ OF PIPE
B
CHAMFER ALL
BLOCK EDGES
A
C
℄ OF PIPE
STEEL PIPE CLAMP, MYATT
FIG. 183, ANVIL FIG. 212,
FIG. 216 OR AS APPROVED.
TRIM ENDS OF CLAMP, IF
NECESSARY, SO THAT THEY
DO NOT EXTEND OVER
BASE EDGE
NEOPRENE SPACER UNDER
CLAMP SEAT
℄ OF PIPE
ANCHOR BOLT - L TYPE, OR
AS APPROVED, GALVANIZED
C/W WASHER AND NUT
NOTE: IN WET AREAS PIPE
CLAMPS AND BOLTS etc TO
BE STAINLESS STEEL
VARIES
D
FLOOR
PROVIDE ADDITIONAL
REINFORCING BARS TO
ANCHOR BLOCK TO FLOOR
REFER TO STRUCTURAL
DRAWINGS
NOTE: IF BLOCK HEIGHT
IS LESS THAN LENGTH
OF ANCHOR BOLT, PLACE
BOLT IN FLOOR SLAB TO
ACHIEVE REQUIRED EMBEDMENT
CONCRETE SUPPORT
BLOCK, FOR REINFORCING
REFER TO STRUCTURAL
DRAWINGS

NOTE

THESE BLOCK DIMENSIONS ARE FOR STANDARD STEEL TEES ONLY
FOR OTHER TYPE OF TEES ADJUST DIMENSIONS ACCORDINGLY
ANCHOR BOLTS MAY BE REPLACED WITH HILTI HSL OR HIT HY 150 OR AS APPROVED

PIPE SIZE	50 & 65	80 & 100	125 & 150	200 & 250	300 TO 400	450 TO 600	750 & 900	1050 & LARGER
A	75	100	150	200	250	300	400	CUSTOM DESIGN FOR EACH APPLICATION
B	50	75	100	150	200	200	300	
C	50	50	75	100	100	150	200	
BOLT Ø x D	M8 x 90 (MIN)	M12 x 110 (MIN)	M16 x 130 (MIN)	M19 x 170 (MIN)	M22 x 210 (MIN)	M25 x 210 (MIN)	M38 x 305 (MIN)	

DETAIL 14
CONCRETE SUPPORT BLOCK WITH STRAP
HORIZONTAL TEE / WYE


CONCRETE SLAB
OR BEAM
ROD Ø mm
CONCRETE INSERT MUELLER
FIG. 152, 281, 282, 285, 286
HANGER ROD (MACHINE ROD
THREADED BOTH ENDS)
PIPE
CLEVIS SAME AS AT RIGHT
WOOD DECK OR BEAM
LAG BOLTS
VARIES
CEILING CLIP MYATT
FIG. 532 FOR ROD SIZE TO
22mm Ø OR FIG. 535 FOR
ROD SIZE 19mm Ø TO 38mm Ø
FOR MOUNTING TO SIDE OF BEAM
OR WALL USE MYATT FIG. 542
PIPE
PIPE CLEVIS HANGER MYATT
FIG. 151,122, 124, 124L, 125,
125L & 126. SEE SUPPLIERS DATA
FOR CORRECT APPLICATION AND
RECOMMENDED LOAD FACTOR
EXAMPLE OF PIPE WITH
INSULATION

OPTIONAL METHODS OF UPPER HANGER ROD ATTACHMENTS
DEPICTING DIFFERENT CEILING STRUCTURES

PIPE SIZE	10	15	20	25	30	40	50	65	80	100	150	200	250	300	350	400	450	500	600
CLEVIS No.	ROD Ø																		
MYATT 122	10	10	10	10	10	10	10	13	13	13									
MYATT 124			10	10	10	10	10	13	13	16	19	19	22	22	25	25	28	32	32
MYATT 125									19	22	25	25	28	32					
MYATT 126										19	19	22	22	25	25	32	32	32	38
MYATT 151		10	10	10	10	10	10	13	13	13	19	19	22						

ANGLE	80x60x6	90x75x6	100x90x8	125x90x10			
CHANNEL					C75x6	C100x8	C130x10
SPAN (mm)	S.L.	S.L.	S.L.	S.L.	S.L.	S.L.	S.L.
600	1680kg	2364kg	3955kg	5455kg	3745kg	6145kg	13345kg
900	1136kg	1590kg	2636kg	3818kg	2472kg	4072kg	8872kg
1200	864kg	1182kg	1951kg	2864kg	1854kg	3054kg	6654kg
1500	682kg	954kg	1590kg	2318kg	1491kg	2436kg	5345kg
1800	545kg	772kg	1318kg	1909kg	1236kg	2036kg	4436kg
2100		682kg	1136kg	1636kg		1745kg	3818kg
2400			1000kg	1455kg		1527kg	3345kg
2700			863kg	1272kg		1345kg	2945kg

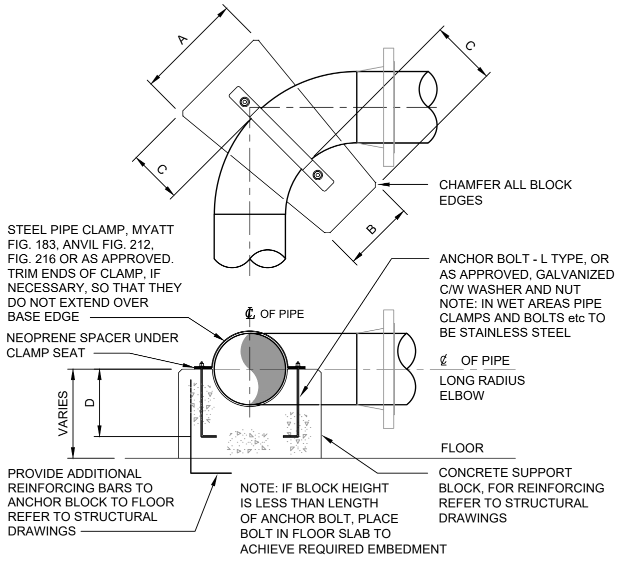
NOTES:

MANUFACTURED COMPONENTS MAY BE ORDERED FROM MYATT, MUELLER OR AS APPROVED

S.L. IS THE SAFE TOTAL UNIFORMLY DISTRIBUTED LOAD IN KILOGRAMS WITH A
MAXIMUM DEFLECTION OF 6mm

FABRICATED COMPONENTS SHOP PRIME WITH 2 COATS RED OXIDE PRIMER OR
GALVANIZED AS PER SPECS.

DETAIL 15
PIPE HANGER

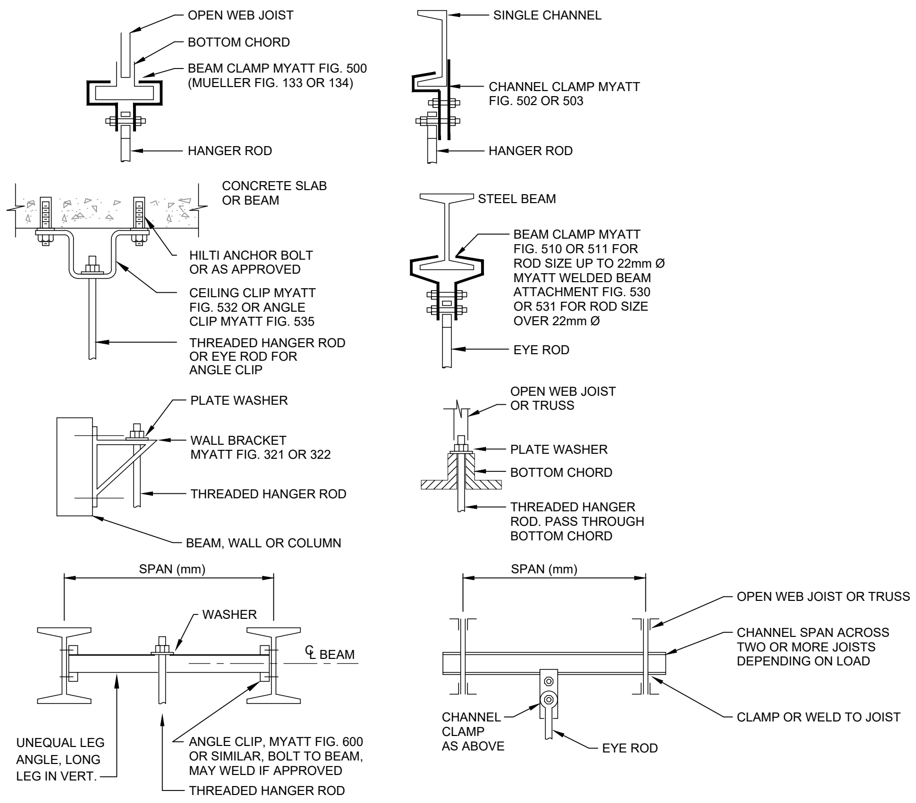

A
C
C
B
CHAMFER ALL BLOCK
EDGES
STEEL PIPE CLAMP, MYATT
FIG. 183, ANVIL FIG. 212,
FIG. 216 OR AS APPROVED.
TRIM ENDS OF CLAMP, IF
NECESSARY, SO THAT THEY
DO NOT EXTEND OVER
BASE EDGE
ANCHOR BOLT - L TYPE, OR
AS APPROVED, GALVANIZED
C/W WASHER AND NUT
NOTE: IN WET AREAS PIPE
CLAMPS AND BOLTS etc TO
BE STAINLESS STEEL
℄ OF PIPE
NEOPRENE SPACER UNDER
CLAMP SEAT
℄ OF PIPE
LONG RADIUS
ELBOW
VARIES
D
FLOOR
PROVIDE ADDITIONAL
REINFORCING BARS TO
ANCHOR BLOCK TO FLOOR
REFER TO STRUCTURAL
DRAWINGS
NOTE: IF BLOCK HEIGHT
IS LESS THAN LENGTH
OF ANCHOR BOLT, PLACE
BOLT IN FLOOR SLAB TO
ACHIEVE REQUIRED EMBEDMENT
CONCRETE SUPPORT
BLOCK, FOR REINFORCING
REFER TO STRUCTURAL
DRAWINGS

NOTE

THESE BLOCK DIMENSIONS ARE FOR LONG RADIUS ELBOWS ONLY
FOR OTHER TYPE OF ELBOWS ADJUST DIMENSIONS ACCORDINGLY
ANCHOR BOLTS MAY BE REPLACED WITH HILTI HSL OR HIT HY 150 OR AS APPROVED

PIPE SIZE	50 & 65	80 & 100	125 & 150	200 & 250	300 TO 400	450 TO 600	750 & 900	1050 & LARGER
A	100	150	200	400	500	600	700	CUSTOM DESIGN FOR EACH APPLICATION
B	50	100	150	250	300	400	500	
C	50	75	100	150	200	250	300	
BOLT Ø x D	M8 x 90 (MIN)	M12 x 110 (MIN)	M16 x 130 (MIN)	M19 x 170 (MIN)	M22 x 210 (MIN)	M25 x 210 (MIN)	M38 x 305 (MIN)	

DETAIL 17
CONCRETE SUPPORT BLOCK WITH STRAP
HORIZONTAL ELBOW


OPEN WEB JOIST
BOTTOM CHORD
BEAM CLAMP MYATT FIG. 500
(MUELLER FIG. 133 OR 134)
HANGER ROD
SINGLE CHANNEL
CHANNEL CLAMP MYATT
FIG. 502 OR 503
HANGER ROD
CONCRETE SLAB
OR BEAM
HILTI ANCHOR BOLT
OR AS APPROVED
CEILING CLIP MYATT
FIG. 532 OR ANGLE
CLIP MYATT FIG. 535
THREADED HANGER ROD
OR EYE ROD FOR
ANGLE CLIP
STEEL BEAM
BEAM CLAMP MYATT
FIG. 510 OR 511 FOR
ROD SIZE UP TO 22mm Ø
MYATT WELDED BEAM
ATTACHMENT FIG. 530
OR 531 FOR ROD SIZE
OVER 22mm Ø
EYE ROD
PLATE WASHER
WALL BRACKET
MYATT FIG. 321 OR 322
THREADED HANGER ROD
BEAM, WALL OR COLUMN
OPEN WEB JOIST
OR TRUSS
PLATE WASHER
BOTTOM CHORD
THREADED HANGER
ROD. PASS THROUGH
BOTTOM CHORD
SPAN (mm)
WASHER
℄ BEAM
UNEQUAL LEG
ANGLE, LONG
LEG IN VERT.
ANGLE CLIP, MYATT FIG. 600
OR SIMILAR, BOLT TO BEAM,
MAY WELD IF APPROVED
THREADED HANGER ROD
SPAN (mm)
OPEN WEB JOIST OR TRUSS
CHANNEL SPAN ACROSS
TWO OR MORE JOISTS
DEPENDING ON LOAD
CHANNEL
CLAMP
AS ABOVE
EYE ROD
CLAMP OR WELD TO JOIST

ABOVE TWO METHODS ARE TO BE USED IF LOAD IS TOO GREAT FOR SINGLE
POINT LOAD, OR IF LOAD IS NOT CENTERED UNDER STRUCTURAL MEMBER

DETAIL 18
PIPE HANGER

1085 Mivvik Street, P.O. Box 460
Iqaluit NU X0A 0H0 Canada
tel 867 979 5600
www.iqaluit.ca

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
P.D.

Drawn by
C.W.

Approved by
M.J.

Project Manager
C.G.

Drawing title

PROCESS

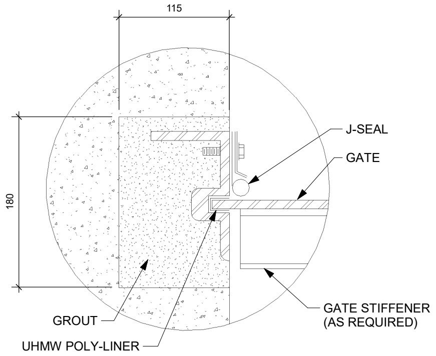
PUMP STATION DETAILS - 3

Project no.	Drawing no.	Revision no.
30192375	P403	B

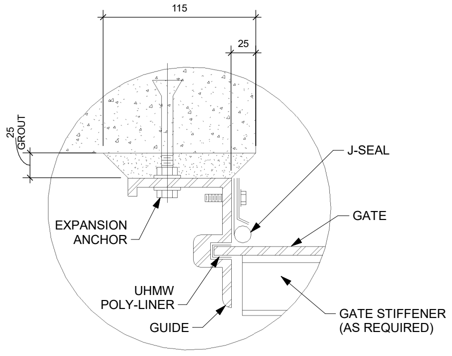
C:\Users\wiecherc4513\DC\ACCDocs\IBI - DT Services\30192375-Iqaluit_LongTermWater C3D2023\Project Files\7.0_Production\7.03_Design\12_Process\Sheets\144081-P201-3 AR TEMP.dwg

A1 - 841X594

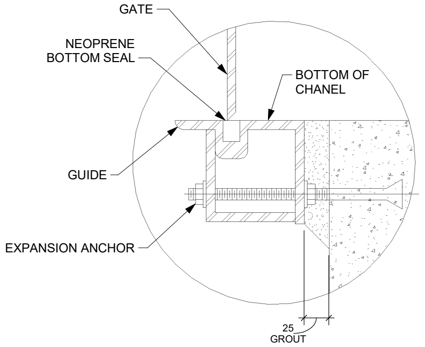
0 10 20 30 40 50 60 70 80 90 100mm


115
180
J-SEAL
GATE
GROUT
UHMW POLY-LINER
GATE STIFFENER
(AS REQUIRED)

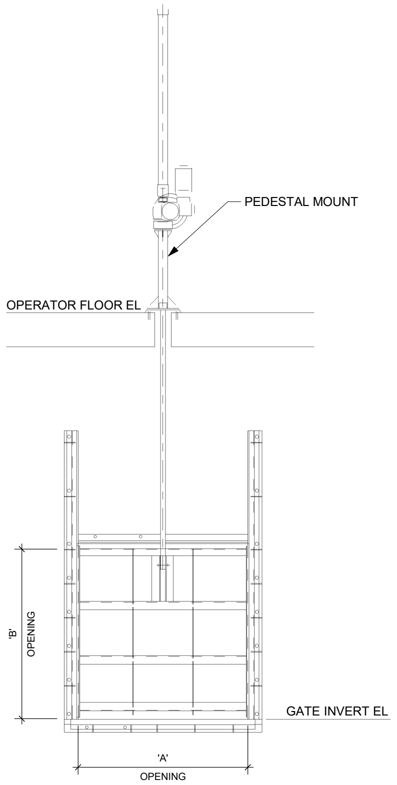
RECESSED


115
25
25
GROUT
J-SEAL
GATE
EXPANSION
ANCHOR
UHMW
POLY-LINER
GUIDE
GATE STIFFENER
(AS REQUIRED)

FLUSH MOUNT


GATE
NEOPRENE
BOTTOM SEAL
BOTTOM OF
CHANEL
GUIDE
EXPANSION ANCHOR
25
GROUT

TYPICAL INVERT


PEDESTAL MOUNT
OPERATOR FLOOR EL
'B'
OPENING
GATE INVERT EL
'A'
OPENING

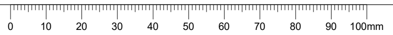
SLIDE GATE, PEDESTAL FLOOR MOUNT

19 SLIDE GATE DETAIL

NTS

NOTE:

1. SEE SHEET P501 FOR GATE SCHEDULE.


0
10
20
30
40
50
60
70
80
90
100mm

Autodesk Docs://30288139-Iqaluit_LongTermWater C3D2025/IQL-ARCA-M-MECHANICAL-23.rvt

A1 - 841X594

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Revision	Description	Date
A	ISSUED FOR 50% DESIGN REVIEW	2025-12-19

Consultant

8133 Warden Avenue - Unit 300
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www.arcadis.com

Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
K.C.

Drawn by
C.W.

Approved by
B.H.

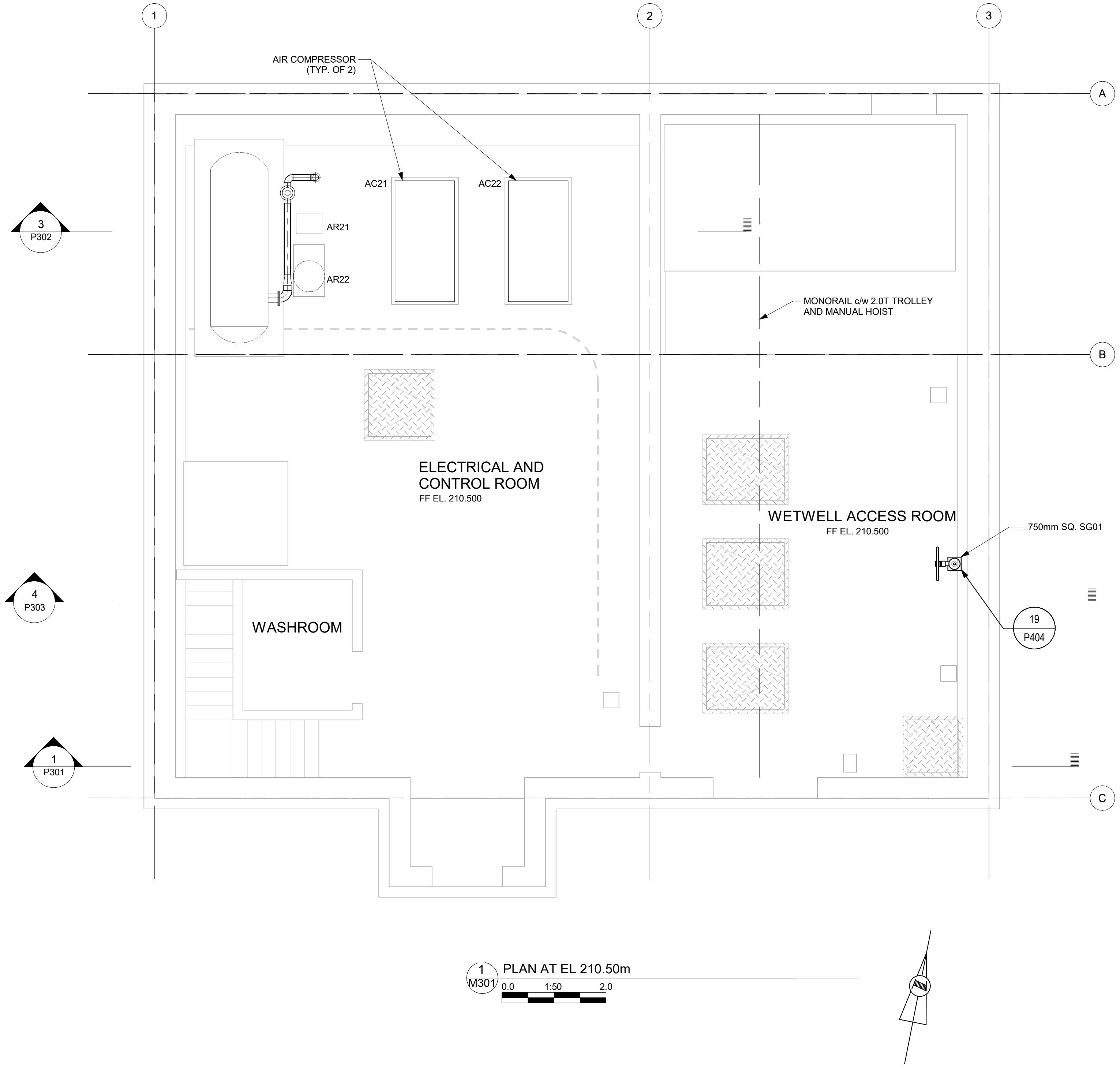
Project Manager
C.G.

Drawing Title

PROCESS

LQ PUMP STATION
DETAILS

Project no.	Drawing no.	Revision no.
30192375	P404	A


1
2
3
A
B
C
AIR COMPRESSOR
(TYP. OF 2)
AC21
AC22
AR21
AR22
3
P302
4
P303
1
P301
MONORAIL c/w 2.0T TROLLEY
AND MANUAL HOIST
ELECTRICAL AND
CONTROL ROOM
FF EL. 210.500
WETWELL ACCESS ROOM
FF EL. 210.500
750mm SQ. SG01
19
P404
WASHROOM

1
M301
PLAN AT EL 210.50m
0.0 1:50 2.0

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
C	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
A	ISSUED FOR CONCEPT DESIGN	2023-11-27

Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
K.C.

Drawn by
C.W.

Approved by
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Project Manager
C.G.

Drawing Title

PROCESS

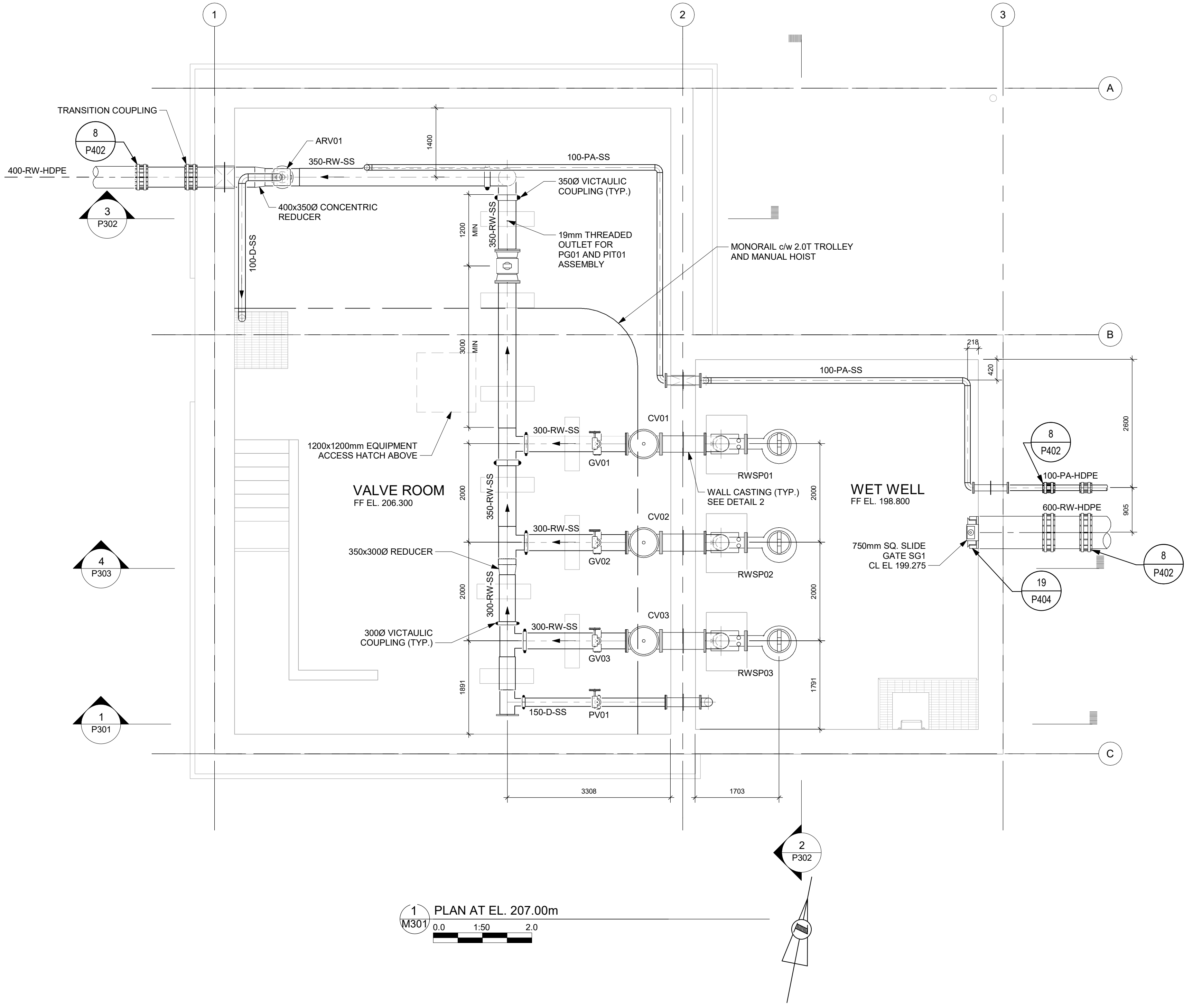
LQ PUMP STATION
PLAN AT EL 210.50m

Project no.	Drawing no.	Revision no.
30192375	**P101**	**C**

Autodesk Docs://30288139-Iqaluit_LongTermWater C3D2025/IQL-ARCA-M-MECHANICAL-23.rvt

A1 - 841X594

0 10 20 30 40 50 60 70 80 90 100mm


1
2
3
A
B
C
TRANSITION COUPLING
8
P402
400-RW-HDPE
3
P302
ARV01
350-RW-SS
1400
100-PA-SS
350Ø VICTAULIC
COUPLING (TYP.)
400x350Ø CONCENTRIC
REDUCER
1200
MIN
350-RW-SS
19mm THREADED
OUTLET FOR
PG01 AND PIT01
ASSEMBLY
100-D-SS
MONORAIL c/w 2.0T TROLLEY
AND MANUAL HOIST
3000
MIN
218
420
100-PA-SS
2600
1200x1200mm EQUIPMENT
ACCESS HATCH ABOVE
300-RW-SS
CV01
GV01
RWSP01
8
P402
100-PA-HDPE
600-RW-HDPE
905
VALVE ROOM
FF EL. 206.300
2000
350-RW-SS
WALL CASTING (TYP.)
SEE DETAIL 2
2000
WET WELL
FF EL. 198.800
4
P303
300-RW-SS
CV02
GV02
RWSP02
750mm SQ. SLIDE
GATE SG1
CL EL 199.275
8
P402
19
P404
350x300Ø REDUCER
2000
300-RW-SS
2000
300Ø VICTAULIC
COUPLING (TYP.)
300-RW-SS
CV03
GV03
RWSP03
1891
1791
1
P301
150-D-SS
PV01
3308
1703
2
P302
1
M301
0.0
1:50
2.0

PLAN AT EL. 207.00m

0 10 20 30 40 50 60 70 80 90 100mm

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Consultant

ARCADIS

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
K.C.

Drawn by
C.W.

Approved by
B.H.

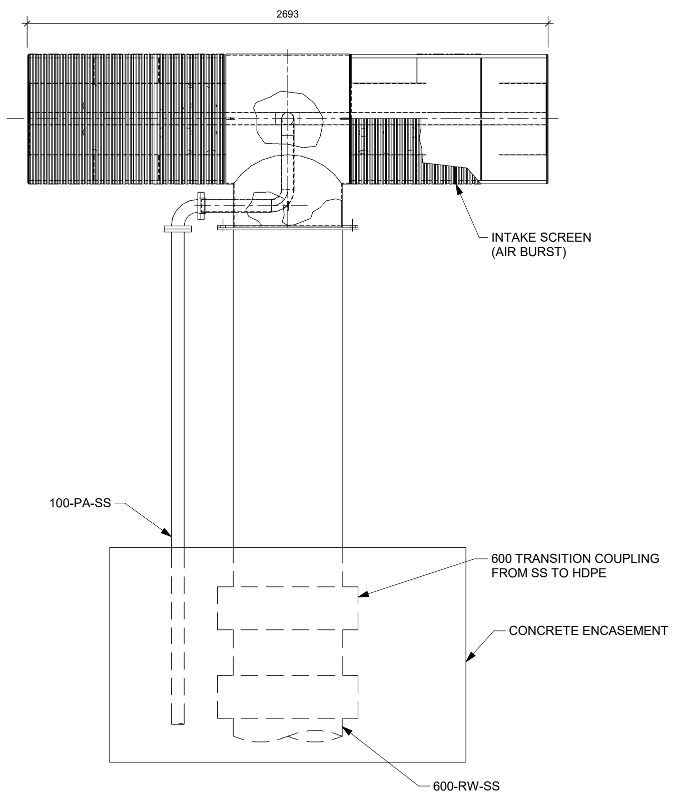
Project Manager
C.G.

Drawing Title

PROCESS

LQ PUMP STATION
PLAN AT EL 207.00m

Project no.	Drawing no.	Revision no.
30192375	P102	C



1 INTAKE PLAN

NTS

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A1 - 841X594

0 10 20 30 40 50 60 70 80 90 100mm

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A	ISSUED FOR 50% DESIGN REVIEW	2025-12-19

Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
K.C.

Drawn by
C.W.

Approved by
B.H.

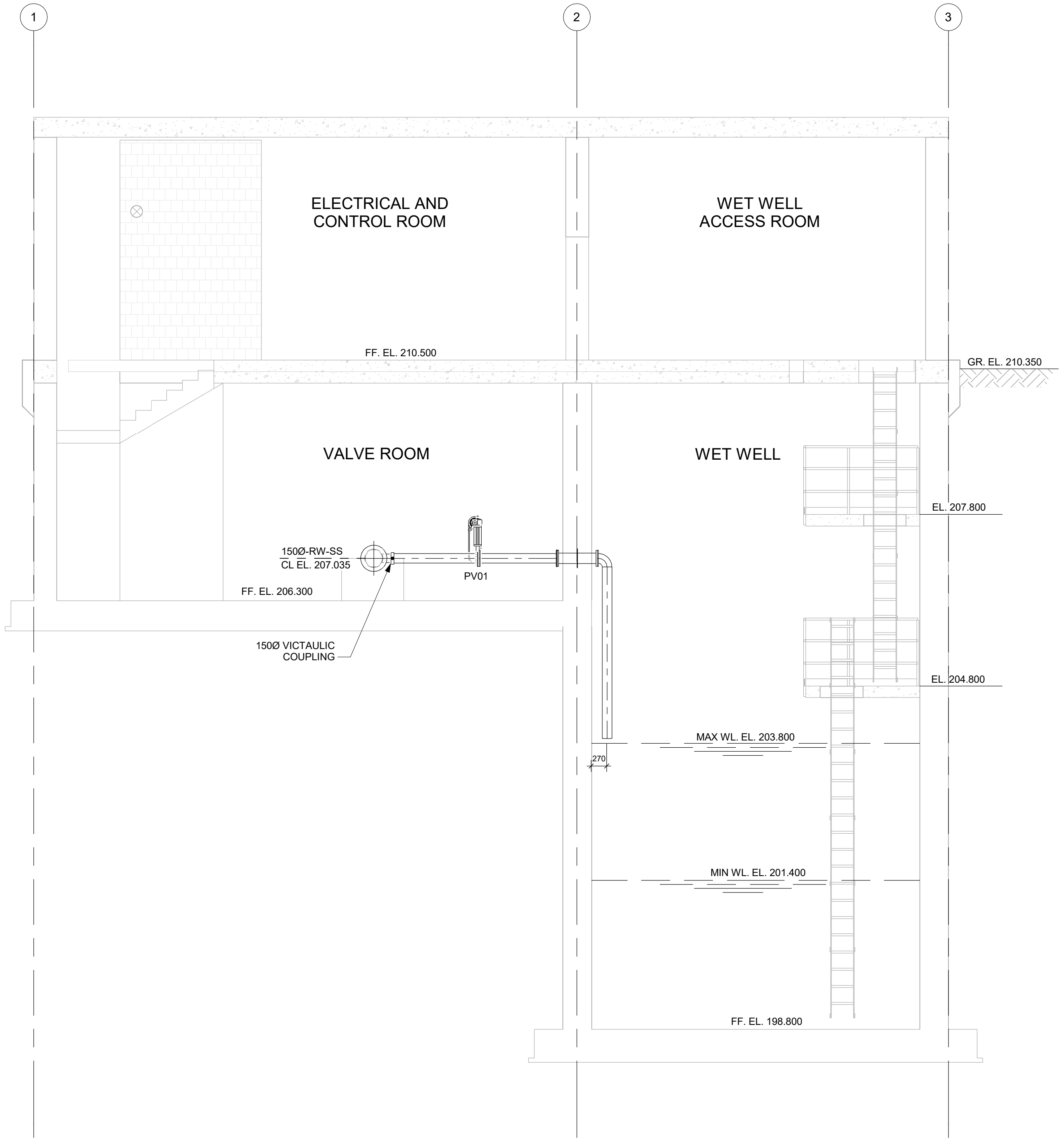
Project Manager
C.G.

Drawing Title

PROCESS

LQ PUMP STATION
INTAKE PLAN

Project no.	Drawing no.	Revision no.
30192375	**P103**	**A**


1
2
3
ELECTRICAL AND CONTROL ROOM
WET WELL ACCESS ROOM
FF. EL. 210.500
GR. EL. 210.350
VALVE ROOM
WET WELL
EL. 207.800
150Ø-RW-SS
CL EL. 207.035
PV01
FF. EL. 206.300
150Ø VICTAULIC COUPLING
EL. 204.800
MAX WL. EL. 203.800
270
MIN WL. EL. 201.400
FF. EL. 198.800

1
P101
SECTION

0.0 1:50 2.0

0 10 20 30 40 50 60 70 80 90 100mm

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SUPPLY AND STORAGE

Designed by
K.C.

Drawn by
C.W.

Approved by
B.H.

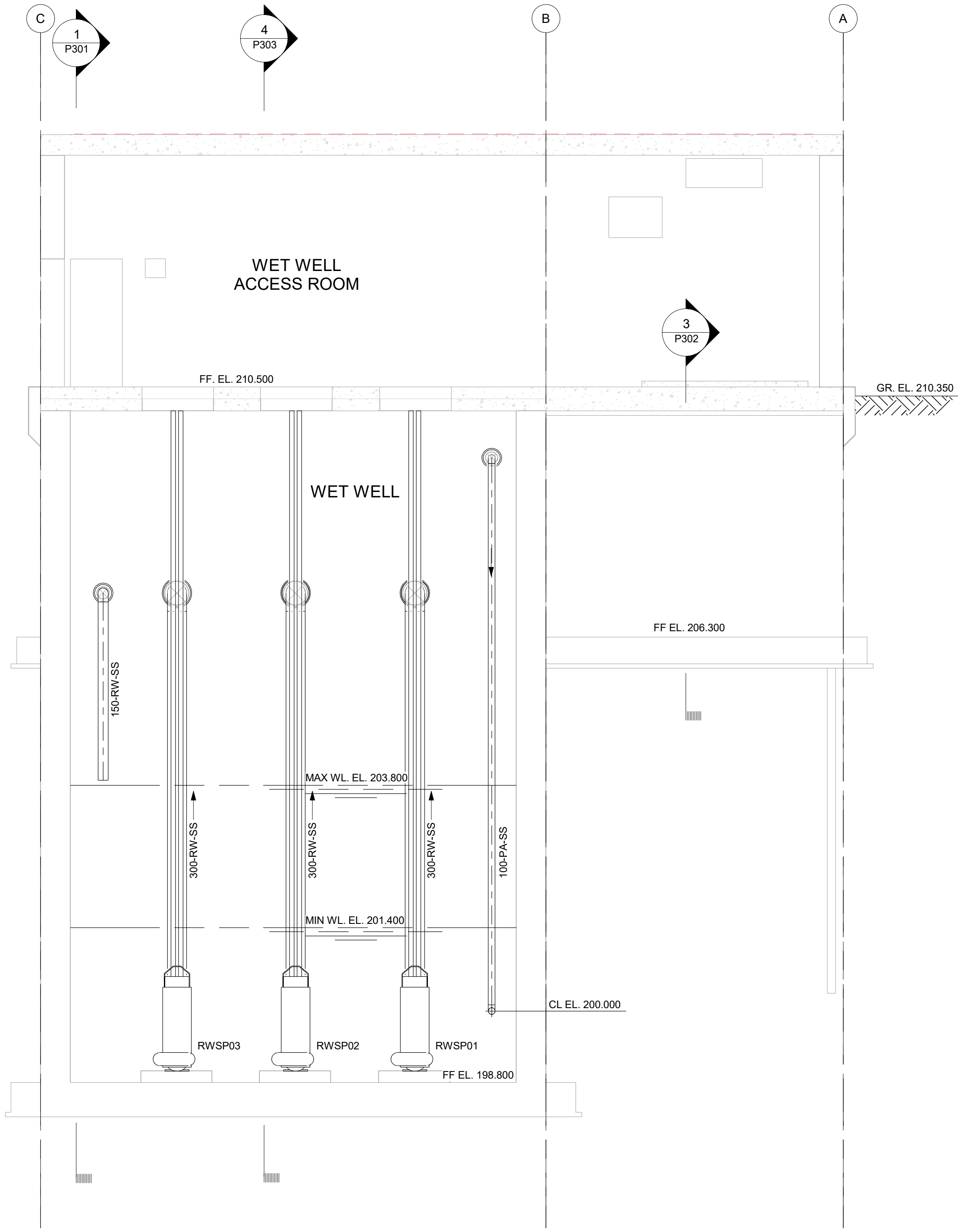
Project Manager
C.G.

Drawing Title

PROCESS

LQ PUMP STATION
SECTIONS - 1

Project no.	Drawing no.	Revision no.
30192375	**P301**	**C**


C
1
P301
4
P303
B
A
WET WELL
ACCESS ROOM
3
P302
FF. EL. 210.500
GR. EL. 210.350
WET WELL
FF EL. 206.300
150-RW-SS
MAX WL. EL. 203.800
300-RW-SS
300-RW-SS
300-RW-SS
100-PA-SS
MIN WL. EL. 201.400
CL EL. 200.000
RWSP03
RWSP02
RWSP01
FF EL. 198.800

2 SECTION
P102
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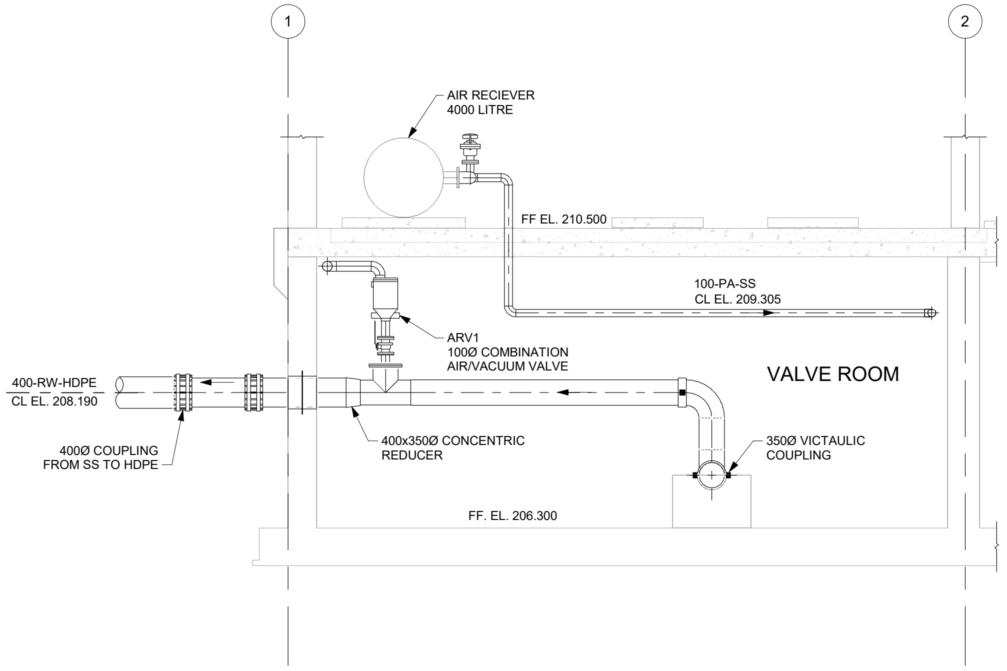
1
2
AIR RECIEVER
4000 LITRE
FF EL. 210.500
100-PA-SS
CL EL. 209.305
ARV1
100Ø COMBINATION
AIR/VACUUM VALVE
VALVE ROOM
400-RW-HDPE
CL EL. 208.190
400Ø COUPLING
FROM SS TO HDPE
400x350Ø CONCENTRIC
REDUCER
350Ø VICTAULIC
COUPLING
FF. EL. 206.300

3 SECTION
P101
0.0 1:50 2.0

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A1 - 841X594

0 10 20 30 40 50 60 70 80 90 100mm

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Revision	Description	Date

Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
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Drawn by
C.W.

Approved by
B.H.

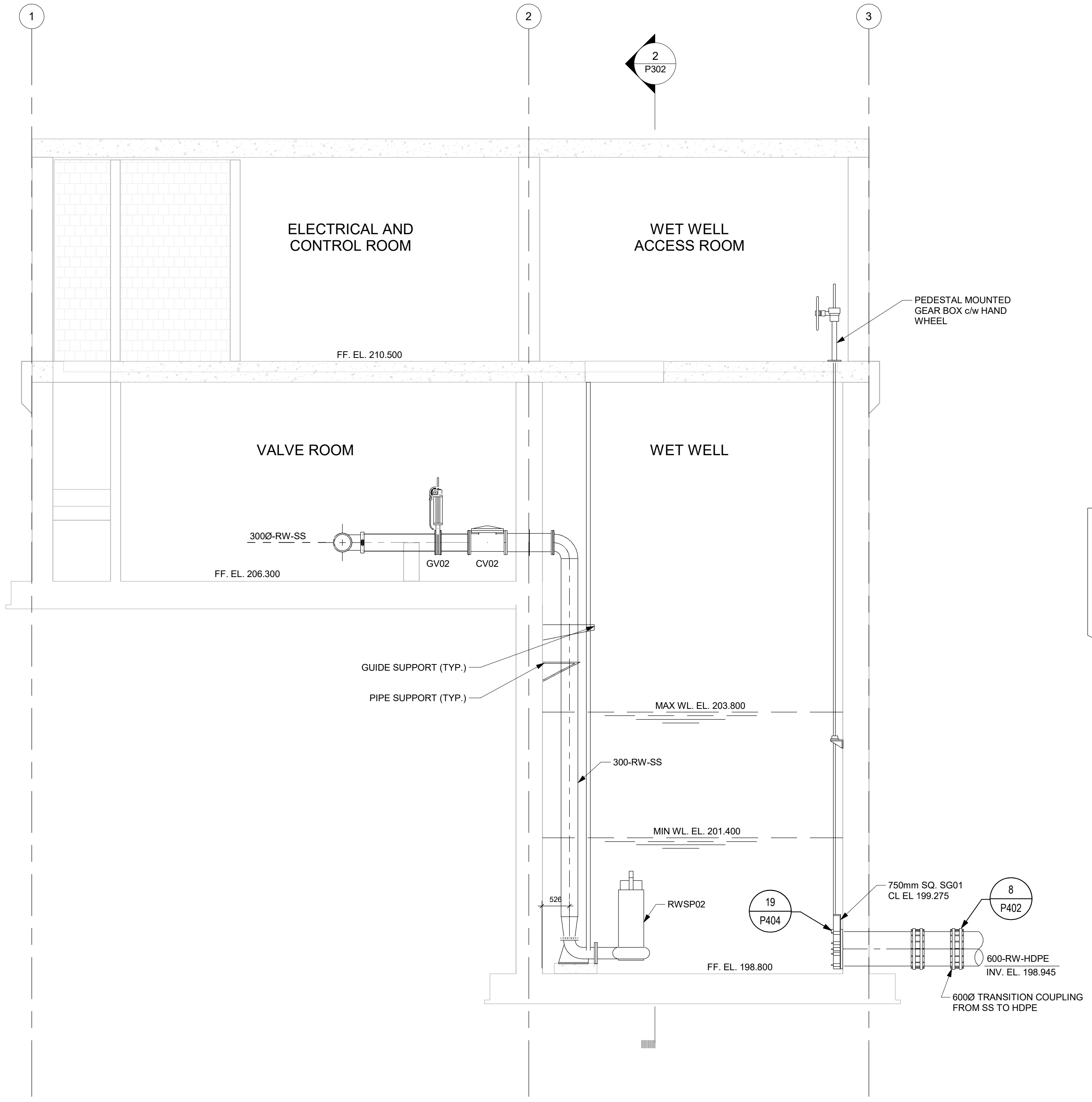
Project Manager
C.G.

Drawing Title

PROCESS

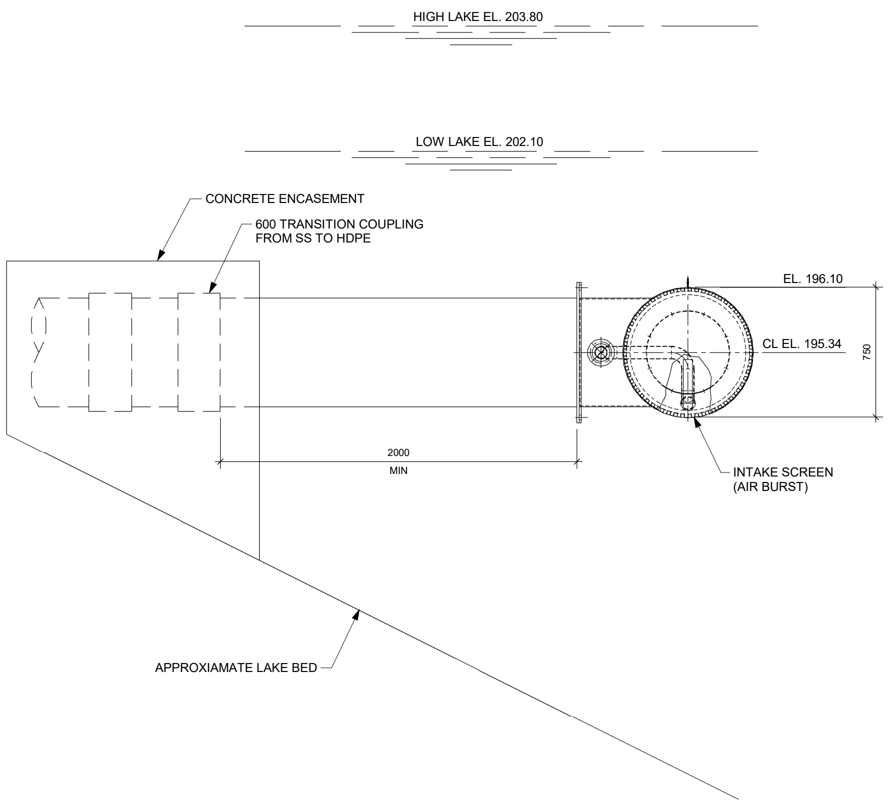
LQ PUMP STATION
SECTIONS - 2

Project no.	Drawing no.	Revision no.
30192375	P302	C


1
2
3
2
P302
ELECTRICAL AND CONTROL ROOM
WET WELL ACCESS ROOM
PEDESTAL MOUNTED GEAR BOX c/w HAND WHEEL
FF. EL. 210.500
VALVE ROOM
WET WELL
300Ø-RW-SS
GV02
CV02
FF. EL. 206.300
GUIDE SUPPORT (TYP.)
PIPE SUPPORT (TYP.)
MAX WL. EL. 203.800
300-RW-SS
MIN WL. EL. 201.400
526
RWSP02
19
P404
750mm SQ. SG01
CL EL 199.275
8
P402
FF. EL. 198.800
600-RW-HDPE
INV. EL. 198.945
600Ø TRANSITION COUPLING FROM SS TO HDPE

4 P303 SECTION

Scale: 1 : 50


HIGH LAKE EL. 203.80
LOW LAKE EL. 202.10
CONCRETE ENCASEMENT
600 TRANSITION COUPLING FROM SS TO HDPE
EL. 196.10
CL EL. 195.34
750
2000
MIN
INTAKE SCREEN (AIR BURST)
APPROXIAMATE LAKE BED

5 INTAKE SECTION

NTS

Iqaluit
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Revision	Description	Date

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Project title

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LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
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Drawn by
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Approved by
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Project Manager
C.G.

Drawing Title

PROCESS

LQ PUMP STATION
SECTIONS - 3

Project no.	Drawing no.	Revision no.
30192375	P303	A

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A1 - 841X594

0 10 20 30 40 50 60 70 80 90 100mm

LAKE Q GATE SCHEDULE

Gate No.	Location	Openings 'A' (mm)	Openings 'B' (mm)	Gate Invert El	Operator El	Seating (m)	Unseating (m)	Operator Mounting	Operator Type	Building	Remarks
SG01	wet well	750	750	198.95	210.50	4.85	4.85	Pedestal Mounted Floor	handwheel	LQ PS	Bevel Gearbox

NOTE:

1. SEE SHEET P401 FOR GATE DETAILS.

LAKE Q VALVE SCHEDULE

Valve No.	Valve Type	Location	Size	Ends	Rating (kPa)	Actuator	Building	Remarks
CV01	check valve	pump discharge	300	Flange	1725	-	LQ PS	
CV02	check valve	pump discharge	300	Flange	1725	-	LQ PS	
CV03	check valve	pump discharge	300	Flange	1725	-	LQ PS	
GV01	gate valve	pump discharge	300	Flange	1030	handwheel	LQ PS	
GV02	gate valve	pump discharge	300	Flange	1030	handwheel	LQ PS	
GV03	gate valve	pump discharge	300	Flange	1030	handwheel	LQ PS	
BV01	ball valve	air release line	100	Flange	1030	lever	LQ PS	
ARV01	air release	air release line	100	Flange	1030	-	LQ PS	
PV01	plug valve	pump header drain	150	Flange	1965	handwheel	LQ PS	
BFV31	butterfly valve	VC1	300	Flange	1725	handwheel	LQ Conveyance	
BFV32	butterfly valve	VC1	300	Flange	1725	handwheel	LQ Conveyance	
PSV01	pressure sustaining valve	VC10	300	Flange	1725	-	LQ Conveyance	
PSV02	pressure sustaining valve	VC10	300	Flange	1725	-	LQ Conveyance	
BFV33	butterfly valve	VC10	300	Flange	1725	motorized	LQ Conveyance	
BFV34	butterfly valve	VC10	300	Flange	1725	motorized	LQ Conveyance	
CV31	check valve	Conveyance line 1	300	Flange	1725	-	LQ Conveyance	
CV32	check valve	conveyance line 2	300	Flange	1725	-	LQ Conveyance	
BV37	ball valve	VC3	100	Flange	1030	lever	LQ conveyance	
BV38	ball valve	VC3	100	Flange	1030	lever	LQ conveyance	
BV41	ball valve	VC5	100	Flange	1030	lever	LQ conveyance	
BV42	ball valve	VC5	100	Flange	1030	lever	LQ conveyance	
BV47	ball valve	VC8	100	Flange	1030	lever	LQ conveyance	
BV48	ball valve	VC8	100	Flange	1030	lever	LQ conveyance	

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0 10 20 30 40 50 60 70 80 90 100mm

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SUPPLY AND STORAGE

Designed by
K.C.

Drawn by
C.W.

Approved by
B.H.

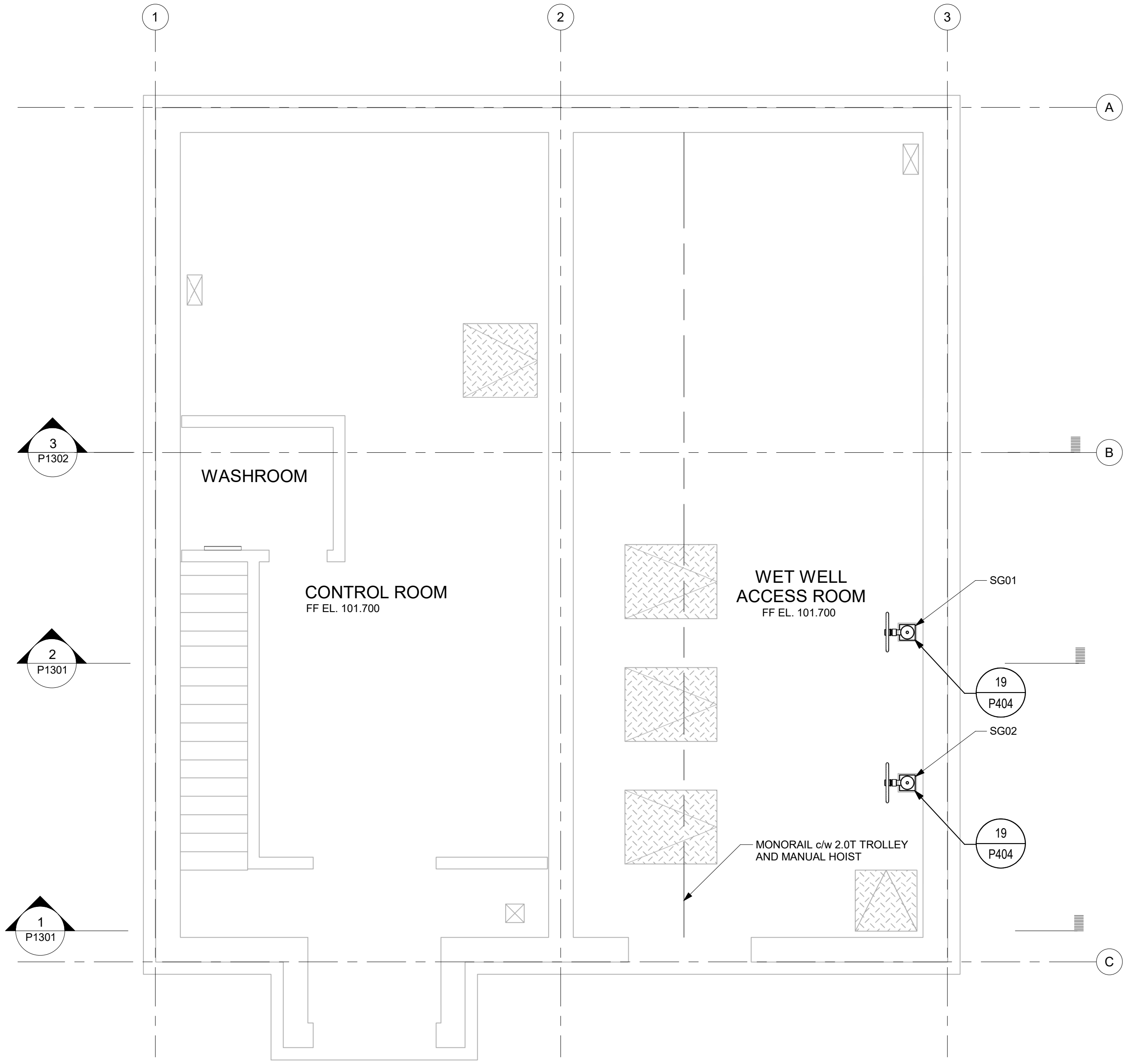
Project Manager
C.G.

Drawing Title

PROCESS

LQ PUMP STATION
SCHEDULES

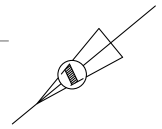
Project no.	Drawing no.	Revision no.
30192375	**P501**	**A**


1
2
3
A
B
C
3
P1302
2
P1301
1
P1301
WASHROOM
CONTROL ROOM
FF EL. 101.700
WET WELL
ACCESS ROOM
FF EL. 101.700
SG01
19
P404
SG02
19
P404
MONORAIL c/w 2.0T TROLLEY
AND MANUAL HOIST

1
P1101

PLAN AT EL 101.70m

Scale: 1 : 50



0 10 20 30 40 50 60 70 80 90 100mm

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A1 - 841X594

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN (REVISED)	2025-09-26

Consultant

ARCADIS

8133 Warden Avenue - Unit 300
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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
K.C.

Drawn by
C.W.

Approved by
B.H.

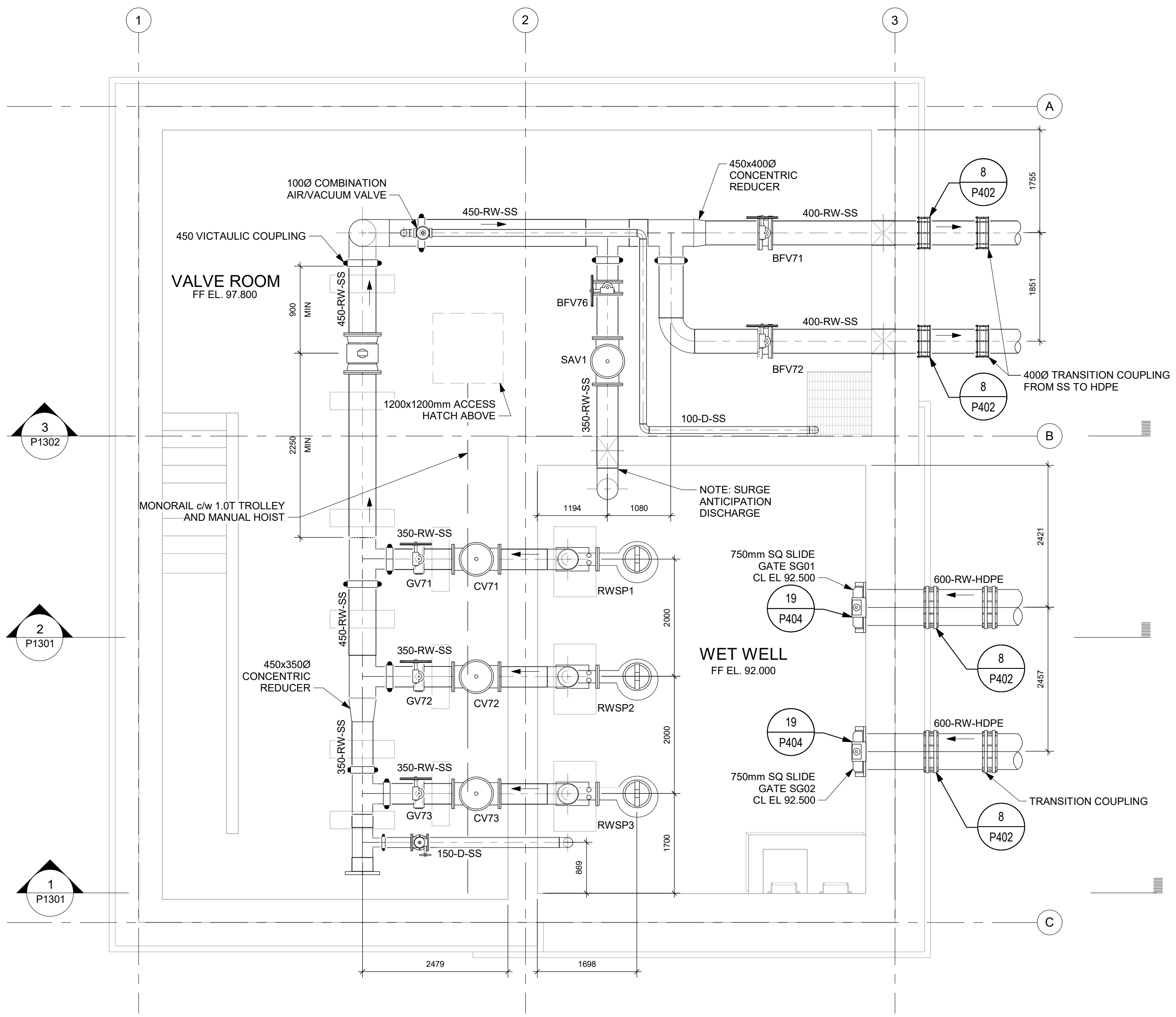
Project Manager
C.G.

Drawing Title

PROCESS

AR PUMP STATION
PLAN AT EL 101.70m

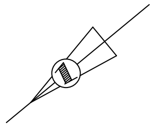
Project no.	Drawing no.	Revision no.
30192375	P1101	B


1
2
3
A
B
C
3
P1302
2
P1301
1
P1301
VALVE ROOM
FF EL. 97.800
WET WELL
FF EL. 92.000
100Ø COMBINATION AIR/VACUUM VALVE
450 VICTAULIC COUPLING
450-RW-SS
450x400Ø CONCENTRIC REDUCER
400-RW-SS
BFV71
400-RW-SS
BFV72
BFV76
SAV1
350-RW-SS
100-D-SS
8
P402
8
P402
400Ø TRANSITION COUPLING FROM SS TO HDPE
1755
1851
900
MIN
2250
MIN
450-RW-SS
1200x1200mm ACCESS HATCH ABOVE
MONORAIL c/w 1.0T TROLLEY AND MANUAL HOIST
NOTE: SURGE ANTICIPATION DISCHARGE
1194
1080
350-RW-SS
GV71
CV71
RWSP1
350-RW-SS
GV72
CV72
RWSP2
350-RW-SS
GV73
CV73
RWSP3
450-RW-SS
450x350Ø CONCENTRIC REDUCER
350-RW-SS
150-D-SS
750mm SQ SLIDE GATE SG01 CL EL 92.500
19
P404
750mm SQ SLIDE GATE SG02 CL EL 92.500
19
P404
600-RW-HDPE
600-RW-HDPE
8
P402
8
P402
TRANSITION COUPLING
2421
2457
2000
2000
1700
869
2479
1698

1
P1102

PLAN AT EL 97.80m

Scale: 1 : 50



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AR PUMP STATION
PLAN AT EL 97.80m

Project no.	Drawing no.	Revision no.
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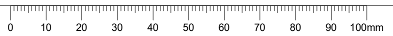
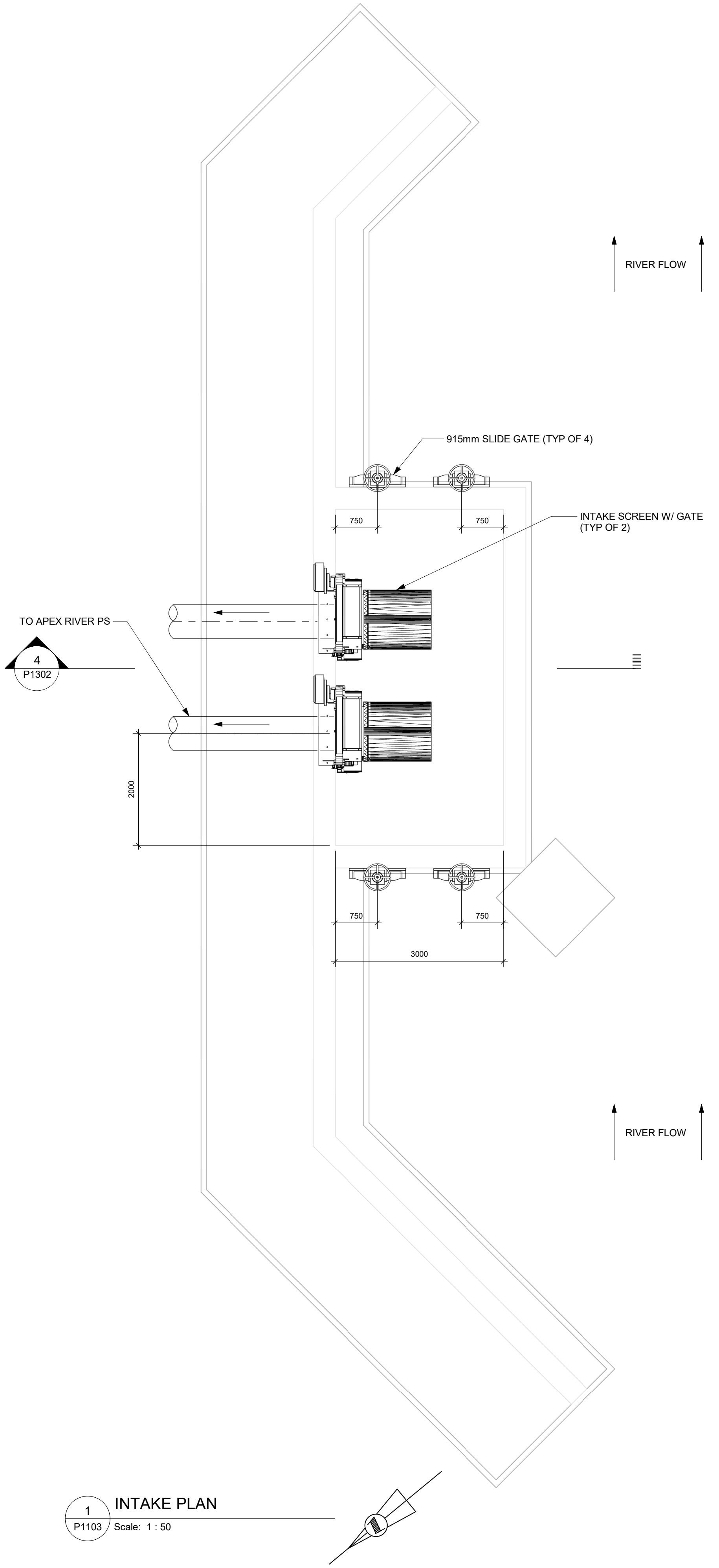
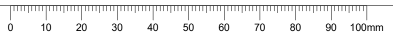

0
10
20
30
40
50
60
70
80
90
100mm


915mm SLIDE GATE (TYP OF 4)
RIVER FLOW
750
750
INTAKE SCREEN W/ GATE
(TYP OF 2)
TO APEX RIVER PS
4
P1302
2000
750
750
3000
RIVER FLOW

1
P1103

INTAKE PLAN

Scale: 1 : 50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100mm

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SUPPLY AND STORAGE

Designed by
K.C.

Drawn by
C.W.

Approved by
B.H.

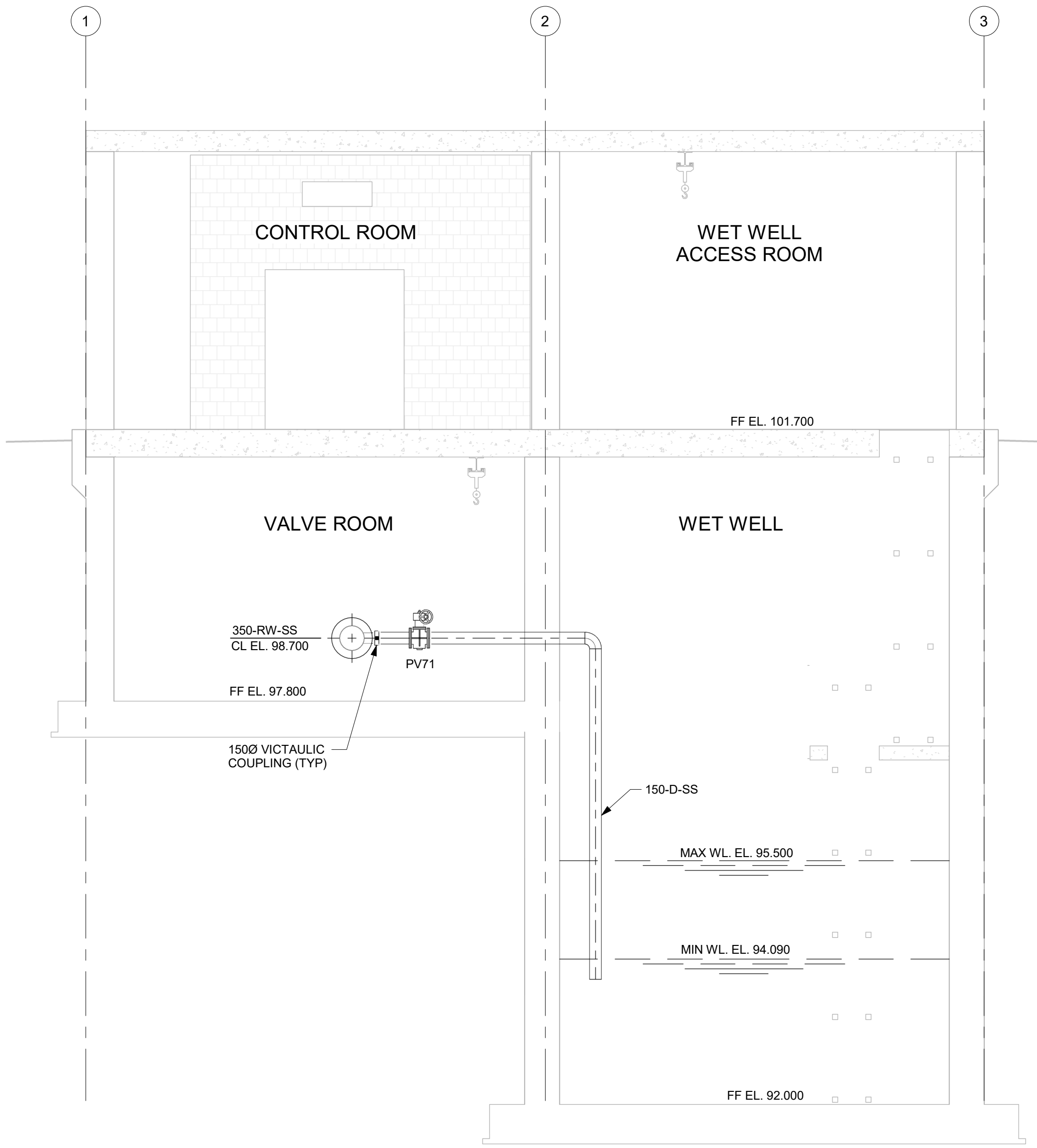
Project Manager
C.G.

Drawing Title

PROCESS

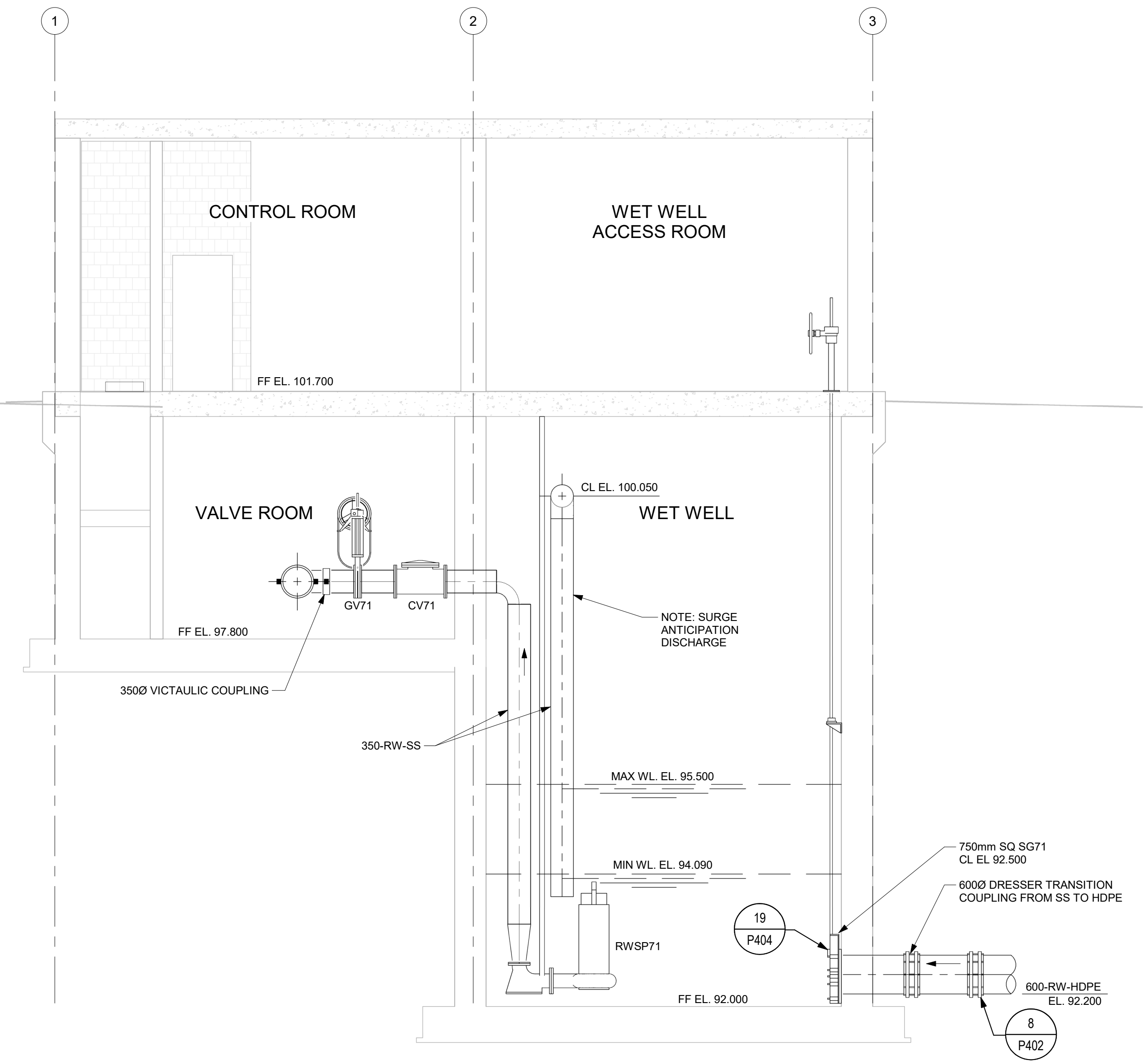
AR PUMP STATION
INTAKE PLAN

Project no.	Drawing no.	Revision no.
30192375	**P1103**	**A**


1
2
3
CONTROL ROOM
WET WELL
ACCESS ROOM
FF EL. 101.700
VALVE ROOM
WET WELL
350-RW-SS
CL EL. 98.700
PV71
FF EL. 97.800
150Ø VICTAULIC
COUPLING (TYP)
150-D-SS
MAX WL. EL. 95.500
MIN WL. EL. 94.090
FF EL. 92.000

1
P1301

SECTION
Scale: 1 : 50


1
2
3
CONTROL ROOM
WET WELL
ACCESS ROOM
FF EL. 101.700
VALVE ROOM
CL EL. 100.050
WET WELL
GV71
CV71
FF EL. 97.800
NOTE: SURGE
ANTICIPATION
DISCHARGE
350Ø VICTAULIC COUPLING
350-RW-SS
MAX WL. EL. 95.500
MIN WL. EL. 94.090
750mm SQ SG71
CL EL 92.500
600Ø DRESSER TRANSITION
COUPLING FROM SS TO HDPE
19
P404
RWSP71
600-RW-HDPE
EL. 92.200
FF EL. 92.000
8
P402

2
P1301

SECTION
Scale: 1 : 50

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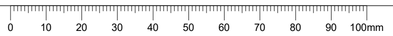
0
10
20
30
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50
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70
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90
100mm

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Approved by
B.H.

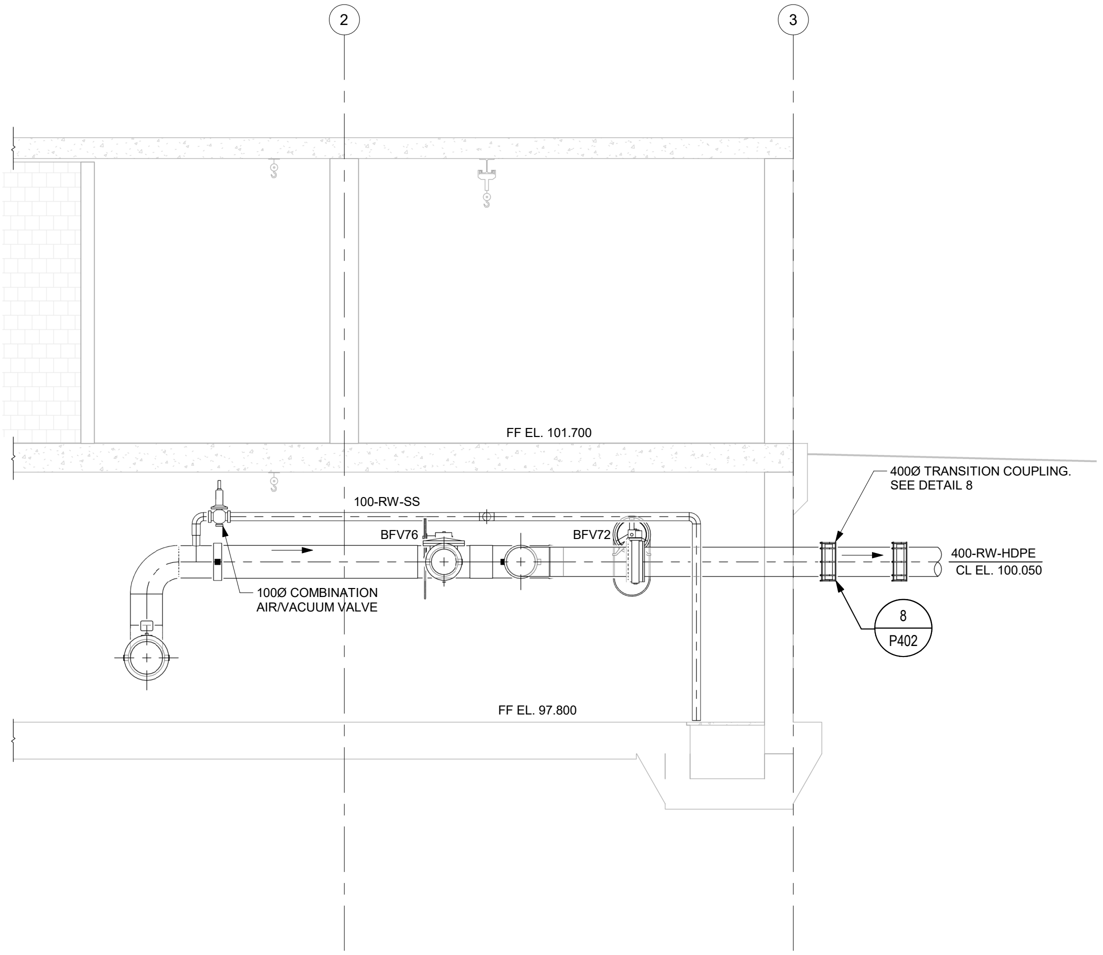
Project Manager
C.G.

Drawing Title

PROCESS

AR PUMP STATION
SECTIONS - 1

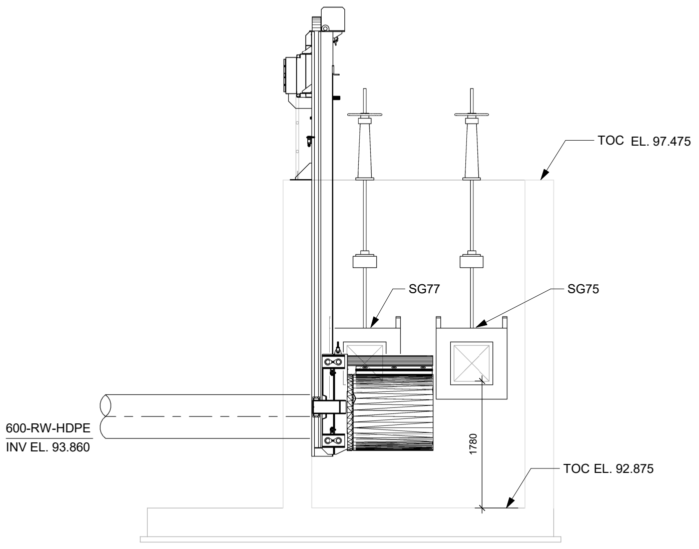
Project no.	Drawing no.	Revision no.
30192375	**P1301**	**B**


2
3
FF EL. 101.700
400Ø TRANSITION COUPLING.
SEE DETAIL 8
100-RW-SS
BFV76
BFV72
400-RW-HDPE
CL EL. 100.050
100Ø COMBINATION
AIR/VACUUM VALVE
8
P402
FF EL. 97.800

3
P1302

SECTION

Scale: 1 : 50


TOC EL. 97.475
SG77
SG75
600-RW-HDPE
INV EL. 93.860
1780
TOC EL. 92.875

4
P1302

SECTION

Scale: 1 : 50

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Drawing Title

PROCESS

AR PUMP STATION
SECTIONS - 2

Project no.	Drawing no.	Revision no.
30192375	P1302	A

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A1 - 841X594

0 10 20 30 40 50 60 70 80 90 100mm

APEX RIVER GATE SCHEDULE

Gate No.	Location	Openings 'A' (mm)	Openings 'B' (mm)	Gate Invert El	Operator El	Seating (m)	Unseating (m)	Operator Mounting	Operator Type	Building	Remarks
SG73	intake crib	750	750	93.86	97.475	2.7	1.64	Pedestal Mounted Floor	handwheel	AR PS	Provided by Intake Screen Manufacturer
SG74	intake crib	750	750	93.86	97.475	2.7	1.64	Pedestal Mounted Floor	handwheel	AR PS	Provided by Intake Screen Manufacturer
SG75	intake crib	915	915	94.78	97.475	1.74	1.74	Pedestal Mounted Floor	handwheel	AR PS	Bevel Gearbox
SG76	intake crib	915	915	94.78	97.475	1.74	1.74	Pedestal Mounted Floor	handwheel	AR PS	Bevel Gearbox
SG77	intake crib	915	915	94.78	97.475	1.74	1.74	Pedestal Mounted Floor	handwheel	AR PS	Bevel Gearbox
SG78	intake crib	915	915	94.78	97.475	1.74	1.74	Pedestal Mounted Floor	handwheel	AR PS	Bevel Gearbox
SG71	wet well	750	750	92.20	101.70	3.30	4.32	Pedestal Mounted Floor	handwheel	AR PS	Bevel Gearbox
SG72	wet well	750	750	92.20	101.70	3.30	4.32	Pedestal Mounted Floor	handwheel	AR PS	Bevel Gearbox

NOTE:

1. SEE SHEET P1401 FOR GATE DETAILS.

APEX RIVER VALVE SCHEDULE

Valve No.	valve type	Location	Size	Ends	Rating (kPa)	Actuator	building	Remarks
CV71	check valve	pump discharge	350	Flange	1725	-	AR PS	
CV72	check valve	pump discharge	350	Flange	1725	-	AR PS	
CV73	check valve	pump discharge	350	Flange	1725	-	AR PS	
GV71	gate valve	pump discharge	350	Flange	1030	handwheel	AR PS	
GV72	gate valve	pump discharge	350	Flange	1030	handwheel	AR PS	
GV73	gate valve	pump discharge	350	Flange	1030	handwheel	AR PS	
BFV71	butterfly valve	station discharge	400	Flange	1725	Chainwheel	AR PS	
BFV72	butterfly valve	station discharge	400	Flange	1725	Chainwheel	AR PS	
GV76	gate valve	drain line	350	Flange	1725	handwheel	AR PS	
SAV71	surge anticipation valve	drain line	350	Flange	1725	-	AR PS	
BV71	ball valve	air release line	100	Flange	1030	lever	AR PS	
ARV71	air release	air release line	100	Flange	1030	-	AR PS	
PV71	plug valve	pump header drain	150	Flange	1965	handwheel	AR PS	
BV91	ball valve	VC9	100	Flange	1030	lever	AR conveyance	
BV92	ball valve	VC9	100	Flange	1030	lever	AR conveyance	
BFV91	butterfly valve	VC12	400	Flange	1725	handwheel	AR conveyance	
BFV92	butterfly valve	VC12	400	Flange	1725	handwheel	AR conveyance	
BV94	ball valve	VC13	100	Flange	1030	lever	AR conveyance	
BFV93	butterfly valve	VC11	400	Flange	1725	handwheel	AR conveyance	
BFV94	butterfly valve	VC11	400	Flange	1725	handwheel	AR conveyance	
CV91	check valve	Conveyance to LG	400	Flange	1725	-	AR conveyance	
PSV91	pressure sustaining valve	VC15	400	Flange	1725	-	AR conveyance	
BFV95	butterfly valve	VC15	400	Flange	1725	handwheel	AR conveyance	
CV92	check valve	Conveyance to NR, direct	400	Flange	1725	-	AR conveyance	
CV93	check valve	indirect	400	Flange	1725	-	AR conveyance	
GV51	gate valve	downstream	750	Flange	690	motorized	service corridor	
GV52	gate valve	downstream	750	Flange	690	motorized	service corridor	
GV53	gate valve	downstream	750	Flange	690	gear and handwheel	service corridor	
GV54	gate valve	downstream	750	Flange	690	gear and handwheel	service corridor	
GV55	gate valve	upstream	750	Flange	690	motorized	service corridor	
GV56	gate valve	upstream	750	Flange	690	motorized	service corridor	
BV51	ball valve	downstream	100	Flange	1030	lever	service corridor	
BV52	ball valve	downstream	100	Flange	1030	lever	service corridor	

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Approved by
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Project Manager
C.G.

Drawing Title

PROCESS

AR PUMP STATION
SCHEDULES

Project no.	Drawing no.	Revision no.
30192375	**P1501**	**A**

GENERAL NOTES

GENERAL NOTES

1. READ THIS SET OF DRAWINGS IN CONJUNCTION WITH SPECIFICATIONS.
2. COORDINATE LOCATIONS OF REQUIRED OPENINGS IN WALLS, FLOORS AND ROOF FOR MECHANICAL SYSTEMS WITH OTHER TRADES AND DISCIPLINES. LOCATIONS AND SIZES SHOWN ARE APPROXIMATE. CONTRACTOR MUST FIELD VERIFY ALL DIMENSIONS PRIOR TO START OF WORK.
3. THERMAL INSULATION PERFORMANCE AND THICKNESS TO BE IN ACCORDANCE WITH ASHRAE 90.1. PROVIDE PVC FINISHING JACKET ON ALL INTERNALLY EXPOSED INSULATION, AND ALUMINUM FINISHING JACKET ON ALL EXTERNALLY EXPOSED INSULATION UNLESS OTHERWISE SPECIFIED. REFER TO SPECIFICATIONS FOR FURTHER DETAILS.
4. FOR ROOF OPENING AND ROOF CURB DETAILS SEE ARCHITECTURAL DETAILS.
5. FOR ALL FRESH AIR OR EXHAUST AIR LOUVRES IN BUILDING WALLS SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS.
6. FOR ALL STORM COLLAR FLASHINGS SEE ARCHITECTURAL DRAWINGS.
7. FOR CONCRETE CURBS AND HOUSEKEEPING PADS UNDER MECHANICAL EQUIPMENT SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS.
8. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND MEASUREMENTS AT THE SITE AND REPORT TO THE OWNER'S REPRESENTATIVE ANY DISCREPANCIES OR UNSATISFACTORY CONDITIONS WHICH MAY ADVERSELY AFFECT THE PROPER COMPLETION OF THE WORK.
9. DIMENSIONS SHOWN ARE FOR PREFERRED LOCATION AND GENERAL ARRANGEMENT OF MECHANICAL SYSTEMS. IT SHALL REMAIN THE CONTRACTORS RESPONSIBILITY TO ENSURE OVERALL COORDINATION OF HIS WORK WITH OTHER TRADES. SHOULD DEVIATION FROM LOCATIONS SHOWN ON DRAWINGS BECOME NECESSARY DUE TO CONFLICTS WITH OTHER TRADES OR LOCAL PROBLEMS THEY MUST BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE FOR APPROVAL PRIOR TO PROCEEDING WITH WORK.

PLUMBING NOTES

1. PLUMBING, DRAINAGE, STORM AND VENT SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF NPC, THE AUTHORITY HAVING JURISDICTION, AND AS REQUIRED IN THE SPECIFICATIONS.
2. ALL FLOOR DRAINS AND FUNNEL FLOOR DRAINS SHALL BE 75mm DIAMETER UNLESS OTHERWISE NOTED ON DRAWINGS. ALL FLOOR DRAINS & SCUPPER DRAINS SERVING ELEVATOR PITS SHALL BE 100mm DIAMETER.
3. SUPPLY AND INSTALL CLEANOUTS PER NPC AND AUTHORITY HAVING JURISDICTION.
4. PROVIDE TRAP PRIMER LINES TO ALL FLOOR DRAINS, FUNNEL FLOOR DRAINS, AND HUB DRAINS CONNECTED TO THE SANITARY DRAINAGE SYSTEM.
5. ALL DRAINS 100mm (NPS 4) SIZE & LARGER SHALL SLOPE AT 1.0%. ALL DRAINS 75MM (NPS 3) & SMALLER SHALL SLOPE AT 2%.
6. ALL VENTING AND TRAP SEAL PRIMER NOT SHOWN BUT REQUIRED.
7. ALL DOMESTIC COLD AND HOT WATER PIPING SHALL BE THERMALLY INSULATED.
8. ALL ABOVE GROUND HORIZONTAL RAIN WATER LEADER, STORM DRAIN AND SANITARY DRAINS SHALL BE THERMALLY INSULATED.
9. PROVIDE VACUUM BREAKERS AT EACH HOSE BIB CONNECTION POINT.
10. PLUMBING, DRAINAGE AND VENT PIPING SHALL NOT BE ROUTED THROUGH ELECTRICAL AND COMMUNICATION-TYPE ROOMS.
11. EQUIPMENT REQUIRING DRAINAGE SHALL NOT BE LOCATED DIRECTLY OVER ELECTRICAL AND COMMUNICATION-TYPE ROOMS.
12. ALL VENT LINES SHALL TERMINATE MINIMUM 2.5m ABOVE GRADE AND SHALL BE PROTECTED FROM RAIN AND SNOW ENTRY.
13. PROVIDE COMPLETE HEAT TRACING AND THERMAL INSULATION FOR ALL PIPING EXPOSED TO FREEZING TEMPERATURES.
14. ISOLATION VALVES SHALL BE PROVIDED FOR ALL PLUMBING FIXTURES AND EQUIPMENT.
15. CORROSION CONTROL MEASURE FOR UNDERGROUND BURIED PIPING SHALL BE PROVIDED PER SPECIFICATION AND NPC REQUIREMENTS.
16. PROVIDE WATER HAMMER ARRESTORS ON ALL DCW LINE ENDS, END FIXTURES, AT EACH PIPE RISER AND AS REQUIRED TO ELIMINATE WATER HAMMER IN THE DOMESTIC COLD WATER SYSTEM.
17. ALL DRAINAGE PIPE STUB SHALL BE TERMINATED MINIMUM 300MM ABOVE FINISHED FLOOR ELEVATION FOR FUTURE CONNECTIONS.

HVAC NOTES

1. DUCTWORK MATERIALS, CONSTRUCTION, JOINTS, FITTINGS AND ACCESSORIES SHALL BE IN ACCORDANCE WITH THE LATEST SMACNA STANDARDS AND AS REQUIRED IN THE SPECIFICATIONS.
2. DUCTWORK: FABRICATED OF PRIME QUALITY GALVANIZED STEEL SHEETS WITH Z275 (G90) DESIGNATION ZINC COATING TO ASTM A653/A653M UNLESS NOTED OTHERWISE.
3. ALL DUCTWORK C/W SEAL CLASS 'A' AS PER S.M.A.C.N.A STANDARDS.
4. ALL EXHAUST DUCTWORK SHALL BE THERMALLY INSULATED FOR 1500mm BEFORE EXITING THE BUILDING ENVELOPE.
5. ALL REFRIGERANT LINES SHALL BE THERMALLY INSULATED.
6. ALL CONDENSATE DRAINS SHALL BE THERMALLY INSULATED.
7. PROVIDE FIRE DAMPERS AT ALL FIRE RATED SEPARATIONS, WHERE INDICATED ON DRAWINGS, AND WHERE REQUIRED BY AUTHORITIES HAVING JURISDICTION. FIRE DAMPERS TO BE ULC LISTED AND TESTED IN ACCORDANCE WITH UL 555 AND APPROPRIATE PROVISIONS FOR CAN S112-M AND CAN 4-S112-2 AND CLASSIFIED, AND LABELED, FOR ‘DYNAMIC CLOSURE’ AGAINST AIR FLOW VELOCITY OF 10.16 m/s AT 1000 Pa DIFFERENTIAL PRESSURE.
8. PROVIDE BALANCING DAMPERS AT ALL BRANCHES SERVING MORE THAN ONE OUTLET, AIR OUTLET TAKE-OFFS, AND WHERE SHOWN ON DRAWINGS.
9. FLEXIBLE DUCTWORK SHALL BE MAXIMUM 3000mm LONG AND SHALL BE INSULATED.
10. MOTORIZED DAMPERS TO BE OPPOSED BLADE TYPE RATED FOR OPERATION IN TEMPERATURES BETWEEN -40°C TO 100°C, AND MAXIMUM LEAKAGE IN THE ‘CLOSED’ POSITION OF 0.21 lps/sq. m. AGAINST A DIFFERENTIAL PRESSURE OF 1000 Pa.
11. ALL WALL MOUNTED HEATERS TO BE MOUNTED SUCH THAT THE BOTTOM OF THE HEATER IS AT 250MM MINIMUM A.F.F. UNLESS OTHERWISE NOTED.

HVAC CONTROL NOTES

1. WHERE INTERFACE BETWEEN HEATING AND COOLING SYSTEMS IS REQUIRED, AUTOMATIC SWITCHOVER SHALL BE PROVIDED, SUCH THAT SIMULTANEOUS HEATING AND COOLING WITHIN THE SYSTEM CANNOT OCCUR.
2. ALL CONTROL PANELS SHALL INCORPORATE THE ABILITY TO SEND TROUBLE ALARM SIGNAL TO BUILDING MANAGEMENT SYSTEM.
3. ALL SENSOR LOCATED IN PUBLIC AREAS SHALL HAVE VANDAL/TAMPER VENDOR RESISTANT HOUSING AND MOUNTING BRACKETS INCLUDED.
4. ALL CONTROL WIRING SHOULD BE FT-6 RATED.

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A1 - 841X594

0 10 20 30 40 50 60 70 80 90 100mm

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

A	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
Revision	Description	Date

Consultant

ARCADIS

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
M.J.

Drawn by
B.T.

Approved by
J.P.

Project Manager
C.G.

Drawing Title

GENERAL NOTES

Project no.	Drawing no.	Revision no.
30192375	**M001**	**A**

MECHANICAL LEGEND AND SYMBOLS

PLUMBING & DRAINAGE

DCW	DOMESTIC COLD WATER
DHW	DOMESTIC HOT WATER
DHWR	DOMESTIC HOT WATER RECIRCULATION
NPW	NON-POTABLE WATER
TW	TEMPERED HOT WATER
IW	IRRIGATION WATER
BRIN	BRINE WATER
CHEM	CHEMICAL WATER
SW	SOFT WATER
SAN	SANITARY DRAIN - ABOVE GRADE
SAN	SANITARY DRAIN - BELOW GRADE
SAN-P	PUMPED SANITARY DRAIN
STM	STORM DRAIN - ABOVE GRADE
STM	STORM DRAIN - BELOW GRADE
STM-P	PUMPED STORM DRAIN
PW	PROCESS DRAIN - ABOVE GRADE
PW	PROCESS DRAIN - BELOW GRADE
PW-P	PUMPED PROCESS DRAIN
WP	WEEPER DRAIN (SUB-DRAIN)
V	VENT
COND	CONDENSATE DRAIN
DL	OVERFLOW DRAIN
FD-A	FLOOR DRAIN (LETTER INDICATES TYPE SEE SPECIFICATION)
RD	ROOF DRAIN (CONVENTIONAL)
RD -1	CONTROL FLOW ROOF DRAIN (NUMBER INDICATES NOTCHES)
	FUNNEL DRAIN - ELEVATION
HB	HOSE BIBB
NFWH	HYDRANT - NON-FREEZE
	SHOWER HEAD
---%	PITCH-INDICATES DOWN SLOPE
CO	CLEANOUT - ABOVE GRADE
CO	CLEANOUT - ABOVE GRADE
CO	CLEANOUT - BELOW GRADE
CO	CLEANOUT - BELOW GRADE
	RUNNING TRAP
BFP	BACKFLOW PREVENTOR
	BACK WATER VALVE (FOR SEWAGE)
	BACKFLOW PREVENTER (RP TYPE)
	BACKFLOW PREVENTER (DCVA)
	WATER CLOSET (WALL HUNG, FLUSH VALVE)
	WATER CLOSET (FLOOR MOUNTED, FLUSH TANK)
	URINAL (WALL HUNG, FLUSH VALVE)
	LAVATORY (WALL HUNG)
	LAVATORY (COUNTER TOP)
	SERVICE SINK
	GROUP WASHFOUNTAIN
M2	MOP SINK / JANITOR SINK
DFC-1	DRINKING FOUNTAIN COOLER (NUMBER INDICATES TYPE - SEE SPECS.)
ESS	SAFETY SHOWER & EYE WASH STATION
EW	EYE WASH STATION
VM	VENDING MACHINE
CB1	600 X 600 X 700 (H) CATCH BASIN
CB2	IN LINE C.B.
TD	TRENCH DRAIN WITH CONTINUOUS SLOPE

MECHANICAL PIPING

X-YYY	"X" PIPE SIZE NPS "Y" PIPE SERVICE
HWS	HEATING WATER SUPPLY
HWR	HEATING WATER RETURN
HCS	HEATING / CHILLED WATER SUPPLY
HCR	HEATING / CHILLED WATER RETURN
GLY-HWS	GLYCOL HEATING WATER SUPPLY
GLY-HWR	GLYCOL HEATING WATER RETURN
CHWS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN
PCHWS	PROCESS CHILLED WATER SUPPLY
PCHWR	PROCESS CHILLED WATER RETURN
CTWS	COOLING WATER SUPPLY
CTWR	COOLING WATER RETURN
HPS	HIGH PRESSURE STEAM
LPS	HIGH PRESSURE STEAM
S.COND	STEAM CONDENSATE
S.COND-P	PUMPED STEAM CONDENSATE
RL	REFRIGERANT LIQUID
RG	REFRIGERANT GAS
FUEL	FUEL PIPE
FOS	FUEL OIL SUPPLY
FOR	FUEL OIL RETURN
FOV	FUEL OIL VENT
H	HUMIDIFIER LINE
ENGINE OIL	ENGINE OIL
SOL 'B'	SOLUBLE 'B' OIL
HONE	HONE OIL
GASO	GASOLINE
MCS(LP)	MACHINE COOLANT SUPPLY (LOW PRESSURE)
MCS(HP)	MACHINE COOLANT SUPPLY (HIGH PRESSURE)
MCR	MACHINE COOLANT RETURN
G	NATURAL GAS
PR	PROPANE
A	COMPRESSED AIR
VACU	VACUUM PIPE
MDG	MEDICAL GAS PIPE
O2	OXYGEN
NO	NITROUS OXIDE
N	NITROGEN
CO2	CARBON DIOXIDE
CO	CARBON MONOXIDE
He	HELIUM
H2	HYDROGEN
AR	ARGON
	DIRECTION OF FLOW
	NEW PIPING / DUCTWORK
	EXISTING PIPING / DUCTWORK TO REMAIN
	EXISTING PIPING / DUCTWORK TO BE REMOVED

VALVES, FITTINGS AND SPECIALTIES

	GATE VALVE
	GLOBE VALVE
	CHECK VALVE
	PLUG VALVE
	BUTTERFLY VALVE
	BALL VALVE
D	DIAPHRAM VALVE
	HOSE END VALVE
	BOILER BLOWDOWN VALVE
FS	FIRE STOP VALVE
	RUPTURE DISC
	VALVE IN RISER
	PRESSURE REDUCING VALVE
	PRESSURE RELIEF VALVE - ELEVATION
	PRESSURE RELIEF VALVE
	PRESSURE RELIEF VALVE - PLAN
	FLOAT ACTIVATED SIGNAL TRANSMITTER
	FLOAT OPERATED VALVE
	BACK PRESSURE VALVE
	DIFFERENTIAL BACK PRESSURE VALVE
	NEEDLE VALVE
	BALANCING VALVE
	FLOW METERING FITTING (UNDER 75mm)
	FLOW METERING FITTING (75mm AND LARGER)
	CONTROL VALVE - ELECTRIC
	CONTROL VALVE - PNEUMATIC
	THREE-WAY CONTROL VALVE - ELECTRIC
	THREE-WAY CONTROL VALVE - PNEUMATIC
M	MOTORIZED VALVE
S	PUMP CONTROL VALVE
	GLOBE CONTROL VALVE - PNEUMATIC
	BUTTERFLY CONTROL VALVE - PNEUMATIC
	PNEUMATIC ACTUATOR
M	ELECTRIC ACTUATOR
M	ELECTRIC MOTOR
S	ELECTRIC SOLENOID
	HEAT TRACING

VALVES, FITTINGS AND SPECIALTIES

	ELBOW TURNED TOWARD
	ELBOW TURNED AWAY
	TEE TURNED AWAY
	TEE TURNED TOWARD
	CONCENTRIC REDUCER
	ECCENTRIC REDUCER
	PIPE CAP THREADED
	PIPE CAP WELDED
	PLUG
	FLEXIBLE CONNECTION
	UNION
	FLANGE CONNECTION
	BLIND FLANGE
	ORIFICE FLANGES
	QUICK CONNECTION FITTING
	PIPE ANCHOR
	PIPE LINE GUIDE
	PIPE LINE TRAPEZE HANGER
EJ	PIPE LINE EXPANSION JOINT
	EXPANSION LOOP
	Y-TYPE STRAINER
	BASKET TYPE STRAINER
	DUPLEX BASKET TYPE STRAINER
	IN-LINE SIGHT GLASS
	GAUGE GLASS
	DRIP PAN ELBOW
	THERMOMETER-STEM TYPE
P OR PG	PRESSURE GAUGE
M	METER
WM	WATER METER
GM	N.GAS METER
CAM	COMPRESSED AIR METER
	PUMP
F&T	STEAM TRAP - FLOAT & THERMOSTATIC
B	STEAM TRAP - INVERTED BUCKET
T	STEAM TRAP - THERMOSTATIC
TH	STEAM TRAP - THERMODYNAMIC
ADT	AUTOMATIC DRAIN TRAP - COMPRESSED AIR
AE	AIR ELIMINATOR
	WATER HAMMER ARRESTOR
	HYDRAULIC SEPERATOR
AAV	AUTOMATIC AIR VENT

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Consultant

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LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
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Drawn by
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Project Manager
C.G.

Drawing Title

MECHANICAL LEGEND

Project no.	Drawing no.	Revision no.
30192375	**M002**	**B**

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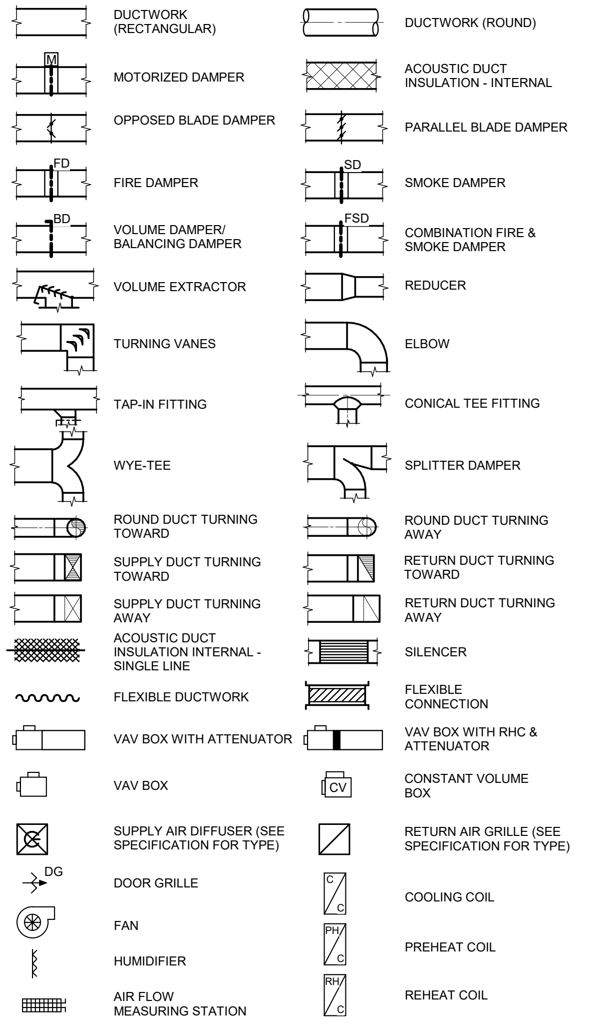
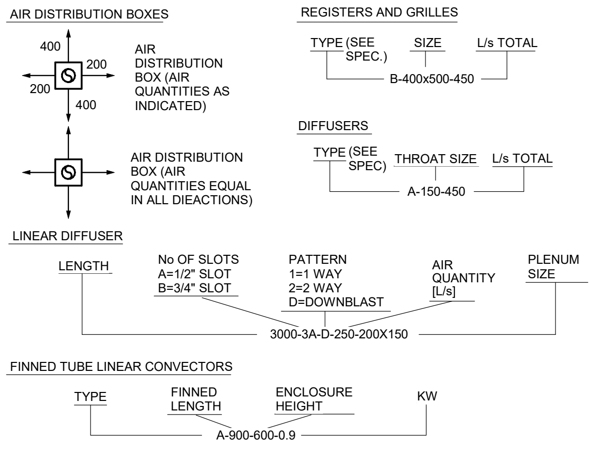
MECHANICAL LEGEND AND SYMBOLS

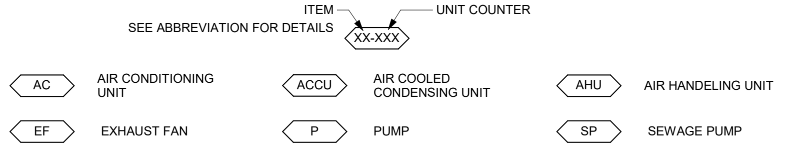
HEATING, VENTILATION AND AIR CONDITIONING



- DUCTWORK (RECTANGULAR)
- DUCTWORK (ROUND)
- MOTORIZED DAMPER
- ACOUSTIC DUCT INSULATION - INTERNAL
- OPPOSED BLADE DAMPER
- PARALLEL BLADE DAMPER
- FIRE DAMPER
- SMOKE DAMPER
- VOLUME DAMPER/ BALANCING DAMPER
- COMBINATION FIRE & SMOKE DAMPER
- VOLUME EXTRACTOR
- REDUCER
- TURNING VANES
- ELBOW
- TAP-IN FITTING
- CONICAL TEE FITTING
- WYE-TEE
- SPLITTER DAMPER
- ROUND DUCT TURNING TOWARD
- ROUND DUCT TURNING AWAY
- SUPPLY DUCT TURNING TOWARD
- RETURN DUCT TURNING TOWARD
- SUPPLY DUCT TURNING AWAY
- RETURN DUCT TURNING AWAY
- ACOUSTIC DUCT INSULATION INTERNAL - SINGLE LINE
- SILENCER
- FLEXIBLE DUCTWORK
- FLEXIBLE CONNECTION
- VAV BOX WITH ATTENUATOR
- VAV BOX WITH RHC & ATTENUATOR
- VAV BOX
- CONSTANT VOLUME BOX
- SUPPLY AIR DIFFUSER (SEE SPECIFICATION FOR TYPE)
- RETURN AIR GRILLE (SEE SPECIFICATION FOR TYPE)
- DOOR GRILLE
- COOLING COIL
- FAN
- PREHEAT COIL
- HUMIDIFIER
- REHEAT COIL
- AIR FLOW MEASURING STATION



EQUIPMENT IDENTIFICATION



- AC - AIR CONDITIONING UNIT
- ACCU - AIR COOLED CONDENSING UNIT
- AHU - AIR HANDELING UNIT
- EF - EXHAUST FAN
- P - PUMP
- SP - SEWAGE PUMP

ABBREVIATIONS

AC - AIR CONDITIONING UNIT
ACCU - AIR COOLED CONDENSING UNITS
AD - COMPRESSED AIR DRYER
AHU - AIR HANDLING UNIT
AHS - COMPRESSED AIR HOSE STATION
AR - AIR RECEIVER
ARS - COMPRESSED AIR REGULATING STATION
B - BOILER
BD - BALACING DAMPER
BH - BLOWER HEATER
BS - BOILER (STEAM)
BW - BOILER (HOT WATER)
BAS - BUILDING AUTOMATION SYSTEM
BB - BASEBOARD HEATER
BFP - BACKFLOW PREVENTER
BMS - BUILDING MANAGEMENT SYSTEM
B.O.D.EL - BOTTOM OF DUCT ELEVATION
B.O.P.EL - BOTTOM OF PIPE ELEVATION
C - COMPRESSOR
CC - COOLING COIL
CF - DESTRATIFICATION FAN
CFRD - CONTROLLED FLOW ROOF DRAIN
CH - CHILLER
CL EL - CENTER LINE OF PIPE ELEVATION
CO - CLEAN OUT
CP - CONTROL PANEL
CR - CRANE
CRAC - COMPUTER ROOM AC UNIT
CT - COOLING TOWER
CTE - CONNECT TO EXISTING
CU - CONDENSING UNIT
CUH - CABINET UNIT HEATER
CV - CONTROL VALVE
CW - COLD WATER (DOMESTIC)
C/W - COMPLETE WITH
DH - DOOR HEATER
DTH - DUCT HEATER
DP - DIAPHRAGM PUMP
DSN - DOWNSPOUT NOZZLE
E/A - EXHAUST AIR
EAO - EXHAUST AIR OUTLET
EAT - ENTERING AIR TEMPERATURE
EEB - ELECTRIC BASEBOARD HEATER
ECU - ECOLOGY UNIT
EDTH - ELECTRIC DUCT HEATER
EF - EXHAUST FAN
EJ - EXPANSION JOINT
EPP - EXCESS PRESSURE PUMP
ESP - EXTERNAL STATIC PRESSURE
ESS - EMERGENCY SHOWER & EYE WASH STATION
ET - EXPANSION TANK
EUH - ELECTRIC UNIT HEATER
EW - EMERGENCY EYEWASH STATION
EWT - ENTERING WATER TEMPERATURE
FA - FRESH AIR
FC - FAN COIL UNIT
FD - FLOOR DRAIN
FFD - FUNNEL FLOOR DRAIN
FFH - FORCED AIR HEATER / FORCED FLOW HEATER
F.F.F. - FROM FINISHED FLOOR
FE - FIRE EXTINGUISHER
FEC - FIRE EXTINGUISHER CABINET
FHC - FIRE HOSE CABINET
FHR - FIRE HOSE REEL
FHV - FIRE HOSE VALVE
FHVC - FIRE HOSE VALVE CABINET
FLX - FLEX. CONNECTOR
FM - FLUID METER
F.M.S. - FLOW MEASURING STATION
FP - FUEL PUMP
FS - FLOW SWITCH

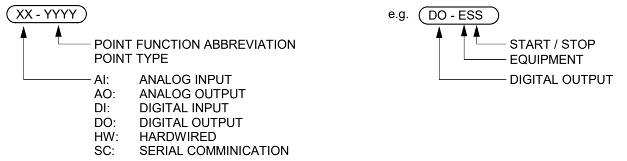
FSD - FIRE SMOKE DAMPER
FTS - FLOAT SWITCH
F.U. - FIXTURE UNITS
GEN E/A - GENERAL EXHAUST AIR
GI - GREASE INTERCEPTOR
GM - GAS METER
GV - GRAVITY VENT
H - HUMIDIFIER
HB - HOSE BIB
HC - HEATING COIL
HD - HUB DRAIN
HRV - HEAT RECOVERY VENTILATOR
HT - DOMESTIC HOT WATER HEATER
HTT - HEAT TRACING
HST - HOISTING EQUIPMENT
HW - HOT WATER (DOMESTIC)
HWR - HOT WATER RETURN
HWT - HOT WATER TANK
HX - HEAT EXCHANGER
IH - INFRARED HEATER
INV. EL. - INVERT ELEVATION
JB - JUNCTION BOX
JS - JANITOR SINK
KS - KITCHEN SINK
L - LOUVRE
LAT - LEAVING AIR TEMPERATURE
LAV - LAVATORY
LS - LEVEL SWITCH
LWT - LEAVING WATER TEMPERATURE
M - METER
MD - MOTORIZED DAMPER
MDA - MOTORIZED DAMPER ACTUATOR
MS - MOISTURE SEPARATOR
MUA - MAKE-UP AIR UNIT
N.C. - NORMALLY CLOSED
NFGH - NON-FREEZE GROUND HYDRANT
NFHB - NON-FREEZE HOSE BIBB
NFRH - NON-FREEZE ROOF HYDRANT
NFWH - NON-FREEZE WALL HYDRANT
N.I.C. - NOT IN CONTRACT
N.O. - NORMALLY OPENED
O/A - OUTSIDE AIR
O.B.B. - OPPOSED BLADE BALANCING
O.E.D. - OPEN ENDED DUCT
OF - OVERFILL ALARM
OI - OIL INTERCEPTOR
P - PUMP
PBS - PUSH BUTTON STATION
PHC - PREHEAT COIL
PP - PISTON PUMP
PRV - PRESSURE REDUCING VALVE /PRESSURE REGULATING VALVE
PW - POWER WASHER
R/A - RETURN AIR
RC - REFRIGERATION COMPRESSOR OR CHILLER
RF - RETURN AIR FAN
RD - ROOF DRAIN
RHC - REHEAT COIL
RP - RADIANT PANEL
RTU - ROOFTOP UNIT
RV - RELIEF VALVE
RWL - RAINWATER LEADER
S - SILENCER
S/A - SUPPLY AIR
SAN E/A - SANITARY EXHAUST AIR
SD - SMOKE DAMPER
SDT - SMOKE DETECTOR
SF - SUPPLY FAN
SP - SUMP PUMP / SEWAGE PUMP
SPW - STEAM POWER WASHER
STP - STANDPIPE

CONTROLS POINT FUNCTION ABBREVIATION

FIRST LETTER		SECOND LETTER		THIRD LETTER		FOURTH LETTER	
A	AIR	A	H-O-A STATUS	H	HIGH	H	HIGH
C	COMPRESSED GAD	C	CLOSE	L	LOW	L	LOW
D	DAMPER	E	VOLTAGE	X	TRASMITTER		
E	EQUIPMENT	F	FIRE (ALARM) SMOKE	Z	INDICATING TRANSMITTER		
G	NATURAL GAS	FL	FLOW	D	DIFFERENTIAL		
L	LIQUID	H	HUMIDITY				
S	STEAM	I	CURRENT				
V	VALVE	L	LEVEL				
M	MISCELLANEOUS	O	OPEN				
		OL	OVERLOAD				
		OR	OVERRIDE				
		P	PRESSURE				
		SS	START / STOP				
		ST	STATUS				
		T	TEMPERATURE				
		V	VELOCITY / SPEED				
		WT	WINDING TEMPERATURE				
		X	POSITION				
		Y	SERIAL COMM'S				

BMS POINT

NOTE: IF AN INSTRUMENT IS NOT DESIGNATED AS A TRANSMITTER "X" OR AN INDICATING TRANSMITTER "Z", IT IS A SENSOR OR SWITCH, DEPENDING ON POINT TYPE.

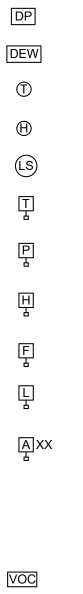


AI: ANALOG INPUT
AO: ANALOG OUTPUT
DI: DIGITAL INPUT
DO: DIGITAL OUTPUT
HW: HARDWIRED
SC: SERIAL COMMINICATION

ABBREVIATIONS

SVC - SPRINKLER VALVE CABINET
T - TANK
TAD - TRANSFER AIR DUCT
TD - TRENCH DRAIN
TIH - TANK IMMERSION HEATER
T.O.D. - TOP OF DUCT
T.O.P. - TOP OF PIPE
TP - TRAP PRIMER
TSP - TRAP SEAL PRIMER ASSEMBLY
TU - TERMINAL UNIT
TUF - TERMINAL UNIT - FAN
TW - TRACER WIRE
TWB - TRACER WIRE JUNCTION BOX
U.C. - UNDER CUT
UH - UNIT HEATER
U/S - UNDER SIDE
V - VENT
VAV - VARIABLE AIR VOLUME BOX
VFD - VARIABLE FREQUENCY DRIVE
VH - VENTILATOR HOOD
VP - VACUUM PUMP
VU - VENTILATING UNIT
WF - WALL FIN RADIATION
WJB - WALL JIB
WM - WATER METER
WGD - WASTE GLYCOL DRUM
WOD - WASTE OIL DRUM

CONTROLS - GENERAL SYMBOLS



- DIFFERENTIAL PRESSURE SENSOR
- DEW POINT SENSOR & TRANSMITTER
- THERMOSTAT
- HUMIDISTAT
- LEVEL SWITCH
- TEMPERATURE SENSOR & TRANSMITTER
- PRESSURE SENSOR / TRANSMITTER / SWITCH
- HUMITIDY SENSOR & TRANSMITTER
- FLOW SENSOR & TRANSMITTER
- LEVEL SENSOR & TRANSMITTER
- ANALYTICAL SENSOR OR TRANSMITTER
  XX: CO2 = CARBONE DIOXIDE
  CO = CARBON MONOXIDE
  NO_X = NITROUS OXIDE
  O2 = OXYGEN
  H2 = HYDROGEN
  AM = AMMONIA
  PH = PH
  C = CONDUCTIVITY
- VOLATILE ORGANIC COMPOUND SENSOR & TRANSMITTER

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M.J.

Drawn by
B.T.

Approved by
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Project Manager
C.G.

Drawing Title

MECHANICAL LEGEND

Project no.	Drawing no.	Revision no.
30192375	**M003**	**A**

Autodesk Docs://30288139-Iqaluit_LongTermWater C3D2025/IQL-ARCA-M-APXPUMP-23.rvt

A1 - 841X594

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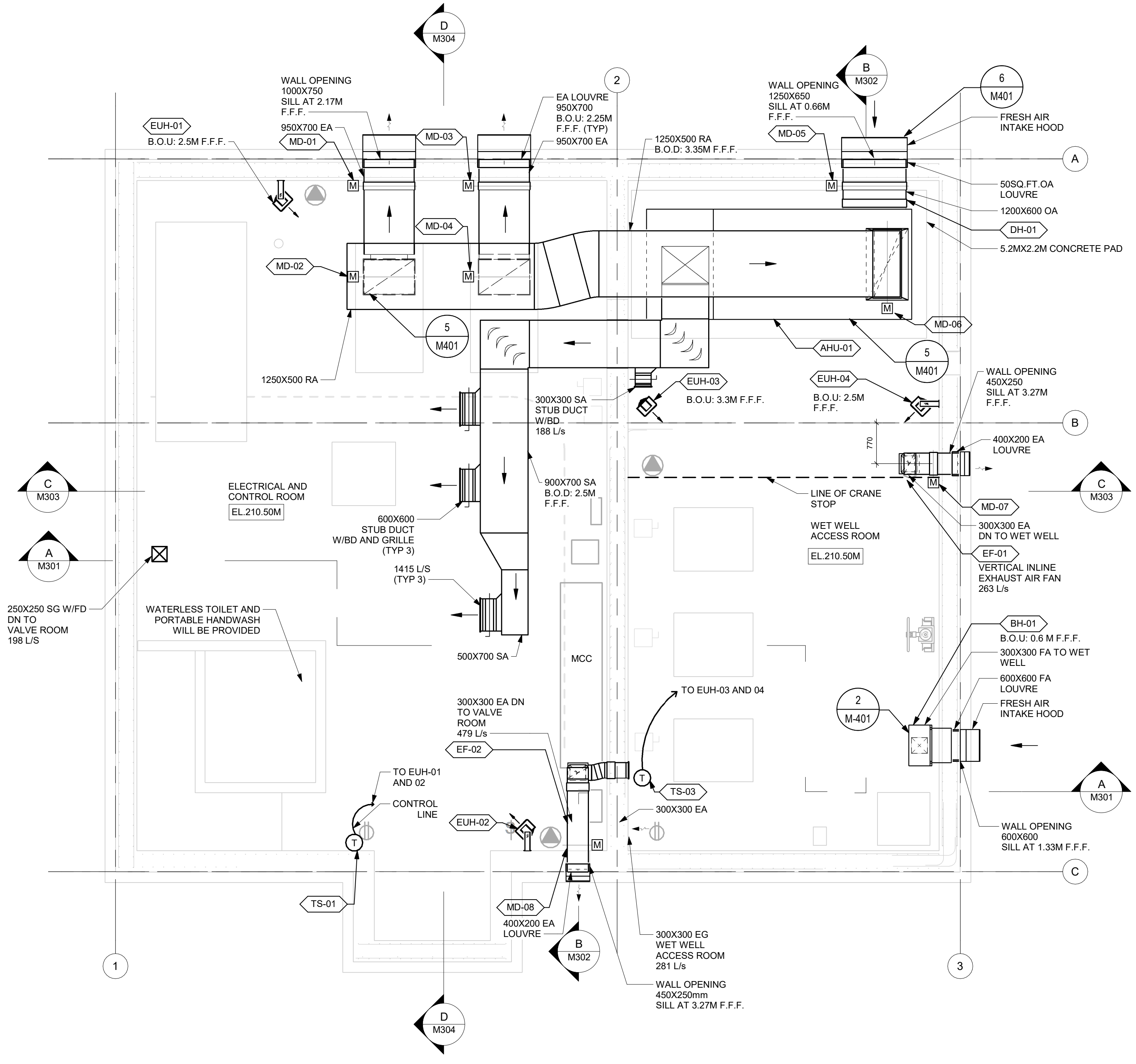
D
M304
WALL OPENING
1000X750
SILL AT 2.17M
F.F.F.
EUH-01
B.O.U: 2.5M F.F.F.
950X700 EA
MD-01
MD-03
2
EA LOUVRE
950X700
B.O.U: 2.25M
F.F.F. (TYP)
950X700 EA
1250X500 RA
B.O.D: 3.35M F.F.F.
B
M302
WALL OPENING
1250X650
SILL AT 0.66M
F.F.F.
MD-05
6
M401
FRESH AIR
INTAKE HOOD
A
50SQ.FT.OA
LOUVRE
1200X600 OA
DH-01
5.2MX2.2M CONCRETE PAD
MD-04
MD-02
M
5
M401
MD-06
AHU-01
5
M401
1250X500 RA
300X300 SA
STUB DUCT
W/BD
188 L/s
EUH-03
B.O.U: 3.3M F.F.F.
EUH-04
B.O.U: 2.5M
F.F.F.
WALL OPENING
450X250
SILL AT 3.27M
F.F.F.
B
770
400X200 EA
LOUVRE
C
M303
ELECTRICAL AND
CONTROL ROOM
EL.210.50M
900X700 SA
B.O.D: 2.5M
F.F.F.
LINE OF CRANE
STOP
WET WELL
ACCESS ROOM
EL.210.50M
MD-07
300X300 EA
DN TO WET WELL
EF-01
VERTICAL INLINE
EXHAUST AIR FAN
263 L/s
C
M303
A
M301
600X600
STUB DUCT
W/BD AND GRILLE
(TYP 3)
1415 L/S
(TYP 3)
250X250 SG W/FD
DN TO
VALVE ROOM
198 L/S
WATERLESS TOILET AND
PORTABLE HANDWASH
WILL BE PROVIDED
500X700 SA
MCC
BH-01
B.O.U: 0.6 M F.F.F.
300X300 FA TO WET
WELL
600X600 FA
LOUVRE
FRESH AIR
INTAKE HOOD
2
M-401
TO EUH-03 AND 04
300X300 EA DN
TO VALVE
ROOM
479 L/s
EF-02
TO EUH-01
AND 02
CONTROL
LINE
EUH-02
T
TS-03
300X300 EA
A
M301
WALL OPENING
600X600
SILL AT 1.33M F.F.F.
C
TS-01
MD-08
400X200 EA
LOUVRE
B
M302
300X300 EG
WET WELL
ACCESS ROOM
281 L/s
WALL OPENING
450X250mm
SILL AT 3.27M F.F.F.
1
3
D
M304

1
M101

PLAN AT GROUND LEVEL AT EL. 210.5m

Scale: 1 : 50

0.0 1:50 2.0

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Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN	2024-03-22

Consultant

8133 Warden Avenue - Unit 300
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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
B.T.

Drawn by
B.T.

Approved by
J.P.

Project Manager
C.G.

Drawing Title

MECHANICAL HVAC

LQ PUMP STATION
HVAC PLAN AT EL. 210.5m

Project no.	Drawing no.	Revision no.
30192375	M101	B

Autodesk Docs://30288139-Iqaluit_LongTermWater C3D2025/IQL-ARCA-M-MECHANICAL-23.rvt

A1 - 841X594

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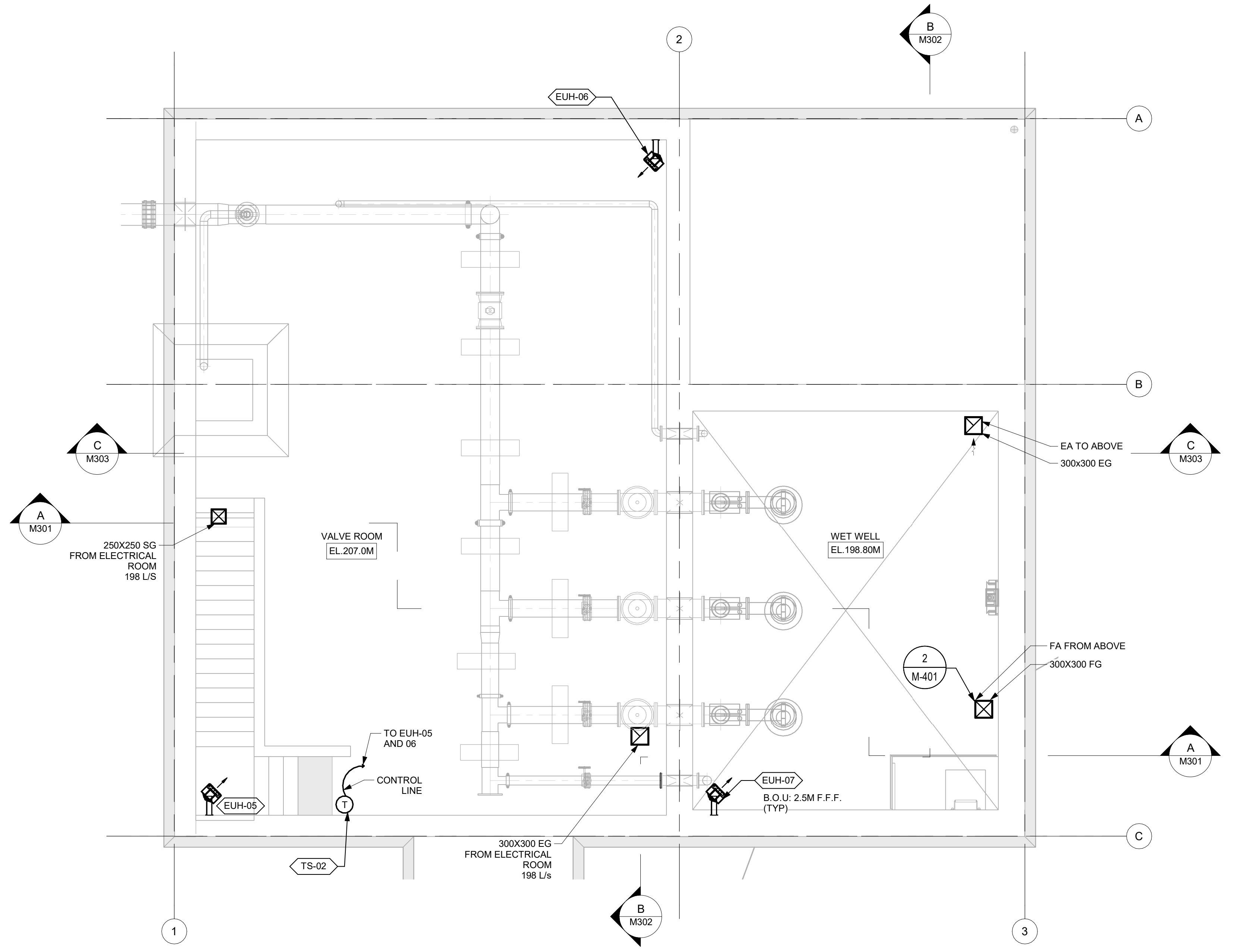
B
M302
2
EUH-06
A
B
C
M303
A
M301
250X250 SG
FROM ELECTRICAL
ROOM
198 L/S
VALVE ROOM
EL.207.0M
WET WELL
EL.198.80M
EA TO ABOVE
300x300 EG
FA FROM ABOVE
300X300 FG
2
M-401
TO EUH-05
AND 06
CONTROL
LINE
T
EUH-05
EUH-07
B.O.U: 2.5M F.F.F.
(TYP)
TS-02
300X300 EG
FROM ELECTRICAL
ROOM
198 L/s
C
1
3

1
M102

PLAN AT EL. 207.00MM

Scale: 1 : 50   0.0   1:50   2.0

0 10 20 30 40 50 60 70 80 90 100mm

Autodesk Docs://30288139-Iqaluit_LongTermWater C3D2025/IQL-ARCA-M-MECHANICAL-23.rvt

A1 - 841X594

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
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Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

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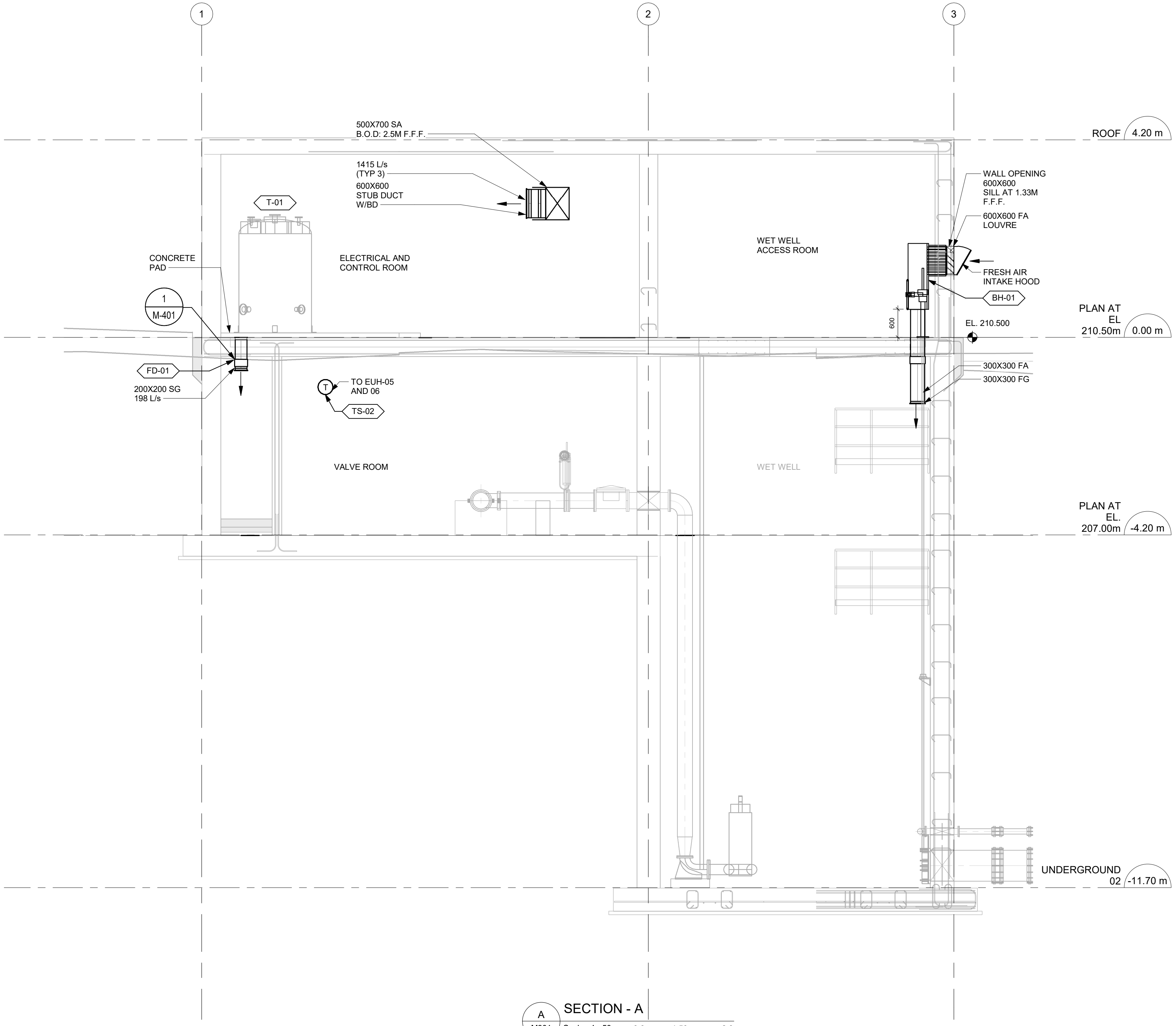
Drawing Title

MECHANICAL HVAC

LQ PUMP STATION
HVAC PLAN AT EL. 207.0m

Project no.	Drawing no.	Revision no.
30192375	M102	B


1
2
3
500X700 SA
B.O.D: 2.5M F.F.F.
1415 L/s
(TYP 3)
600X600
STUB DUCT
W/BD
T-01
ROOF 4.20 m
WALL OPENING
600X600
SILL AT 1.33M
F.F.F.
600X600 FA
LOUVRE
WET WELL
ACCESS ROOM
CONCRETE
PAD
ELECTRICAL AND
CONTROL ROOM
FRESH AIR
INTAKE HOOD
BH-01
1
M-401
600
EL. 210.500
PLAN AT
EL
210.50m 0.00 m
FD-01
200X200 SG
198 L/s
T
TO EUH-05
AND 06
TS-02
300X300 FA
300X300 FG
VALVE ROOM
WET WELL
PLAN AT
EL.
207.00m -4.20 m
UNDERGROUND
02 -11.70 m

A
M301

SECTION - A

Scale: 1 : 50

0.0 1:50 2.0

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

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Revision	Description	Date

Consultant

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Project title

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LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
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Drawn by
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Approved by
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Project Manager
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Drawing Title

MECHANICAL HVAC

LQ PUMP STATION
HVAC SECTION A

Project no.	Drawing no.	Revision no.
30192375	**M301**	**B**

Autodesk Docs://30288139-Iqaluit_LongTermWater C3D2025/IQL-ARCA-M-MECHANICAL-23.rvt

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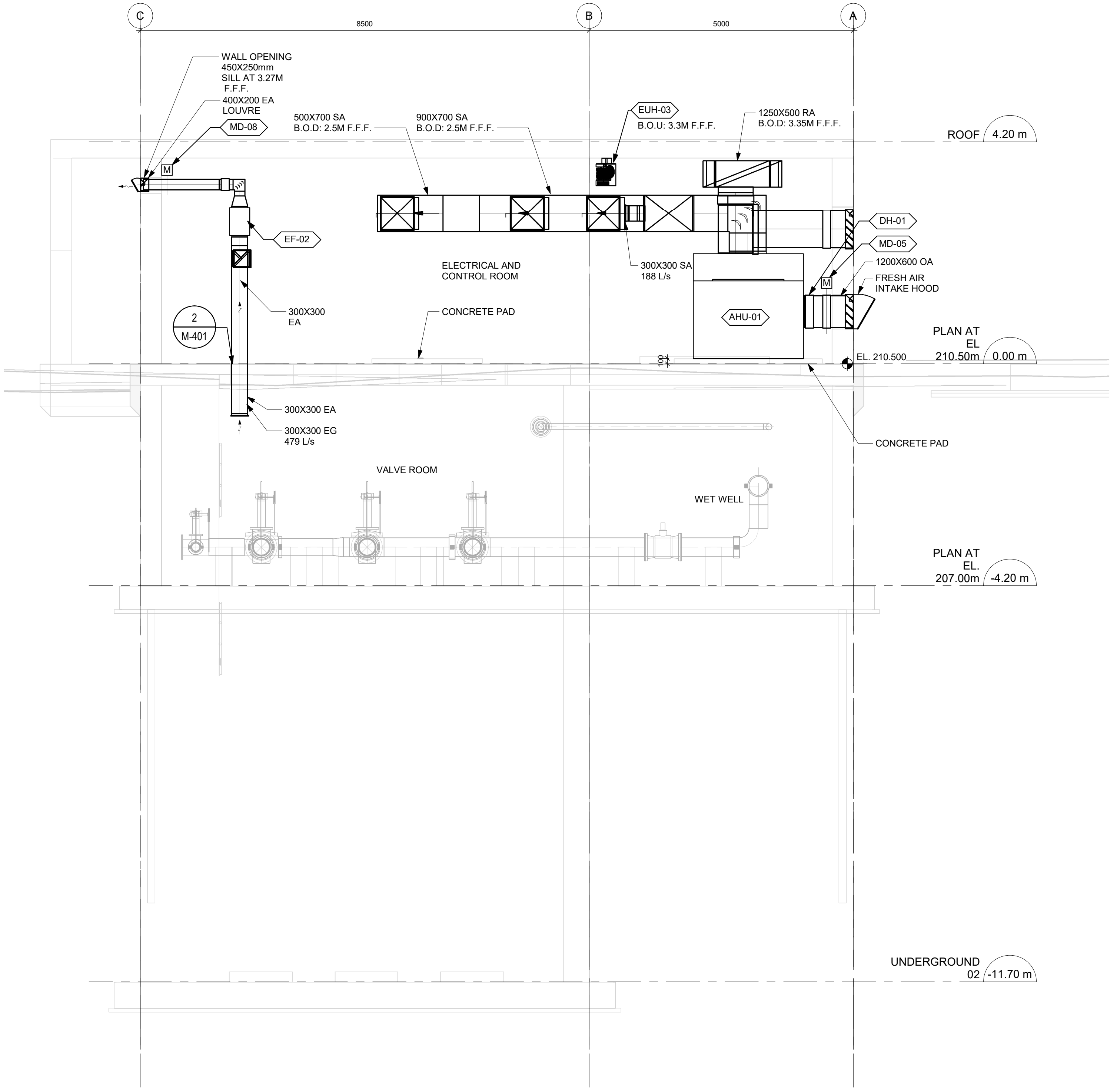

C
B
A
8500
5000
WALL OPENING
450X250mm
SILL AT 3.27M
F.F.F.
400X200 EA
LOUVRE
MD-08
M
500X700 SA
B.O.D: 2.5M F.F.F.
900X700 SA
B.O.D: 2.5M F.F.F.
EUH-03
B.O.U: 3.3M F.F.F.
1250X500 RA
B.O.D: 3.35M F.F.F.
ROOF 4.20 m
EF-02
DH-01
MD-05
1200X600 OA
FRESH AIR
INTAKE HOOD
ELECTRICAL AND
CONTROL ROOM
300X300 SA
188 L/s
2
M-401
300X300
EA
CONCRETE PAD
AHU-01
PLAN AT
EL
210.50m 0.00 m
EL. 210.500
100
300X300 EA
300X300 EG
479 L/s
CONCRETE PAD
VALVE ROOM
WET WELL
PLAN AT
EL.
207.00m -4.20 m
UNDERGROUND
02 -11.70 m

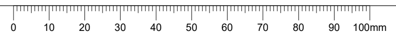
SECTION - B

B
M302

Scale: 1 : 50
0.0 1:50 2.0

Autodesk Docs://30288139-Iqaluit_LongTermWater C3D2025/IQL-ARCA-M-MECHANICAL-23.rvt

A1 - 841X594


0
10
20
30
40
50
60
70
80
90
100mm

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A	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
Revision	Description	Date

Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
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Drawn by
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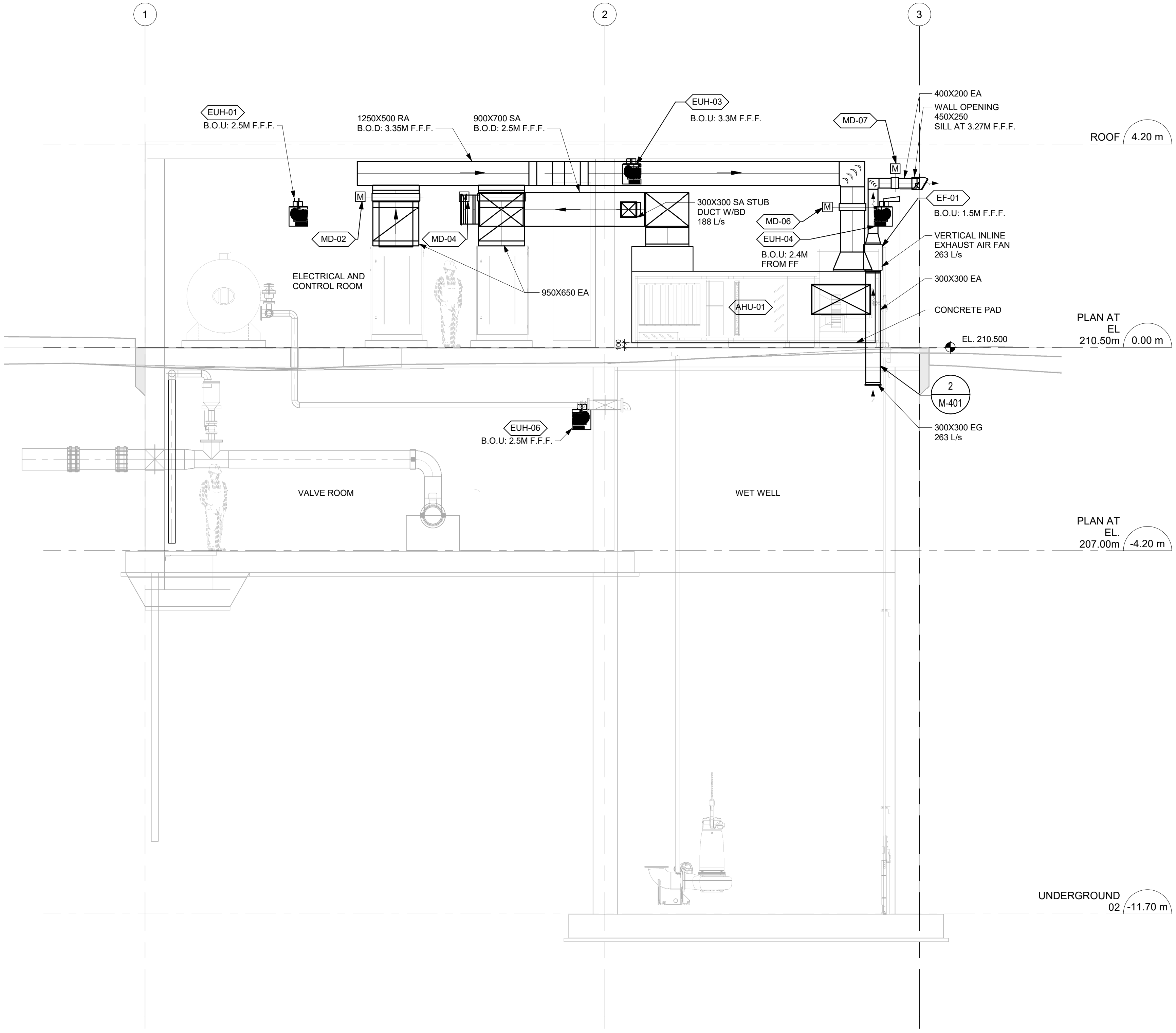
C.G.

Drawing Title

MECHANICAL HVAC

LQ PUMP STATION
HVAC SECTION B

Project no.	Drawing no.	Revision no.
30192375	**M302**	**B**


1
2
3
EUH-01
B.O.U: 2.5M F.F.F.
1250X500 RA
B.O.D: 3.35M F.F.F.
900X700 SA
B.O.D: 2.5M F.F.F.
EUH-03
B.O.U: 3.3M F.F.F.
MD-07
400X200 EA
WALL OPENING
450X250
SILL AT 3.27M F.F.F.
ROOF
4.20 m
M
MD-02
MD-04
300X300 SA STUB
DUCT W/BD
188 L/s
MD-06
EUH-04
B.O.U: 2.4M
FROM FF
EF-01
B.O.U: 1.5M F.F.F.
VERTICAL INLINE
EXHAUST AIR FAN
263 L/s
ELECTRICAL AND
CONTROL ROOM
950X650 EA
AHU-01
300X300 EA
CONCRETE PAD
PLAN AT
EL
210.50m
0.00 m
EL. 210.500
100
2
M-401
EUH-06
B.O.U: 2.5M F.F.F.
300X300 EG
263 L/s
VALVE ROOM
WET WELL
PLAN AT
EL.
207.00m
-4.20 m
UNDERGROUND
02
-11.70 m

C
M303

SECTION - C

Scale: 1 : 50

0.0 1:50 2.0

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A1 - 841X594

0 10 20 30 40 50 60 70 80 90 100mm

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN	2024-03-22

Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
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Drawn by
B.T.

Approved by
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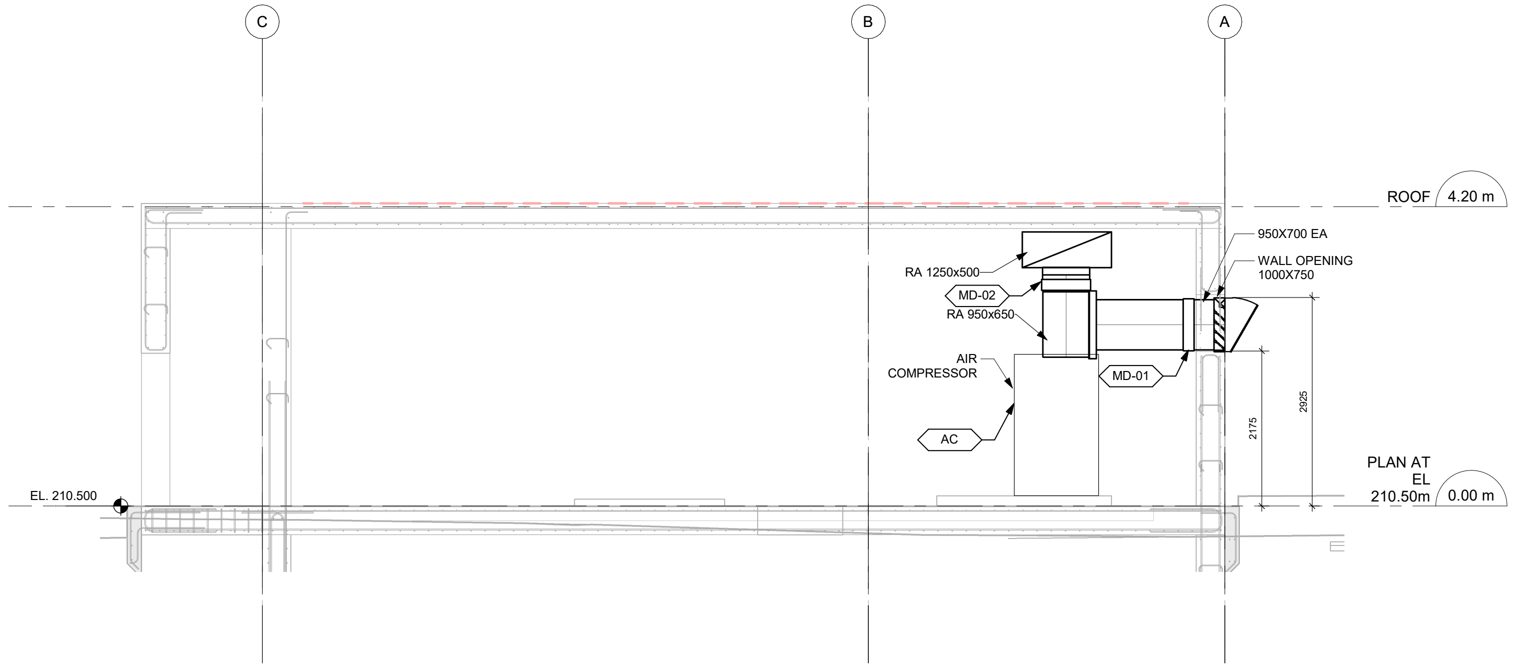
Project Manager
C.G.

Drawing Title

MECHANICAL HVAC

LQ PUMP STATION
HVAC SECTION C

Project no.	Drawing no.	Revision no.
30192375	M303	B



D
M304

SECTION - C

Scale: 1 : 50

0.0 1:50 2.0

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

A	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
Revision	Description	Date

Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
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Drawn by
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Approved by
J.P.

Project Manager
C.G.

Drawing Title

MECHANICAL HVAC

LQ PUMP STATION
HVAC SECTION D

Project no.	Drawing no.	Revision no.
30192375	**M304**	**A**

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A1 - 841X594

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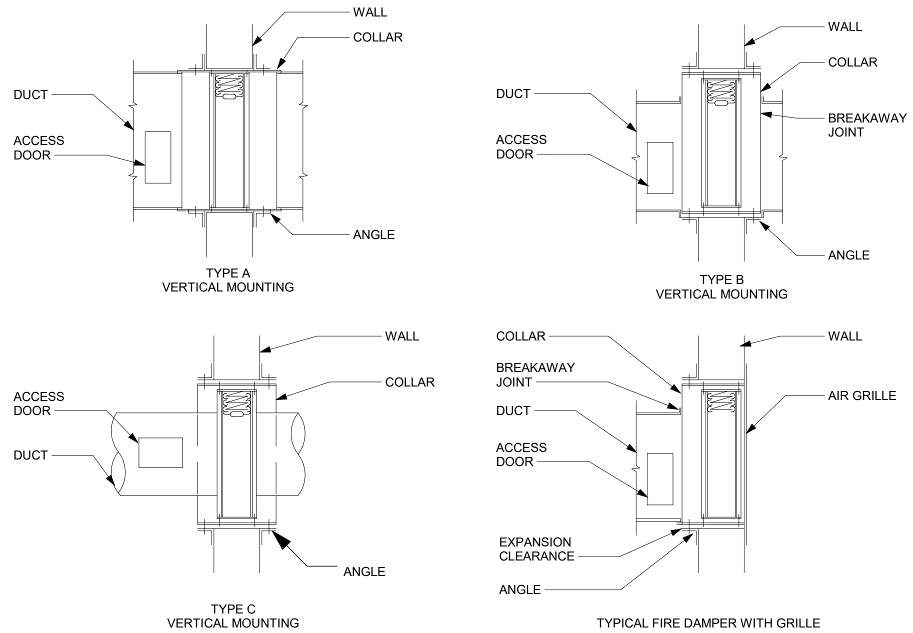
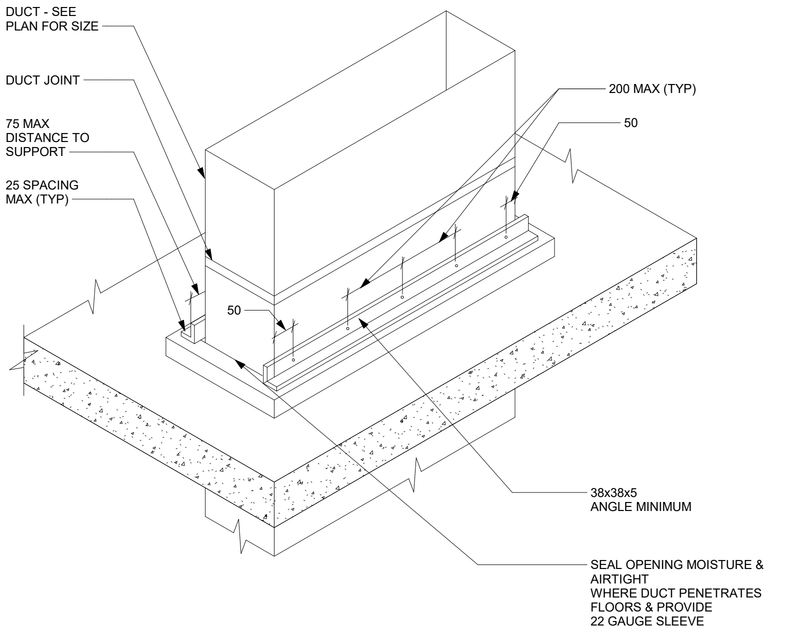

WALL
COLLAR
DUCT
ACCESS DOOR
ANGLE
TYPE A
VERTICAL MOUNTING
WALL
COLLAR
DUCT
BREAKAWAY JOINT
ACCESS DOOR
ANGLE
TYPE B
VERTICAL MOUNTING
WALL
COLLAR
ACCESS DOOR
DUCT
ANGLE
TYPE C
VERTICAL MOUNTING
COLLAR
WALL
BREAKAWAY JOINT
AIR GRILLE
DUCT
ACCESS DOOR
EXPANSION CLEARANCE
ANGLE
TYPICAL FIRE DAMPER WITH GRILLE

NOTES:

1. VERTICAL MOUNTINGS SHOWN. HORIZONTAL MOUNTINGS SIMILAR.
2. THE INSTALLATION SHOWN COMPLY WITH THE FIRE DAMPER MANUFACTURERS PRINTED INSTALLATION INSTRUCTIONS.
3. FIRE DAMPER SHALL BE INSTALLED IN THE PLANE OF THE FIRE SEPARATION.
4. PROVIDE AN ACCESS DOOR FOR EACH FIRE DAMPER.
5. PROVIDE SHOP DRAWINGS AND INSTALLATION DETAILS FOR REVIEW.

1 M401 FIRE DAMPER MOUNTING

Scale: NTS

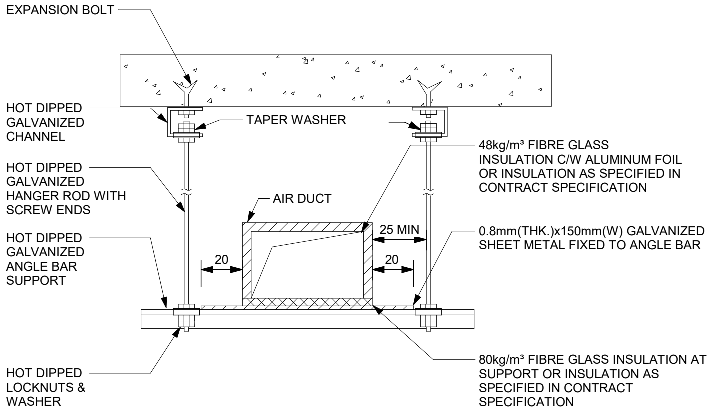

DUCT - SEE PLAN FOR SIZE
DUCT JOINT
75 MAX DISTANCE TO SUPPORT
25 SPACING MAX (TYP)
50
200 MAX (TYP)
50
38x38x5 ANGLE MINIMUM
SEAL OPENING MOISTURE & AIRTIGHT WHERE DUCT PENETRATES FLOORS & PROVIDE 22 GAUGE SLEEVE

NOTES:

1. 100MM CONCRETE CURB AROUND DUCT OPENING.
2. REFER TO FIRE DAMPER DETAILS WHEN FIRE DAMPER IS REQUIRED.

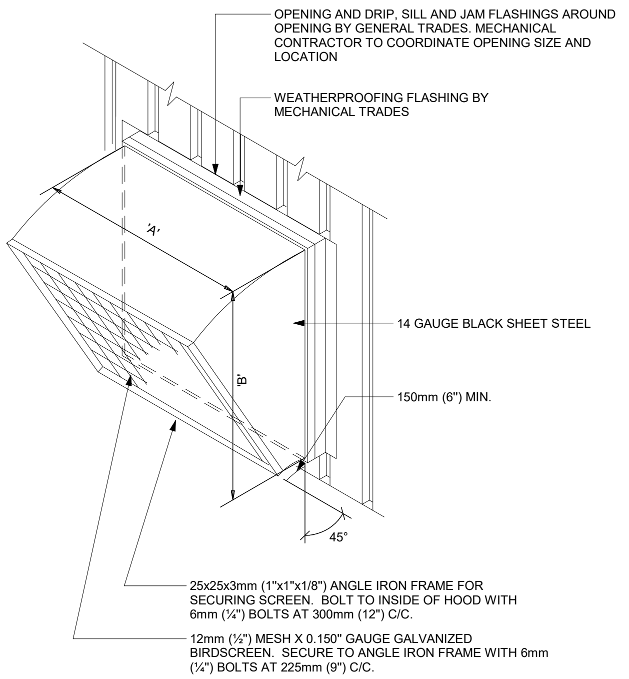
2 M401 DUCT RISER SUPPORTS FROM FLOOR

Scale: NTS


EXPANSION BOLT
HOT DIPPED GALVANIZED CHANNEL
TAPER WASHER
HOT DIPPED GALVANIZED HANGER ROD WITH SCREW ENDS
AIR DUCT
48kg/m³ FIBRE GLASS INSULATION C/W ALUMINUM FOIL OR INSULATION AS SPECIFIED IN CONTRACT SPECIFICATION
HOT DIPPED GALVANIZED ANGLE BAR SUPPORT
20
25 MIN
20
0.8mm(THK.)x150mm(W) GALVANIZED SHEET METAL FIXED TO ANGLE BAR
HOT DIPPED LOCKNUTS & WASHER
80kg/m³ FIBRE GLASS INSULATION AT SUPPORT OR INSULATION AS SPECIFIED IN CONTRACT SPECIFICATION

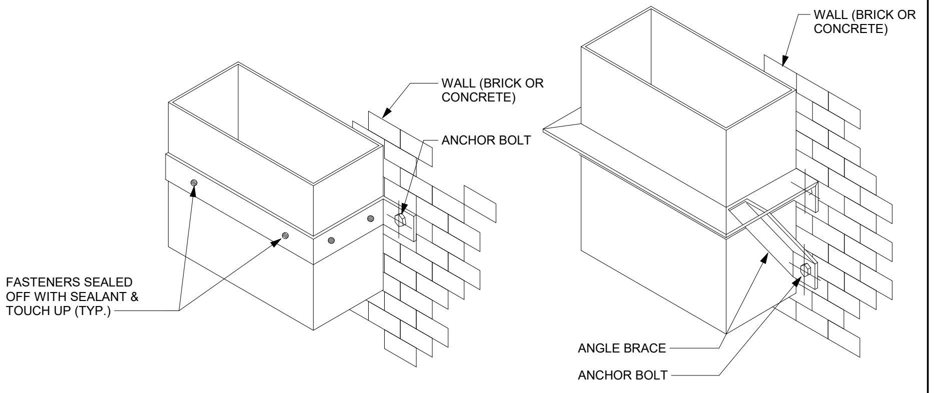
3 M401 AIR DUCT HANGER WITH INSULATION

Scale: NTS


OPENING AND DRIP, SILL AND JAM FLASHINGS AROUND OPENING BY GENERAL TRADES. MECHANICAL CONTRACTOR TO COORDINATE OPENING SIZE AND LOCATION
WEATHERPROOFING FLASHING BY MECHANICAL TRADES
'A'
'B'
14 GAUGE BLACK SHEET STEEL
150mm (6") MIN.
45°
25x25x3mm (1"x1"x1/8") ANGLE IRON FRAME FOR SECURING SCREEN. BOLT TO INSIDE OF HOOD WITH 6mm (¼") BOLTS AT 300mm (12") C/C.
12mm (½") MESH X 0.150" GAUGE GALVANIZED BIRDSCREEN. SECURE TO ANGLE IRON FRAME WITH 6mm (¼") BOLTS AT 225mm (9") C/C.

6 M401 FRESH/EXHAUST AIR INTAKE HOOD - WALL TYPE

Scale: NTS

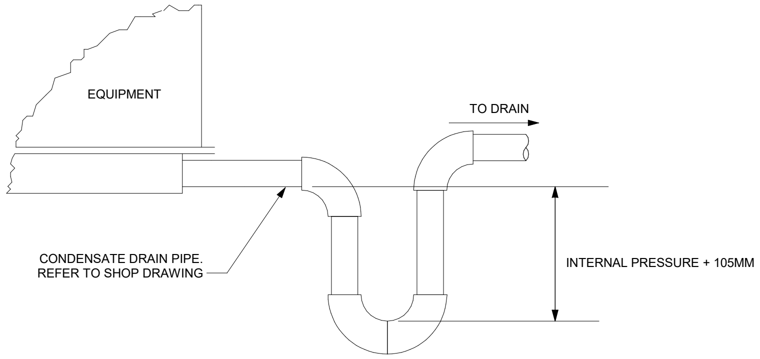

WALL (BRICK OR CONCRETE)
WALL (BRICK OR CONCRETE)
ANCHOR BOLT
FASTENERS SEALED OFF WITH SEALANT & TOUCH UP (TYP.)
ANGLE BRACE
ANCHOR BOLT

NOTES (TYP. FOR ALL DUCT WORK SUPPORT) :

1. ANGLE AND FASTENER SIZES FOR DUCT SUPPORTS AND HANGERS SHALL BE IN ACCORDANCE WITH SHEET METAL AND AIR CONDITIONING CONTRACTOR'S NATIONAL ASSOCIATION (SMACNA) DUCT CONSTRUCTION AND SEISMIC STANDARDS OR APPROVED EQUAL.
2. FOR DUCT OPENINGS THROUGH FLOORS, REFER TO STRUCTURAL DRAWINGS.
3. THE DETAILS SHOWN ON THIS SHEET ARE A CONCEPTUAL PRESENTATION ONLY. ALL EQUIPMENT AND DUCT ATTACHMENTS SHALL BE SUBJECTED TO THE REVIEW AND APPROVAL OF THE PROJECT STRUCTURAL ENGINEER. ATTACHMENTS SHALL BE DESIGNED TO SUPPORT ALL GRAVITY LOADS, DYNAMIC WIND AND SNOW PRESSURE LOADS CAUSED BY THE OPERATION OF THE EQUIPMENT AND SEISMIC LOADING. ATTACHMENTS SHALL MEET ALL REQUIREMENTS OF THE OBC, SMACNA, ASHRAE STANDARDS AND APPLICABLE LOCAL CODES.

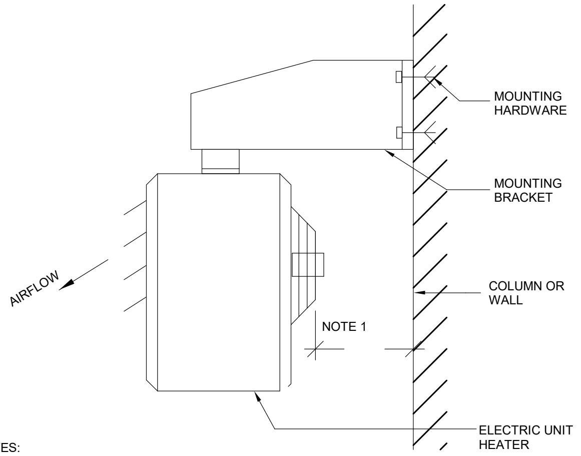
4 M401 DUCT RISER SUPPORTS FROM WALL

Scale: NTS


EQUIPMENT
TO DRAIN
CONDENSATE DRAIN PIPE. REFER TO SHOP DRAWING
INTERNAL PRESSURE + 105MM

5 M401 COIL DRAIN WITH DRAW THRU TRAP

Scale: NTS


MOUNTING HARDWARE
MOUNTING BRACKET
AIRFLOW
COLUMN OR WALL
NOTE 1
ELECTRIC UNIT HEATER

NOTES:

1. MAINTAIN MANUFACTURER'S MINIMUM CLEARANCE REQUIREMENTS.

7 M401 ELECTRIC UNIT HEATER

Scale: NTS

Iqaluit

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www.iqaluit.ca

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN	2024-03-22

Consultant

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www.arcadis.com

Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
B.T.

Drawn by
B.T.

Approved by
J.P.

Project Manager
C.G.

Drawing Title

MECHANICAL

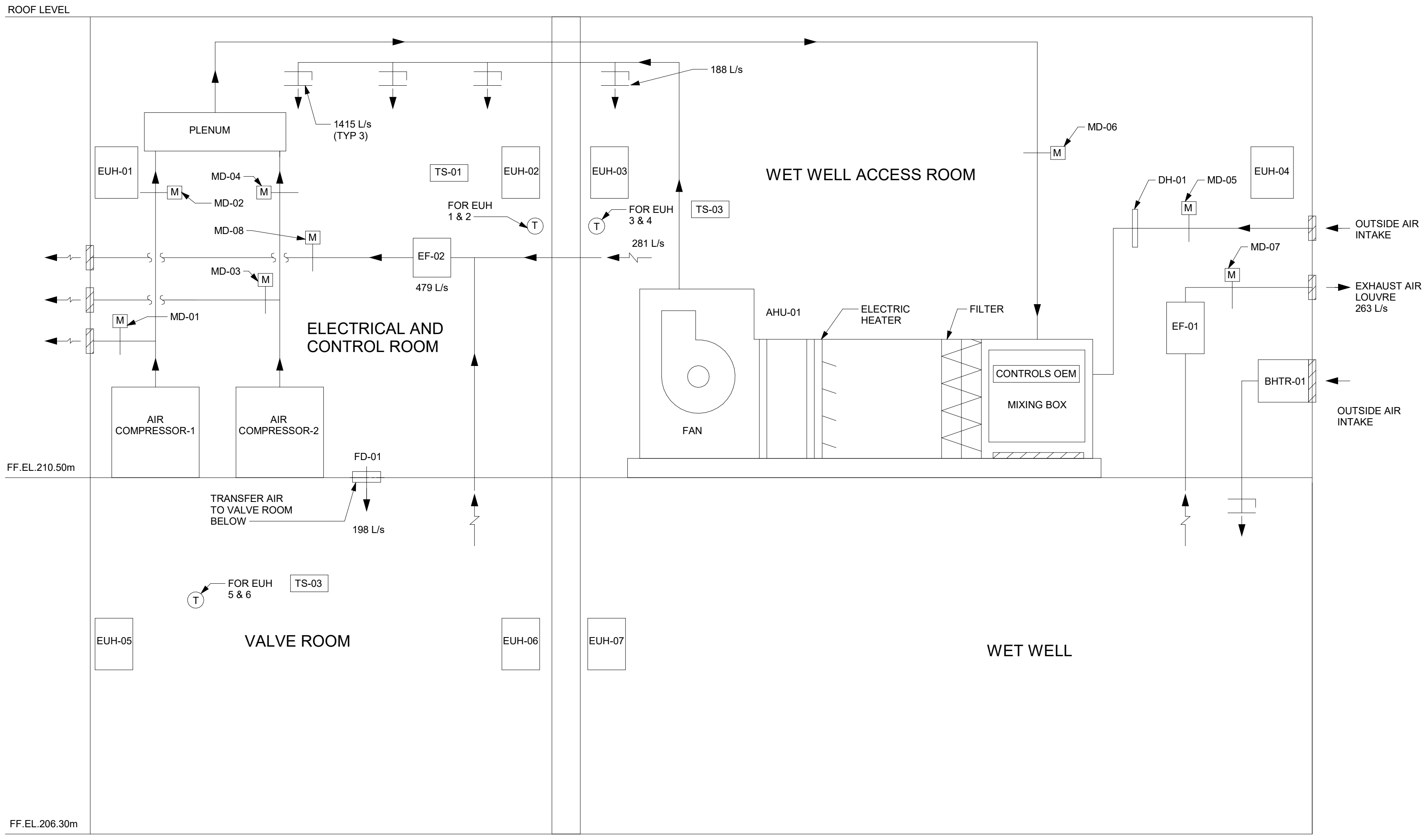
HVAC DETAILS

Project no.	Drawing no.	Revision no.
30192375	M401	B

Autodesk Docs://30288139-Iqaluit_LongTermWater C3D2025/IQL-ARCA-M-MECHANICAL-23.rvt

A1 - 841X594

0 10 20 30 40 50 60 70 80 90 100mm


ROOF LEVEL
PLENUM
1415 L/s
(TYP 3)
188 L/s
EUH-01
MD-04
MD-02
MD-08
MD-03
MD-01
TS-01
EUH-02
FOR EUH
1 & 2
EF-02
479 L/s
EUH-03
FOR EUH
3 & 4
TS-03
281 L/s
WET WELL ACCESS ROOM
MD-06
DH-01
MD-05
EUH-04
OUTSIDE AIR
INTAKE
MD-07
EXHAUST AIR
LOUVRE
263 L/s
EF-01
BHTR-01
OUTSIDE AIR
INTAKE
ELECTRICAL AND
CONTROL ROOM
AIR
COMPRESSOR-1
AIR
COMPRESSOR-2
AHU-01
ELECTRIC
HEATER
FILTER
CONTROLS OEM
MIXING BOX
FAN
M
T
FF.EL.210.50m
FD-01
TRANSFER AIR
TO VALVE ROOM
BELOW
198 L/s
FOR EUH
5 & 6
TS-03
EUH-05
VALVE ROOM
EUH-06
EUH-07
WET WELL
FF.EL.206.30m

1
M501

PUMP STATION BUILDING AIRFLOW & CONTROL SCHEMATICS

Scale: NTS

CONTROL NOTES:

1. ALL EQUIPMENT TO HAVE LOCAL CONTROLS WITH ALARMS AT SCADA SYSTEM
2. ALL ROOM TEMPERATURES, MIN. MAX. TO BE MONITORED AT SCADA.
3. AIR COMPRESSORS GEN. ALARMS AT SCADA

SEQUENCE OF OPERATION:

1.OUTDOOR TEMP. < 15C:
OCCUPIED MODE: EF-1,2,3 RUN UNIT AHU-01 OPERATED AT 2500CFM IF AIR COMPRESSORS ARE OFF OR 10500CFM IF ONE AIR COMPRESSOR IS ON; UNOCCUPIED MODE: EF-1&3 ARE OFF, EF-2 IS OPER., UNIT MAU-01 RUNS AT 1280CFM IF AIR COMPRESSORS ARE OFF AND AT 9280 IF ONE AIR COMPRESSOR IS ON. MDs ON AIR COMPRESSOR EXHAUST AIR CONNECTIONS MODULATE TO MAINTAIN SA TEMP. AT 17C.

2. OUTDOOR TEMP. >15C
OCCUPIED MODE: EF-1,2,3 RUN UNIT MAU-01 OPERATED AT 2500CFM IF AIR COMPRESSORS ARE OFF OR 10500CFM IF ONE AIR COMPRESSOR IS ON, MDs MODULATE TO MAINTAIN ROOM TEMP AT AMBIENT TEMPERATURE; UNOCCUPIED MODE: EF-1&3 ARE OFF, EF-2 IS OPER, UNIT MAU-01 RUNS AT 1280CFM IF AIR COMPRESSORS ARE OFF AND AT 9280 IF ONE AIR COMPRESSOR IS ON.

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Consultant

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SUPPLY AND STORAGE

Designed by
B.T.

Drawn by
B.T.

Approved by
J.P.

Project Manager
C.G.

Drawing Title

MECHANICAL HVAC

LQ PUMP STATION
HVAC SCHEMATICS

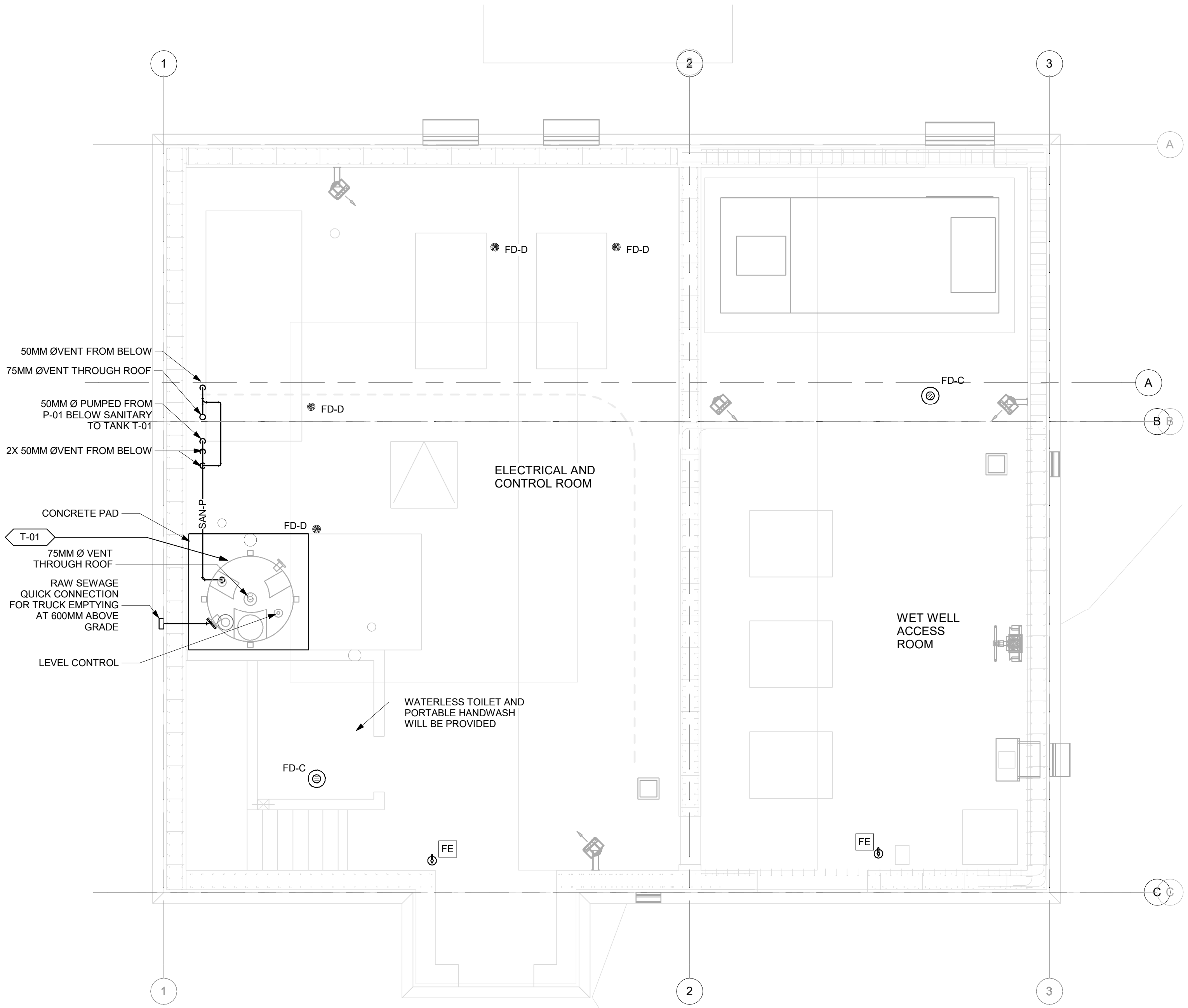
Project no.	Drawing no.	Revision no.
30192375	**M501**	**B**

Autodesk Docs://30288139-Iqaluit_LongTermWater C3D2025/IQL-ARCA-M-MECHANICAL-23.rvt

A1 - 841X594

0 10 20 30 40 50 60 70 80 90 100mm

NOTES:
1. ALL PIPING TO BE INSULATED, REFER TO SPECIFICATIONS.
2. ALL FLOOR DRAINS C/W WATERLESS INLINE 2" DRAIN TRAP SEAL


1
2
3
A
B
C
50MM ØVENT FROM BELOW
75MM ØVENT THROUGH ROOF
50MM Ø PUMPED FROM P-01 BELOW SANITARY TO TANK T-01
2X 50MM ØVENT FROM BELOW
SAN-P
CONCRETE PAD
T-01
75MM Ø VENT THROUGH ROOF
RAW SEWAGE QUICK CONNECTION FOR TRUCK EMPTYING AT 600MM ABOVE GRADE
LEVEL CONTROL
FD-D
FD-D
FD-D
FD-D
FD-C
FD-C
ELECTRICAL AND CONTROL ROOM
WET WELL ACCESS ROOM
WATERLESS TOILET AND PORTABLE HANDWASH WILL BE PROVIDED
FE
FE

1 M103 PLAN AT GROUND ELEVATION AT EL. 210.5m

Scale: 1 : 50

0.0 1:50 2.0

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Designed by
B.T.

Drawn by
B.T.

Approved by
J.P.

Project Manager
C.G.

Drawing Title

MECHANICAL PLUMBING

LQ PUMP STATION PLUMBING & DRAINAGE PLAN AT EL. 210.5m

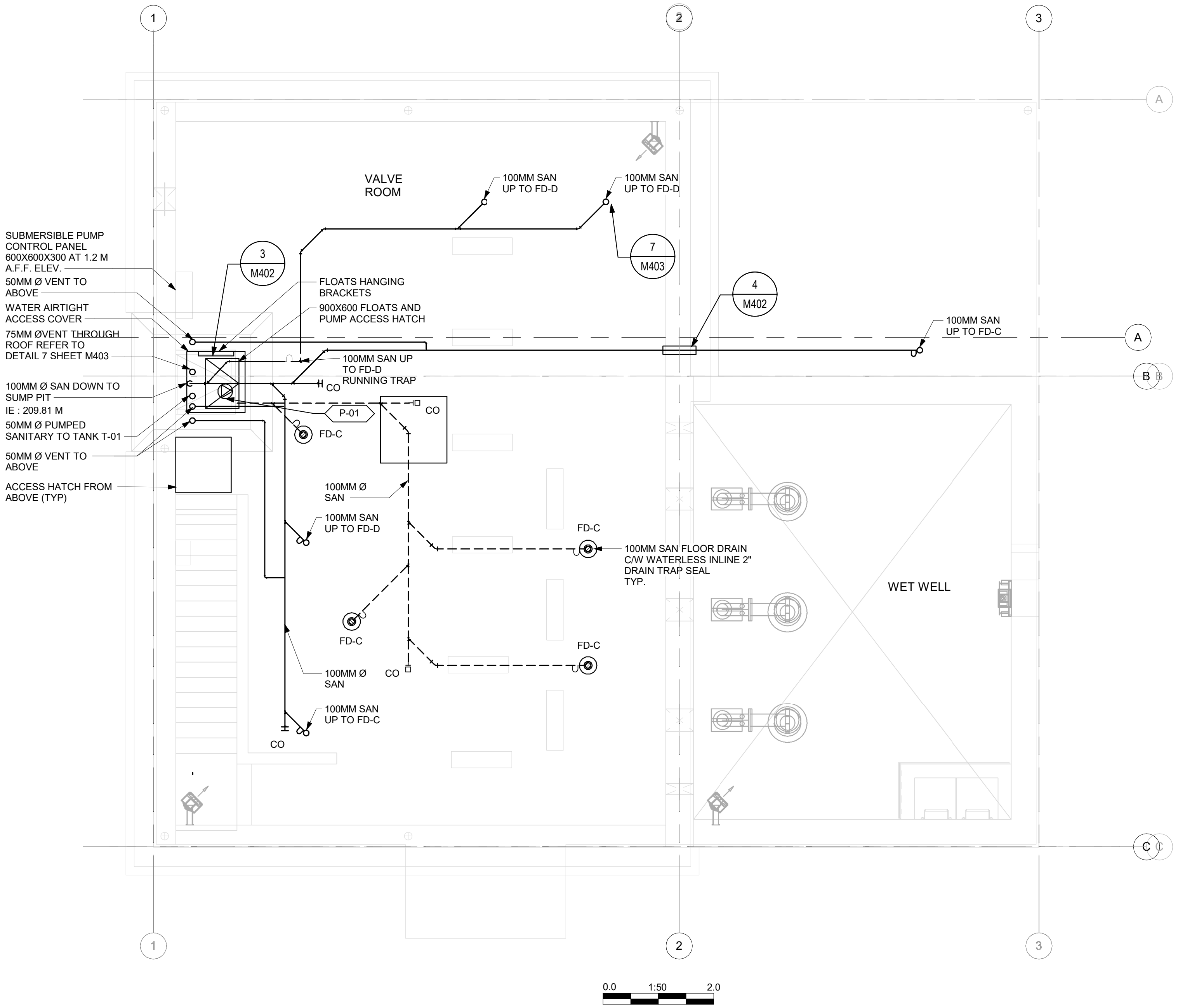
Project no.	Drawing no.	Revision no.
30192375	M103	B

Autodesk Docs://30288139-Iqaluit_LongTermWater C3D2025/IQL-ARCA-P-PLUMBING-23.rvt

A1 - 841X594

0 10 20 30 40 50 60 70 80 90 100mm

NOTES:
1. ALL PIPING TO BE INSULATED,
REFER TO SPECIFICATIONS.


1
2
3
A
B
C
VALVE ROOM
WET WELL
SUBMERSIBLE PUMP CONTROL PANEL 600X600X300 AT 1.2 M A.F.F. ELEV.
50MM Ø VENT TO ABOVE
WATER AIRTIGHT ACCESS COVER
75MM ØVENT THROUGH ROOF REFER TO DETAIL 7 SHEET M403
100MM Ø SAN DOWN TO SUMP PIT
IE : 209.81 M
50MM Ø PUMPED SANITARY TO TANK T-01
50MM Ø VENT TO ABOVE
ACCESS HATCH FROM ABOVE (TYP)
3
M402
FLOATS HANGING BRACKETS
900X600 FLOATS AND PUMP ACCESS HATCH
100MM SAN UP TO FD-D
100MM SAN UP TO FD-D
7
M403
4
M402
100MM SAN UP TO FD-C
100MM SAN UP TO FD-D RUNNING TRAP
CO
P-01
FD-C
CO
100MM Ø SAN
100MM SAN UP TO FD-D
FD-C
100MM SAN FLOOR DRAIN C/W WATERLESS INLINE 2" DRAIN TRAP SEAL TYP.
FD-C
FD-C
100MM Ø SAN
CO
100MM SAN UP TO FD-C
CO
0.0
1:50
2.0

1
M104
PLAN AT EL. 207.00m
Scale: 1 : 50

Autodesk Docs://30288139-Iqaluit_LongTermWater C3D2025/IQL-ARCA-P-PLUMBING-23.rvt

A1 - 841X594

0 10 20 30 40 50 60 70 80 90 100mm

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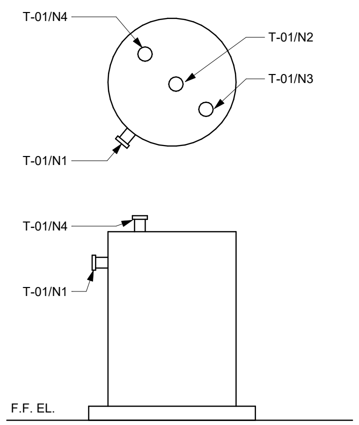
MECHANICAL PLUMBING

LQ PUMP STATION
PLUMBING & DRAINAGE PLAN
AT EL. 207.0m

Project no.	Drawing no.	Revision no.
30192375	M104	B


T-01/N4
T-01/N2
T-01/N3
T-01/N1
T-01/N4
T-01/N1
F.F. EL.

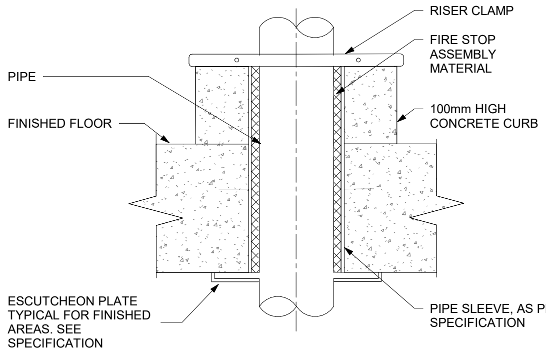
TANK DETAIL

TANK NO.	NOZZLE NO.	SIZE	NOZZLE DESCRIPTION	NOTES
T-01	N1	50	EMPTY BY TRUCK	MAINTAIN MIN 2M FROM WATER FILLING LINE
T-01	N2	75	VENT	EXTEND LINE OT OUTDOOR ABOVE ROOF LINE
T-01	N3	75	LEVEL CONTROL	HIGH LEVEL ALARM AT PLC, INTERLOCK AND STOP P-02
T-01	N4	50	SAN-P P-02	P-02 SHUT OFF AT HIGH LEVEL T-02
T-01	N5	32	SANIF	DISCHARGE LINE FROM SANI FLOW

NOTES :
1. PROVIDE SIGHT GLASS LEVEL FOR BOTH TANKS.
2. ALL NOZZLES TO BE FLANGED CONNECTION, CLASS 150.

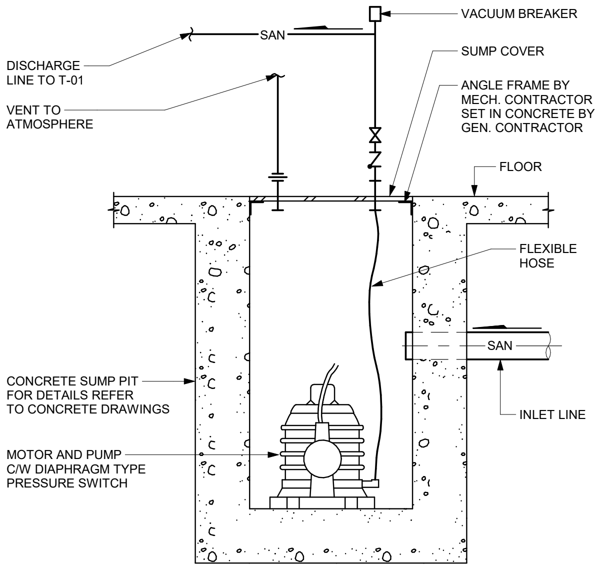
1 M402 TANK DETAILS

Scale: NTS


RISER CLAMP
FIRE STOP ASSEMBLY MATERIAL
PIPE
100mm HIGH CONCRETE CURB
FINISHED FLOOR
ESCUTCHEON PLATE TYPICAL FOR FINISHED AREAS. SEE SPECIFICATION
PIPE SLEEVE, AS PER SPECIFICATION

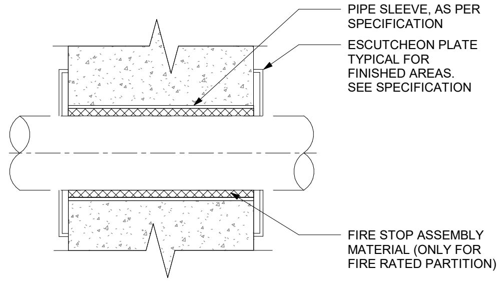
2 M402 PIPE SLEEVE THROUGH FLOORS

Scale: NTS


VACUUM BREAKER
SAN
DISCHARGE LINE TO T-01
SUMP COVER
ANGLE FRAME BY MECH. CONTRACTOR SET IN CONCRETE BY GEN. CONTRACTOR
VENT TO ATMOSPHERE
FLOOR
FLEXIBLE HOSE
SAN
CONCRETE SUMP PIT FOR DETAILS REFER TO CONCRETE DRAWINGS
INLET LINE
MOTOR AND PUMP C/W DIAPHRAGM TYPE PRESSURE SWITCH

3 M402 SUMP PIT DETAIL

Scale: NTS


PIPE SLEEVE, AS PER SPECIFICATION
ESCUTCHEON PLATE TYPICAL FOR FINISHED AREAS. SEE SPECIFICATION
FIRE STOP ASSEMBLY MATERIAL (ONLY FOR FIRE RATED PARTITION)

4 M402 PIPE SLEEVE THROUGH INTERIOR WALL

Scale: NTS

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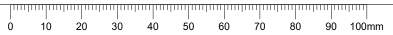
A1 - 841X594


0
10
20
30
40
50
60
70
80
90
100mm

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
B.T.

Drawn by
B.T.

Approved by
J.P.

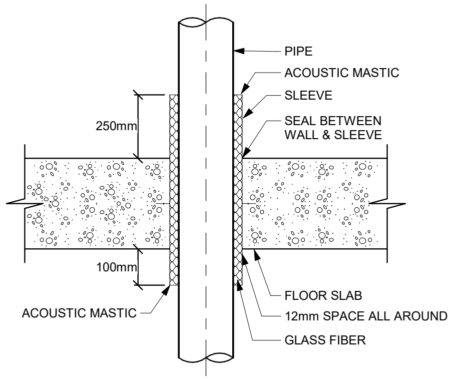
Project Manager
C.G.

Drawing Title

MECHANICAL PLUMBING

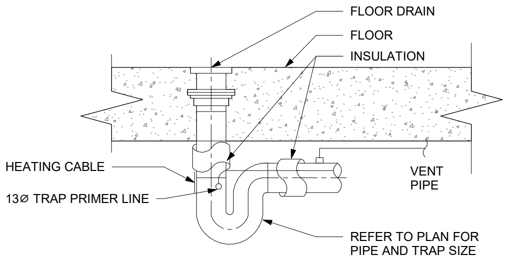
LQ PUMP STATION
PLUMBING & DRAINAGE DETAILS - 1

Project no.	Drawing no.	Revision no.
30192375	M402	B


PIPE
ACOUSTIC MASTIC
SLEEVE
SEAL BETWEEN
WALL & SLEEVE
250mm
100mm
ACOUSTIC MASTIC
FLOOR SLAB
12mm SPACE ALL AROUND
GLASS FIBER

6 M403 ACOUSTIC TREATMENT OF PIPE PENETRATION OF ROOF FLOOR SLAB

Scale: NTS


FLOOR DRAIN
FLOOR
INSULATION
HEATING CABLE
13Ø TRAP PRIMER LINE
VENT
PIPE
REFER TO PLAN FOR
PIPE AND TRAP SIZE

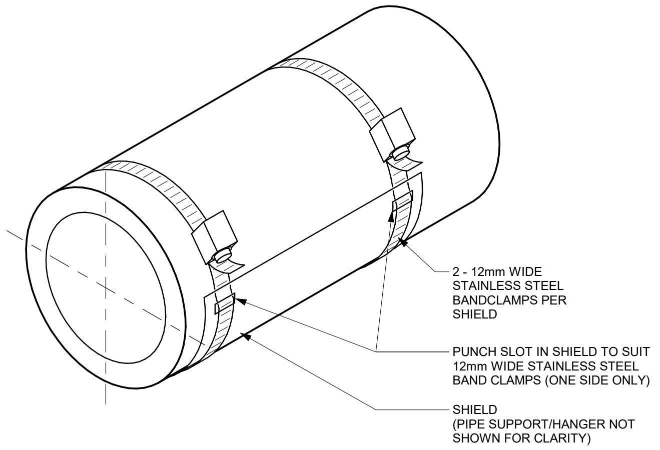
NOTES:

1. PLUMBING CONTRACTOR TO BE PRESENT DURING CONCRETE POUR TO ENSURE PIPE IS NOT DAMAGED OR MOVED.

2. SECURELY ANCHOR PIPE IN PLACE.

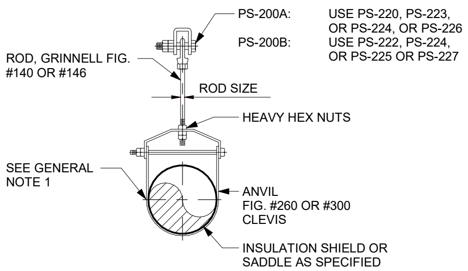
7 M403 TYPICAL FLOOR DRAIN

Scale: NTS


2 - 12mm WIDE
STAINLESS STEEL
BANDCLAMPS PER
SHIELD
PUNCH SLOT IN SHIELD TO SUIT
12mm WIDE STAINLESS STEEL
BAND CLAMPS (ONE SIDE ONLY)
SHIELD
(PIPE SUPPORT/HANGER NOT
SHOWN FOR CLARITY)

8 M403 INSULATION SHIELD INSTALLATION

Scale: NTS


PS-200A:
USE PS-220, PS-223,
OR PS-224, OR PS-226
PS-200B:
USE PS-222, PS-224,
OR PS-225 OR PS-227
ROD, GRINNELL FIG.
#140 OR #146
ROD SIZE
HEAVY HEX NUTS
SEE GENERAL
NOTE 1
ANVIL
FIG. #260 OR #300
CLEVIS
INSULATION SHIELD OR
SADDLE AS SPECIFIED

DETAIL NOTES:

1. PS-200B CAN ONLY BE USED IF THE LINE TEMPERATURE IS LESS THAN 650°F AND FOR LINES 3/4" TO 1-1/2" WITH 2" MAXIMUM INSULATION THICKNESS, AND LINES 2" TO 12" WITH 4" MAXIMUM INSULATION THICKNESS.

2. AS AN OPTION; STAINLESS STEEL WEAR PLATE MAY BE WELDED TO CLEVIS, (IF CLEVIS IS NOT GALVANIZED.)

PS-200A NON-INSULATED CLEVIS ANVIL FIG. #260		PS-200B INSULATED CLEVIS ANVIL FIG. #300	
LINE SIZE	ROD SIZE	LINE SIZE	ROD SIZE
65	13	65	13
80	13	80	13
100	16	100	16
150	19	150	19
200	19	200	19
250	22	250	22
300	22	300	22
350	25		
400	25		
18"	25		
20"	32		
24"	32		
30"	32		

9 M403 PS2 - CLEVIS PIPE SUPPORTS

Scale: NTS

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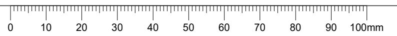
0
10
20
30
40
50
60
70
80
90
100mm

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B.T.

Drawn by
B.T.

Approved by
J.P.

Project Manager
C.G.

Drawing Title

MECHANICAL PLUMBING

LQ PUMP STATION
PLUMBING & DRAINAGE DETAILS - 2

Project no.	Drawing no.	Revision no.
30192375	**M403**	**B**

FAN SCHEDULE

MARK NO.	LOCATION	SERVICE	TYPE	DRIVE TYPE	AIRFLOW (L/S)	ESP (IN. WG)	FAN SPEED (RPM)	MOTOR DATA			WEIGHT (KG)	DB AT 1.5M	MANUFACTURER	MODEL	REMARKS
								KW	RPM	V/PH/HZ					
EF-01	WET WELL ACCESS ROOM	WETWELL EXHAUST	DUCT MOUNTED CENTRIFUGAL INLINE FAN	D-DIRECT	263	0.5	1343	0.373	1725	208/1/60	34	55	PENNBARRY (HTS)	SQX122-0541GP	
EF-02	ELECTRICAL CONTROL ROOM	VALVE ROOM AND WET WELL ACCESS ROOM EXHAUST	DUCT MOUNTED CENTRIFUGAL INLINE FAN	D-DIRECT	479	0.5	1239	0.559	1725	208/1/60	39	58	PENNBARRY (HTS)	SQX122-0541GP	

NOTES:

ELECTRIC UNIT HEATER SCHEDULE (EUH)

MARK NO.	LOCATION	TYPE	ELECTRICAL DATA				FAN DATA		MOUNTING HEIGHT	WEIGHT	MANUFACTURER	MODEL	DIMENSIONS (H/W/D) (MM)
			HEATER RATING (KW)	HEATER V/PH/HZ	MOTOR RATING (KW)	MOTOR V/PH/HZ	FLOW RATE	MOTOR SPEED					
							L/S	RPM	M	KG			
EUH-01	ELECTRICAL / CONTROL ROOM	WALL MOUNTED ELECTRIC UNIT HEATER	10	600/3/60	0.0373	208/1/60	358.7	1550		24	RUFFNECK (HTS)	RGE108	356/432/394
EUH-02	ELECTRICAL / CONTROL ROOM	WALL MOUNTED ELECTRIC UNIT HEATER	10	600/3/60	0.0373	208/1/60	358.7	1550		24	RUFFNECK (HTS)	RGE108	356/432/394
EUH-03	WET WELL ACCESS ROOM	WALL MOUNTED ELECTRIC UNIT HEATER	7.5	600/3/60	0.0373	208/1/60	287.4	1550		24	RUFFNECK (HTS)	RGE078	356/432/394
EUH-04	WET WELL ACCESS ROOM	WALL MOUNTED ELECTRIC UNIT HEATER	7.5	600/3/60	0.0373	208/1/60	287.4	1550		24	RUFFNECK (HTS)	RGE078	356/432/394
EUH-05	VALVE ROOM	WALL MOUNTED ELECTRIC UNIT HEATER	4	600/3/60	0.0373	208/1/60	224.2	1550		24	RUFFNECK (HTS)	RGE048	356/432/394
EUH-06	VALVE ROOM	WALL MOUNTED ELECTRIC UNIT HEATER	4	600/3/60	0.0373	208/1/60	224.2	1550		24	RUFFNECK (HTS)	RGE048	356/432/394
EUH-07	WET WELL	WALL MOUNTED ELECTRIC UNIT HEATER	7.5	600/3/60	0.0373	208/1/60	287.4	1550		24	RUFFNECK (HTS)	RGE078	356/432/394

NOTES:

MOTORIZED DAMPER SCHEDULE (MD)

TAG NO.	LOCATION	SERVICE	DAMPER LOCATION	ASSOCIATED UNIT	CONTROL DAMPER					ACTUATOR					REMARKS
					SIZE (MM)	AIR FLOW (L/S)	MANUFACTURER	MODEL	V/PH/HZ	ENCLOSURE RATING	V/PH/HZ	POWER (W)	MANUFACTURER	MODEL	
MD-01	ELECTRICAL/CONTROL ROOM	EXHAUST AIR DAMPER	IN DUCT	AIR COMPRESSOR								7			
MD-02	ELECTRICAL/CONTROL ROOM	EXHAUST AIR DAMPER	IN DUCT	AIR COMPRESSOR								7			
MD-03	ELECTRICAL/CONTROL ROOM	EXHAUST AIR DAMPER	IN DUCT	AIR COMPRESSOR								7			
MD-04	ELECTRICAL/CONTROL ROOM	EXHAUST AIR DAMPER	IN DUCT	AIR COMPRESSOR								7			
MD-05	ELECTRICAL/CONTROL ROOM	INTAKE AIR DAMPER	IN DUCT	AHU								7			
MD-06	ELECTRICAL/CONTROL ROOM	EXHAUST AIR DAMPER	IN DUCT	AHU								7			
MD-07	ELECTRICAL/CONTROL ROOM	EXHAUST AIR DAMPER	IN DUCT	EF-01								7			
MD-08	ELECTRICAL/CONTROL ROOM	EXHAUST AIR DAMPER	IN DUCT	EF-02								7			

NOTES:

AIR HANDLING UNIT SCHEDULE (AHU)

MARK NO.	LOCATION	SERVICE	SUPPLY FAN DATA							FILTERS		WEIGHT (KG)	DIMENSIONS (H/W/L) (MM)	MANUFACTURER	MODEL	REMARKS
			DRIVE TYPE	ESP (IN. WG)	TSP (IN. WG)	TOTAL AIRFLOW (L/S)	QTY	KW PER MOTOR	MOTOR SPEED (RPM)	THICKNESS (MM)	MERV RATING					
AHU-01	ELECTRICAL/CONTROL ROOM	SUPPLY	LEFT	1.0		4956	1		1750				1320.8/2082.8 /5029.2	DAIKIN	CAH021GHGC	

NOTES:

1. UNIT TBD
2. DISCONNECT PROVIDED UNDER THE ELECTRICAL WORK.
3. UNIT SHALL CONSIST OF AIR INTAKE HOOD WITH WIREMESH SECTION W/ INLET DAMPER AND FILTERS, FAN SECTION W/VFD, ELECTRIC HEATING SECTION

BLOWER HEATER SCHEDULE (BH)

MARK NO.	LOCATION	ELECTRICAL REQUIREMENTS				WEIGHT (KG)	FAN		MANUFACTURER	MODEL	REMARKS
		HEATING ELEMENTS		CONTROL UNIT							
		CAPACITY OUTPUT (KW)	V/PH/HZ	POWER (W)	V/PH/HZ		FLOW (LPS)	ESP (IN. WG)			
BH-01	WET WELL ACCESS ROOM	18	600/3/60	240	120/1/60		263	0.5	DEXON CANADA AIR SYSTEMS INC.	WMDH18	

NOTES:
1. INDOOR WALL MOUNTED BLOWER HEATER
2. AIR INTAKE TROUGH A WALL IS 490MMX530MM AND AIR DISCHARGE COLLAR IS 200MM D X 450MM W
3. C.S.A. CERTIFIED FOR CLASS1, DIVISION 2, GAS GROUPS C &D LOCATIONS, ENCLOSURE TYPE 3R
4. C/W REMOTE STATUS BOARD & 8 METERS CABLE

PUMP SCHEDULE (P)

MARK NO.	TANK NAME	LOCATION	CAPACITY	HEAD	MOTOR	MANUFACTURER	MODEL	REMARKS
			LPS	M	HP			
P-01	RAW SUBMERSIBLE SUMP PUMP	ELECTRICAL & CONTROL ROOM	4.21	11.1	2.7	FLYGT	NP 3069 SH 3	C/W CONTROL PANEL, FLOATS, ACCESS HATCH

NOTES :
1. REFER TO DETAIL 1 ON DWG M402 FOR NOZZLES REQUIRE.
2. MOUNTED ON CONCRETE PAD.

TANKS SCHEDULE (T)

MARK NO.	TANK NAME	LOCATION	CAPACITY	DIA	HEIGHT	MANUFACTURER	MODEL	REMARKS
			LITERS	MM	MM			
T-01	WASTEWATER STORAGE TANK	ELECTRICAL & CONTROL ROOM	3785	1550	2110	PPM	0892 B-B	NOTES 1,2

NOTES :
1. REFER TO DETAIL 1 ON DWG M402 FOR NOZZLES REQUIRE.
2. MOUNTED ON CONCRETE PAD.

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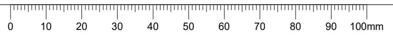

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN	2024-03-11

Consultant

8133 Warden Avenue - Unit 300
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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
B.T.

Drawn by
B.T.

Approved by
J.P.

Project Manager
C.G.

Drawing Title

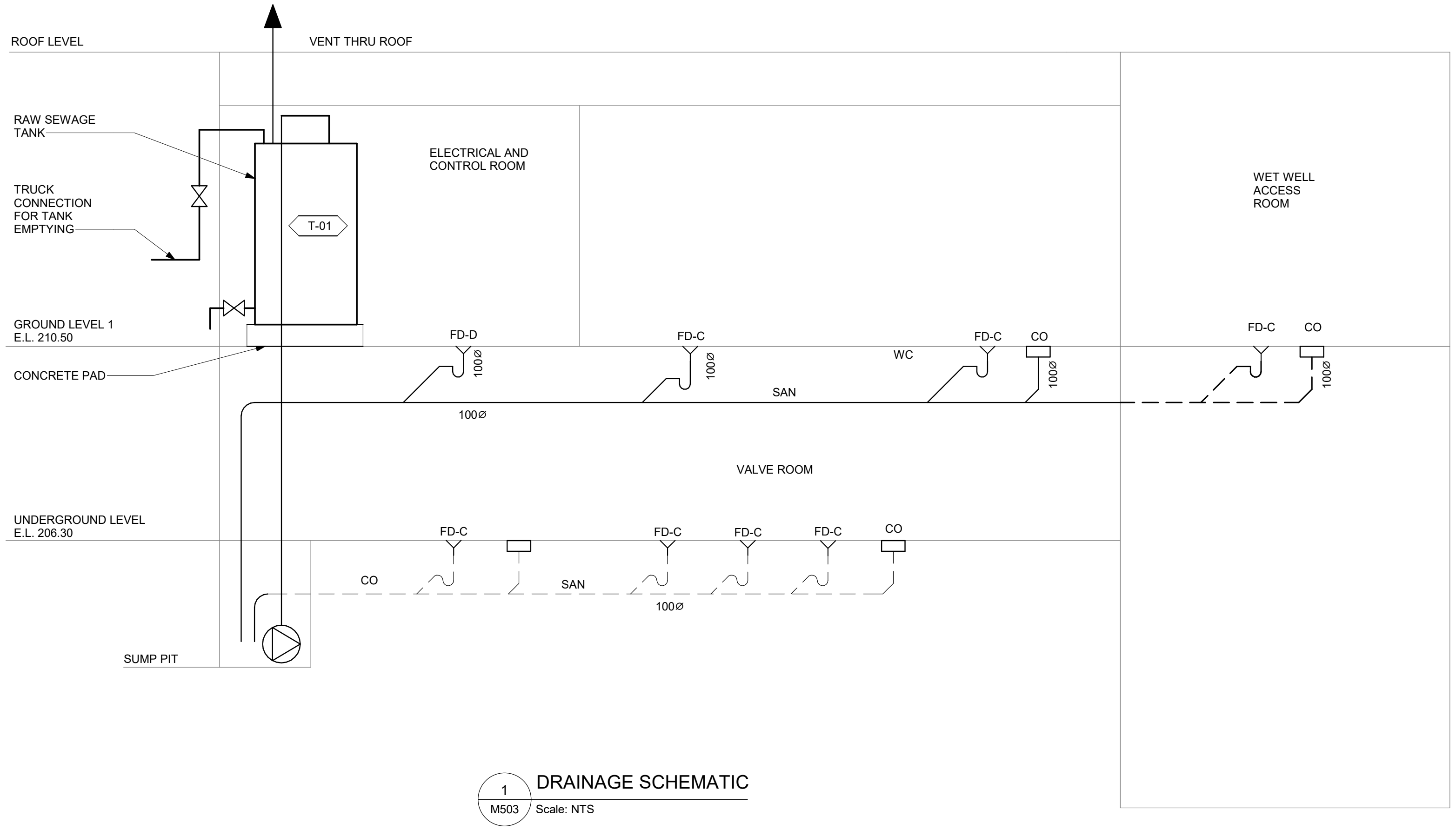
MECHANICAL PLUMBING

LQ PUMP STATION
EQUIPMENT SCHEDULES

Project no.
30192375

Drawing no.
M502

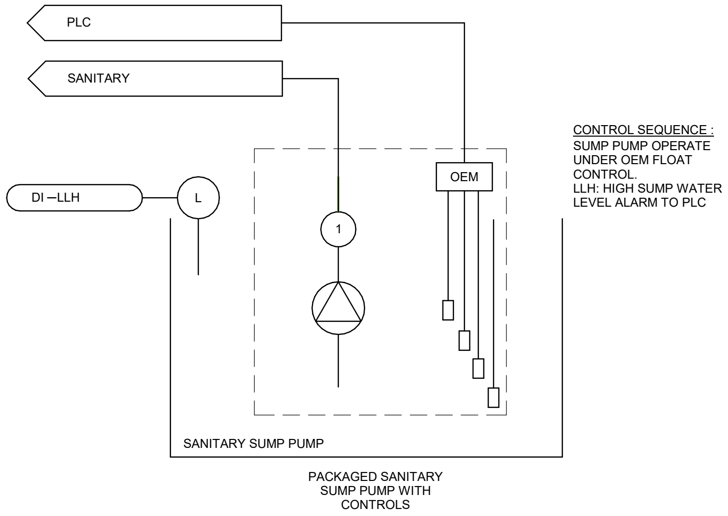
Revision no.
B


ROOF LEVEL
VENT THRU ROOF
RAW SEWAGE TANK
TRUCK CONNECTION FOR TANK EMPTYING
T-01
ELECTRICAL AND CONTROL ROOM
WET WELL ACCESS ROOM
GROUND LEVEL 1
E.L. 210.50
CONCRETE PAD
FD-D
100Ø
FD-C
100Ø
WC
FD-C
CO
100Ø
FD-C
CO
100Ø
SAN
100Ø
VALVE ROOM
UNDERGROUND LEVEL
E.L. 206.30
FD-C
CO
SAN
FD-C
FD-C
FD-C
CO
100Ø
SUMP PIT

1
M503

DRAINAGE SCHEMATIC

Scale: NTS


PLC
SANITARY
DI –LLH
L
OEM
1
SANITARY SUMP PUMP
PACKAGED SANITARY SUMP PUMP WITH CONTROLS

CONTROL SEQUENCE :
SUMP PUMP OPERATE UNDER OEM FLOAT CONTROL.
LLH: HIGH SUMP WATER LEVEL ALARM TO PLC

3
M503

CONTROL SCHEMATIC FOR SANITARY DRAIN SUMP PUMP

Scale: NTS

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0 10 20 30 40 50 60 70 80 90 100mm

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B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
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Revision	Description	Date

Consultant

ARCADIS

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
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Drawn by
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Approved by
J.P.

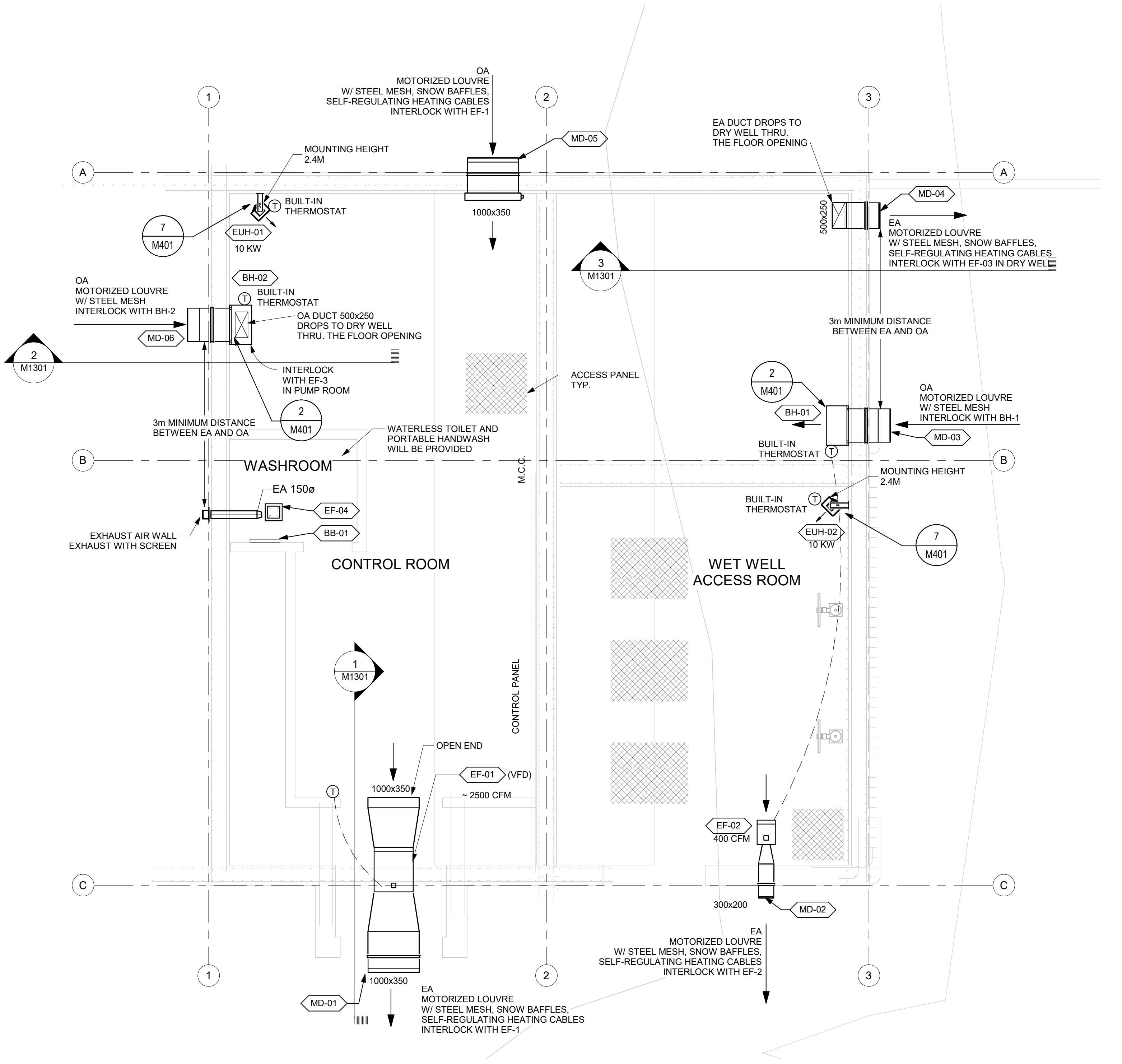
Project Manager
C.G.

Drawing Title

MECHANICAL PLUMBING

LQ PUMP STATION PLUMBING & DRAINAGE SCHEMATICS

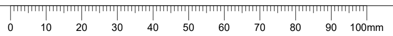
Project no.	Drawing no.	Revision no.
30192375	M503	B


1
2
3
A
B
C
OA
MOTORIZED LOUVRE
W/ STEEL MESH, SNOW BAFFLES,
SELF-REGULATING HEATING CABLES
INTERLOCK WITH EF-1
MD-05
1000x350
MOUNTING HEIGHT
2.4M
BUILT-IN
THERMOSTAT
T
7
M401
EUH-01
10 KW
EA DUCT DROPS TO
DRY WELL THRU.
THE FLOOR OPENING
500x250
MD-04
EA
MOTORIZED LOUVRE
W/ STEEL MESH, SNOW BAFFLES,
SELF-REGULATING HEATING CABLES
INTERLOCK WITH EF-03 IN DRY WELL
3
M1301
OA
MOTORIZED LOUVRE
W/ STEEL MESH
INTERLOCK WITH BH-2
BH-02
BUILT-IN
THERMOSTAT
OA DUCT 500x250
DROPS TO DRY WELL
THRU. THE FLOOR OPENING
MD-06
2
M1301
INTERLOCK
WITH EF-3
IN PUMP ROOM
2
M401
ACCESS PANEL
TYP.
3m MINIMUM DISTANCE
BETWEEN EA AND OA
2
M401
BH-01
OA
MOTORIZED LOUVRE
W/ STEEL MESH
INTERLOCK WITH BH-1
MD-03
BUILT-IN
THERMOSTAT
3m MINIMUM DISTANCE
BETWEEN EA AND OA
WATERLESS TOILET AND
PORTABLE HANDWASH
WILL BE PROVIDED
WASHROOM
M.C.C.
MOUNTING HEIGHT
2.4M
BUILT-IN
THERMOSTAT
EA 150ø
EF-04
EXHAUST AIR WALL
EXHAUST WITH SCREEN
BB-01
EUH-02
10 KW
7
M401
CONTROL ROOM
WET WELL
ACCESS ROOM
1
M1301
CONTROL PANEL
OPEN END
1000x350
EF-01
(VFD)
~ 2500 CFM
EF-02
400 CFM
300x200
MD-02
1000x350
MD-01
EA
MOTORIZED LOUVRE
W/ STEEL MESH, SNOW BAFFLES,
SELF-REGULATING HEATING CABLES
INTERLOCK WITH EF-1
EA
MOTORIZED LOUVRE
W/ STEEL MESH, SNOW BAFFLES,
SELF-REGULATING HEATING CABLES
INTERLOCK WITH EF-2

1
M1101

PLAN AT GROUND ELEVATION AT EL. 101.7M

Scale: 1 : 50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100mm

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
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Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
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Drawn by
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Approved by
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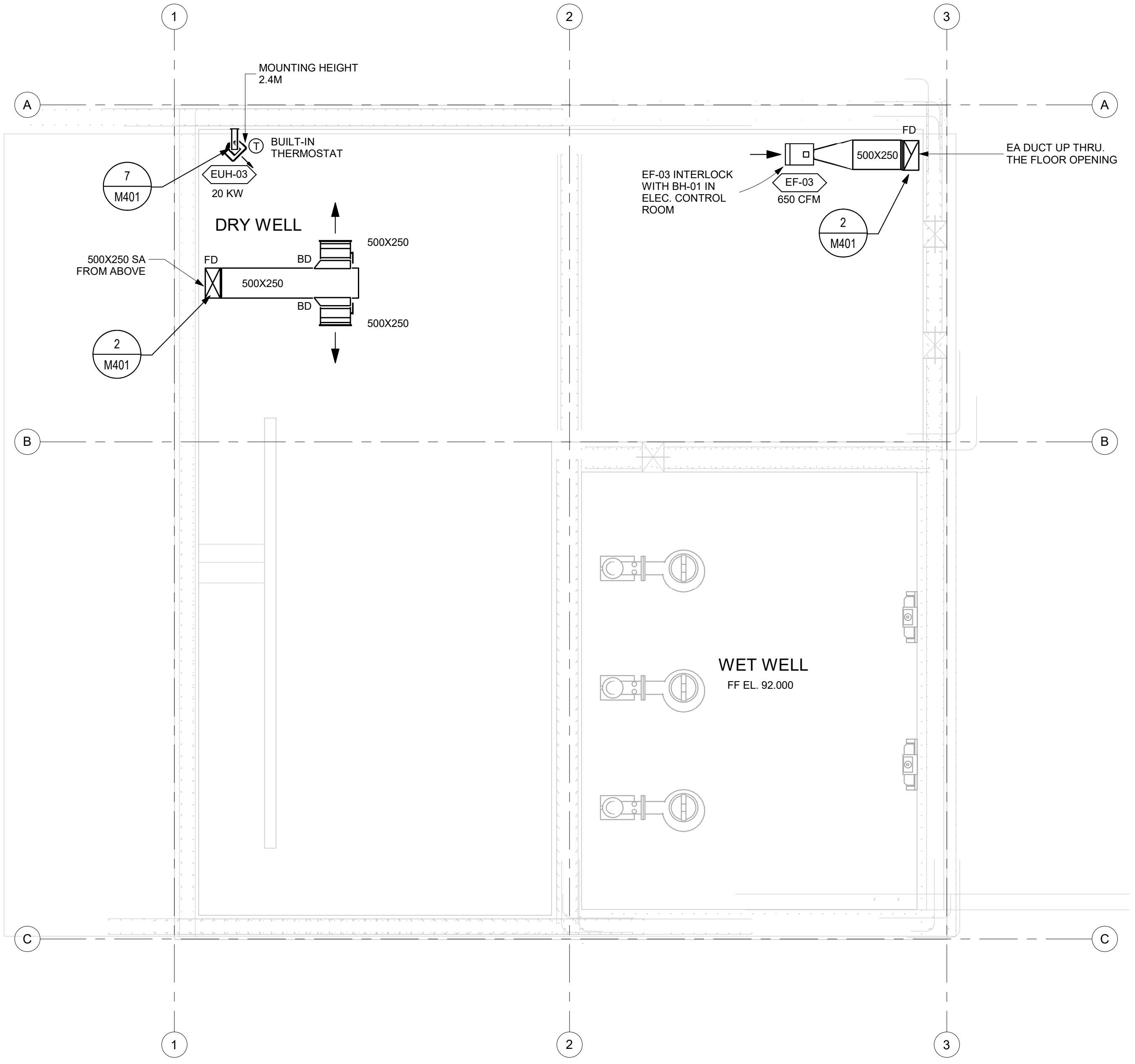
Project Manager
C.G.

Drawing Title

MECHANICAL HVAC

AR PUMP STATION
HVAC PLAN AT EL. 101.7m

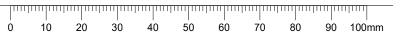
Project no.	Drawing no.	Revision no.
30192375	M1101	B


MOUNTING HEIGHT
2.4M
BUILT-IN
THERMOSTAT
T
EUH-03
20 KW
7
M401
DRY WELL
500X250
500X250 SA
FROM ABOVE
FD
BD
500X250
BD
500X250
2
M401
FD
EF-03 INTERLOCK
WITH BH-01 IN
ELEC. CONTROL
ROOM
EF-03
650 CFM
500X250
EA DUCT UP THRU.
THE FLOOR OPENING
2
M401
WET WELL
FF EL. 92.000
1
2
3
A
B
C

1
M1102

PLAN AT EL 97.8 HVAC

Scale: 1 : 50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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN (REVISED)	2025-09-26
Revision	Description	Date

Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

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Drawn by
B.T.

Approved by
J.P.

Project Manager
C.G.

Drawing Title

MECHANICAL HVAC

AR PUMP STATION
HVAC PLAN AT EL. 97.8 m

Project no.	Drawing no.	Revision no.
30192375	M1102	B

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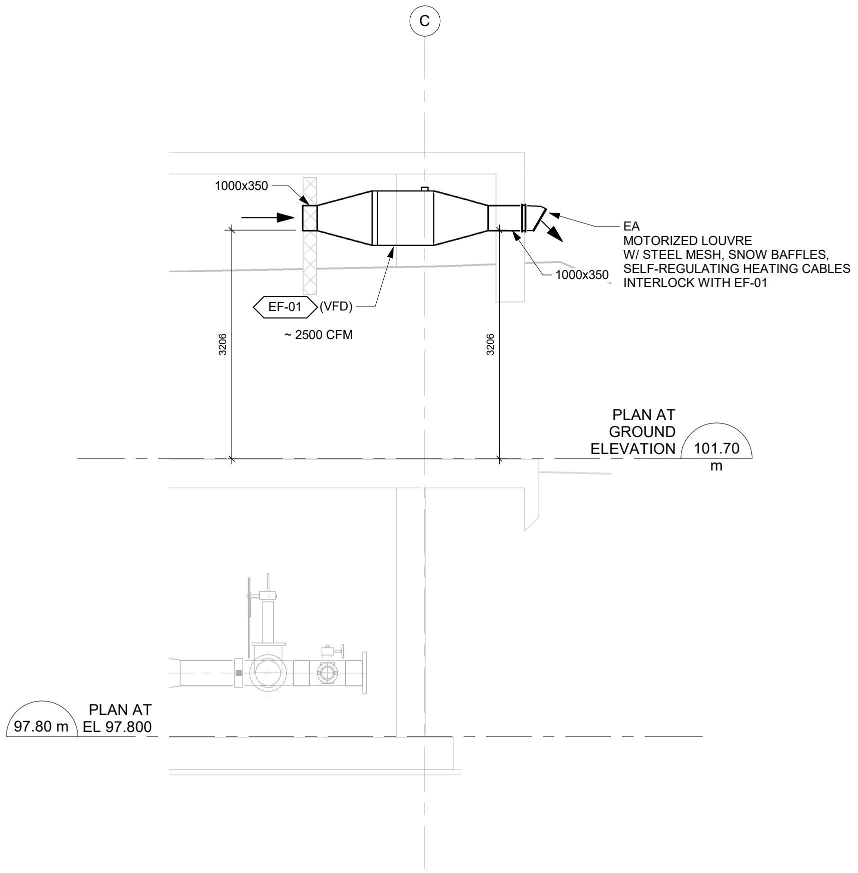
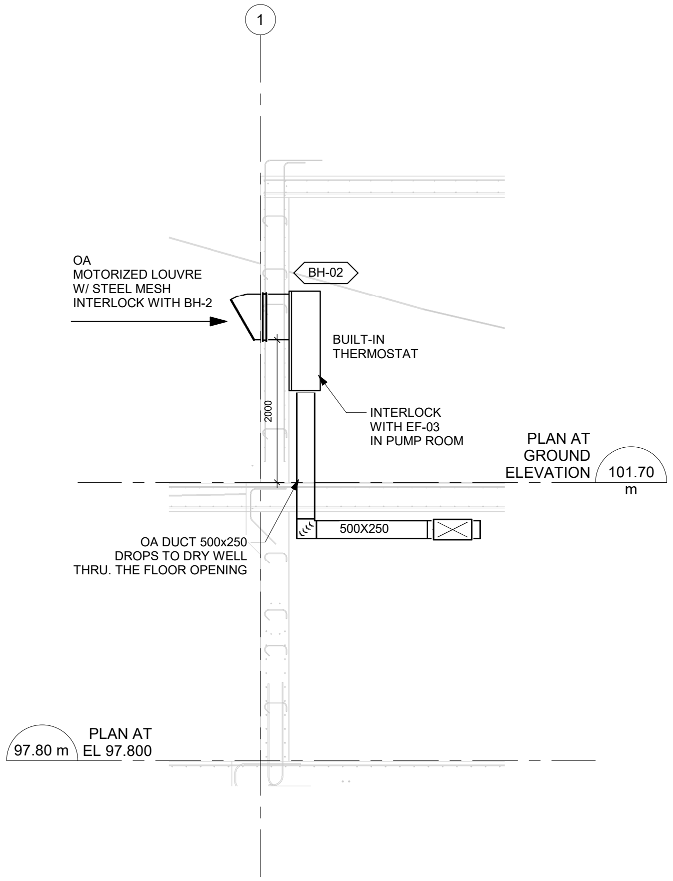
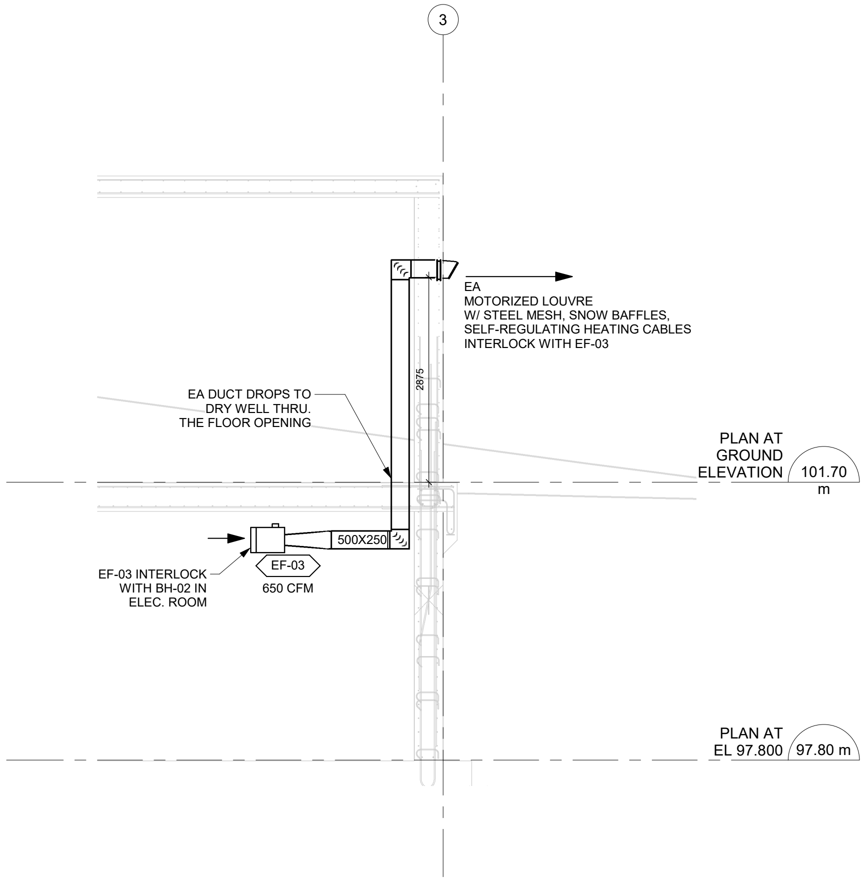

C
1000x350
EA
MOTORIZED LOUVRE
W/ STEEL MESH, SNOW BAFFLES,
SELF-REGULATING HEATING CABLES
INTERLOCK WITH EF-01
1000x350
EF-01
(VFD)
~ 2500 CFM
3206
3206
PLAN AT
GROUND
ELEVATION
101.70
m
97.80 m
PLAN AT
EL 97.800

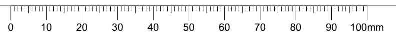
1
M1301
CONTROL ROOM SECTION A
Scale: 1 : 50


1
OA
MOTORIZED LOUVRE
W/ STEEL MESH
INTERLOCK WITH BH-2
BH-02
BUILT-IN
THERMOSTAT
INTERLOCK
WITH EF-03
IN PUMP ROOM
2000
PLAN AT
GROUND
ELEVATION
101.70
m
500X250
OA DUCT 500x250
DROPS TO DRY WELL
THRU. THE FLOOR OPENING
97.80 m
PLAN AT
EL 97.800

2
M1301
CONTROL ROOM SECTION B
Scale: 1 : 50


3
EA
MOTORIZED LOUVRE
W/ STEEL MESH, SNOW BAFFLES,
SELF-REGULATING HEATING CABLES
INTERLOCK WITH EF-03
EA DUCT DROPS TO
DRY WELL THRU.
THE FLOOR OPENING
2875
PLAN AT
GROUND
ELEVATION
101.70
m
500X250
EF-03
650 CFM
EF-03 INTERLOCK
WITH BH-02 IN
ELEC. ROOM
PLAN AT
EL 97.800
97.80 m

3
M1301
CONTROL ROOM SECTION C
Scale: 1 : 50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Autodesk Docs://30288139-Iqaluit_LongTermWater C3D2025/IQL-ARCA-M-APXPUMP-23.rvt

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A	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
Revision	Description	Date

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
B.T.

Drawn by
B.T.

Approved by
J.P.

Project Manager
C.G.

Drawing Title

MECHANICAL HVAC

AR PUMP STATION
HVAC SECTIONS

Project no.	Drawing no.	Revision no.
30192375	**M1301**	**A**

BLOWER HEATER SCHEDULE (BH)

MARK NO.	LOCATION	ELECTRICAL REQUIREMENTS				WEIGHT (KG)	FAN		MANUFACTURER	MODEL	REMARKS
		HEATING ELEMENTS		CONTROL UNIT							
		CAPACITY OUTPUT (KW)	V/PH/HZ	POWER (W)	V/PH/HZ		FLOW (LPS)	ESP (PA)			
BH-01	CONTROL ROOM	20.1	600/3/60	360	120/1/60	72.58	307	0	DEXON CANADA AIR SYSTEMS INC	WMDH20-1	EXP. RATING: CLASS 1, DIV. 2
BH-02	WET WELL ACCESS ROOM	12.15	600/3/60	240	120/1/60	52.16	189	0	DEXON CANADA AIR SYSTEMS INC	WMDH12-1	EXP. RATING: CLASS 1, DIV. 2

BLOWER HEATER SCHEDULE (BH)

MARK NO.	LOCATION	WATT DENSITY (W/FT)	ELECTRICAL REQUIREMENTS		HEATER LENGTH MM	WEIGHT (KG)	FAN		MANUFACTURER	MODEL	REMARKS
			HEATING ELEMENTS								
			CAPACITY OUTPUT (KW)	V/PH/HZ			FLOW (LPS)	ESP (PA)			
BB-01	WASHROOM	152	0.30	120/1/60	600	2.4	307	0	OUELLET CANADA	OMP0302	NATURAL CONVECTION HEATER - NO FAN

ELECTRIC UNIT HEATER SCHEDULE (EUH)

MARK NO.	LOCATION	TYPE	ELECTRICAL DATA				FAN DATA		MOUNTING HEIGHT	WEIGHT	MANUFACTURER	MODEL	DIMENSIONS (H/W/D) (MM)
			HEATER RATING (KW)	V/PH/HZ	MOTOR RATING KW	MAX AMP RATING	FLOW RATE	MOTOR SPEED					
							L/S	RPM	M	KG			
EUH-01	CONTROL ROOM	WALL MOUNTED ELECTRIC UNIT HEATER	10	600/3/60	0.0373	208/1/60	358	1550		24	RUFFNECK	RGE108	356/432/394
EUH-02	WET WELL ACCESS ROOM	WALL MOUNTED ELECTRIC UNIT HEATER	7.5	600/3/60	0.0373	208/1/60	278	1550		24	RUFFNECK	RGE078	356/432/394
EUH-03	DRY WELL	WALL MOUNTED ELECTRIC UNIT HEATER	20	600/3/60	0.0746	208/1/60	594	1550		47	RUFFNECK	RGE208	495/610/559
NOTES:													

FAN SCHEDULE

MARK NO.	LOCATION	SERVICE	TYPE	DRIVE TYPE	AIRFLOW (L/S)	ESP (PA)	FAN SPEED (RPM)	MOTOR DATA			WEIGHT (KG)	DB AT 1.5M	MANUFACTURER	MODEL	REMARKS
								KW	RPM	V/PH/HZ					
EF-01	CONTROL ROOM	CONTROL ROOM EXHAUST	EXHAUST	DIRECT	1203.5	49.77	1589	0.746	520	575/3/60	102	11.5	PENNBARRY	SQX222-0041GP	
EF-02	WET WELL ACCESS ROOM	WET WELL EXHAUST	EXHAUST	DIRECT	165.2	49.77	1531	0.125	1531	208/1/60	21.8	11.5	PENNBARRY	SQX080-0041GP	
EF-03	DRY WELL	DRYWELL EXHAUST	EXHAUST	DIRECT	306.8	49.77	1699	0.246	1699	208/1/60	20.4	11.5	PENNBARRY	SQX100-0041GP	
EF-04	WASHROOM	WASHROOM EXHAUST	EXHAUST	DIRECT	37.8	24.9		0.026		120/1/60	4.1	1.0	BROAN	LP80	
NOTES:															

MOTORIZED DAMPER SCHEDULE (MD)

TAG NO.	LOCATION	SERVICE	DAMPER LOCATION	ASSOCIATED UNIT	CONTROL DAMPER					ACTUATOR					REMARKS
					SIZE (MM)	AIR FLOW (L/S)	MANUFACTURER	MODEL	V/PH/HZ	ENCLOSURE RATING	V/PH/HZ	POWER (W)	MANUFACTURER	MODEL	
MD-01	CONTROL ROOM	EXHAUST AIR DAMPER	IN DUCT	EF-1											
MD-02	WET WELL ACCESS ROOM	EXHAUST AIR DAMPER	IN DUCT	EF-2											
MD-03	CONTROL ROOM	EXHAUST AIR DAMPER	IN DUCT	BH-1											
MD-04	CONTROL ROOM	EXHAUST AIR DAMPER	IN DUCT	EF-3											
MD-05	CONTROL ROOM	INTAKE AIR DAMPER	IN DUCT	EF-1											
MD-06	CONTROL ROOM	EXHAUST AIR DAMPER	IN DUCT	BH-2											
NOTES:															

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
A	ISSUED FOR 50% DESIGN REVIEW	2025-12-19

Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
B.T.

Drawn by
B.T.

Approved by
J.P.

Project Manager
C.G.

Drawing Title

MECHANICAL HVAC

AR PUMP STATION
EQUIPMENT SCHEDULE

Project no.	Drawing no.	Revision no.
30192375	**M1501**	**A**

Autodesk Docs://30288139-Iqaluit_LongTermWater C3D2025/IQL-ARCA-M-APXPUMP-23.rvt

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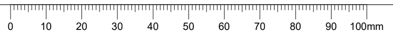

SINGLE LINE DIAGRAM

SYMBOL	DESCRIPTION
600 A	FUSED CUT OUT SWITCH 600 A RATING
600 A	FUSED DISCONNECT SWITCH 600 A RATING
600 A	ISOLATING DISCONNECT SWITCH 600 A RATING
600 A	LOAD INTERRUPTER SWITCH 600 A RATING
	LIGHTNING ARRESTER
600-120/ 208V	TRANSFORMER (2 WINDING) PRIMARY=600V; SECONDARY=120/208V
△	3 PHASE, 3 WIRE, DELTA CONNECTION
Y	3 PHASE, 3 WIRE, WYE CONNECTION
	3 PHASE, 4 WIRE, WYE CONNECTION SOLID GROUNDED NEUTRAL
600-5 A 3	CURRENT TRANSFORMER CURRENT RATIO : 600-5 A QUANTITY : 3
600-120 V 2	POTENTIAL TRANSFORMER VOLTAGE RATIO :600-120 V QUANTITY : 2
AT AF NA	AIR OR MOLDED CASE CIRCUIT BREAKER (1500 V OR LESS) AT AMP TRIP SIZE AF AMP FRAME SIZE NA NON AUTOMATIC
	CAPACITOR
	DRAW OUT OR PLUG TYPE CONTACTS
1	COMBINATION MAGNETIC STARTER FULL VOLTAGE, NON-REVERSING, FIXED FRAME, BREAKER TYPE EEMAC SIZE 1
1	COMBINATION MAGNETIC STARTER FULL VOLTAGE, NON-REVERSING, DRAWOUT, BREAKER TYPE EEMAC SIZE 1
2S2W 1	COMBINATION MAGNETIC STARTER FULL VOLTAGE TWO SPEED DRAWOUT, BREAKER TYPE EEMAC SIZE 1 2S1W 2 SPEED, 1 WINDING 2S2W 2 SPEED, 2 WINDING
1	COMBINATION MAGNETIC STARTER FULL VOLTAGE, REVERSING, DRAWOUT, BREAKER TYPE EEMAC SIZE 1
5 80	COMBINATION MAGNETIC STARTER REDUCED VOLTAGE, DRAWOUT, AUTOTRANSFORMER TYPE EEMAC SIZE 5 TAP SETTING 80%
2	MAGNETIC CONTACTOR FULL VOLTAGE, NON-REVERSING, DRAWOUT, BREAKER TYPE EEMAC SIZE 2
45 kW	SQUIRREL CAGE INDUCTION MOTOR
SSS 2	COMBINATION SOLID-STATE REDUCED VOLTAGE MOTOR STARTER WITH EEMAC SIZE 2 BY-PASS CONTACTOR

SINGLE LINE DIAGRAM

SYMBOL	DESCRIPTION
	THERMAL ELEMENT
⏚	GROUND CONNECTION
1	CABLE/CONDUCTOR No. 1 REFER TO CABLE/CONDUCTOR LIST
A	INSTRUMENT OR METER A AMMETER (D - DENOTES MAX. DEMAND INDICATOR) V VOLTMETER kW KILOWATT METER kWH KILOWATT HOUR METER
AS	OPERATOR CONTROLS AS AMMETER SWITCH VS VOLTMETER SWITCH

SINGLE LINE DIAGRAM LEGEND

SYMBOL	DESCRIPTION
	HEAVY LINES - NEW WIRING & EQUIPMENT
	LIGHT LINES - EXISTING WIRING & EQUIPMENT
▨	TO BE REMOVED

LAYOUT SYMBOLS

SYMBOL	DESCRIPTION
	GENERAL POWER & LIGHTING
HP	ELECTRIC MOTOR, NUMBER SHOWN DENOTES MOTOR No. M ELECTRIC MOTOR SF SUPPLY FAN MD MOTORIZED DAMPER EF EXHAUST FAN
UHT1	ELECTRIC UNIT HEATER No. UHT1
	DUCT HEATER
EH/EC	ELECTRIC HEATER/ELECTRIC CONVECTOR
A	SURFACE MOUNTED LED FIXTURE. 'A' DENOTES TYPE. REFER TO LUMINAIR SCHEDULE FOR DETAILS
A ○	ROUND DOWN LED FIXTURE. 'A' DENOTES TYPE. REFER TO LUMINAIR SCHEDULE FOR DETAILS
A	WALL MOUNTED LED FIXTURE. 'A' DENOTES TYPE. REFER TO LUMINAIR SCHEDULE FOR DETAILS
A	POLE/STANCHION MOUNTED LED FIXTURE. 'A' DENOTES TYPE. REFER TO LUMINAIR SCHEDULE FOR DETAILS
⊗ X1	WALL MOUNTED EXIT SIGN REFER TO SCHEDULE FOR DETAILS
B1	EMERGENCY LIGHTING UNIT INTEGRAL BATTERY, 120 V PLUG-IN CONNECTION WITH 2 UNIT MOUNTED HEADS
E1	REMOTE HEADS FOR EMERGENCY LIGHTING SYSTEM (DUPLEX ARRG'T SHOWN)
	120/208V DIRECT CONNECTION TO EQUIPMENT
	600V DIRECTION CONNECTION TO EQUIPMENT
	DUPLEX RECEPTACLE, 120 V, 15 A UNLESS OTHERWISE NOTED
	DUPLEX RECEPTACLE, 120 V SPLIT WIRED
$	SINGLE POLE SWITCH SWITCH/RECEPTACLE DESIGNATIONS GFI GROUND FAULT INTERRUPTER EXP EXPLOSION PROOF WP WEATHER PROOF TL TWIST LOCK S INCLUDES SWITCH & SINGLE OUTLET SWITCH TYPES 3 THREE-WAY P SWITCH & PILOT LIGHT 4 FOUR-WAY D DIMMER, FULL RANGE K KEY SWITCH M MOTION SENSOR
EX	EXISTING
EXP	EXPLOSION PROOF
(EF21) M S	MANUAL STARTER
(EF21)	COMBINATION MAGNETIC STARTER
(EF21)	MANUAL DISCONNECT SWITCH, NON-FUSED
(EF21)	MANUAL DISCONNECT SWITCH, FUSED
(EF21) T	THERMOSTAT
(EF21) CS	CONTROL STATION (NUMBER DENOTES EQUIPMENT WITH WHICH DEVICE IS ASSOCIATED (TYP.)
CP2	CONTROL PANEL `CP2'
LC	LOCAL CONTROL
DC	DISCONNECT
ZS	MISCELLANEOUS CONTROL DEVICES ZS LIMIT SWITCH LS LEVEL SWITCH DS DOOR SWITCH MD MOTORIZED DAMPER FS FLOW SWITCH SV SOLENOID VALVE FZ FREEZESTAT PS PRESSURE SWITCH F FIRESTAT T THERMOSTAT PC PHOTOCELL
XX	INSTRUMENTATION DEVICES XX REFER TO INSTRUMENTATION DRAWINGS (`I' SERIES) FOR DESCRIPTION

LAYOUT SYMBOLS

SYMBOL	DESCRIPTION
D	INTERCOM/TELEPHONE OUTLET NO DESIGNATION - BELL OUTLET D DESK TOP HANDSET TYPE F FLOOR OUTLET M FAX MACHINE P PLANT IN-HOUSE PHONE W WALL MTD. HANDSET TYPE
	CONDUIT/WIRING DESIGNATIONS
— — —	CONDUIT OR CABLE, CONCEALED OR EMBEDDED
	FUTURE CONDUIT OR CABLE, CONCEALED OR EMBEDDED
—»»—	CONDUIT OR CABLE, DIRECT BURIED
	CONDUIT OR CABLE EXPOSED OR SURFACE MOUNTED
J	WIRING BOX J JUNCTION BOX P PULL BOX S SPLITTER BOX
A3	CONDUIT OR CABLE (HOME RUN TO PANELBOARD "A" CIRCUIT 3.

9 #12-21mmC

21mm CONDUIT INSIDE DIAMETER
CONDUCTOR SIZE (AWG OR KCMIL)
NUMBER OF CONDUCTORS

CONDUIT IMPERIAL/METRIC CONVERSIONS

1/2"	= 16mm	3/4"	= 21mm
1"	= 27mm	1-1/4"	= 35mm
1-1/2"	= 41mm	2"	= 53mm
2-1/2"	= 63mm	3"	= 78mm
4"	= 103mm	5"	= 127mm

GROUNDING

SYMBOL	DESCRIPTION
	GROUNDING CONDUCTOR, CONCEALED, EMBEDDED OR DIRECT BURIED
	SPLICE OR TAP CONNECTION
	THERMIT WELD CONNECTION TO FLAT SURFACE
⊗	GROUND ROD, DIRECT BURIED
⊗	GROUND ROD WITH INSPECTION BOX OR WELL
▩	GRADIENT GROUND MAT

CONTROL SCHEMATICS

SYMBOL	DESCRIPTION
CR 101	STARTER/CONTACTOR OPERATING COIL DESIGNATION M STARTER COIL C CONTACTOR COIL MS SLOW CS SLOW MF FAST CF FAST MFD FORWARD CFD FORWARD MRV REVERSE CRV REVERSE RELAYS CR CONTROL RELAY LR LATCHING RELAY ETM ELASPED TIME METER DVR DOUBLE VOLTAGE RELAY

CONTROL SCHEMATICS

SYMBOL	DESCRIPTION
TR	TIMING RELAY (SEE TABLE BELOW)

TIME DELAY AFTER COIL IS			
ENERGIZED		DE-ENERGIZED	
NORMALLY OPEN	NORMALLY CLOSED	NORMALLY OPEN	NORMALLY CLOSED

SYMBOL	DESCRIPTION
MD 1	FRACTIONAL HP MOTOR OR MOTORIZED OPERATOR MD MOTORIZED DAMPER EF EXHAUST FAN SF SUPPLY FAN UH UNIT HEATER FAN MOTOR SV SOLENOID VALVE
XX 3	INSTRUMENTATION DEVICES XX REFER TO INSTRUMENTATION DRAWINGS (`I' SERIES) FOR DESCRIPTION
||	NORMALLY OPEN CONTACT
	NORMALLY CLOSED CONTACT O/L DENOTES THERMAL OVERLOAD CONTACT
	AUX. CONTACT ON DISCONNECT SWITCH OR CIRCUIT BREAKER
	CIRCUIT BREAKER COMPLETE WITH LOCK-ON MECHANISM
	EMERGENCY STOP PUSH BUTTON (MUSHROOM HEAD)
	PUSH BUTTON, PUSH TO CLOSE
	PUSH BUTTON, PUSH TO OPEN
	PUSH BUTTON, MULTIPOLE (2 NORMALLY OPEN POLES SHOWN)
H O A	MULTI POSITION SELECTOR SWITCH (2 POLES SHOWN) H-O-A (HAND-OFF-AUTO) O-C-PLC (OPEN-CLOSE-PLC) H-O-PLC (HAND-OFF-PLC)
R	INDICATING LIGHT A AMBER W WHITE B BLUE Y YELLOW G GREEN R RED INDICATING LIGHT, PUSH-TO-TEST
A	SOLENOID VALVE NC NORMALLY CLOSED WHEN DE-ENERGIZED NO NORMALLY OPEN WHEN DE-ENERGIZED
	MANUAL MOTOR STARTER

PILOT DEVICE CONTACT SCHEDULE				
CONTROL DEVICE	OPEN ON RISE	CLOSE ON RISE	OPEN ON FALL	CLOSE ON FALL
THERMOSTAT				
LEVEL SWITCH				
PRESSURE SWITCH				
FLOW SWITCH				
CONTROL DEVICE	N.O.	N.O. (HELD CLOSED)	N.C.	N.C. (HELD OPEN)
LIMIT SWITCH				

SYMBOL	DESCRIPTION
	CIRCUIT CONNECTION
	NO CIRCUIT CONNECTION
	SCREEN/SHIELD
	DEVICE LOCATION REFERENCE
CP1 431	IN PANEL CP1, IN PANEL #431
△	IN MOTOR CONTROL CENTRE
∗	FIELD DEVICE
	WIRING TERMINATION DESIGNATIONS
⊗	TERMINAL BLOCK IN PLC PANEL
◕	TERMINAL BLOCK IN CONTROL PANEL/ LOCAL CONTROL STATION
	TERMINAL BLOCK IN VARIABLE SPEED DRIVE
□	TERMINAL BLOCK IN MCC

RWP BUILDING SINGLE LINE DIAGRAM

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN	2024-03-22

Consultant
ARCADIS
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Project title

CITY OF IQALUIT

**LONG TERM WATER PROGRAM
SUPPLY AND STORAGE**

Designed by
M. B

Drawn by
M. B

Approved by
F. R

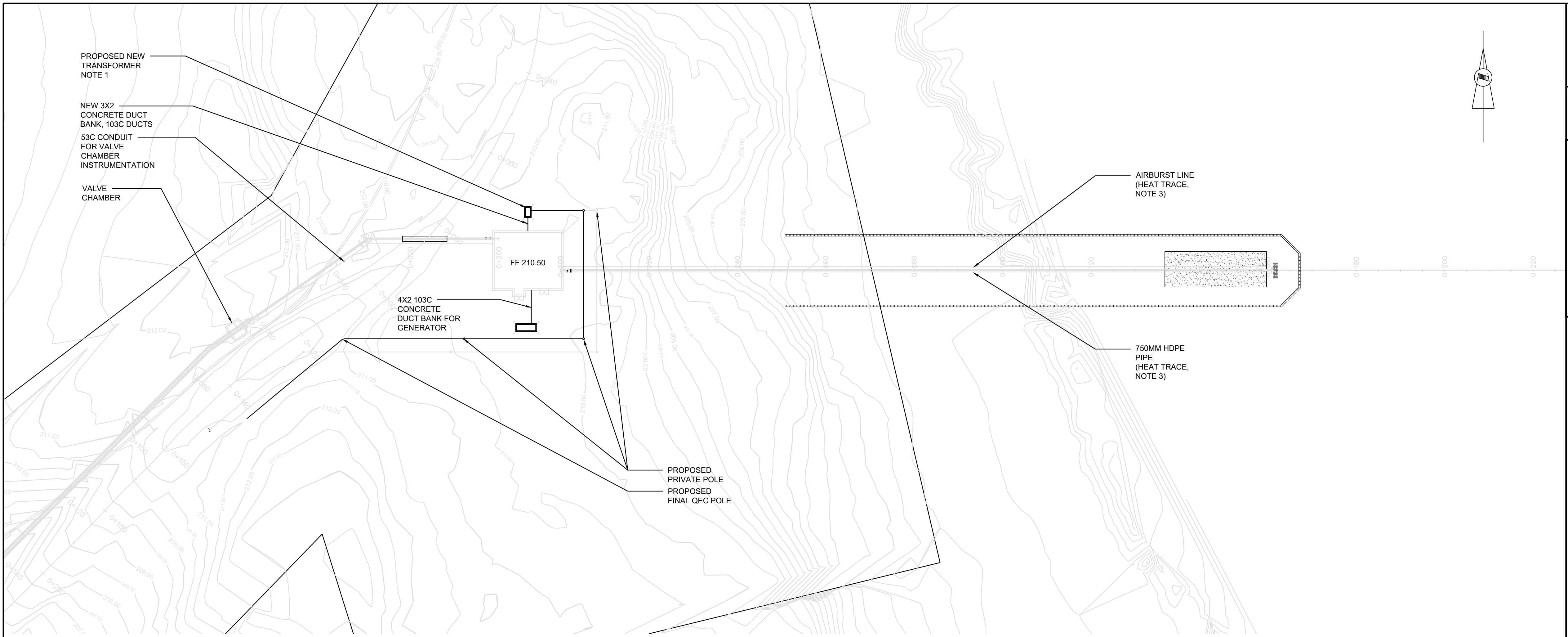
Project Manager
M. J

Drawing title

ELECTRICAL

LEGEND

Project no.	Drawing no.	Revision no.
30192375	**E001**	**B**


PROPOSED NEW
TRANSFORMER
NOTE 1
NEW 3X2
CONCRETE DUCT
BANK, 103C DUCTS
53C CONDUIT
FOR VALVE
CHAMBER
INSTRUMENTATION
VALVE
CHAMBER
FF 210.50
4X2 103C
CONCRETE
DUCT BANK FOR
GENERATOR
AIRBURST LINE
(HEAT TRACE,
NOTE 3)
750MM HDPE
PIPE
(HEAT TRACE,
NOTE 3)
PROPOSED
PRIVATE POLE
PROPOSED
FINAL QEC POLE

SITE PLAN AT EL. 207.00m

SCALE 1:500

NOTES:

1. COORDINATE WITH UTILITY REGARDING INSTALLATION OF PAD MOUNT TRANSFORMER. PROVIDE DUCT BANK FROM TRANSFORMER VAULT TO BUILDING. PROVIDE NEW POLES, POLE MOUNTING AND GUYING FOR EACH PRIVATE POLE INDICATED.
2. PROVIDE NEW GENERATOR AS SHOWN ON PLAN. REFER TO SINGLE LINE DIAGRAM FOR MORE INFORMATION.
3. PROVIDE HEAT TRACING ALONG PIPELINE FROM BUILDING TO INTAKE AS SHOWN ON PLAN. PROVIDE TWO REDUNDANT HEAT TRACE LINES FOR EACH PIPE IN A DUTY/STANDBY CONFIGURATION, PROGRAMMED TO VARY THE DUTY SO THAT THE CIRCUITS HAVE EQUAL USE.
   - 3.1. 750mm INTAKE HDPE, 50mm INSULATION
   - 3.2. 150mm AIRBURST LINE, 50MM INSULATION
4. PROVIDE 53C CONDUIT FOR INSTRUMENTATION CABLING FOR VALVE CHAMBER

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A1 - 841X594

0 10 20 30 40 50 60 70 80 90 100mm

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
A	ISSUED FOR 50% DESIGN REVIEW	2025-12-19

Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
M. B.

Drawn by
M. B.

Approved by
F. R.

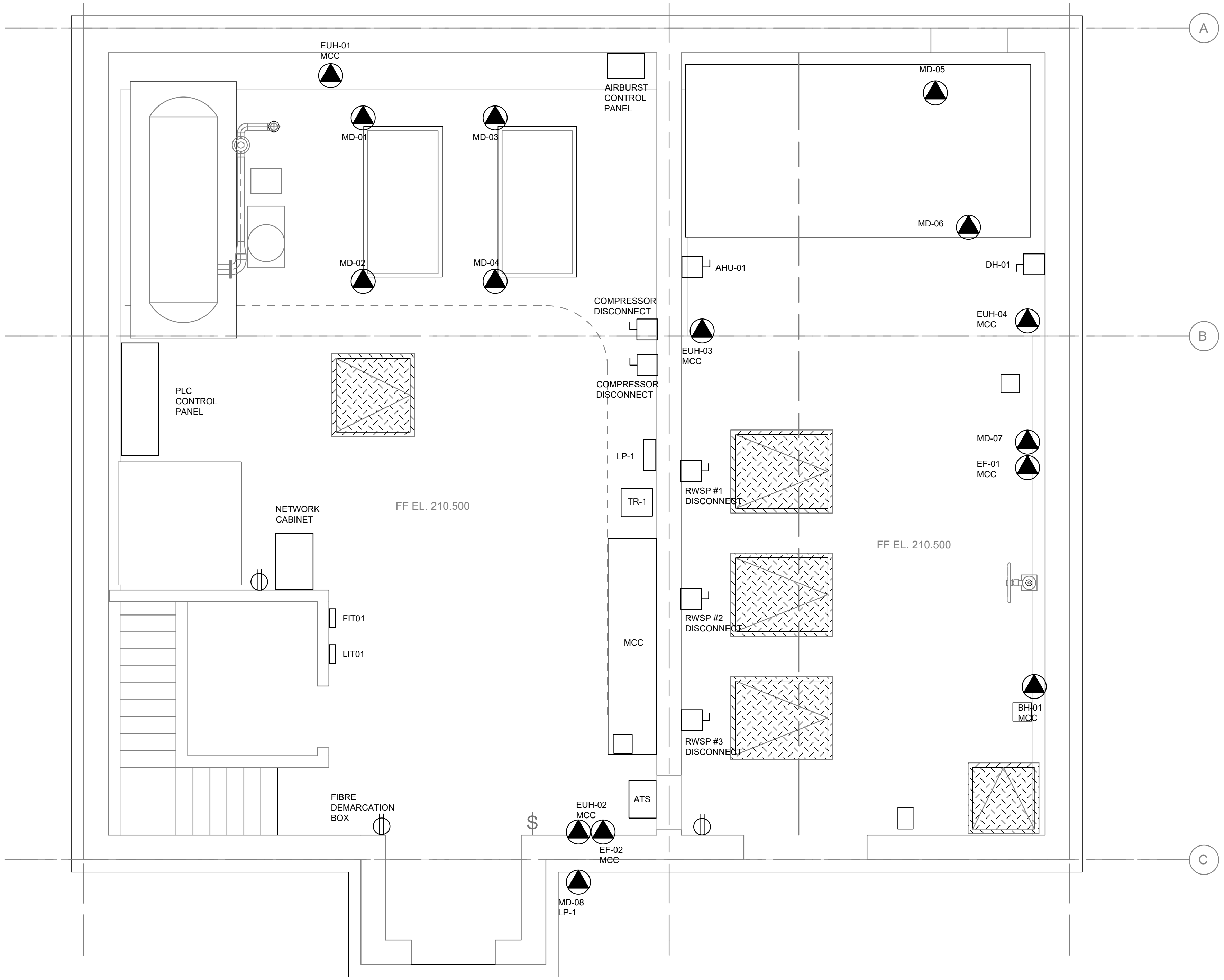
Project Manager
C. G.

Drawing title

ELECTRICAL

LQ PUMP STATION
ELECTRICAL SITE PLAN

Project no.	Drawing no.	Revision no.
30192375	E101	A


A
B
C
EUH-01
MCC
AIRBURST
CONTROL
PANEL
MD-05
MD-01
MD-03
MD-06
MD-02
MD-04
AHU-01
DH-01
COMPRESSOR
DISCONNECT
EUH-04
MCC
EUH-03
MCC
COMPRESSOR
DISCONNECT
PLC
CONTROL
PANEL
MD-07
EF-01
MCC
LP-1
RWSP #1
DISCONNECT
TR-1
NETWORK
CABINET
FF EL. 210.500
FF EL. 210.500
FIT01
RWSP #2
DISCONNECT
MCC
LIT01
BH-01
MCC
RWSP #3
DISCONNECT
ATS
FIBRE
DEMARCATION
BOX
EUH-02
MCC
$
EF-02
MCC
MD-08
LP-1

PLAN AT EL. 210.5m

SCALE 1:40

NOTES:

1. PROVIDE NEW ATS, MCC, TRANSFORMER AND PANEL AS INDICATED ON PLAN. SEE SINGLE LINE DIAGRAM FOR ADDITIONAL DETAIL.
2. PROVIDE CONDUIT FOR ALL INSTRUMENTATION AND CONTROL CABLING AS INDICATED ON THE P&ID DRAWING FOR THIS STATION. ANALOG AND DIGITAL SIGNALS TO BE IN SEPARATE CONDUIT.
3. PROVIDE ALL CONNECTIONS TO MECHANICAL/HVAC EQUIPMENT AS INDICATED.

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN	2024-03-22

Consultant
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Project title
CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
M. B.

Drawn by
M. B.

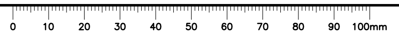
Approved by
F. R.

Project Manager
C. G.

Drawing title
ELECTRICAL

LQ PUMP STATION
PLAN AT EL. 210.5m

Project no.	Drawing no.	Revision no.
30192375	E102	B


0
10
20
30
40
50
60
70
80
90
100mm

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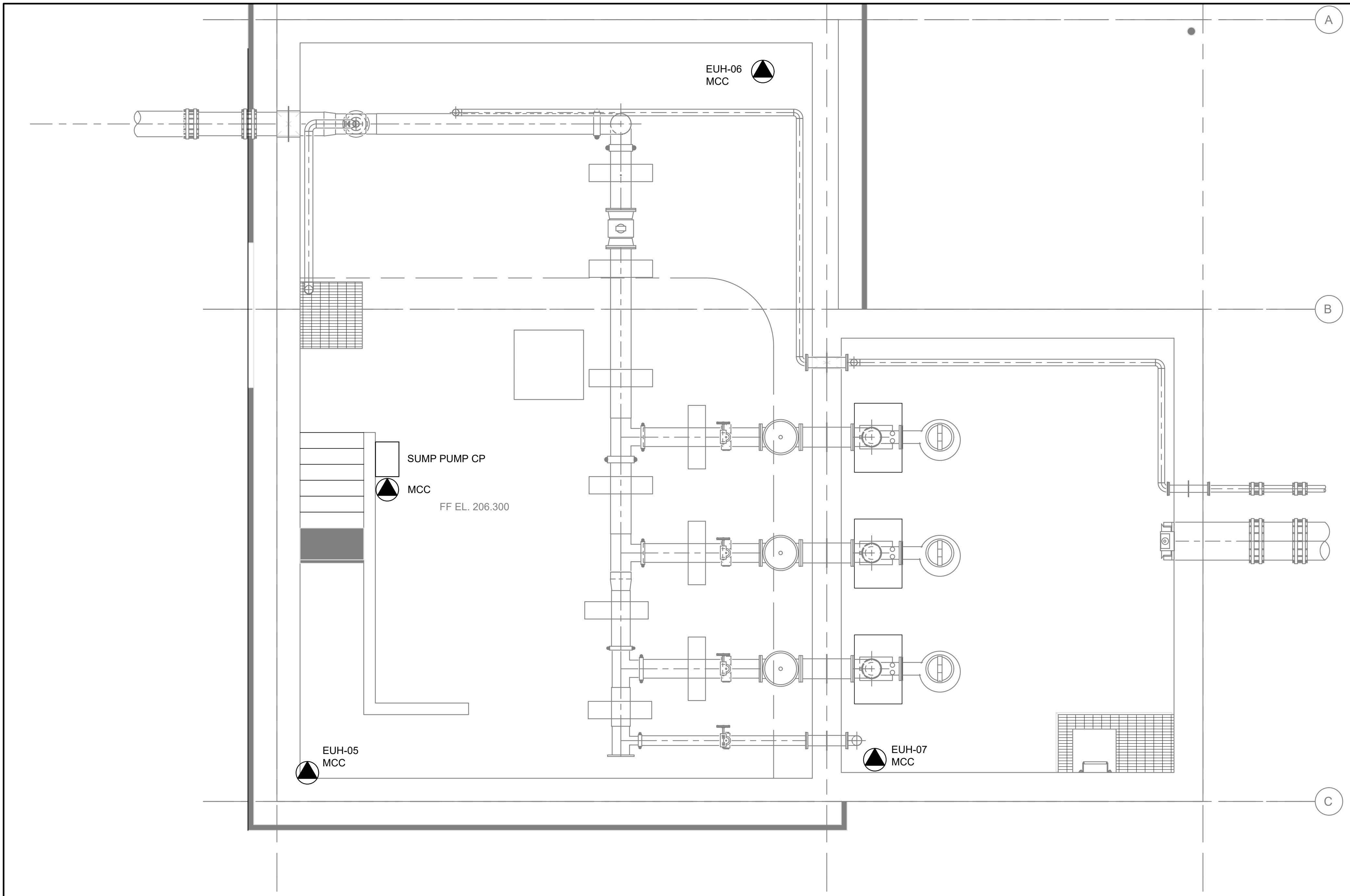

PLAN AT EL. 207.00m

SCALE 1:40

NOTES:

1. PROVIDE CONDUIT FOR ALL INSTRUMENTATION AND CONTROL CABLING AS INDICATED ON THE P&ID DRAWING FOR THIS STATION. ANALOG AND DIGITAL SIGNALS TO BE IN SEPARATE CONDUIT.
2. PROVIDE ALL CONNECTIONS TO MECHANICAL/HVAC EQUIPMENT AS INDICATED.

A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN	2024-03-22

Consultant

ARCADIS

8133 Warden Avenue - Unit 300
Markham ON L6G 1B3 Canada
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www.arcadis.com

Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
M. B

Drawn by
M. B

Approved by
F. R

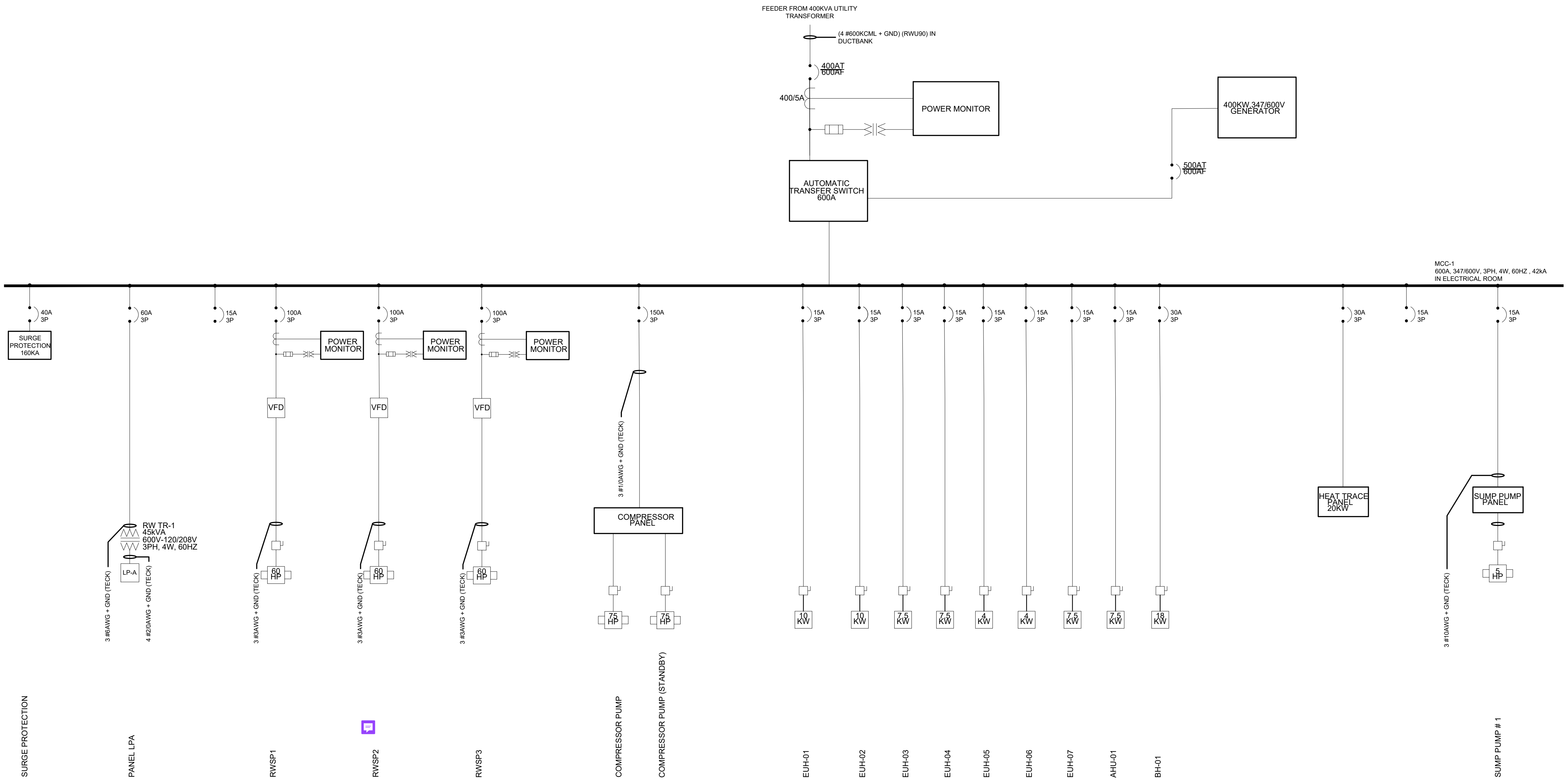
Project Manager
C. G

Drawing title

ELECTRICAL

LQ PUMP STATION
PLAN AT EL. 207m

Project no.	Drawing no.	Revision no.
30192375	E103	B


FEEDER FROM 400KVA UTILITY TRANSFORMER
(4 #600KCML + GND) (RWU90) IN DUCTBANK
400AT
600AF
400/5A
POWER MONITOR
400KW,347/600V GENERATOR
500AT
600AF
AUTOMATIC TRANSFER SWITCH 600A
MCC-1
600A, 347/600V, 3PH, 4W, 60HZ , 42kA
IN ELECTRICAL ROOM
40A 3P
SURGE PROTECTION 160KA
60A 3P
RW TR-1
45kVA
600V-120/208V
3PH, 4W, 60HZ
LP-A
3 #6AWG + GND (TECK)
4 #2/0AWG + GND (TECK)
15A 3P
100A 3P
POWER MONITOR
VFD
3 #3AWG + GND (TECK)
60 HP
100A 3P
POWER MONITOR
VFD
3 #3AWG + GND (TECK)
60 HP
100A 3P
POWER MONITOR
VFD
3 #3AWG + GND (TECK)
60 HP
150A 3P
3 #1/0AWG + GND (TECK)
COMPRESSOR PANEL
75 HP
75 HP
15A 3P
10 KW
15A 3P
10 KW
15A 3P
7.5 KW
15A 3P
7.5 KW
15A 3P
4 KW
15A 3P
4 KW
15A 3P
7.5 KW
15A 3P
7.5 KW
30A 3P
18 KW
30A 3P
HEAT TRACE PANEL 20KW
15A 3P
15A 3P
SUMP PUMP PANEL
3 #10AWG + GND (TECK)
5 HP
SURGE PROTECTION
PANEL LPA
RWSP1
RWSP2
RWSP3
COMPRESSOR PUMP
COMPRESSOR PUMP (STANDBY)
EUH-01
EUH-02
EUH-03
EUH-04
EUH-05
EUH-06
EUH-07
AHU-01
BH-01
SUMP PUMP # 1

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A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
C	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
B	ISSUED FOR PRELIMINARY DESIGN	2024-03-22
A	ISSUED FOR CONCEPT DESIGN	2023-11-27

Consultant

ARCADIS

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Project title
CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
M. B.

Drawn by
M. B.

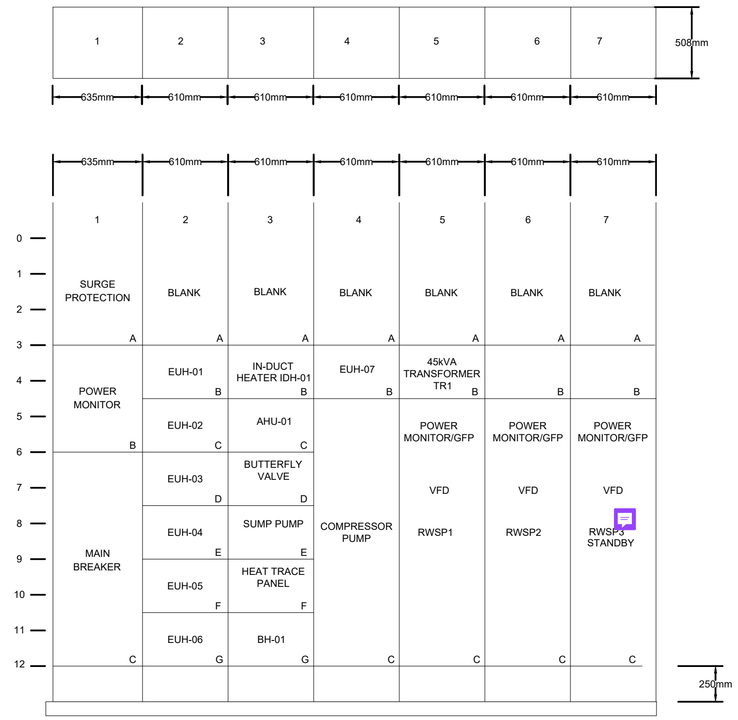
Approved by
F. R.

Project Manager
C. G.

Drawing title
ELECTRICAL

LQ PUMP STATION
SINGLE LINE DIAGRAM

Project no.	Drawing no.	Revision no.
30192375	E501	C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508mm
635mm
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610mm
635mm
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610mm
1
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3
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7
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1
2
3
4
5
6
7
8
9
10
11
12
SURGE PROTECTION
A
BLANK
A
BLANK
A
BLANK
A
BLANK
A
BLANK
A
BLANK
A
POWER MONITOR
B
EUH-01
B
IN-DUCT HEATER IDH-01
B
EUH-07
B
45kVA TRANSFORMER TR1
B
B
B
EUH-02
C
AHU-01
C
POWER MONITOR/GFP
POWER MONITOR/GFP
POWER MONITOR/GFP
EUH-03
D
BUTTERFLY VALVE
D
VFD
VFD
VFD
MAIN BREAKER
C
EUH-04
E
SUMP PUMP
E
COMPRESSOR PUMP
C
RWSP1
C
RWSP2
C
RWSP3 STANDBY
C
EUH-05
F
HEAT TRACE PANEL
F
EUH-06
G
BH-01
G
250mm

RWPS FACILITY - MCC ELEVATION

LOCATION - RWPS FACILITY ELECTRICAL ROOM
ENCLOSURE - EEMAC 12 (DUSTTIGHT)

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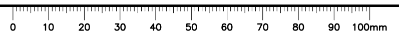
A1 - 841X594


0
10
20
30
40
50
60
70
80
90
100mm

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Consultant

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Project title

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LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
M. B.

Drawn by
M. B.

Approved by
F. R.

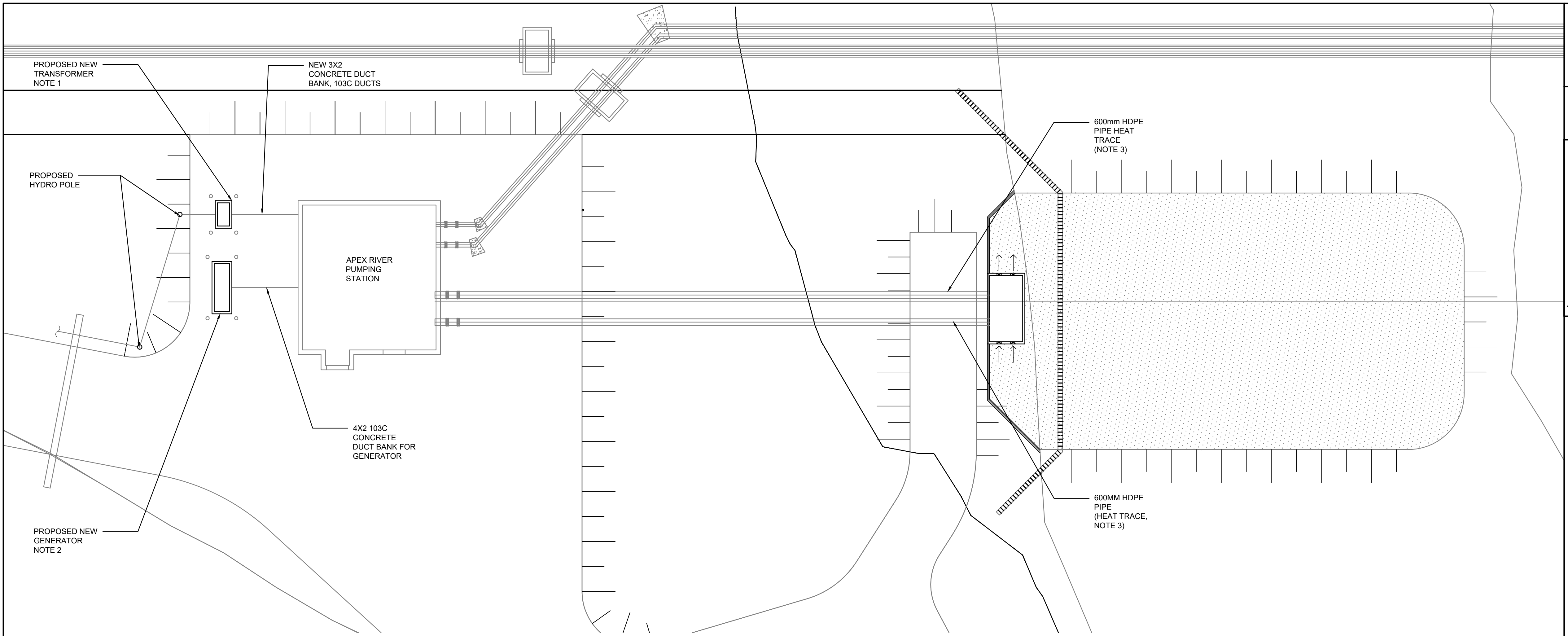
Project Manager
C. G.

Drawing title

ELECTRICAL

LQ PUMP STATION
MCC ELEVATION AND
PANEL SCHEDULES

Project no.	Drawing no.	Revision no.
30192375	E502	C


PROPOSED NEW
TRANSFORMER
NOTE 1
NEW 3X2
CONCRETE DUCT
BANK, 103C DUCTS
PROPOSED
HYDRO POLE
APEX RIVER
PUMPING
STATION
4X2 103C
CONCRETE
DUCT BANK FOR
GENERATOR
PROPOSED NEW
GENERATOR
NOTE 2
600mm HDPE
PIPE HEAT
TRACE
(NOTE 3)
600MM HDPE
PIPE
(HEAT TRACE,
NOTE 3)

SITE PLAN AT EL. 101.07m

SCALE 1:200

NOTES:

1. COORDINATE WITH UTILITY REGARDING INSTALLATION OF PAD MOUNT TRANSFORMER. PROVIDE DUCT BANK FROM TRANSFORMER VAULT TO BUILDING. PROVIDE NEW POLES, POLE MOUNTING AND GUYING FOR EACH PRIVATE POLE INDICATED.
2. PROVIDE NEW GENERATOR AS SHOWN ON PLAN. REFER TO SINGLE LINE DIAGRAM FOR MORE INFORMATION.
3. PROVIDE HEAT TRACING ALONG PIPELINE FROM BUILDING TO INTAKE AS SHOWN ON PLAN. PROVIDE TWO REDUNDANT HEAT TRACE LINES FOR EACH PIPE IN A DUTY/STANDBY CONFIGURATION, PROGRAMMED TO VARY THE DUTY SO THAT THE CIRCUITS HAVE EQUAL USE.
   3.1. 2x600mm INTAKE HDPE, 50mm INSULATION

0 10 20 30 40 50 60 70 80 90 100mm

A1 – 841X594

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A	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
Revision	**Description**	**Date**

Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
M. B.

Drawn by
M. B.

Approved by
F. R.

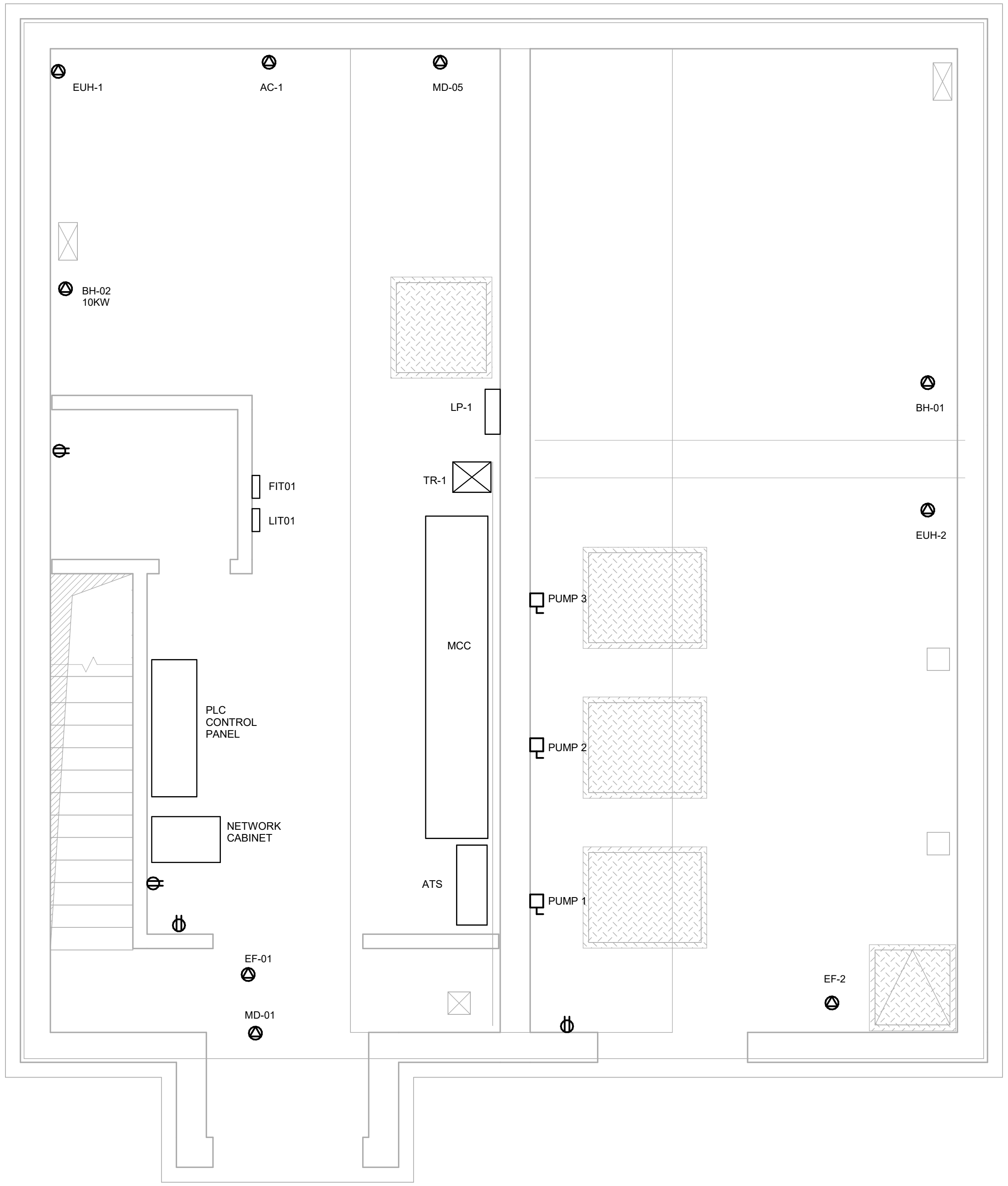
Project Manager
C. G.

Drawing title

ELECTRICAL

AR PUMP STATION
ELECTRICAL SITE PLAN

Project no.	Drawing no.	Revision no.
30192375	E1101	A



1
E1101

PLAN AT EL. 101.7M

Scale: 1 : 40

NOTES:

1. PROVIDE NEW ATS, MCC, TRANSFORMER AND PANEL AS INDICATED ON PLAN. SEE SINGLE LINE DIAGRAM FOR ADDITIONAL DETAILS.
2. PROVIDE CONDUITS FOR ALL INSTRUMENTATION AND CONTROL CABLING AS INDICATED ON THE P&ID DRAWING FOR THIS STATION. ANALOG AND DIGITAL SIGNALS SHALL BE IN SEPARATE CONDUITS.
3. PROVIDE ALL CONNECTIONS TO MECHANICAL/HVAC EQUIPMENT AS INDICATED.

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A1 - 841X594

0 10 20 30 40 50 60 70 80 90 100mm

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN (REVISED)	2025-09-26
Revision	Description	Date

Consultant

ARCADIS
8133 Warden Avenue - Unit 300
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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
M. B.

Drawn by
M. B.

Approved by
F. R.

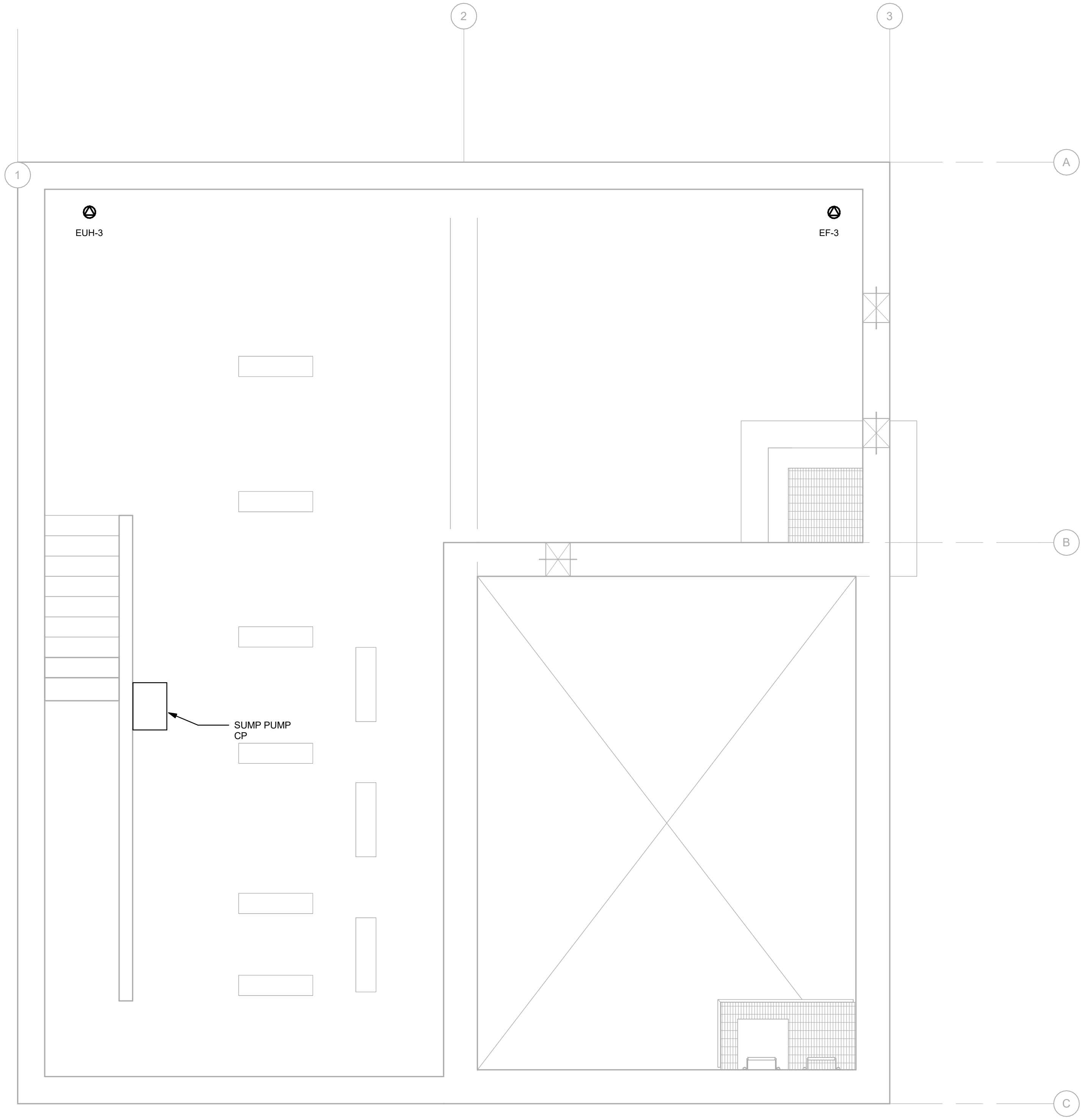
Project Manager
C. G.

Drawing Title

ELECTRICAL

AR PUMP STATION PLAN AT EL. 101.7m

Project no.	Drawing no.	Revision no.
30192375	E1102	B



1
E1102
PLAN AT EL. 99.10m
Scale: 1 : 40

NOTES:

1. PROVIDE ELECTRICAL CONNECTIONS FROM MCC BREAKERS TO MECHANICAL EQUIPMENT INDICATED.

2. PROVIDE 600V CONNECTION TO SUMP PUMP CONTROL PANEL. PROVIDE CONDUIT AND PULL STRINGS FROM PLC TO SUMP PUMP CP

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Consultant

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Project title

CITY OF IQALUIT

**LONG TERM WATER PROGRAM
SUPPLY AND STORAGE**

Designed by
M. B.

Drawn by
M. B.

Approved by
F. R.

Project Manager
C. G.

Drawing Title

ELECTRICAL

**AR PUMP STATION
PLAN AT EL. 99.1M**

Project no.	Drawing no.	Revision no.
30192375	E1103	B

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A1 - 841X594

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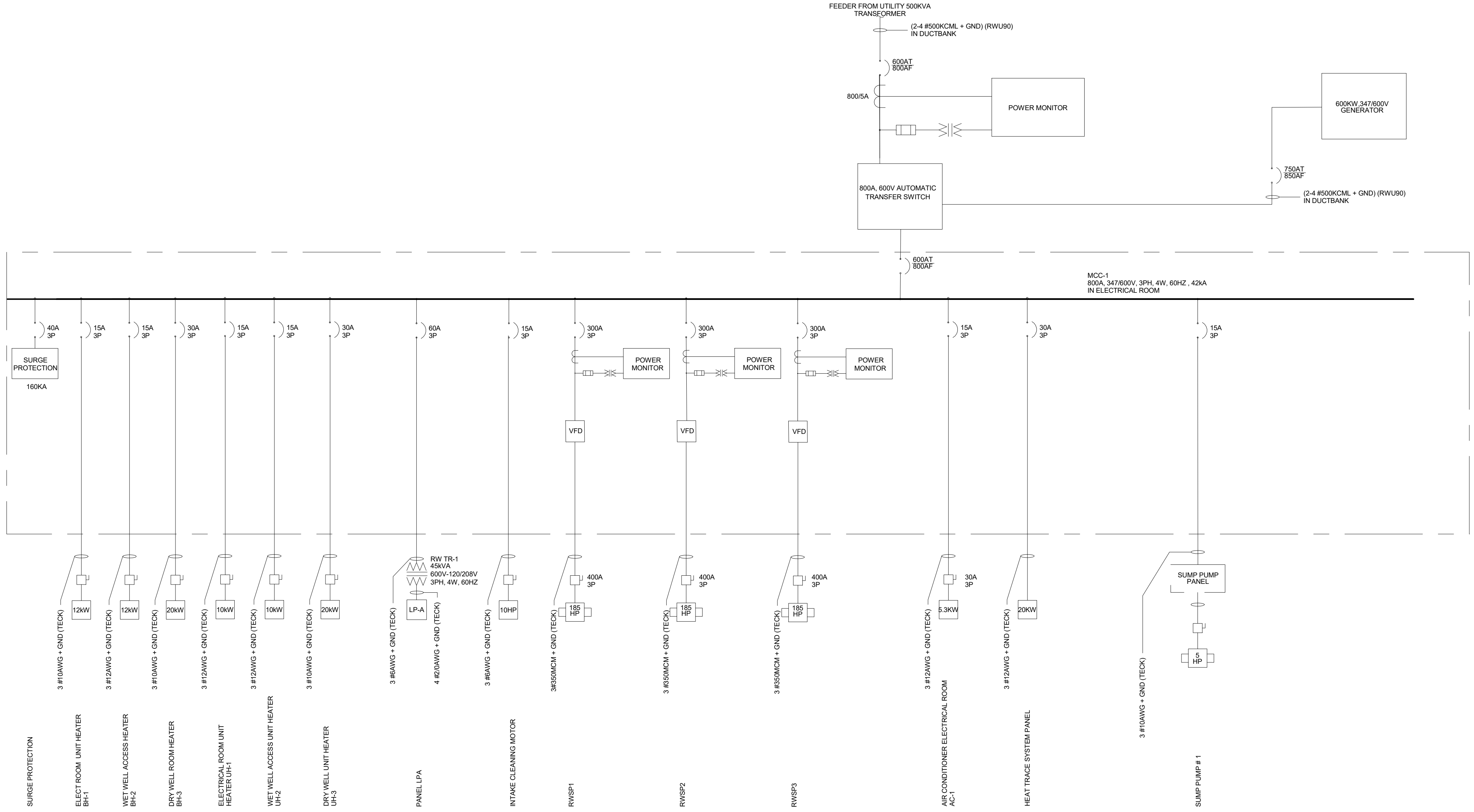
FEEDER FROM UTILITY 500KVA TRANSFORMER
(2-4 #500KCML + GND) (RWU90) IN DUCTBANK
600AT
800AF
800/5A
POWER MONITOR
600KW,347/600V GENERATOR
750AT
850AF
(2-4 #500KCML + GND) (RWU90) IN DUCTBANK
800A, 600V AUTOMATIC TRANSFER SWITCH
600AT
800AF
MCC-1
800A, 347/600V, 3PH, 4W, 60HZ , 42kA
IN ELECTRICAL ROOM
40A 3P
SURGE PROTECTION
160KA
15A 3P
15A 3P
30A 3P
15A 3P
15A 3P
30A 3P
60A 3P
15A 3P
300A 3P
POWER MONITOR
VFD
300A 3P
POWER MONITOR
VFD
300A 3P
POWER MONITOR
VFD
15A 3P
30A 3P
15A 3P
12kW
12kW
20kW
10kW
10kW
20kW
RW TR-1
45kVA
600V-120/208V
3PH, 4W, 60HZ
LP-A
10HP
400A 3P
185 HP
400A 3P
185 HP
400A 3P
185 HP
30A 3P
5.3KW
20KW
SUMP PUMP PANEL
5 HP
3 #10AWG + GND (TECK)
3 #12AWG + GND (TECK)
3 #10AWG + GND (TECK)
3 #12AWG + GND (TECK)
3 #12AWG + GND (TECK)
3 #10AWG + GND (TECK)
3 #6AWG + GND (TECK)
4 #2/0AWG + GND (TECK)
3 #6AWG + GND (TECK)
3#350MCM + GND (TECK)
3 #350MCM + GND (TECK)
3 #350MCM + GND (TECK)
3 #12AWG + GND (TECK)
3 #12AWG + GND (TECK)
3 #10AWG + GND (TECK)
SURGE PROTECTION
ELECT ROOM UNIT HEATER BH-1
WET WELL ACCESS HEATER BH-2
DRY WELL ROOM HEATER BH-3
ELECTRICAL ROOM UNIT HEATER UH-1
WET WELL ACCESS UNIT HEATER UH-2
DRY WELL UNIT HEATER UH-3
PANEL LPA
INTAKE CLEANING MOTOR
RWSP1
RWSP2
RWSP3
AIR CONDITIONER ELECTRICAL ROOM AC-1
HEAT TRACE SYSTEM PANEL
SUMP PUMP # 1

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

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B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN (REVISED)	2025-09-26

Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
M. B.

Drawn by
M. B.

Approved by
F. R.

Project Manager
C. G.

Drawing Title

ELECTRICAL

AR PUMP STATION
SINGLE LINE DIAGRAM

Project no.	Drawing no.	Revision no.
30192375	E1501	B

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A1 - 841X594

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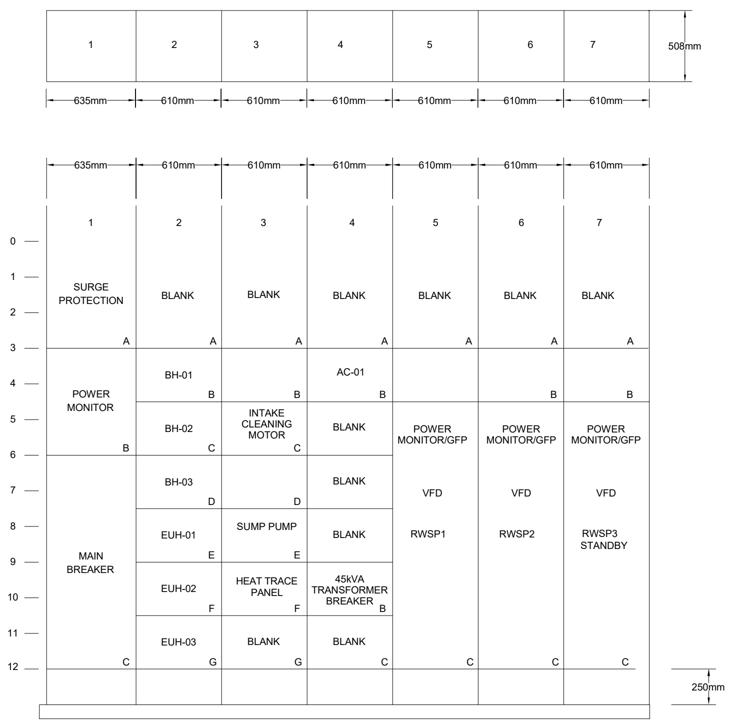
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12
SURGE PROTECTION
A
BLANK
A
BLANK
A
BLANK
A
BLANK
A
BLANK
A
BLANK
A
POWER MONITOR
B
BH-01
B
B
AC-01
B
B
B
BH-02
C
INTAKE CLEANING MOTOR
C
BLANK
POWER MONITOR/GFP
POWER MONITOR/GFP
POWER MONITOR/GFP
BH-03
D
D
BLANK
VFD
VFD
VFD
EUH-01
E
SUMP PUMP
E
BLANK
RWSP1
RWSP2
RWSP3 STANDBY
MAIN BREAKER
EUH-02
F
HEAT TRACE PANEL
F
45kVA TRANSFORMER BREAKER
B
EUH-03
G
BLANK
G
BLANK
C
C
C
C
C
250mm

RWPS FACILITY - MCC ELEVATION

LOCATION - AR PUMP STATION ELECTRICAL ROOM
ENCLOSURE - EEMAC 12 (DUSTTIGHT)

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A1 - 841X594

0 10 20 30 40 50 60 70 80 90 100mm

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Approved by
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Project Manager
C. G.

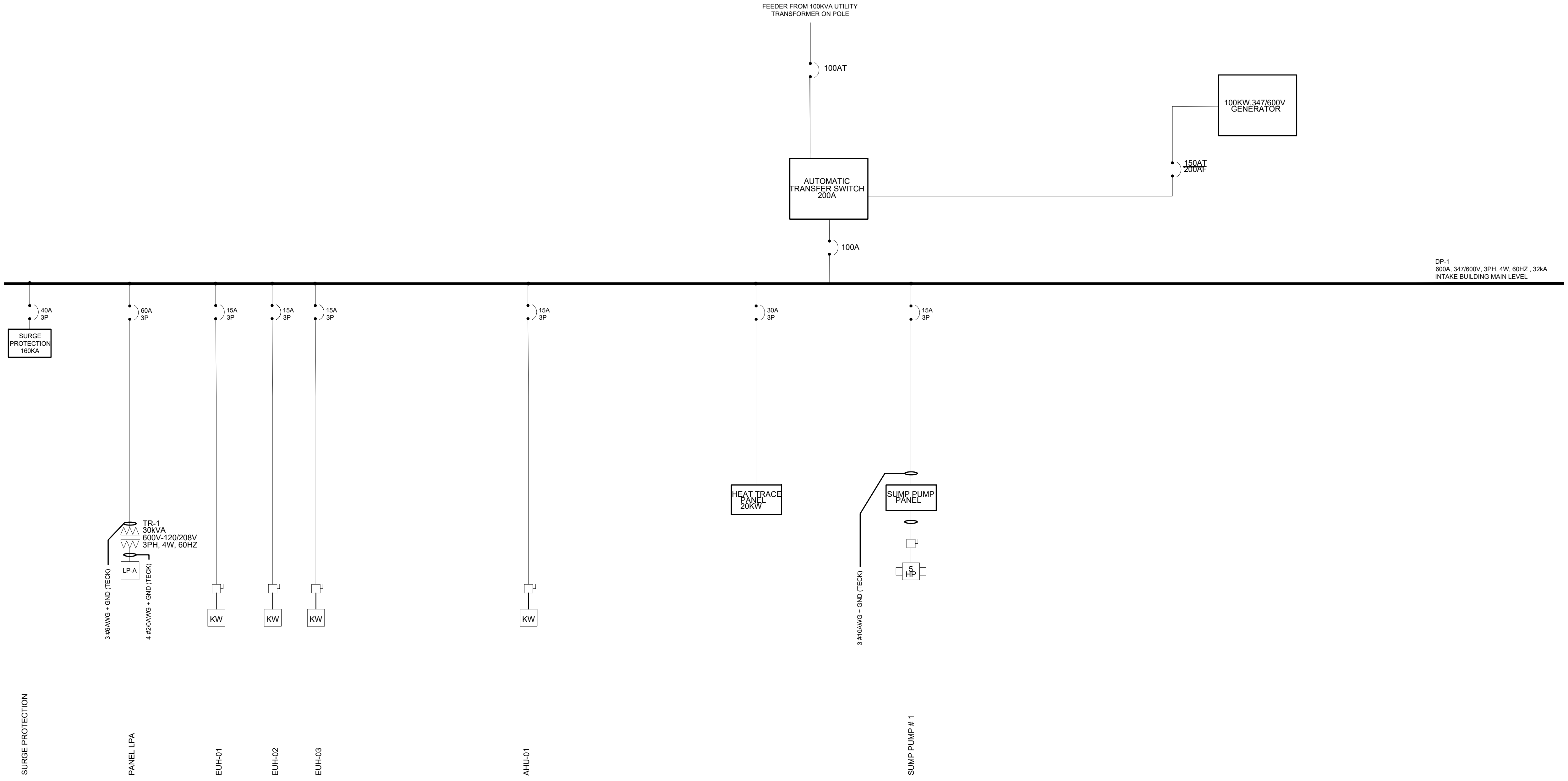
Drawing Title

ELECTRICAL

AR PUMP STATION
MCC ELEVATION AND PANEL SCHEDULE

Project no.	Drawing no.	Revision no.
30192375	E1502	A

C:\Users\bojicm5444\DC\ACCDocs\IBI – DT Services\30288139–Iqaluit_LongTermWater C3D2025\Project Files\7.0_Production\7.03_Design\14_Elec–Bld\Sheets\Corridor\E501 LQ PUMP STATION – SINGLE LINE DIAGRAM.dwg


FEEDER FROM 100KVA UTILITY TRANSFORMER ON POLE
100AT
AUTOMATIC TRANSFER SWITCH 200A
100KW 347/600V GENERATOR
~~150AT~~
200AF
100A
DP-1
600A, 347/600V, 3PH, 4W, 60HZ , 32kA
INTAKE BUILDING MAIN LEVEL
40A 3P
SURGE PROTECTION 160KA
60A 3P
TR-1
30kVA
600V-120/208V
3PH, 4W, 60HZ
LP-A
3 #6AWG + GND (TECK)
4 #2/0AWG + GND (TECK)
15A 3P
15A 3P
15A 3P
15A 3P
KW
KW
KW
KW
30A 3P
HEAT TRACE PANEL 20KW
15A 3P
SUMP PUMP PANEL
5 HP
3 #10AWG + GND (TECK)
SURGE PROTECTION
PANEL LPA
EUH-01
EUH-02
EUH-03
AHU-01
SUMP PUMP # 1

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

A	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
Revision	**Description**	**Date**

Consultant

ARCADIS

8133 Warden Avenue - Unit 300
Markham ON L6G 1B3 Canada
tel 905 763 2322
www.arcadis.com

Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
M. B.

Drawn by
M. B.

Approved by
F. R.

Project Manager
C. G.

Drawing title

ELECTRICAL

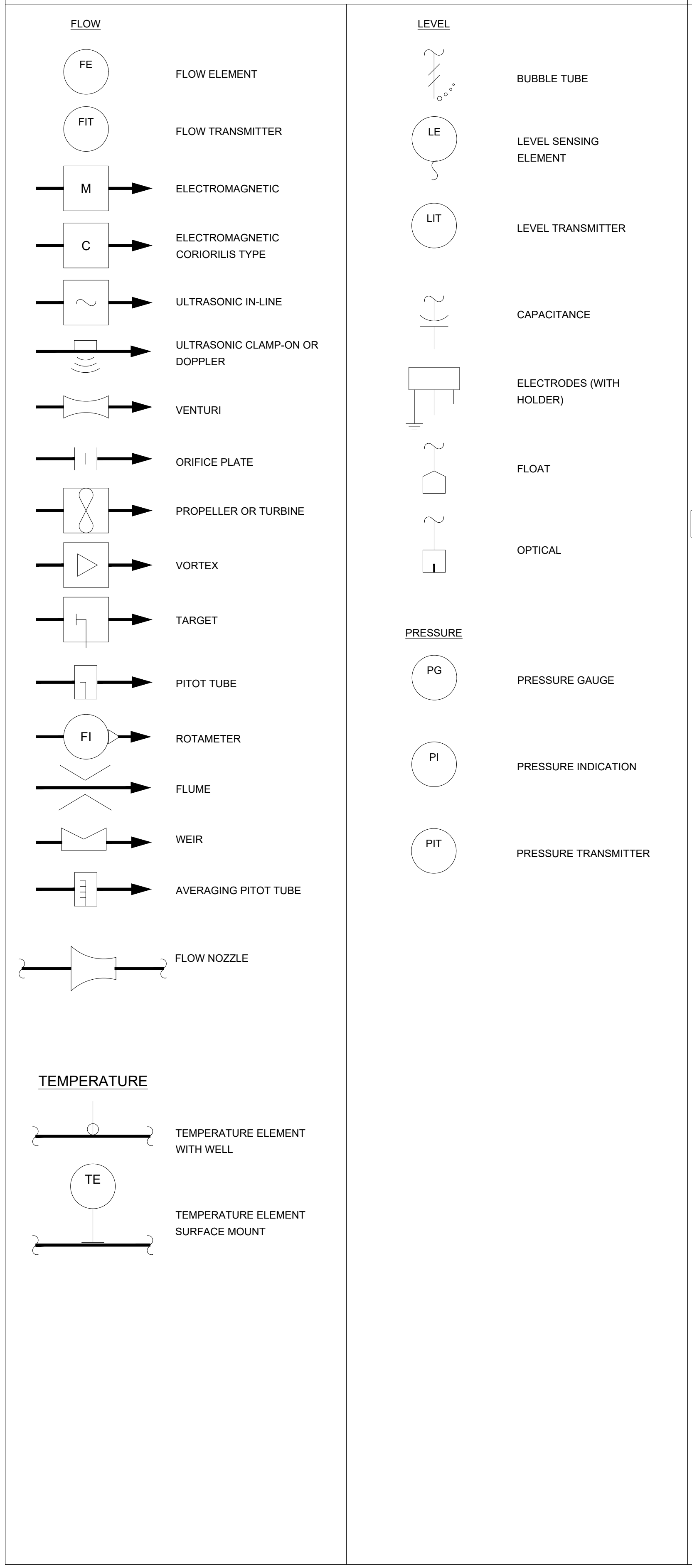
SERVICE CORRIDOR ACCESS
BUILDING
SINGLE LINE DIAGRAM

Project no.	Drawing no.	Revision no.
30192375	E2501	A

A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

PRIMARY ELEMENT SYMBOLS

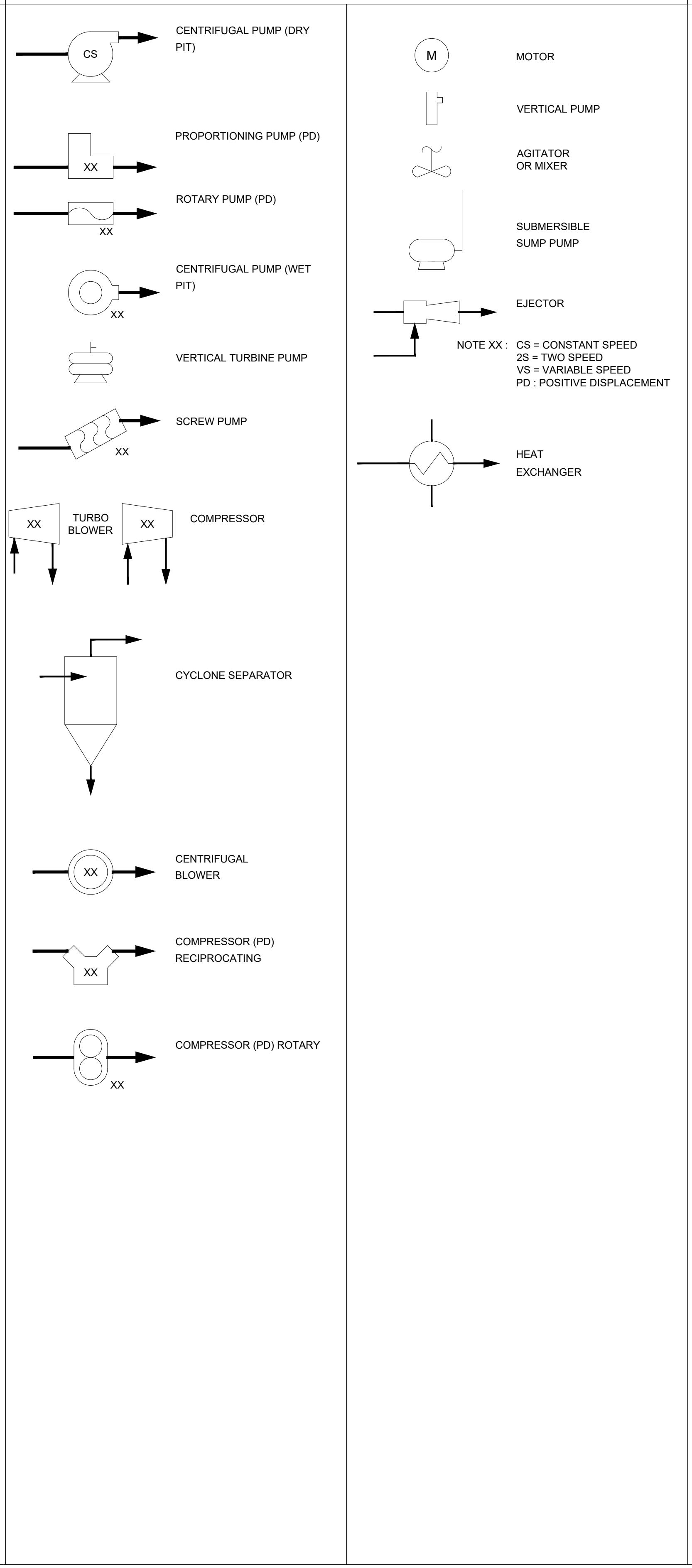

FLOW
FE — FLOW ELEMENT
FIT — FLOW TRANSMITTER
M — ELECTROMAGNETIC
C — ELECTROMAGNETIC CORIORILIS TYPE
ULTRASONIC IN-LINE
ULTRASONIC CLAMP-ON OR DOPPLER
VENTURI
ORIFICE PLATE
PROPELLER OR TURBINE
VORTEX
TARGET
PITOT TUBE
FI — ROTAMETER
FLUME
WEIR
AVERAGING PITOT TUBE
FLOW NOZZLE

TEMPERATURE
TEMPERATURE ELEMENT WITH WELL
TE — TEMPERATURE ELEMENT SURFACE MOUNT

LEVEL
BUBBLE TUBE
LE — LEVEL SENSING ELEMENT
LIT — LEVEL TRANSMITTER
CAPACITANCE
ELECTRODES (WITH HOLDER)
FLOAT
OPTICAL

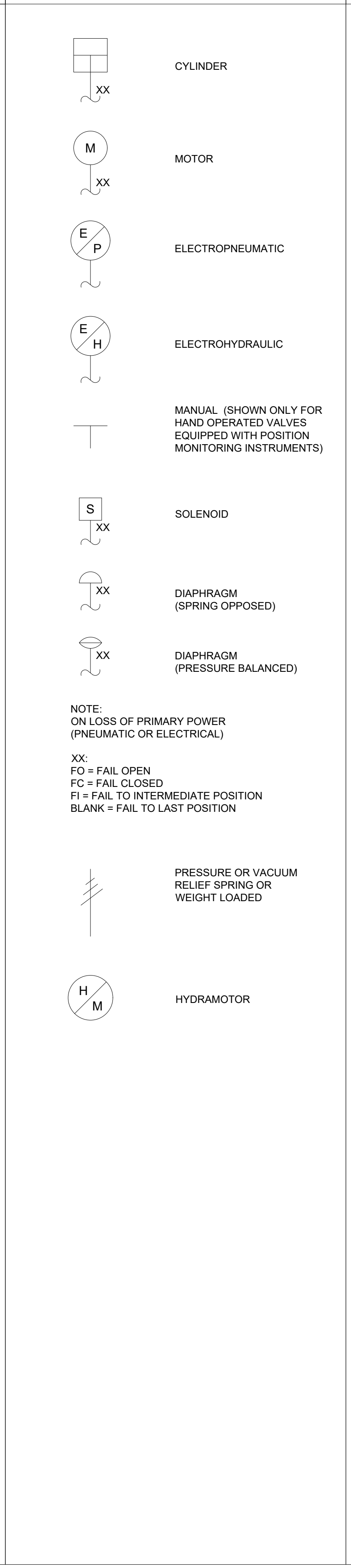
PRESSURE
PG — PRESSURE GAUGE
PI — PRESSURE INDICATION
PIT — PRESSURE TRANSMITTER

EQUIPMENT SYMBOLS


CS — CENTRIFUGAL PUMP (DRY PIT)
XX — PROPORTIONING PUMP (PD)
XX — ROTARY PUMP (PD)
XX — CENTRIFUGAL PUMP (WET PIT)
VERTICAL TURBINE PUMP
XX — SCREW PUMP
XX — TURBO BLOWER
XX — COMPRESSOR
CYCLONE SEPARATOR
XX — CENTRIFUGAL BLOWER
XX — COMPRESSOR (PD) RECIPROCATING
XX — COMPRESSOR (PD) ROTARY
M — MOTOR
VERTICAL PUMP
AGITATOR OR MIXER
SUBMERSIBLE SUMP PUMP
EJECTOR
HEAT EXCHANGER

NOTE XX : CS = CONSTANT SPEED
2S = TWO SPEED
VS = VARIABLE SPEED
PD : POSITIVE DISPLACEMENT

ACTUATOR SYMBOLS

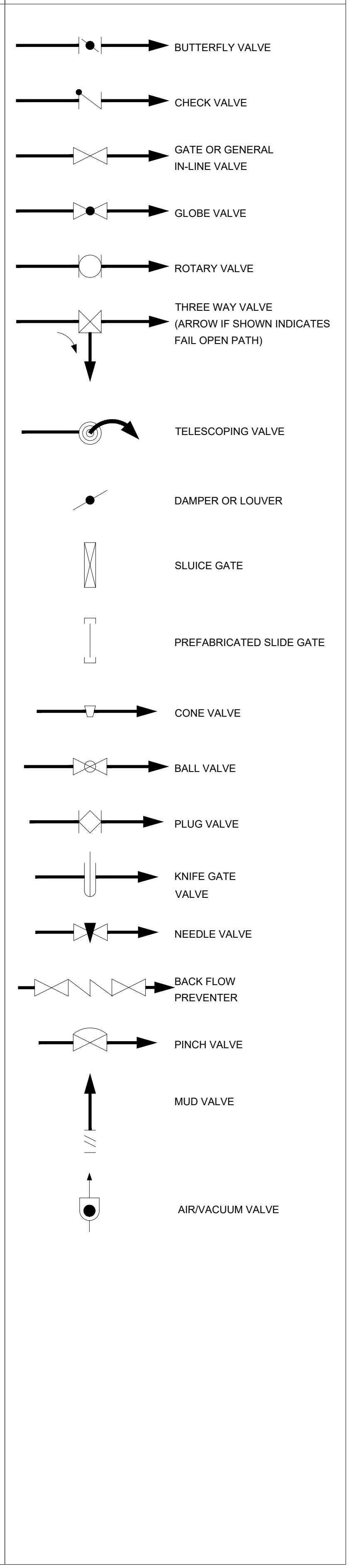

XX — CYLINDER
M, XX — MOTOR
E/P — ELECTROPNEUMATIC
E/H — ELECTROHYDRAULIC
MANUAL (SHOWN ONLY FOR HAND OPERATED VALVES EQUIPPED WITH POSITION MONITORING INSTRUMENTS)
S, XX — SOLENOID
XX — DIAPHRAGM (SPRING OPPOSED)
XX — DIAPHRAGM (PRESSURE BALANCED)

NOTE:
ON LOSS OF PRIMARY POWER
(PNEUMATIC OR ELECTRICAL)

XX:
FO = FAIL OPEN
FC = FAIL CLOSED
FI = FAIL TO INTERMEDIATE POSITION
BLANK = FAIL TO LAST POSITION

PRESSURE OR VACUUM RELIEF SPRING OR WEIGHT LOADED
H/M — HYDRAMOTOR

VALVE & GATE SYMBOLS


BUTTERFLY VALVE
CHECK VALVE
GATE OR GENERAL IN-LINE VALVE
GLOBE VALVE
ROTARY VALVE
THREE WAY VALVE (ARROW IF SHOWN INDICATES FAIL OPEN PATH)
TELESCOPING VALVE
DAMPER OR LOUVER
SLUICE GATE
PREFABRICATED SLIDE GATE
CONE VALVE
BALL VALVE
PLUG VALVE
KNIFE GATE VALVE
NEEDLE VALVE
BACK FLOW PREVENTER
PINCH VALVE
MUD VALVE
AIR/VACUUM VALVE

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN	2024-03-22

Consultant

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Project title
CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
J.G.C.
Drawn by
M.H.
Approved by
J.G.C.
Project Manager
C.G.

Drawing title
INSTRUMENTATION AND CONTROL

LEGEND 1

Project no.	Drawing no.	Revision no.
30192375	I001	B

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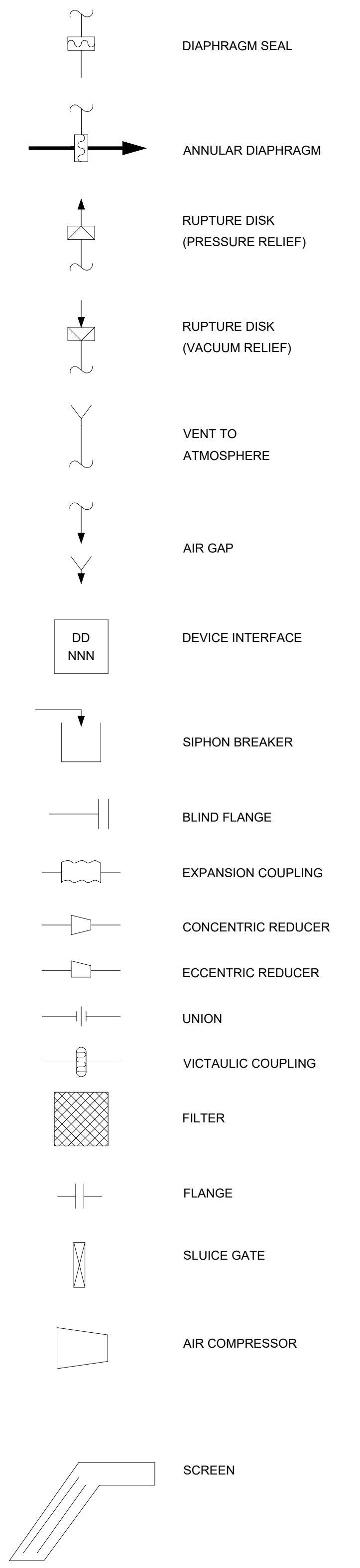
A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

MISCELLANEOUS SYMBOLS



DIAPHRAGM SEAL

ANNULAR DIAPHRAGM

RUPTURE DISK
(PRESSURE RELIEF)

RUPTURE DISK
(VACUUM RELIEF)

VENT TO
ATMOSPHERE

AIR GAP

DEVICE INTERFACE

SIPHON BREAKER

BLIND FLANGE

EXPANSION COUPLING

CONCENTRIC REDUCER

ECCENTRIC REDUCER

UNION

VICTAULIC COUPLING

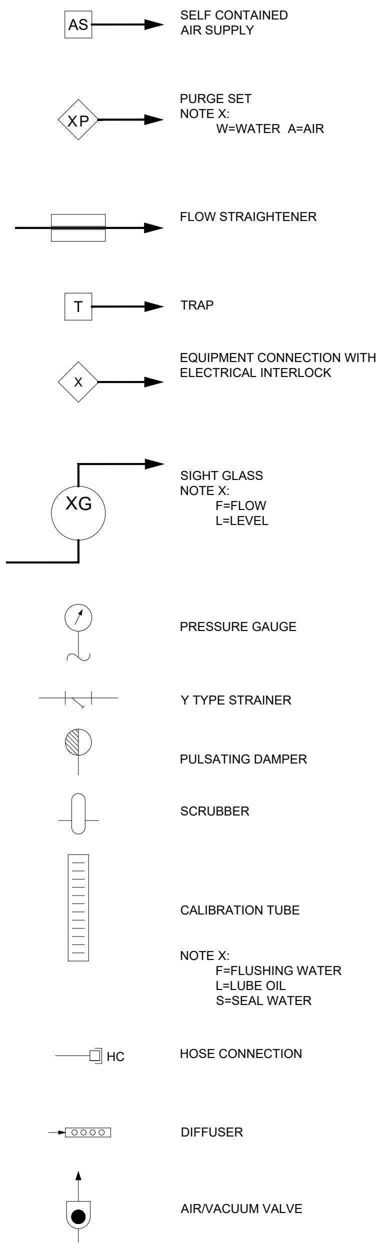
FILTER

FLANGE

SLUICE GATE

AIR COMPRESSOR

SCREEN



SELF CONTAINED
AIR SUPPLY

PURGE SET
NOTE X:
W=WATER A=AIR

FLOW STRAIGHTENER

TRAP

EQUIPMENT CONNECTION WITH
ELECTRICAL INTERLOCK

SIGHT GLASS
NOTE X:
F=FLOW
L=LEVEL

PRESSURE GAUGE

Y TYPE STRAINER

PULSATING DAMPER

SCRUBBER

CALIBRATION TUBE

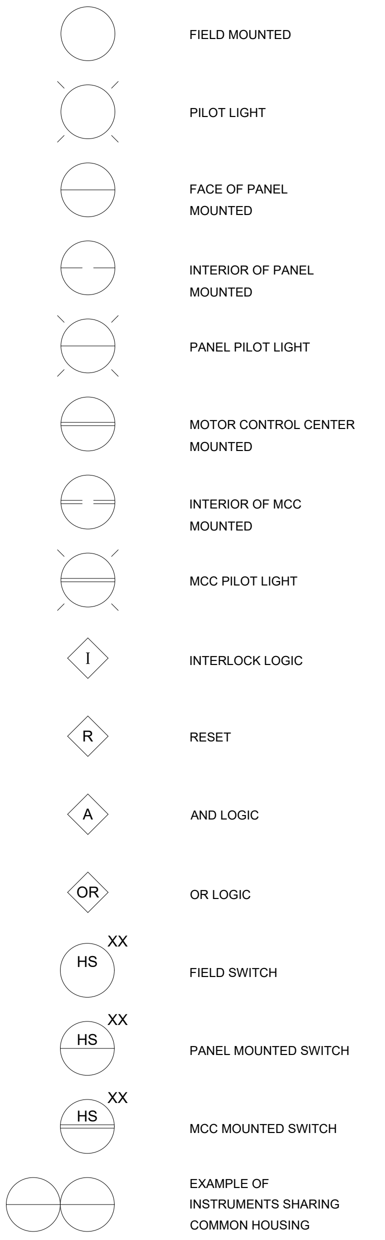
NOTE X:
F=FLUSHING WATER
L=LUBE OIL
S=SEAL WATER

HOSE CONNECTION

DIFFUSER

AIR/VACUUM VALVE

INSTRUMENT & FUNCTION SYMBOLS



FIELD MOUNTED

PILOT LIGHT

FACE OF PANEL
MOUNTED

INTERIOR OF PANEL
MOUNTED

PANEL PILOT LIGHT

MOTOR CONTROL CENTER
MOUNTED

INTERIOR OF MCC
MOUNTED

MCC PILOT LIGHT

INTERLOCK LOGIC

RESET

AND LOGIC

OR LOGIC

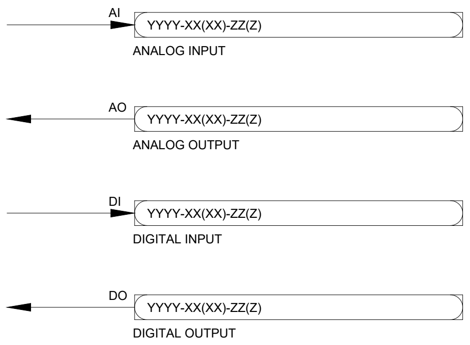
FIELD SWITCH

PANEL MOUNTED SWITCH

MCC MOUNTED SWITCH

EXAMPLE OF
INSTRUMENTS SHARING
COMMON HOUSING

INPUTS & OUTPUTS TO SHARED OR PROGRAMMABLE LOGIC CONTROLLER



ANALOG INPUT

ANALOG OUTPUT

DIGITAL INPUT

DIGITAL OUTPUT

NOTE:

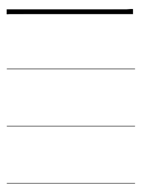
YYYY: 4 DIGIT TAG FOR PROCESS AREA
"LQPS" DENOTES LAKE QIKIKTALIK PUMPING STATION
"ARPS" DENOTES APEX RIVER PUMPING STATION

XX(XX): 2-4 DIGIT TAG FOR DEVICE SYMBOL

ZZ(Z): 2-3 DIGIT SIGNAL DESCRIPTION

GENERAL NOTES

1. THIS IS A GENERAL P & ID SYMBOL SHEET. SOME SYMBOLS OR NOTATIONS MAY NOT BE USED ON THIS PROJECT.
2. MOTOR CONTROL (MC) & VARIABLE SPEED DRIVE (VSD) PANELS ARE SHOWN WITH FACE OF PANEL MOUNTED INSTRUMENTS & EXTERNAL INTERFACE SIGNALS ONLY.
3. A CONTROL PANEL (CP) PACKAGED WITH MECHANICAL EQUIPMENT OR A SYSTEM IS SHOWN WITH FACE OF PANEL MOUNTED INSTRUMENTS & EXTERNAL INTERFACE SIGNALS SIMILAR TO MC & VSD PANELS.
4. CONTROL PANELS (CP) OTHER THAN THOSE PREVIOUSLY DE- SCRIBED ARE SHOWN WITH FACE & INTERIOR OF PANEL MOUNTED INSTRUMENTS.
5. SEE ELECTRICAL DRAWINGS FOR MC & VSD LOCATIONS WITHIN THE MCC.
6. EXISTING PIPING, EQUIPMENT & INSTRUMENTS ARE SHOWN LIGHT-LINED, SCREENED OR DOTTED.



INDICATE PROPOSED MAIN PROCESS LINES

INDICATE PROPOSED OTHER PROCESS LINES

INDICATE FUTERE PROCESS LINES

INDICATE EXISTING PROCESS LINES

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A	ISSUED FOR PRELIMINARY DESIGN	2024-03-22

Consultant
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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
J.G.C.

Drawn by
M.H.

Approved by
J.G.C.

Project Manager
C.G.

Drawing title

INSTRUMENTATION AND CONTROL

LEGEND 2

Project no.	Drawing no.	Revision no.
30192375	I002	B

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A1 - 841X594

0 10 20 30 40 50 60 70 80 90 100mm

PROCESS PIPING LEGEND

LEGEND	SERVICE
A	AIR, PLANT UTILITY
AA	AQUEOUS AMMONIA
AC	ACTIVATED CARBON
ACS	ACTIVATED CARBON SLURRY
ACW	ACID CHEMICAL WASTE
AH	AMMONIA HYDROXIDE
AHP	AIR, HIGH PRESSURE PROCESS
AI	AIR, INSTRUMENT
AIW	AIR WASH
AL	ALUM
ALB	AIR, LABORATORY
ALD	ALUM (DRY)
ALL	ALUM (LIQUID)
ALP	AIR, LOW PRESSURE PROCESS
ALS	ALUM SLUDGE
AMS	AMMONIA SOLUTION
ARD	ACID RESISTANT DRAIN
ARL	AIR RELEASE LINE
ARV	ACID RESISTANT VENT
ASC	ANTISCALANT CHEMICAL
ASH	SODA ASH
ASI	ACTIVATED SILICA
ASPD	ACID SUMP PUMP DISCHARGE
AUS	ALUM SOLUTION
AWS	AIR WASH SUPPLY
B	BRINE
BDS	BLENDED DIGESTED SLUDGE
BFE	BIOFILTER EFFLUENT
BFI	BIOFILTER INFLUENT
BFR	BIOFILTER RECYCLE
BFW	BRINE FEEDWATER
BP	BUBBLER PIPE
BS	BRINE SLUDGE
BSD	BLENDED SLUDGE
BSPD	BASIC SUMP PUMP DISCHARGE
BTS	BLENDED THICKENED SLUDGE
BUP	BUBBLER PIPE
BWS	BACKWASH SUPPLY
BWW	BACKWASH WASTE WATER
BWWS	BACKWASH WASTE WATER SLUDGE
BYP	BYPASS
C	CARBON SLURRY
CA	CITRIC ACID
CC	COMBINED CENTRATE
CD	CARBON DIOXIDE GAS
CEN	CENTRATE
CEX	COOLED EXHAUST
CG	CHLORINE GAS (PRESSURE)
CGR	CHILLED GLYCOL RETURN
CGS	CHILLED GLYCOL SUPPLY
CGV	CHLORINE GAS (VACUUM)
CHD	CHEMICAL DRAIN, GRAVITY
CHDP	CHEMICAL DRAIN, PRESSURE
CHS	CHEMICAL SLUDGE
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CL	CHLORINE LIQUID (PRESSURE)
CLSAM	CHLORINE SAMPLING LINE
CNA	CELL CAUSTIC
CND	CONDENSER WATER
CO	CONDENSATE DRAIN
CPSM	CONCENTRATED PRIMARY SCUM
CRAWS	CONDITIONED RAW SLUDGE
CRG	CONDENSATE RETURN GRAVITY
CRP	CONDENSATE RETURN PRESSURE
CRT	CONDENSATE RETURN TRANSFER
CS	CHLORINE SOLUTION
CSD	CHEMICAL SUMP DISCHARGE
CSM	CONCENTRATED SCUM
CTR	COOLING TOWER RETURN
CTS	COOLING TOWER SUPPLY
CUF	SCUM CONCENTRATOR UNDERFLOW
CW	CONDENSER WATER
CWR	COOLING WATER RETURN
CWS	COOLING WATER SUPPLY
D	DRAIN (SANITARY)
DA	DEHUMIDIFIED AIR
DAS	DIGESTED ACTIVATED SLUDGE
DBS	DRIED BIOSOLIDS
DC	DEWATERING CENTRATE
DEX	DRYER EXHAUST
DF	DIESEL FUEL
DFS	DIESEL FUEL SUPPLY
DFR	DIESEL FUEL RETURN
DG	DIGESTER GAS
DGC	DIGESTER GAS CONDENSATE
DGD	DIGESTER GAS DISCHARGE

LEGEND	SERVICE
DGER	DIGESTER GAS EXPLOSION RELIEF
DGM	DIGESTER GAS MIXING
DGR	DIGESTER GAS RELIEF
DGRE	DIGESTER GAS RECIRCULATION
DGW	DIGESTER GAS WITHDRAWAL
DIW	DEIONIZED WATER
DL	DRY LIME
DLS	DILUTE SLUDGE
DPO	DRY POLYMER
DPSD	DEGRITTED PRIMARY SLUDGE
DRCY	DRYER RECYCLE
DRL	DRIP LEG
DS	DIGESTED SLUDGE
DSC	DEWATERED SLUDGE CAKE
DSLW	DIGESTED SLUDGE WITHDRAWAL
DSM	DIGESTER SCUM
DSP	DRY STANDPIPE
DUS	DUST
DW	DISTILLED WATER
DWG	DIGESTER WASTE GAS
EA	EXHAUST AIR
EFF	EFFLUENT
EMA	EMISSION AIR
EWW	EYEWASH WATER
FBW	FILTER BACKWASH WATER
FBWW	FILTER BACKWASH WASTEWATER
FC	FERRIC CHLORIDE
FDW	FINISHED WATER
FE	FILTER EFFLUENT
FEC	FERRIC CHLORIDE
FES	FERRIC SULPHATE
FEX	FURNACE EXHAUST
FF	FIRE SUPPRESSION FOAM
FI	FILTER INFLUENT
FLA	HYDROFLUOSILICIC ACID
FLOC	FLOCCULATION
FLS	FLUORIDE SOLUTION
FLT	FILTRATE
FLW	FLOCCULATED WATER
FNS	FINES
FODR	FOUNDATION DRAIN
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FOV	FUEL OVERFLOW
FP	FIRE PROTECTION
FS	FIRE SPRINKLER
FTW	FILTER TO WASTE
FW	FILTERED WATER
GAS	GASOLINE
GD	GRIT DRAIN
GOX	GASEOUS OXYGEN
GOX1	GOX PRODUCT
GOX2	GOX PRODUCT
GOX3	GOX VENT
GOX4	GOX PRESSURE BUILD
GOX5	GOX ADDITION
GLR	GLYCOL RETURN
GLS	GLYCOL SUPPLY
GR	GRIT SLURRY
GRD	GRIT DRAIN
GTO	GRAVITY THICKENER OVERFLOW
GTS	GRAVITY THICKENED SLUDGE
GTSM	GRAVITY THICKENED SCUM
H	HYDROGEN GAS
HF	HYDRAULIC FLUID
HFR	HYDRAULIC FLUID RETURN
HFS	HYDRAULIC FLUID SUPPLY
HGR	HEATING GLYCOL RETURN
HGS	HEATING GLYCOL SUPPLY
HPOX	HIGH PURITY OXYGEN
HPOXV	HIGH PURITY OXYGEN VENT
HPR	HIGH PRESSURE RETURN (CONDENSATE)
HPS	HIGH PRESSURE STEAM
HPW	HIGH PRESSURE WATER
HPW3	HIGH PRESSURE EFFLUENT WATER
HRR	HEAT RECOVERY RETURN
HRS	HEAT RECOVERY SUPPLY
HRSD	HEATED RECIRCULATED SLUDGE
HS	HEAVY SOLIDS
HUM	HUMIDIFIER
HW	HOT WATER (DOMESTIC)
HW2	HOT SEPERATED POTABLE WATER
HW3R	HOT EFFLUENT WATER RETURN
HW3S	HEATING EFFLUENT WATER SUPPLY
HWJ	HOT WATER JACKET

LEGEND	SERVICE
HWR	HEATING WATER RETURN
HWS	HEATING WATER SUPPLY
HWW2	HOT WATER, W2
HYD	HYDROGEN PEROXIDE
HYL	HYDRATED LIME (DRY)
LA	LABORATORY AIR
LCW	LABORATORY COLD WATER
LD	DRY LIME
LG	LUBRICATION GREASE
LHW	LABORATORY HOT WATER
LO	LUBRICATING OIL
LOD	LUBE OIL DRAIN
LOR	LUBE OIL RETURN
LOS	LUBE OIL SUPPLY
LOX	LIQUID OXYGEN
LOX1	LOX MAKE
LOX2	LOX PRODUCT
LOX3	LOX ADDITION
LOX4	LOX TRANSFER
LOX5	LOX WITHDRAWAL
LOX6	LOX PRESSURE BUILD
LPC	LOW PRESSURE CONDENSATE
LPO	LIQUID POLYMER
LPR	LOW PRESURE RETURN (CONDENSATE)
LPS	LOW PRESSURE STEAM
LRHW	LABORATORY RECIRCULATING HOT WATER
LS	LIME SLURRY
LSD	LIME SLUDGE
LV	LABORATORY VACUUM
MA	MURIATIC ACID
MDE	MIXED DRYER EXHAUST
ML	MIXED LIQUOR
MLR	MIXED LIQUOR RECYCLE
MO	MINERAL OIL
MOL	METHANOL (100%)
MPR	MEDIUM PRESSURE RETURN (CONDENSATE)
MPS	MEDIUM PRESSURE STEAM
MS	METHANOL (23% OR LESS SOLUTION)
MU	MAKE-UP WATER
MXW	MIXED WATER
NA	SODIUM HYDROXIDE
NG	NATURAL GAS
NGH	NATURAL GAS (HIGH PRESSURE)
NGL	NATURAL GAS (LOW PRESSURE)
NGM	NATURAL GAS (MEDIUM PRESSURE)
NIT	NITROGEN GAS
NRCY	NITRATE RICH RECYCLE
NT	NITROGEN TRICHLORIDE
N2	NITROGEN
O	OZONE
OA	ODOROUS AIR
OD	ROOF OVERFLOW DRAIN
OES	OUTDOOR EXHAUST STACK
OF	OVERFLOW
OFL	OUTFALL (PLANT OUTFALL)
OL	OVERFLOW LIQUOR
OSA	OUTSIDE AIR
OW	OZONATED WATER
OX	OXYGEN
OXWG	OXYGEN WASTE GAS
OZG	OZONE GAS
P	PROPANE GAS
PAB	PROCESS AIR BLOWOFF
PAC	POWDERED ACTIVATED CARBON
PAD	PROCESS AIR DIFFUSER
PD	PROCESS DRAIN
PDS	PRIMARY DIGESTED SLUDGE
PE	PRIMARY EFFLUENT
PI	PRIMARY INFLUENT
PLE	PLANT EFFLUENT
PLY	POLYELECTROLYTE
PLS	POLYELECTROLYTE SOLUTION
PO	POLYMER SOLUTION
POD	POLYMER (DRY)
PRD	PRODUCT
PRL	PRESSURE RELIEF LINE
PS	PRESSURE SEWER
PSD	PRIMARY SLUDGE
PSM	PRIMARY SCUM
PSW	PLANT SERVICE WATER
PUA	PURGE AIR
PVT	PNEUMATIC VENT
QUL	QUICK LIME (DRY)

LEGEND	SERVICE
RA	RETURN AIR
RAS	RETURN ACTIVATED SLUDGE
RASS	RETURN ACTIVATED SLUDGE SYPHON
RAW	RAW WATER
RAWRE	RAW AND RECIRCULATED SLUDGE
RAWS	RAW SLUDGE
RB	RAW BRINE
RCS	RECARBONATION SLUDGE
RCY	RECYCLE
RD	ROOF DRAIN
REC	RECIRCULATION
REL	REFRIGERANT LIQUID
RES	REFRIGERANT SUCTION
RF	REFRIGERANT
RHG	REFRIGERANT HOT GAS
RHW	RECIRCULATED HOT WATER
RS	RAW SEWAGE
RSD	RECIRCULATED SLUDGE
RSE	RAW SEWAGE EFFLUENT
RV	RELIEF VALVE
RWL	RAIN WATER LEADER
S	SANITARY SEWER (GRAVITY)
SA	SAMPLE
SAB	SCRUBBER AND BLOWDOWN
SAC	SPENT ACTIVATED CARBON
SAS	SODA ASH SOLUTION
SAW	SURFACE AGITATOR WATER
SB	SPENT BRINE
SBC	CAUSTIC SCRUBBER BLOWDOWN
SBS	SODIUM BISULFITE
SC	COLD SLUDGE
SCR	SCREENINGS
SD	STORM DRAIN
SDG	SULFUR DIOXIDE GAS (PRESSURE)
SDL	SULFUR DIOXIDE LIQUID (PRESSURE)
SDS	SULFUR DIOXIDE SOLUTION
SDV	SULFUR DIOXIDE GAS (VACUUM)
SE	SECONDARY EFFLUENT
SEL	SENSING LINE
SEP	SEPTAGE
SET	SETTLED WATER
SFA	SULFURIC ACID
SH	HEATED SLUDGE
SHC	SODIUM HYPOCHLORITE
SHD	SODIUM HYDROXIDE
SHY	SODIUM HYPOCHLORITE
SI	SECONDARY INFLUENT
SLC	SLUDGE CAKE
SLD	SETTLED SLUDGE
SLL	SLUDGE LOADING
SLOV	SLUDGE OVERFLOW
SLR	SLUDGE RECIRCULATION
SLT	SLUDGE TRANSFER
SOW	SOFTENED WATER
SPD	SUMP PUMP DISCHARGE
SR	SCRUBBER RECYCLE
SRL	SURGE RELIEF LINE
SS	STORM SEWER
SSD	SECONDARY DIGESTED SLUDGE
SSI	SODIUM SILICATE
SSM	SECONDARY SCUM
STD	STORM DRAIN
STG	STACK GAS
SU	SUPERNATANT
SUF	SUPERNATANT FEED
SULF	SUPERNATANT LOWER FEED
SUO	SUPERNATANT OVERFLOW
SUUF	SUPERNATANT UPPER FEED
SW	SURFACE WASH
SW2	SOFTENED W2
TAS	THICKENED ACTIVATED SLUDGE
TB	TREATED BRINE
TBS	THICKENER BOTTOM SLUDGE
TC	THICKENING CENTRATE RECYCLE
TDS	THICKENED DIGESTED SLUDGE
TI	THRESHOLD INHIBITOR
TPS	THICKENED PRIMARY SLUDGE
TRW	TREATED WATER
TS	THICKENED SLUDGE
TSD	TERTIARY SLUDGE
TSE	TERTIARY SETTLING TANK EFFLUENT
TSM	TERTIARY SCUM
TUF	THICKENED UNDER FLOW
TWAS	THICKENED WASTE ACTIVATED SLUDGE

LEGEND	SERVICE
UD	UNDERDRAIN
UNW	UNWATERING
V	VENT
VAC	VACUUM
VAR	VACUUM RELIEF
VR	VAPOR RECOVERY
VTR	VENT THRU ROOF
W1	POTABLE WATER
W2	PLANT SERVICE WATER (NON-POTABLE)
W3	PLANT EFFLUENT WATER (NON-POTABLE)
W3(HOT)	PLANT EFFLUENT WATER HOT (NON-POTABLE)
W3(HP)	PLANT EFFLUENT WATER HIGH PRESSURE (NON-POTABLE)
W3(CLD)	PLANT EFFLUENT WATER COLD (NON-POTABLE)
W3(RET)	PLANT EFFLUENT WATER RETURN (NON-POTABLE)
WAS	WASTE ACTIVATED SLUDGE
WLOR	WASTE LUBE OIL RETURN
WLOS	WASTE LUBE OIL SUPPLY
WML	WASTE MIXED LIQUOR
WSP	WET STANDPIPE
WVA	WASTE VACUUM LINE

PROCESS PIPING MATERIAL

DI	CEMENT LINED DUCTILE IRON
GLDI	GLASS LINED DUCTILE IRON
SS	STAINLESS STEEL
PVC	PVC PIPE

ABBREVIATIONS

RW	RAW WATER
D	DRAIN
V	VENT
PA	PROCESS AIR
SS	STAINLESS STEEL
SP	SUBMERSIBLE PUMP
HDPE	HIGH-DENSITY POLYETHYLENE

ABBREVIATIONS

AD	ANNULAR DIAPHRAGM
BV	BALL VALVE
BFV	BUTTERFLY VALVE
CV	CHECK VALVE
DI	DUCTILE IRON
HDPE	HIGH-DENSITY POLYETHYLENE
M	MOTORIZED
PG	PRESSURE GAUGE
PI	PRESSURE INSTRUMENT
PSV	PRESSURE SUSTAINING VALVE
PT	PRESSURE TRANSMITTER
RW	RAW WATER
SCAV	SANITARY COMBINATION AIR VALVE
VC	VALVE CHAMBER

ABBREVIATIONS

BV	BALL VALVE
DIFF	DIFFUSER
FE	FLOW ELEMENT
FM	FLOW METER
FT	FLOW TRANSMITTER
GV	GATE VALVE
HDPE	HIGH DENSITY POLYETHYLENE
RW	RAW WATER
SC	SCREEN

NOTE:

1. FLOW STREAM IDENTIFICATION IS A STANDARD LEGEND. THEREFORE, NOT ALL OF THE INFORMATION SHOWN MAY BE USED ON THIS PROJECT.

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
B	**ISSUED FOR 50% DESIGN REVIEW**	**2025-12-19**
A	**ISSUED FOR PRELIMINARY DESIGN**	**2024-03-22**

Consultant
ARCADIS
8133 Warden Avenue - Unit 300
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Project title
CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
J.G.C.

Drawn by
M.H.

Approved by
J.G.C.

Project Manager
C.G.

Drawing title
INSTRUMENTATION AND CONTROL

LEGEND 3

Project no.	Drawing no.	Revision no.
30192375	**I003**	**B**

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A1 - 841X594

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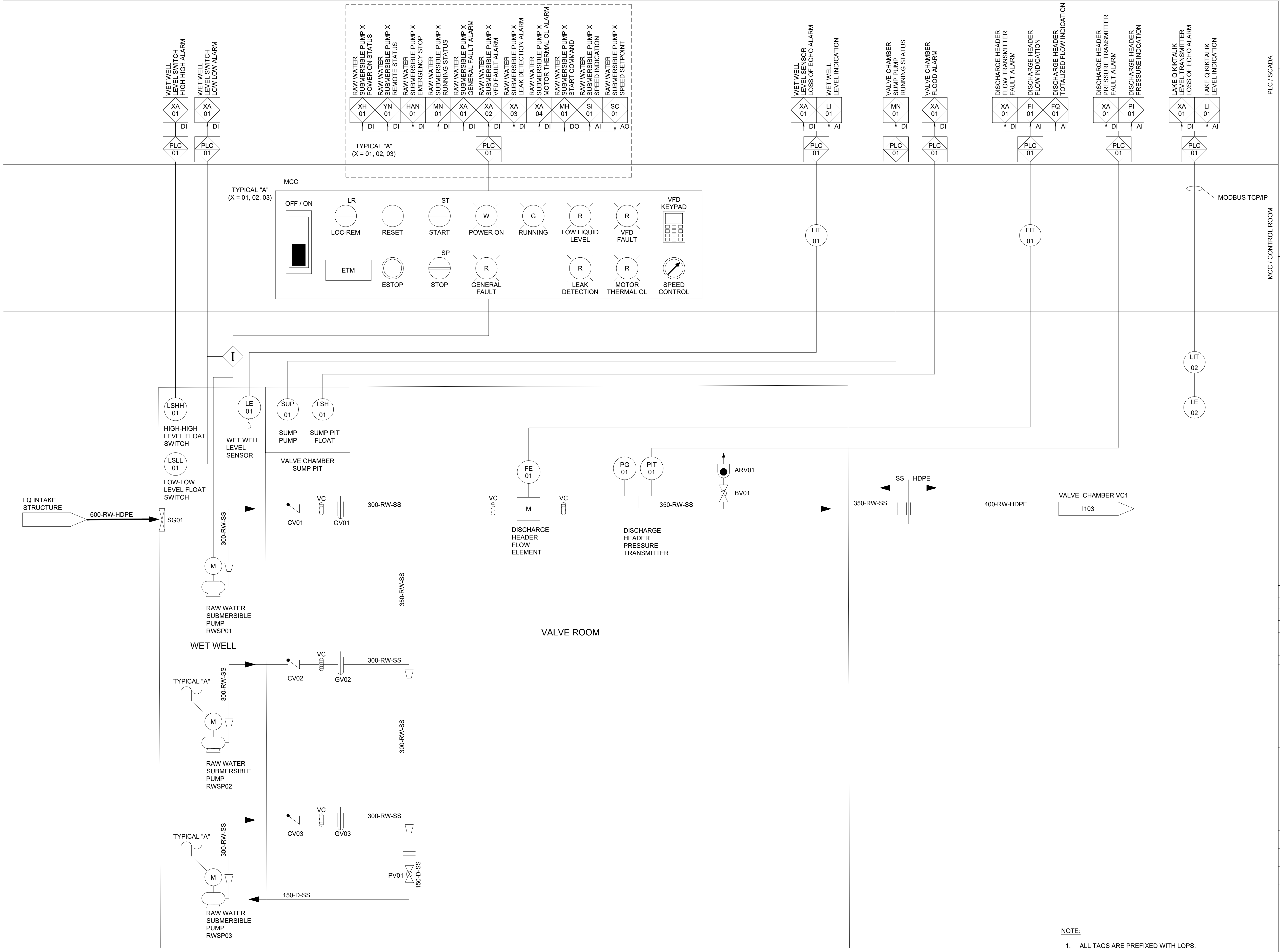
WET WELL LEVEL SWITCH HIGH HIGH ALARM
XA 01
DI
PLC 01
WET WELL LEVEL SWITCH LOW LOW ALARM
XA 01
DI
PLC 01
RAW WATER SUBMERSIBLE PUMP X POWER ON STATUS
XH 01
DI
RAW WATER SUBMERSIBLE PUMP X REMOTE STATUS
YN 01
DI
RAW WATER SUBMERSIBLE PUMP X EMERGENCY STOP
HAN 01
DI
RAW WATER SUBMERSIBLE PUMP X RUNNING STATUS
MN 01
DI
RAW WATER SUBMERSIBLE PUMP X GENERAL FAULT ALARM
XA 01
DI
RAW WATER SUBMERSIBLE PUMP X VFD FAULT ALARM
XA 02
DI
RAW WATER SUBMERSIBLE PUMP X LEAK DETECTION ALARM
XA 03
DI
RAW WATER SUBMERSIBLE PUMP X MOTOR THERMAL OL ALARM
XA 04
DI
RAW WATER SUBMERSIBLE PUMP X START COMMAND
MH 01
DO
RAW WATER SUBMERSIBLE PUMP X SPEED INDICATION
SI 01
AI
RAW WATER SUBMERSIBLE PUMP X SPEED SETPOINT
SC 01
AO
TYPICAL "A"
(X = 01, 02, 03)
PLC 01
WET WELL LEVEL SENSOR LOSS OF ECHO ALARM
XA 01
DI
WET WELL LEVEL INDICATION
LI 01
AI
PLC 01
VALVE CHAMBER SUMP PUMP RUNNING STATUS
MN 01
DI
PLC 01
VALVE CHAMBER FLOOD ALARM
XA 01
DI
PLC 01
DISCHARGE HEADER FLOW TRANSMITTER FAULT ALARM
XA 01
DI
DISCHARGE HEADER FLOW INDICATION
FI 01
AI
DISCHARGE HEADER TOTALIZED FLOW INDICATION
FQ 01
AI
PLC 01
DISCHARGE HEADER PRESSURE TRANSMITTER FAULT ALARM
XA 01
DI
DISCHARGE HEADER PRESSURE INDCATION
PI 01
AI
PLC 01
LAKE QIKIKTALIK LEVEL TRANSMITTER LOSS OF ECHO ALARM
XA 01
DI
LAKE QIKIKTALIK LEVEL INDICATION
LI 01
AI
PLC 01
PLC / SCADA
MODBUS TCP/IP
MCC / CONTROL ROOM
MCC
TYPICAL "A"
(X = 01, 02, 03)
OFF / ON
LR
LOC-REM
RESET
ST
START
W
POWER ON
G
RUNNING
R
LOW LIQUID LEVEL
R
VFD FAULT
VFD KEYPAD
ETM
ESTOP
SP
STOP
R
GENERAL FAULT
R
LEAK DETECTION
R
MOTOR THERMAL OL
SPEED CONTROL
LIT 01
FIT 01
LIT 02
LE 02
I
LSHH 01
HIGH-HIGH LEVEL FLOAT SWITCH
LE 01
WET WELL LEVEL SENSOR
SUP 01
SUMP PUMP
LSH 01
SUMP PIT FLOAT
VALVE CHAMBER SUMP PIT
LSLL 01
LOW-LOW LEVEL FLOAT SWITCH
LQ INTAKE STRUCTURE
600-RW-HDPE
SG01
300-RW-SS
M
RAW WATER SUBMERSIBLE PUMP RWSP01
WET WELL
CV01
VC
GV01
300-RW-SS
350-RW-SS
VC
FE 01
M
VC
DISCHARGE HEADER FLOW ELEMENT
PG 01
PIT 01
DISCHARGE HEADER PRESSURE TRANSMITTER
350-RW-SS
ARV01
BV01
SS
HDPE
350-RW-SS
400-RW-HDPE
VALVE CHAMBER VC1
I103
VALVE ROOM
TYPICAL "A"
300-RW-SS
M
RAW WATER SUBMERSIBLE PUMP RWSP02
CV02
VC
GV02
300-RW-SS
300-RW-SS
TYPICAL "A"
300-RW-SS
M
RAW WATER SUBMERSIBLE PUMP RWSP03
CV03
VC
GV03
300-RW-SS
PV01
150-D-SS
150-D-SS

NOTE:

1. ALL TAGS ARE PREFIXED WITH LQPS.

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

B	**ISSUED FOR 50% DESIGN REVIEW**	**2025-12-19**
A	**ISSUED FOR PRELIMINARY DESIGN**	**2024-03-22**
Revision	Description	Date

Consultant

8133 Warden Avenue - Unit 300
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www.arcadis.com

Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
J.G.C.

Drawn by
M.H.

Approved by
J.G.C.

Project Manager
C.G.

Drawing title

INSTRUMENTATION AND CONTROL

LQ PUMP STATION
PUMP STATION P&ID

Project no.	Drawing no.	Revision no.
30192375	**I101**	**B**

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A1 - 841X594

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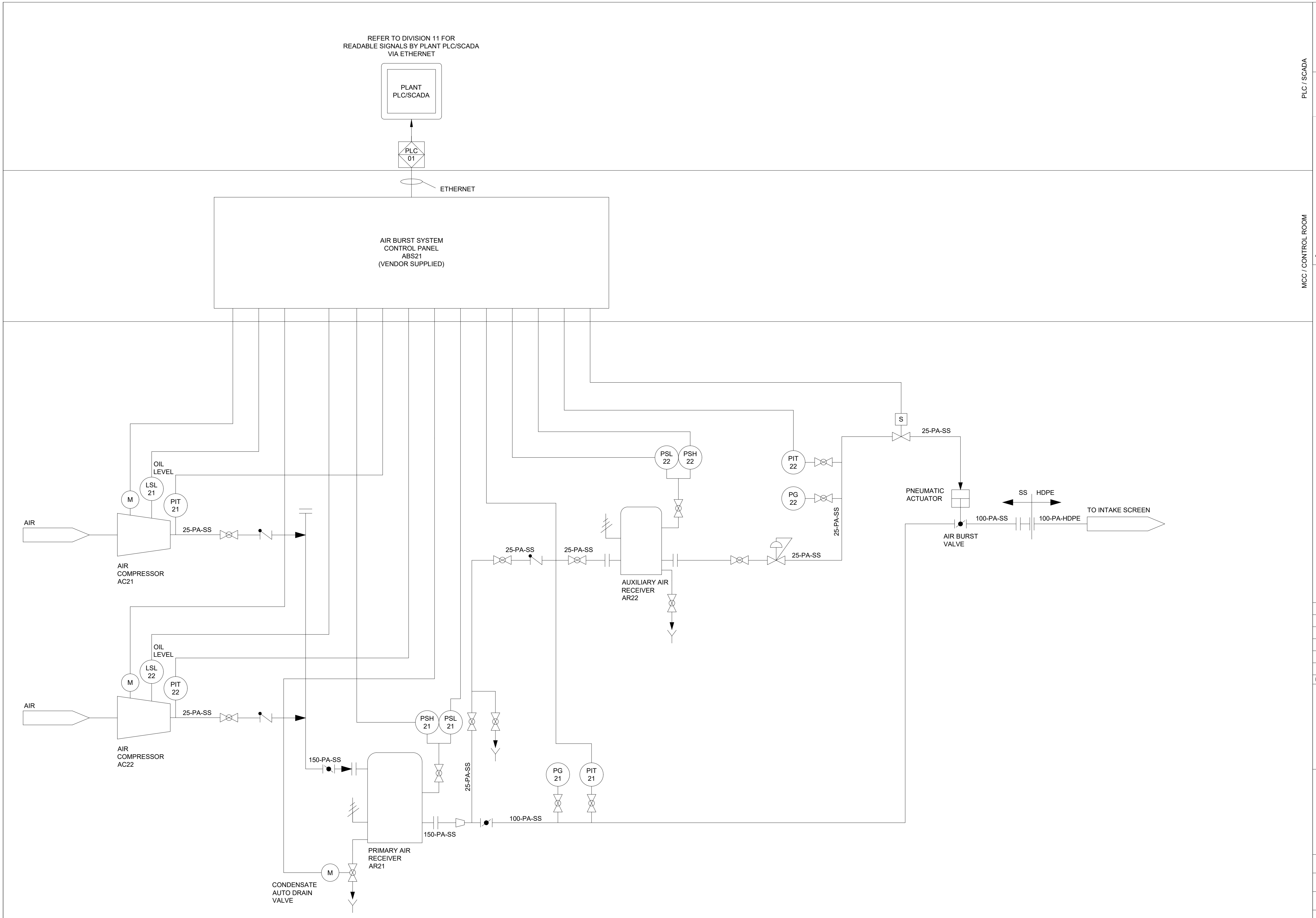
REFER TO DIVISION 11 FOR
READABLE SIGNALS BY PLANT PLC/SCADA
VIA ETHERNET
PLANT
PLC/SCADA
PLC / SCADA
PLC
01
ETHERNET
AIR BURST SYSTEM
CONTROL PANEL
ABS21
(VENDOR SUPPLIED)
MCC / CONTROL ROOM
S
25-PA-SS
PSL
22
PSH
22
PIT
22
PG
22
PNEUMATIC
ACTUATOR
SS
HDPE
TO INTAKE SCREEN
100-PA-SS
100-PA-HDPE
AIR BURST
VALVE
25-PA-SS
OIL
LEVEL
LSL
21
M
PIT
21
AIR
25-PA-SS
AIR
COMPRESSOR
AC21
25-PA-SS
25-PA-SS
AUXILIARY AIR
RECEIVER
AR22
25-PA-SS
OIL
LEVEL
LSL
22
M
PIT
22
AIR
25-PA-SS
AIR
COMPRESSOR
AC22
PSH
21
PSL
21
150-PA-SS
25-PA-SS
PG
21
PIT
21
100-PA-SS
150-PA-SS
PRIMARY AIR
RECEIVER
AR21
M
CONDENSATE
AUTO DRAIN
VALVE

NOTE:

1. ALL TAGS ARE PREFIXED WITH LQPS.

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN	2024-03-22

Consultant

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Project title

CITY OF IQALUIT

**LONG TERM WATER PROGRAM
SUPPLY AND STORAGE**

Designed by
J.G.C.

Drawn by
M.H.

Approved by
J.G.C.

Project Manager
C.G.

Drawing title

INSTRUMENTATION AND CONTROL

**LQ PUMP STATION
AIR BURST SYSTEM P&ID**

Project no.	Drawing no.	Revision no.
30192375	I102	B

C:\Users\duongm0785\DC\ACCDocs\BI - DT Services\30288139-Iqaluit_LongTermWater C302025\Project Files\7.0_Production\7.03_Design\26_Instrumentation\Sheets\30192375 05 - I102 - LQ PUMP STATION - AIR BURST SYSTEM P&ID.dwg

A1 - 841X594

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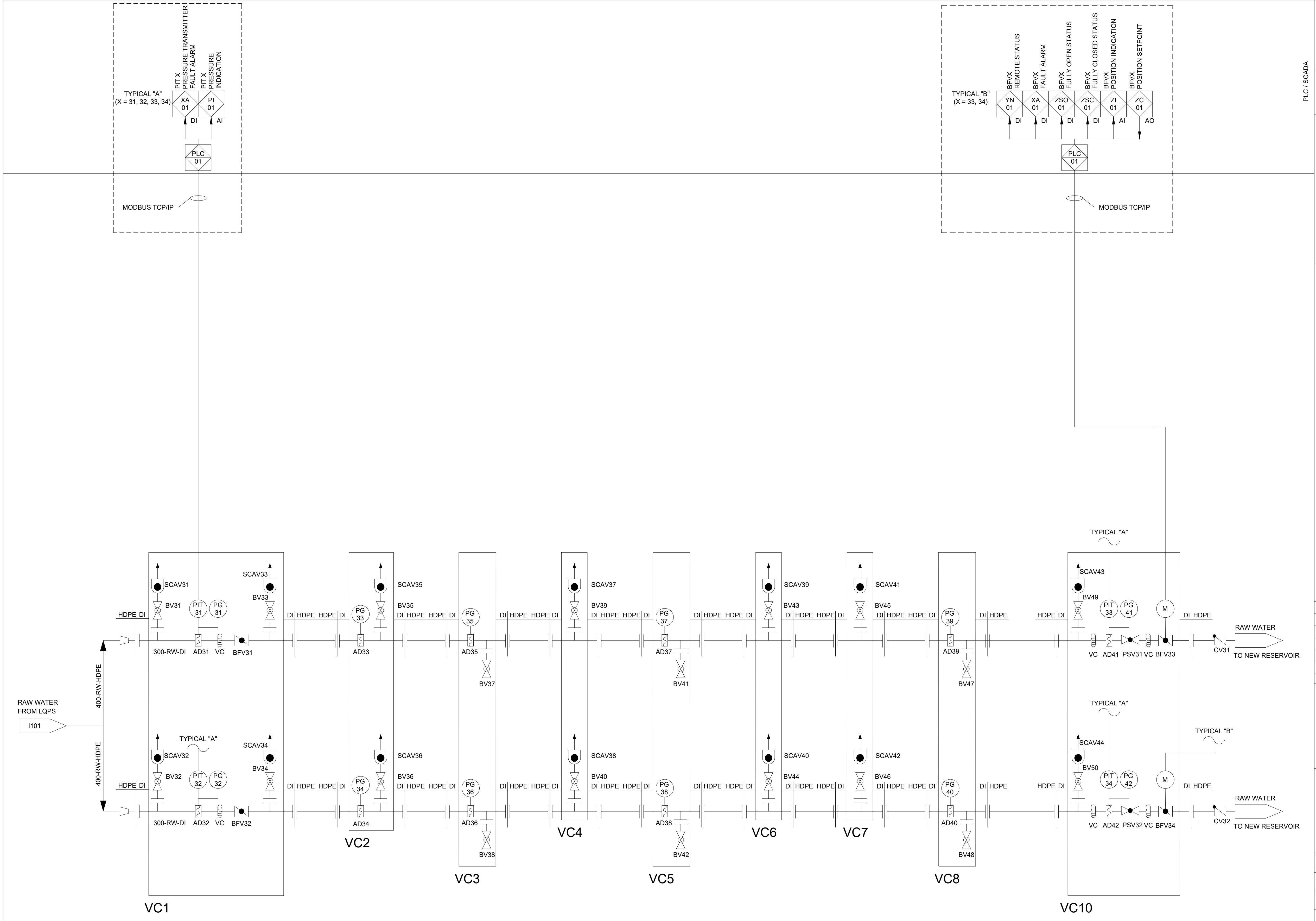
PIT X
PRESSURE TRANSMITTER
FAULT ALARM
PIT X
PRESSURE
INDICATION
TYPICAL "A"
(X = 31, 32, 33, 34)
XA
01
PI
01
DI
AI
PLC
01
MODBUS TCP/IP
BFVX
REMOTE STATUS
BFVX
FAULT ALARM
BFVX
FULLY OPEN STATUS
BFVX
FULLY CLOSED STATUS
BFVX
POSITION INDICATION
BFVX
POSITION SETPOINT
TYPICAL "B"
(X = 33, 34)
YN
01
XA
01
ZSO
01
ZSC
01
ZI
01
ZC
01
DI
DI
DI
DI
AI
AO
PLC
01
MODBUS TCP/IP
PLC / SCADA
RAW WATER
FROM LQPS
I101
400-RW-HDPE
400-RW-HDPE
HDPE
DI
SCAV31
BV31
PIT
31
PG
31
SCAV33
BV33
300-RW-DI
AD31
VC
BFV31
TYPICAL "A"
SCAV32
BV32
PIT
32
PG
32
SCAV34
BV34
300-RW-DI
AD32
VC
BFV32
VC1
PG
33
AD33
SCAV35
BV35
PG
34
AD34
SCAV36
BV36
VC2
PG
35
AD35
BV37
PG
36
AD36
BV38
VC3
SCAV37
BV39
SCAV38
BV40
VC4
PG
37
AD37
BV41
PG
38
AD38
BV42
VC5
SCAV39
BV43
SCAV40
BV44
VC6
SCAV41
BV45
SCAV42
BV46
VC7
PG
39
AD39
BV47
PG
40
AD40
BV48
VC8
TYPICAL "A"
SCAV43
BV49
PIT
33
PG
41
M
VC
AD41
PSV31
VC
BFV33
CV31
RAW WATER
TO NEW RESERVOIR
TYPICAL "A"
SCAV44
BV50
PIT
34
PG
42
M
TYPICAL "B"
VC
AD42
PSV32
VC
BFV34
CV32
RAW WATER
TO NEW RESERVOIR
VC10

NOTE:

1. ALL TAGS ARE PREFIXED WITH LQPS.
2. ALL TEE CONNECTIONS ARE 150MM DUCTILE IRON.

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
C	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
B	ISSUED FOR PRELIMINARY DESIGN(REVISED)	2025-09-26
A	ISSUED FOR PRELIMINARY DESIGN	2024-03-22

Consultant

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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
J.G.C.

Drawn by
M.H.

Approved by
J.G.C.

Project Manager
C.G.

Drawing title

INSTRUMENTATION AND CONTROL

LQ PUMP STATION
CONVEYANCE PIPELINE P&ID

Project no.	Drawing no.	Revision no.
30192375	I103	C

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A1 - 841X594

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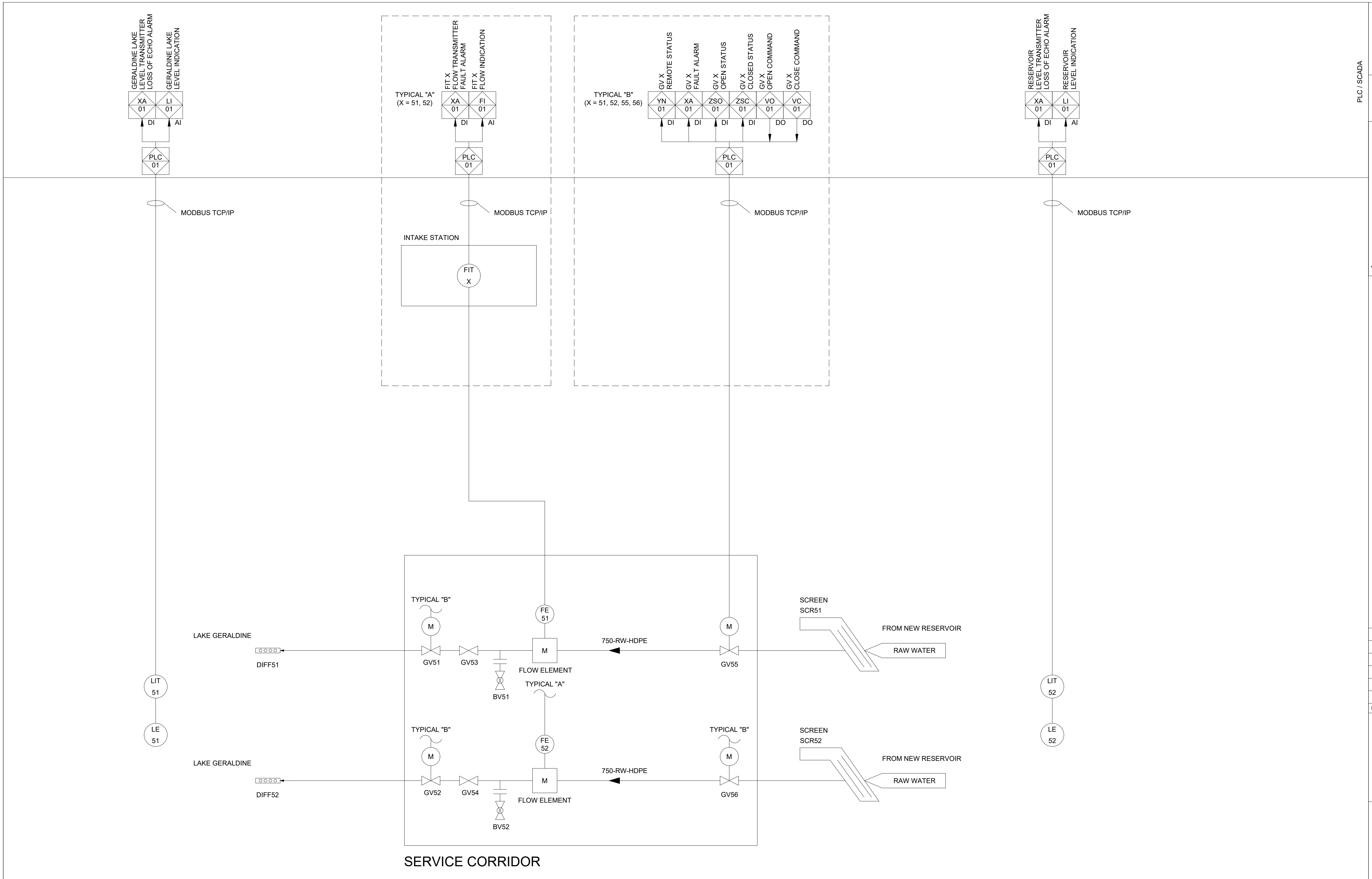
PLC / SCADA
GERALDINE LAKE LEVEL TRANSMITTER LOSS OF ECHO ALARM
GERALDINE LAKE LEVEL INDICATION
XA 01
LI 01
DI
AI
PLC 01
MODBUS TCP/IP
TYPICAL "A" (X = 51, 52)
FIT X FLOW TRANSMITTER FAULT ALARM
FIT X FLOW INDICATION
XA 01
FI 01
DI
AI
PLC 01
MODBUS TCP/IP
INTAKE STATION
FIT X
TYPICAL "B" (X = 51, 52, 55, 56)
GV X REMOTE STATUS
GV X FAULT ALARM
GV X OPEN STATUS
GV X CLOSED STATUS
GV X OPEN COMMAND
GV X CLOSE COMMAND
YN 01
XA 01
ZSO 01
ZSC 01
VO 01
VC 01
DI
DI
DI
DI
DO
DO
PLC 01
MODBUS TCP/IP
RESERVOIR LEVEL TRANSMITTER LOSS OF ECHO ALARM
RESERVOIR LEVEL INDICATION
XA 01
LI 01
DI
AI
PLC 01
MODBUS TCP/IP
TYPICAL "B"
M
FE 51
M
SCREEN SCR51
FROM NEW RESERVOIR
LAKE GERALDINE
750-RW-HDPE
RAW WATER
DIFF51
GV51
GV53
FLOW ELEMENT
GV55
TYPICAL "A"
BV51
LIT 51
LE 51
TYPICAL "B"
FE 52
TYPICAL "B"
SCREEN SCR52
M
M
FROM NEW RESERVOIR
LAKE GERALDINE
M
750-RW-HDPE
RAW WATER
DIFF52
GV52
GV54
FLOW ELEMENT
GV56
BV52
LIT 52
LE 52
SERVICE CORRIDOR

NOTE:

1. ALL TAGS ARE PREFIXED WITH LQPS.

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN	2024-03-22

Consultant
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Project title
CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
J.G.C.

Drawn by
M.H.

Approved by
J.G.C.

Project Manager
C.G.

Drawing title
INSTRUMENTATION AND CONTROL

SERVICE CORRIDOR P&ID

Project no.	Drawing no.	Revision no.
30192375	I104	B

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A1 – 841X594

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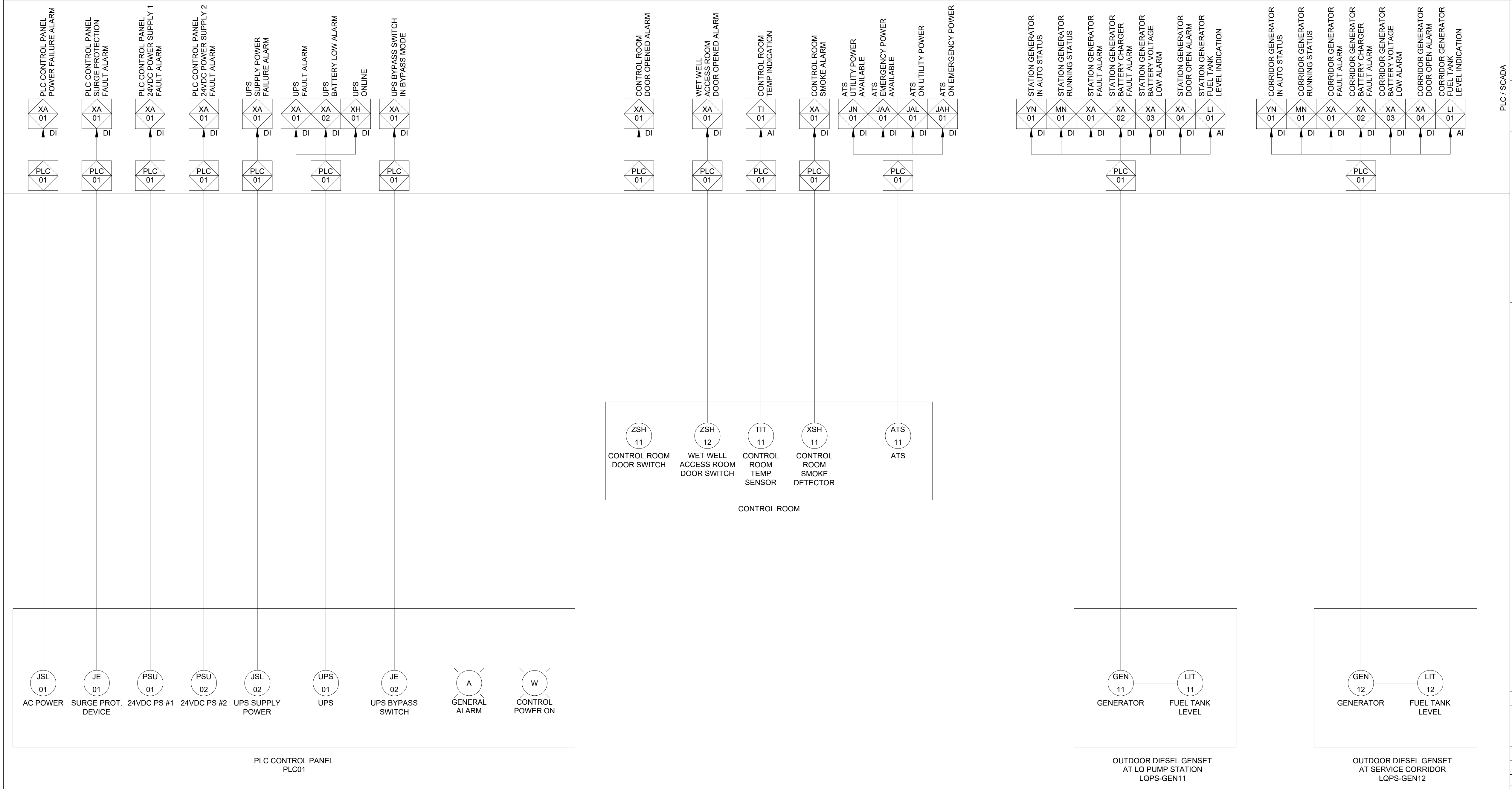
PLC CONTROL PANEL POWER FAILURE ALARM
PLC CONTROL PANEL SURGE PROTECTION FAULT ALARM
PLC CONTROL PANEL 24VDC POWER SUPPLY 1 FAULT ALARM
PLC CONTROL PANEL 24VDC POWER SUPPLY 2 FAULT ALARM
UPS SUPPLY POWER FAILURE ALARM
UPS FAULT ALARM
UPS BATTERY LOW ALARM
UPS ONLINE
UPS BYPASS SWITCH IN BYPASS MODE
XA 01
XA 01
XA 01
XA 01
XA 01
XA 01
XA 02
XH 01
XA 01
DI
PLC 01
CONTROL ROOM DOOR OPENED ALARM
WET WELL ACCESS ROOM DOOR OPENED ALARM
CONTROL ROOM TEMP INDICATION
CONTROL ROOM SMOKE ALARM
ATS UTILITY POWER AVAILABLE
ATS EMERGENCY POWER AVAILABLE
ATS ON UTILITY POWER
ATS ON EMERGENCY POWER
XA 01
XA 01
TI 01
XA 01
JN 01
JAA 01
JAL 01
JAH 01
AI
STATION GENERATOR IN AUTO STATUS
STATION GENERATOR RUNNING STATUS
STATION GENERATOR FAULT ALARM
STATION GENERATOR BATTERY CHARGER FAULT ALARM
STATION GENERATOR BATTERY VOLTAGE LOW ALARM
STATION GENERATOR DOOR OPEN ALARM
STATION GENERATOR FUEL TANK LEVEL INDICATION
YN 01
MN 01
XA 01
XA 02
XA 03
XA 04
LI 01
CORRIDOR GENERATOR IN AUTO STATUS
CORRIDOR GENERATOR RUNNING STATUS
CORRIDOR GENERATOR FAULT ALARM
CORRIDOR GENERATOR BATTERY CHARGER FAULT ALARM
CORRIDOR GENERATOR BATTERY VOLTAGE LOW ALARM
CORRIDOR GENERATOR DOOR OPEN ALARM
CORRIDOR GENERATOR FUEL TANK LEVEL INDICATION
PLC / SCADA
ZSH 11
CONTROL ROOM DOOR SWITCH
ZSH 12
WET WELL ACCESS ROOM DOOR SWITCH
TIT 11
CONTROL ROOM TEMP SENSOR
XSH 11
CONTROL ROOM SMOKE DETECTOR
ATS 11
ATS
CONTROL ROOM
JSL 01
AC POWER
JE 01
SURGE PROT. DEVICE
PSU 01
24VDC PS #1
PSU 02
24VDC PS #2
JSL 02
UPS SUPPLY POWER
UPS 01
UPS
JE 02
UPS BYPASS SWITCH
A
GENERAL ALARM
W
CONTROL POWER ON
PLC CONTROL PANEL
PLC01
GEN 11
GENERATOR
LIT 11
FUEL TANK LEVEL
OUTDOOR DIESEL GENSET
AT LQ PUMP STATION
LQPS-GEN11
GEN 12
GENERATOR
LIT 12
FUEL TANK LEVEL
OUTDOOR DIESEL GENSET
AT SERVICE CORRIDOR
LQPS-GEN12

NOTE:

1. ALL TAGS ARE PREFIXED WITH LQPS.

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN	2024-03-22

Consultant

ARCADIS

8133 Warden Avenue - Unit 300
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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
J.G.C.

Drawn by
M.H.

Approved by
J.G.C.

Project Manager
C.G.

Drawing title

INSTRUMENTATION AND CONTROL

LQ PUMP STATION
CONTROL AND GENERATOR P&ID

Project no.	Drawing no.	Revision no.
30192375	I105	B

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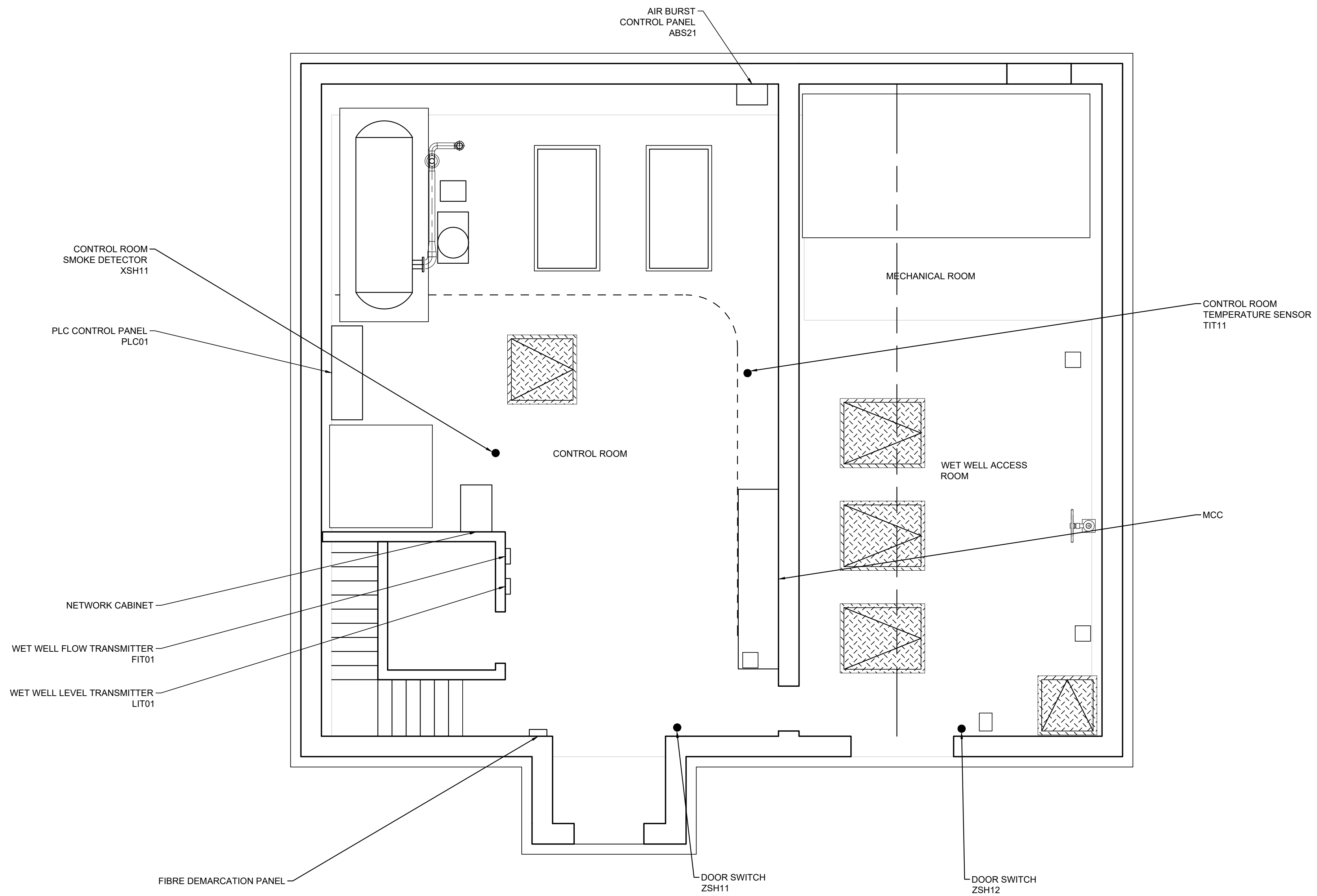
AIR BURST
CONTROL PANEL
ABS21
CONTROL ROOM
SMOKE DETECTOR
XSH11
PLC CONTROL PANEL
PLC01
MECHANICAL ROOM
CONTROL ROOM
TEMPERATURE SENSOR
TIT11
CONTROL ROOM
WET WELL ACCESS
ROOM
MCC
NETWORK CABINET
WET WELL FLOW TRANSMITTER
FIT01
WET WELL LEVEL TRANSMITTER
LIT01
FIBRE DEMARCATION PANEL
DOOR SWITCH
ZSH11
DOOR SWITCH
ZSH12

FLOOR PLAN AT EL. 210.5m - LAKE QIKIQTALIK PUMP STATION

SCALE 1:50

NOTE:

1. ALL TAGS ARE PREFIXED WITH LQPS.

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

A	**ISSUED FOR 50% DESIGN REVIEW**	**2025-12-19**
Revision	Description	Date

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SUPPLY AND STORAGE

Designed by
J.G.C.

Drawn by
M.H.

Approved by
J.G.C.

Project Manager
C.G.

Drawing title

INSTRUMENTATION AND CONTROL

LQ PUMP STATION
PLAN AT EL. 210.5m

Project no.	Drawing no.	Revision no.
30192375	**N101**	**A**

C:\Users\wiecherc4513\OneDrive - ARCADIS\Desktop\Markups\IQALUIT\WORKING FILES\CAD FILES\30192375 100 - N101-N102 - LQ PUMP STATION - FLOOR PLANS.dwg

A1 - 841X594

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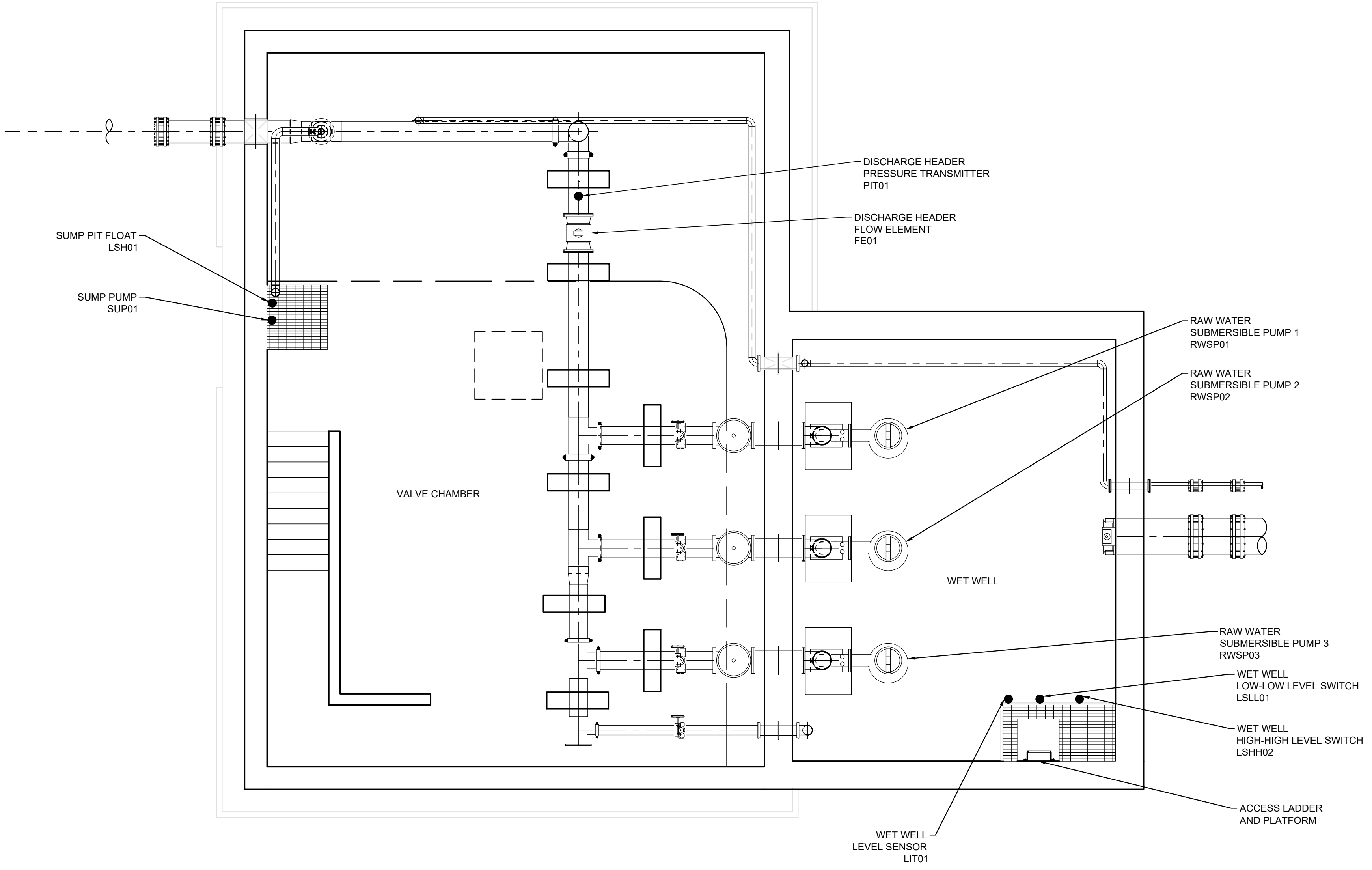
DISCHARGE HEADER
PRESSURE TRANSMITTER
PIT01
DISCHARGE HEADER
FLOW ELEMENT
FE01
SUMP PIT FLOAT
LSH01
SUMP PUMP
SUP01
RAW WATER
SUBMERSIBLE PUMP 1
RWSP01
RAW WATER
SUBMERSIBLE PUMP 2
RWSP02
VALVE CHAMBER
WET WELL
RAW WATER
SUBMERSIBLE PUMP 3
RWSP03
WET WELL
LOW-LOW LEVEL SWITCH
LSLL01
WET WELL
HIGH-HIGH LEVEL SWITCH
LSHH02
ACCESS LADDER
AND PLATFORM
WET WELL
LEVEL SENSOR
LIT01

FLOOR PLAN AT EL. 207.00m - LAKE QIKIQTALIK PUMP STATION

SCALE 1:50

NOTE:

1. ALL TAGS ARE PREFIXED WITH LQPS.

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A	**ISSUED FOR 50% DESIG REVIEW**	
Revision	Description	Date

Consultant

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Project title

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**LONG TERM WATER PROGRAM
SUPPLY AND STORAGE**

Designed by
J.G.C.

Drawn by
M.H.

Approved by
J.G.C.

Project Manager
C.G.

Drawing title

INSTRUMENTATION AND CONTROL

**LQ PUMP STATION
PLAN AT EL. 207.00m**

Project no.	Drawing no.	Revision no.
30192375	**N102**	**A**

C:\Users\wiecherc4513\OneDrive – ARCADIS\Desktop\Markups\IQALUIT\WORKING FILES\CAD FILES\30192375 100 – N101–N102 – LQ PUMP STATION – FLOOR PLANS.dwg

A1 – 841X594

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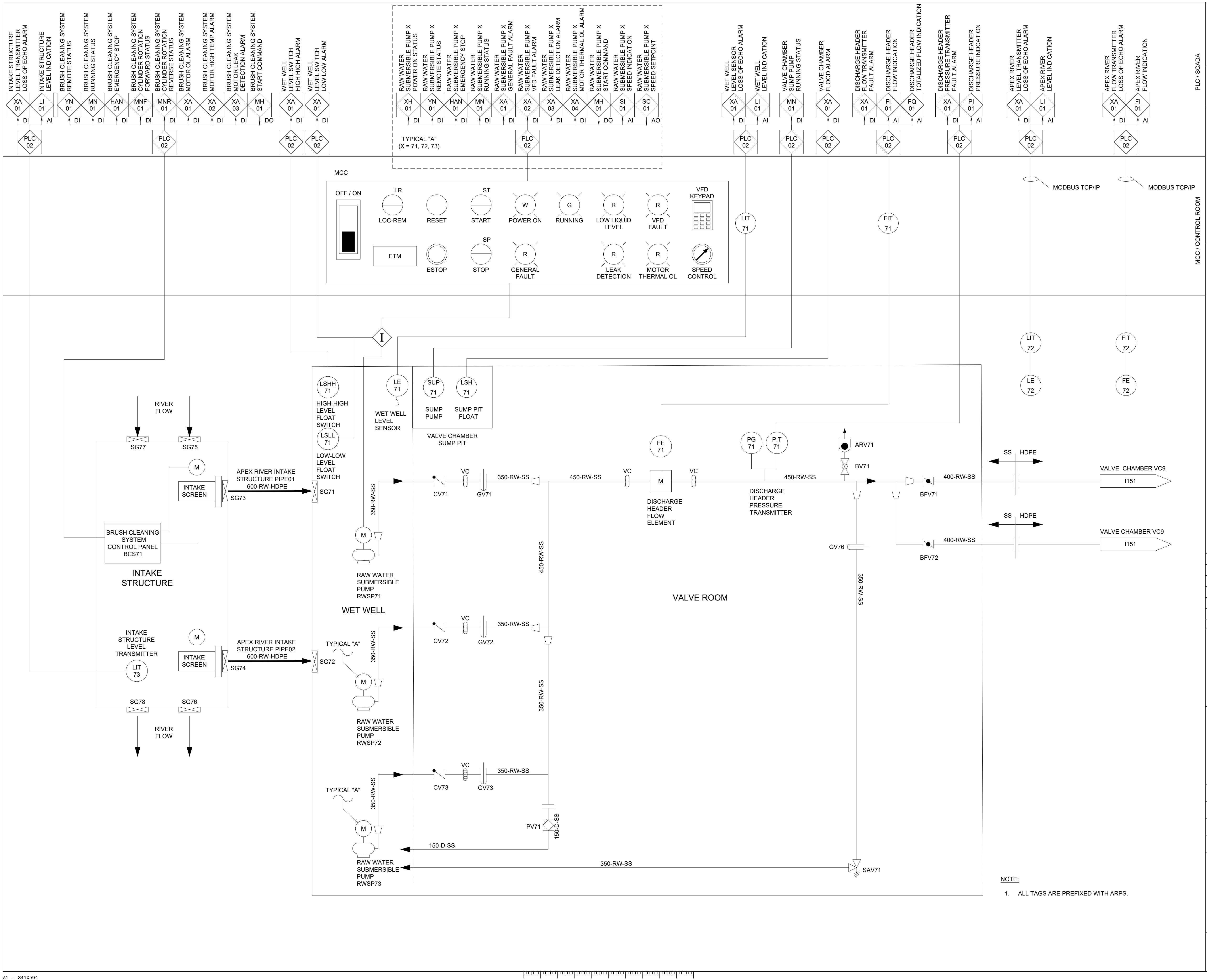
INTAKE STRUCTURE LEVEL TRANSMITTER LOSS OF ECHO ALARM
INTAKE STRUCTURE LEVEL INDICATION
BRUSH CLEANING SYSTEM REMOTE STATUS
BRUSH CLEANING SYSTEM RUNNING STATUS
BRUSH CLEANING SYSTEM EMERGENCY STOP
BRUSH CLEANING SYSTEM CYLINDER ROTATION FORWARD STATUS
BRUSH CLEANING SYSTEM CYLINDER ROTATION REVERSE STATUS
BRUSH CLEANING SYSTEM MOTOR OL ALARM
BRUSH CLEANING SYSTEM MOTOR HIGH TEMP ALARM
BRUSH CLEANING SYSTEM MOTOR LEAK DETECTION ALARM
BRUSH CLEANING SYSTEM START COMMAND
WET WELL LEVEL SWITCH HIGH HIGH ALARM
WET WELL LEVEL SWITCH LOW LOW ALARM
RAW WATER SUBMERSIBLE PUMP X POWER ON STATUS
RAW WATER SUBMERSIBLE PUMP X REMOTE STATUS
RAW WATER SUBMERSIBLE PUMP X EMERGENCY STOP
RAW WATER SUBMERSIBLE PUMP X RUNNING STATUS
RAW WATER SUBMERSIBLE PUMP X GENERAL FAULT ALARM
RAW WATER SUBMERSIBLE PUMP X VFD FAULT ALARM
RAW WATER SUBMERSIBLE PUMP X LEAK DETECTION ALARM
RAW WATER SUBMERSIBLE PUMP X MOTOR THERMAL OL ALARM
RAW WATER SUBMERSIBLE PUMP X START COMMAND
RAW WATER SUBMERSIBLE PUMP X SPEED INDICATION
RAW WATER SUBMERSIBLE PUMP X SPEED SETPOINT
WET WELL LEVEL SENSOR LOSS OF ECHO ALARM
WET WELL LEVEL INDICATION
VALVE CHAMBER SUMP PUMP RUNNING STATUS
VALVE CHAMBER FLOOD ALARM
DISCHARGE HEADER FLOW TRANSMITTER FAULT ALARM
DISCHARGE HEADER FLOW INDICATION
DISCHARGE HEADER TOTALIZED FLOW INDICATION
DISCHARGE HEADER PRESSURE TRANSMITTER FAULT ALARM
DISCHARGE HEADER PRESSURE INDCATION
APEX RIVER LEVEL TRANSMITTER LOSS OF ECHO ALARM
APEX RIVER LEVEL INDICATION
APEX RIVER FLOW TRANSMITTER LOSS OF ECHO ALARM
APEX RIVER FLOW INDICATION
XA 01
LI 01
YN 01
MN 01
HAN 01
MNF 01
MNR 01
XA 01
XA 02
XA 03
MH 01
XA 01
XA 01
XH 01
YN 01
HAN 01
MN 01
XA 01
XA 02
XA 03
XA 04
MH 01
SI 01
SC 01
XA 01
LI 01
MN 01
XA 01
XA 01
FI 01
FQ 01
XA 01
PI 01
XA 01
LI 01
XA 01
FI 01
DI
AI
DO
AO
PLC 02
TYPICAL "A"
(X = 71, 72, 73)
PLC / SCADA
MCC / CONTROL ROOM
MCC
OFF / ON
LR
LOC-REM
RESET
ST
START
W
POWER ON
G
RUNNING
R
LOW LIQUID LEVEL
R
VFD FAULT
VFD KEYPAD
ETM
ESTOP
SP
STOP
R
GENERAL FAULT
R
LEAK DETECTION
R
MOTOR THERMAL OL
SPEED CONTROL
LIT 71
FIT 71
MODBUS TCP/IP
MODBUS TCP/IP
LIT 72
LE 72
FIT 72
FE 72
I
RIVER FLOW
SG77
SG75
M
INTAKE SCREEN
SG73
APEX RIVER INTAKE STRUCTURE PIPE01
600-RW-HDPE
SG71
BRUSH CLEANING SYSTEM CONTROL PANEL BCS71
INTAKE STRUCTURE
INTAKE STRUCTURE LEVEL TRANSMITTER
LIT 73
M
INTAKE SCREEN
SG74
APEX RIVER INTAKE STRUCTURE PIPE02
600-RW-HDPE
SG72
SG78
SG76
RIVER FLOW
LSHH 71
HIGH-HIGH LEVEL FLOAT SWITCH
LSLL 71
LOW-LOW LEVEL FLOAT SWITCH
LE 71
WET WELL LEVEL SENSOR
SUP 71
SUMP PUMP
LSH 71
SUMP PIT FLOAT
VALVE CHAMBER SUMP PIT
WET WELL
350-RW-SS
M
RAW WATER SUBMERSIBLE PUMP RWSP71
TYPICAL "A"
M
RAW WATER SUBMERSIBLE PUMP RWSP72
TYPICAL "A"
M
RAW WATER SUBMERSIBLE PUMP RWSP73
CV71
VC
GV71
350-RW-SS
CV72
VC
GV72
350-RW-SS
CV73
VC
GV73
350-RW-SS
450-RW-SS
450-RW-SS
350-RW-SS
PV71
150-D-SS
150-D-SS
350-RW-SS
SAV71
VALVE ROOM
VC
FE 71
M
DISCHARGE HEADER FLOW ELEMENT
VC
PG 71
PIT 71
DISCHARGE HEADER PRESSURE TRANSMITTER
450-RW-SS
ARV71
BV71
GV76
350-RW-SS
BFV71
BFV72
400-RW-SS
400-RW-SS
SS
HDPE
SS
HDPE
VALVE CHAMBER VC9
I151
VALVE CHAMBER VC9
I151

NOTE:

1. ALL TAGS ARE PREFIXED WITH ARPS.

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN	2024-03-22

Consultant

ARCADIS

8133 Warden Avenue - Unit 300
Markham ON L6G 1B3 Canada
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www.arcadis.com

Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
J.G.C.

Drawn by
M.H.

Approved by
J.G.C.

Project Manager
C.G.

Drawing title

INSTRUMENTATION AND CONTROL

AR PUMP STATION
PUMP STATION P&ID

Project no.	Drawing no.	Revision no.
30192375	I1101	B

C:\Users\duongnm0785\DC\ACCDocs\BI - DT Services\30288139-Iqaluit_LongTermWater C302025\Project Files\V.0_Production\7.03_Design\26_Instrumentation\Sheets\30192375 09 - I1101 - AR PUMP STATION - PUMP STATION P&ID.dwg

A1 – 841X594

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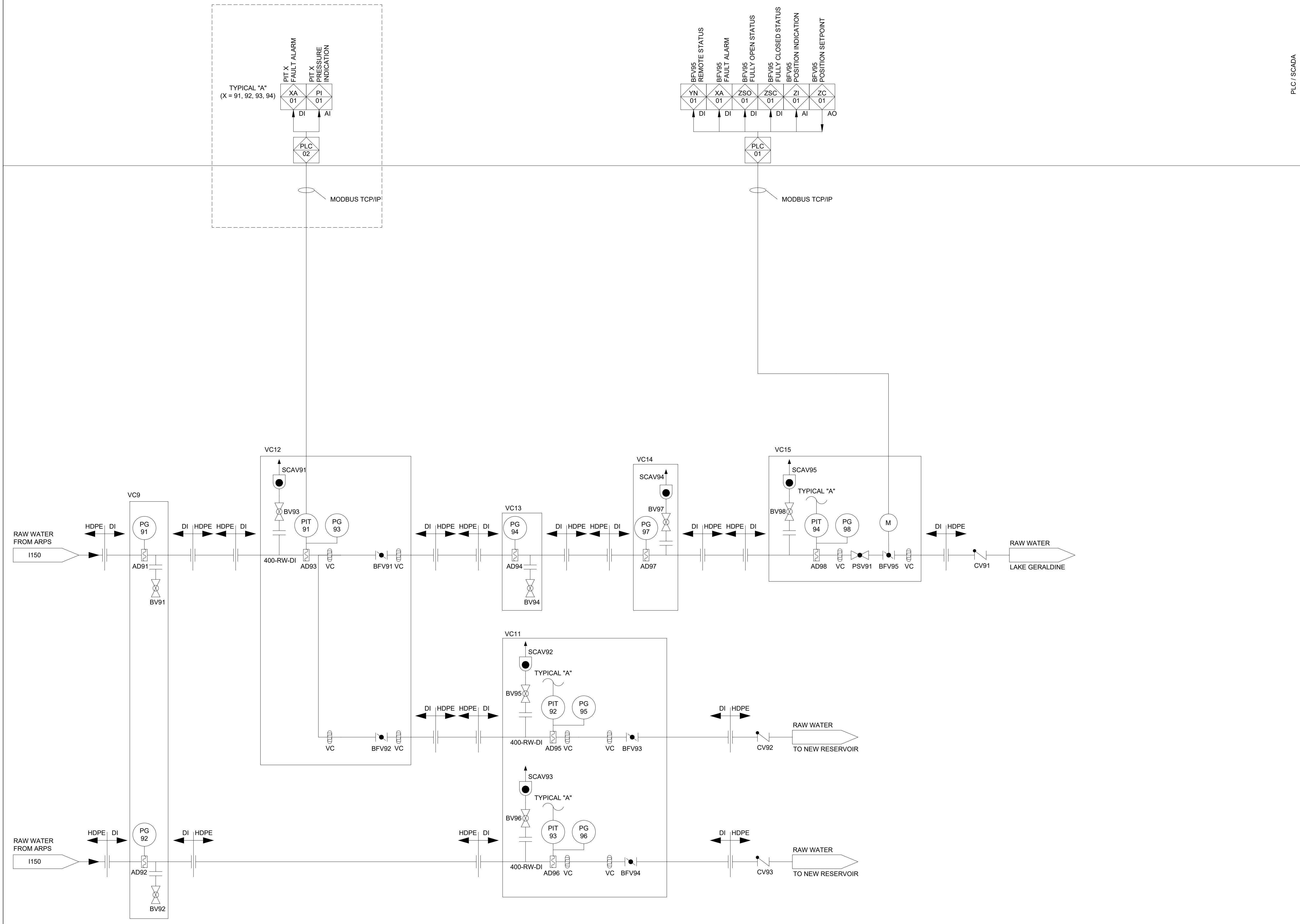
TYPICAL "A"
(X = 91, 92, 93, 94)
PIT X FAULT ALARM
PIT X PRESSURE INDICATION
XA 01
PI 01
DI
AI
PLC 02
MODBUS TCP/IP
BFV95 REMOTE STATUS
BFV95 FAULT ALARM
BFV95 FULLY OPEN STATUS
BFV95 FULLY CLOSED STATUS
BFV95 POSITION INDICATION
BFV95 POSITION SETPOINT
YN 01
XA 01
ZSO 01
ZSC 01
ZI 01
ZC 01
DI
DI
DI
DI
AI
AO
PLC 01
MODBUS TCP/IP
PLC / SCADA
RAW WATER FROM ARPS
I150
HDPE
DI
VC9
PG 91
AD91
BV91
VC12
SCAV91
BV93
PIT 91
PG 93
400-RW-DI
AD93
VC
BFV91
VC
VC13
PG 94
AD94
BV94
VC14
SCAV94
BV97
PG 97
AD97
VC15
SCAV95
TYPICAL "A"
BV98
PIT 94
PG 98
M
AD98
VC
PSV91
BFV95
VC
CV91
RAW WATER
LAKE GERALDINE
VC11
SCAV92
TYPICAL "A"
BV95
PIT 92
PG 95
400-RW-DI
AD95
VC
VC
BFV93
VC
BFV92
VC
CV92
RAW WATER
TO NEW RESERVOIR
SCAV93
TYPICAL "A"
BV96
PIT 93
PG 96
400-RW-DI
AD96
VC
VC
BFV94
CV93
RAW WATER
TO NEW RESERVOIR
RAW WATER FROM ARPS
I150
PG 92
AD92
BV92

NOTE:

1. ALL TAGS ARE PREFIXED WITH ARPS.

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

B	**ISSUED FOR 50% DESIGN REVIEW**	**2025-12-19**
A	**ISSUED FOR PRELIMINARY DESIGN**	**2024-03-22**
Revision	Description	Date

Consultant

ARCADIS
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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
J.G.C.

Drawn by
M.H.

Approved by
J.G.C.

Project Manager
C.G.

Drawing title

INSTRUMENTATION AND CONTROL

AR PUMP STATION CONVEYANCE PIPELINE P&ID

Project no.	Drawing no.	Revision no.
30192375	**I1102**	**B**

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A1 - 841X594

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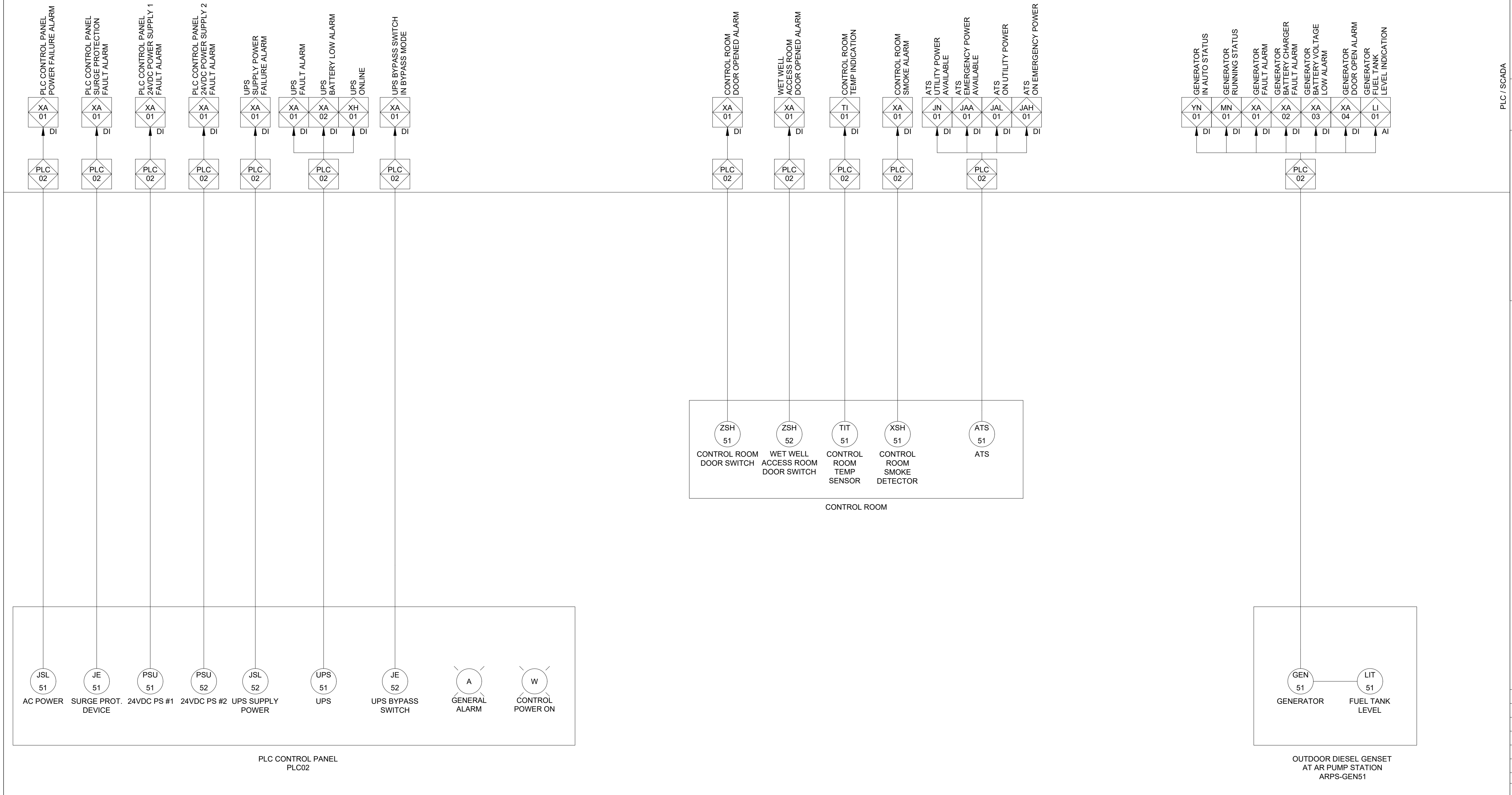
PLC / SCADA
PLC CONTROL PANEL POWER FAILURE ALARM
XA 01 DI
PLC CONTROL PANEL SURGE PROTECTION FAULT ALARM
XA 01 DI
PLC CONTROL PANEL 24VDC POWER SUPPLY 1 FAULT ALARM
XA 01 DI
PLC CONTROL PANEL 24VDC POWER SUPPLY 2 FAULT ALARM
XA 01 DI
UPS SUPPLY POWER FAILURE ALARM
XA 01 DI
UPS FAULT ALARM
XA 01 DI
UPS BATTERY LOW ALARM
XA 02 DI
UPS ONLINE
XH 01 DI
UPS BYPASS SWITCH IN BYPASS MODE
XA 01 DI
PLC 02
CONTROL ROOM DOOR OPENED ALARM
XA 01 DI
WET WELL ACCESS ROOM DOOR OPENED ALARM
XA 01 DI
CONTROL ROOM TEMP INDICATION
TI 01 DI
CONTROL ROOM SMOKE ALARM
XA 01 DI
ATS UTILITY POWER AVAILABLE
JN 01 DI
ATS EMERGENCY POWER AVAILABLE
JAA 01 DI
ATS ON UTILITY POWER
JAL 01 DI
ATS ON EMERGENCY POWER
JAH 01 DI
GENERATOR IN AUTO STATUS
YN 01 DI
GENERATOR RUNNING STATUS
MN 01 DI
GENERATOR FAULT ALARM
XA 01 DI
GENERATOR BATTERY CHARGER FAULT ALARM
XA 02 DI
GENERATOR BATTERY VOLTAGE LOW ALARM
XA 03 DI
GENERATOR DOOR OPEN ALARM
XA 04 DI
GENERATOR FUEL TANK LEVEL INDICATION
LI 01 AI
ZSH 51 CONTROL ROOM DOOR SWITCH
ZSH 52 WET WELL ACCESS ROOM DOOR SWITCH
TIT 51 CONTROL ROOM TEMP SENSOR
XSH 51 CONTROL ROOM SMOKE DETECTOR
ATS 51 ATS
CONTROL ROOM
JSL 51 AC POWER
JE 51 SURGE PROT. DEVICE
PSU 51 24VDC PS #1
PSU 52 24VDC PS #2
JSL 52 UPS SUPPLY POWER
UPS 51 UPS
JE 52 UPS BYPASS SWITCH
A GENERAL ALARM
W CONTROL POWER ON
PLC CONTROL PANEL PLC02
GEN 51 GENERATOR
LIT 51 FUEL TANK LEVEL
OUTDOOR DIESEL GENSET AT AR PUMP STATION ARPS-GEN51

NOTE:

1. ALL TAGS ARE PREFIXED WITH ARPS.

0 10 20 30 40 50 60 70 80 90 100mm

A1 – 841X594

C:\Users\duongm0785\DC\ACCDocs\IBI – DT Services\30288139–Iqaluit_LongTermWater C3D2025\Project Files\7.0_Production\7.03_Design\26_Instrumentation\Sheets\30192375 11 – I1103 – AR PUMP STATION – CONTROL AND GENERATOR P&ID.dwg

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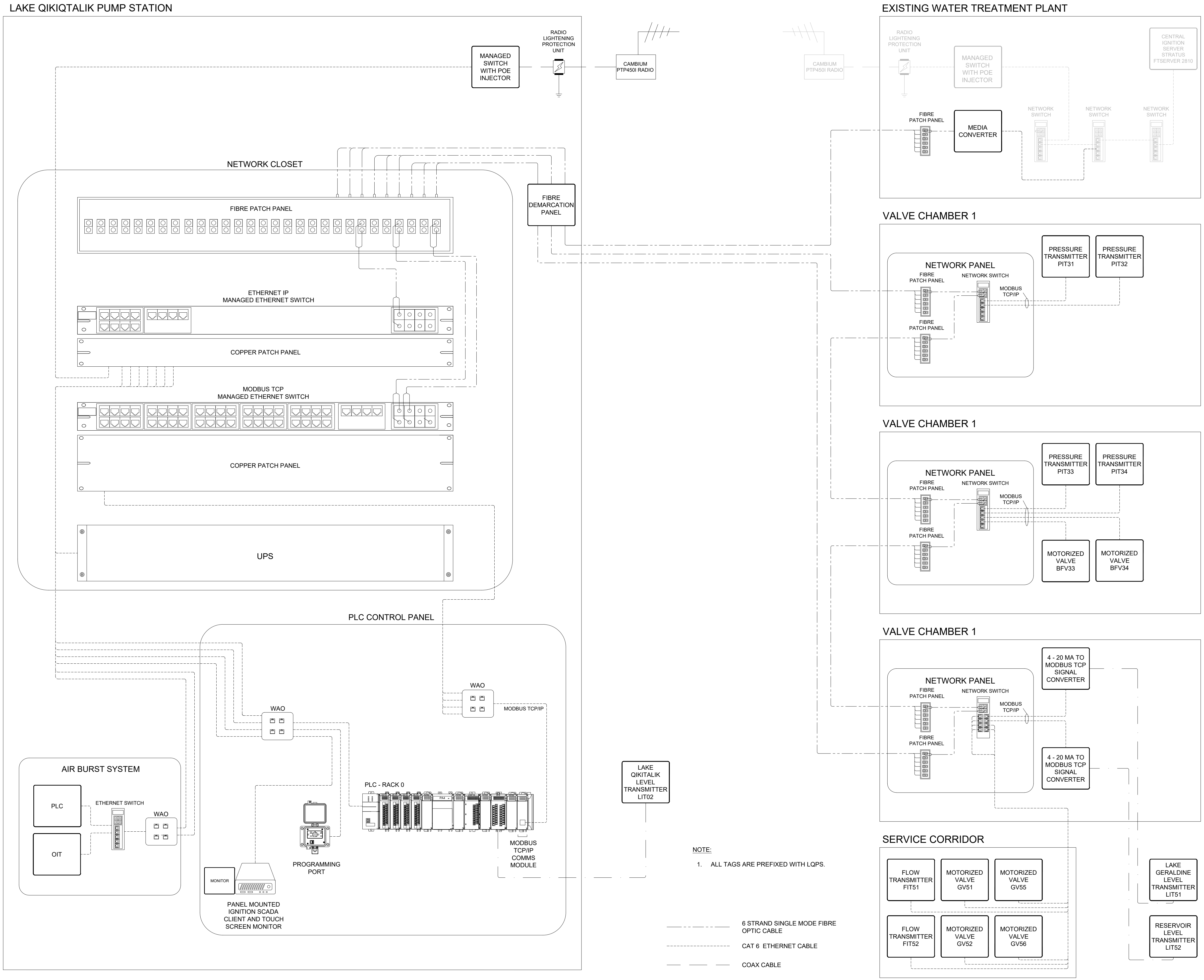
Project Manager
C.G.

Drawing title

INSTRUMENTATION AND CONTROL

AR PUMP STATION
CONTROL AND GENERATOR P&ID

Project no.	Drawing no.	Revision no.
30192375	I1103	B


LAKE QIKIQTALIK PUMP STATION
MANAGED SWITCH WITH POE INJECTOR
RADIO LIGHTENING PROTECTION UNIT
CAMBIUM PTP450I RADIO
NETWORK CLOSET
FIBRE PATCH PANEL
FIBRE DEMARCATION PANEL
ETHERNET IP MANAGED ETHERNET SWITCH
COPPER PATCH PANEL
MODBUS TCP MANAGED ETHERNET SWITCH
COPPER PATCH PANEL
UPS
PLC CONTROL PANEL
WAO
WAO
MODBUS TCP/IP
AIR BURST SYSTEM
PLC
ETHERNET SWITCH
WAO
OIT
PLC - RACK 0
PA4
PROGRAMMING PORT
MODBUS TCP/IP COMMS MODULE
MONITOR
PANEL MOUNTED IGNITION SCADA CLIENT AND TOUCH SCREEN MONITOR
LAKE QIKITALIK LEVEL TRANSMITTER LIT02
CAMBIUM PTP450I RADIO
EXISTING WATER TREATMENT PLANT
RADIO LIGHTENING PROTECTION UNIT
MANAGED SWITCH WITH POE INJECTOR
CENTRAL IGNITION SERVER STRATUS FTSERVER 2810
FIBRE PATCH PANEL
MEDIA CONVERTER
NETWORK SWITCH
NETWORK SWITCH
NETWORK SWITCH
VALVE CHAMBER 1
NETWORK PANEL
FIBRE PATCH PANEL
NETWORK SWITCH
MODBUS TCP/IP
FIBRE PATCH PANEL
PRESSURE TRANSMITTER PIT31
PRESSURE TRANSMITTER PIT32
VALVE CHAMBER 1
NETWORK PANEL
FIBRE PATCH PANEL
NETWORK SWITCH
MODBUS TCP/IP
FIBRE PATCH PANEL
PRESSURE TRANSMITTER PIT33
PRESSURE TRANSMITTER PIT34
MOTORIZED VALVE BFV33
MOTORIZED VALVE BFV34
VALVE CHAMBER 1
NETWORK PANEL
FIBRE PATCH PANEL
NETWORK SWITCH
MODBUS TCP/IP
FIBRE PATCH PANEL
4 - 20 MA TO MODBUS TCP SIGNAL CONVERTER
4 - 20 MA TO MODBUS TCP SIGNAL CONVERTER
SERVICE CORRIDOR
FLOW TRANSMITTER FIT51
MOTORIZED VALVE GV51
MOTORIZED VALVE GV55
FLOW TRANSMITTER FIT52
MOTORIZED VALVE GV52
MOTORIZED VALVE GV56
LAKE GERALDINE LEVEL TRANSMITTER LIT51
RESERVOIR LEVEL TRANSMITTER LIT52

NOTE:

1. ALL TAGS ARE PREFIXED WITH LQPS.

6 STRAND SINGLE MODE FIBRE OPTIC CABLE
CAT 6 ETHERNET CABLE
COAX CABLE
ANALOG 4-20mA

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A1 - 841X594

0 10 20 30 40 50 60 70 80 90 100mm

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

A	**ISSUED FOR 50% DESIGN REVIEW**	**2025-12-19**
Revision	Description	Date

Consultant

ARCADIS

8133 Warden Avenue - Unit 300
Markham ON L6G 1B3 Canada
tel 905 763 2322
www.arcadis.com

Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
J.G.C.

Drawn by
M.H.

Approved by
J.G.C.

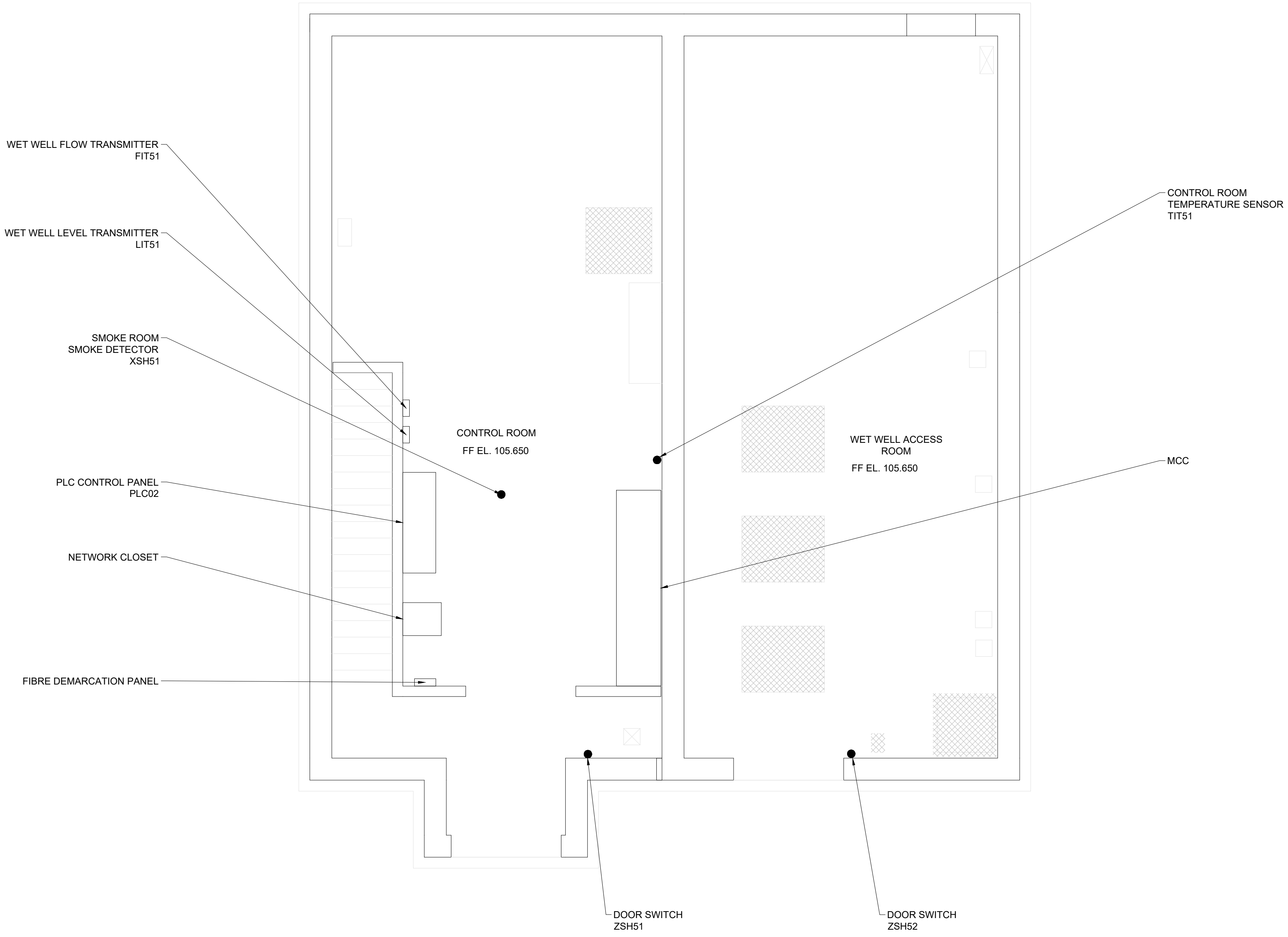
Project Manager
C.G.

Drawing title

INSTRUMENTATION AND CONTROL

LQ PUMP STATION
NETWORK ARCHITECTURE

Project no.	Drawing no.	Revision no.
30192375	**N103**	**A**



WET WELL FLOW TRANSMITTER
FIT51
WET WELL LEVEL TRANSMITTER
LIT51
SMOKE ROOM
SMOKE DETECTOR
XSH51
PLC CONTROL PANEL
PLC02
NETWORK CLOSET
FIBRE DEMARCATION PANEL
CONTROL ROOM
FF EL. 105.650
WET WELL ACCESS
ROOM
FF EL. 105.650
CONTROL ROOM
TEMPERATURE SENSOR
TIT51
MCC
DOOR SWITCH
ZSH51
DOOR SWITCH
ZSH52

FLOOR PLAN AT EL. 105.65m - APEX RIVER PUMP STATION

SCALE 1:50

NOTE:

1. ALL TAGS ARE PREFIXED WITH ARPS.

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
B	ISSUED FOR 50% DESIGN REVIEW	2025-12-19
A	ISSUED FOR PRELIMINARY DESIGN	2024-03-22

Consultant

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CITY OF IQALUIT

LONG TERM WATER PROGRAM
SUPPLY AND STORAGE

Designed by
J.G.C.

Drawn by
M.H.

Approved by
J.G.C.

Project Manager
C.G.

Drawing title

INSTRUMENTATION AND CONTROL

AR PUMP STATION
PLAN AT EL. 105.65m

Project no.	Drawing no.	Revision no.
30192375	N1101	B

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A1 – 841X594

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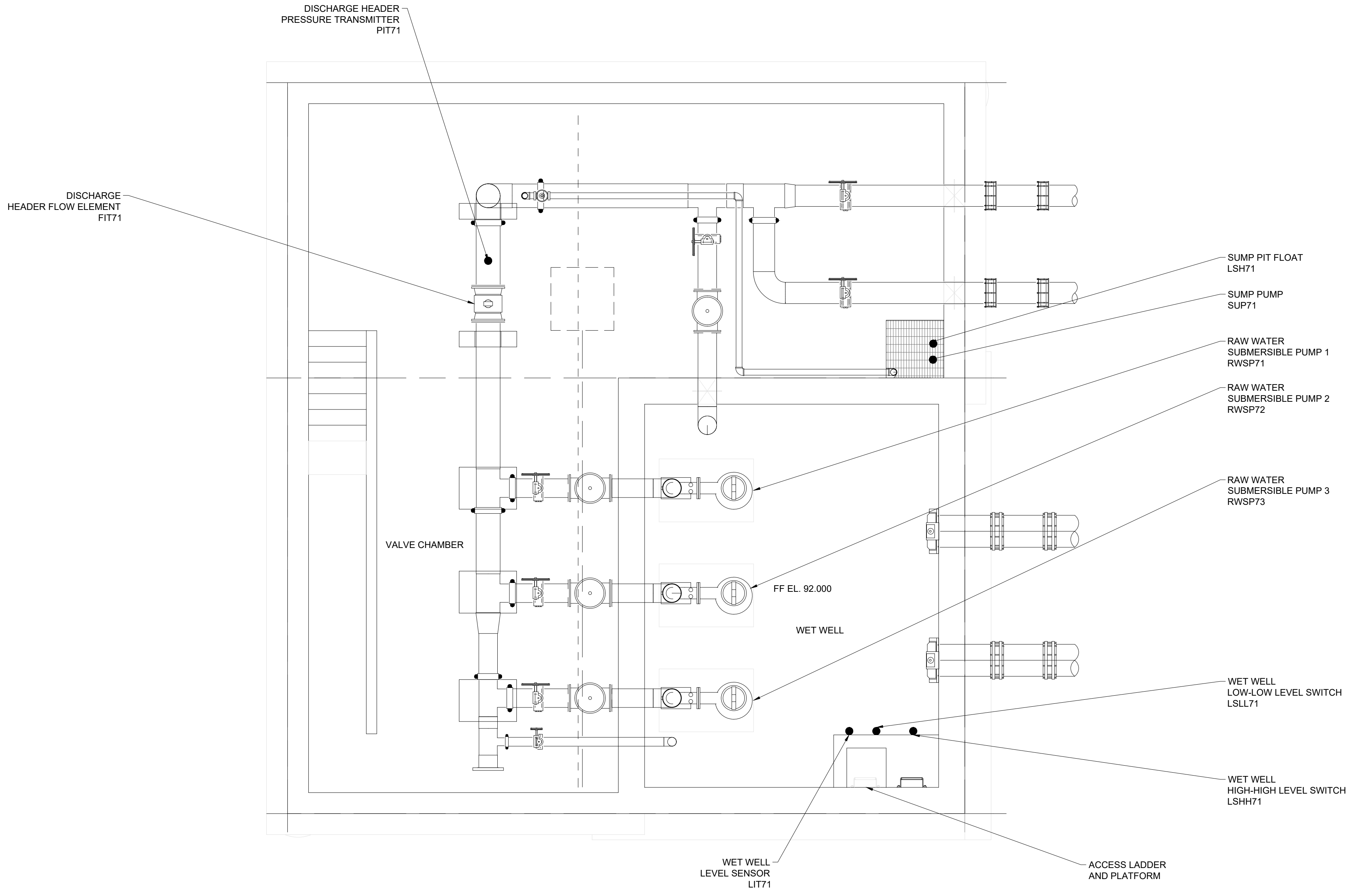
DISCHARGE HEADER
PRESSURE TRANSMITTER
PIT71
DISCHARGE
HEADER FLOW ELEMENT
FIT71
SUMP PIT FLOAT
LSH71
SUMP PUMP
SUP71
RAW WATER
SUBMERSIBLE PUMP 1
RWSP71
RAW WATER
SUBMERSIBLE PUMP 2
RWSP72
RAW WATER
SUBMERSIBLE PUMP 3
RWSP73
VALVE CHAMBER
FF EL. 92.000
WET WELL
WET WELL
LOW-LOW LEVEL SWITCH
LSLL71
WET WELL
HIGH-HIGH LEVEL SWITCH
LSHH71
ACCESS LADDER
AND PLATFORM
WET WELL
LEVEL SENSOR
LIT71

FLOOR PLAN AT EL 99.100m - APEX RIVER PUMP STATION

SCALE 1:50

NOTE:

1. ALL TAGS ARE PREFIXED WITH ARPS.

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
B	ISSUED FOR 50% DESIG REVIEW	
A	ISSUED FOR PRELIMINARY DESIGN	2024-03-22

Consultant

ARCADIS
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Project title

CITY OF IQALUIT

LONG TERM WATER PROGRAM SUPPLY AND STORAGE

Designed by
J.G.C.

Drawn by
M.H.

Approved by
J.G.C.

Project Manager
C.G.

Drawing title

INSTRUMENTATION AND CONTROL

AR PUMP STATION
PLAN AT EL. 99.100m

Project no.	Drawing no.	Revision no.
30192375	N1102	B

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A1 - 841X594

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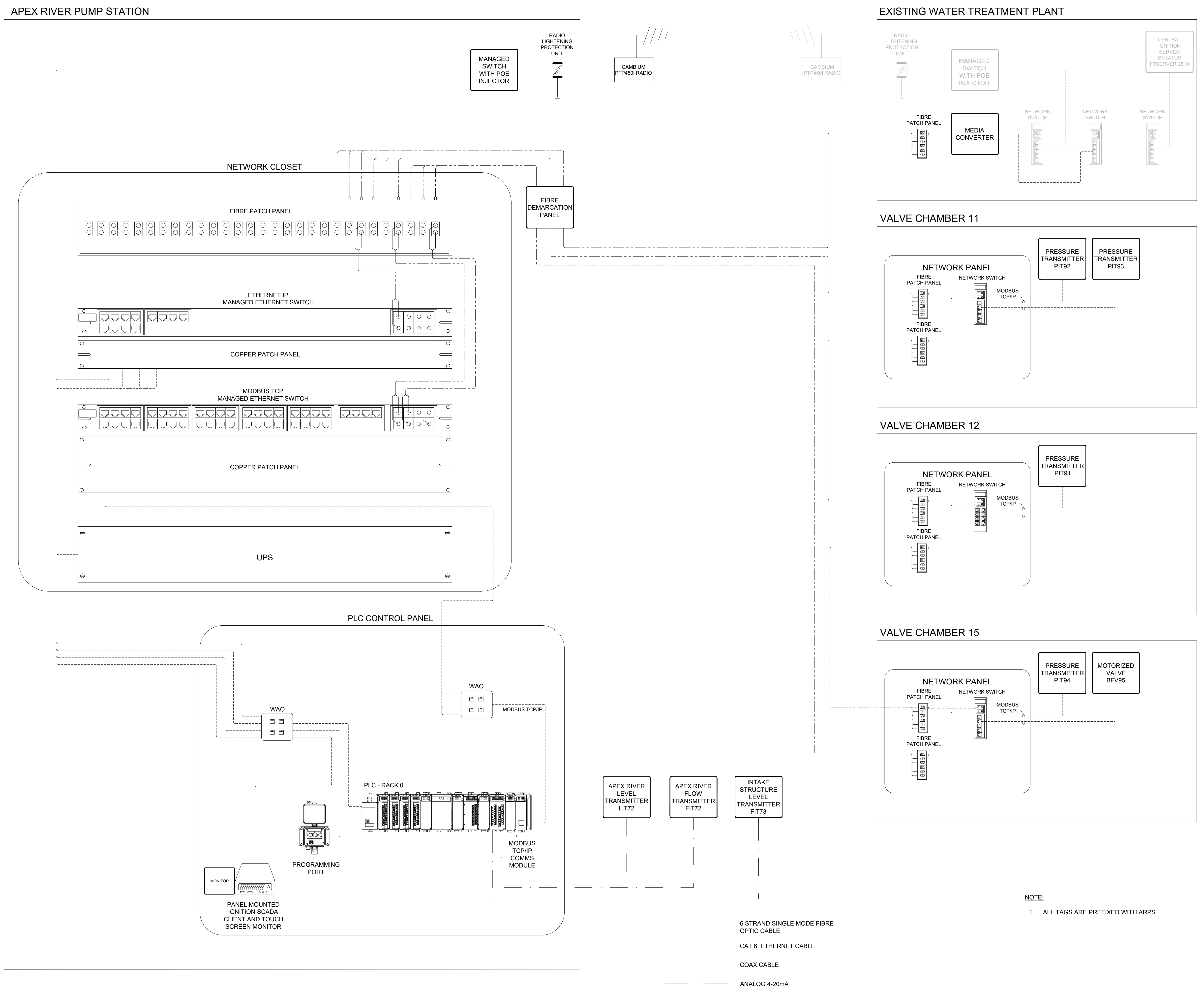
APEX RIVER PUMP STATION
MANAGED SWITCH WITH POE INJECTOR
RADIO LIGHTENING PROTECTION UNIT
CAMBIUM PTP450I RADIO
NETWORK CLOSET
FIBRE PATCH PANEL
FIBRE DEMARCATION PANEL
ETHERNET IP MANAGED ETHERNET SWITCH
COPPER PATCH PANEL
MODBUS TCP MANAGED ETHERNET SWITCH
COPPER PATCH PANEL
UPS
PLC CONTROL PANEL
WAO
WAO
MODBUS TCP/IP
PLC - RACK 0
MODBUS TCP/IP COMMS MODULE
PROGRAMMING PORT
MONITOR
PANEL MOUNTED IGNITION SCADA CLIENT AND TOUCH SCREEN MONITOR
APEX RIVER LEVEL TRANSMITTER LIT72
APEX RIVER FLOW TRANSMITTER FIT72
INTAKE STRUCTURE LEVEL TRANSMITTER FIT73
EXISTING WATER TREATMENT PLANT
CAMBIUM PTP450I RADIO
RADIO LIGHTENING PROTECTION UNIT
MANAGED SWITCH WITH POE INJECTOR
CENTRAL IGNITION SERVER STRATUS FTSERVER 2810
FIBRE PATCH PANEL
MEDIA CONVERTER
NETWORK SWITCH
NETWORK SWITCH
NETWORK SWITCH
VALVE CHAMBER 11
NETWORK PANEL
FIBRE PATCH PANEL
NETWORK SWITCH
MODBUS TCP/IP
FIBRE PATCH PANEL
PRESSURE TRANSMITTER PIT92
PRESSURE TRANSMITTER PIT93
VALVE CHAMBER 12
NETWORK PANEL
FIBRE PATCH PANEL
NETWORK SWITCH
MODBUS TCP/IP
FIBRE PATCH PANEL
PRESSURE TRANSMITTER PIT91
VALVE CHAMBER 15
NETWORK PANEL
FIBRE PATCH PANEL
NETWORK SWITCH
MODBUS TCP/IP
FIBRE PATCH PANEL
PRESSURE TRANSMITTER PIT94
MOTORIZED VALVE BFV95
6 STRAND SINGLE MODE FIBRE OPTIC CABLE
CAT 6 ETHERNET CABLE
COAX CABLE
ANALOG 4-20mA
0 10 20 30 40 50 60 70 80 90 100mm

NOTE:

1. ALL TAGS ARE PREFIXED WITH ARPS.

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A1 – 841X594

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ARCADIS PROFESSIONAL SERVICES (CANADA) INC.

Revision	Description	Date
A	**ISSUED FOR 50% DESIGN REVIEW**	**2025-12-19**

Consultant

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SUPPLY AND STORAGE**

Designed by
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Drawn by
M.H.

Approved by
J.G.C.

Project Manager
C.G.

Drawing title

INSTRUMENTATION AND CONTROL

**AR PUMP STATION
NETWORK ARCHITECTURE**

Project no.	Drawing no.	Revision no.
30192375	**N1103**	**A**