

Appendix A RECORD DRAWINGS



The Contractor shall verify and be responsible for all dimensions. DO NOT scale the drawing - any errors or omissions shall be reported to Stantec without delay.

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Consultants

Legend

WATER

ROADS

LOT BOUNDARIES

POWER POLES

EXAV

 - EXISTING VAULT REQUIRED MODIFICATION

AV

 - NEW VAULT

Notes

4	ACCESS ROAD WIDENING (CCN #3)	AK	MF	16.08.16
3	CHARS REALIGNMENT & PROFILE UPDATE (SI)	LM	AF	15.01.16
2	CHARS REALIGNMENT	AK	AF	14.12.08
Revision		By	Appd.	YY.MM.DD
E	AS-BUILT DRAWING	NL	MF	17.12.21
D	ISSUED FOR CONSTRUCTION	MN	WO	14.05.26
C	ISSUED FOR TENDER	AF	WO	14.02.14
B	ISSUED FOR 80% REVIEW	AF	WO	13.12.20
A	ISSUED FOR 50% REVIEW	AF	WO	12.11.09
Issued		By	Appd.	YY.MM.DD

File Name: 144901252	AF	WO	WO	13.12.19
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

Permit-Seal

AS-BUILT DRAWING

Client/Project

GOVERNMENT OF NUNAVUT

POTABLE WATER SYSTEM PHASE II

Cambridge Bay, Nunavut

Title

PROJECT LOCATION PLAN

Project No.
144901252

Scale 1:4000

Drawing No.

Sheet

Revision

C-101

1 of 24

3



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Consultants

Legend

ROADS	-----
LOT BOUNDARIES	- - - - -
POWER POLES	⊙
MAJOR TOPO LINE	_____
MINOR TOPO LINE	_____

EXAV

EXAV
 - EXISTING VAULT REQUIRED MODIFICATION

AV  - NEW VAULT

Notes

- CONTRACTOR TO COORDINATE ANY REMOVAL OF EXISTING SINGLE PHASE POWER LINE.
- REFER TO DETAILS AS APPLICABLE
- SEE ELECTRICAL SITE PLAN FOR UTILITY CONNECTIONS

4	ACCESS ROAD WIDENING (CCN #3)	AK	MF	16.08.16	
3	CHARS REALIGNMENT & PROFILE UPDATE (SJ)	LM	AF	15.01.16	
2	CHARS REALIGNMENT	AK	AF	14.12.08	
Revision		By	Appd.	YY.MM.DD	
E	AS-BUILT DRAWING	NL	MF	17.12.21	
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Issued		By	Appd.	YY.MM.DD	
File Name: 144901252		AF	WO	WO	13.12.19
		Dwn,	Chkd,	Dsgn,	YY.MM.DD

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AS-BUILT DRAWING

Client/Project
GOVERNMENT OF NUNAVUT

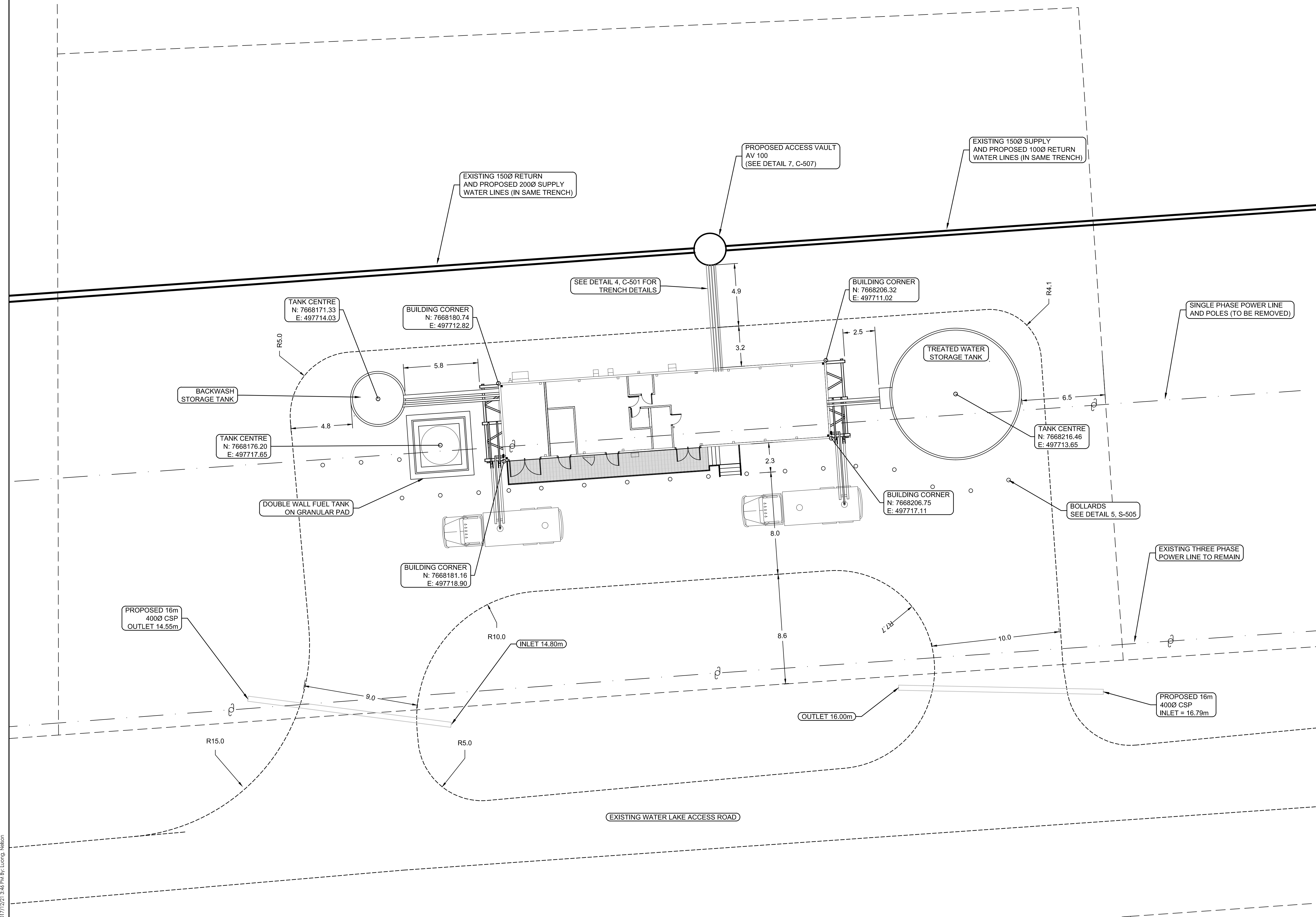
POTABLE WATER SYSTEM
PHASE II
Cambridge Bay, Nunavut

Title
WTP SITE LAYOUT

Project No.	Scale
144901252	1:150

Drawing No.	Sheet	Revision
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C-102 2 of 24 3



Consultants

Legend

- ROADS
- LOT BOUNDARIES
- POWER POLES
- MAJOR TOPO LINE
- MINOR TOPO LINE

- EXAV
- EXISTING VAULT REQUIRED MODIFICATION
- AV
- NEW VAULT

- Notes
- TYPE E - VAULTS 13 & 15
 - TYPE F - VAULTS 10 & 14
 - TYPE G - VAULTS 08, 09, 11 & 12
 - TYPE J - VAULTS 16
 - TYPE Q - VAULTS 100
 - FOR NORTH REHEAT STATION - SEE DETAIL 2, DRAWING C-508

	ACCESS ROAD WIDENING (CCN #3)	AK	MF	16.08.16
	CHARS REALIGNMENT & PROFILE UPDATE (SJ)	LM	AF	15.01.16
	CHARS REALIGNMENT	AK	AF	14.12.08
Revision		By	Appd.	YY.MM.DD
	AS-BUILT DRAWING	NL	MF	17.12.21
	ISSUED FOR CONSTRUCTION	MN	WO	14.05.26
	ISSUED FOR TENDER	AF	WO	14.02.14
	ISSUED FOR 80% REVIEW	AF	WO	13.12.20
	ISSUED FOR 50% REVIEW	AF	WO	12.11.09
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File Name:	144901252	AF	WO	WO	13.12.19
		Dwn.	Chkd.	Dsgn.	YY.MM.DD

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AS-BUILT DRAWING

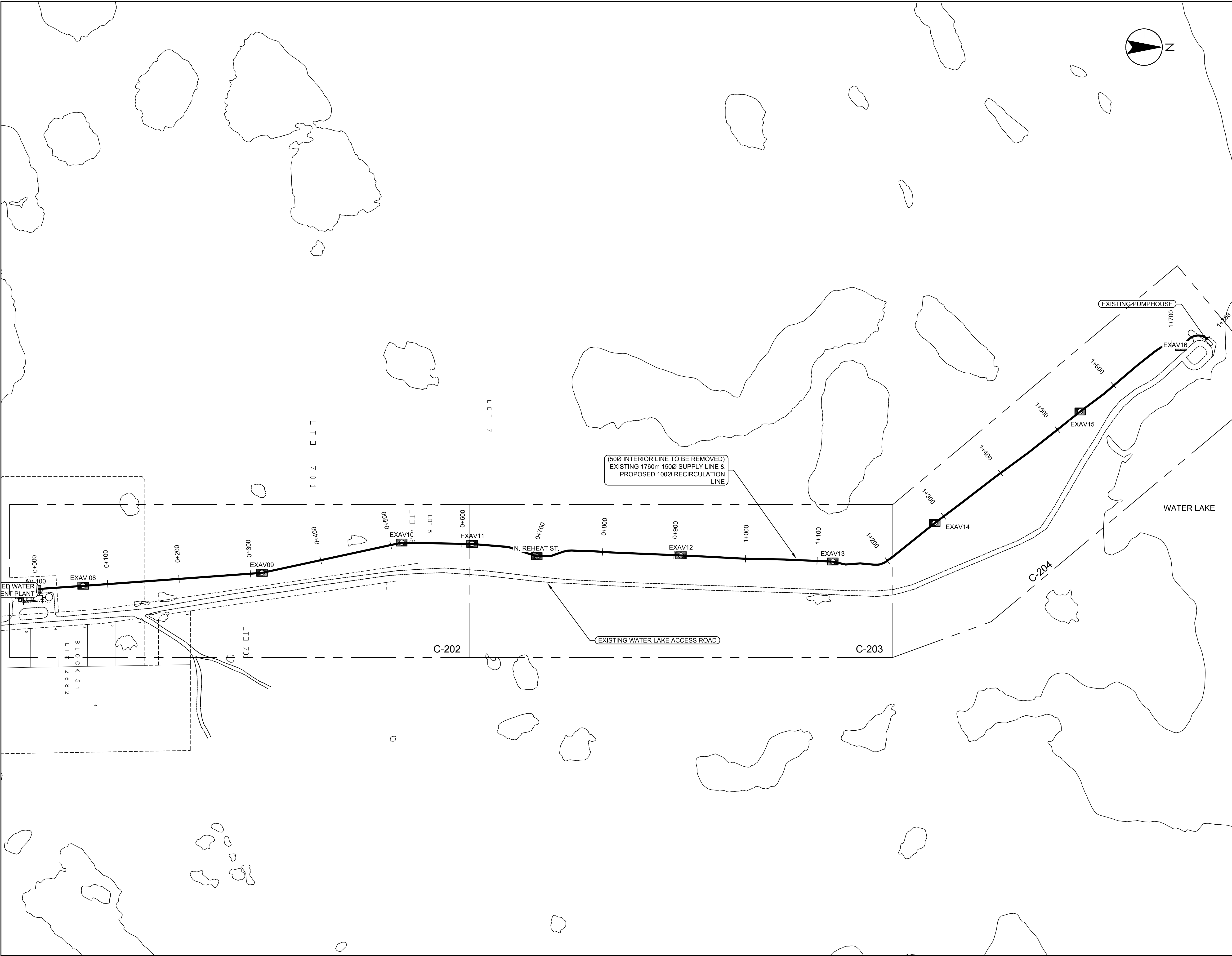
Client/Project
GOVERNMENT OF NUNAVUT

POTABLE WATER SYSTEM
PHASE II
Cambridge Bay, Nunavut

Title
RECIRCULATION LINE
ACCESS VAULT
LOCATIONS & TYPES

Project No.	Scale	
144901252	1:2500	
Drawing No.	Sheet	Revision

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Legend

ROADS

LOT BOUNDARIES

POWER POLES

MAJOR TOPO LINE

MINOR TOPO LINE

EXAV

 - EXISTING VAULT REQUIRED MODIFICATION

AV
 - NEW VAULT

Notes

- TYPE B - VAULT 02
- TYPE C - VAULT 05
- TYPE D - VAULT 06
- TYPE H - VAULTS 04 & 07
- TYPE K - VAULTS 102, 103, 105, 107, 108 & 109
- TYPE L - VAULT 104
- TYPE M - VAULT 106
- TYPE N - VAULT 110
- TYPE P - VAULT 101
- AV 01 IS TO BE REMOVED
- FOR 03a & 03b SERVICE CONNECTION SEE DETAIL 4 C-508
- FOR SOUTH REPEAT STATION - SEE DETAIL 3, DRAWING C-508
- TYPE Q - VAULT 100

4	ACCESS ROAD WIDENING (CCN #3)	AK	MF	16.08.16
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Issued _____ By _____ Appd. _____ YY.MM.DD

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Client/Project

GOVERNMENT OF NUNAVUT

POTABLE WATER SYSTEM
PHASE II

Cambridge Bay, Nunavut

Title

DISTRIBUTION LOOP ACCESS VAULT LOCATIONS & TYPES

Project No. _____

Scale
1:1250

Drawing No.

Sheet

Revision

C-104

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3



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Legend

EXAV
 EXISTING VAL

NEW PIPE

- ACTUAL NEW CONNECTION LOCATIONS TO BE CONFIRMED IN FIELD.

File Name: 144901252	AF	WO	WO	13.12.19
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

AS-BUILT DRAWING

GOVERNMENT OF NUNAVUT

Cambridge Bay, Nunavut

EXISTING AND NEW WATER CONNECTION DOWNTOWN

144901252

1:1250

Sheet

Sheet

revision

C-105

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Consultants

Legend

ROADS

LOT BOUNDARIES

POWER POLES

MAJOR TOPO LINE

MINOR TOPO LINE

EXAV

 - EXISTING VAULT REQUIRED MODIFICATION

AV - NEW VAULT

Notes

- TYPE T - VAULTS 201
- TYPE U - VAULT 202
- TYPE R - VAULT 203
- TYPE L - VAULTS 204, 205
- TYPE S - VAULT 206

4	ACCESS ROAD WIDENING (CCN #3)	AK	MF	16.08.16
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2	CHARS REALIGNMENT	AK	AF	14.12.08
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AS-BUILT DRAWING

Client/Project

GOVERNMENT OF NUNAVUT

POTABLE WATER SYSTEM PHASE II

Cambridge Bay, Nunavut

Title

CHARS LOOP ACCESS VAULT LOCATIONS & TYPES

Project No. 144901252	Scale 1:1250	
Drawing No.	Sheet	Revision

C-106

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Legend

ROADS

LOT BOUNDARIES

POWER POLES

MAJOR TOPO LINE

MINOR TOPO LINE

EXAV

AV - NEW VAULT

Notes

1. EXISTING GROUND BASED ON 2013 TOPOGRAPHIC SURVEY.

4	ACCESS ROAD WIDENING (CCN #3)	AK	MF			16.08.16
3	CHAS REALIGNMENT & PROFILE UPDATE (SI)	LM	AF			15.01.16
2	CHAS REALIGNMENT	AK	AF			14.12.08
Revision						
		By	Appd.			YY.MM.DD
E	A5-BUILT DRAWING	NL	MF			17.12.21
D	ISSUED FOR CONSTRUCTION	NN	WO			14.05.26
C	ISSUED FOR TENDER	AF	WO			14.02.14
B	ISSUED FOR 80% REVIEW	AF	WO			13.12.20
A	ISSUED FOR 50% REVIEW	AF	WO			12.11.09
Issued						
		By	Appd.			YY.MM.DD

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	Dwn.	Chkd.	Dsgn.	YY.MM.DD

Permit-Seal

AS-BUILT DRAWING

Client/Project

GOVERNMENT OF NUNAVUT

POTABLE WATER SYSTEM PHASE II

Cambridge Bay, Nunavut

Title

WTP PAD & ACCESS ROAD PLAN & PROFILE

Project No. _____

144901252

Scale

AS SHOWN

Drawing No.

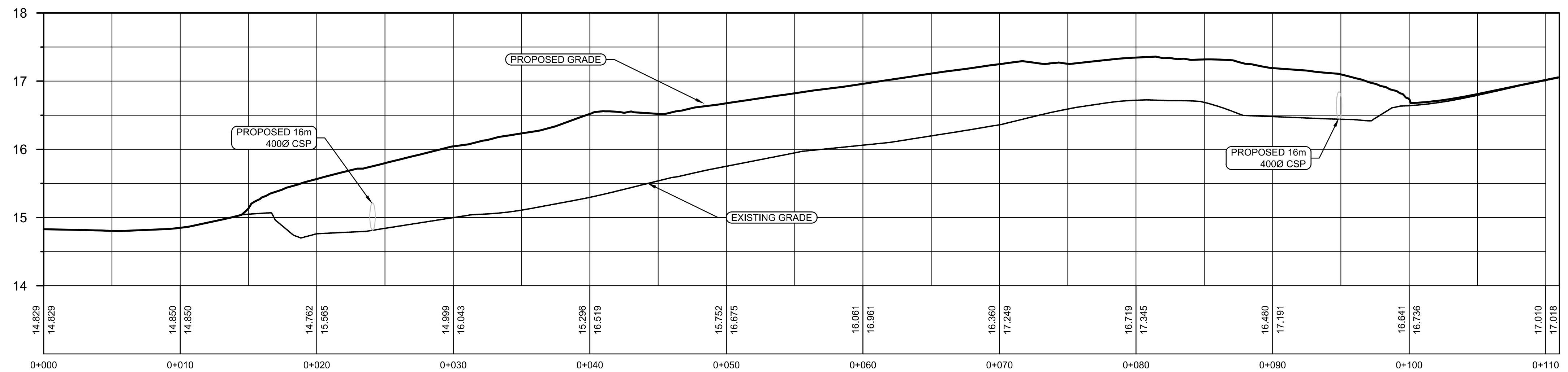
Sheet

revision

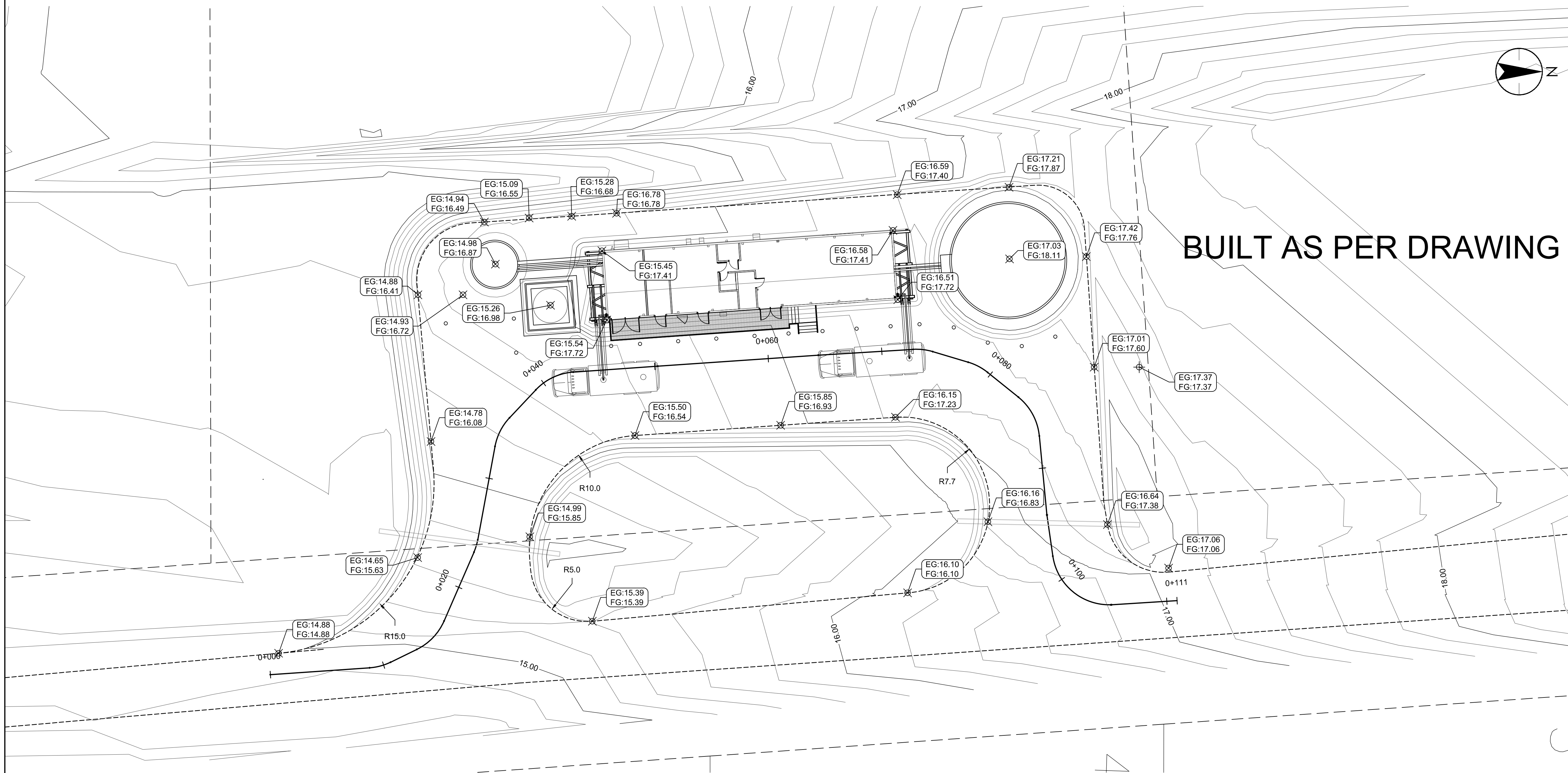
C-201

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1 WTP PAD & ACCESS ROAD PROFILE
C201 SCALE: H 1:200 V 1:40



2 WTP PAD & ACCESS ROAD PLAN
C201 SCALE: 1:200



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Legend

ROADS	-----
LOT BOUNDARIES	- - - - -
POWER POLES	⓪
MAJOR TOPO LINE	_____
MINOR TOPO LINE	_____

EXAV
 - EXISTING VAULT REQUIRED MODIFICATION

AV
 - NEW VAULT

1. ELEVATION AND GRADE INFORMATION OF THE EXISTING PIPELINE AND ACCESS VAULTS BASED ON DILLON CONSULTING JUNE 2004 *AS-BUILT* DRAWINGS.
2. PROPOSED 1000" RECIRCULATION LINE TO RUN ALONGSIDE EXISTING 1500" SUPPLY LINE AS PER DETAIL 1, C-505.
3. T.O.P = TOP OF PIPE
T.O.V = TOP OF VAULT
T.O.V.F = TOP OF VAULT FLOOR

4	ACCESS ROAD WIDENING (CCN #3)	AK	MF	16.08.16
3	CHARS REALIGNMENT & PROFILE UPDATE (SJ)	LM	AF	15.01.16
2	CHARS REALIGNMENT	AK	AF	14.12.08
Revision		By	Appd.	YY.MM.DD
E	A5-BUILT DRAWING	NL	MF	17.12.21
D	ISSUED FOR CONSTRUCTION	MN	WO	14.05.26
C	ISSUED FOR TENDER	AF	WO	14.02.14
B	ISSUED FOR 80% REVIEW	AF	WO	13.12.20
A	ISSUED FOR 50% REVIEW	AF	WO	12.11.09
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	Dwn.	Chkd.	Dsgn.	YY.MM.DD

AS-BUILT DRAWING

POTABLE WATER SYSTEM
PHASE II
Cambridge Bay, Nunavut

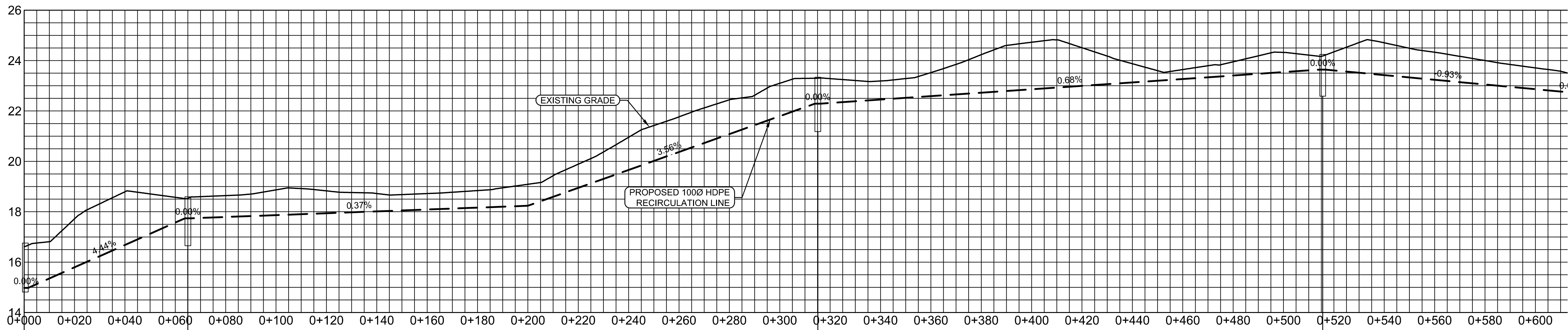
Title
NEW RECIRCULATION LINE
PLAN & PROFILE
0+000 TO 0+600

Project No. 144901252	Scale AS SHOWN	
Drawing No.	Sheet	Revision

C-202

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3



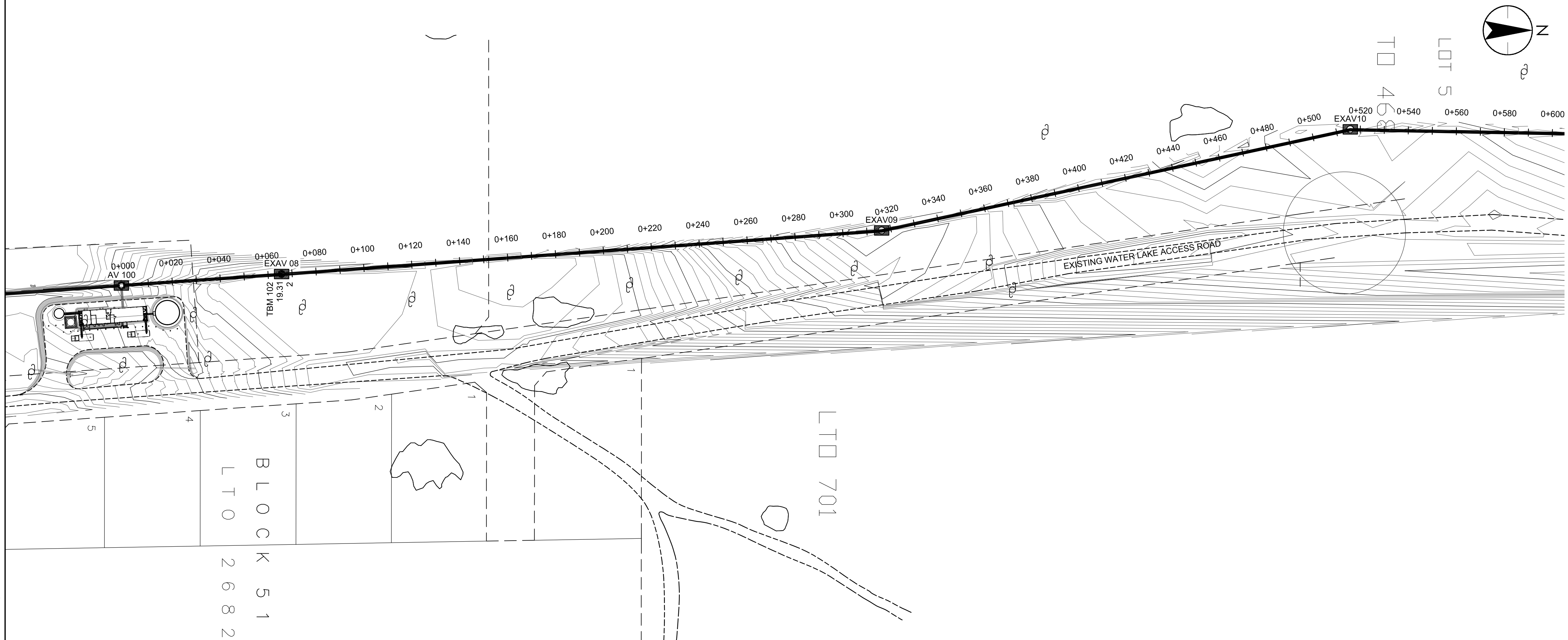
ACCESS VAULT DATA	
STATION	0+000
NORTHING	7668197.27
EASTING	497702.34
T.O.P. ELEV.	14.98
T.O.V ELEV.	16.79m
T.O.V.F ELEV.	14.60m
ACCESS VAULT	AV 100
VAULT TYPE	Q

ACCESS VAULT DATA	
STATION	0+065
NORTHING	7668025.63
EASTING	497747.49
T.O.P. ELEV.	17.74m
ACCESS VAULT EXAV 08	
VAULT TYPE	G

ACCESS VAULT DATA	
STATION	0+320
NORTHING	7668274.94
EASTING	497729.95
T.O.P. ELEV.	22.29m
ACCESS VAULT	EXAV 09
VAULT TYPE	G

ACCESS VAULT DATA	
STATION	0+515
NORTHING	7668470.64
EASTING	497690.52
T.O.P. ELEV.	23.64m
ACCESS VAULT	EXAV 10
VAULT TYPE	F

1 NEW RECIRCULATION LINE PROFILE
C202 SCALE: H 1:1000 V 1:100



2 NEW RECIRCULATION LINE PLAN
C202 SCALE: 1:1000

Consultants

Legend

- ROADS -----
- LOT BOUNDARIES - - - - -
- POWER POLES ⦿
- MAJOR TOPO LINE _____
- MINOR TOPO LINE _____

- EXAV
[Symbol] - EXISTING VAULT REQUIRED MODIFICATION
- AV
[Symbol] - NEW VAULT

Notes

- ELEVATION AND GRADE INFORMATION OF THE PIPELINE AND ACCESS VAULTS BASED ON DILLON CONSULTING JUNE 2004 AS-BUILT DRAWINGS.
- T.O.P = TOP OF PIPE
T.O.V = TOP OF VAULT
T.O.V.F = TOP OF VAULT FLOOR

4	ACCESS ROAD WIDENING (CCN #3)	AK	MF 16.08.16
3	CHARS REALIGNMENT & PROFILE UPDATE (SJ)	LM	AF 15.01.16
2	CHARS REALIGNMENT	AK	AF 14.12.08
Revision		By	Appd. YY.MM.DD
E	AS-BUILT DRAWING	NL	MF 17.12.21
D	ISSUED FOR CONSTRUCTION	MN	WO 14.05.26
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	Dwn.	Chkd.	Dsgn.	YY.MM.DD

Permit-Seal

AS-BUILT DRAWING

Client/Project
GOVERNMENT OF NUNAVUT

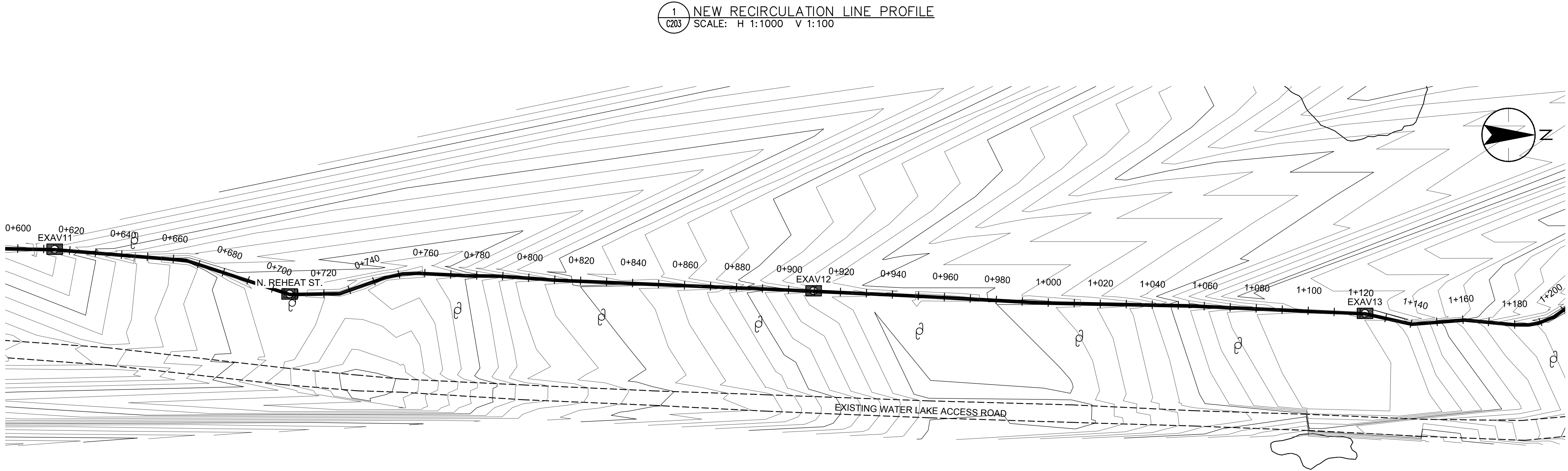
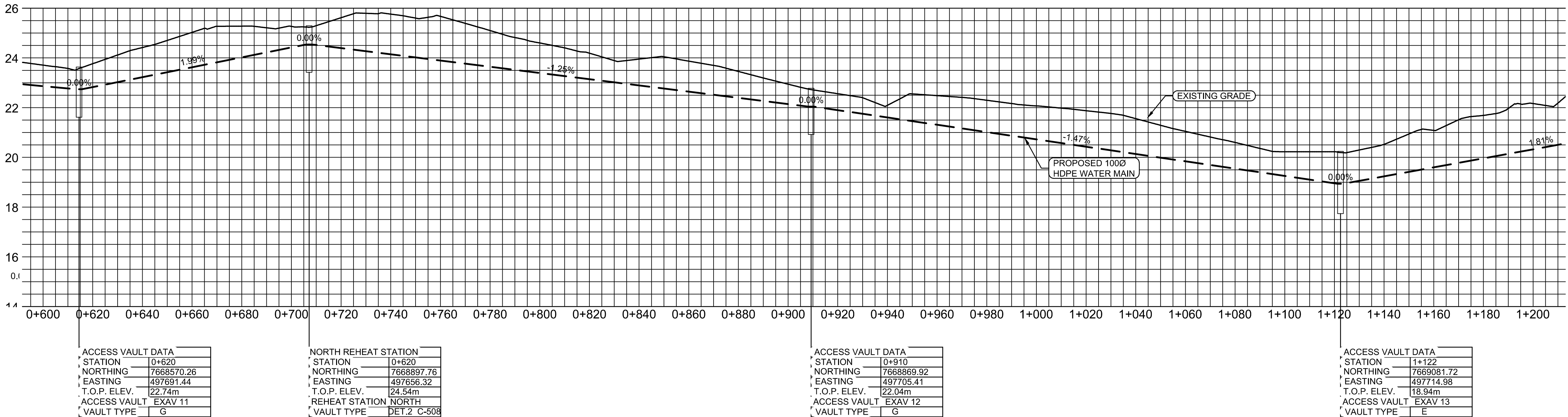
POTABLE WATER SYSTEM
PHASE II
Cambridge Bay, Nunavut

Title
NEW RECIRCULATION LINE
PLAN & PROFILE
0+600 TO 1+200

Project No. 144901252
Scale AS SHOWN

Drawing No. Sheet Revision

C-203 9 of 24 3





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Legend

EXAV
 - EXISTING VAULT REQUIRED MODIFICATION

AV
 - NEW VAULT

1. ELEVATION AND GRADE INFORMATION OF THE PIPELINE AND ACCESS VAULTS BASED ON DILLON CONSULTING JUNE 2004 AS-BUILT DRAWINGS.
2. T.O.P = TOP OF PIPE
T.O.V = TOP OF VAULT
T.O.V.F = TOP OF VAULT FLOOR

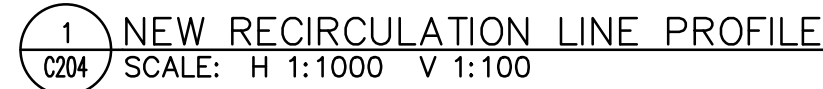
File Name: 144901252	AF	WO	WO	13.12.19
	Dwn.	Chkd.	Dsgn.	YY.MM.D

AS-BUILT DRAWING

POTABLE WATER SYSTEM
PHASE II
Cambridge Bay, Nunavut

NEW RECIRCULATION LINE PLAN & PROFILE 1+200 TO 1+758

C-204 10 of 24 3





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Legend

Notes

1. ELEVATION AND GRADE INFORMATION OF THE PIPELINE AND ACCESS VAULTS BASED ON DILLON CONSULTING JUNE 2004 AS-BUILT DRAWINGS.
2. T.O.P = TOP OF PIPE
T.O.V = TOP OF VAULT
T.O.V.F = TOP OF VAULT FLOOR

4	ACCESS ROAD WIDENING (CCN #3)	AK	MF 16.08.16
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E	A5-BUILT DRAWING	NL	MF 17.12.21
D	ISSUED FOR CONSTRUCTION	MN	WO 14.05.26
C	ISSUED FOR TENDER	AF	WO 14.02.14
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A	ISSUED FOR 50% REVIEW	AF	WO 12.11.09
Issued		By	Appd. YY.MM.DD

File Name: 144901252	AF	WO	WO	13.12.19
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

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Client/Project
GOVERNMENT OF NUNAVUT

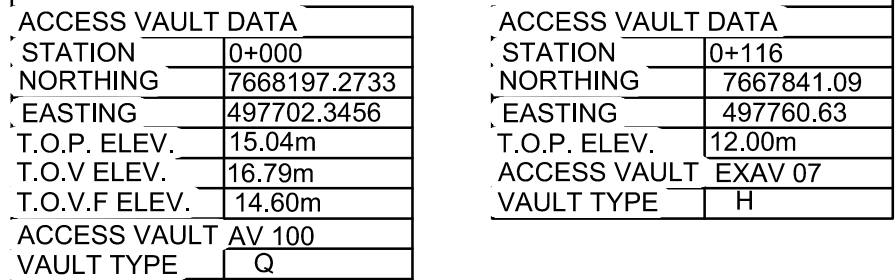
POTABLE WATER SYSTEM
PHASE II
Cambridge Bay, Nunavut

Title
NEW DISTRIBUTION LOOP
PLAN & PROFILE
0+000 TO 0+420

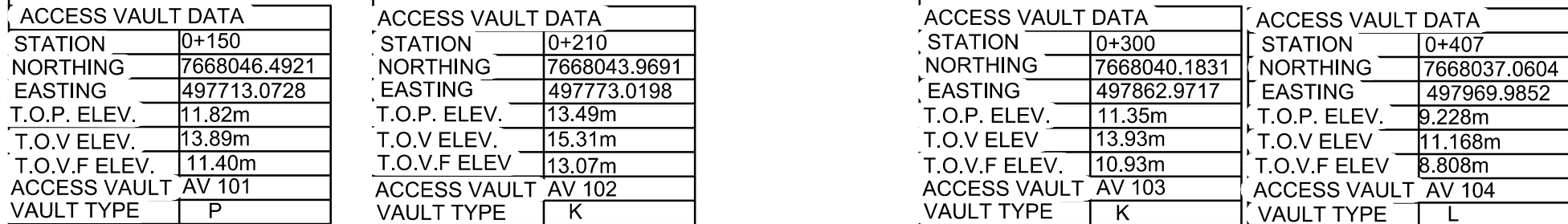
Project No. 144901252	Scale AS SHOWN
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Drawing No.	Sheet	Revision
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1 NEW DISTRIBUTION LOOP PROFILE
C205 SCALE: H 1:1000 V 1:100



2 NEW DISTRIBUTION LOOP PROFILE
C205 SCALE: H 1:1000 V 1:100





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Legend

LOT BOUND

MAJOR TOPO LINE —

MINOR TOPO LINE

EXAV

 - EXISTING VAULT REQUIRED MODIFICATION

AV
 - NEW VAULT

Notes

1. ELEVATION AND GRADE INFORMATION OF THE PIPELINE AND ACCESS VAULTS BASED ON DILLON CONSULTING JUNE 2004 *AS-BUILT* DRAWINGS.
2. EXAV 01 TO BE REMOVED. SEE DWG C-105.
3. T.O.P = TOP OF PIPE
T.O.V = TOP OF VAULT
T.O.V.F = TOP OF VAULT FLOOR

4	ACCESS ROAD WIDENING (CCN #3)	AK	MF		16.08.16
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Client/Project

GOVERNMENT OF NUNAVUT

POTABLE WATER SYSTEM
PHASE II
Cambridge Bay, Nunavut

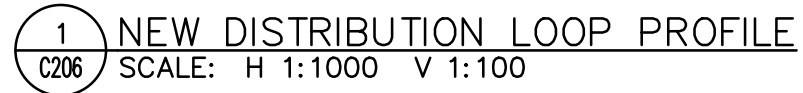
Title

NEW DISTRIBUTION LOOP
PLAN & PROFILE
0+420 TO 1+060

Project No. 144901252 Scale AS SHOWN

Drawing No.	Sheet	Revision
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Legend

Notes

1. T.O.P = TOP OF PIPE
T.O.V = TOP OF VAULT
T.O.V.F = TOP OF VAULT FLOOR

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Permit-Seal

Client/Project

GOVERNMENT OF NUNAVUT

POTABLE WATER SYSTEM PHASE II

Cambridge Bay, Nunavut

Title

CHARS DISTRIBUTION LOOP
PLAN & PROFILE
0+000 TO 0+500

Project No.

144901252

Scale

AS SHOWN

Drawing No.

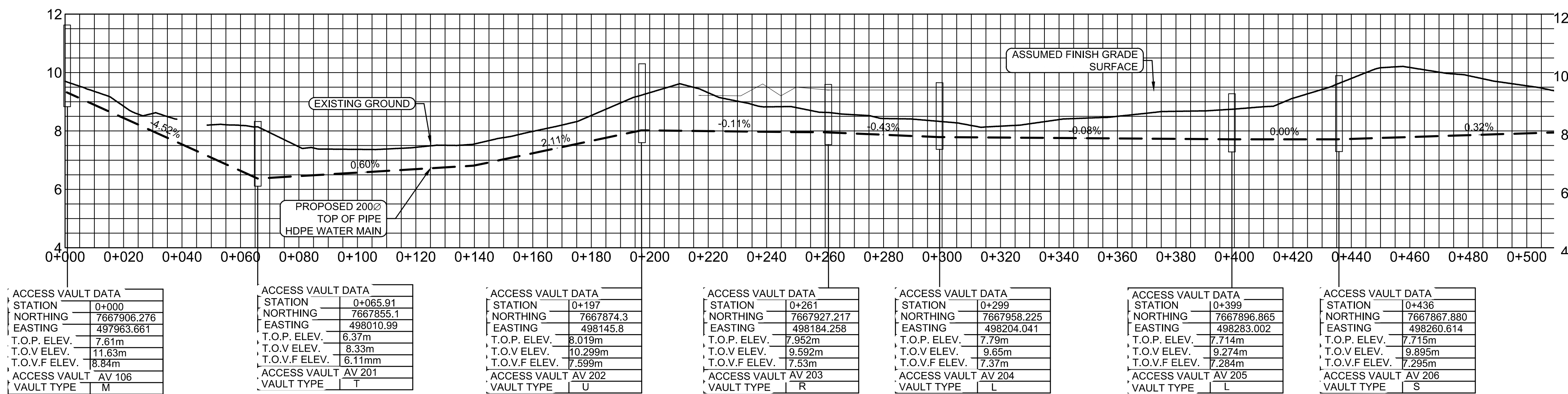
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Revision

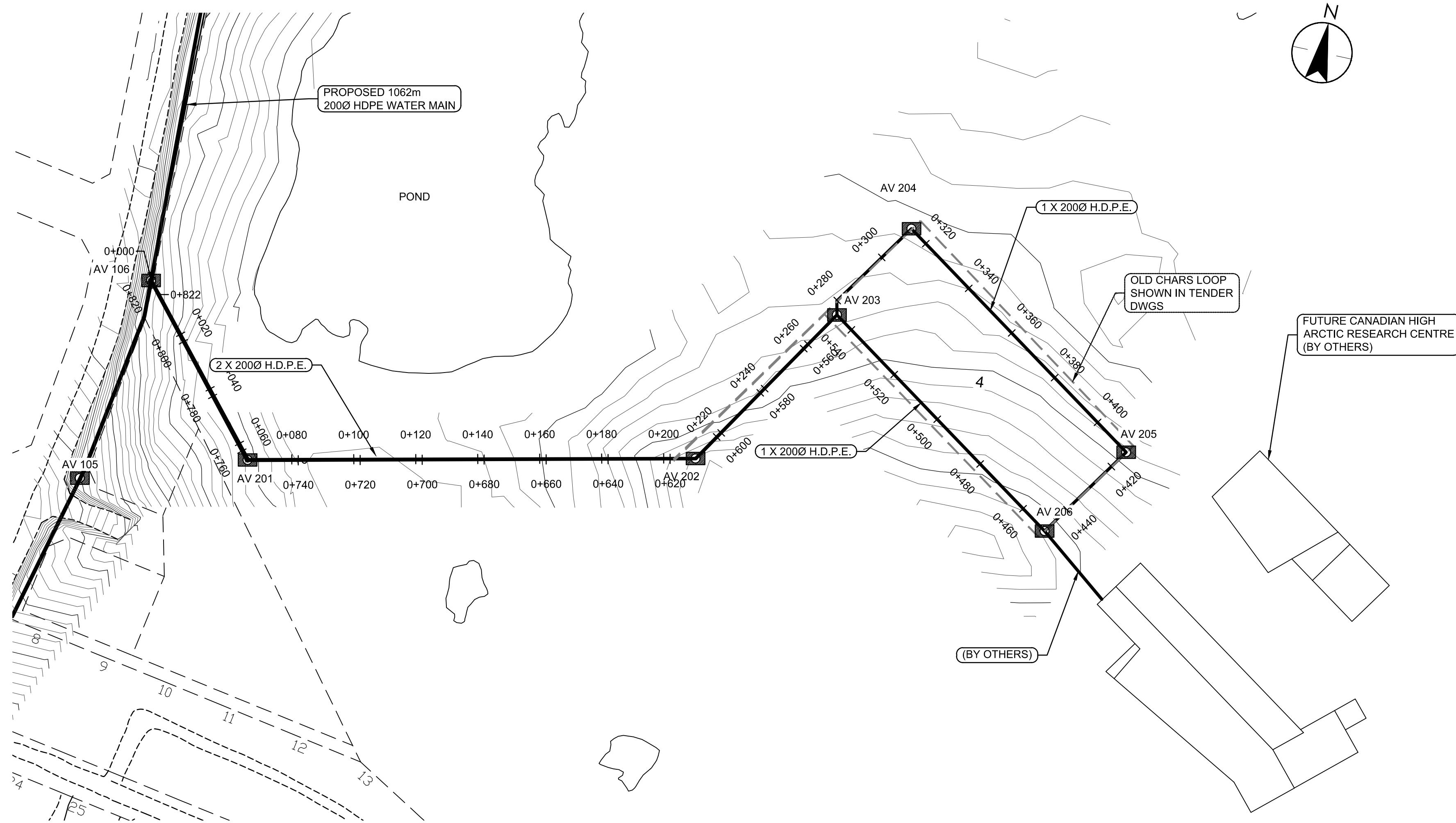
C-207

13 of 24

3



1 CHARS DISTRIBUTION LOOP PROFILE
C207 SCALE: H 1:1000 V 1:100



2 CHARS DISTRIBUTION LOOP PLAN
C207 SCALE: 1:1000



Consultants

ROADS	-----
LOT BOUNDARIES	- - - - -
POWER POLES	⓪
MAJOR TOPO LINE	=====
MINOR TOPO LINE	=====

AV  - NEW VAULT

1. T.O.P = TOP OF PIPE
T.O.V = TOP OF VAULT
T.O.V.F = TOP OF VAULT FLOOR

File Name: 144901252	AF	WO	WO	13.12.19
	Dwn.	Chkd.	Dsgn.	YY.MM.D

Permit-Seal

Client/Project
GOVERNMENT OF NUNAVUT

POTABLE WATER SYSTEM
PHASE II
Cambridge Bay, Nunavut

Project No. 144901252	Scale AS SHOWN
Drawing No.	Sheet Revision

3



4	ACCESS ROAD WIDENING (CCN #3)	AK	MF	16.08.16
3	CHARS REALIGNMENT & PROFILE UPDATE (S)	LM	AF	15.01.16
2	CHARS REALIGNMENT	AK	AF	14.12.08
Revision		By	Appd.	YY.MM.DD
E	AS-BUILT DRAWING	NL	MF	17.12.21
D	ISSUED FOR CONSTRUCTION	MN	WO	14.05.26
C	ISSUED FOR TENDER	AF	WO	14.02.14
B	ISSUED FOR 80% REVIEW	AF	WO	13.12.20
A	ISSUED FOR 50% REVIEW	AF	WO	12.11.09
Issued		By	Appd.	YY.MM.DD

File Name:	144901252	AF	WO	WO	13.12.19
		Dwn.	Chkd.	Dsgn.	YY.MM.DD

Permit-Seal

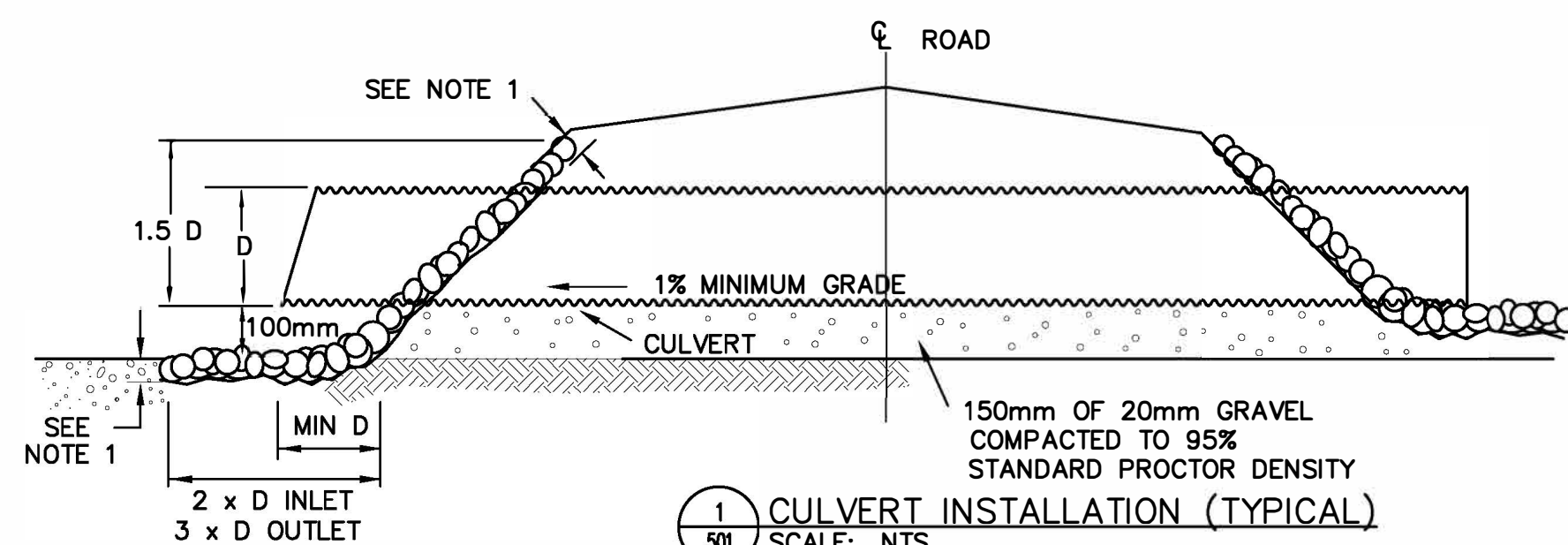
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Client/Project
GOVERNMENT OF NUNAVUT

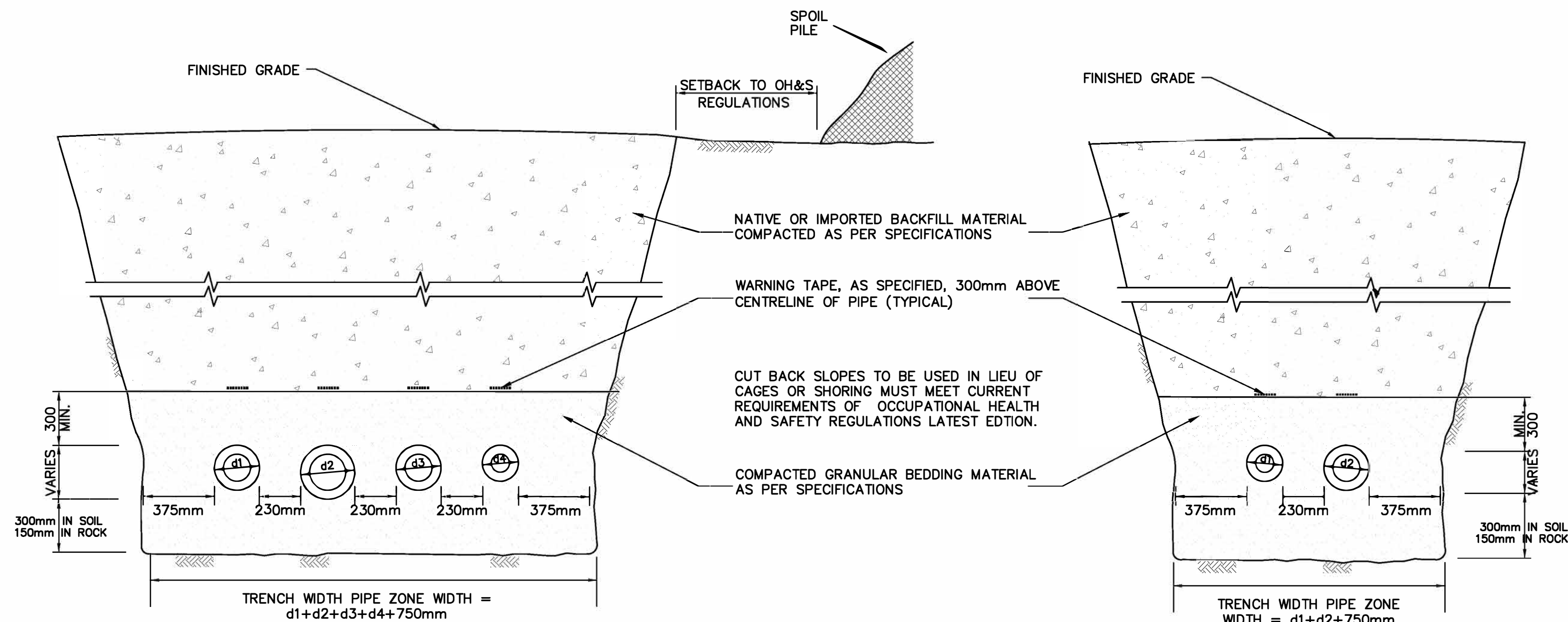
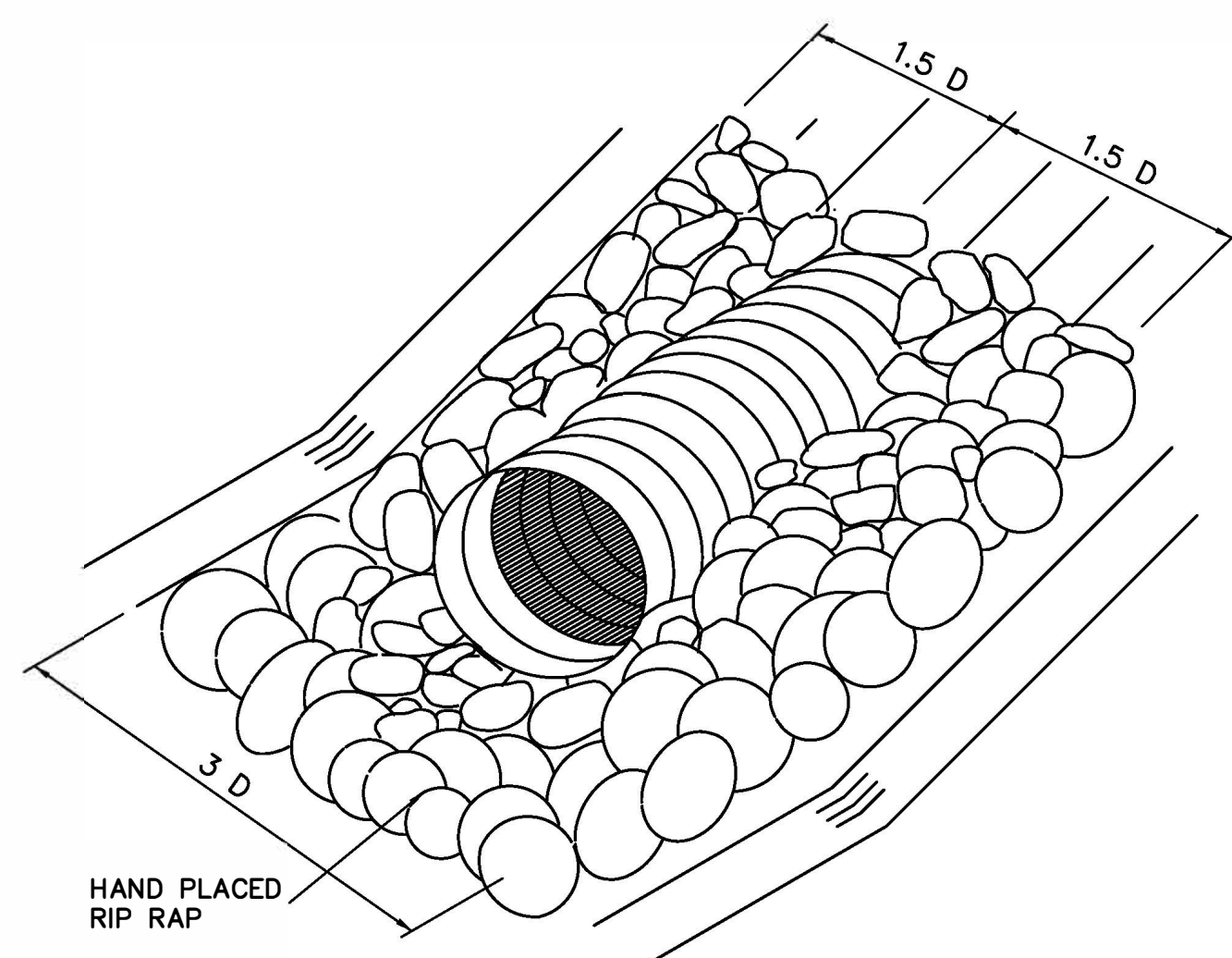
POTABLE WATER SYSTEM
PHASE II
Cambridge Bay, Nunavut

Title
CIVIL DETAILS

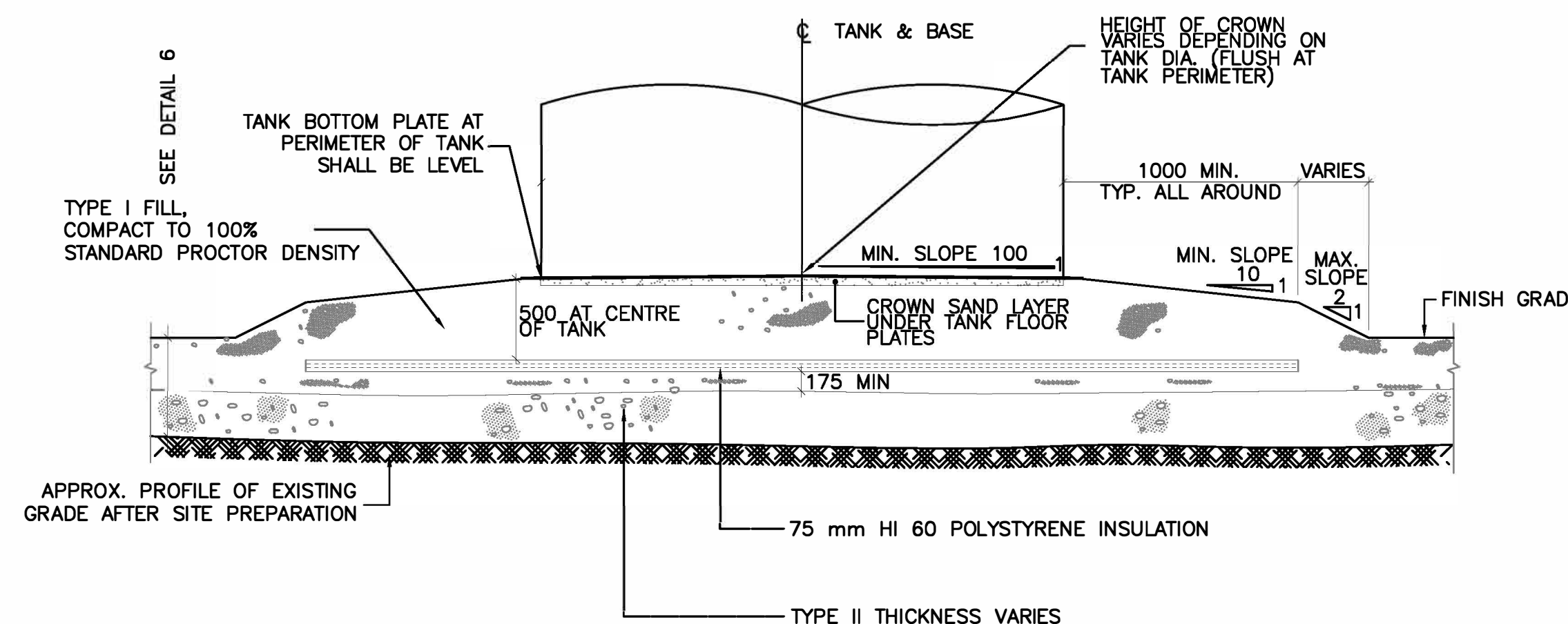
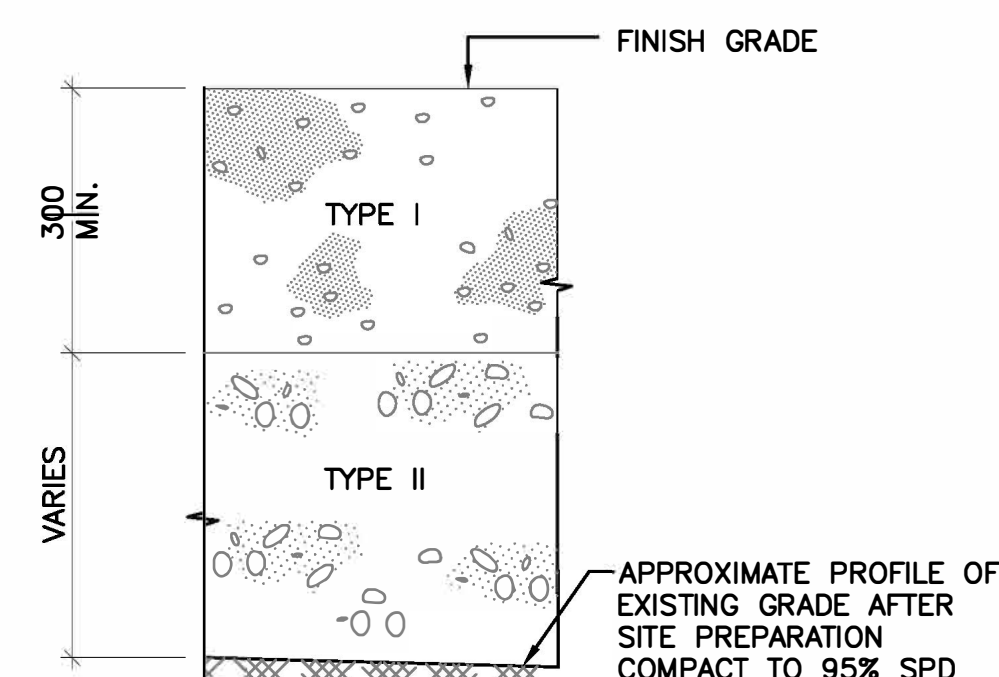
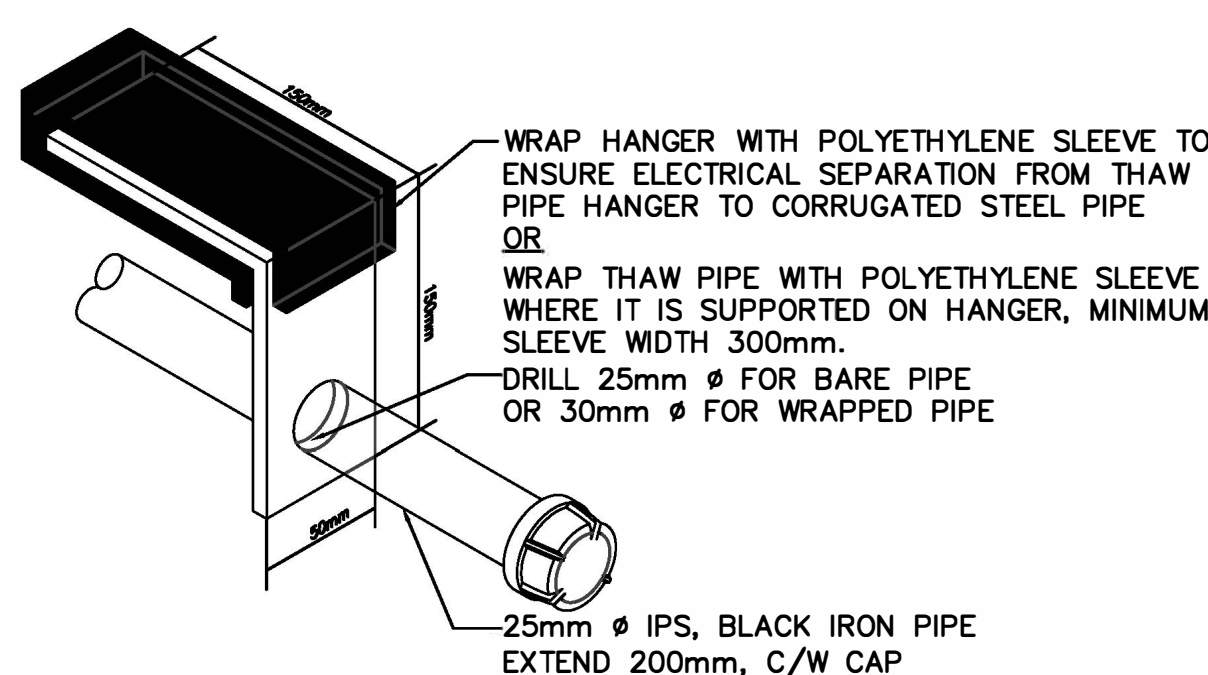
Project No. 144901252	Scale N.T.S.
Drawing No. C-501	Sheet 15 of 24
	Revision 3

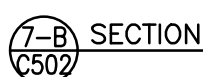
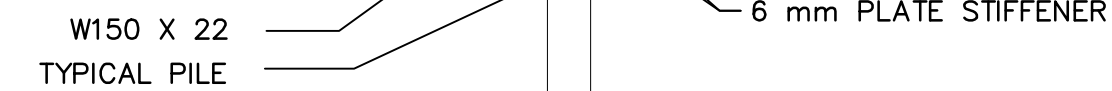
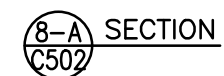


- NOTE:
- THICKNESS 300mm (D SMALLER THAN 1400mm)
 - THICKNESS 600mm (D=1400-2000mm)
 - RIP RAP SHALL BE HAND PLACED ROCK COBBLE OR BAGGED CONCRETE, AS SPECIFIED BY THE ENGINEER.
 - MINIMUM CULVERT DIA 300mm
 - 100mm DROP FROM BOTTOM OF CULVERT TO RIP RAP IS FOR OUTLET END ONLY.

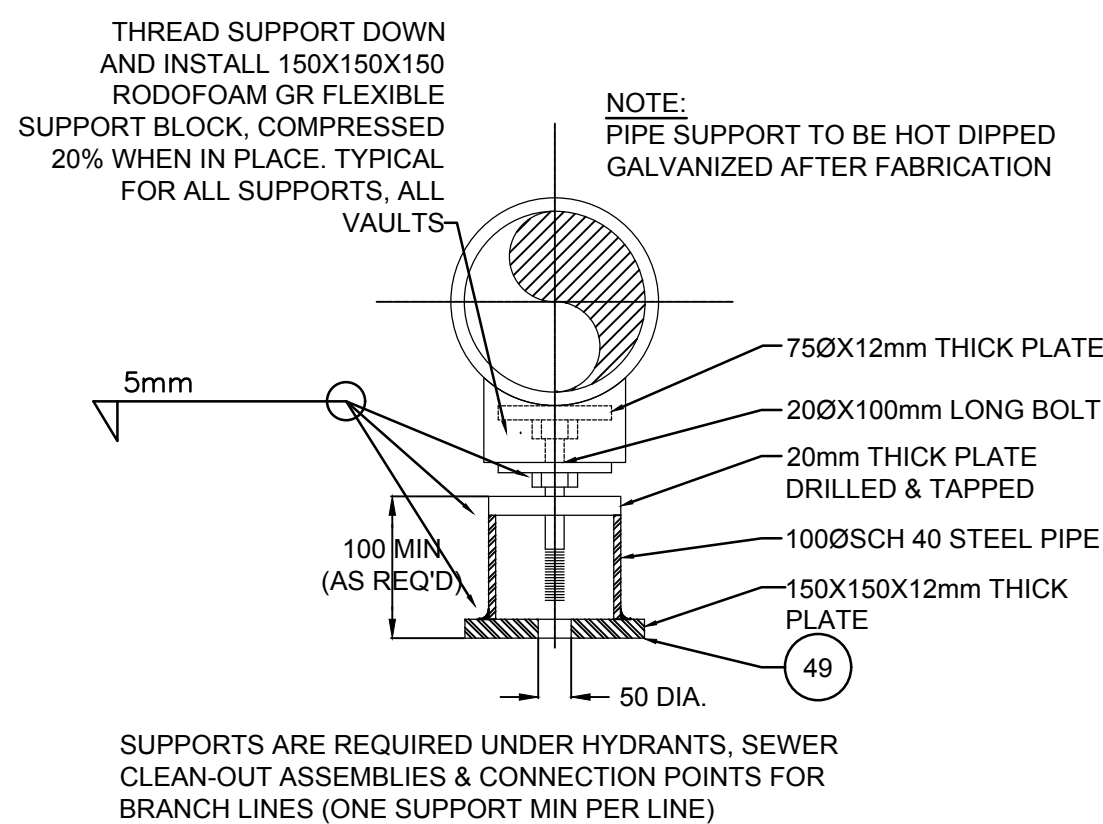


- NOTE:
- ALL DIMENSIONS ARE IN MILLIMETERS
 - CONTRACTOR SHALL CONTACT OCCUPATIONAL HEALTH AND SAFETY BOARD TO DETERMINE CURRENT CUT-BACK SLOPE REQUIREMENTS
 - d= PIPE OUTSIDE DIAMETER OVER INSULATION

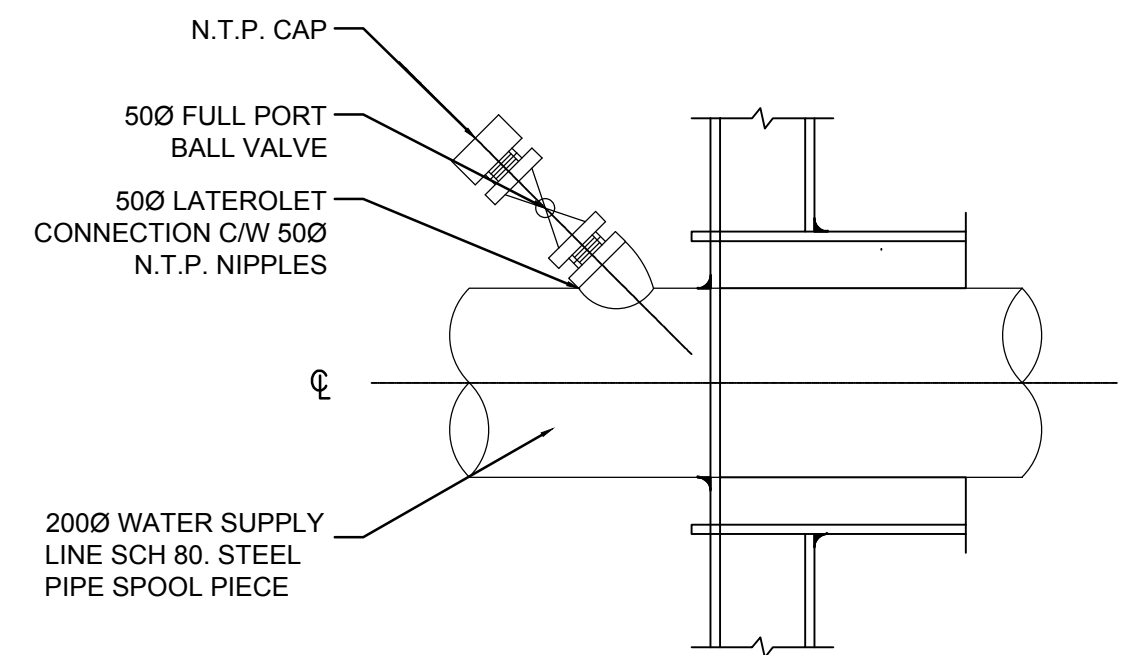




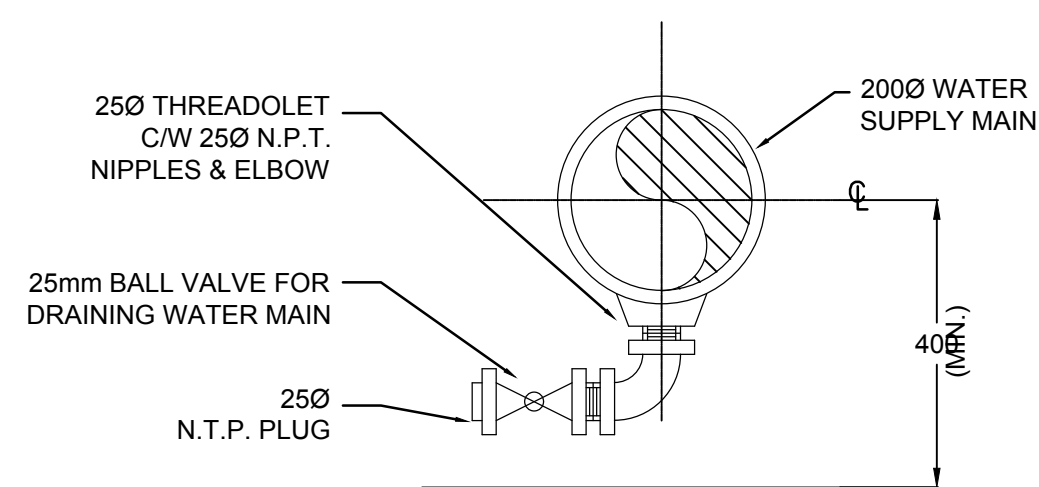
- 20mm THK HD POLYETHYLENE SHEET, THERMAL BREAK
- 12mmØ GALVANIZED STEEL BOLTS, NUTS, AND WASHERS 210mm EQUAL SPACING.
- HASP ASSEMBLY (DETAIL 2-C5)
- 50mm X 60mm X 12mm STEEL HINGE BASE PLATE WELDED TO ACCESS VAULT TOP
- 19mm X 38mm 35 DUROMETER SOFT NATURAL RUBBER STRIP (REVERSIBLE) GASKET TO ACHIEVE AIRTIGHT & WATERPROOF SEAL ALL AROUND (DETAIL 3-C5)
- 50mm X 10mm BAR, WELD CONTINUOUS AROUND TOP OF VAULT BARREL, DRILL TO MATCH TOP LID.
- LIFTING EYE 12mmØ STEEL X 40mm INSIDE LOOP
- 6mm GALVANIZED STEEL NUT. COUNTERSUNK SHEET METAL SCREWS @ 100mm CENTERS
- 6mm X 19mm GALVANIZED STEEL COUNTERSUNK SHEET METAL SCREWS @ 100mm CENTERS
- POLYURETHANE SHEET INSULATION, 240 kPa CUT TO SIZE
- 20mm THICK HIGH DENSITY POLYETHYLENE
- HINGES SPACED @ 400mm APART.
- THUNDER-LINE CORP. LINK-SEAL MODEL LS-500-C (200X350) OR APPROVED EQUAL TO FIT ITEMS 14 & 40
- 200mmØ CRANE MCavity M-67 "IN-LINE" FIRE HYDRANT LIFTING LUGS - TWO PER ACCESS VAULT. 150mm X 75mm X 12mm THICK WITH 38mmØ LIFTING EYE, C/W 200 X 200 X 12 STEEL REINFORCING PLATE CURVED TO RADIUS, CONTINUOUSLY WELDED.
- 65mmØ THREADED STEEL HALF NIPPLE CONDUIT SLEEVE (FOR EXTENSION CORD OR SUMP PUMP DISCHARGE) IN APPROPRIATE LOCATION, C/W THREADED GALVANIZED STEEL CAPS
- SPRAYED POLYURETHANE INSULATION 240kPa (TYPICAL).
- LADDER, LENGTH AS REQUIRED. 450m WIDE MADE FROM 65mm X 12mm FLAT BAR VERTICALS & SUPPORTS WITH 20mmØ RUNGS. WELDED CONSTRUCTION THROUGHOUT ALL EDGES TO BE GROUND SMOOTH GALVANIZED AFTER FABRICATION. FASTEN WITH STEEL STUDS WELDED TO INNER WALL.
- 38mm THICK STYROFOAM, 4 PIECES, OUTER EDGE TO MATCH ITEM 21 - DOW CHEMICAL H 60, 410 kPa COMPRESSIVE STRENGTH.
- FILLER PIECE 10mm THICK STYROFOAM DOW CHEMICAL H 60
- 38mm THICK STYROFOAM DOW CHEMICAL H 60. SEE SPECIFIC VAULT DETAIL FOR DIMENSIONS
- POLYURETHANE SHEET INSULATION CUT TO SIZE, 240kPa
- 10mm THICK SQUARE STEEL BASE PLATE. SEE SPECIFIC VAULT DETAILS FOR DIMENSIONS.
- 6mm THICK STEEL PLATE ACCESS VAULT CONSTRUCTION
- 150mmØ SANITARY SEWER ENTRY, SCHEDULE 8 STEEL PIPE SPOOL PIECE.
- WATERMAIN ENTRY. SCHEDULE 80 STEEL PIPE SPOOL PIECE. WELDED STEEL SLIP-ON FLANGE.
- DR 17 SERIES DR 17 SUB END, ASA 125# CAST IRON (DUCTILE) METAL BACKUP FLANGE, CADMIUM PLATED NUTS, BOLTS AND WASHERS AND STUB END GASKET
- FLANGE INSULATION KIT, 470mm OD FOR 200mmØ PE PIPE, 407mm OD FOR 150mmØ PE PIPE, 290mm OD FOR 50mmØ. (MASTIC COATED INNER SURFACES) AND FRP COATING.
- FLANGE INSULATION KIT, 290mm OD FOR 50mmØ PE PIPE, 407mm OD FOR 150mmØ PE PIPE, 470mm OD FOR 200mmØ PE PIPE, 535mm OD FOR 250mmØ PE (MASTIC COATED INNER SURFACES) AND FRP COATING.
- 200mmØ/150mmØ (I.P. SIZE) DR 17 PE/50mmØ DR 17 PE SUB END, ASA 125# CAST IRON (DUCTILE) METAL BACKUP FLANGE, CADMIUM PLATED NUTS, BOLTS & WASHERS, AND STUB END GASKET
- RAYCHEM THERMACLAD HEAT SHRINK TAPE, 2 LAYERS MIN. 50% OVERLAP EACH WRAP.
- 50mm THICK POLYURETHANE INSULATION HALVES OR PE PIPE PER-INSULATION TO SUIT PIPE SIZES
- 200mmØ (IP SIZE) PE WATERMAIN OR 50mmØ (IP SIZE) PE WATERMAIN
- STEEL RING SECTION WELDED TO ACCESS VAULT OUTER WALL
- 6mm THICK X 470mm OD FOR 200mmØ, 290mm OD FOR 50mmØ
- HOT DIPPED GALVANIZED STEEL PIPING.
- 50mmØ LATROLET
- 25mmØ THREDOLET
- STEEL RING SECTION WELDED TO ACCESS VAULT OUTER WALL
- 6mm THICK X 407mm OD FOR 150mmØ SEWER LINE, 470mm OD FOR 200Ø SEWER LINE.
- HYDRANT COLLAR, 350mmØ SCHEDULE 10 (346mm ID) STEEL PIPE X 100mm LONG WELDED TO ACCESS VAULT EXTERIOR TOP PLATE
- 200mmØ/150mmØ WELDED STEEL SLIP-ON FLANGE
- 200mmØ (IP SIZE) PE SEWER MAIN.
- 50mm THICK POLYURETHANE INSULATION HALVES OR PE PIPE PER-INSULATION TO SUIT PIPE SIZES
- POLYETHYLENE LINER TUB, PACK WITH STYROFOAM INSULATION.



N.T.S.



N.T.S.



N.T.S



ACCESS ROAD WIDENING (CCN #3)	AK	MF	16.08.16
CHARS REALIGNMENT & PROFILE UPDATE (SI)	LM	AF	15.01.16
CHARS REALIGNMENT	AK	AF	14.12.08
Revision	By	Appd.	YY.MM.DD
AS-BUILT DRAWING	NL	MF	17.12.21
ISSUED FOR CONSTRUCTION	MN	WO	14.05.26
ISSUED FOR TENDER	AF	WO	14.02.14
ISSUED FOR 80% REVIEW	AF	WO	13.12.20
ISSUED FOR 50% REVIEW	AF	WO	12.11.09
Issued	By	Appd.	YY.MM.DD

File Name:	AF	WO	WO	13.12.19
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

Permit-Seal

AS-BUILT DRAWING

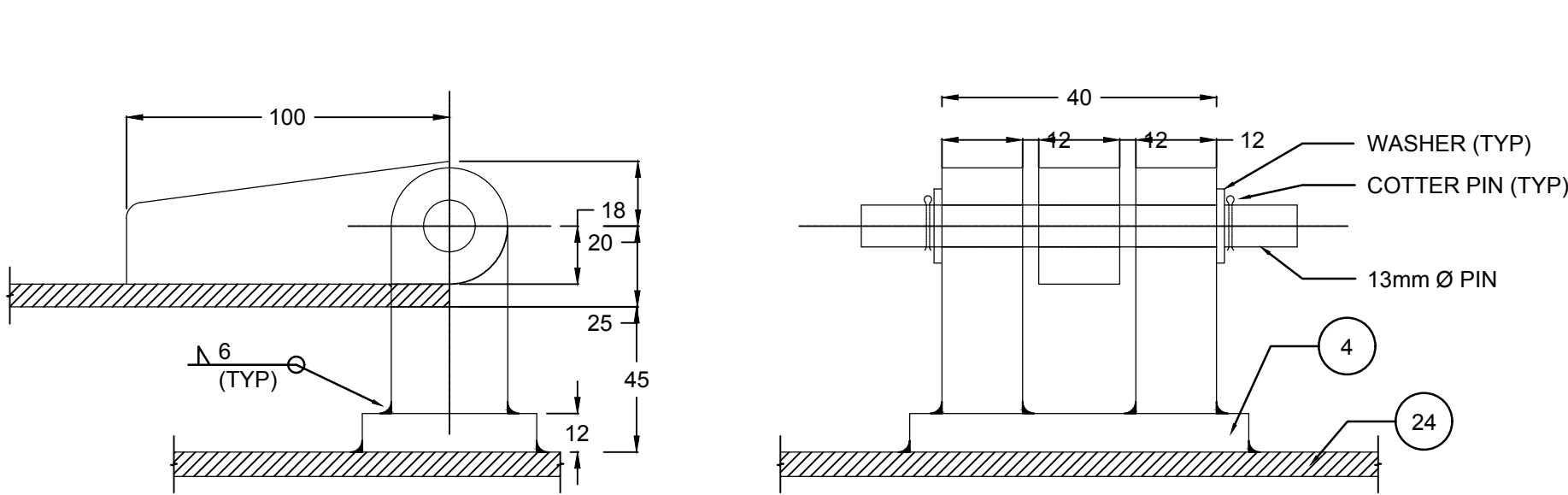
Client/Project
GOVERNMENT OF NUNAVUT

POTABLE WATER SYSTEM
PHASE II
Cambridge Bay, Nunavut

Title
ACCESS VAULT
STANDARD DETAILS
SHEET TWO

Project No.	Scale	
144901252	AS SHOWN	
Drawing No.	Sheet	Revision

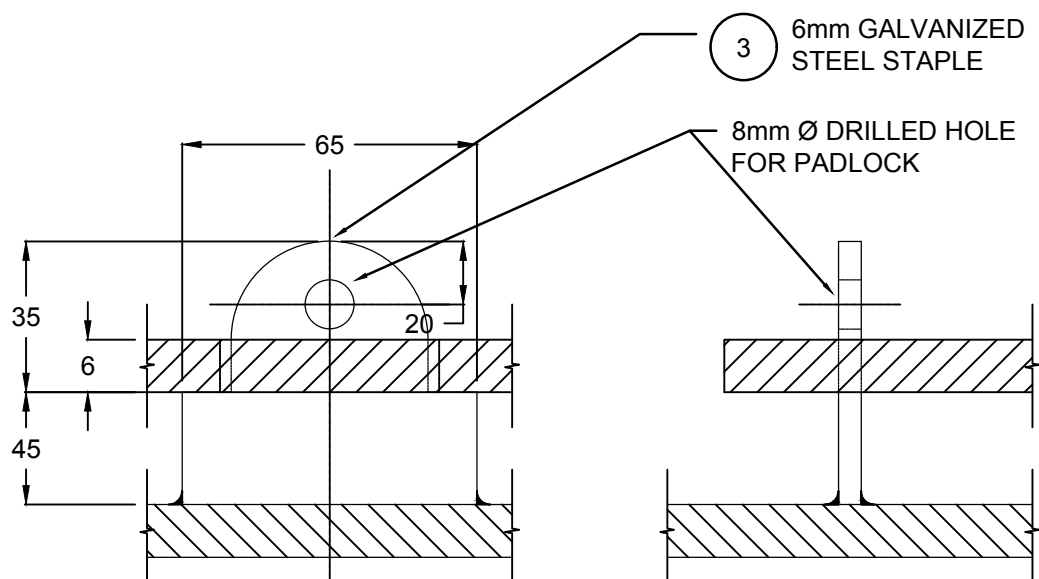
C-504 18 of 24 3



COVER HINGE DETAIL

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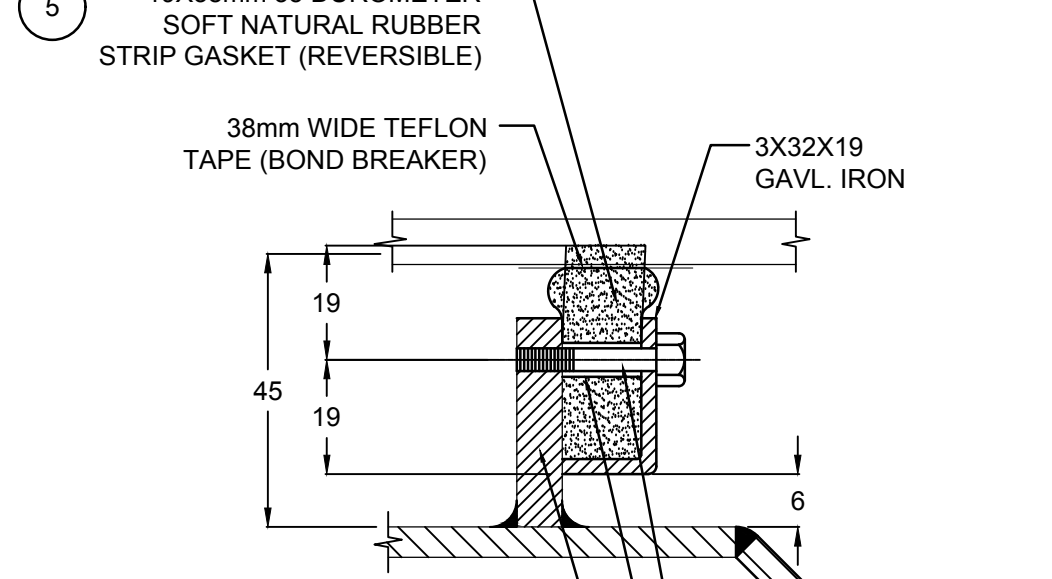
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C504



LOCK HASP DETAIL

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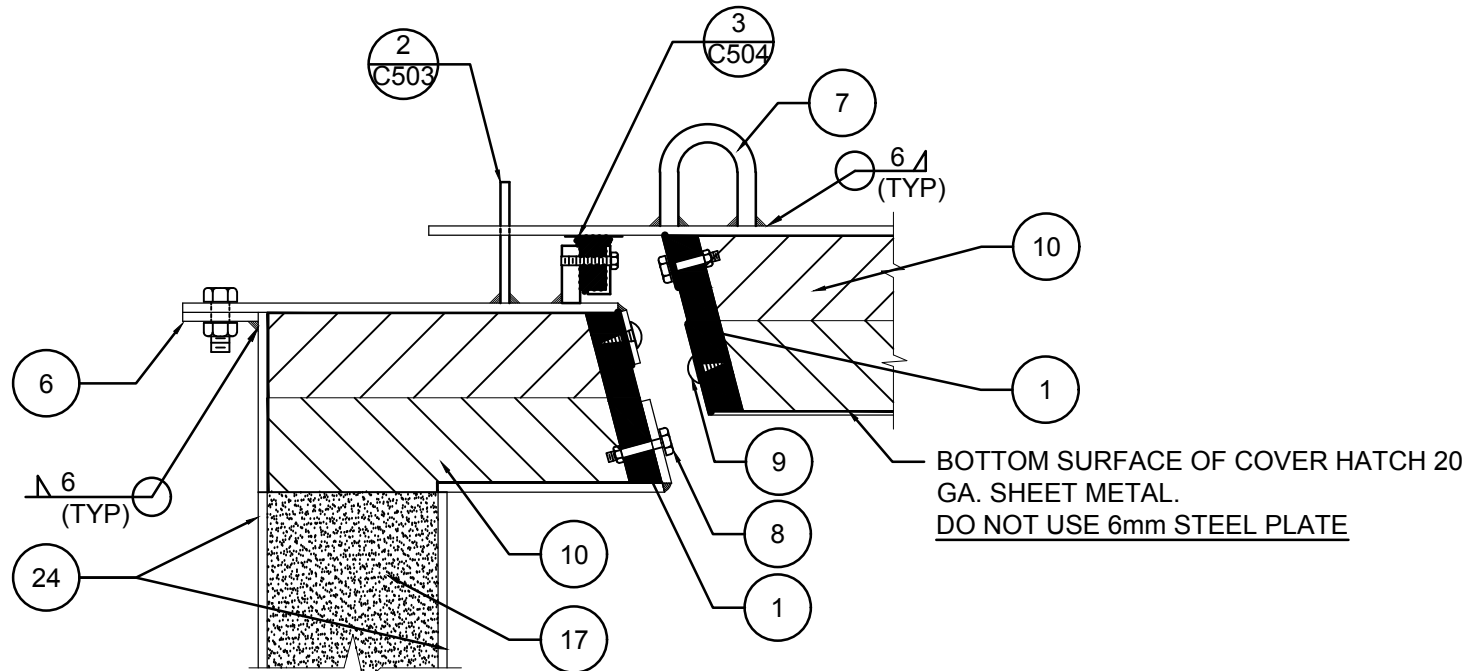
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COVER SEAL DETAIL

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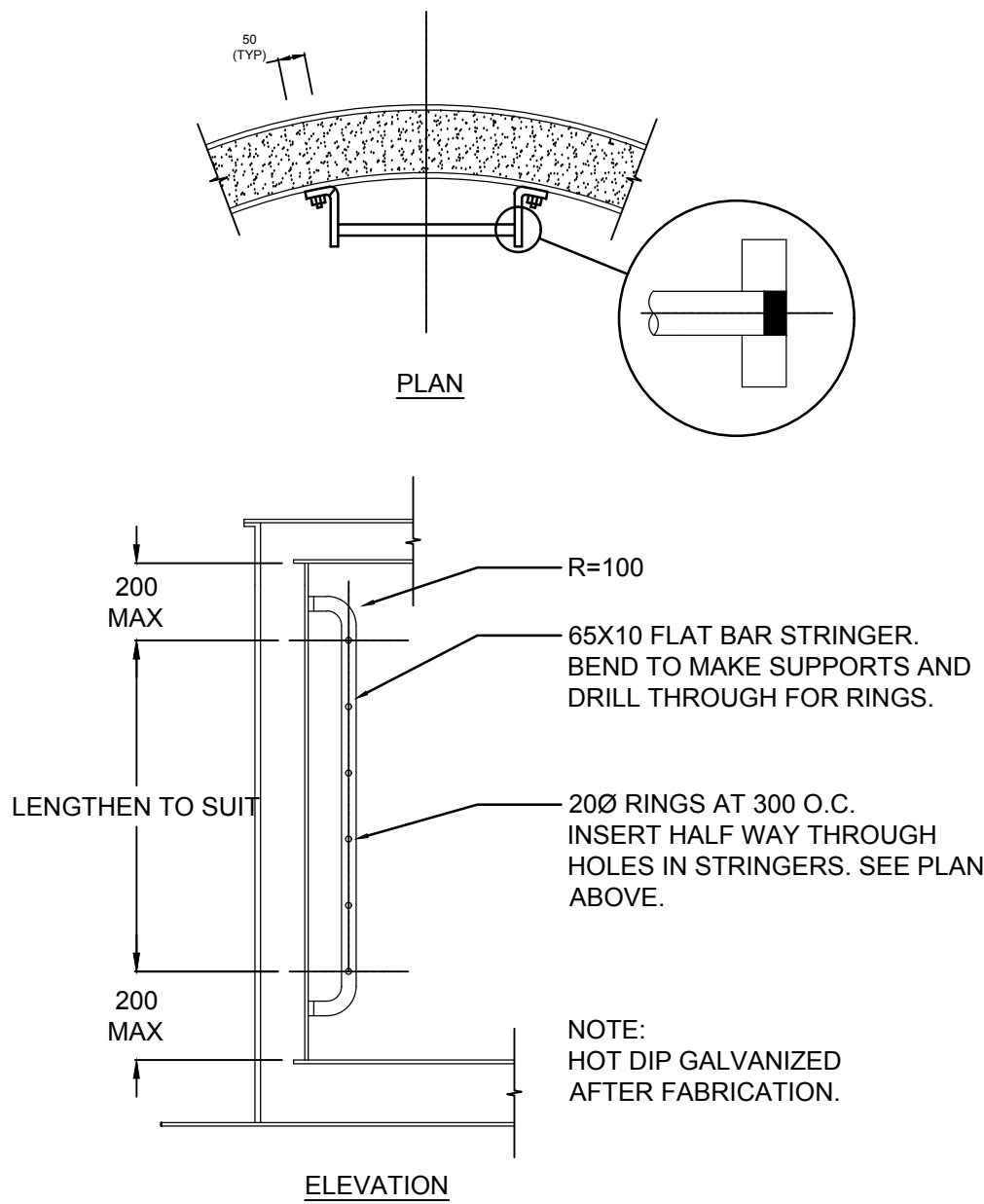
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COVER CONSTRUCTION DETAIL

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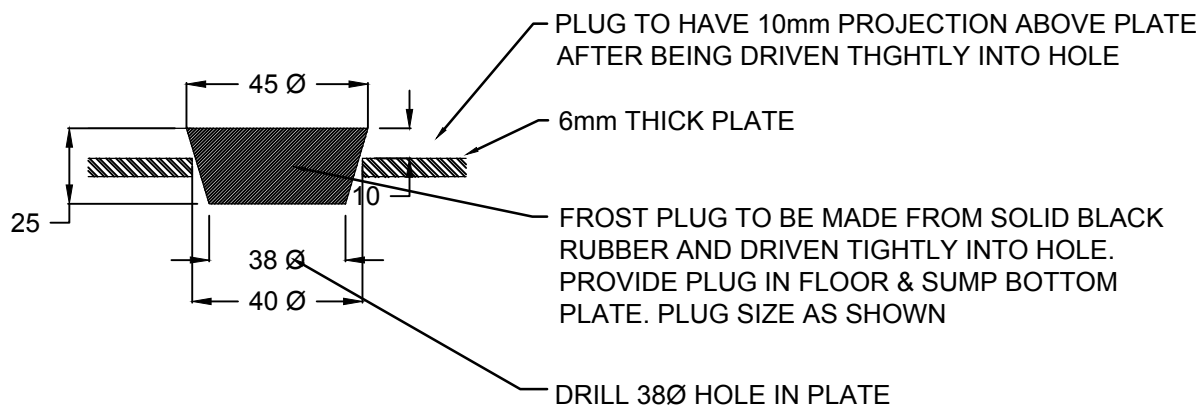
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ACCESS VAULT LADDER DETAIL

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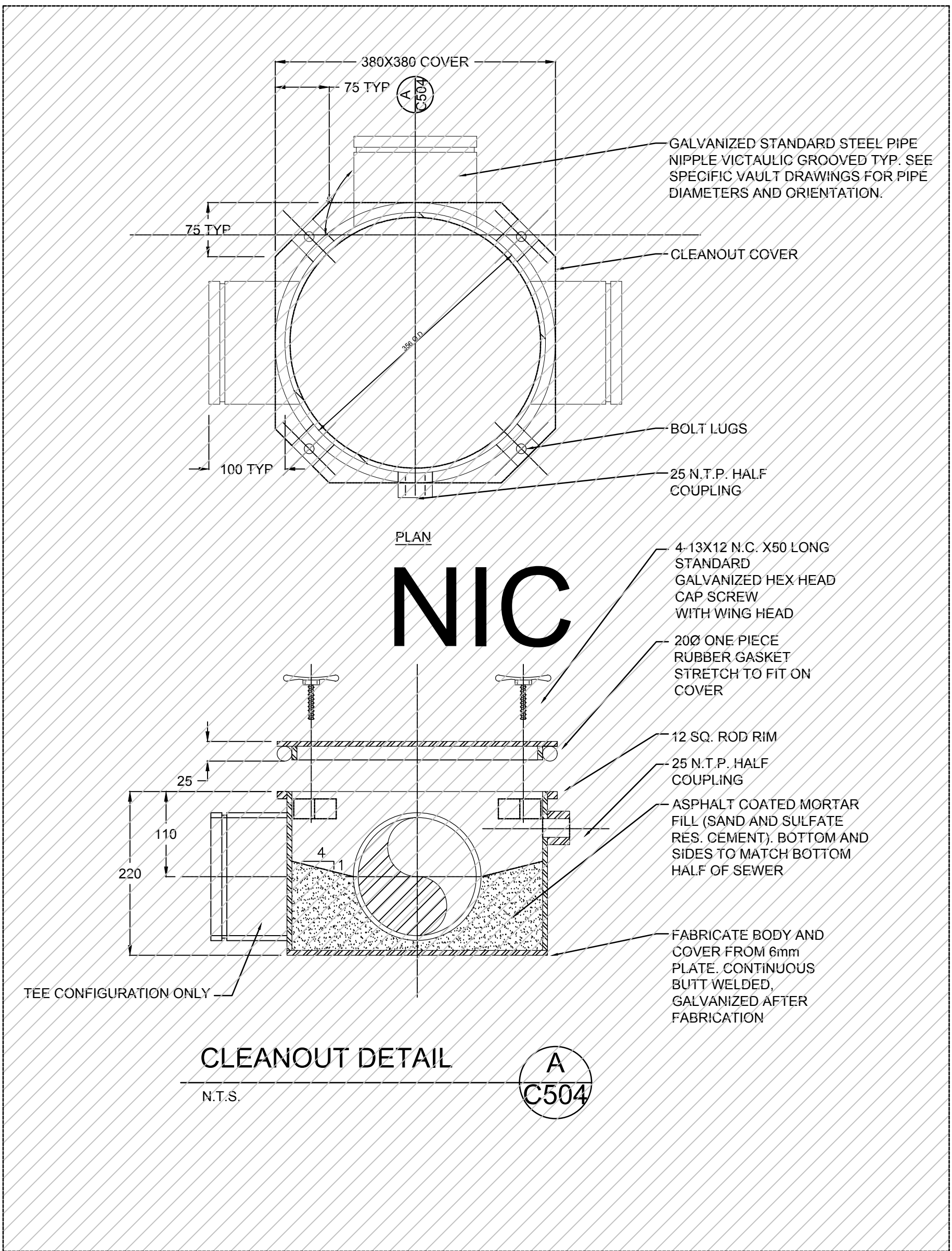
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C504



FROST PLUG DETAIL

N.T.S.

5
C504



CLEANOUT DETAIL

N.T.S.

A
C504

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Consultants

Legend

Notes

1. GRAY SHADED ITEMS IN EXISTING VIEW TO BE REMOVED

Revision			
Rev	By	Appd.	YY.MM.DD
4	ACCESS ROAD WIDENING (CCN #3)	AK	MF 16.08.16
3	CHARS REALIGNMENT & PROFILE UPDATE (SI)	LM	AF 15.01.16
2	CHARS REALIGNMENT	AK	AF 14.12.08
E	AS-BUILT DRAWING	NL	MF 17.12.21
D	ISSUED FOR CONSTRUCTION	MN	WO 14.05.26
C	ISSUED FOR TENDER	AF	WO 14.02.14
B	ISSUED FOR 80% REVIEW	AF	WO 13.12.20
A	ISSUED FOR 50% REVIEW	AF	WO 12.11.09
Issued			
By Appd. YY.MM.DD			
File Name: 144901252			
AF WO WO 13.12.19			
Dwn. Chkd. Dsgn. YY.MM.DD			

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AS-BUILT DRAWING

Client/Project
GOVERNMENT OF NUNAVUT

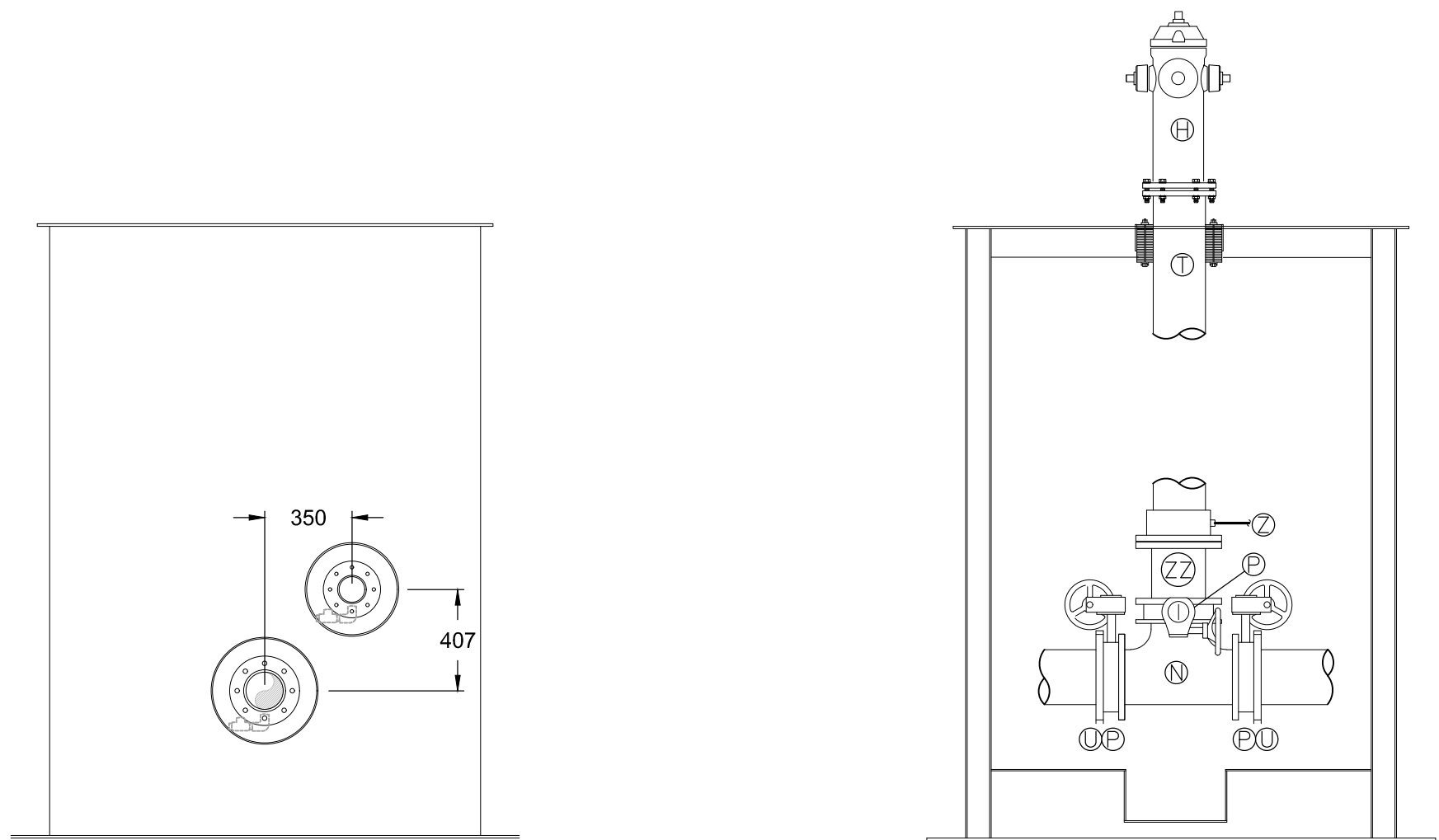
POTABLE WATER SYSTEM
PHASE II
Cambridge Bay, Nunavut

Title
VAULT DETAILS
SHEET ONE

Project No. 144901252 Scale AS SHOWN

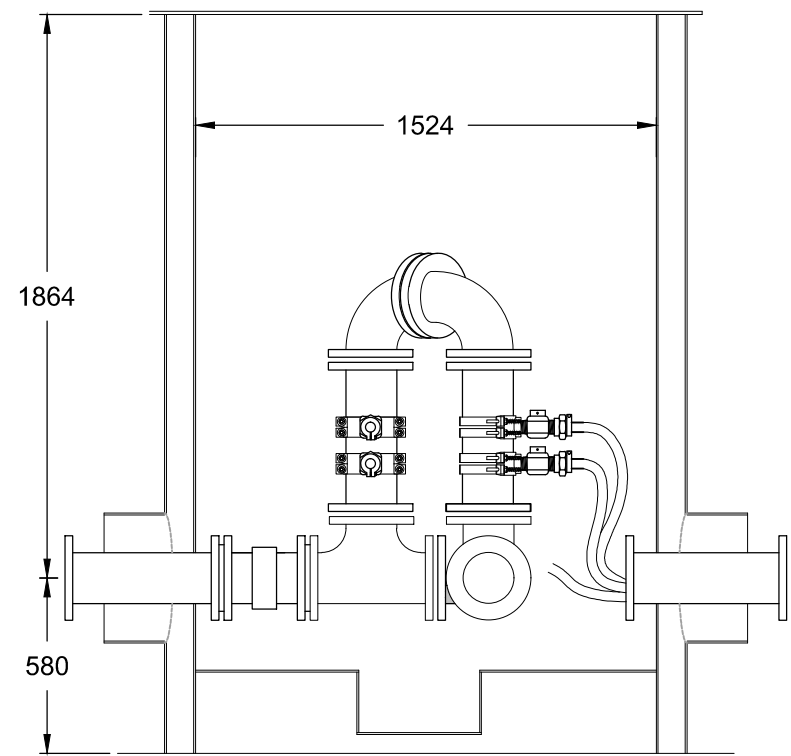
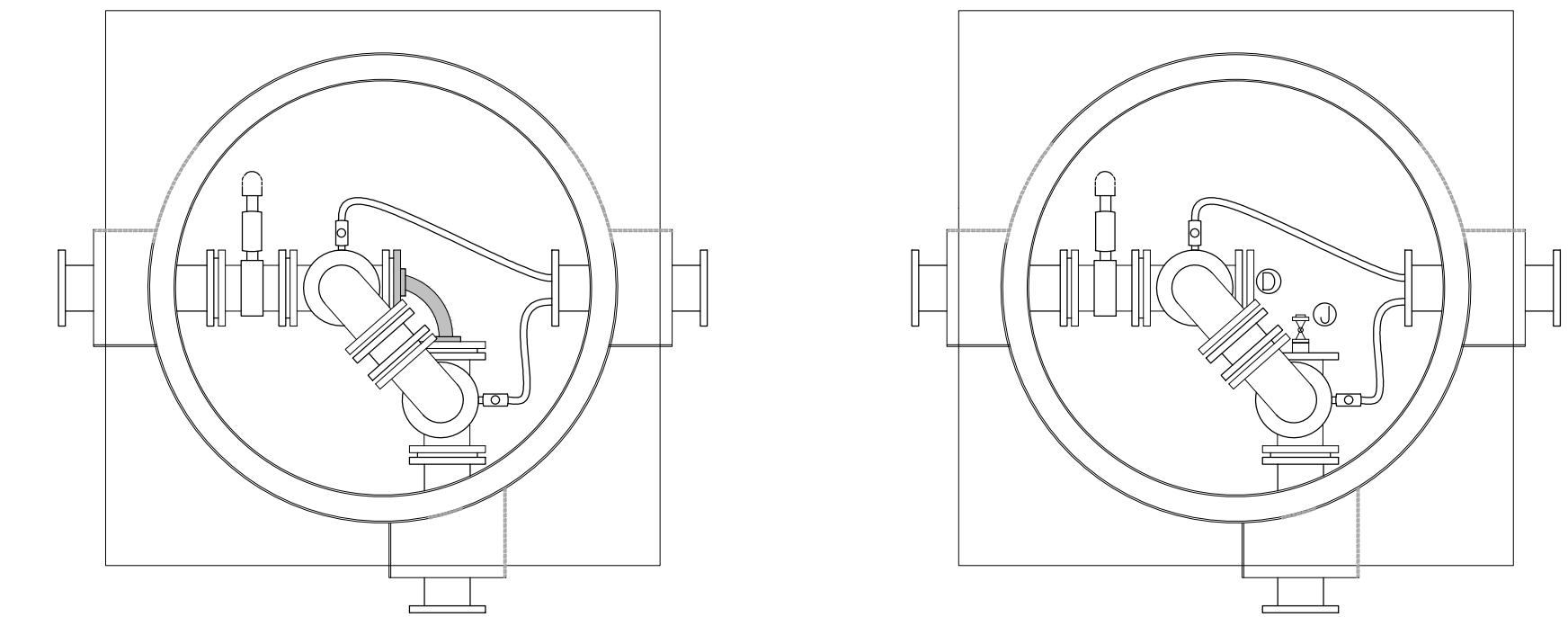
Drawing No. Sheet Revision

C-505 19 of 24 3

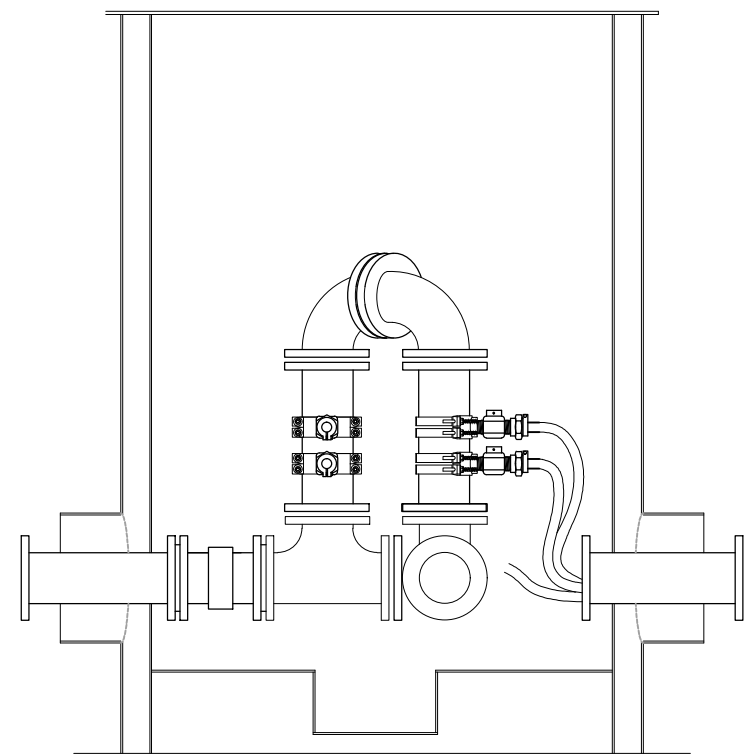


1 RECIRCULATION LINE VAULT PIPE OFFSETS (TYPICAL)
SCALE: 1:25

2 HYDRANT DETAIL (TYPICAL)
SCALE: NTS

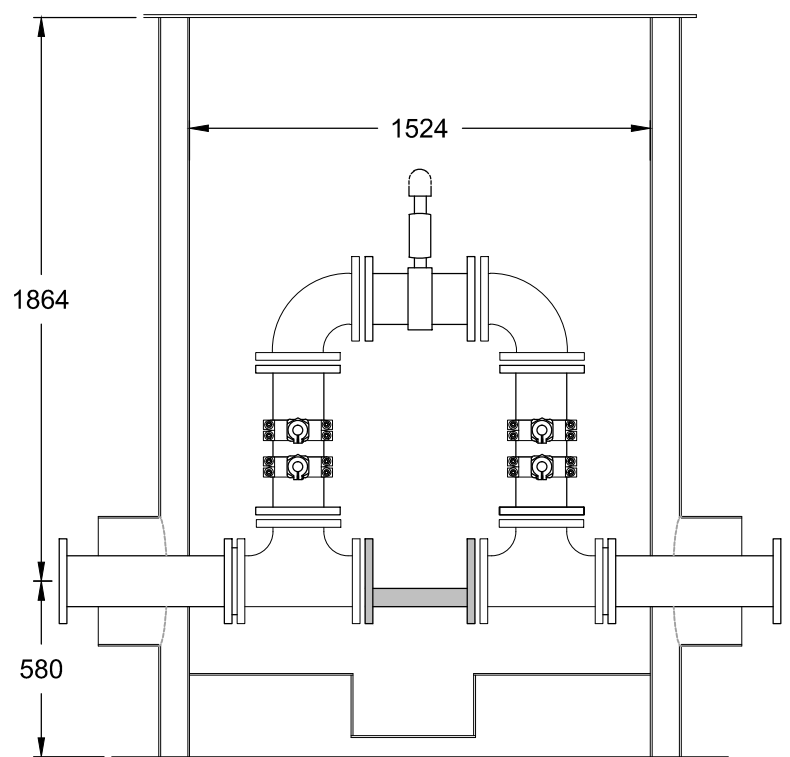
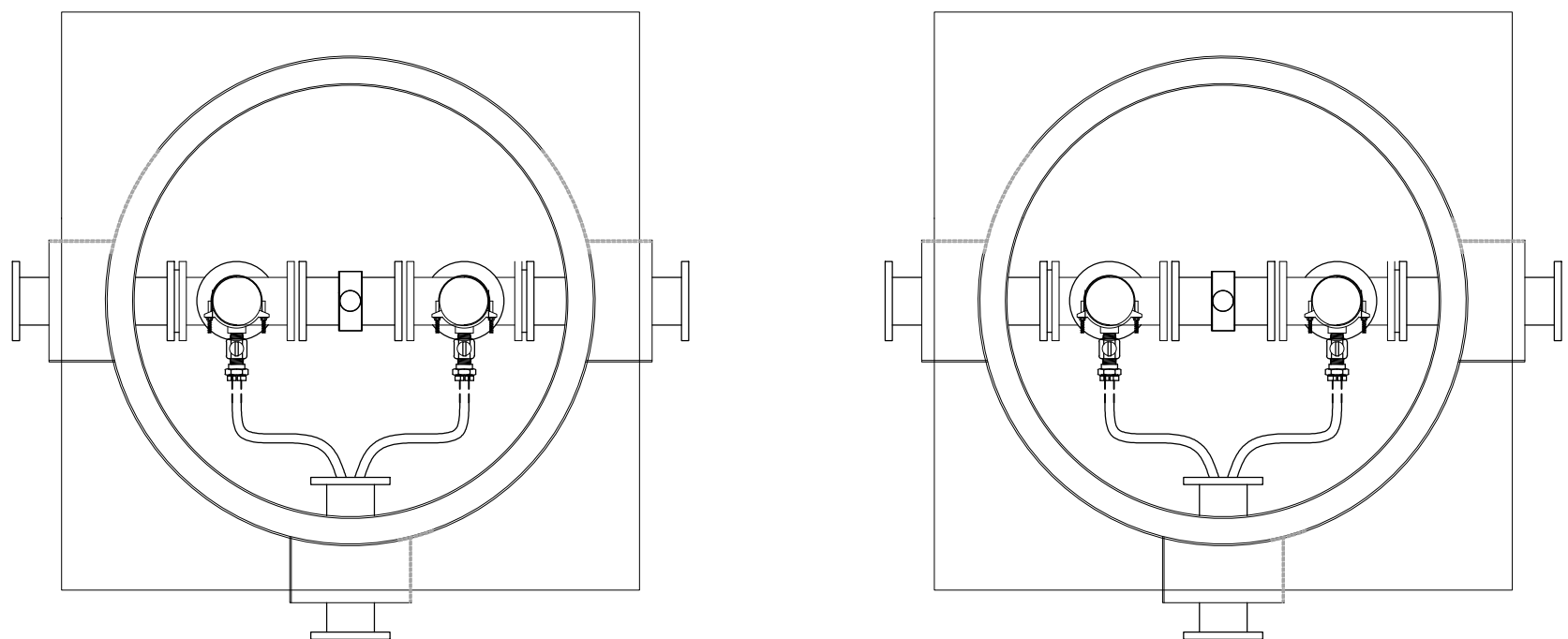


EXISTING ACCESS VAULT TYPE B

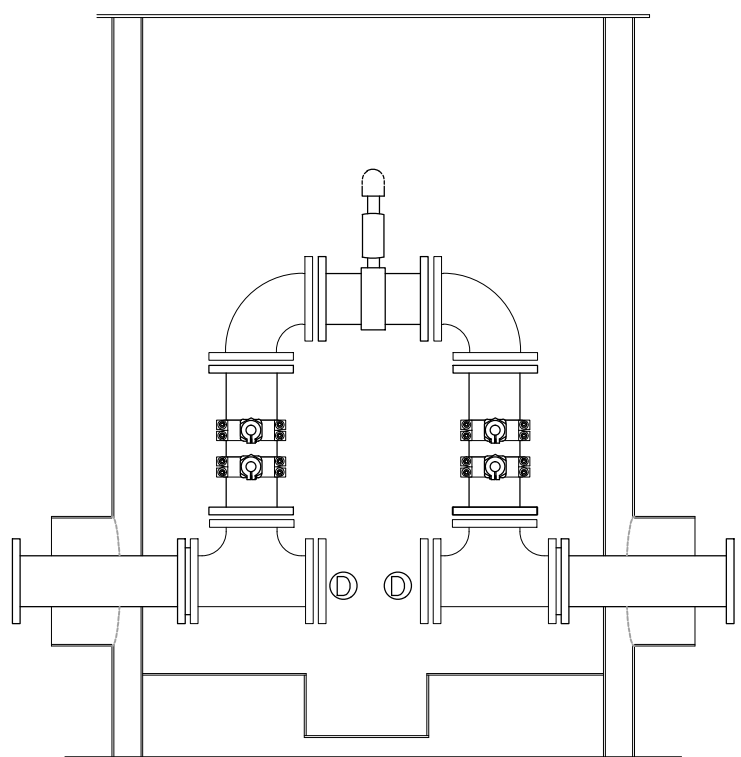


MODIFIED ACCESS VAULT TYPE B

3 ACCESS VAULT TYPE B (TYPICAL)
SCALE: 1:25

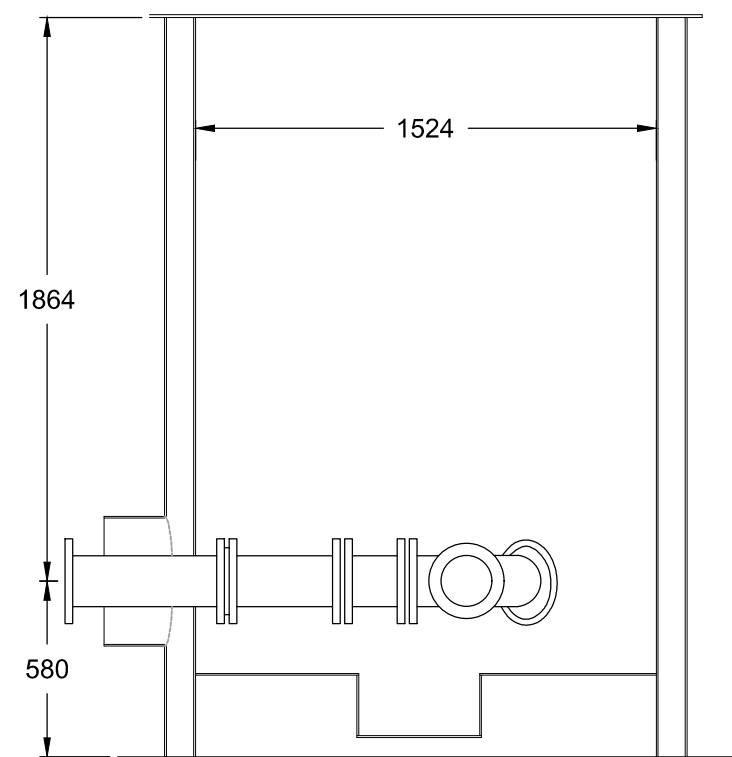
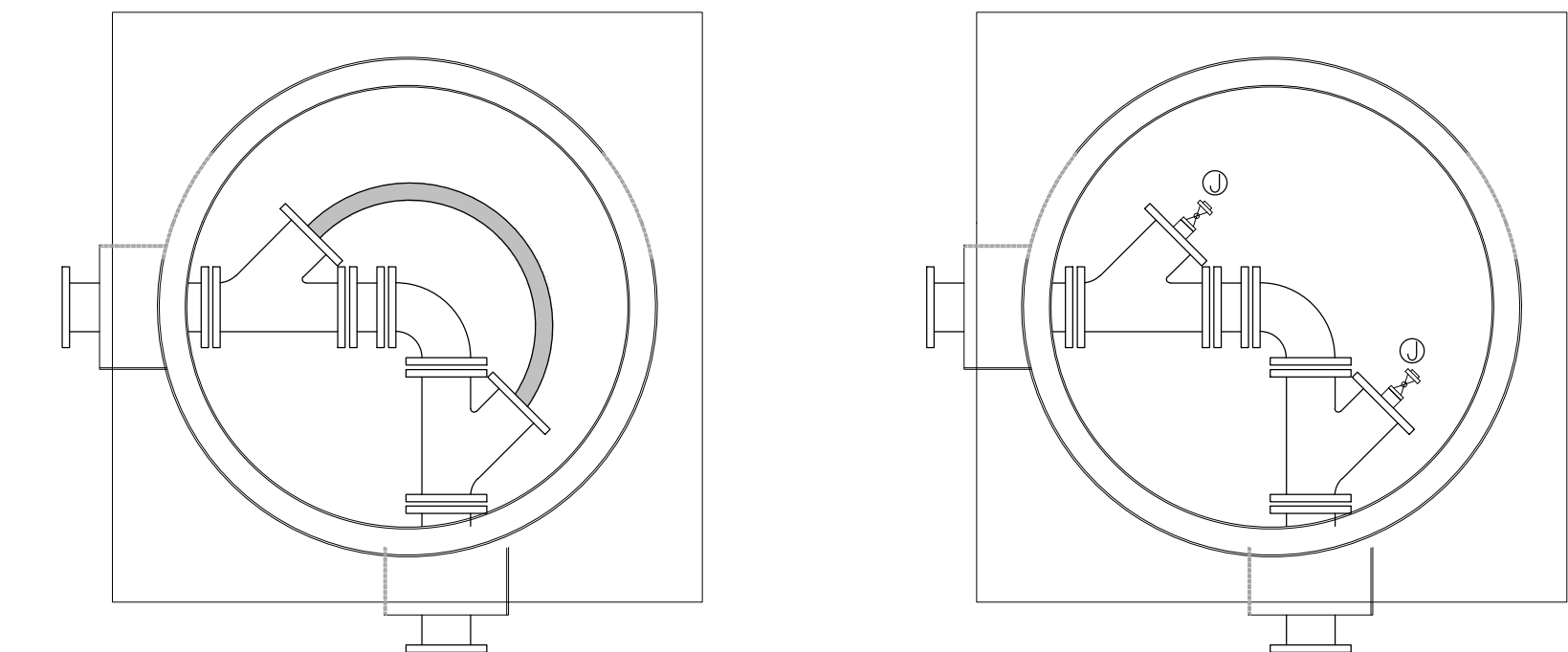


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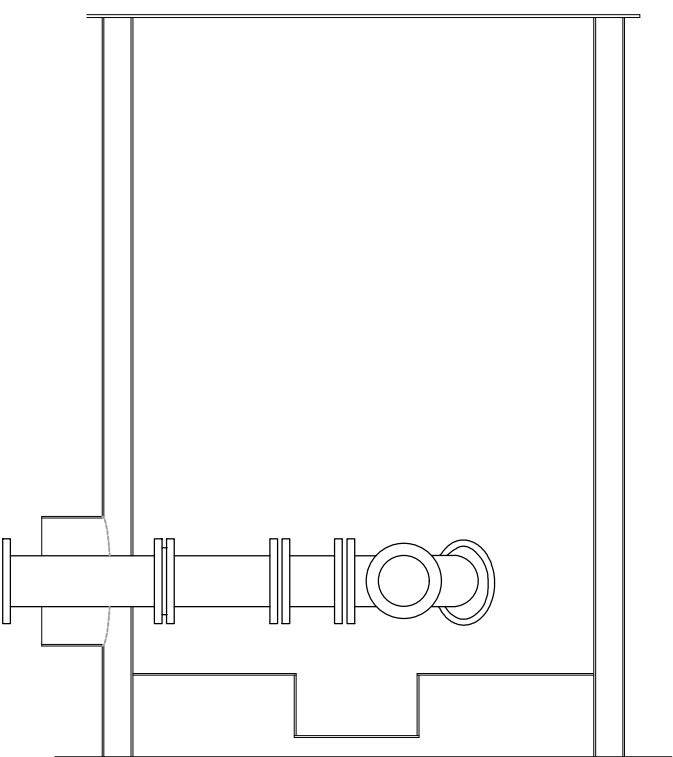


MODIFIED ACCESS VAULT TYPE C

4 ACCESS VAULT TYPE C (TYPICAL)
SCALE: 1:25



EXISTING ACCESS VAULT TYPE D



MODIFIED ACCESS VAULT TYPE D

5 ACCESS VAULT TYPE D (TYPICAL)
SCALE: 1:25



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Legend

1. GRAY SHADED ITEMS IN EXISTING VIEW TO BE REMOVED
2. FOR PARTS NUMBERS, REFER TO DRAWING C-509

4	ACCESS ROAD WIDENING (CCN #3)	AK	MF	16.08.16
3	CHARS REALIGNMENT & PROFILE UPDATE (SI)	LM	AF	15.01.16
2	CHARS REALIGNMENT	AK	AF	14.12.08
Revision		By	Appd.	YY.MM.DD
E	A5-BUILT DRAWING	NL	MF	17.12.21
D	ISSUED FOR CONSTRUCTION	MN	WO	14.05.26
C	ISSUED FOR TENDER	AF	WO	14.02.14
B	ISSUED FOR 80% REVIEW	AF	WO	13.12.20
A	ISSUED FOR 50% REVIEW	AF	WO	12.11.09
Issued		By	Appd.	YY.MM.DD
		AF	WO	13.12.19
File Name: 144901252		Dwn.	Chkal.	YY.MM.DD

AS-BUILT DRAWING

Client/Project
GOVERNMENT OF NUNAVUT

POTABLE WATER SYSTEM
PHASE II
Cambridge Bay, Nunavut

Title
VAULT DETAILS
SHEET TWO

Project No.	Scale
144901252	AS SHOWN

Drawing No.	Sheet	Revision
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3



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Legend

1. GRAY SHADED ITEMS IN EXISTING VIEW TO BE REMOVED.
2. FOR PARTS NUMBERS, REFER TO DRAWING C-509

File Name: 144901252	AF	WO	WO	13.12.19
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

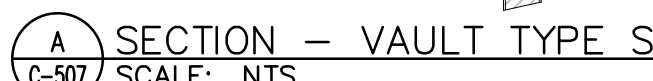
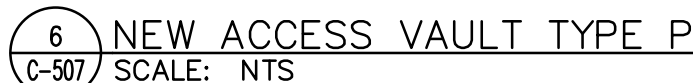
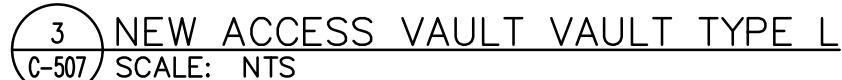
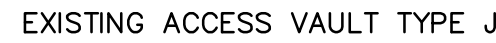
AS-BUILT DRAWING

Cambridge Bay, Nunavut

Project No.	Scale
144901252	AS SHOWN

Drawing No.	Sheet	Revision
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Consultants

Legend

Notes

4	ACCESS ROAD WIDENING (CCN #3)	AK	MF		16.08.16	
3	CHARS REALIGNMENT & PROFILE UPDATE [SI]	LM	AF		15.01.16	
2	CHARS REALIGNMENT	AK	AF		14.12.08	
Revision		By	Appd.	YY.MM.DD		
E	AS-BUILT DRAWING	NL	MF		17.12.21	
D	ISSUED FOR CONSTRUCTION	MN	WO		14.05.26	
C	ISSUED FOR TENDER	AF	WO		14.02.14	
B	ISSUED FOR 80% REVIEW	AF	WO		13.12.20	
A	ISSUED FOR 50% REVIEW	AF	WO		12.11.09	
Issued		By	Appd.	YY.MM.DD		
		AF	WO	WO	13.12.19	
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File Name:		144901252				

Permit-Seal

Client/Project
GOVERNMENT OF NUNAVUT

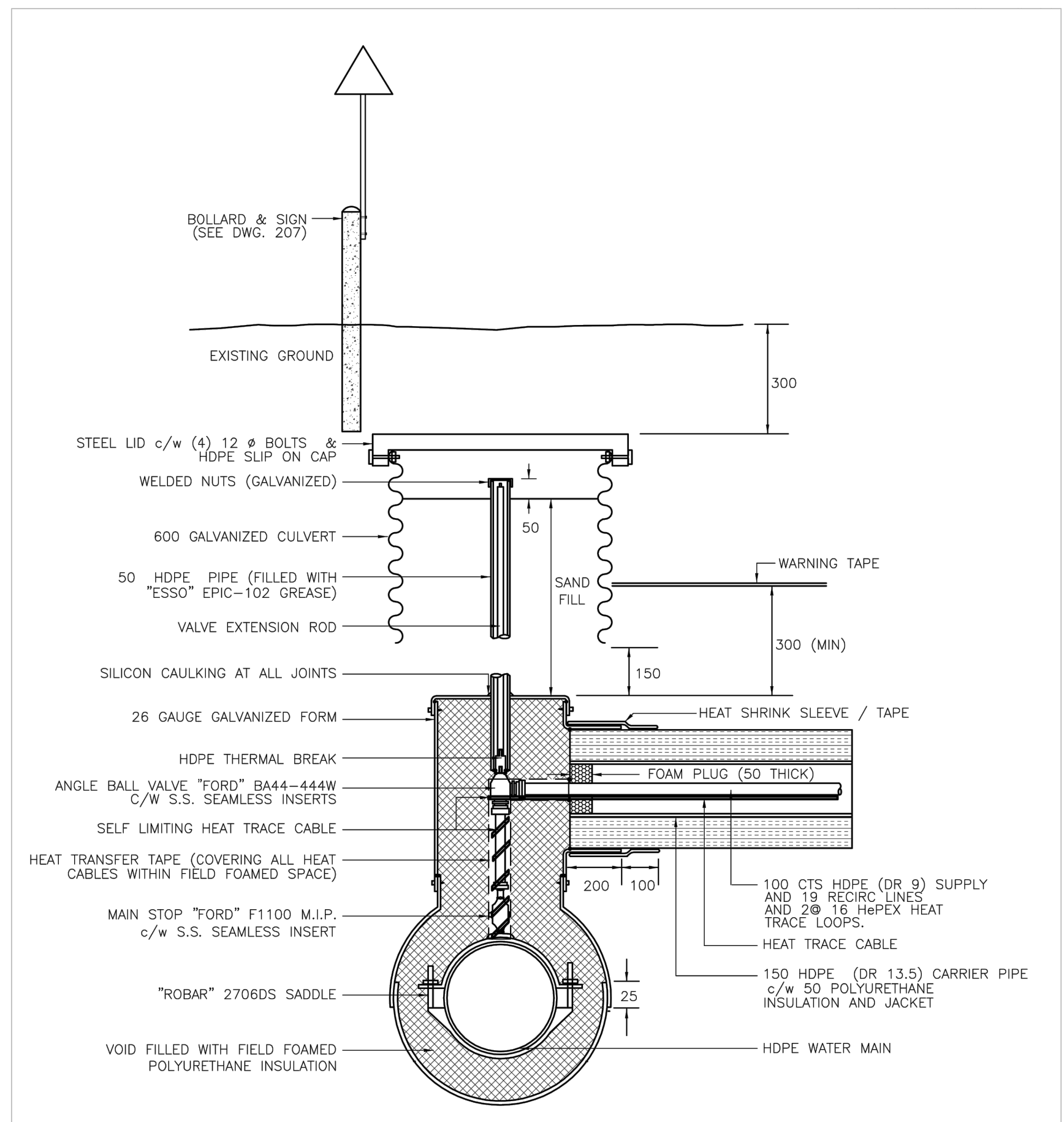
POTABLE WATER SYSTEM
PHASE II
Cambridge Bay, Nunavut

Title
REHEAT STATION MODIFICATIONS
AND EXISTING SERVICE
CONNECTION DETAILS

Project No.	Scale
144901252	AS SHOWN

Drawing No.	Sheet	Revision
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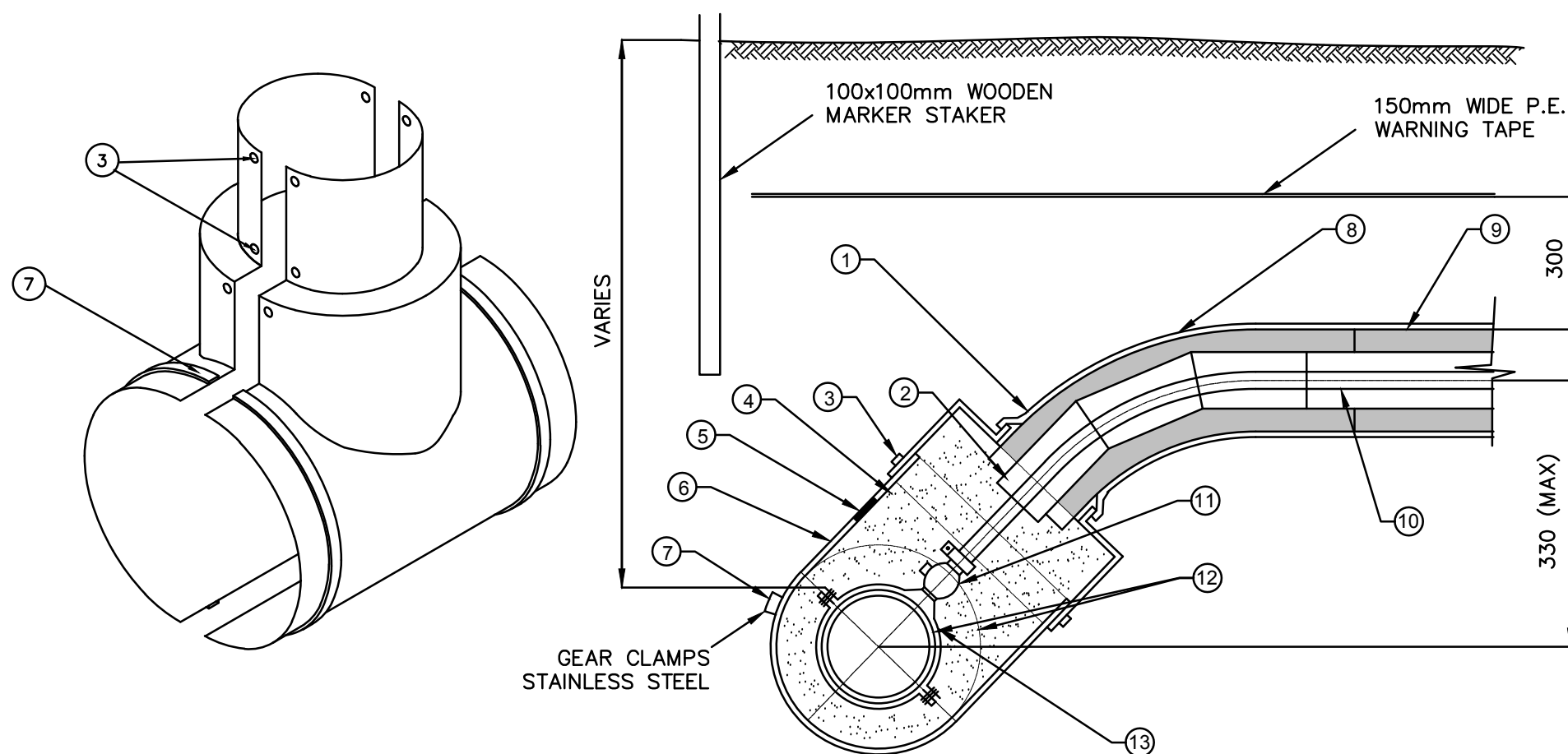


GENERAL NOTES:

1. ALL STEEL PIPE, FITTINGS AND STEEL PIPE SUPPORTS SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION.
2. VICTAULIC FITTINGS SHALL BE HOT DIPPED GALVANIZED STYLE 77.
3. ALL SCREWED PIPE & FITTINGS SHALL BE GALVANIZED 1034 KPA STD. MALLEABLE IRON.
4. WELDING & FABRICATION TO CSA W59/177 & W47-1 1970.
5. HOT DIPPED GALVANIZING TO CSA G252-11, MINIMUM 150 G.
6. VICTAULIC JOINTS SHALL BE FLEXIBLE GROOVED TO ALLOW UP TO 1 x DEFLECTION EACH (WHERE REQUIRED) TO PROVIDE PIPE ENTRY ANGLES SHOWN ON LAYOUT PLANS.
7. PROVIDE SPOOL PIECES AS REQUIRED

4 EXISTING SERVICE CONNECTION – TYPE Z (FOR REFERENCE ONLY)

SCALE: NTS



KEY TO NUMBERED PARTS

1. HEAT SHRINK SLEEVE, MIN. 100mm LAP ON BLACK JACKET
2. POLYURETHANE FOAM PLUG
3. GALV. SHEET METAL SCREWS
4. FIELD FORMED POLYURETHANE INSULATION FOAM (207 kPa COMPRESSIVE STRENGTH)
5. HOLES FOR FOAM INJECTION - TO BE MASTIC COATED AFTER FOAM INJECTION
6. INSULATION FOAM SIZED TO FIT WATER MAIN O.D. AND SERVICE LATERAL O.D., 25mm LAP REQUIRED ON EACH SIDE
7. STAINLESS STEEL GEAR CLAMPS
8. FACTORY FABRICATED DR17 HDPE 45 DEGREE BEND c/w 50mm FACTORY APPLIED POLYURETHANE INSULATION, FRP JACKET AND MASTIC COATED ENDS
9. DR17 HDPE PIPE c/w 50mm FACTORY APPLIED POLYURETHANE INSULATION, FRP JACKET AND MASTIC COATED ENDS
10. DR11 CTS HDPE (MIN DIA 25mm - MAX DIA 50mm) SUPPLY / RETURN WATER SERVICE PIPE, CONTINUOUS LENGTH FROM COIL STOCK
11. BRONZE BALL CORPORATION STOP, 25mm DIA. - MIPT INLET X CTS DR11 HDPE - JOINT OUTLET c/w STAINLESS STEEL INSERT STIFFENERS - 1 REQUIRED.
12. EXISTING WATER MAIN - (INSULATED DI PIPE)
13. ROBAR 2706 TAPPING SADDLE, DOUBLE STRAP.

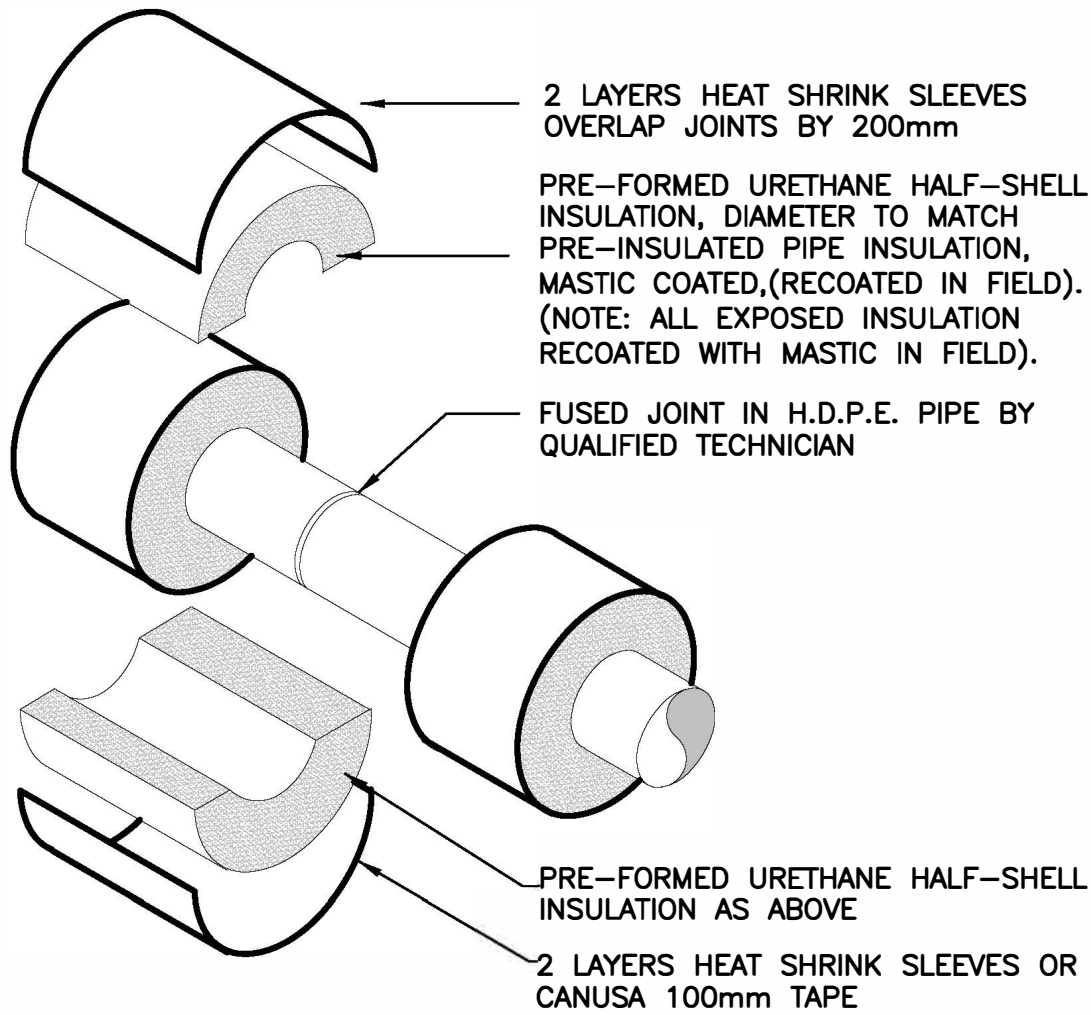
5 NEW SERVICE CONNECTIONS – TYPICAL

C-508 SCALE: NTS

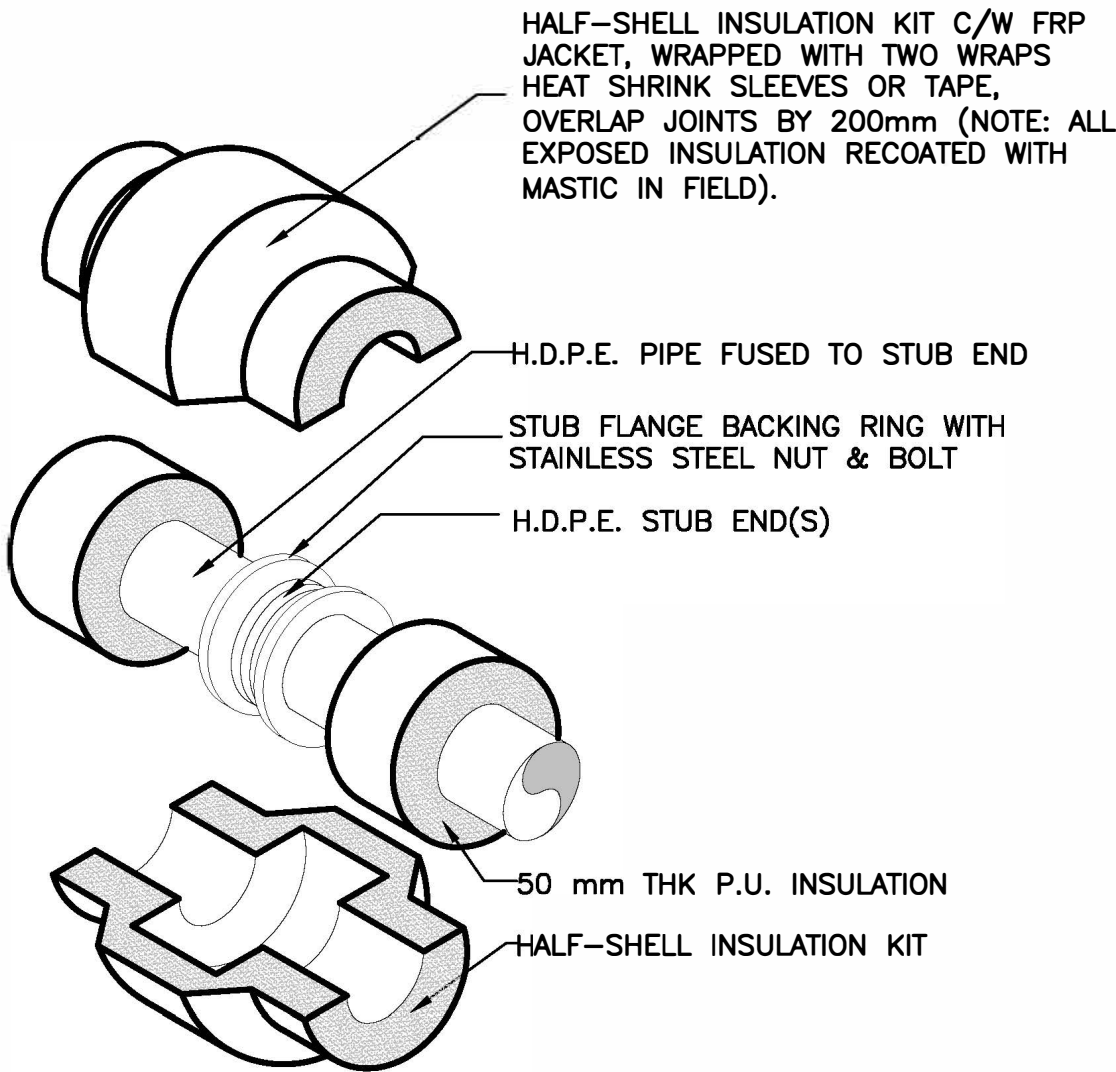
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ORIGINAL SHEET - ANSI D

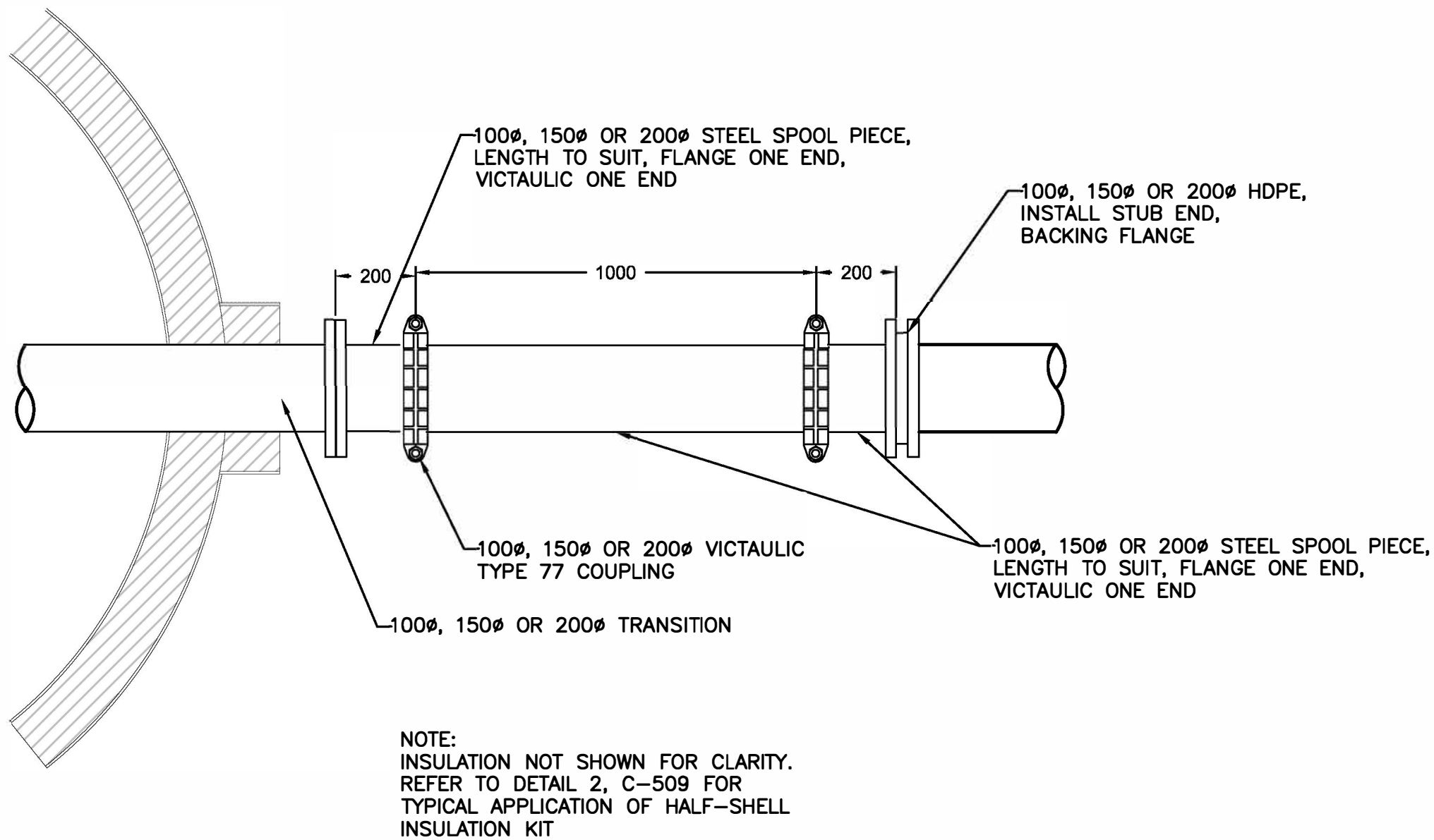
A	STEEL TRANSITION PIECE, 100mm Ø, WELDED TO INNER SHELL, PROVIDE INSULATED COLLAR AS SHOWN ON DRAWING C-503, VICTAULIC INSIDE, FLANGED OUTSIDE VAULT WALL.
B	SPOOL PIECE, 100mm Ø, VICTAULIC BOTH ENDS, FABRICATED TO SUIT.
C	SPOOL PIECE, 150mm Ø, VICTAULIC BOTH ENDS, FABRICATED TO SUIT.
D	BLIND FLANGE, 150mm Ø.
E	ELBOW, 90° VICTAULIC No. 10, 150mm Ø.
F	FLANGE ADAPTOR, VICTAULIC TYPE 741, 150mm Ø.
G	COUPLING, VICTAULIC STYLE 77, 100mm Ø.
H	McAVITY M-67 HYDRANT, SEE SPECIFICATIONS
I	25mm Ø THREADOLET (SEE DETAIL 3 - C503 WATERLINE DRAIN)
J	50mm FULL PORT BALL VALVE C/W N.T.P. CAP
K	BUTTERFLY VALVE, WAFER, 100mm, DeZURIK OR EQUAL
L	BUTTERFLY VALVE, WAFER, 150mm, DeZURIK OR EQUAL
M	FLANGE ADAPTOR, VICTAULIC TYPE 741, 100mm Ø.
N	TEE, VICTAULIC ALL ENDS, 200 X 200 X 200
O	COUPLING, VICTAULIC STYLE 77, 200mm Ø.
P	BUTTERFLY VALVE, WAFER, 200mm, DeZURIK OR EQUAL
Q	ELBOW, 90° VICTAULIC No. 10, 200mm Ø.
R	STEEL TRANSITION PIECE, 200mm Ø, WELDED TO INNER SHELL, PROVIDE INSULATED COLLAR AS SHOWN ON DRAWING C-503, VICTAULIC INSIDE, FLANGED OUTSIDE VAULT WALL.
S	SPOOL PIECE, 200mm Ø, VICTAULIC BOTH ENDS, FABRICATED TO SUIT.
T	HYDRANT BARREL, LENGTH TO SUIT
U	FLANGE ADAPTOR, VICTAULIC TYPE 741, 200mm Ø.
V	STEEL TRANSITION PIECE, 150mm Ø, WELDED TO INNER SHELL, PROVIDE INSULATED COLLAR AS SHOWN ON DRAWING C-503, VICTAULIC INSIDE, FLANGED OUTSIDE VAULT WALL.
W	50mm Ø LATEROLET (SEE DETAIL 2 - C503 WATERLINE VENT)
X	COUPLING, VICTAULIC STYLE 77, 150mm Ø.
Y	ELBOW, 90° VICTAULIC No. 10, 100mm Ø.
Z	HYDRANT DRAIN PIPED TO SUMP, 12 mm GARDEN HOSE
ZZ	HYDRANT SPOOL PIECE, 200mm Ø, STD. FLANGE ONE END, FLANGE TO MATCH McAVITY HYDRANT ONE END, MIN. LENGTH 200mm
EE	ELBOW, 45° VICTAULIC No. 11, 200mm Ø.
FF	FLANGE ADAPTOR, VICTAULIC TYPE 741, 50mm Ø.
GG	COUPLING, VICTAULIC STYLE 77, 50mm Ø.
KK	BUTTERFLY VALVE, WAFER, 50mm, DeZURIK OR EQUAL
NN	TEE, REDUCING, VICTAULIC ALL ENDS, 200 X 200 X 50
QQ	ELBOW, 90° VICTAULIC No. 10, 50mm Ø.
RR	STEEL TRANSITION PIECE, 50mm Ø, WELDED TO INNER SHELL, PROVIDE INSULATED COLLAR AS SHOWN ON DRAWING C-503, VICTAULIC INSIDE, FLANGED OUTSIDE VAULT WALL.
SS	SPOOL PIECE, 50mm Ø, VICTAULIC BOTH ENDS, FABRICATED TO SUIT.
TT	STEEL TRANSITION PIECE, 50mm Ø, WELDED TO INNER SHELL, PROVIDE INSULATED COLLAR AS SHOWN ON DRAWING C-503, VICTAULIC INSIDE, FLANGED OUTSIDE VAULT WALL.



1 HDPE FUSED JOINT INSULATION DETAIL (TYPICAL)
C-509 SCALE: NTS



2 HDPE FLANGED JOINT INSULATION DETAIL (TYPICAL)
C-509 SCALE: NTS



3 HDPE EXTERNAL CONNECTION (TYPICAL) HDPE
C-509 SCALE: NTS



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Consultants

Legend

Notes

4	ACCESS ROAD WIDENING (CCN #3)	AK	MF 16.08.16
3	CHARS REALIGNMENT & PROFILE UPDATE (S)	LM	AF 15.01.16
2	CHARS REALIGNMENT	AK	AF 14.12.08
Revision		By	Appd. YY.MM.DD
E	AS-BUILT DRAWING	NL	MF 17.12.21
D	ISSUED FOR CONSTRUCTION	MN	WO 14.05.26
C	ISSUED FOR TENDER	AF	WO 14.02.14
B	ISSUED FOR 80% REVIEW	AF	WO 13.12.20
A	ISSUED FOR 50% REVIEW	AF	WO 12.11.09
Issued		By	Appd. YY.MM.DD
File Name: 144901252		AF	WO WO 13.12.19
		Dwn.	Chkd. Dsgn. YY.MM.DD

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AS-BUILT DRAWING

Client/Project
GOVERNMENT OF NUNAVUT

POTABLE WATER SYSTEM
PHASE II
Cambridge Bay, Nunavut

Title
ACCESS VAULT
KEY TO NUMBER PARTS
CONNECTION AND JOINT DETAILS

Project No. 144901252	Scale AS SHOWN
Drawing No.	Sheet Revision

C-509

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3



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4	ACCESS ROAD WIDENING (CCN #3)	AK	MF	16.08.16
3	CHARS REALIGNMENT & PROFILE UPDATE (SI)	LM	AF	15.01.16
2	CHARS REALIGNMENT	AK	AF	14.12.08
Revision		By	Appd.	YY.MM.DD
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		AF	WO	13.12.19
File Name: 144901252		Dwn.	Chkd.	Dsgn.
				YY.MM.DD

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Client/Project
GOVERNMENT OF NUNAVUT

POTABLE WATER SYSTEM
PHASE II
Cambridge Bay, Nunavut

Title

EXISTING PUMPHOUSE
MODIFICATIONS

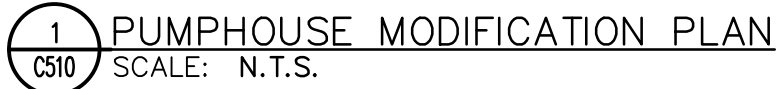
Project No.	Scale
144901252	N.T.S.

Drawing No.	Sheet	Revision
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RCP-02
RAW WATER CIRCULATION PUMP

RATED CAPACITY : 3.8 L/sec
RATED HEAD : 65 kpa
S.G. : 1.0
HORSEPOWER : 0.75 HP
TYPE : ARMSTRONG 2X2X6
208V / 3 / 60 Hz

4	ACCESS ROAD WIDENING (CCN #3)	AK	MF	16.08.16
3	CHARS REALIGNMENT & PROFILE UPDATE (SI)	LM	AF	15.01.16
2	CHARS REALIGNMENT	AK	AF	14.12.08
Revision		By	Appd.	YY.MM.DD
E	AS-BUILT DRAWING	NL	MF	17.12.21
D	ISSUED FOR CONSTRUCTION	MN	WO	14.05.26
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File Name:	144901252	AF	WO	WO	13.12.19
		Dwn.	Chkd.	Dsgn.	YY.MM.DD

AS-BUILT DRAWING

Client/Project
GOVERNMENT OF NUNAVUT

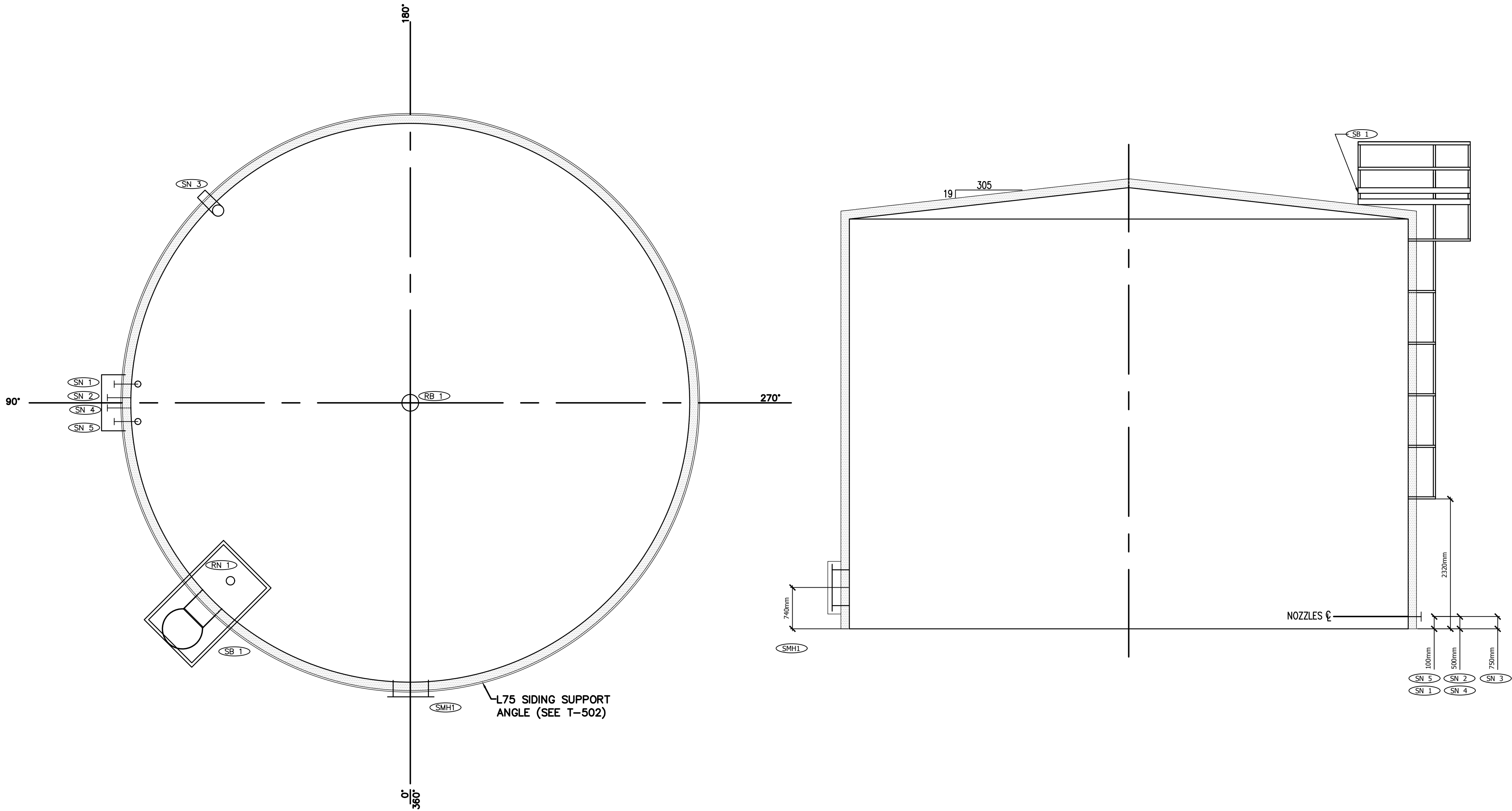
POTABLE WATER SYSTEM
PHASE II
Cambridge Bay, Nunavut

Title
TOP AND SIDE VIEW
OF 570 cu.m. WATER TANK

Project No. 144901252 Scale N.T.S.

Drawing No. Sheet Revision

T-501 1 of 4 3



1 TREATED WATER STORAGE TANK – 9.98m ϕ X 7.32m H – TOP VIEW
SCALE: NTS

2 TREATED WATER STORAGE TANK 9.98m ϕ X 7.32m H – FRONT VIEW
SCALE: NTS

LIST OF REQUIRED APPURTENANCES FOR NEW TREATED WATER STORAGE VERTICAL TANK					
ITEM	SIZE	ELEV. ABOVE BASE RING (TO CL)	DESCRIPTION	COMMENTS	ANGULAR LOCATION – CW DECIMAL DEGREES
SN2	150 ϕ	500	TANK INLET FILL LINE	SEE DETAIL DRAWING	90.00
SN4	200 ϕ	500	TANK OUTLET LINE	SEE DETAIL DRAWING	90.00
SN5	50 ϕ	100	TANK DRAIN VALVE WITH KAMLOCK (SUPPLY 6.0m x 50mm ϕ HOSE FOR TANK DRAINING)	SEE DETAIL DRAWING	90.00
SMH1	760 ϕ	740	COVER 960mm, NECK 760mm, FLANGE THICKNESS 11mm, COVER THICKNESS 14mm.		360.00
SN3	200 ϕ	750	OVERFLOW / VENT LINE	SEE DETAIL DRAWING	135.00
SB1			CENTER OF ACCESS LADDER	SEE DETAIL DRAWING	45.00
SN1	50 ϕ	100	PRESSURE TRANSDUCER PORT C/W ISOLATION GATE VALVE	SEE DETAIL DRAWING	90.00
LIST ROOF APPURTENANCES FOR NEW WATER STORAGE VERTICAL TANK					
ITEM	SIZE	HOR. LOCATION FROM EDGE OF SHELL (CL)	DESCRIPTION	COMMENTS	ANGULAR LOCATION – CW DECIMAL DEGREES
RB1	150 ϕ	MIDDLE OF TANK	CABLE SUPPORT POST		
RN1	150 ϕ	650	LEVEL GAUGE ACCESS PORT		45.00

3 ORIENTATION PLAN – NEW TREATED WATER STORAGE TANK
SCALE: NTS

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Notes

Revision	By	Appd.	YY.MM.DD
4	AK	MF	16.08.16
3	LM	AF	15.01.16
2	AK	AF	14.12.08
E	NL	MF	17.12.21
D	MN	WO	14.05.26
C	AF	WO	14.02.14
B	AF	WO	13.12.20
A	AF	WO	12.11.09

File Name:	144901252	AF	WO	WO	13.12.19
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AS-BUILT DRAWING

Client/Project
GOVERNMENT OF NUNAVUT

POTABLE WATER SYSTEM
PHASE II
Cambridge Bay, Nunavut

Title
WATER TANK DETAILS I

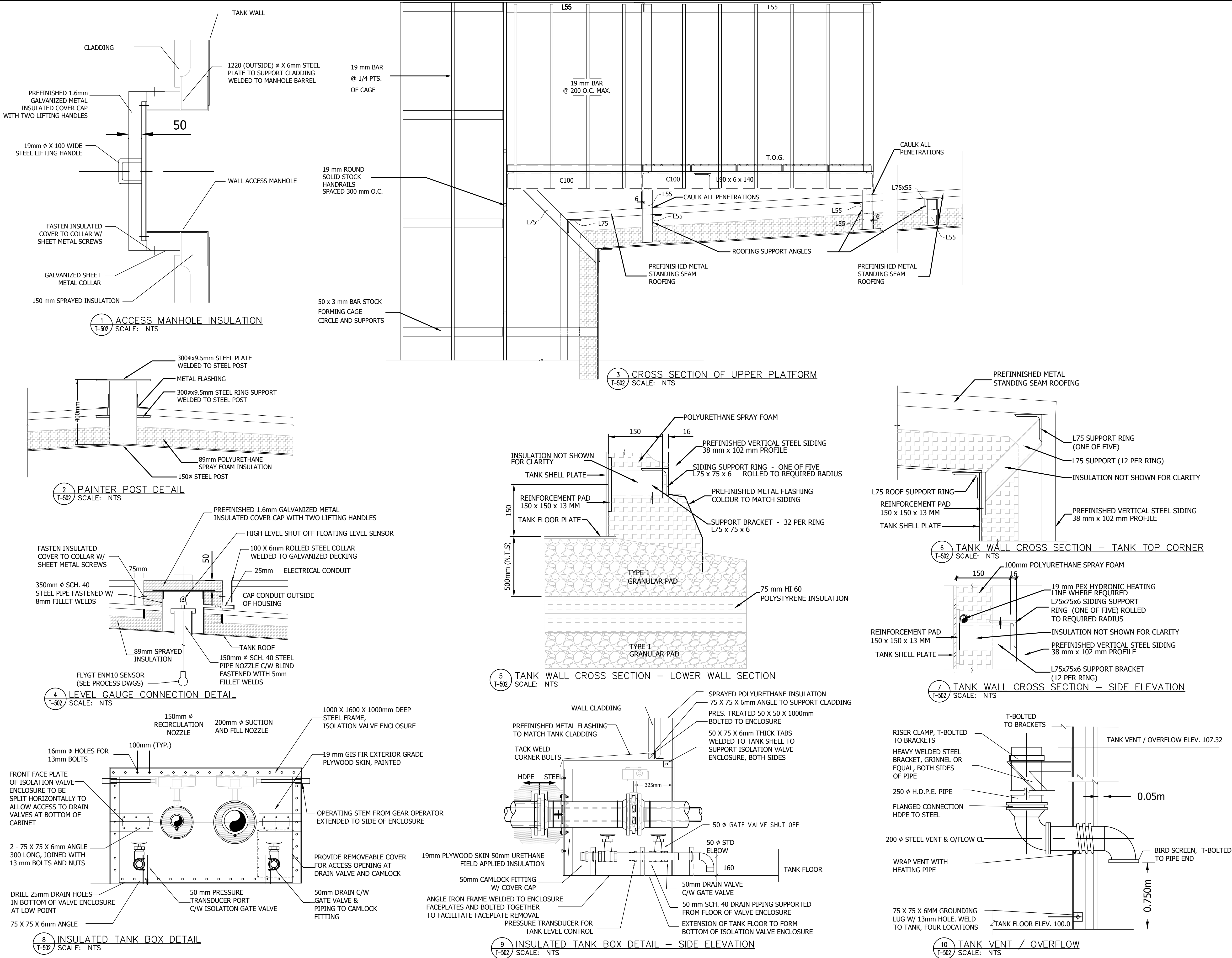
Project No.
144901252

Drawing No. Sheet Revision

T-502

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3



4	ACCESS ROAD WIDENING (CCN #3)	AK	MF	16.08.16
3	CHARS REALIGNMENT & PROFILE UPDATE (SJ)	LM	AF	15.01.16
2	CHARS REALIGNMENT	AK	AF	14.12.08
Revision		By	Appd.	YY.MM.DD
E	A5-BUILT DRAWING	NL	MF	17.12.21
D	ISSUED FOR CONSTRUCTION	MN	WO	14.05.26
C	ISSUED FOR TENDER	AF	WO	14.02.14
B	ISSUED FOR 80% REVIEW	AF	WO	13.12.20
A	ISSUED FOR 50% REVIEW	AF	WO	12.11.09
Issued		By	Appd.	YY.MM.DD

File Name: 144901252	AF	WO	WO	13.12.19
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

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AS-BUILT DRAWING

Client/Project
GOVERNMENT OF NUNAVUT

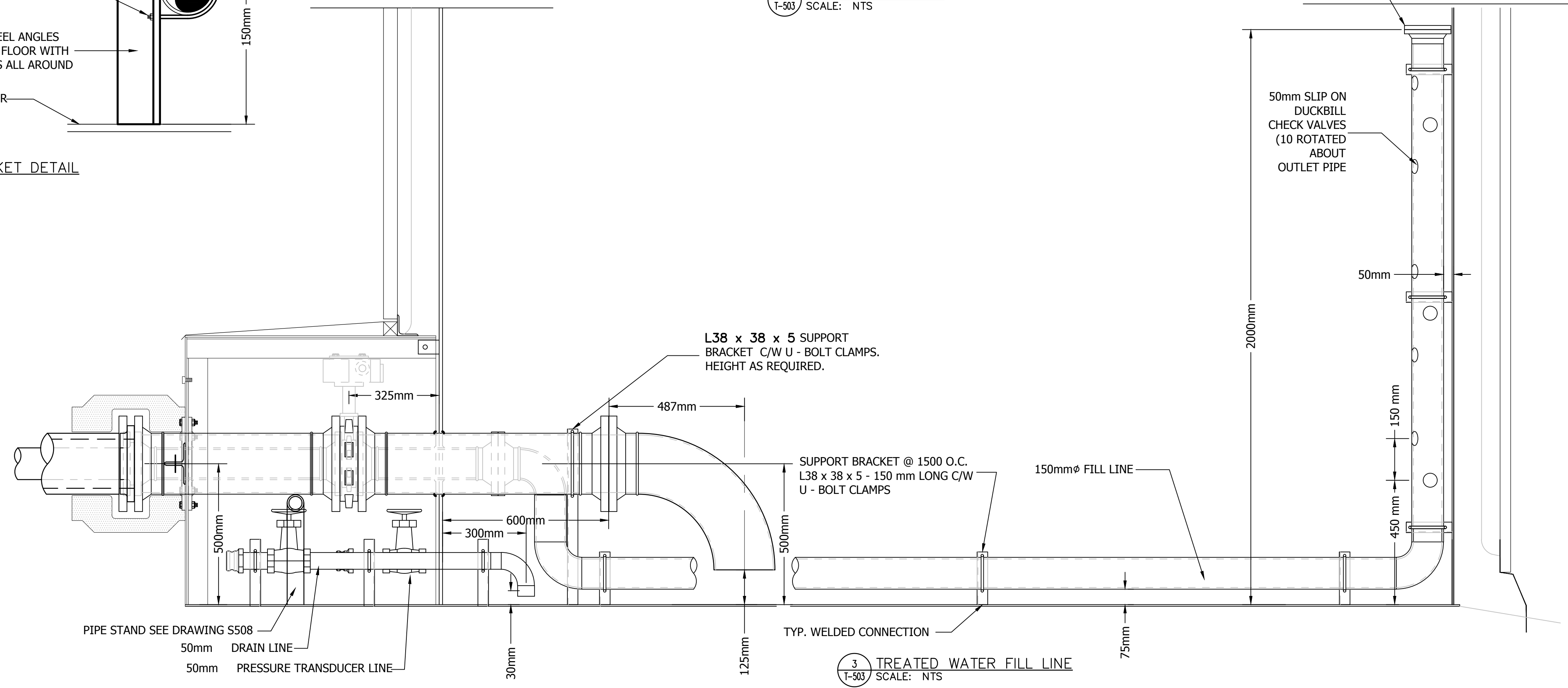
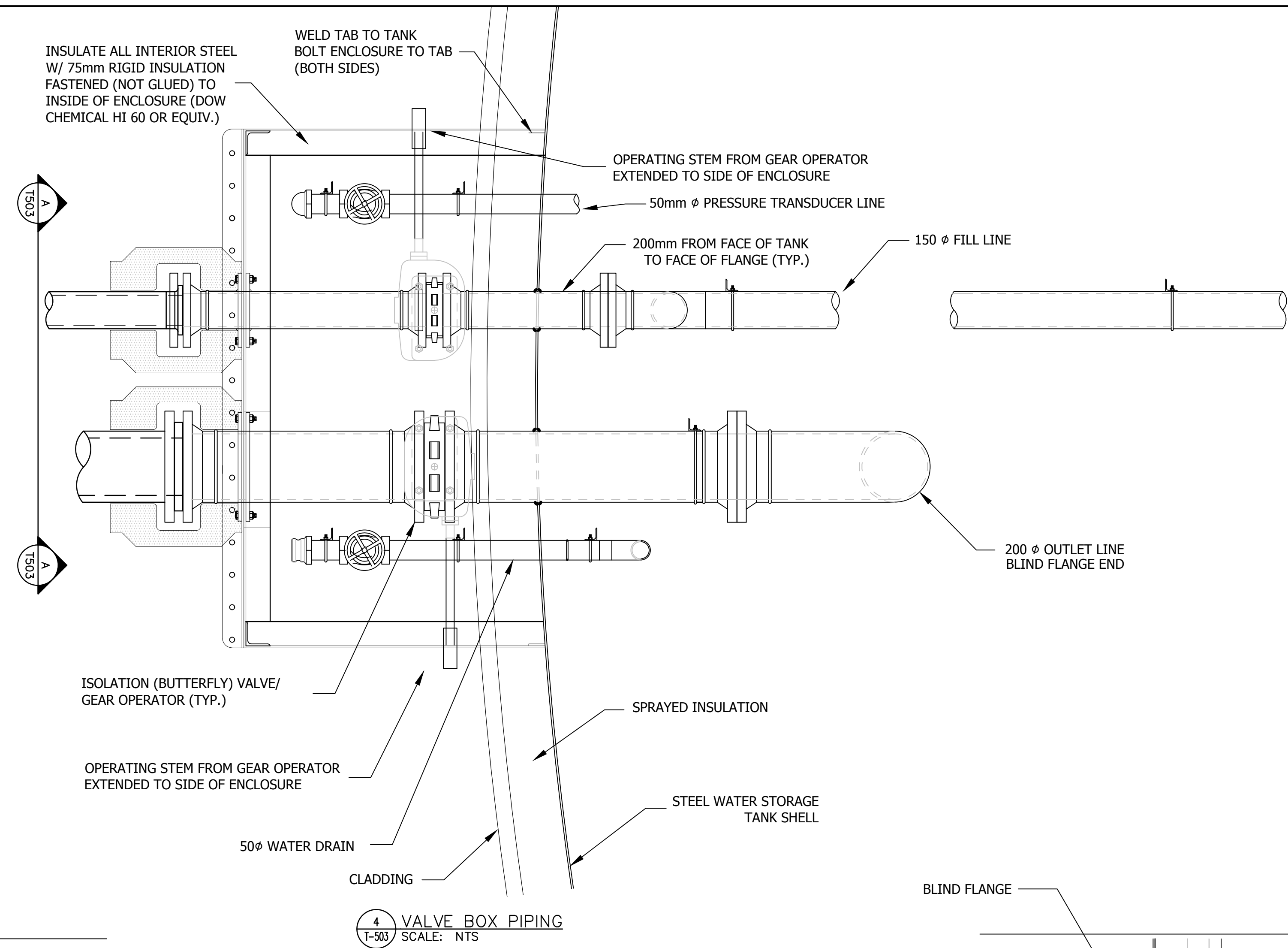
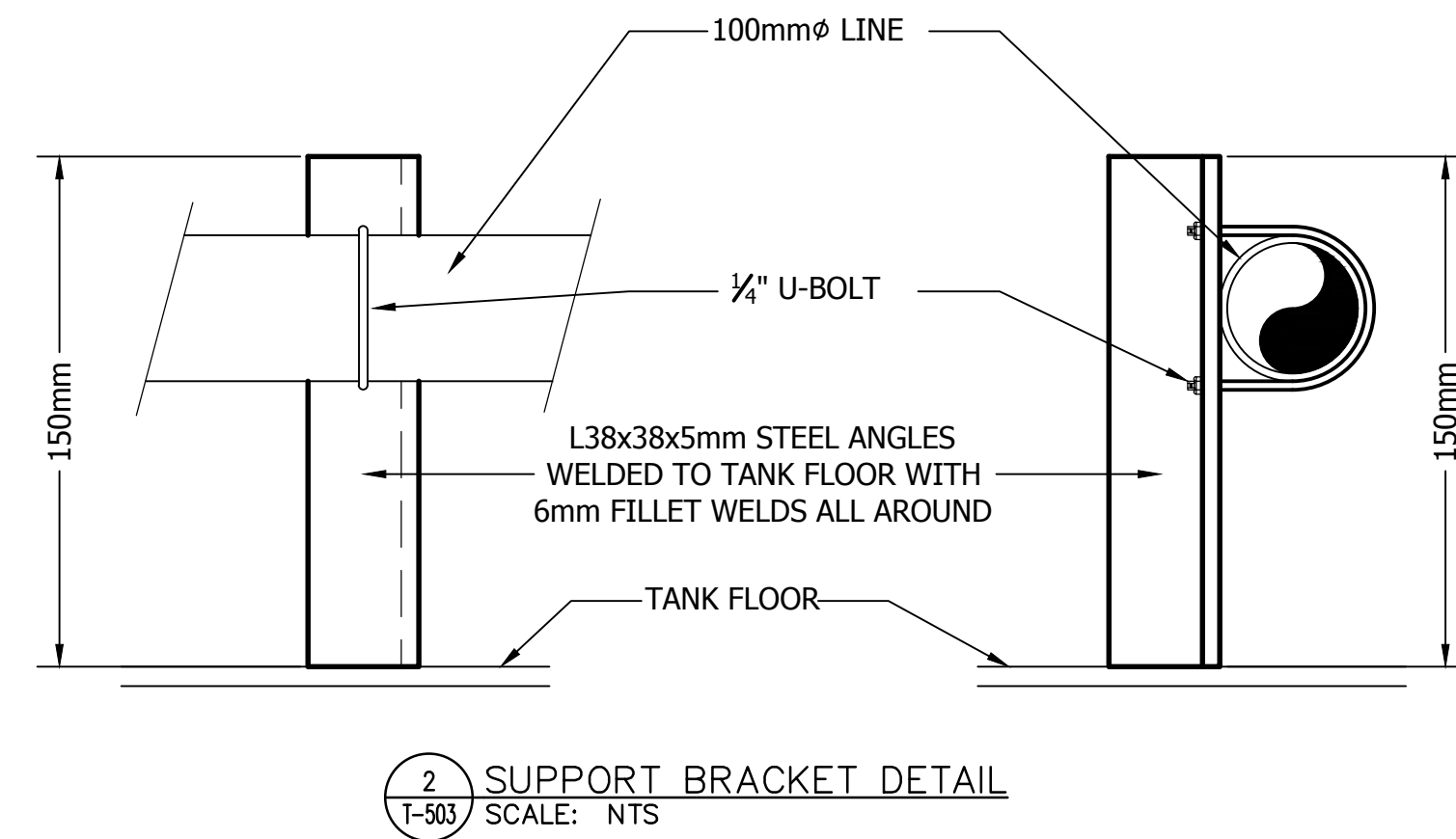
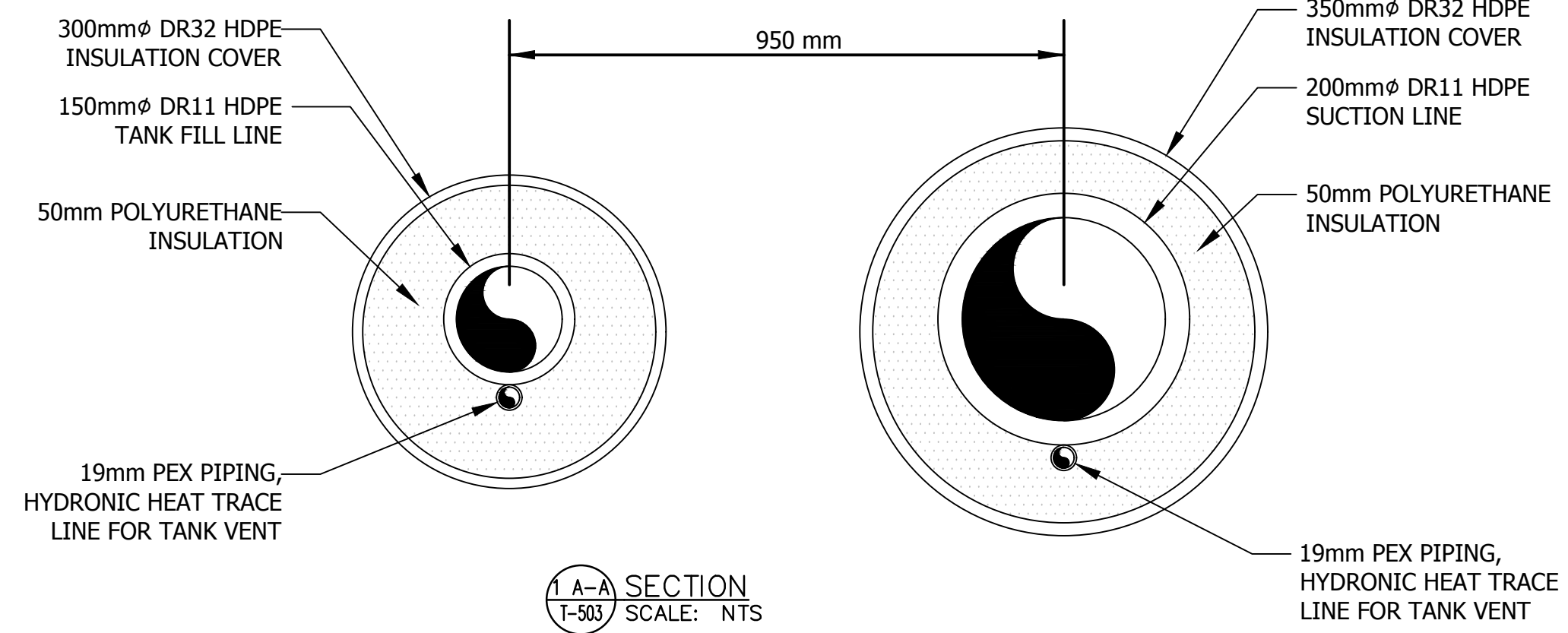
POTABLE WATER SYSTEM
PHASE II
Cambridge Bay, Nunavut

Title
WATER TANK DETAILS II

Project No.	Scale
144901252	N.T.S.

Drawing No.	Sheet	Revision
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Notes

File Name: 144901252	AF	WO	WO	13.12.19
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AS-BUILT DRAWING

GOVERNMENT OF NUNAVUT

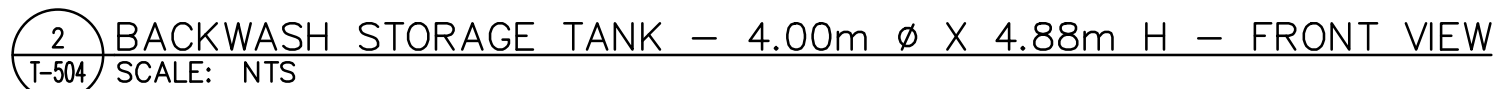
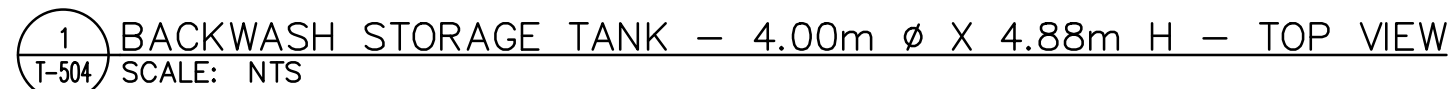
Cambridge Bay, Nunavut

TOP AND SIDE VIEW
OF 60 cu.m. BACKWASH TANK

Sheet

4 of 4

3



3 ORIENTATION PLAN – BACKWASH STORAGE TANK
T-504 SCALE: NTS

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2017/12/21 4:55 PM by: c.ding, Nelson

DESIGN NOTES

1. GENERAL

- 1.1. ALL CODES REFERENCED ARE TO BE THE LATEST VERSION AT THE DATE OF ISSUE.
- 1.2. DESIGN IS BASED ON THE NATIONAL BUILDING CODE OF CANADA 2010 (NBCC 2010) .
- 1.3. READ THESE DESIGN NOTES IN CONJUNCTION WITH THE CONTRACT SPECIFICATIONS AND ALL OTHER CONTRACT DOCUMENTS.
- 1.4. OBTAIN ENGINEER'S APPROVAL BEFORE CUTTING, BORING, OR SLEEVING LOAD-BEARING MEMBERS UNLESS NOTED OTHERWISE.
- 1.5. THE STRUCTURAL DRAWINGS ARE FOR THE COMPLETED PROJECT. STABILITY OF THE STRUCTURE DURING CONSTRUCTION REMAINS THE RESPONSIBILITY OF THE CONTRACTOR.
- 1.6. REFER TO ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR SMALL OPENINGS, SLEEVES, RECESSES, DEPRESSIONS, SUMPS, TRENCHES, CURBS, HOUSEKEEPING PADS, EQUIPMENT BASES, AND SLOPES NOT INDICATED ON THE STRUCTURAL DRAWINGS.
- 1.7. OPENINGS AND SLEEVES INDICATED ON THE STRUCTURAL DRAWINGS ARE FOR REFERENCE ONLY. COORDINATE ALL OPENING LOCATIONS AND DIMENSIONS WITH THE APPROPRIATE ENGINEER AND THE CONTRACTOR PRIOR TO CONSTRUCTION.
- 1.8. REVIEW ALL DRAWINGS AND CHECK DIMENSIONS PRIOR TO IMPLEMENTING THE WORK. REPORT ANY DISCREPANCIES TO THE ENGINEER FOR CLARIFICATION BEFORE PROCEEDING.
- 1.9. COORDINATE PLACEMENT AND LOCATION OF ITEMS BY SUBSEQUENT TRADES. RELEVANT TRADES SHALL REVIEW PRIOR TO ERECTION AND/OR INSTALLATION.
- 1.10. NOTIFY THE ENGINEER A MINIMUM OF 72 HOURS PRIOR TO ANY REQUIRED SITE REVIEWS.

2. DESIGN LOADS

- 2.1. UNLESS NOTED OTHERWISE, THE LOADS NOTED ON DRAWINGS ARE UNFACTORED.
- 2.2. CLIMATIC INFORMATION REFER TO TABLE 2.1
- 2.3. SITE INFORMATION REFER TO TABLE 2.2
- 2.4. DESIGN LOADS REFER TO TABLE 2.3
- 2.5. LATERAL LOADS
- 2.5.1. LATERAL LOADS FROM WIND AND SEISMIC LOADS ARE RESISTED BY THE CHEVRON BRACING (V-BRACING).
- 2.6. CONSTRUCTION LOADS SHALL NOT EXCEED THE LOADS NOTED ON THE DRAWINGS.
- 2.7. WHERE PERMISSIBLE, LIVE LOADS HAVE BEEN REDUCED IN ACCORDANCE WITH NBCC 2010.

3. DELEGATED DESIGN

- 3.1. PORTIONS OF THE DETAILED DESIGN ARE DELEGATED TO THE CONTRACTOR. RETAIN A PROFESSIONAL ENGINEER REGISTERED IN THE TERRITORY OF NUNAVUT TO COMPLETE THE DESIGN.
- 3.2. SUBMIT SHOP DRAWINGS FOR COMPONENTS REQUIRING DELEGATED DESIGN UNDER THE SEAL AND SIGNATURE OF THE ENGINEER RESPONSIBLE FOR THE DESIGN.
- 3.3. THE FOLLOWING COMPONENTS REQUIRE DELEGATED DESIGN:
- 3.3.1. STRUCTURAL STEEL CONNECTIONS WHERE APPLICABLE
- 3.3.2. PRE-FABRICATED WALL PANELS
- 3.3.3. STEEL GIRTS / STUDS AND CONNECTIONS
- 3.3.4. THE ENGINEER RESPONSIBLE FOR THE DESIGN IS ALSO RESPONSIBLE FOR REVIEW OF FABRICATION AND INSTALLATION OF THE COMPONENTS. UPON COMPLETION OF THE WORK, CERTIFY IN WRITING TO THE ENGINEER THAT SUCH REVIEW HAS BEEN COMPLETED.
- 3.3.5. REFER TO SPECIFICATIONS FOR FURTHER REQUIREMENTS.

4. FOUNDATION AND GEOTECHNICAL NOTES

- 4.1. FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL INVESTIGATION REPORT PREPARED BY EBA, PROJECT #Y14103058, AND DATED FEBRUARY 2013. ENSURE THAT THE REQUIREMENTS OUTLINED IN THIS REPORT ARE READ AND COMPLIED WITH THROUGHOUT PROJECT CONSTRUCTION.
- 4.2. REMOVE ALL ORGANIC MATERIAL FROM THE BUILDING AREA.
- 4.3. GEOTECHNICAL TESTING AGENCY TO BE APPROVED BY AND RESPONSIBLE TO THE ENGINEER AND PAID FOR BY THE CONTRACTOR.
- 4.4. UNLESS OTHERWISE SHOWN ON PLAN, FOUNDATION ELEMENTS ARE TO BE CENTERED UNDER FOUNDATION BEAMS. A VARIANCE OF MORE THAN 25mm IN ANY DIRECTION IS NOT PERMITTED.
- 4.5. PILE MONITORING DURING INSTALLATION SHALL BE DONE BY A PROFESSIONAL GEOTECHNICAL ENGINEER REGISTERED IN THE TERRITORY OF NUNAVUT.

5. CAST-IN-PLACE REINFORCED CONCRETE

- 5.1. CONCRETE MATERIALS, QUALITY, MIXING, PLACING, FORMWORK AND OTHER CONSTRUCTION PRACTICES TO CONFORM TO CSA-A23.1.
- 5.2. SUPPLY CONTROLLED CONCRETE IN ACCORDANCE WITH CSA-A23.1 WITH PROPERTIES NOTED IN TABLE 5.1.
- 5.3. NOTIFY ENGINEER A MINIMUM OF 5 BUSINESS DAYS PRIOR TO CONCRETE POURS TO ALLOW FOR REVIEW OF REINFORCEMENT.

- 5.4. DO NOT USE ADMIXTURES CONTAINING CALCIUM CHLORIDE.
- 5.5. FIELD AND LABORATORY TESTING OF CONCRETE TO BE COMPLETED BY A THIRD PARTY TESTING AND INSPECTION AGENCY APPROVED BY AND RESPONSIBLE TO THE ENGINEER. TESTING AGENCY SHALL BE CERTIFIED TO CSA-A283 AND TESTING TO BE COMPLETED IN ACCORDANCE WITH CSA-A23.2. TESTING PAID FOR BY CONTRACTOR.
6. CONCRETE REINFORCEMENT
- 6.1. REINFORCEMENT STEEL TO CONFORM TO CSA-G30.18 GRADE 400.
- 6.2. DO NOT WELD REINFORCEMENT UNLESS APPROVED IN WRITING BY THE ENGINEER. REINFORCEMENT TO BE WELDED TO CONFORM TO CSA G30.18, GRADE 400W. WELDING ONLY PERMITTED BY AN ORGANIZATION CERTIFIED TO CSA W186.
- 6.3. NOTIFY THE ENGINEER PRIOR TO CONCRETE PLACEMENT TO ALLOW FOR REVIEW OF REINFORCING.
- 6.4. SUBMIT SHOP DRAWINGS AND DETAILS FOR ALL REINFORCEMENT FOR REVIEW PRIOR TO FABRICATION.
- 6.5. CLEAR CONCRETE COVER TO REINFORCEMENT - REFER TO TABLE 6.1.
- 6.6. STANDARD END HOOK LENGTHS FOR REINFORCING - REFER TO TABLE 6.2.
- 6.7. REINFORCEMENT SPLICES - REFER TO TABLE 6.3.
- 6.7.1. WHERE SPLICES ARE INDICATED ON THE DRAWINGS, SUCH DIMENSIONS SHALL APPLY.
- 6.7.2. WHERE THE DRAWINGS INDICATE TENSION OR COMPRESSION SPLICES, IT SHALL BE AS INDICATED IN REINFORCEMENT SPLICES TABLE.
- 6.7.3. WHERE NO SPLICE OR SPLICE TYPE IS INDICATED ON THESE DRAWINGS, IT SHALL BE A TENSION SPLICE EXCEPT FOR COLUMNS WHICH SHALL BE A COMPRESSION SPLICE.
- 6.8. EMBEDMENT OF DOWELS - REFER TO TABLE 6.3
- 6.8.1. WHERE EMBEDMENT IS DIMENSIONED ON THE DRAWINGS, SUCH DIMENSIONS SHALL APPLY.
- 6.8.2. WHERE THE DRAWINGS INDICATE TENSION OR COMPRESSION EMBEDMENT, IT SHALL BE AS NOTED IN THE REINFORCEMENT SPLICES TABLE.
- 6.8.3. WHERE NO EMBEDMENT OR EMBEDMENT TYPE IS INDICATED ON THESE DRAWINGS, IT SHALL BE A TENSION EMBEDMENT EXCEPT FOR COLUMNS WHICH SHALL BE A COMPRESSION EMBEDMENT.
- 6.9. DO NOT CUT REINFORCEMENT AT OPENINGS WHERE IT CAN BE SPREAD CONTINUOUS AROUND OPENING.
- 6.10. ALL REINFORCEMENT TO BE SUPPORTED AT 900mm MAXIMUM SPACING.

7. STRUCTURAL STEEL

- 7.1. DESIGN, FABRICATION, ERECTION, AND OTHER CONSTRUCTION PRACTICES TO CONFORM TO CAN/CSA-S16 AND THE CISC CODE OF STANDARD PRACTICE FOR STRUCTURAL STEEL.
- 7.2. STEEL TO BE FABRICATED AND ERECTED BY A SHOP CERTIFIED BY THE CANADIAN WELDING BUREAU TO THE REQUIREMENTS OF CSA-W47.1, DIVISION 1 OR 2.1 ONLY.
- 7.3. SUBMIT SHOP DRAWINGS SHOWING ALL STRUCTURAL STEEL MEMBERS FOR REVIEW PRIOR TO FABRICATION. WELDING TO CONFORM TO CSA-W59.
- 7.4. ALL EXPOSED WELDS TO BE CONTINUOUS. GRIND ALL EXPOSED WELDS SMOOTH, INCLUDING PAINTED STEEL.
- 7.5. SUPPLY STEEL WITH PROPERTIES NOTED IN TABLE 7.1.
- 7.6. CONNECTIONS NOT DETAILED ON THE STRUCTURAL DRAWINGS SHALL BE DESIGNED AND DETAILED BY A PROFESSIONAL STRUCTURAL ENGINEER REGISTERED IN THE TERRITORY OF NUNAVUT AT THE STEEL FABRICATOR'S EXPENSE.
- 7.7. PROVIDED A MINIMUM OF 2 BOLTS IN BOLTED CONNECTIONS.
- 7.8. ALL BOLTED CONNECTIONS TO USE SNUG-TIGHTENED HIGH-STRENGTH BOLTS UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- 7.9. DO NOT SPLICE MATERIAL WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER. WHERE GRANTED, A COMPLETE NON-DESTRUCTIVE EXAMINATION WILL BE MANDATORY AND PAID FOR BY THE CONTRACTOR.
- 7.10. CLEAN, PREPARE AND PRIME ALL STRUCTURAL STEEL AND ANCHOR PLATES. DO NOT PRIME ANCHOR BOLTS OR SURFACES IN CONTACT WITH CONCRETE.
- 7.11. CLEAN ALL INTERIOR STRUCTURAL STEEL THAT IS TO BE FINISH PAINTED BY COMMERCIAL BLAST IN ACCORDANCE WITH SSPC SPECIFICATIONS SP6 TO ENSURE BASE STEEL IS THOROUGHLY CLEANED OF ALL RUST, DIRT, MILL SPATTER AND ALL OTHER EXTRANEIOUS MATERIAL FOLLOWED BY SOLVENT CLEANING BEFORE APPLYING PRIMER. REFER TO ARCHITECTURAL ROOM FINISH SCHEDULE FOR EXTENT. CONFIRM COMPATIBILITY BETWEEN PAINT AND PRIMER.
- 7.12. TOUCH-UP FIELD WELDS, CONNECTIONS AND ABRASIONS TO MATCH THE SHOP PRIMER.
- 7.13. SHOP AND FIELD INSPECTION OF STEEL FABRICATION AND ERECTION TO BE COMPLETED BY A THIRD PARTY TESTING AND INSPECTION AGENCY APPROVED BY AND RESPONSIBLE TO THE ENGINEER. TESTING AGENCY SHALL BE CERTIFIED TO CSA-W178. TESTING PAID FOR BY CONTRACTOR.
- 7.14. ALL STEEL BRACING CONNECTION SHALL BE SLIP-CRITICAL OR WELDED CONNECTIONS.

TABLE 5.1							
TO BE READ IN CONJUNCTION WITH DESIGN NOTES SECTION 5 - CAST-IN-PLACE CONCRETE							
CONTROLLED CONCRETE							
CONCRETE ELEMENT	CLASS OF EXPOSURE	MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS (MPa)	MINIMUM COMPRESSIVE STRENGTH AT 56 DAYS (MPa)	MAXIMUM AGGREGATE E SIZE (mm)	AIR CONTENT CATEGORY Y	MAXIMUM W/C RATIO	CEMENT TYPE
EXTERIOR CONCRETE							
ALL EXT. CONCRETE	C-1	35	NA	20	1	0.40	GU

TABLE 6.1			
TO BE READ IN CONJUNCTION WITH DESIGN NOTES SECTION 6 - CONCRETE REINFORCEMENT			
CLEAR CONCRETE COVER TO REINFORCEMENT			
EXPOSURE CONDITION	EXPOSURE CLASS		
	N	F-1, F-2, S-1, S-2, S-3	C-XL, C-1, C-2, C-3, A-1, A-2, A-3
CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	-	75 mm	75 mm
SLABS, WALLS, (EXCEPT AS NOTED BELOW)	20 mm	40 mm	60 mm
RATIO OF COVER TO NOMINAL BAR DIAMETER	1	1.5	2
RATIO OF COVER TO NOMINAL MAXIMUM AGGREGATE SIZE	1	1.5	2
NOTE THE LARGEST COVER REQUIRED FOR ANY ONE ELEMENT SHALL GOVERN.			

TABLE 7.1	
TO BE READ IN CONJUNCTION WITH DESIGN NOTES SECTION 10 - STRUCTURAL STEEL	
STEEL GRADES	
MEMBER TYPE	GRADE
ROLLED W-SHAPES	CAN/CSA G40.21 350W OR ASTM A992 GRADE 50
RECTANGULAR / SQUARE HSS	CAN/CSA G40.21 350W OR ASTM A992 GRADE 50
ROUND HSS	ASTM A500 GRADE 46 (GRADE C)
PLATE / ANGLES / CHANNELS	CAN/CSA G40.21 300W
BOLTS	ASTM A325 / A325M

TABLE 2.1	
TO BE READ IN CONJUNCTION WITH DESIGN NOTES SECTION 2 - DESIGN LOADS	
CLIMATIC INFORMATION	
SNOW LOAD 1/50, Ss	1.6 kPa
SNOW LOAD 1/50, Sr	0.1 kPa
ONE DAY RAIN 1/50	38 mm
HOURLY WIND PRESSURE (1/10)	0.42 kPa
HOURLY WIND PRESSURE (1/50)	0.54 kPa
SEISMIC RESPONSE, Sa(0.2)	0.095
SEISMIC RESPONSE, Sa(0.5)	0.057
SEISMIC RESPONSE, Sa(1.0)	0.026
SEISMIC RESPONSE, Sa(2.0)	0.008
SEISMIC RESPONSE, PGA	0.036

TABLE 2.2	
TO BE READ IN CONJUNCTION WITH DESIGN NOTES SECTION 2 - DESIGN LOADS	
SITE INFORMATION	
IMPORTANCE CATEGORY	POST-DISASTER
WIND EXPOSURE TYPE	OPEN TERRAIN
INTERNAL PRESSURE CATEGORY	2
FOUNDATION SITE CLASS	B

TABLE 2.3	
TO BE READ IN CONJUNCTION WITH DESIGN NOTES SECTION 2 - DESIGN LOADS	
DESIGN LOADS	
FLOOR	
LIVE LOAD	### kPa
SUPERIMPOSED DEAD LOAD	2.50 kPa
ROOFS	
SUPERIMPOSED DEAD LOAD	1.50 kPa
BASIC SNOW LOAD	1.40 kPa

TABLE 6.2								
TO BE READ IN CONJUNCTION WITH DESIGN NOTES SECTION 6 - CONCRETE REINFORCEMENT								
STANDARD END HOOKS								
BAR SIZE	10M	15M	20M	25M	30M	35M	45M	55M
90° HOOK LENGTH	180	260	310	400	510	640	790	1020
180° HOOK LENGTH	140	180	210	280	390	550	670	860

TABLE 6.3					
TO BE READ IN CONJUNCTION WITH DESIGN NOTES SECTION 6 - CONCRETE REINFORCEMENT					
REINFORCEMENT SPLICES					
BAR SIZE	COMPRESSION SPLICE (mm)	TENSION SPLICE (mm)			
		FULL TENSION SPLICE		FULL TENSION SPLICE TOP BARS*	
		REGULAR BARS	EPOXY COATED BARS	REGULAR BARS	EPOXY COATED BARS
10M	300	400	600	500	650
15M	450	550	850	750	950
20M	600	700	1000	900	1150
25M	750	1100	1650	1400	1850
30M	900	1300	1950	1700	2200
35M	1025	1550	2300	2000	2600
NOTE 1:	THIS TABLE IS BASED ON NORMAL WEIGHT CONCRETE $f_c = 35$ MPa AND ON REINFORCING STEEL $f_y = 400$ MPa.				
NOTE 2:	*TOP BARS ARE DEFINED AS HORIZONTAL REINFORCEMENT PLACED SUCH THAT MORE THAN 300mm OF CONCRETE IS CAST IN THE MEMBER BELOW THE REINFORCEMENT.				
NOTE 3:	FOR STANDARD EMBEDMENT DEPTH INTO CONCRETE, DIVIDE BASIC TENSION LAP SPLICE NUMBERS BY 1.3.				



4910 - 53 Street PO Box 1777
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Consultants

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Notes

Revision		By	Appd.	YY.MM.DD
4	ACCESS ROAD WIDENING (CCN #3)	AK	MF	16.08.16
3	CHARS REALIGNMENT & PROFILE UPDATE (SI)	LM	AF	15.01.16
2	CHARS REALIGNMENT	AK	AF	14.12.08
Revision		By	Appd.	YY.MM.DD
E	AS-BUILT DRAWING	NL	MF	17.12.21
D	ISSUED FOR CONSTRUCTION	MN	WO	14.05.26
C	ISSUED FOR TENDER	AF	WO	14.02.14
B	ISSUED FOR 80% REVIEW	AF	WO	13.12.20
A	ISSUED FOR 50% REVIEW	AF	WO	12.11.09
Issued		By	Appd.	YY.MM.DD

File Name: 144901252	AF	WO	WO	13.12.19
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

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AS-BUILT DRAWING

Client/Project
GOVERNMENT OF NUNAVUT

POTABLE WATER SYSTEM
PHASE II

Cambridge Bay, Nunavut

Title
STRUCTURAL NOTES

Project No.
144901252

Scale
N.T.S.

Drawing No.

Sheet

Revision

S-501

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4	ACCESS ROAD WIDENING (CCN #3)	AK	MF 16.08.16
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By		Appd.	YY.MM.DD
Issued			
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By		Appd.	YY.MM.DD

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GOVERNMENT OF NUNAVUT

POTABLE WATER SYSTEM
PHASE II
Cambridge Bay, Nunavut

Title

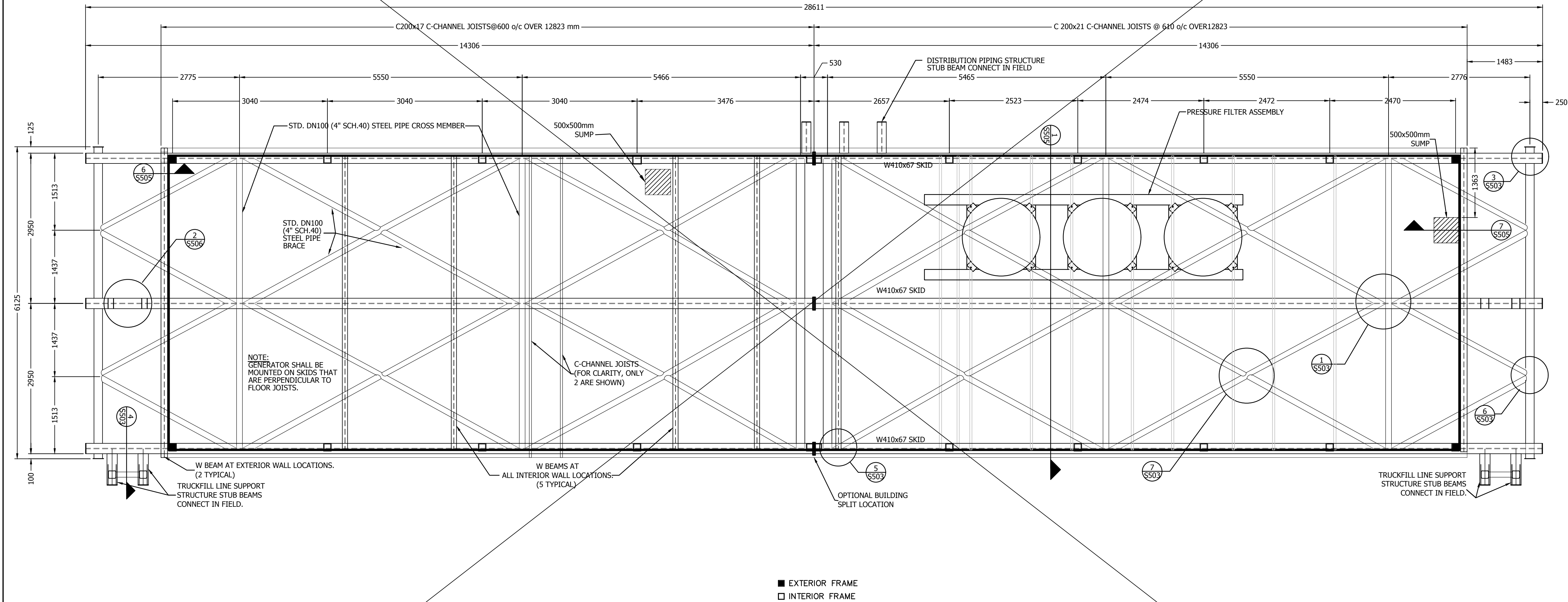
SKID AND SUBFLOOR
ASSEMBLY

Project No.	Scale	
144901252	N.T.S.	
Drawing No.	Sheet	Revision

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3





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Legend

1. FOAM IN PLACE INSULATION IN FLOOR CAVITY NOT SHOWN FOR CLARITY.
2. ALL VOIDS IN FLOOR SYSTEM TO BE FULLY INSULATED WITH FOAM-IN-PLACE INSULATION

3	ACCESS ROAD WIDENING (CCN #3)	AK	MF	16.08.16
3	CHAR'S REALIGNMENT & PROFILE UPDATE (S)	LM	AF	15.01.16
2	CHAR'S REALIGNMENT	AK	AF	14.12.08
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D	ISSUED FOR CONSTRUCTION	MN	WO	14.05.26
C	ISSUED FOR TENDER	AF	WO	14.02.14
B	ISSUED FOR 80% REVIEW	AF	WO	13.12.20
A	ISSUED FOR 50% REVIEW	AF	WO	12.11.09
Issued		By	Appd.	YY.MM.DD

File Name: 144901252	AF	WO	WO	13.12.19
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

AS-BUILT DRAWING

POTABLE WATER SYSTEM
PHASE II
Cambridge Bay, Nunavut

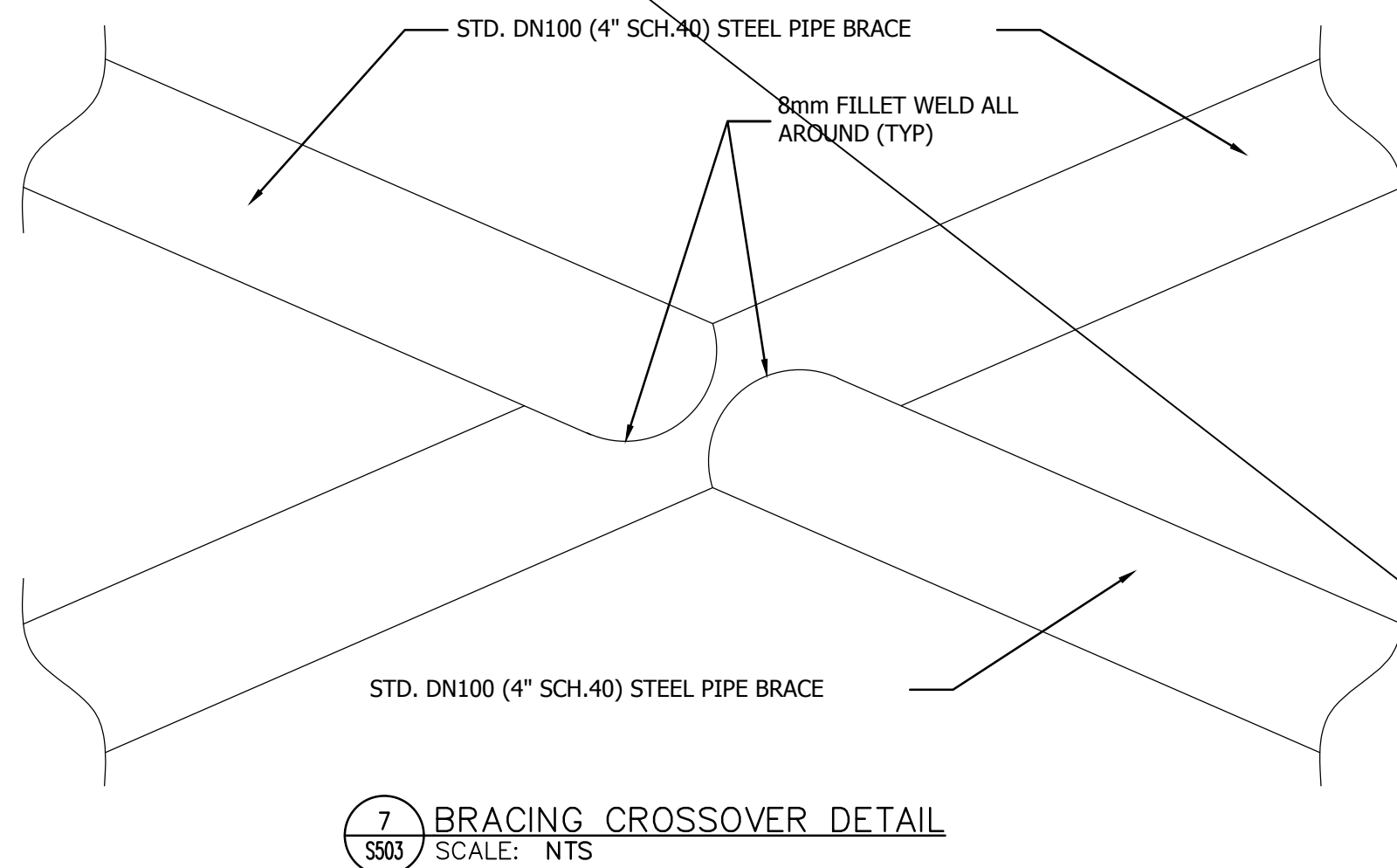
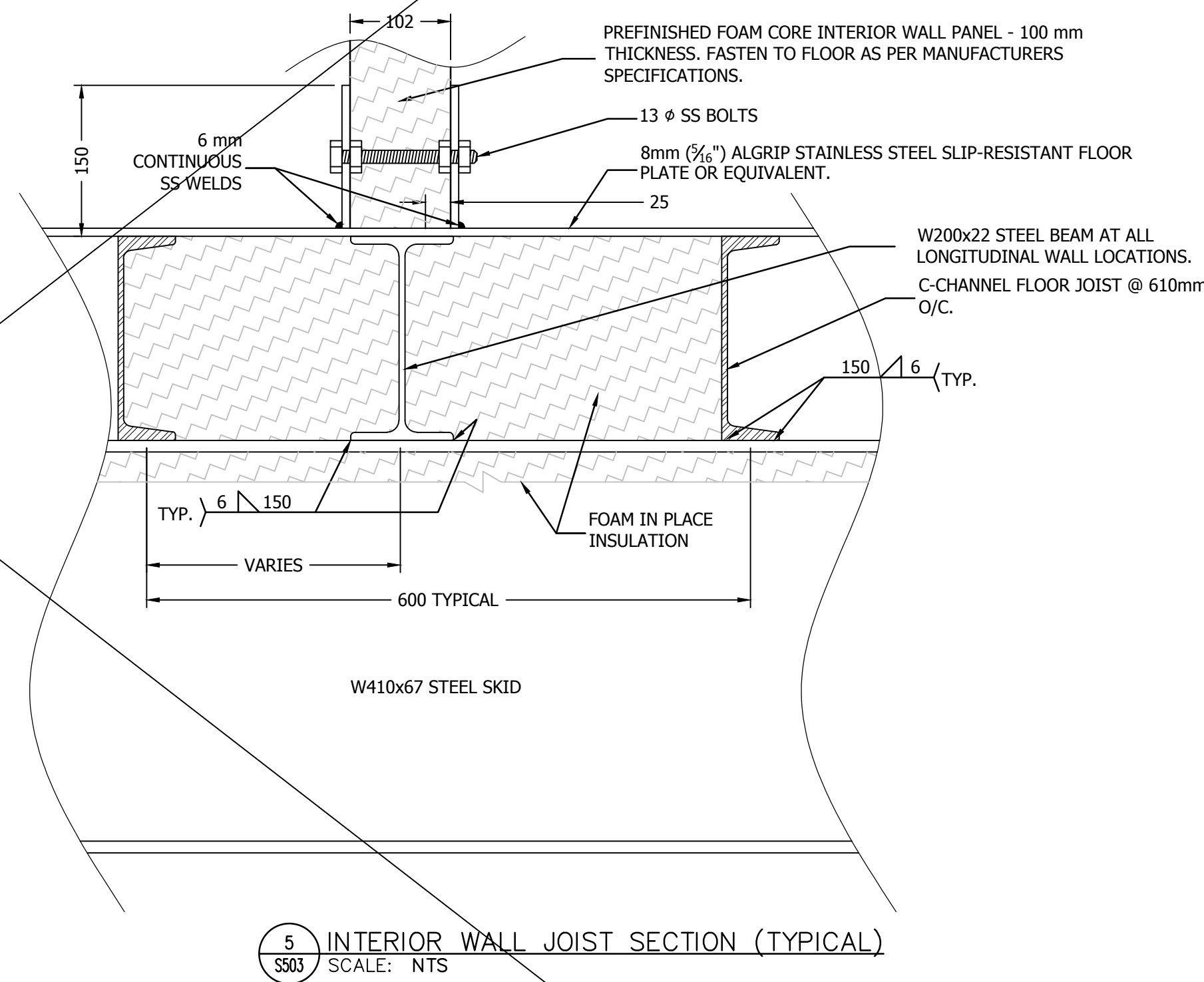
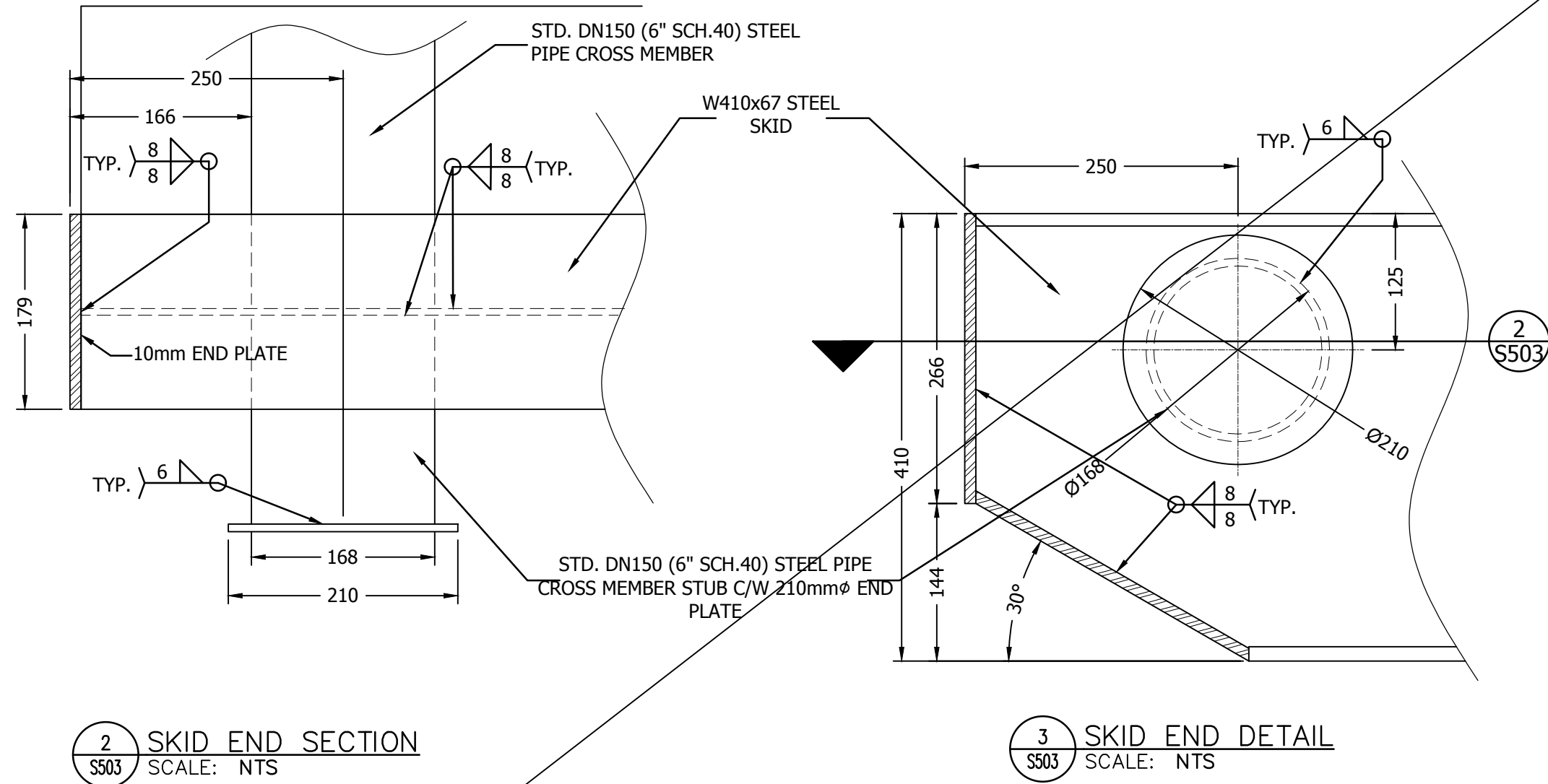
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Project No. 144901252	Scale N.T.S.	
Drawing No.	Sheet	Revision

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3	CHARS REALIGNMENT & PROFILE UPDATE (SI)	LM	AF	15.01.16
2	CHARS REALIGNMENT	AK	AF	14.12.08
Revision		By	Appd.	YY.MM.DD
E	AS-BUILT DRAWING	NL	MF	17.12.21
D	ISSUED FOR CONSTRUCTION	MN	WO	14.05.26
C	ISSUED FOR TENDER	AF	WO	14.02.14
B	ISSUED FOR 80% REVIEW	AF	WO	13.12.20
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GOVERNMENT OF NUNAVUT

POTABLE WATER SYSTEM
PHASE II
Cambridge Bay, Nunavut

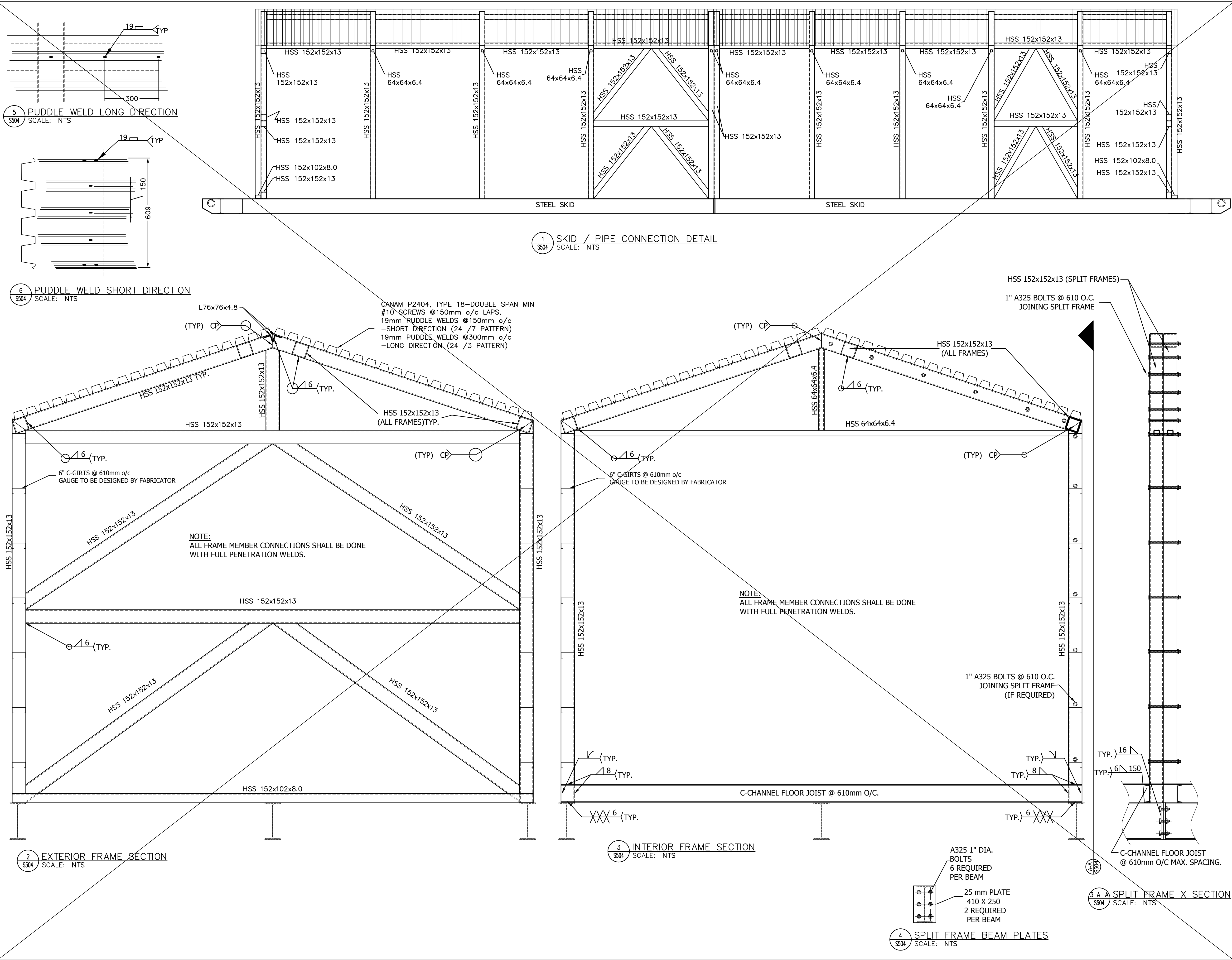
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Project No.	Scale	Revision
144901252	N.T.S.	
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2	CH&RS REALIGNMENT	AK	AF	14.12.08
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C	ISSUED FOR TENDER	AF	WO	14.02.14
B	ISSUED FOR 80% REVIEW	AF	WO	13.12.20
A	ISSUED FOR 50% REVIEW	AF	WO	12.11.09
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AS-BUILT DRAWING

POTABLE WATER SYSTEM
PHASE II
Cambridge Bay, Nunavut

Drawing No.	Sheet	Revision
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ORIGINAL SHEET - ANSI D

4	ACCESS ROAD WIDENING (CCN #3)	AK	MF	14.08.16
3	CHARS REALIGNMENT & PROFILE UPDATE (S)	LM	AF	15.01.16
2	CHARS REALIGNMENT	AK	AF	14.12.08
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C	ISSUED FOR TENDER	AF	WO	14.02.14
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POTABLE WATER SYSTEM
PHASE II

Cambridge Bay, Nunavut

STAIR DETAILS

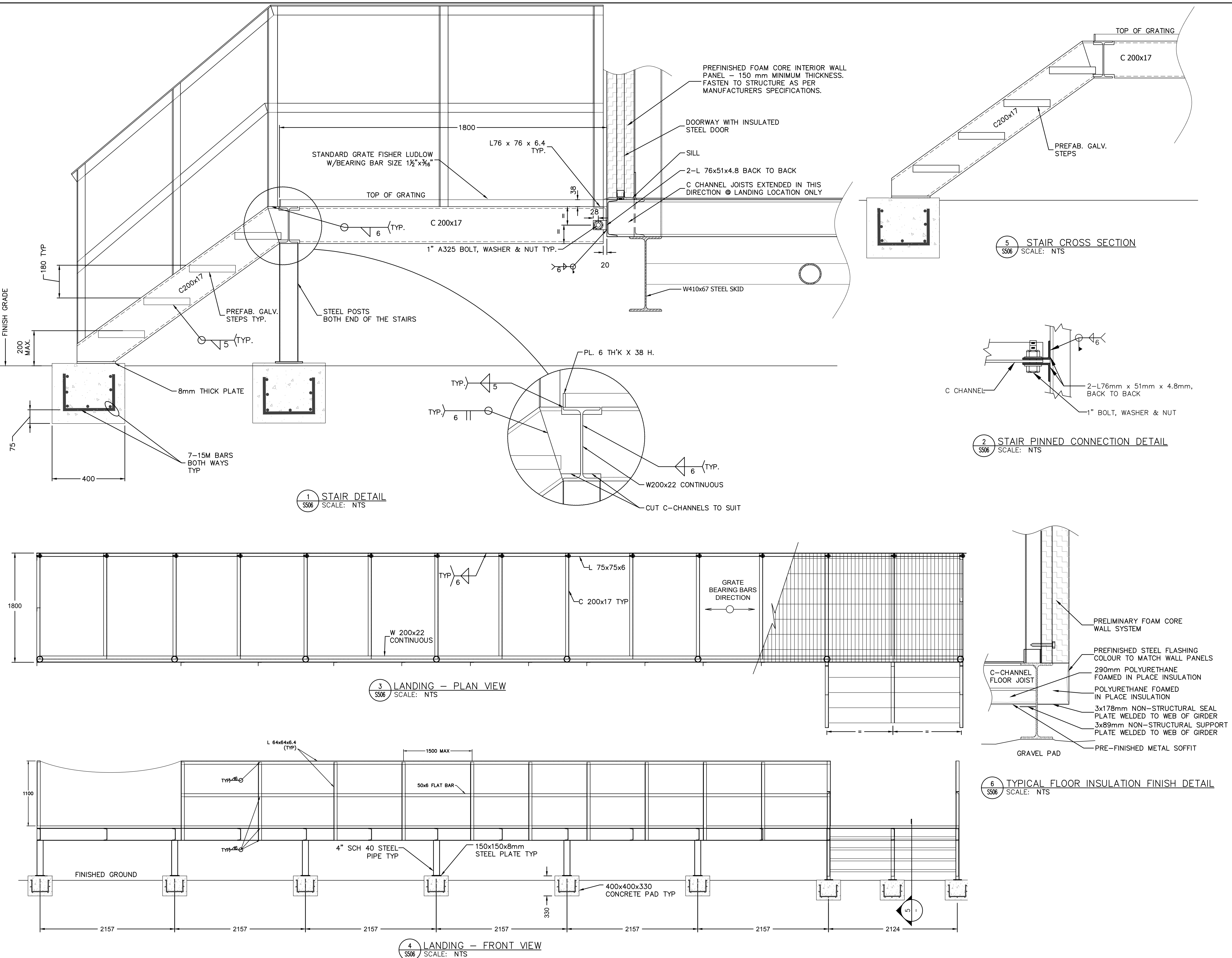
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144901252	N.T.S.

Drawing No.	Sheet	Revision
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Legend

1. ALL APPLICABLE EDGES ARE TO BE GAS CUT AND ARE NOT TO BE SHEARED.
2. ALL STEEL BEAMS ARE TO BE Laterally Restrained by Floor Joist Above.
3. ALL STEEL PILES TO BE HSS 141x6.4, GRADE 350W.
4. STIFFENERS TO BE PLACED AT ALL PILE SUPPORT.

4	ACCESS ROAD WIDENING (CCN #3)	AK	MF	16.08.16
3	CHARS REALIGNMENT & PROFILE UPDATE (SI)	LM	AF	15.01.16
2	CHARS REALIGNMENT	AK	AF	14.12.08
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POTABLE WATER SYSTEM
PHASE II
Cambridge Bay, Nunavut

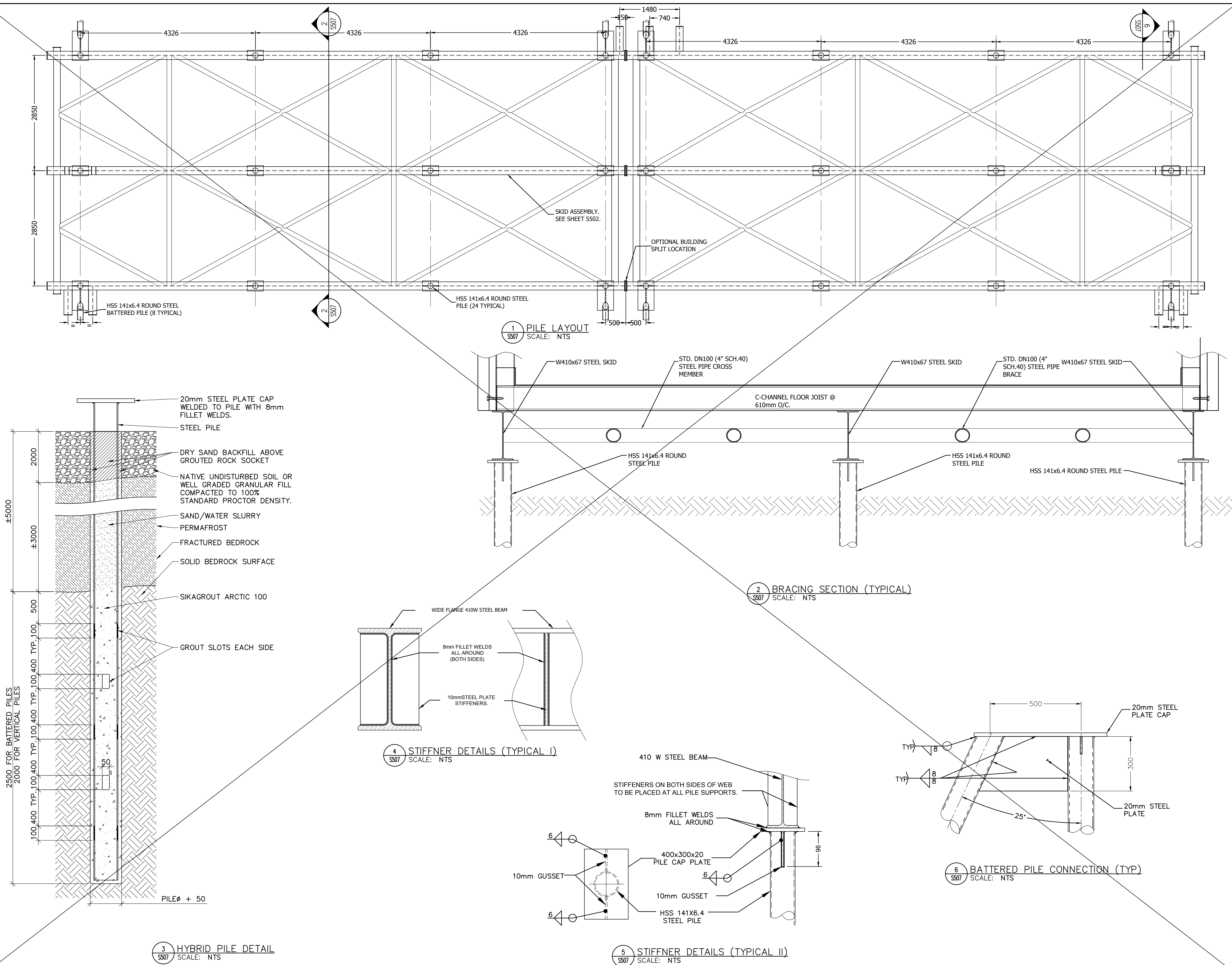
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Project No.	Scale
144901252	N.T.S.

Drawing No.	Sheet	Revision
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2017/12/21 4:06 PM By: Luong, Nelson

ORIGINAL SHEET - ANSI D

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AS-BUILT DRAWING

Client/Project
GOVERNMENT OF NUNAVUT

POTABLE WATER SYSTEM
PHASE II
Cambridge Bay, Nunavut

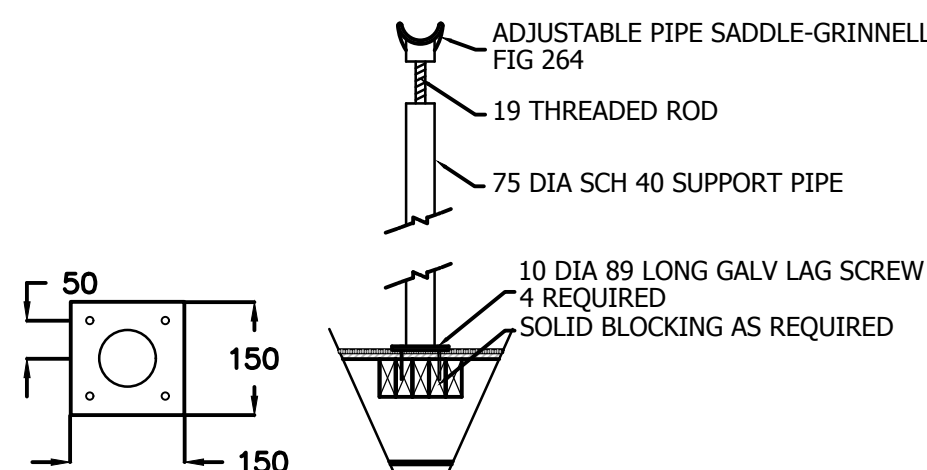
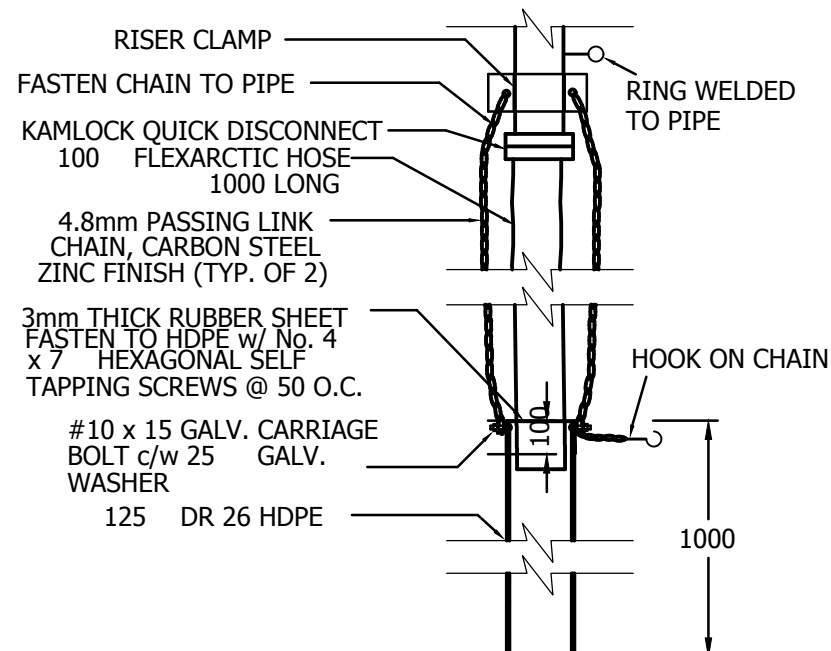
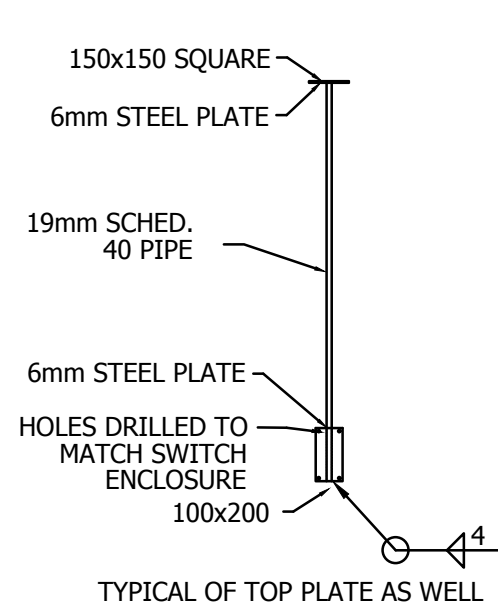
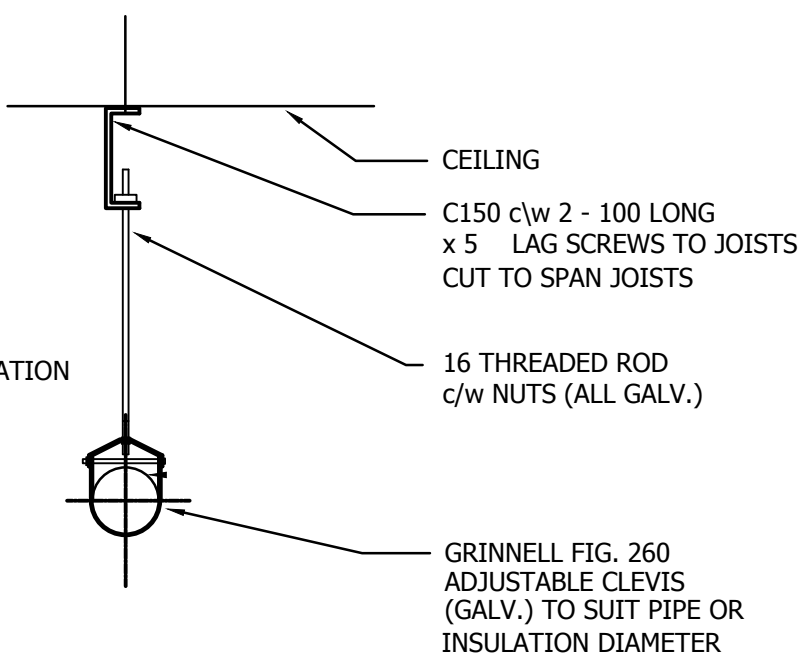
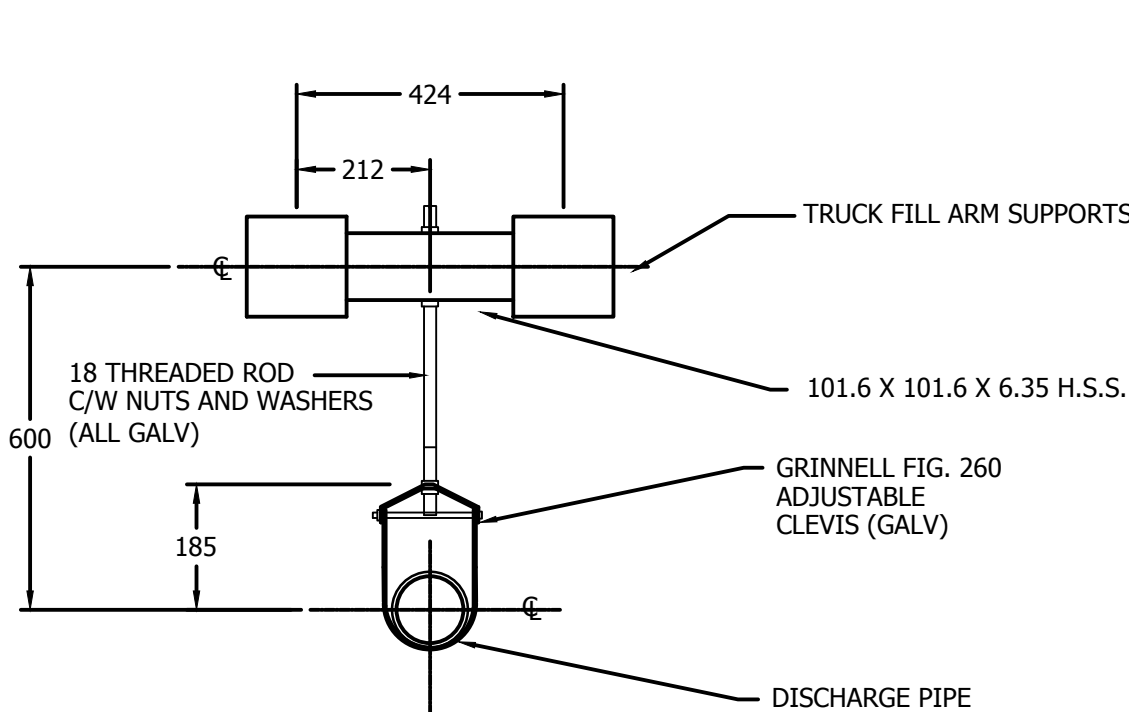
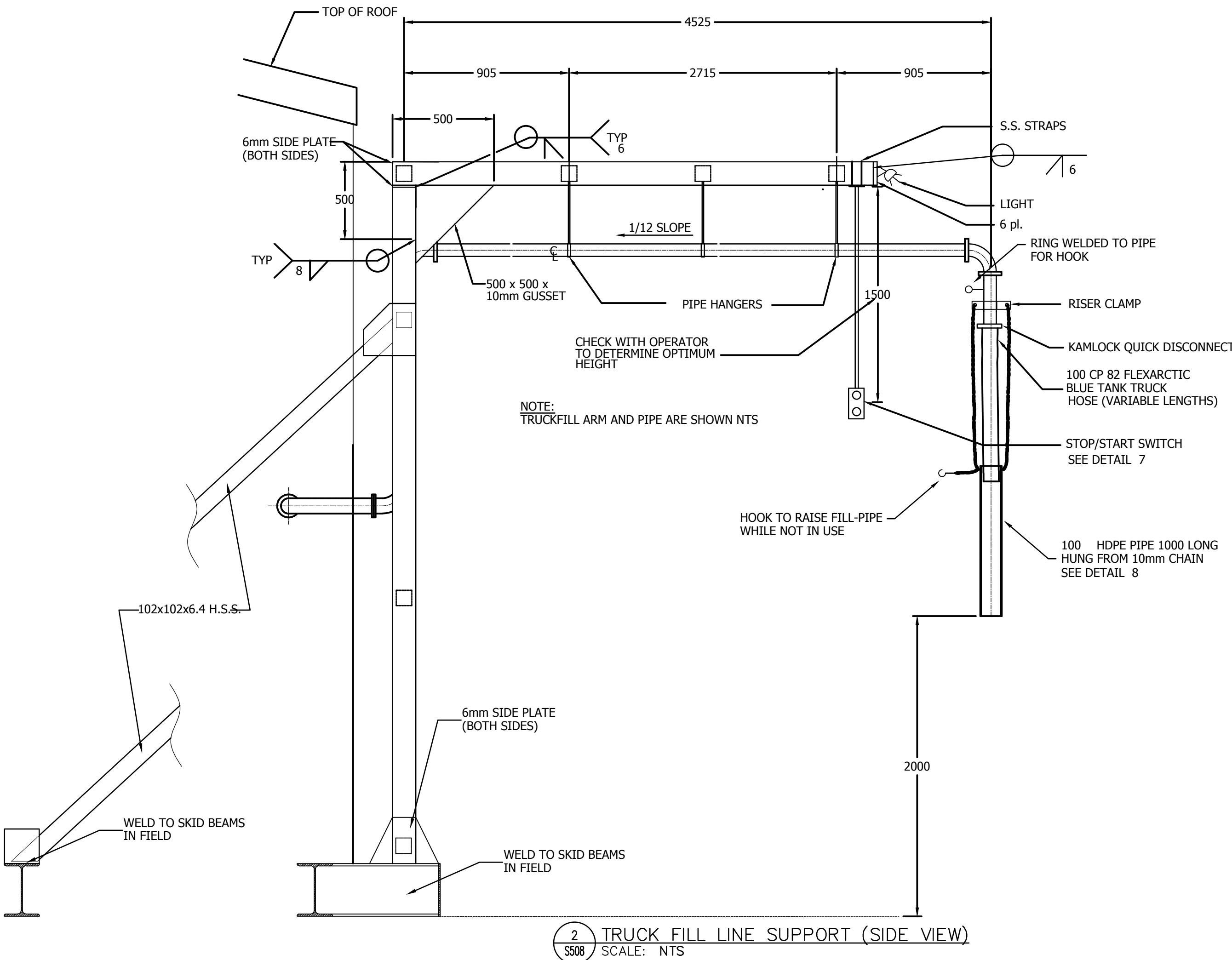
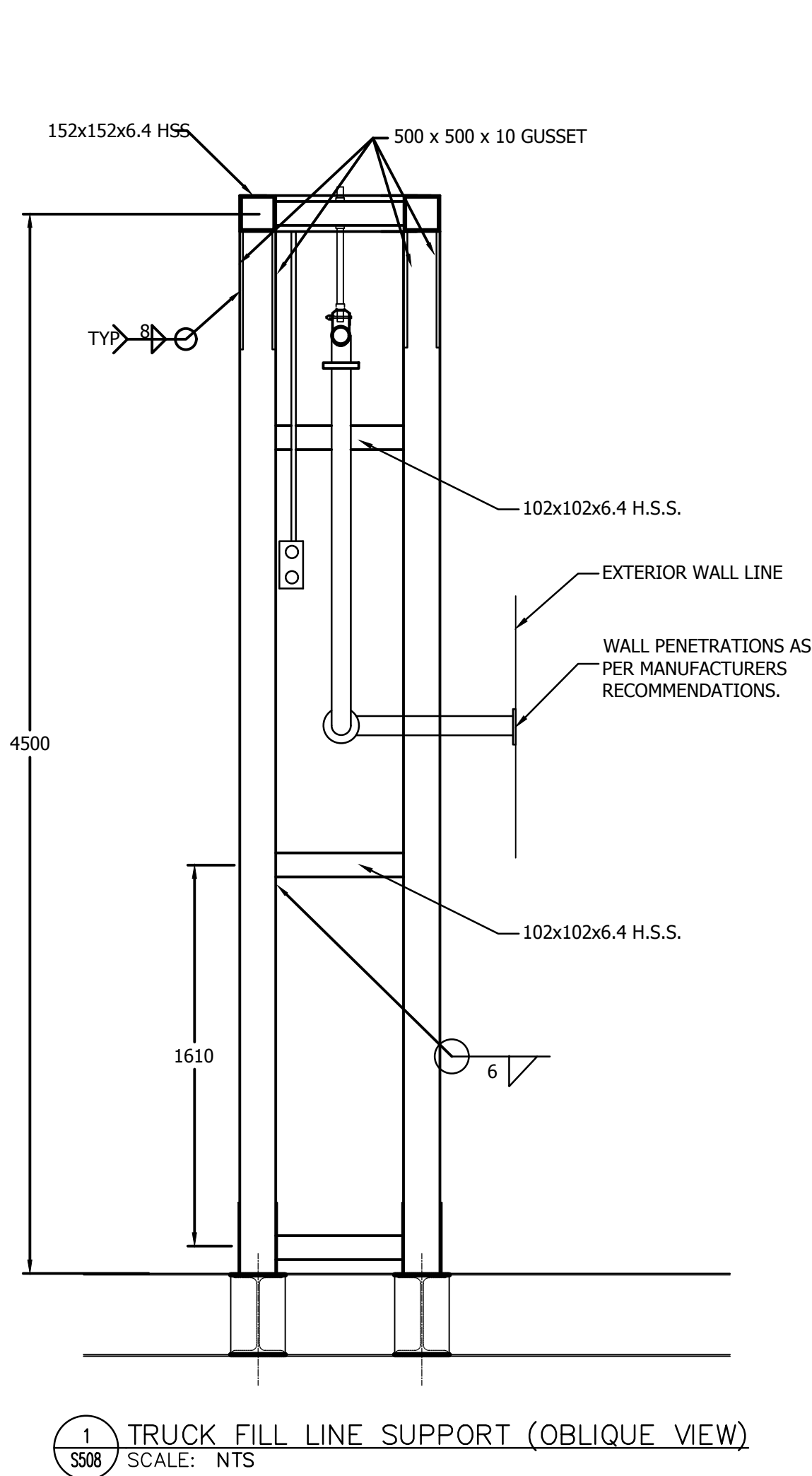
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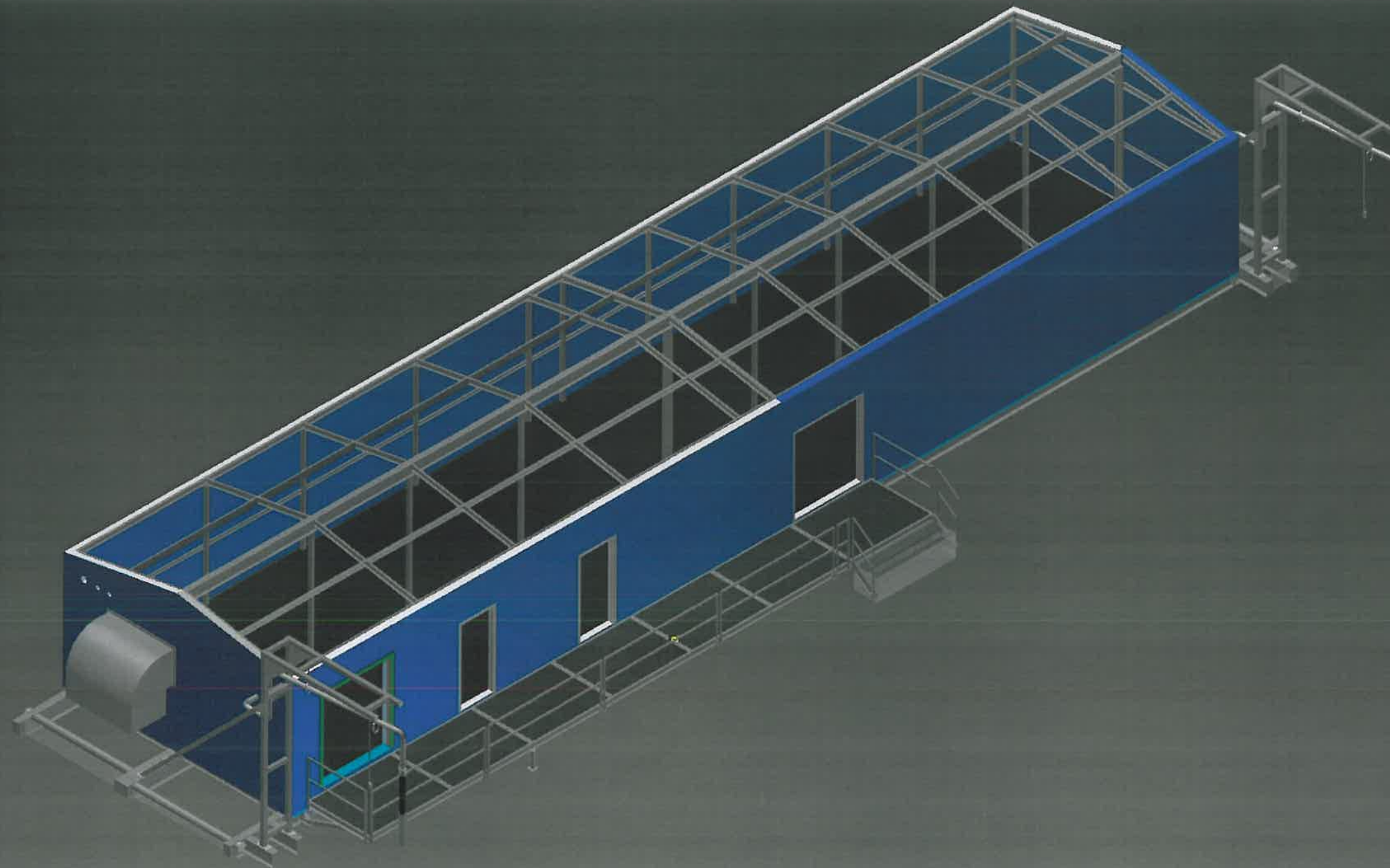
Project No.	Scale	Revision
144901252	N.T.S.	
Drawing No.	Sheet	

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**BI Pure Water
(Canada) Inc.**
#2, 9790 - 190th Street
Surrey, BC V4N 3M9
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T	Status
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ISSUED FOR
APPROVAL

	12/12/14		ISSUED FOR APPROVAL
Issue	Date	App'd	Revision Description

Design By:	JG
Drawn By:	JG
Checked By:	PA
Submitted	
Approved	

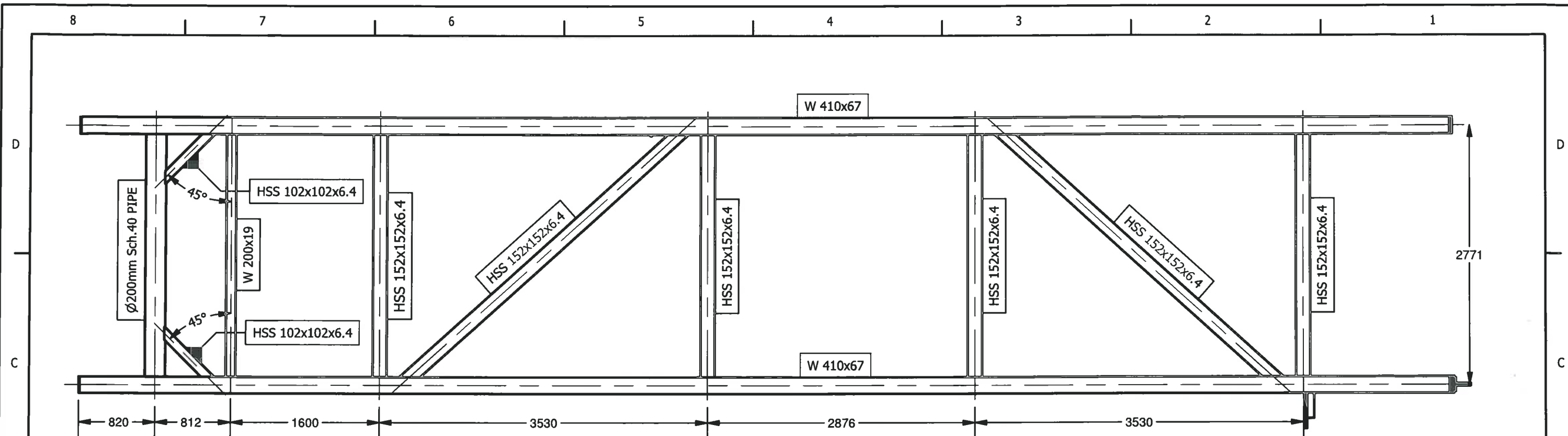
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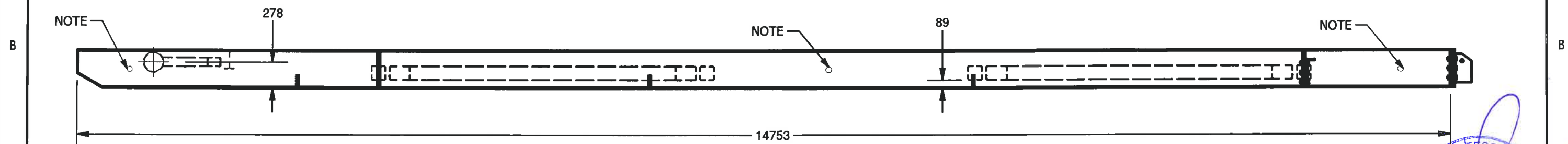
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Project:	WATER TREATMENT BUILDING 3D MODEL

Drawing #: **COVER SHEET**

Scale	
Date	30/10/2014
Sheet	1 of 1
Job#	2500
	Rev: A



PLAN



SIDE

NOTE:

1. Ø24mm HOLE THRU WEB TO ACCEPT A325 Ø19mm HEAVY HEX BOLT TO CONNECT OPPOSING MEMEBERS.



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Surrey, BC V4N 3M9
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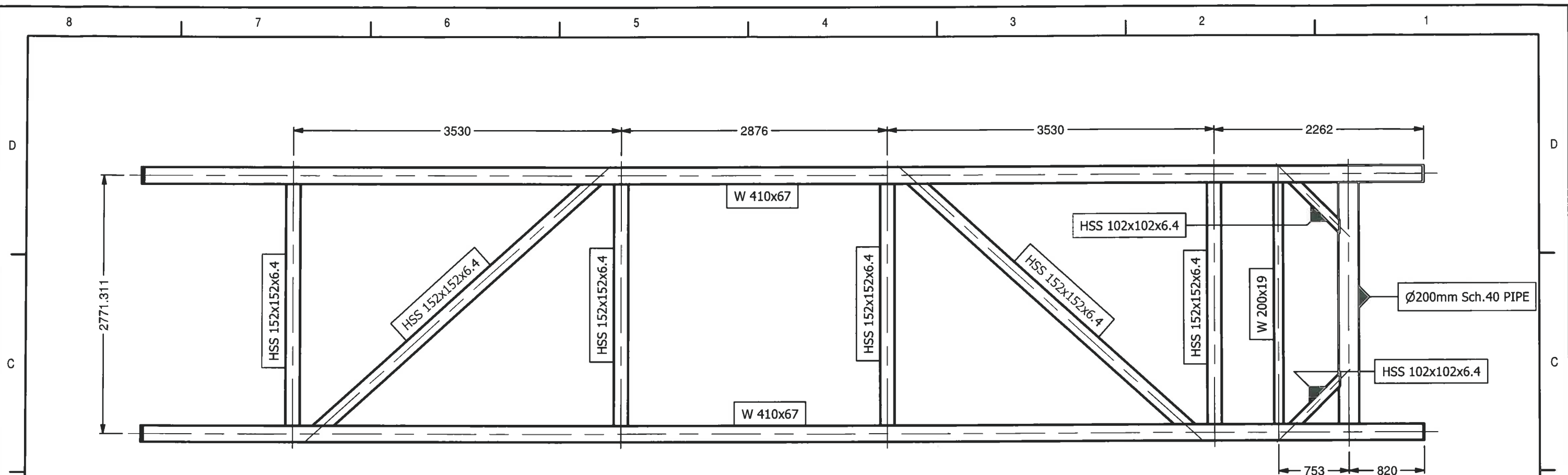
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Drawn By: JG
Checked By: PA
Submitted
Approved

Client:

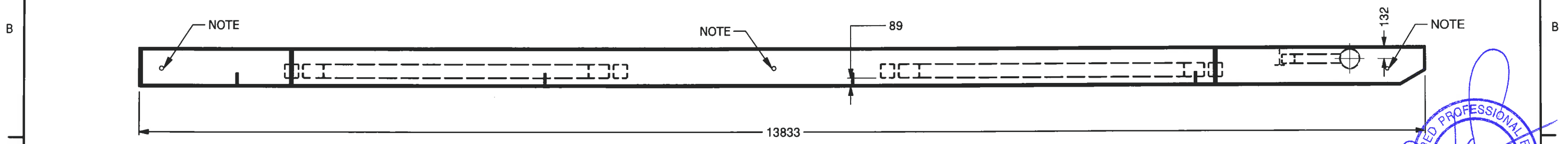


Title: CAMBRIDGE BAY WATER TREATMENT PLANT
Project: MODULE 1 SKID LAYOUT
Drawing #: 2500-LA-001

Scale: 1:50
Date: 25/09/14
Sheet: 1 of 1
Job #: 2500
Rev: 2

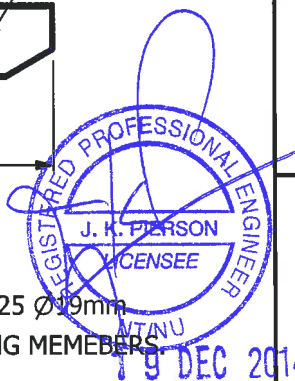


PLAN



SIDE

NOTE:
 1. Ø24mm HOLE THRU WEB TO ACCEPT A325 Ø19mm HEAVY HEX BOLT TO CONNECT OPPOSING MEMBERS.



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 Surrey, BC V4N 3M9
 Phone: (604) 882-6650
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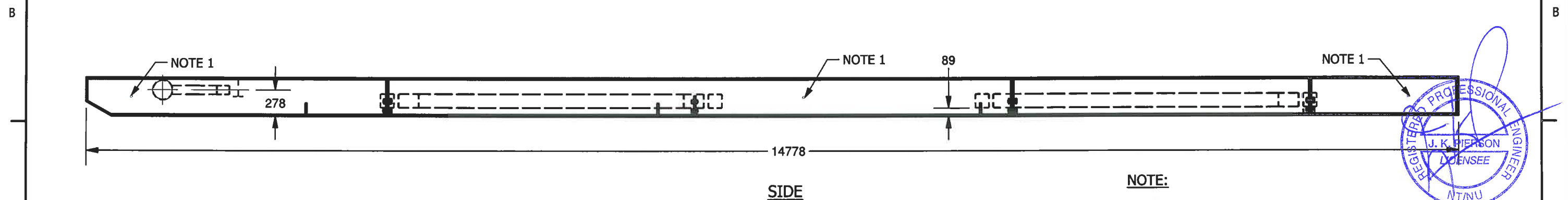
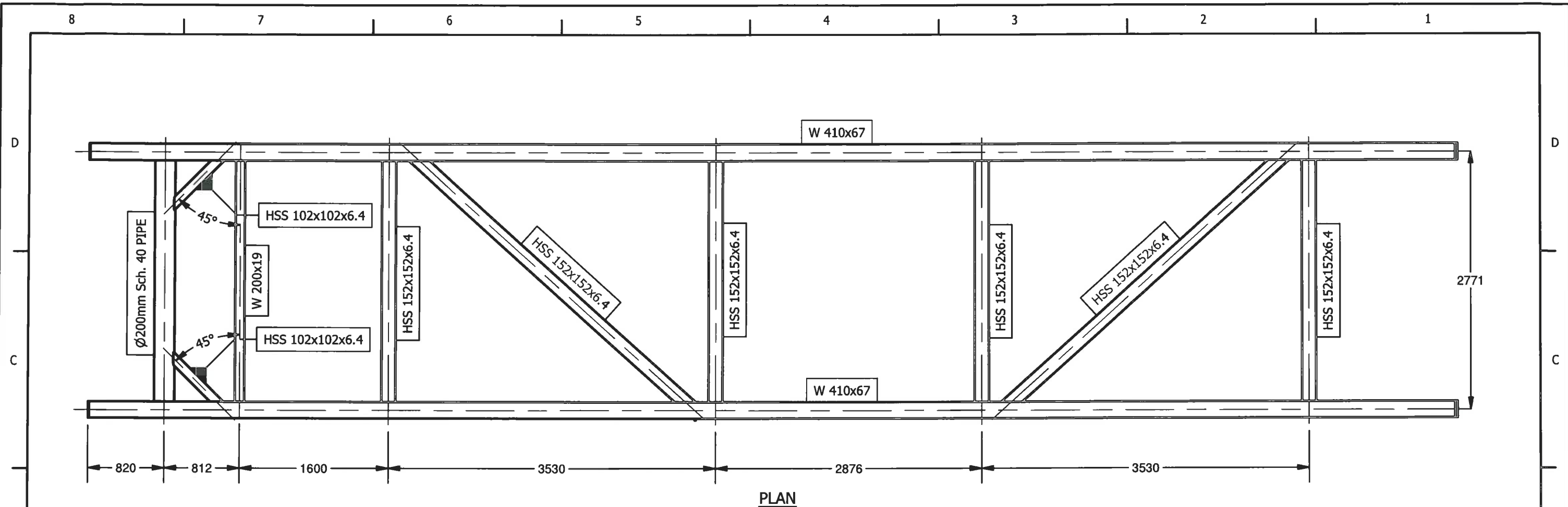
Issue	Date	App'd	Revision Description
1	12/12/14		ISSUED FOR APPROVAL

Design By: JG
 Drawn By: JG
 Checked By: PA
 Submitted: _____
 Approved: _____

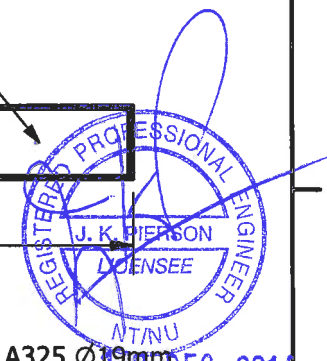


Title: **CAMBRIDGE BAY WATER TREATMENT PLANT**
 Project: **MODULE 2 SKID LAYOUT**
 Drawing #: **2500-LA-002**

Scale: 1 : 50
 Date: 25/09/14
 Sheet: 1 of 1
 Job#: 2500
 Rev: 1



NOTE:
 1. Ø24mm HOLE THRU WEB TO ACCEPT A325 Ø19mm HEAVY HEX BOLT TO CONNECT OPPOSING MEMEBERS.



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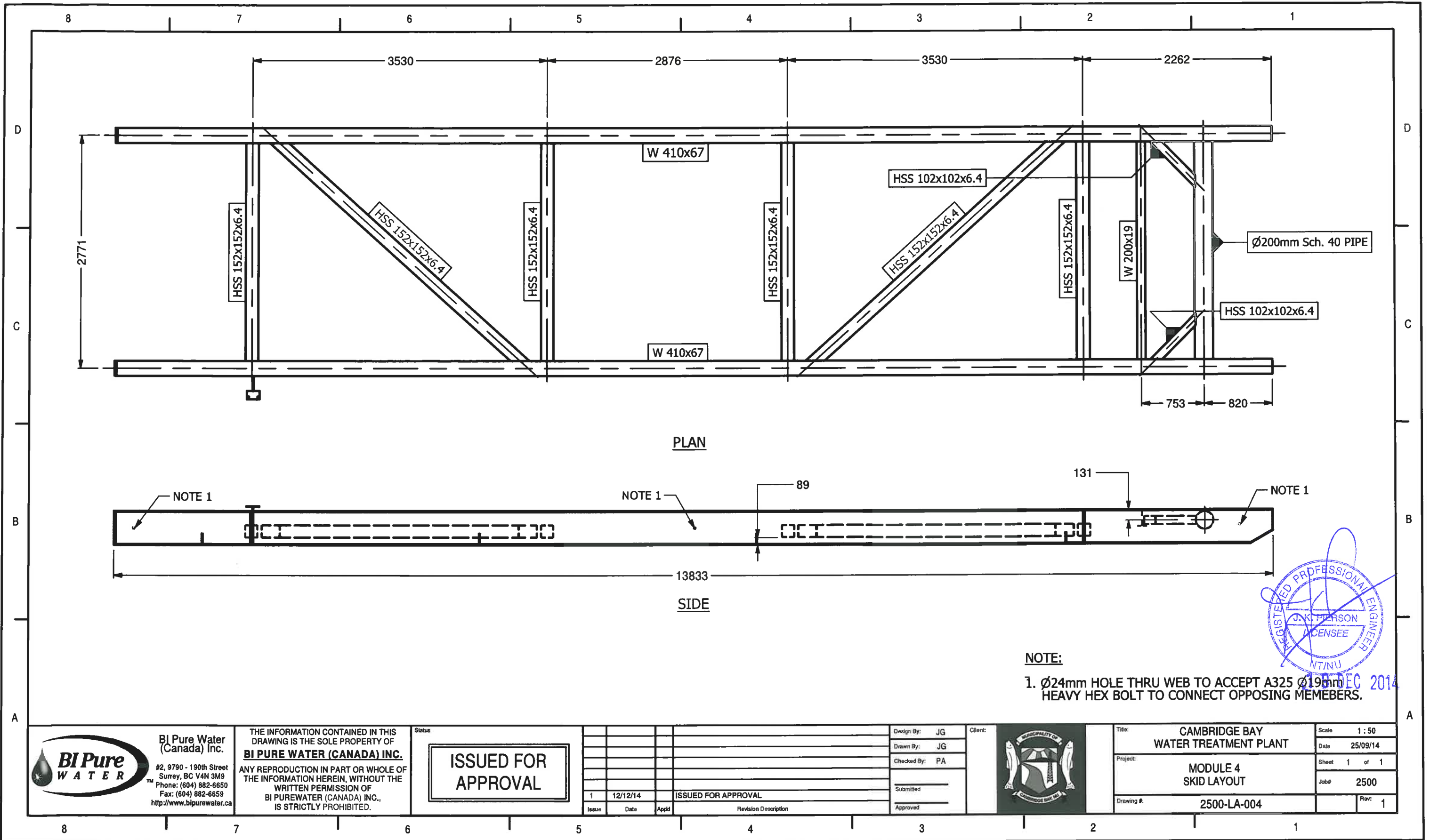
Issue	Date	Appd	Revision Description
1	12/12/14		ISSUED FOR APPROVAL

Design By: PA
 Drawn By: JG
 Checked By: PA
 Submitted
 Approved



Title: CAMBRIDGE BAY WATER TREATMENT PLANT
 Project: MODULE 3 SKID LAYOUT
 Drawing #: 2500-LA-003

Scale: 1 : 50
 Date: 19/09/14
 Sheet: 1 of 1
 Job#: 2500
 Rev: 1



PLAN

SIDE

NOTE:
1. Ø24mm HOLE THRU WEB TO ACCEPT A325 Ø19mm HEAVY HEX BOLT TO CONNECT OPPOSING MEMEBERS.



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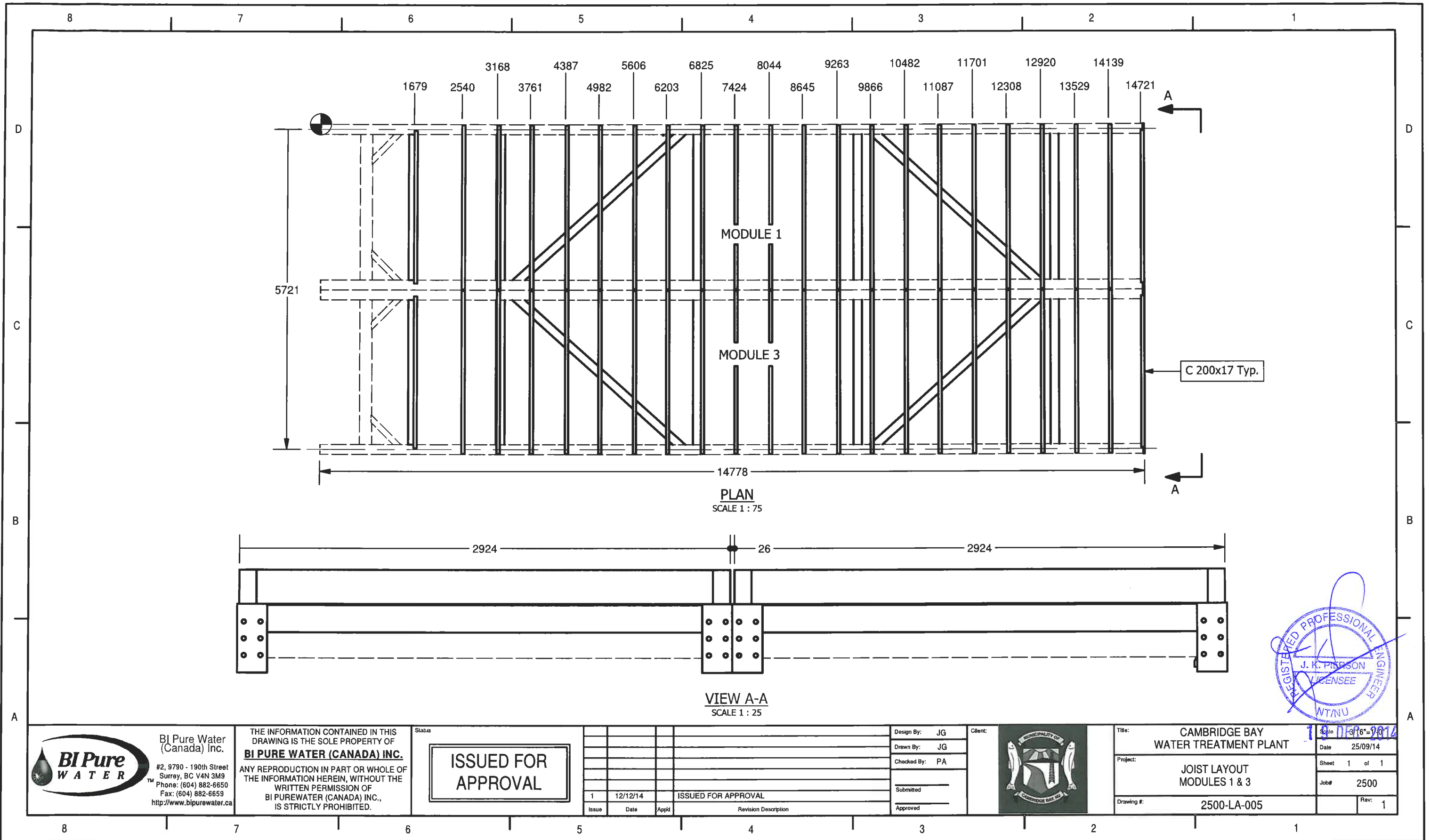
Design By: JG
Drawn By: JG
Checked By: PA
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Client:



Title: CAMBRIDGE BAY
WATER TREATMENT PLANT
Project: MODULE 4
SKID LAYOUT
Drawing #: 2500-LA-004

Scale: 1 : 50
Date: 25/09/14
Sheet: 1 of 1
Job#: 2500
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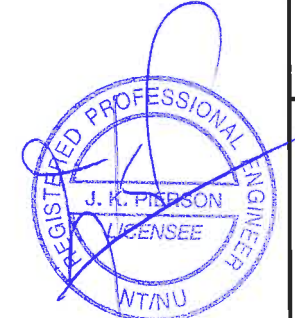
Design By: JG
Drawn By: JG
Checked By: PA
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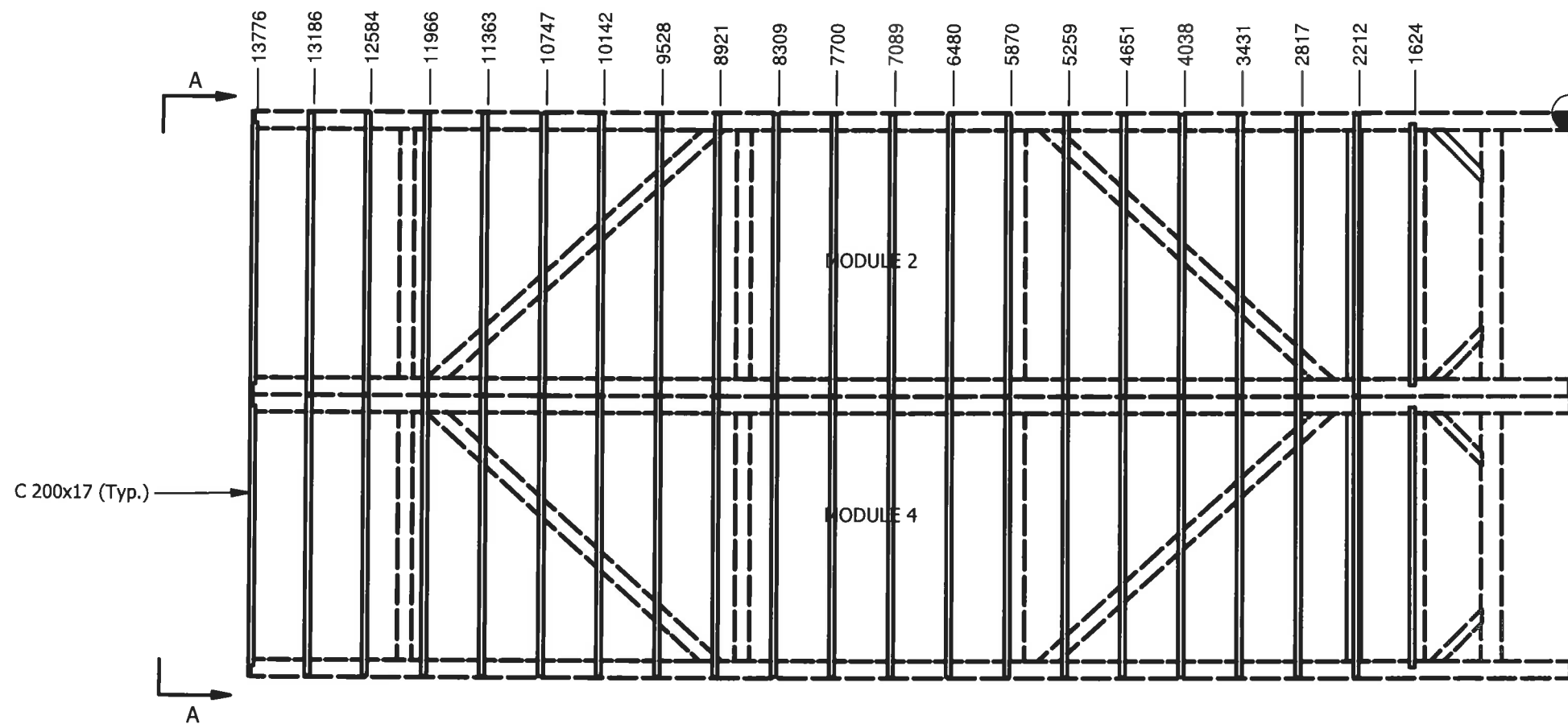
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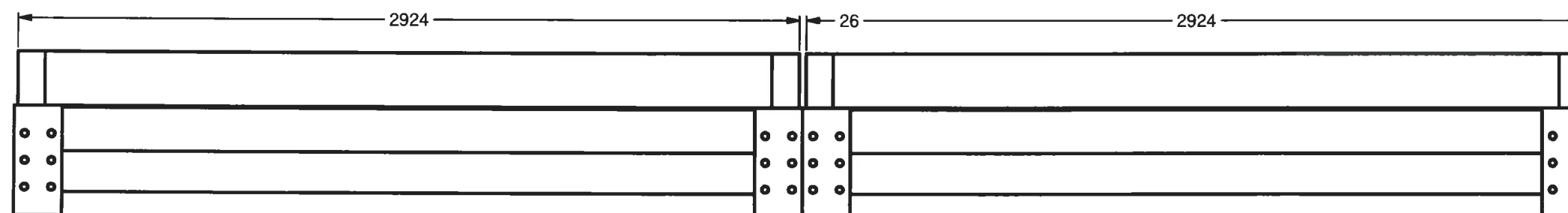
Title: CAMBRIDGE BAY
WATER TREATMENT PLANT
Project: JOIST LAYOUT
MODULES 1 & 3
Drawing #: 2500-LA-005

Date: 25/09/14
Sheet 1 of 1
Job#: 2500
Rev: 1





PLAN
SCALE 1 : 75



VIEW A-A
SCALE 1 : 25



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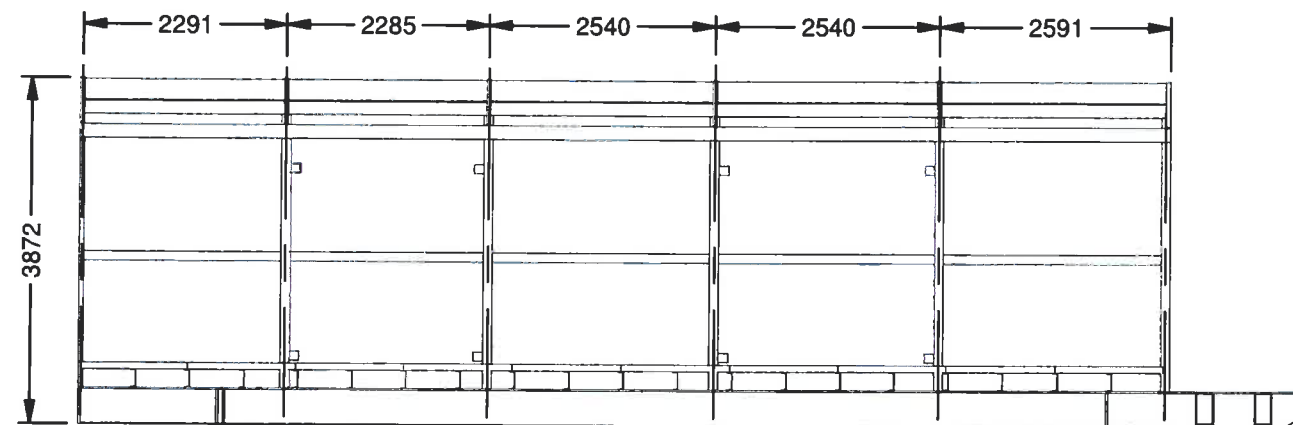
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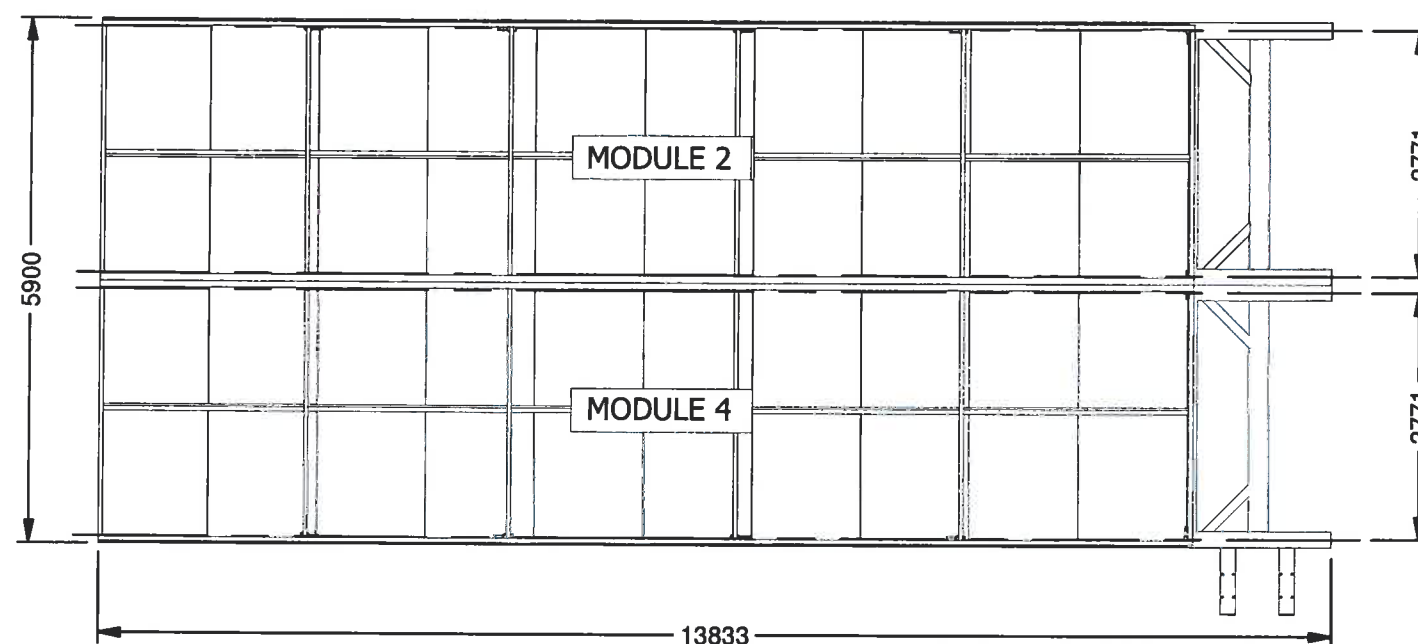
Title: CAMBRIDGE BAY
WATER TREATMENT PLANT
Project: JOIST LAYOUT
MODULES 2 & 4
Drawing #: 2500-LA-006

Scale: 1
Date: 25/09/14
Sheet: 1 of 1
Job#: 2500
Rev: 1

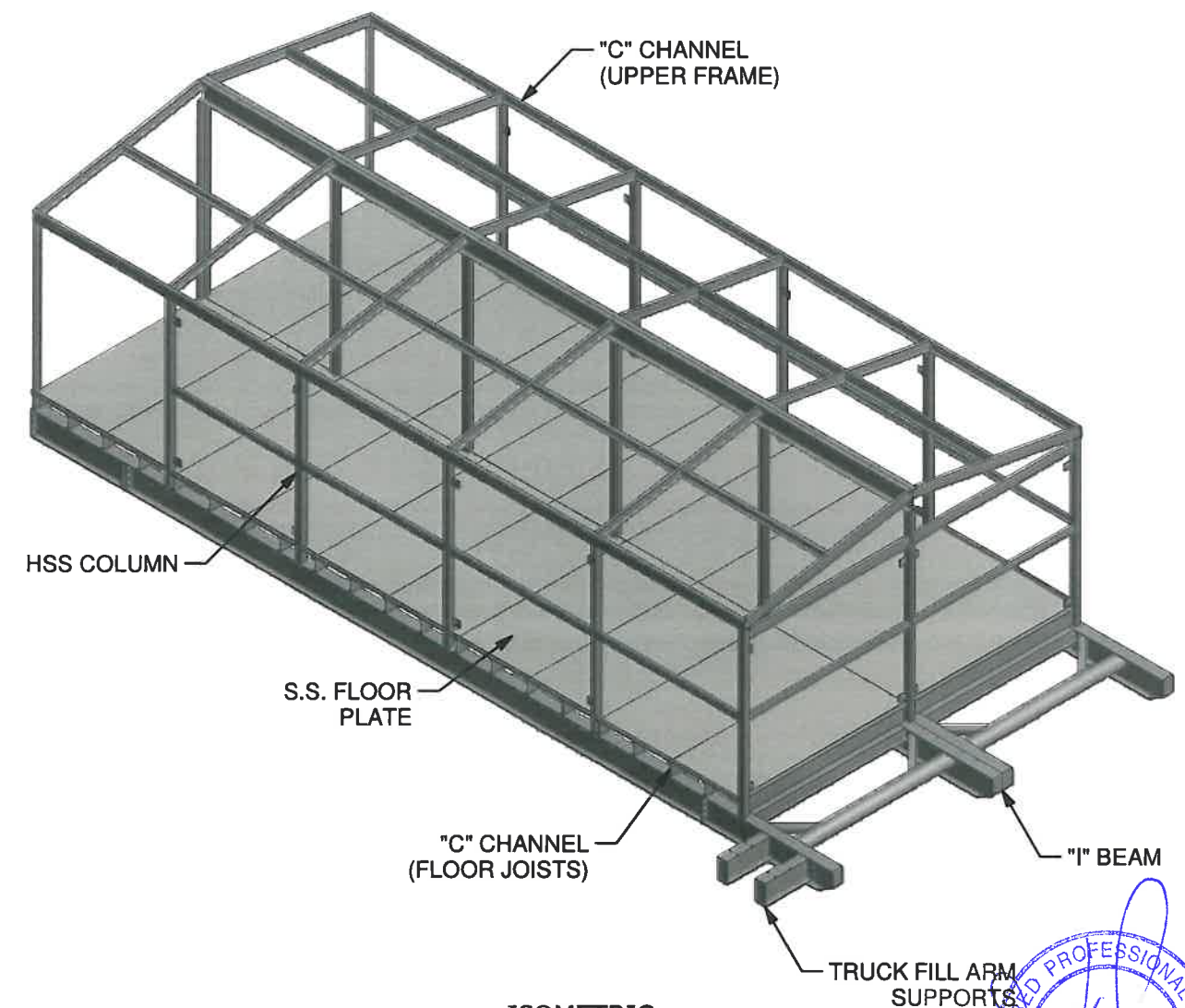




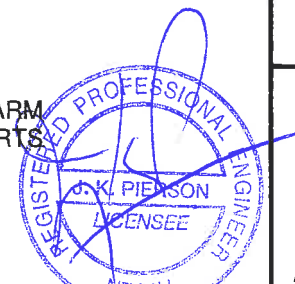
ELEVATION



PLAN



ISOMETRIC



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Issue	Date	Appld		Revision Description	

Design By:	JG
Drawn By:	JG
Checked By:	PA
Submitted	
Approved	

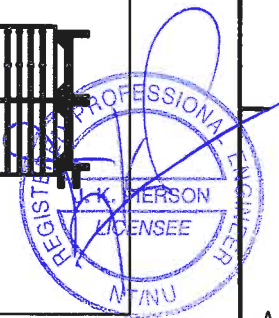
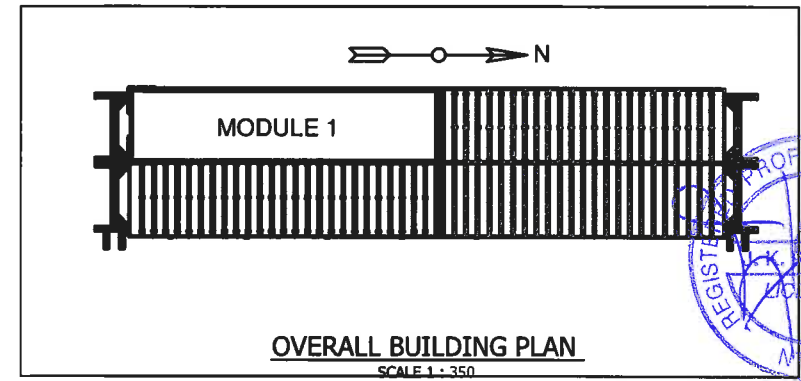
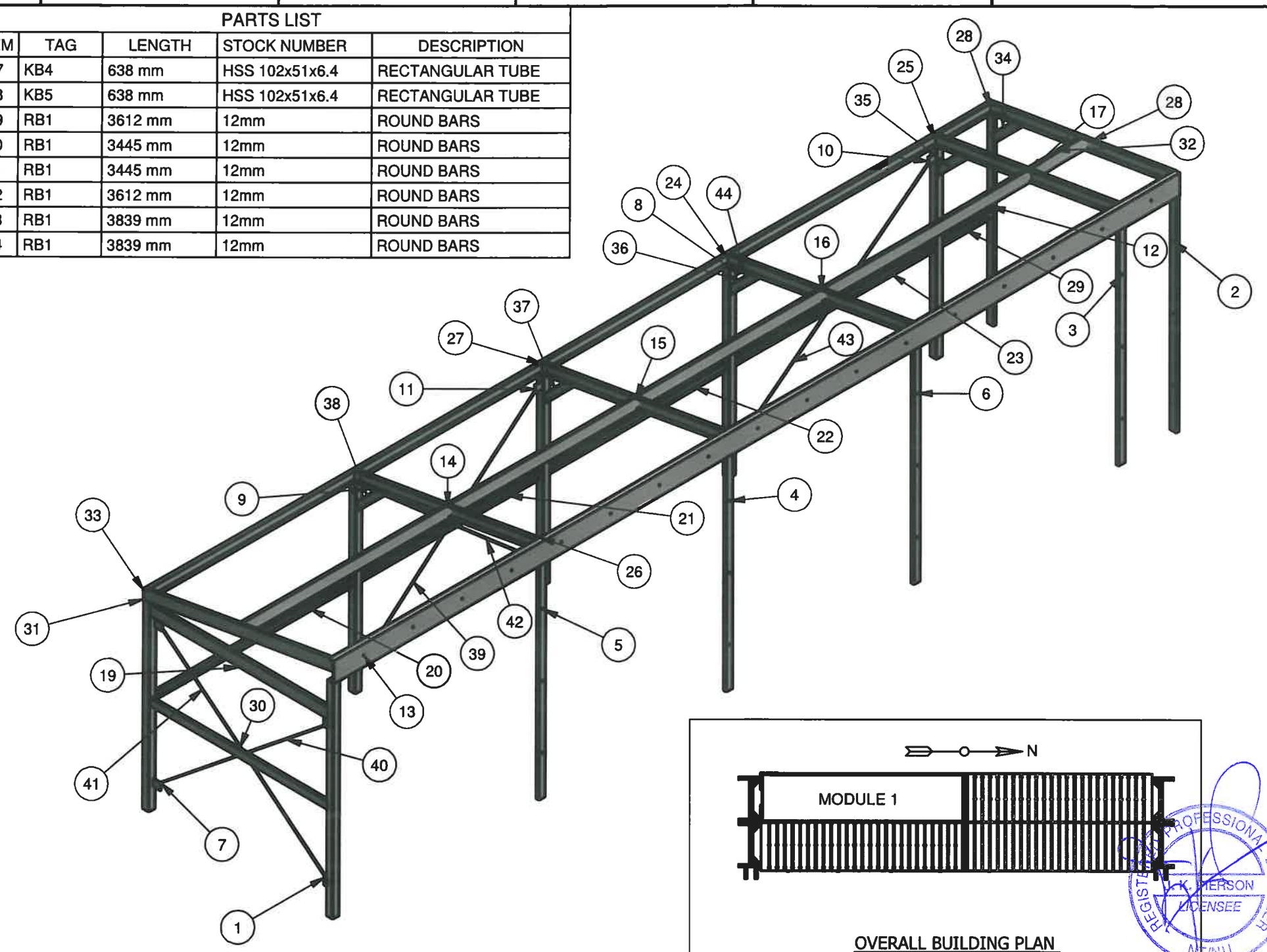
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Title:	CAMBRIDGE BAY WATER TREATMENT PLANT
Project:	WATER TREATMENT BUILDING UPPER FRAME ASS'Y - MOD 2 & 4
Drawing #:	2500-LA-008

Scale:	1:100
Date:	30/10/2014
Sheet:	1 of 1
Job#:	2500
Rev:	A

PARTS LIST					PARTS LIST				
ITEM	TAG	LENGTH	STOCK NUMBER	DESCRIPTION	ITEM	TAG	LENGTH	STOCK NUMBER	DESCRIPTION
1	AC1	3146 mm	HSS 102x102x6.4	SQUARE TUBE	37	KB4	638 mm	HSS 102x51x6.4	RECTANGULAR TUBE
2	AC2	3146 mm	HSS 102x51x6.4	RECTANGULAR TUBE	38	KB5	638 mm	HSS 102x51x6.4	RECTANGULAR TUBE
3	AC2	3146 mm	HSS 102x51x6.4	RECTANGULAR TUBE	39	RB1	3612 mm	12mm	ROUND BARS
4	AC2	3146 mm	HSS 102x51x6.4	RECTANGULAR TUBE	40	RB1	3445 mm	12mm	ROUND BARS
5	AC2	3146 mm	HSS 102x51x6.4	RECTANGULAR TUBE	41	RB1	3445 mm	12mm	ROUND BARS
6	AC2	3146 mm	HSS 102x51x6.4	RECTANGULAR TUBE	42	RB1	3612 mm	12mm	ROUND BARS
7	AC3	2794 mm	HSS 102x102x6.4	SQUARE TUBE	43	RB1	3839 mm	12mm	ROUND BARS
8	AC4	2794 mm	HSS 102x102x6.4	SQUARE TUBE	44	RB1	3839 mm	12mm	ROUND BARS
9	AC4	2794 mm	HSS 102x102x6.4	SQUARE TUBE					
10	AC5	2794 mm	HSS 102x102x6.4	SQUARE TUBE					
11	AC5	2794 mm	HSS 102x102x6.4	SQUARE TUBE					
12	AC6	2794 mm	HSS 102x51x6.4	RECTANGULAR TUBE					
13	ACH1	13120 mm	C 310 x 31	CHANNEL					
14	ACH2	3399 mm	C 150x12	CHANNEL					
15	ACH3	2583 mm	C 150x12	CHANNEL					
16	ACH4	2988 mm	C 150x12	CHANNEL					
17	ACH5	3144 mm	C 150x12	CHANNEL					
18	ACH6	2994 mm	C 150x12	CHANNEL					
19	ACH7	2798 mm	C 150x12	CHANNEL					
20	ACH8	3080 mm	C 100x8	CHANNEL					
21	ACH9	2797 mm	C 100x8	CHANNEL					
22	ACH10	2786 mm	C 100x8	CHANNEL					
23	ACH11	3091 mm	C 100x8	CHANNEL					
24	ACH12	3072 mm	C 150x12	CHANNEL					
25	ACH12	3072 mm	C 150x12	CHANNEL					
26	ACH12	3072 mm	C 150x12	CHANNEL					
27	ACH12	3072 mm	C 150x12	CHANNEL					
28	ACH13	3072 mm	C 150x12	CHANNEL					
29	ACH14	809 mm	C 100x8	CHANNEL					
30	ACH15	2798 mm	C 100x8	CHANNEL					
31	ACH16	13120 mm	C 150x12	CHANNEL					
32	ACH17	861 mm	C 150x12	CHANNEL					
33	ACH18	3072 mm	C 150x12	CHANNEL					
34	KB1	637 mm	HSS 102x51x6.4	RECTANGULAR TUBE					
35	KB2	638 mm	HSS 102x102x6.4	RECTANGULAR TUBE					
36	KB3	638 mm	HSS 102x51x6.4	RECTANGULAR TUBE					



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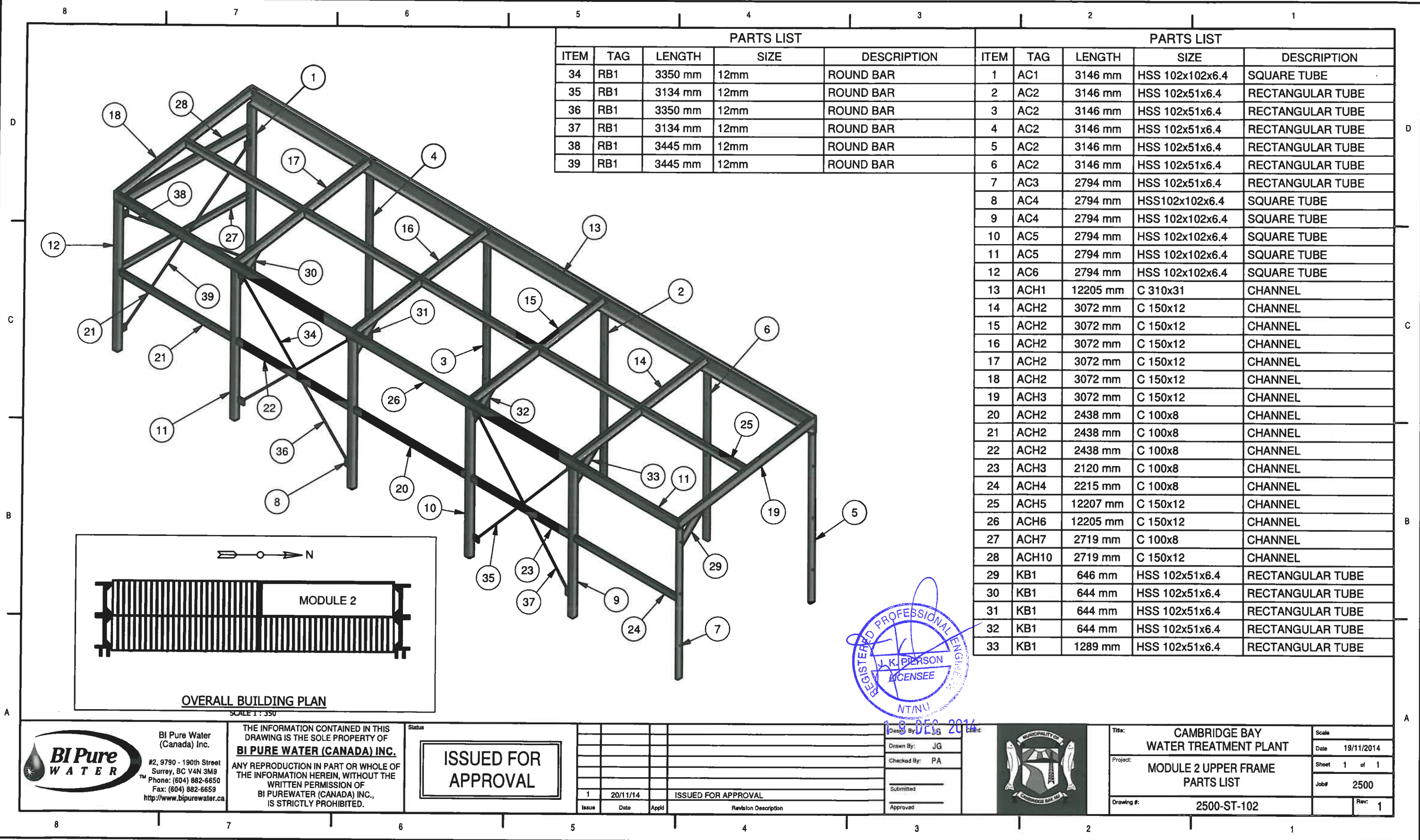
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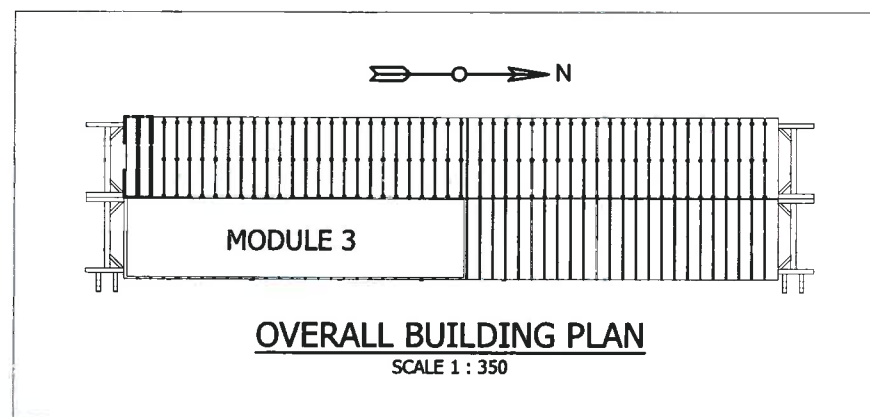
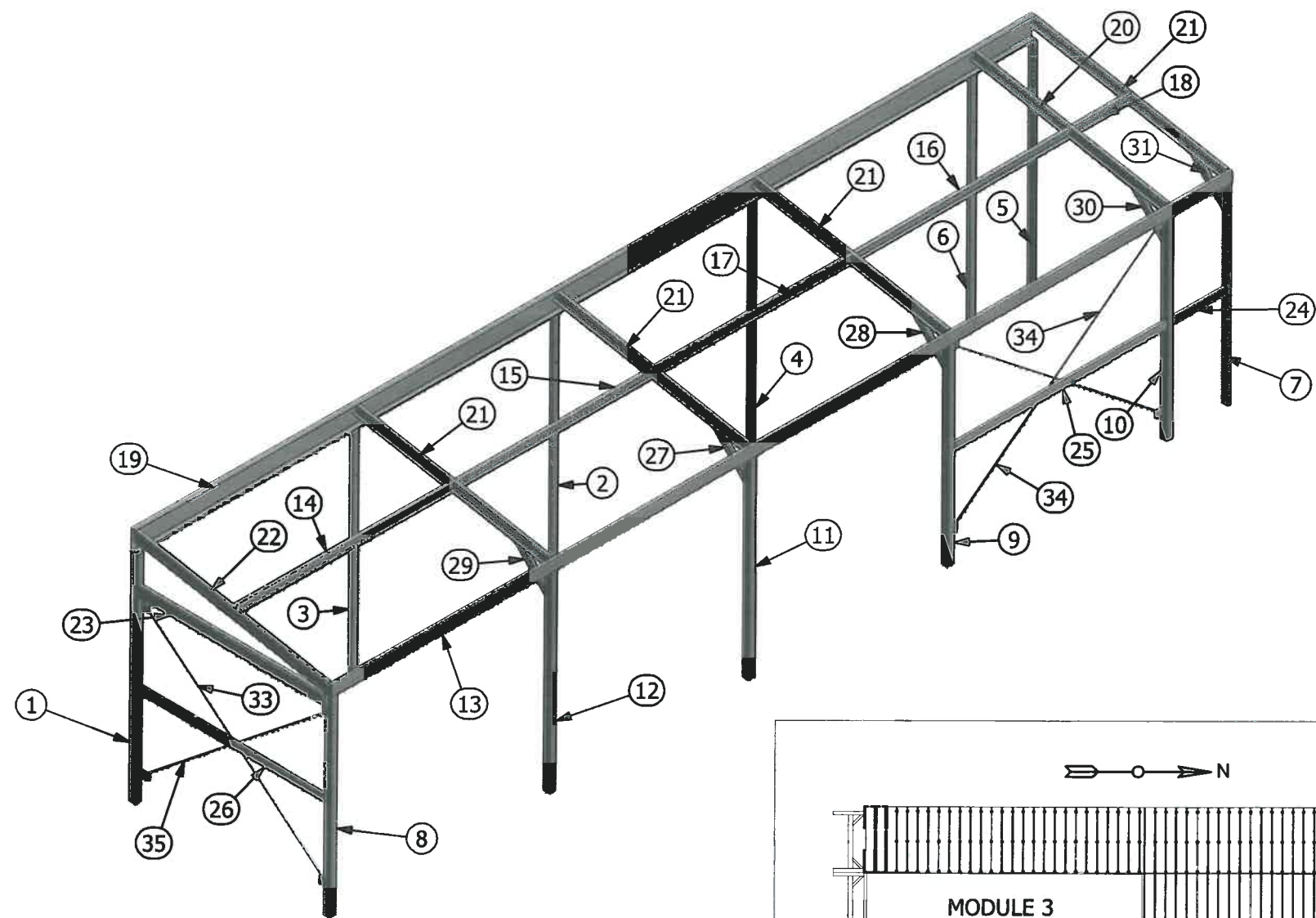
Design By: JG
Drawn By: JG
Checked By: PA
Submitted: _____
Approved: _____



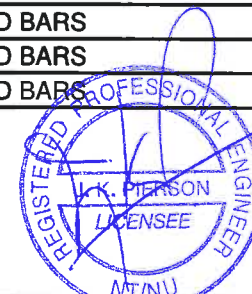
Title: **CAMBRIDGE BAY WATER TREATMENT PLANT**
Project: **MODULE 1 UPPER FRAME PARTS LIST**
Drawing #: **2500-ST-101**

Scale: _____
Date: 19/11/14
Sheet 1 of 1
Job# 2500
Rev: 1





PARTS LIST				
ITEM	TAG	LENGTH	SIZE	DESCRIPTION
1	AC1	3146 mm	HSS 102x102x6.4	SQUARE TUBE
2	AC2	3146 mm	HSS 102x51x6.4	SQUARE TUBE
3	AC2	3146 mm	HSS 102x51x6.4	SQUARE TUBE
4	AC2	3146 mm	HSS 102x51x6.4	SQUARE TUBE
5	AC2	3146 mm	HSS 102x51x6.4	SQUARE TUBE
6	AC2	3146 mm	HSS 102x51x6.4	SQUARE TUBE
7	AC3	2794 mm	HSS 102x51x6.4	SQUARE TUBE
8	AC3	2794 mm	HSS 102x102x6.4	SQUARE TUBE
9	AC4	2794 mm	HSS102x102x6.4	SQUARE TUBE
10	AC5	2794 mm	HSS 102x102x6.4	SQUARE TUBE
11	AC6	2794 mm	HSS 102x102x6.4	SQUARE TUBE
12	AC6	2794 mm	HSS 102x102x6.4	SQUARE TUBE
13	ACH1	13121 mm	C 150x12	CHANNEL
14	ACH2	3399 mm	C 150x12	CHANNEL
15	ACH3	2583 mm	C 150x12	CHANNEL
16	ACH4	2991 mm	C 150x12	CHANNEL
17	ACH4	2991 mm	C 150x12	CHANNEL
18	ACH5	862 mm	C 150x12	CHANNEL
19	ACH6	13120 mm	C 310x31	CHANNEL
20	ACH7	3072 mm	C 150x12	CHANNEL
21	ACH8	12287 mm	C 150x12	CHANNEL
22	ACH9	3072 mm	C 150x12	CHANNEL
23	ACH10	2747 mm	C 150x12	CHANNEL
24	ACH11	788 mm	C 100x8	CHANNEL
25	ACH12	3091 mm	C 100x8	CHANNEL
26	ACH13	2747 mm	C 100x8	CHANNEL
27	KB1	683 mm	HSS 102x51x6.4	RECTANGULAR TUBE
28	KB1	683 mm	HSS 102x51x6.4	RECTANGULAR TUBE
29	KB1	683 mm	HSS 102x51x6.4	RECTANGULAR TUBE
30	KB1	683 mm	HSS 102x51x6.4	RECTANGULAR TUBE
31	KB1	683 mm	HSS 102x51x6.4	RECTANGULAR TUBE
32	RB1	3839 mm	12mm	ROUND BARS
33	RB1	3445 mm	12mm	ROUND BARS
34	RB1	3839 mm	12mm	ROUND BARS
35	RB1	3445 mm	12mm	ROUND BARS



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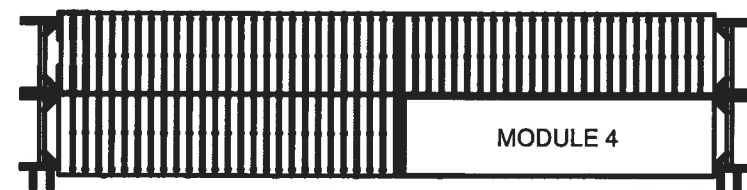
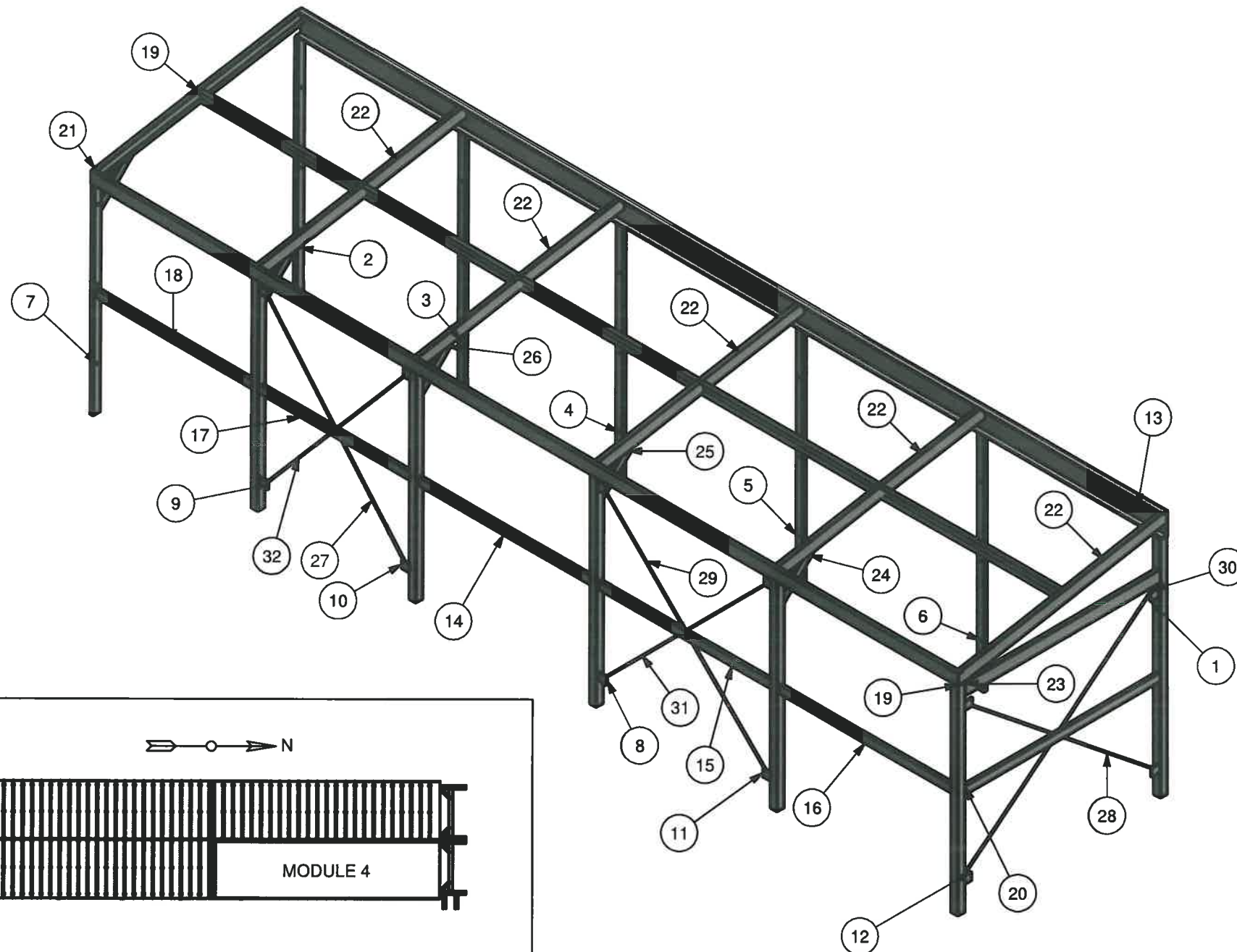
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1	12/12/14		ISSUED FOR APPROVAL

Design By: JG
Drawn By: JG
Checked By: PA
Submitted
Approved



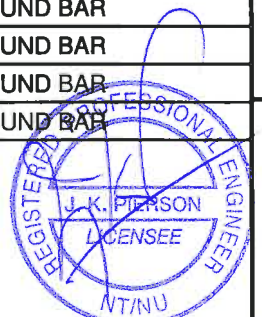
Title: CAMBRIDGE BAY WATER TREATMENT PLANT
Project: MODULE 3 UPPER FRAME PARTS LIST
Drawing #: 2500-ST-103

Date: 07/11/2014
Sheet 1 of 1
Job: 2500
Rev: 1



OVERALL BUILDING PLAN
SCALE 1 : 350

PARTS LIST				
ITEM	TAG	LENGTH	STOCK NUMBER	DESCRIPTION
1	AC1	3146 mm	HSS 102x102x6.4	SQUARE TUBE
2	AC2	3146 mm	HSS 102x51x6.4	RECTANGULAR TUBE
3	AC2	3146 mm	HSS 102x51x6.4	RECTANGULAR TUBE
4	AC2	3146 mm	HSS 102x51x6.4	RECTANGULAR TUBE
5	AC2	3146 mm	HSS 102x51x6.4	RECTANGULAR TUBE
6	AC2	3146 mm	HSS 102x51x6.4	RECTANGULAR TUBE
7	AC3	2794 mm	HSS 102x51x6.4	RECTANGULAR TUBE
8	AC4	2794 mm	HSS102x102x6.4	SQUARE TUBE
9	AC4	2794 mm	HSS 102x102x6.4	SQUARE TUBE
10	AC5	2794 mm	HSS 102x102x6.4	SQUARE TUBE
11	AC5	2794 mm	HSS 102x102x6.4	SQUARE TUBE
12	AC6	2794 mm	HSS102x102x6.4	SQUARE TUBE
13	ACH1	12207 mm	C 310x31	CHANNEL
14	ACH2	2438 mm	C 100x8	CHANNEL
15	ACH2	2438 mm	C 100x8	CHANNEL
16	ACH2	2437 mm	C 100x8	CHANNEL
17	ACH3	2120 mm	C 100x8	CHANNEL
18	ACH4	2215 mm	C 100x8	CHANNEL
19	ACH6	12207 mm	C 150x12	CHANNEL
20	ACH7	2747 mm	C 100x8	CHANNEL
21	ACH8	3072 mm	C 150x12	CHANNEL
22	ACH9	15358 mm	C 150x12	CHANNEL
23	ACH10	2747 mm	C 150x12	CHANNEL
24	KB1	644 mm	HSS 102x51x6.4	RECTANGULAR TUBE
25	KB1	644 mm	HSS 102x51x6.4	RECTANGULAR TUBE
26	KB1	1933 mm	HSS 102x51x6.4	RECTANGULAR TUBE
27	RB1	3134 mm	12mm	ROUND BAR
28	RB1	3445 mm	12mm	ROUND BAR
29	RB1	3350 mm	12mm	ROUND BAR
30	RB1	3445 mm	12mm	ROUND BAR
31	RB1	3350 mm	12mm	ROUND BAR
32	RB1	3134 mm	12mm	ROUND BAR



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Checked By: PA
Submitted
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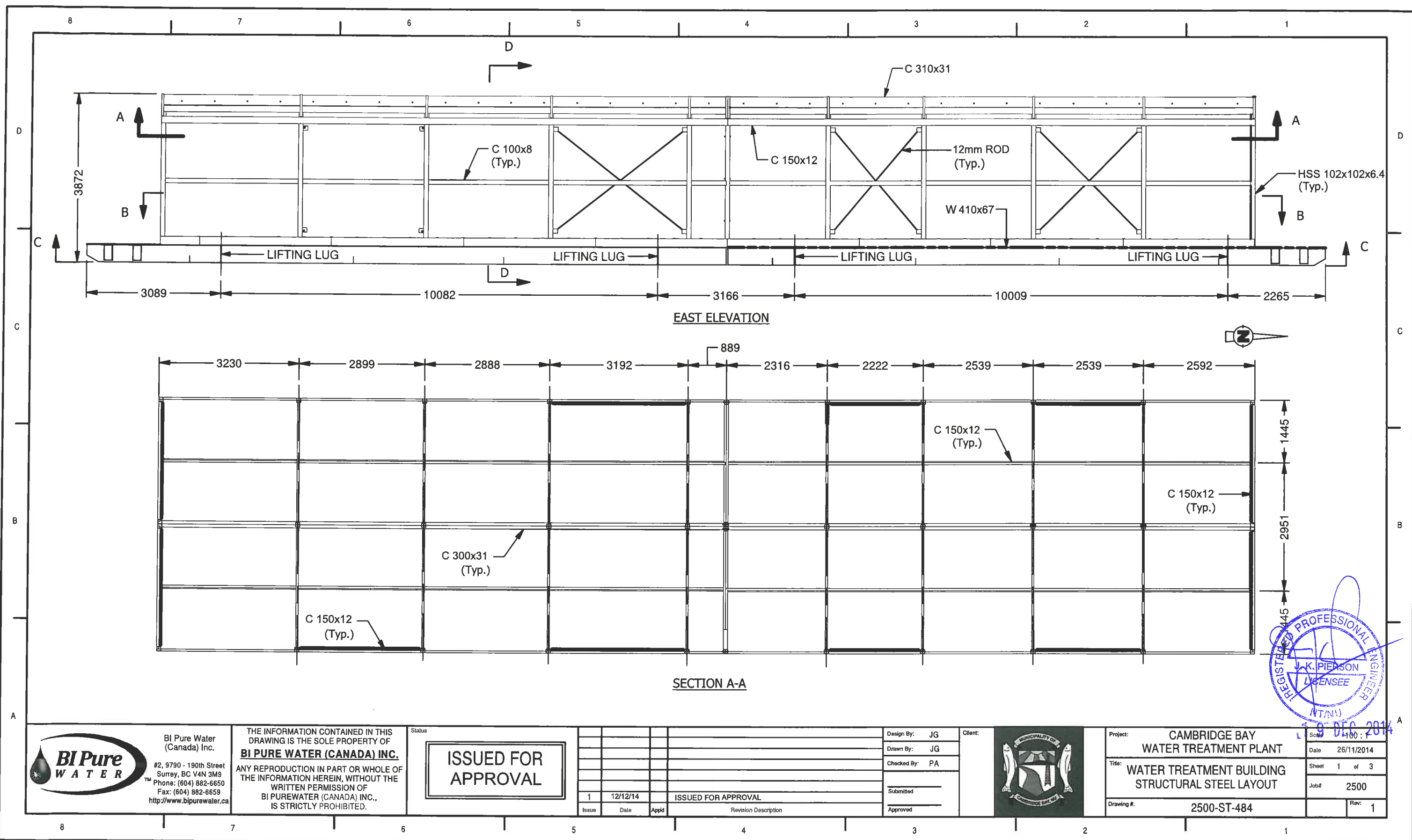
Client:



Title: CAMBRIDGE BAY
WATER TREATMENT PLANT
Project: MODULE 4 UPPER FRAME
PARTS LIST

Drawing #: 2500-ST-104

Scale: 1/8" = 1'-0"
Date: 14/11/2014
Sheet: 1 of 1
Job#: 2500
Rev: 1



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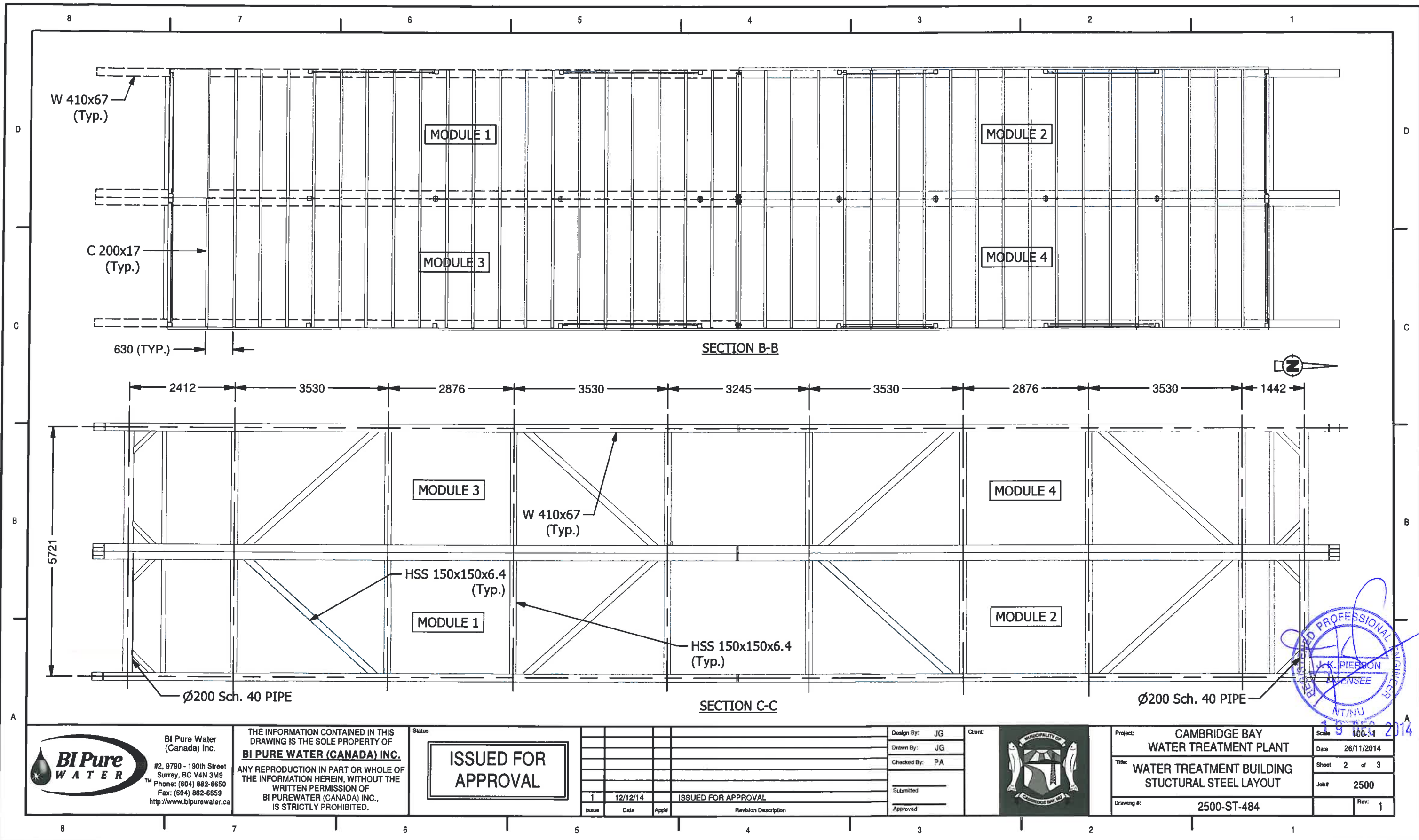
Design By: JG
Drawn By: JG
Checked By: PA
Submitted
Approved

Client:



Project: CAMBRIDGE BAY
WATER TREATMENT PLANT
Title: WATER TREATMENT BUILDING
STRUCTURAL STEEL LAYOUT
Drawing #: 2500-ST-484

Scale: 100 : 1
Date: 26/11/2014
Sheet: 1 of 3
Job#: 2500
Rev: 1



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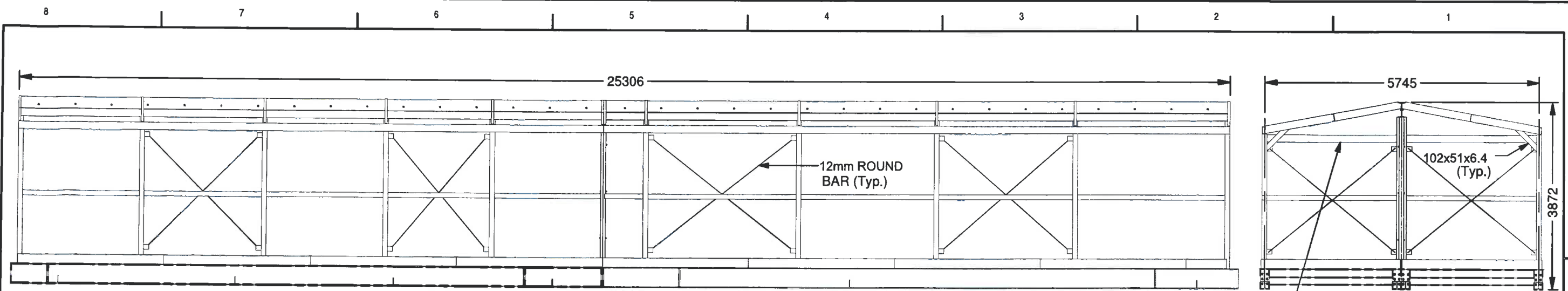
Issue	Date	App'd	Revision Description
1	12/12/14		ISSUED FOR APPROVAL

Design By: JG
Drawn By: JG
Checked By: PA
Submitted
Approved



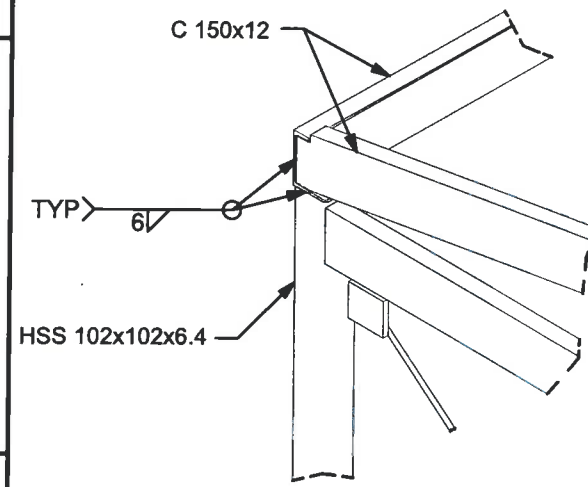
Project: CAMBRIDGE BAY
WATER TREATMENT PLANT
Title: WATER TREATMENT BUILDING
STRUCTURAL STEEL LAYOUT
Drawing #: 2500-ST-484

Scale: 100:1
Date: 26/11/2014
Sheet: 2 of 3
Job#: 2500
Rev: 1

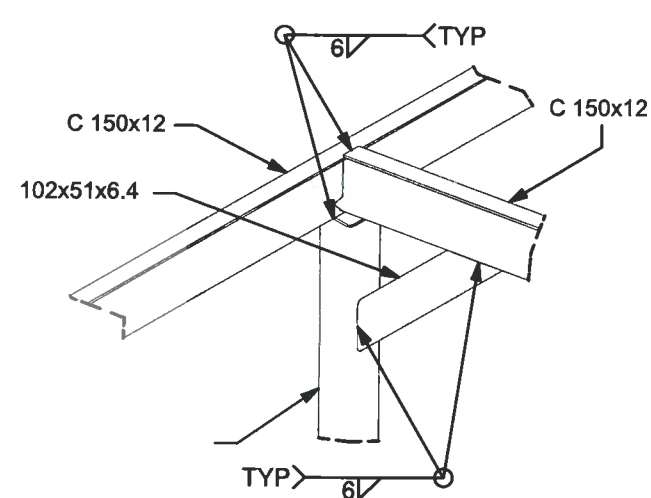


WEST ELEVATION
SCALE 1 : 100

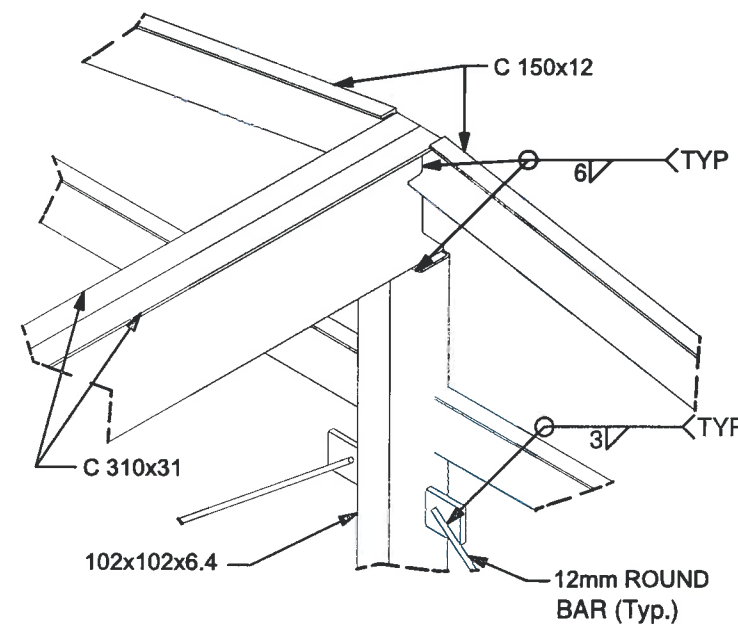
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SCALE 1 : 100



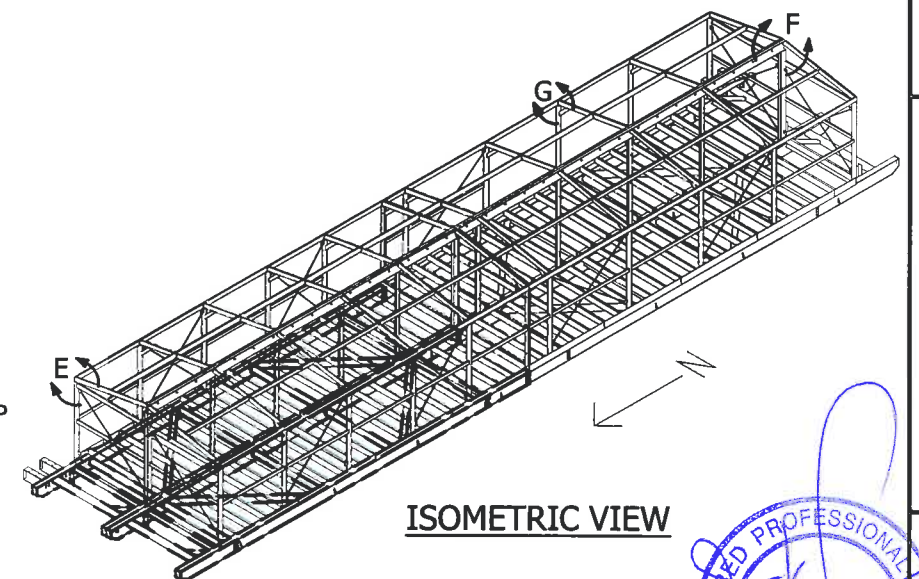
DETAIL E
SCALE 1 : 20



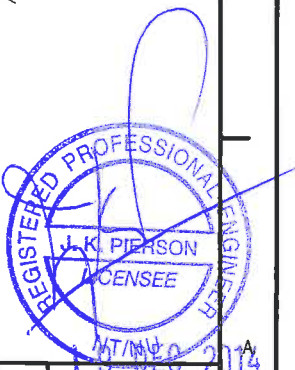
DETAIL G
SCALE 1 : 20



DETAIL F
SCALE 1 : 20



ISOMETRIC VIEW



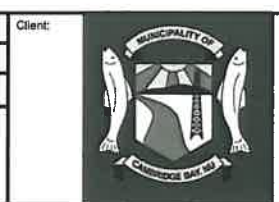
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Issue	Date	App'd	Revision Description
1	12/12/14		ISSUED FOR APPROVAL

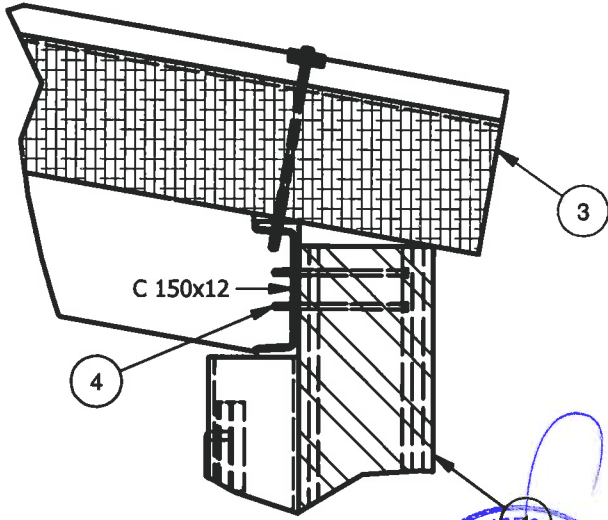
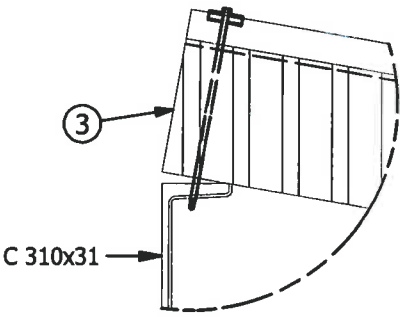
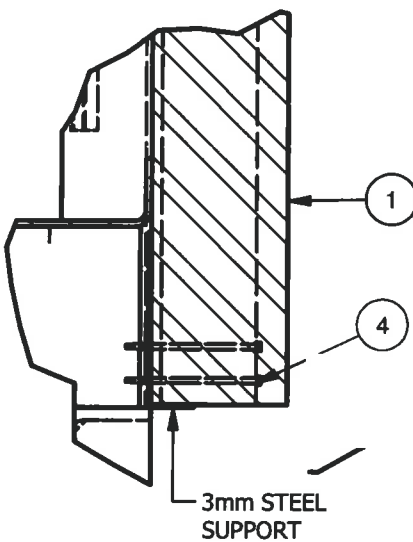
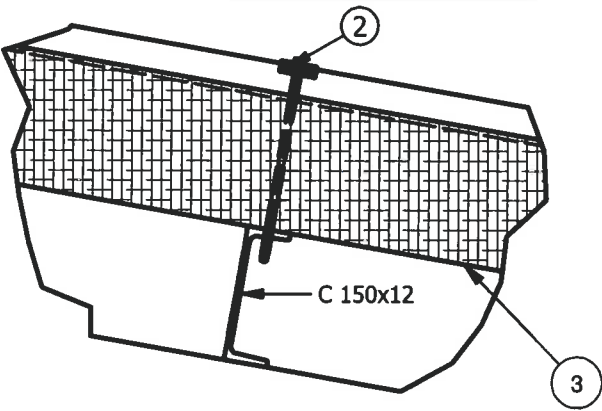
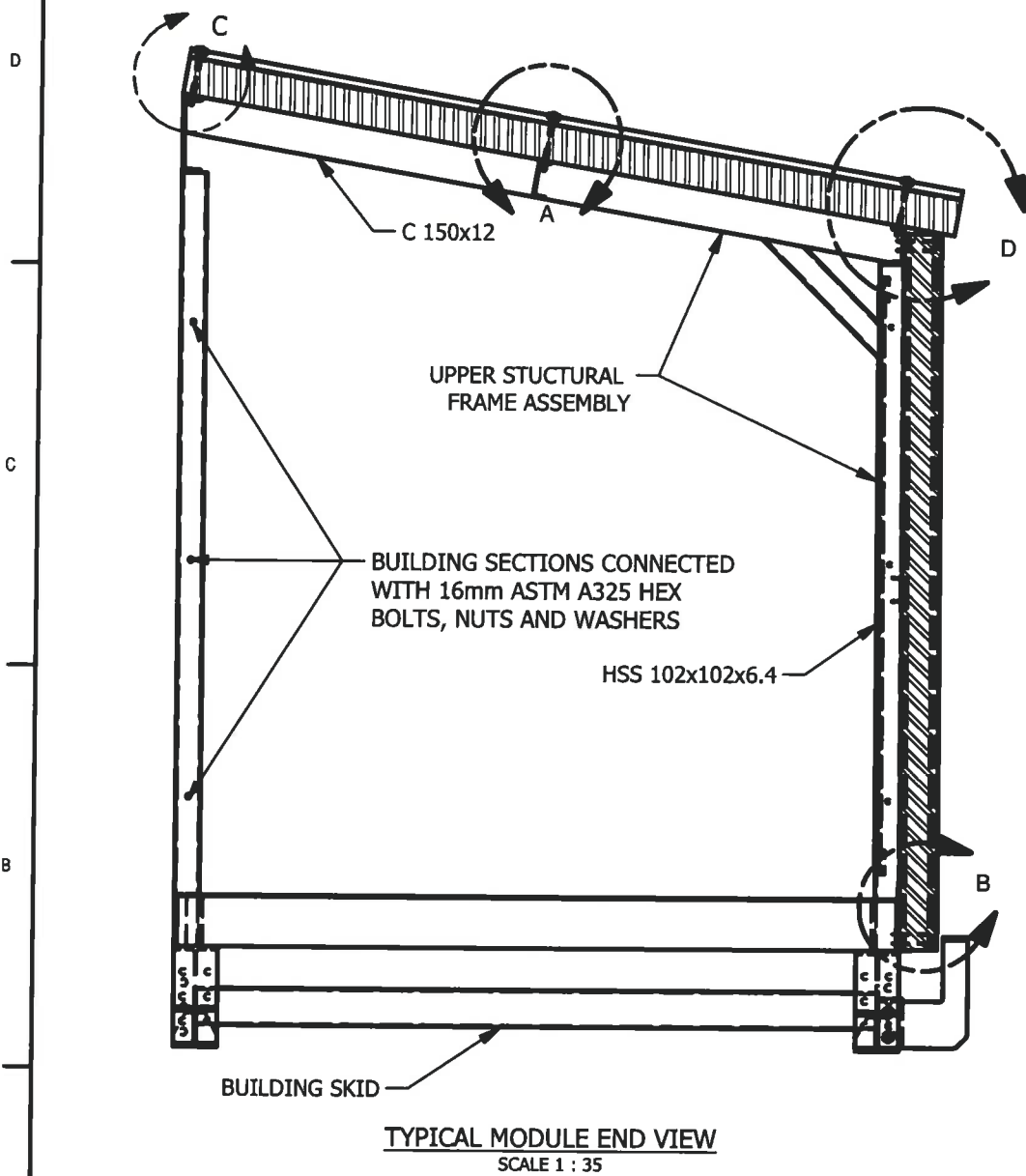
Design By: JG
Drawn By: JG
Checked By: PA
Submitted: _____
Approved: _____



Project: **CAMBRIDGE BAY WATER TREATMENT PLANT**
Title: **WATER TREATMENT BUILDING STRUCTURAL STEEL LAYOUT**
Drawing #: **2500-ST-484**

Scale: 100:1
Date: 26/11/2014
Sheet: 3 of 3
Job#: 2500
Rev: 1

PARTS LIST		
ITEM	PART NUMBER	DESCRIPTION
1	AWIP DM40	150mm Thk. INSULATED METAL PANEL
2	6-20 x 229 TEK 5 HEX HEAD SCREW c/w SADDLE WASHER	PANEL FACE FASTENER (1) Fastener@ 20" o/c
3	AWIP HR3	150mm Thk. INSULATED ROOF PANEL
4	6-20 X 152 Tek 5 Hex Head Screw	PANEL FACE FASTENER FS-C = WC-01 WITH (3) FASTENERS & (3) FABLOK



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Status

**ISSUED FOR
APPROVAL**

Issue	Date	Appd	Revision Description
1	12/12/14		ISSUED FOR APPROVAL

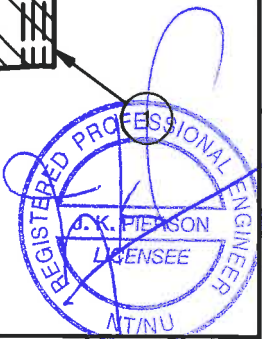
Design By: JG
Drawn By: JG
Checked By: PA
Submitted
Approved

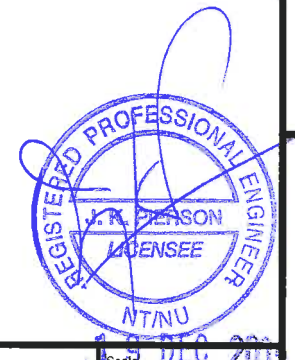
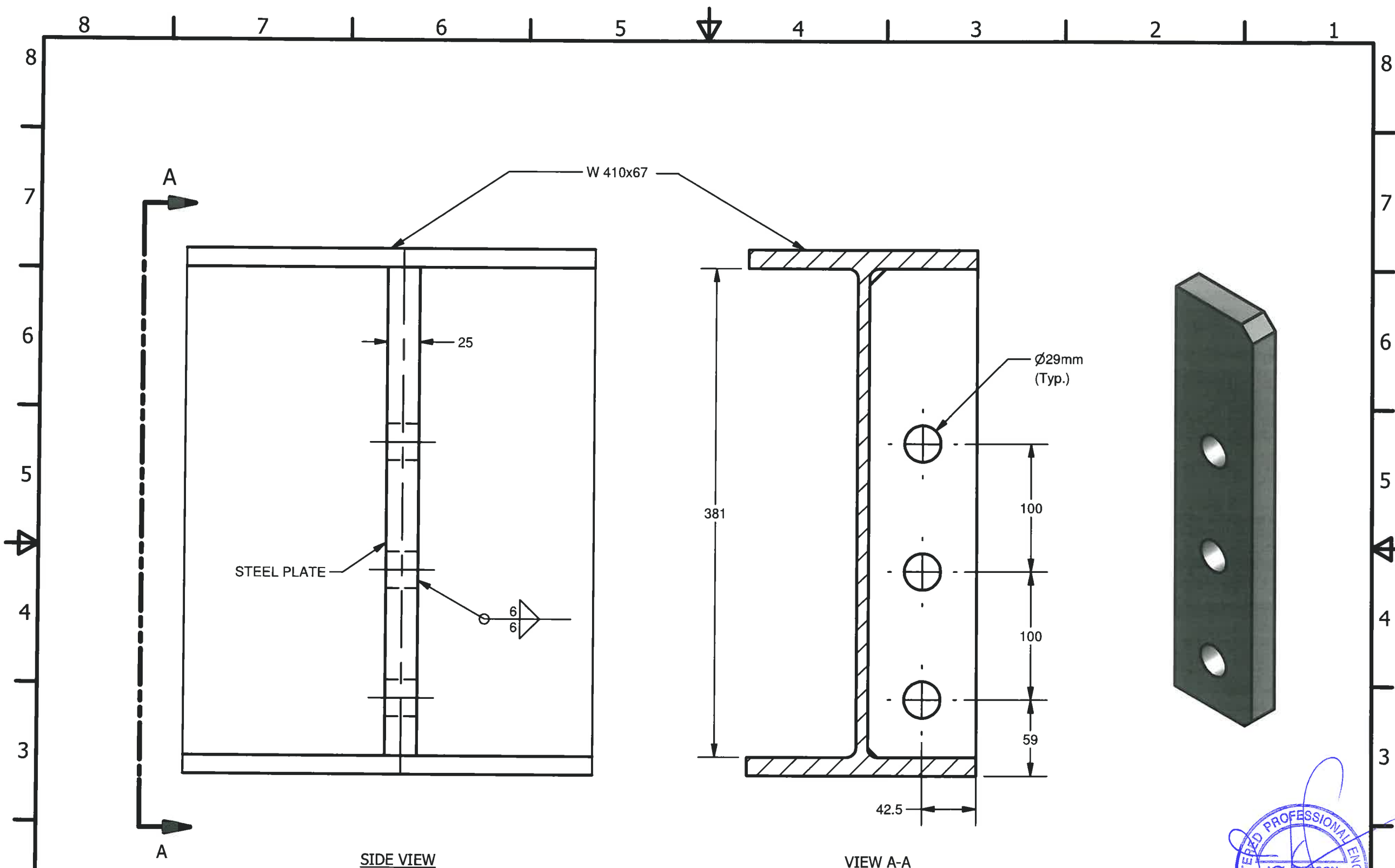
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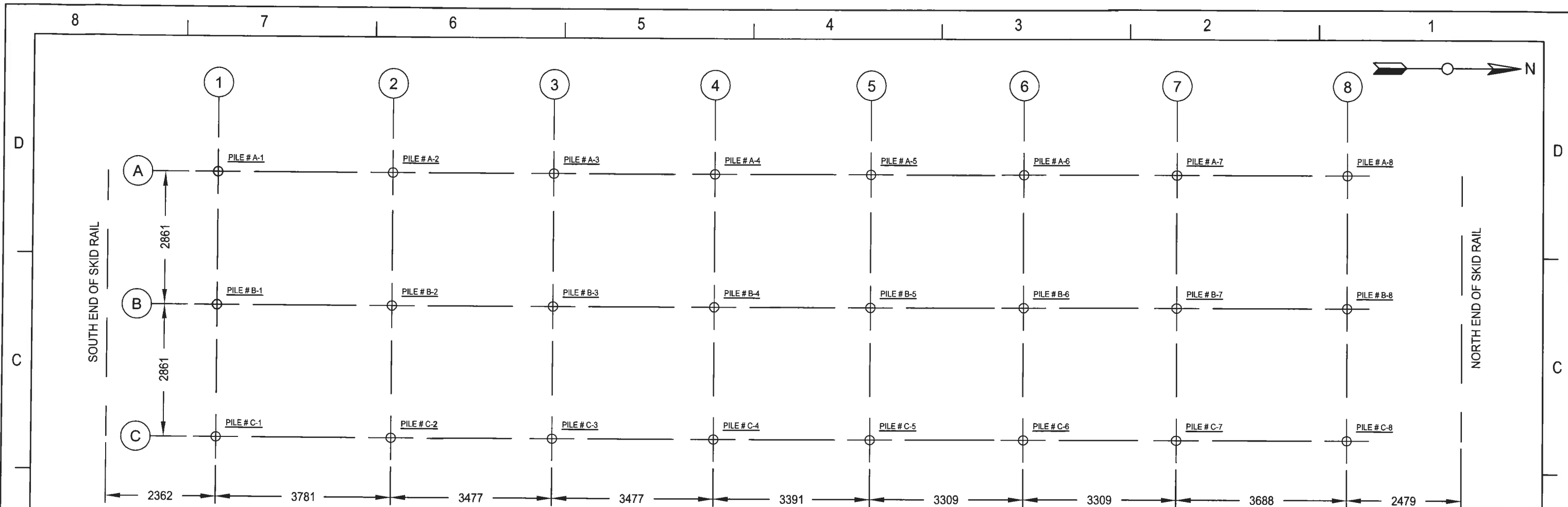
Title: CAMBRIDGE BAY
WATER TREATMENT PLANT
Project: INSULATED METAL PANEL
CONNECTION DETAILS
Drawing #: 2500-DT-014

Scale: 1/8" = 1'-0"
Date: 04/12/2014
Sheet: 1 of 1
Job#: 2500
Rev: 1





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Issue	Date	Appd	Revision Description																														
1	12/12/14	PA	ISSUED FOR APPROVAL																														
Design By:	JG																																
Drawn By:	JG																																
Checked By:	PA																																
Submitted																																	
Approved																																	



LOAD (kN)	GRID LINE								
	1	2	3	4	5	6	7	8	
TOTAL	48.9	71.2	62.3	57.8	57.8	111.2	106.8	44.5	A
DL	18.2	25.4	20.9	17.8	16.5	70.3	61.4	11.6	
LL	21.8	33.4	31.1	26.7	26.2	30.2	32.5	22.7	
SL	7.6	10.2	8.9	9.3	8.9	7.1	10.7	7.1	
WL LA1	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	
TOTAL	102.3	142.3	124.5	111.2	115.6	142.3	151.2	89.0	B
DL	42.7	54.3	41.8	38.7	37.8	66.3	66.7	27.1	
LL	43.1	66.7	62.3	52.9	52.0	60.0	64.5	44.9	
SL	14.7	20.0	17.3	18.2	23.1	13.8	20.0	13.8	
WL LA1	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	
TOTAL	48.9	71.2	62.3	66.7	62.3	53.4	62.3	44.5	C
DL	18.2	25.8	18.7	29.8	20.5	14.2	19.1	14.7	
LL	21.8	33.4	31.1	26.7	26.2	30.2	32.5	22.7	
SL	7.6	10.2	8.9	9.3	11.6	7.1	10.7	7.1	
WL LA1	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	

- NOTES:
1. PILES AND CONNECTIONS TO SKIDS ASSIGNED BY OTHERS.
 2. DL = DEAD LOAD
LL = LIVE LOAD
SL = ROOF SNOW LOAD
TOTAL = TOTAL LOAD (DL + LL + SL)

TABLE 2.1 TO BE READ IN CONJUNCTION WITH DESIGN NOTES SECTION 2 - DESIGN LOADS CLIMATIC INFORMATION	
SNOW LOAD 1/50, S_e	1.6 kPa
SNOW LOAD 1/50, S_r	0.1 kPa
ONE DAY RAIN 1/50	38 mm
HOURLY WIND PRESSURE (1/10)	0.42 kPa
HOURLY WIND PRESSURE (1/50)	0.54 kPa
SEISMIC RESPONSE, $S_a(0.2)$	0.095
SEISMIC RESPONSE, $S_a(0.5)$	0.057
SEISMIC RESPONSE, $S_a(1.0)$	0.028
SEISMIC RESPONSE, $S_a(2.0)$	0.008
SEISMIC RESPONSE, P_g	0.036

TABLE 2.2 TO BE READ IN CONJUNCTION WITH DESIGN NOTES SECTION 2 - DESIGN LOADS SITE INFORMATION	
IMPORTANCE CATEGORY	POST-DISASTER
WIND EXPOSURE TYPE	OPEN TERRAIN
INTERNAL PRESSURE CATEGORY	2
FOUNDATION SITE CLASS	B

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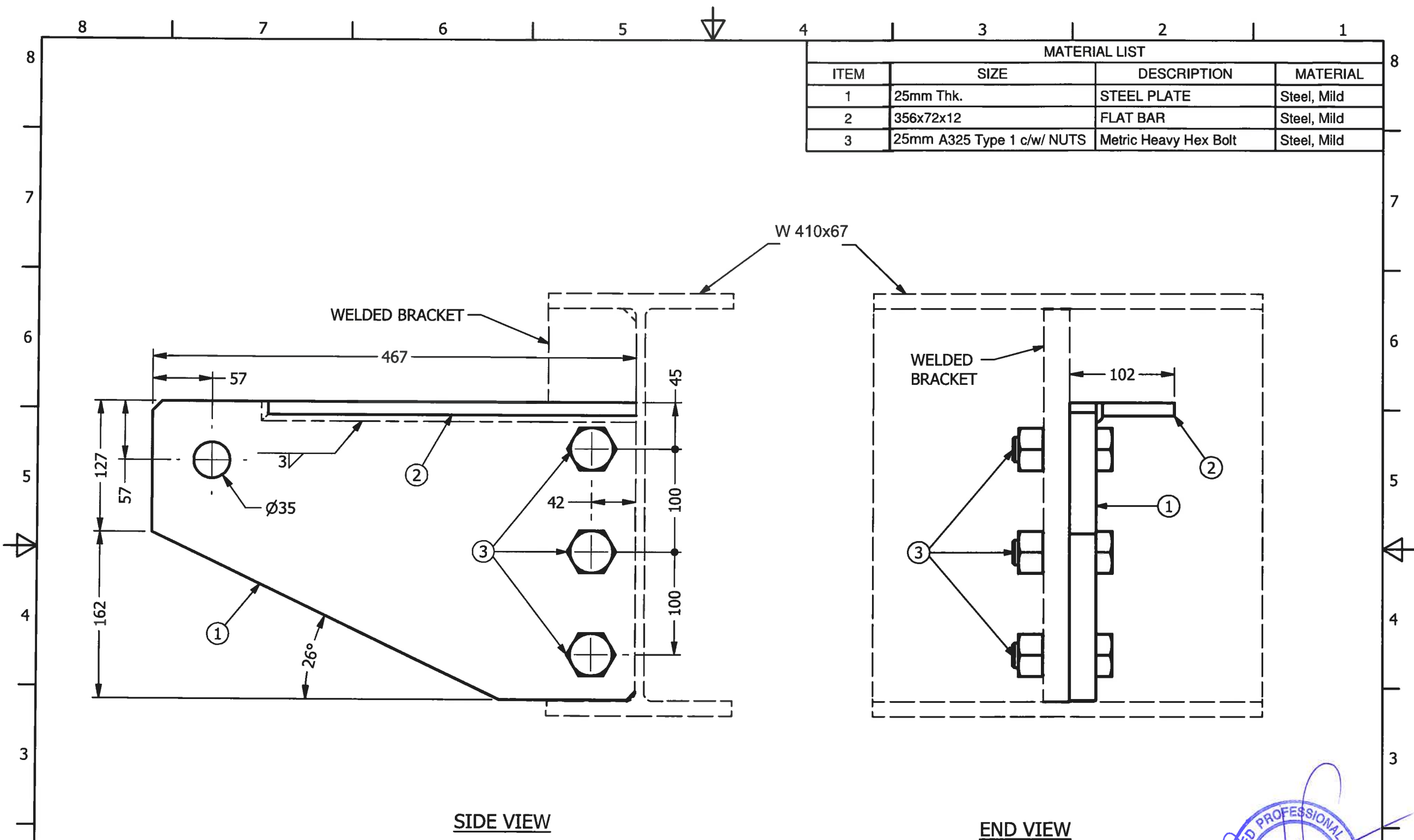
ISSUED FOR APPROVAL

				Design By: PA
				Drawn By: JG
				Checked By: BL
1	12/12/14		ISSUED FOR APPROVAL	Submitted
Issue	Date	Appl	Revision Description	Approved



Title:	CAMBRIDGE BAY WATER TREATMENT PLANT	Scale:	100:1
Date:	27/11/14	Sheet:	1 of 1
Project:	PILE LOADING SUMMARY AND LAYOUT	Job#:	2500
Drawing #:	2500-CL-100	Rev:	1

MATERIAL LIST			
ITEM	SIZE	DESCRIPTION	MATERIAL
1	25mm Thk.	STEEL PLATE	Steel, Mild
2	356x72x12	FLAT BAR	Steel, Mild
3	25mm A325 Type 1 c/w/ NUTS	Metric Heavy Hex Bolt	Steel, Mild





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Issue	Date	Appd	Revision Description
1	01/12/14	PA	ISSUED FOR FABRICATION

Design By: JG

Drawn By: JG

Checked By: PA

Submitted

Approved

Project: CAMBRIDGE BAY WATER TREATMENT PLANT

Title: WTP BUILDING LIFTING LUG DETAIL

Drawing #: 2500-DT-102

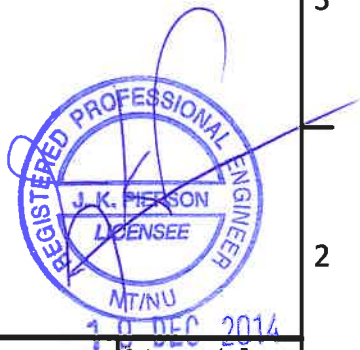
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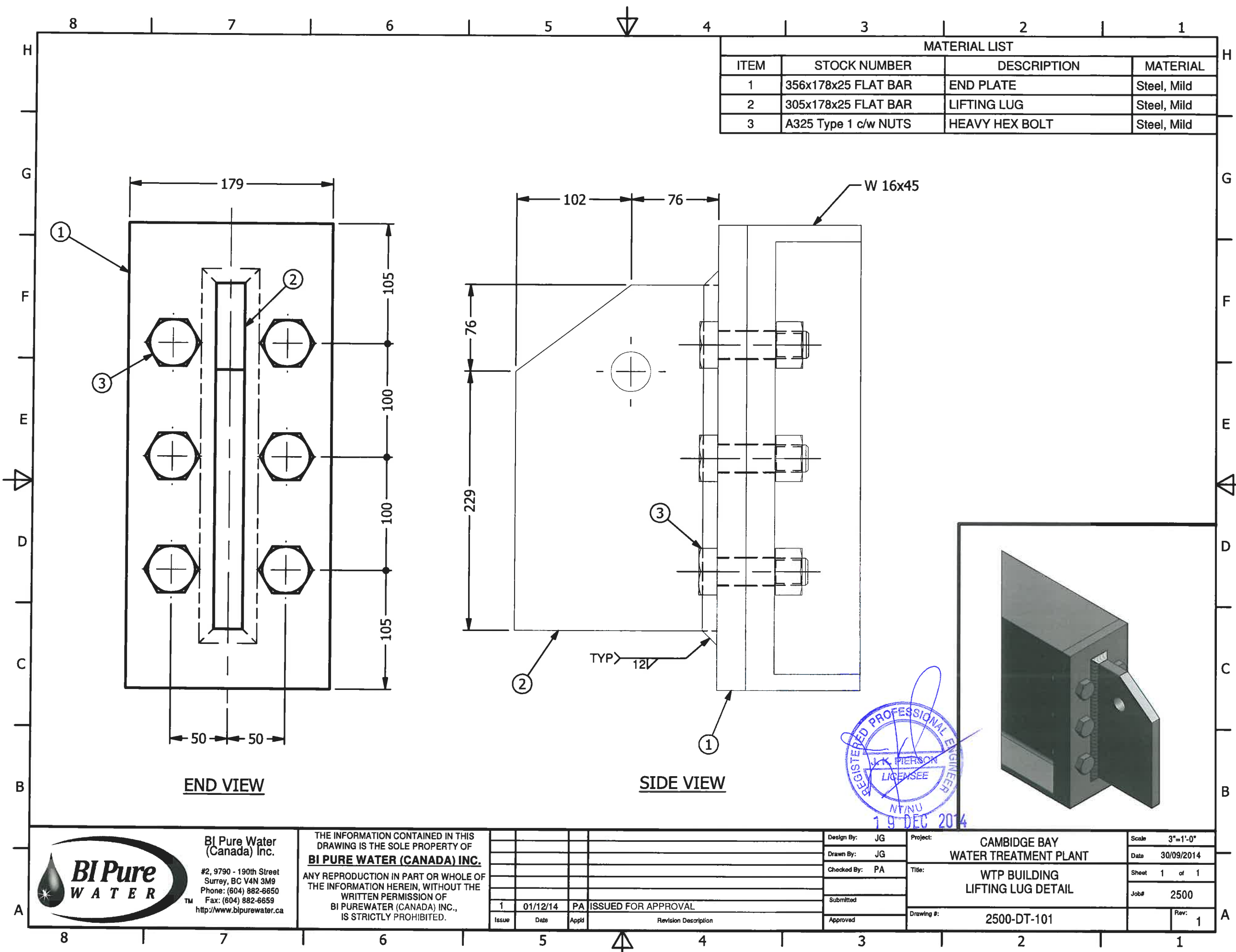
Date: 16/12/2014

Sheet: 1 of 1

Job#: 2500

Rev: 1





MATERIAL LIST			
ITEM	STOCK NUMBER	DESCRIPTION	MATERIAL
1	356x178x25 FLAT BAR	END PLATE	Steel, Mild
2	305x178x25 FLAT BAR	LIFTING LUG	Steel, Mild
3	A325 Type 1 c/w NUTS	HEAVY HEX BOLT	Steel, Mild



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Issue	Date	App'd	Revision Description
1	01/12/14	PA	ISSUED FOR APPROVAL

Design By:	JG
Drawn By:	JG
Checked By:	PA
Submitted	
Approved	

Project:	CAMBRIDGE BAY WATER TREATMENT PLANT
Title:	WTP BUILDING LIFTING LUG DETAIL
Drawing #:	2500-DT-101

Scale	3"=1'-0"
Date	30/09/2014
Sheet	1 of 1
Job#	2500
Rev:	1

Revision			
4	ACCESS ROAD WIDENING (CCN #3)	AK	MF 16.08.16
3	CHARS REALIGNMENT & PROFILE UPDATE (SI)	LM	AF 15.01.16
2	CHARS REALIGNMENT	AK	AF 14.12.08
		By	Appd. YY.MM.DD
E	AS-BUILT DRAWING	NL	MF 17.12.21
D	ISSUED FOR CONSTRUCTION	MN	WO 14.05.26
C	ISSUED FOR TENDER	AF	WO 14.02.14
B	ISSUED FOR 80% REVIEW	AF	WO 13.12.20
A	ISSUED FOR 50% REVIEW	AF	WO 12.11.09
Issued		By	Appd. YY.MM.DD

File Name:	144901252	AF	WO	WO	13.12.19
		Dwn.	Chkd.	Dsgn.	YY.MM.DD

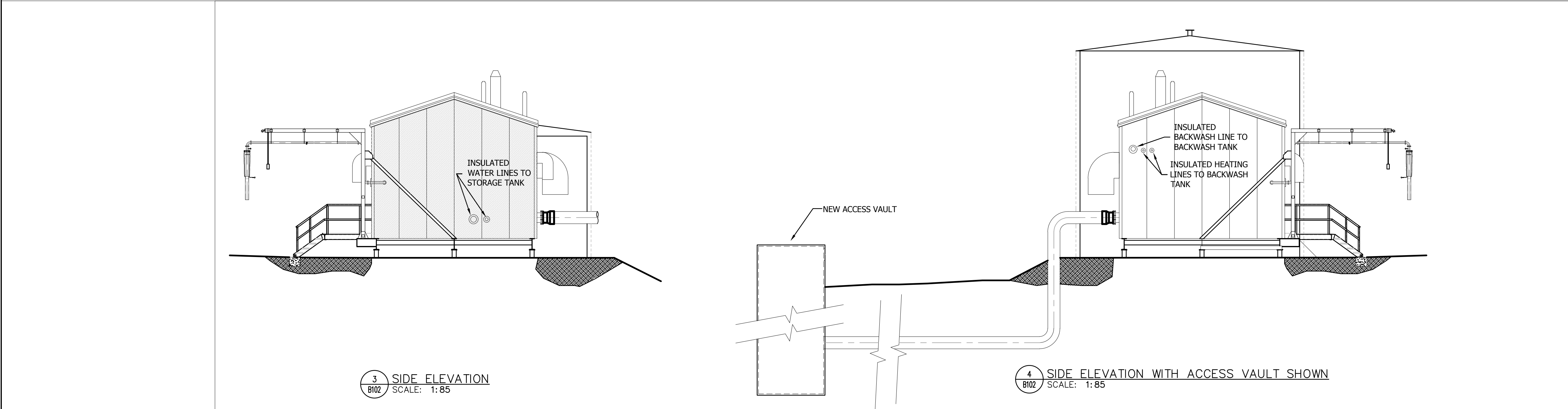
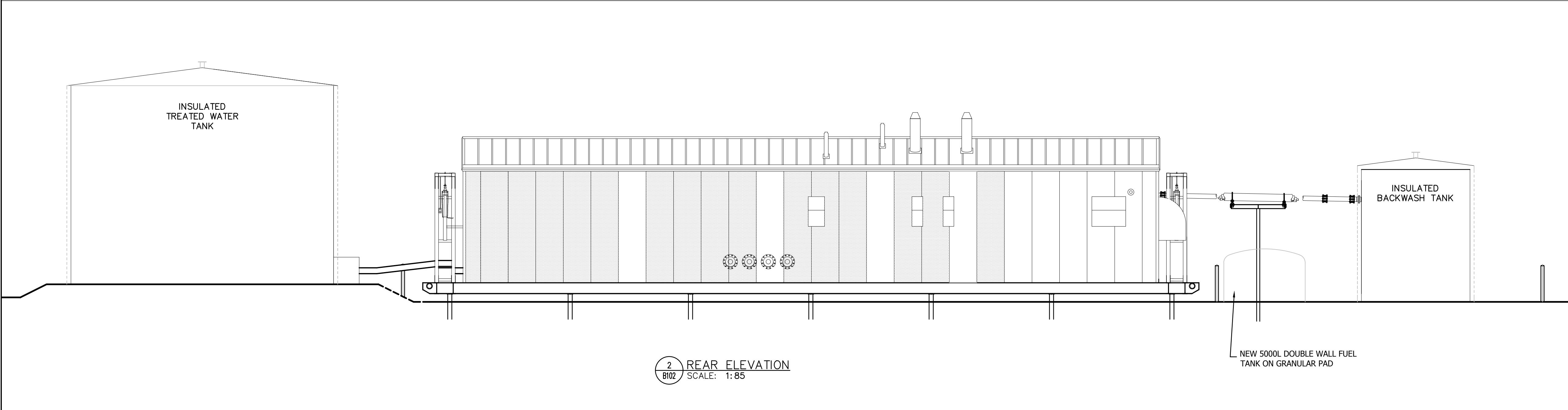
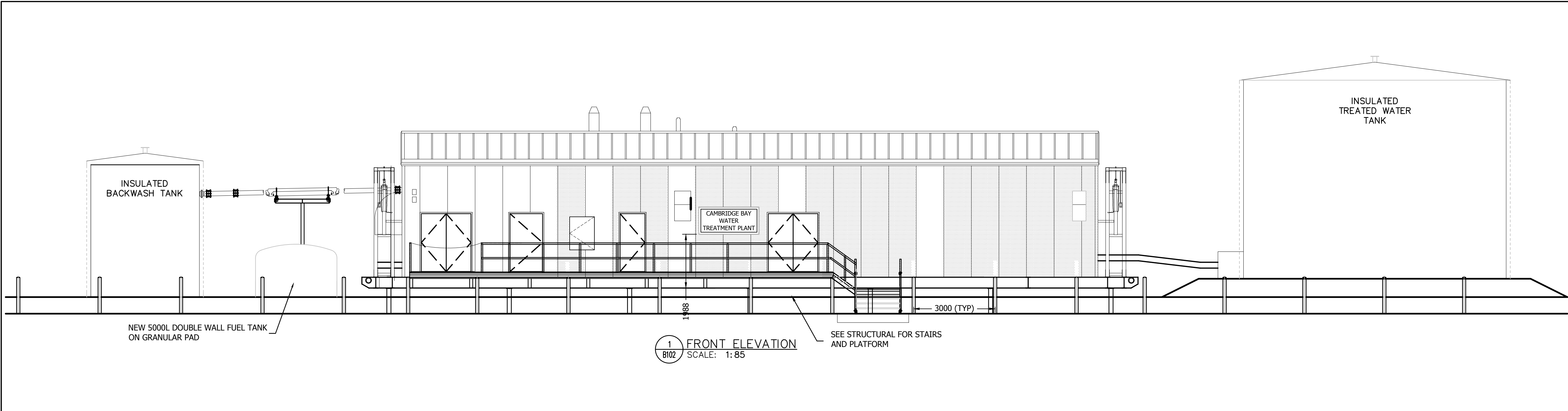
AS-BUILT DRAWING

Client/Project
GOVERNMENT OF NUNAVUT

POTABLE WATER SYSTEM
PHASE II
Cambridge Bay, Nunavut

Title
BUILDING ELEVATIONS

Project No. 144901252	Scale AS NOTED
Drawing No. B-102	Sheet 2 of 3
	Revision 3



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Legend

Notes

4	ACCESS ROAD WIDENING (CCN #3)	AK	MF	16.08.16
3	CHARS REALIGNMENT & PROFILE UPDATE (S)	LM	AF	15.01.16
2	CHARS REALIGNMENT	AK	AF	14.12.08
Revision		By	Appd.	YY.MM.DD
E	AS-BUILT DRAWING	NL	MF	17.12.21
D	ISSUED FOR CONSTRUCTION	MN	WO	14.05.26
C	ISSUED FOR TENDER	AF	WO	14.02.14
B	ISSUED FOR 80% REVIEW	AF	WO	13.12.20
A	ISSUED FOR 50% REVIEW	AF	WO	12.11.09
Issued		By	Appd.	YY.MM.DD

File Name:	144901252	AF	WO	WO	13.12.19
		Dwn.	Chkd.	Dsgn.	YY.MM.DD

Permit-Seal

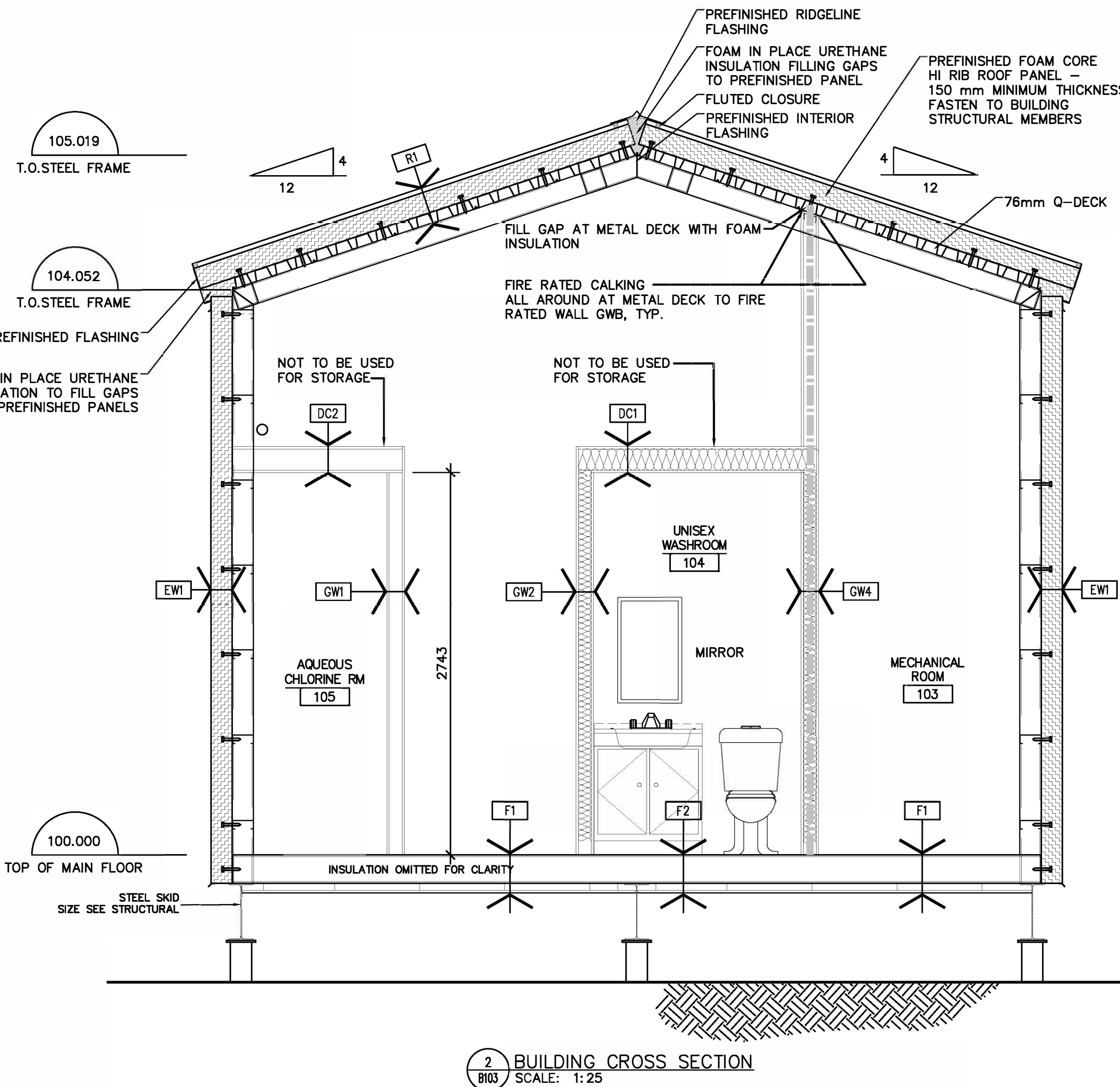
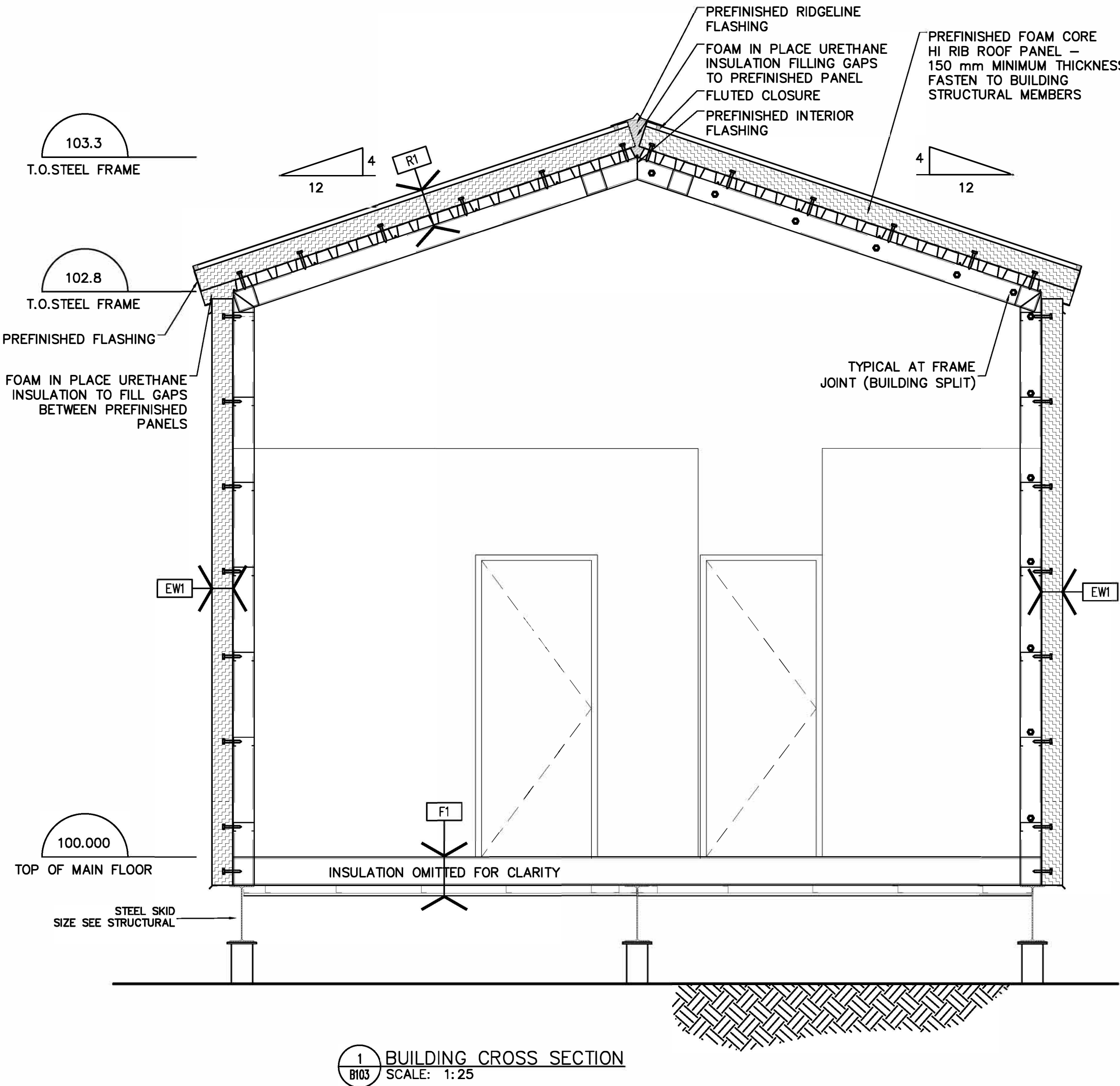
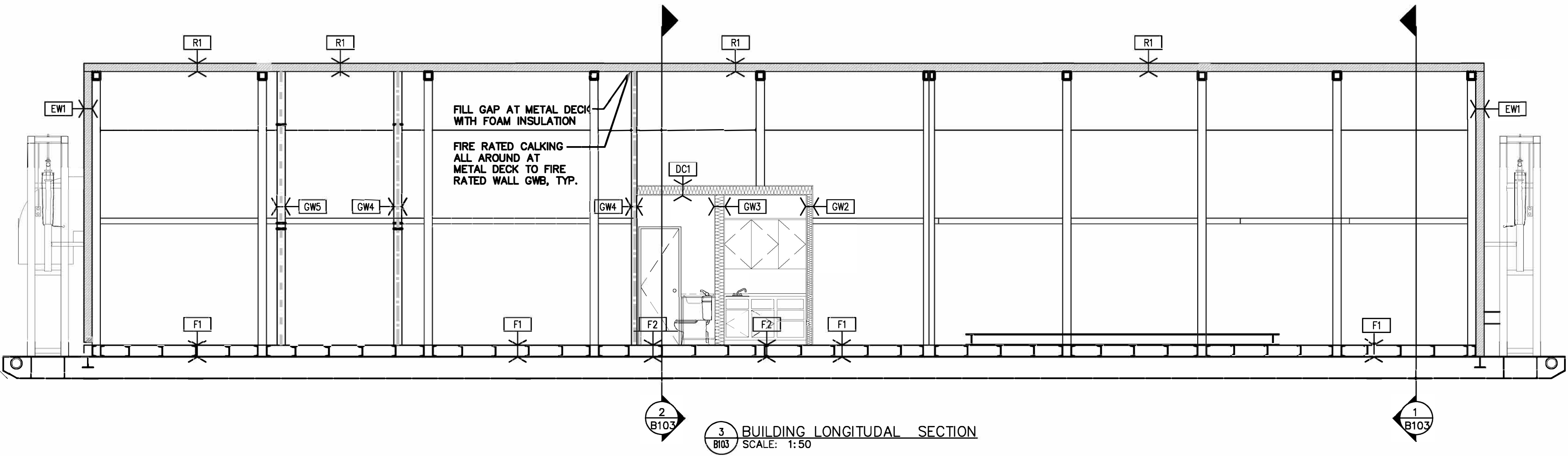
AS-BUILT DRAWING

Client/Project
GOVERNMENT OF NUNAVUT

POTABLE WATER SYSTEM
PHASE II
Cambridge Bay, Nunavut

Title
**BUILDING SECTION AND
MISC. DETAILS**

Project No.	Scale
144901252	AS NOTES
Drawing No.	Sheet
B-103	3 of 3
	Revision
	3



4	ACCESS ROAD WIDENING (CCN #3)	AK	MF	16.08.16
3	CHARS REALIGNMENT & PROFILE UPDATE (S)	LM	AF	15.01.16
2	CHARS REALIGNMENT	AK	AF	14.12.08
Revision		By	Appd.	YY.MM.DD
E	AS-BUILT DRAWING	NL	MF	17.12.21
D	ISSUED FOR CONSTRUCTION	MN	WO	14.05.26
C	ISSUED FOR TENDER	AF	WO	14.02.14
B	ISSUED FOR 80% REVIEW	AF	WO	13.12.20
A	ISSUED FOR 50% REVIEW	AF	WO	12.11.09
Issued		By	Appd.	YY.MM.DD

File Name:	144901252	AF	WO	WO	13.12.19
		Dwn.	Chkd.	Dsgn.	YY.MM.DD

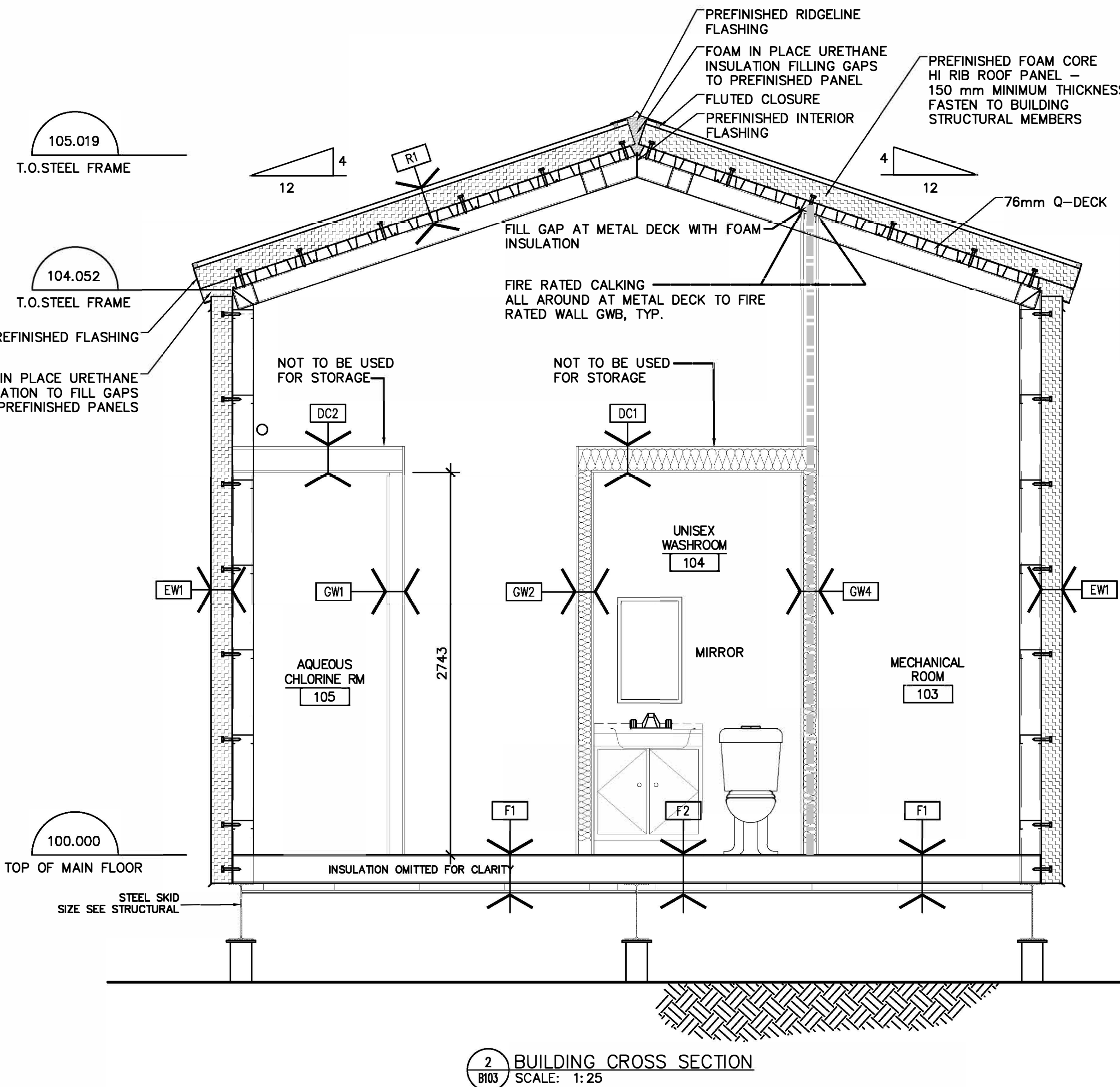
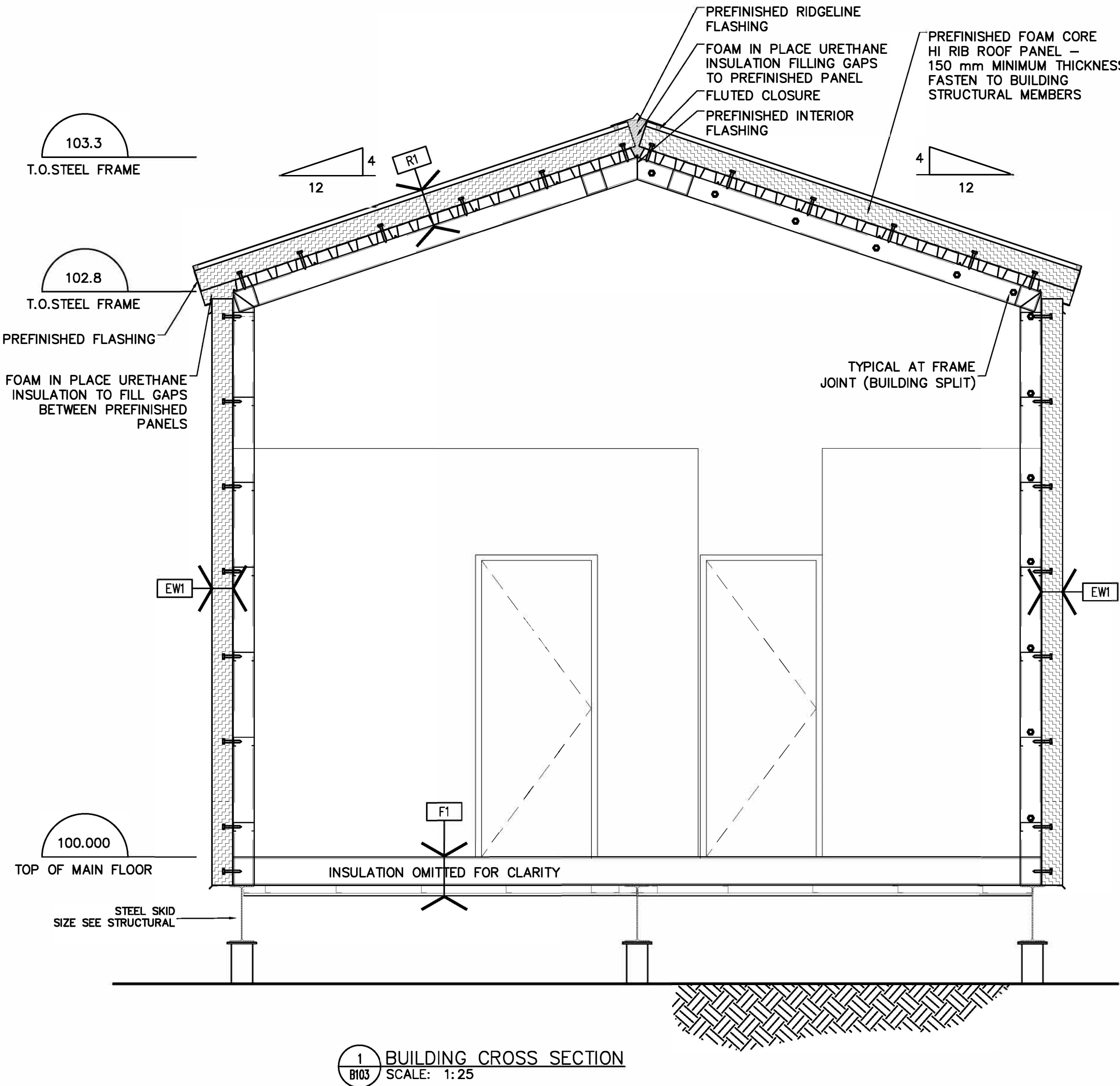
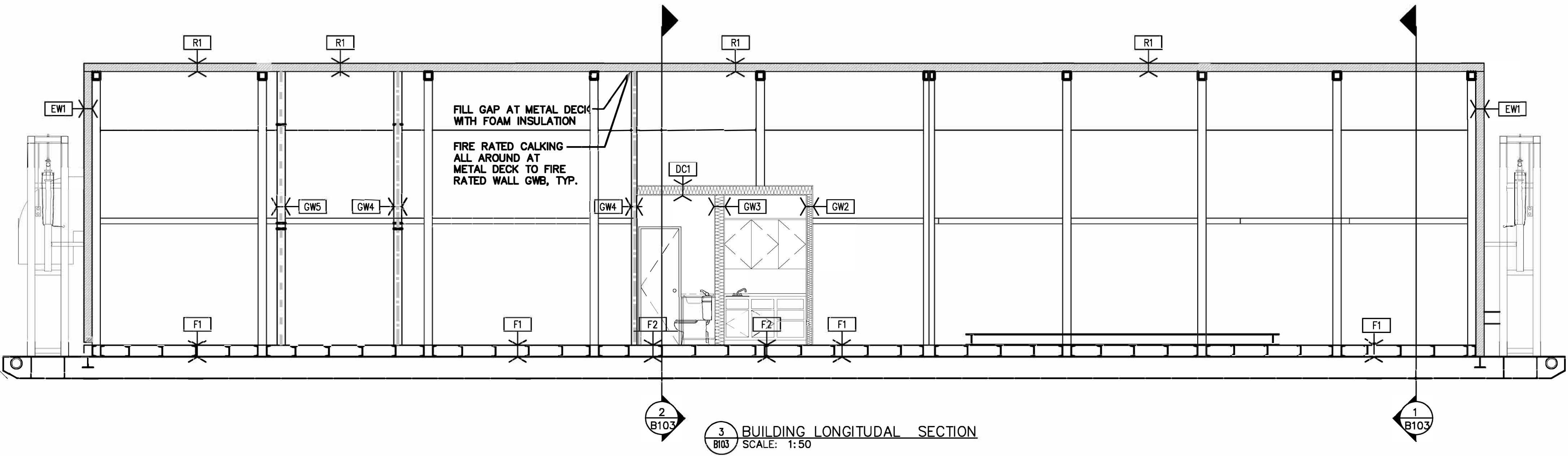
AS-BUILT DRAWING

Client/Project
GOVERNMENT OF NUNAVUT

POTABLE WATER SYSTEM
PHASE II
Cambridge Bay, Nunavut

Title
**BUILDING SECTION AND
MISC. DETAILS**

Project No.	Scale	AS NOTES
144901252		
Drawing No.	Sheet	Revision
B-103		



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Legend

Notes

1. ALL PIPING OUTSIDE OF SKIDS 75 DIA. AND LARGER TO BE SCH.40 304 STAINLESS STEEL.
2. FLOW LIMITING ORIFICE TO BE SIZED TO ALLOW A MAXIMUM FLOW OF 3.8 L/s WHEN FILTER FEED PUMPS ARE OPERATING.
3. HEAT EXCHANGER (HE), REFER TO MECHANICAL DRAWINGS FOR PIPING AND CONTROL DETAILS.
4. CHLORINE INJECTION PUMP GENERAL ARRANGEMENT SHOWN. REFER TO SPECIFICATIONS FOR DETAILED PIPING, VALVING AND ACCESSORIES REQUIREMENTS.

Revision By Appd. YY.MM.DD

D	AS-BUILT DRAWING	NL	MF	17.12.21
C	ISSUED FOR CONSTRUCTION	DC	SK	14.05.26
B	ISSUED FOR TENDER	CV	SK	14.02.21
A	ISSUED FOR 50% REVIEW	BWB	BN	12.11.06
Issued		By	Appd.	YY.MM.DD

File Name: P-01 P-02.DWG	BWB	BN	BN	12.11.06
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

AS-BUILT DRAWING

Permit-Seal

Client/Project

GOVERNMENT OF NUNAVUT

POTABLE WATER SYSTEM
PHASE II

Cambridge Bay, Nunavut

Title

PIPING AND INSTRUMENTATION
DIAGRAM - SHEET 1

Project No. 144901252 Scale N.T.S.

Drawing No. Sheet Revision

P-101

of

0

WATER TREATMENT PLANT

FILTRATION SYSTEM PACKAGE
SEE DRAWING P-101A

WATER TREATMENT PLANT

FFP-01 / 02
FILTER FEED PUMPS

RATED CAPACITY : 20 L/sec
RATED HEAD : 345 kPa
S.G. : 1.0
HORSE POWER : 15 HP
TYPE : GRUNDFOS PACO
16N6-25709-13010X
208V / 3 / 60Hz

RCP-01
RAW WATER CIRCULATION PUMP

RATED CAPACITY : 3.8 L/sec
RATED HEAD : 65 kPa
S.G. : 1.0
HORSE POWER : 0.75 HP
TYPE : GRUNDFOS TP
32-160/2
208V / 3 / 60Hz

CP-01
COAGULANT PUMP

RATED CAPACITY : 1 L/hr
HORSE POWER : FRACTIONAL
TYPE : BLUE WHITE
112V / 1 / 60Hz

CP-02 / 03 / 04 / 05 / 06 / 07
CHLORINE PUMPS

RATED CAPACITY : VARIOUS - SEE SPECIFICATIONS
HORSE POWER : FRACTIONAL
TYPE : PROMINENT
112V / 1 / 60Hz

UV-01 / 02
UV DISINFECTION

RATED CAPACITY : 20 L/sec
DIAMETER : 150mm
UV TRANSMITTANCE : 85%
TYPE : TROJAN UV SWIFT SC D-03
208V / 3 / 60Hz

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Legend

Notes

1. ALL PVC PIPING SCHEDULE 80.
2. ALL STEEL PIPING TO BE SCH.40 304 STAINLESS STEEL.

Revision	By	Appd.	YY.MM.DD	
D AS-BUILT DRAWING	NL	MF	17.12.21	
C ISSUED FOR CONSTRUCTION	DC	SK	14.05.26	
B ISSUED FOR TENDER	CV	SK	14.02.21	
A ISSUED FOR 50% REVIEW	BWB	BN	12.11.06	
Issued	By	Appd.	YY.MM.DD	
File Name: P-01_P-02.DWG	BWB	BN	BN	12.11.06
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

AS-BUILT DRAWING

Permit-Seal

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GOVERNMENT OF NUNAVUT

POTABLE WATER SYSTEM
PHASE II

Cambridge Bay, Nunavut

Title

PIPING AND INSTRUMENTATION
DIAGRAM - SHEET 2

Project No.

144901252

Drawing No.

P-101A

Scale

N.T.S.

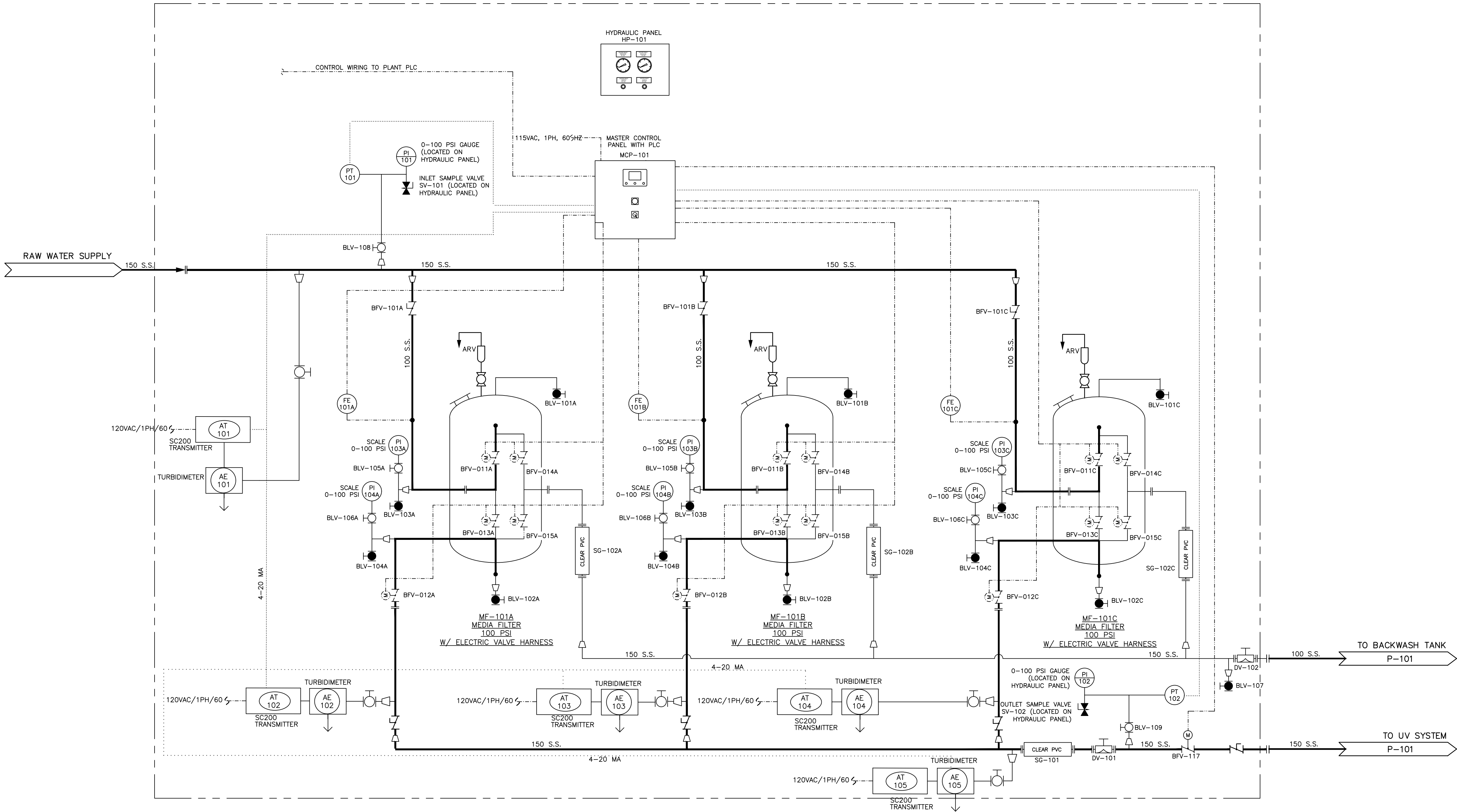
Sheet

of

Revision

0

FILTER SYSTEM



LEGENDS

- MAIN PROCESS LINE (NORMAL FLOW)
- SECONDARY PROCESS LINE
- HYDRAULIC TUBING
- DISCRETE CONTROL SIGNAL
- PIPING BY OTHERS
- PNEUMATIC TUBING
- POWER SUPPLY
- ANALOG CONTROL SIGNAL

- LEVEL TRANSMITTER
- IN-LINE FLOWMETER
- PRESSURE GAUGE
- FLOW TOTALIZER (PANEL MOUNTED)
- FLOW SENSOR
- PRESSURE SENSOR
- SIGHT GLASS

- ACTUATED BALL VALVE
- MANUAL BALL VALVE (NORMALLY CLOSED)
- MANUAL BALL VALVE (NORMALLY OPEN)
- NEEDLE OR TOGGLE VALVE (NORMALLY CLOSED)
- CHECK VALVE
- STATIC MIXER
- INJECTION ASSEMBLY
- AIR RELIEF VALVE

- MANUAL DIAPHRAGM VALVE
- MANUAL BUTTERFLY VALVE
- ACTUATED BUTTERFLY VALVE
- PIPE REDUCER
- UNION FITTING

CONTROL LOGIC NOTES:

1. WELL PUMP SHALL BE RUNNING DURING BACKWASH
2. SKID-MOUNTED SYSTEM
3. ONLY ONE VESSEL SHALL BACKWASH AT A TIME, OTHER VESSELS OFF-LINE DURING BACKWASH

DESCRIPTION:

1. SYSTEM MODEL: APU140Z-5460CS-3-AVH
2. SKID-MOUNTED SYSTEM
3. MEDIA: AD140Z FILTRATION MEDIA
4. CONTROL VALVES: 4" LUG-STYLE BUTTERFLY VALVES
5. SYSTEM CONTROL: ALLEN BRADLEY PLC
6. VESSELS: THREE (3) 54" DIAMETER X 60" SIDESHELL
7. SYSTEM PRESSURE: 100 PSI MAX

OPERATING CONDITIONS:

1. FLOW CONFIGURATION: PARALLEL
2. SERVICE FLOW RATE: 317 GPM (OVER 3 VESSELS)
3. BACKWASH FLOW RATE: 254 GPM PER VESSEL
4. BACKWASH SOURCE: VESSELS IN SERVICE
5. OPERATING PRESSURE: <100 PSI
6. IF PRESSURE EXCEEDS 100 PSI, A PRESSURE REGULATOR IS REQUIRED, TO BE PROVIDED BY CUSTOMER

NOTES:

FILTER UNITS SUPPLIED
ADEGGE WATER TECHNOLOGIES



Consultants

Legend

Revision	By	Appd.	YY.MM.DD
D AS-BUILT DRAWING	NL	MF	17.12.21
C ISSUED FOR CONSTRUCTION	DC	SK	14.05.26
B ISSUED FOR TENDER	CV	SK	14.02.21
A ISSUED FOR 50% REVIEW	BWB	BN	12.11.06
Issued	By	Appd.	YY.MM.DD

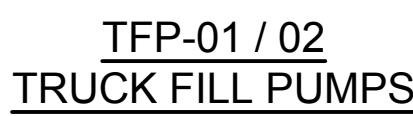
AS-BUILT DRAWING

Permit-Seal

POTABLE WATER SYSTEM
PHASE II
Cambridge Bay, Nunavut

Project No. 144901252	Scale N.T.S.	
Drawing No.	Sheet	Revision

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CSP-01 / 02
CORE SERVICING PUMPS

CSP-03 / 04
CORE SERVICING PUMPS

FP-01
FIRE PUMP

DP-01
DRAIN PUMP

RATED CAPACITY : 55 L/min
RATED HEAD : 90 kPa
S.G. : 1.0
HORSE POWER : 1/5 HP
TYPE : CENTRIFUGAL
120V / 1 / 60Hz



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Legend

Notes

Revision	By	Appd.	YY.MM.DD
D AS-BUILT DRAWING	NL	MF	17.12.21
C ISSUED FOR CONSTRUCTION	CV	SK	14.05.24
B ISSUED FOR TENDER	CV	SK	14.02.21
A ISSUED FOR 50% REVIEW	BWB	BN	12.11.06
Issued	By	Appd.	YY.MM.DD

AS-BUILT DRAWING

Permit-Seal

Client/Project

GOVERNMENT OF NUNAVUT

POTABLE WATER SYSTEM
PHASE II

Cambridge Bay, Nunavut

Title

OVERALL PROCESS LAYOUT

Project No.
144901252

Scale
N.T.S.

Drawing No.

Sheet

Revision

P-103

of

0

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2017/12/21 3:43 PM By: Luong, Nelson

ORIGINAL SHEET ANGLE



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Consultants

Legend

Notes
1. ALL PIPING OUTSIDE OF SKIDS 75 DIA. AND LARGER TO BE SCH.40 304 STAINLESS STEEL.

Revision	By	Appd.	YY.MM.DD
D AS-BUILT DRAWING	NL	MF	17.12.21
C ISSUED FOR CONSTRUCTION	CV	SK	14.05.26
B ISSUED FOR TENDER	CV	SK	14.02.21
A ISSUED FOR 50% REVIEW	BWB	BN	12.11.06
Issued	By	Appd.	YY.MM.DD

File Name: P-04_P05.DWG	BWB	BN	BN	12.11.06
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AS-BUILT DRAWING

Permit-Seal

Client/Project
GOVERNMENT OF NUNAVUT

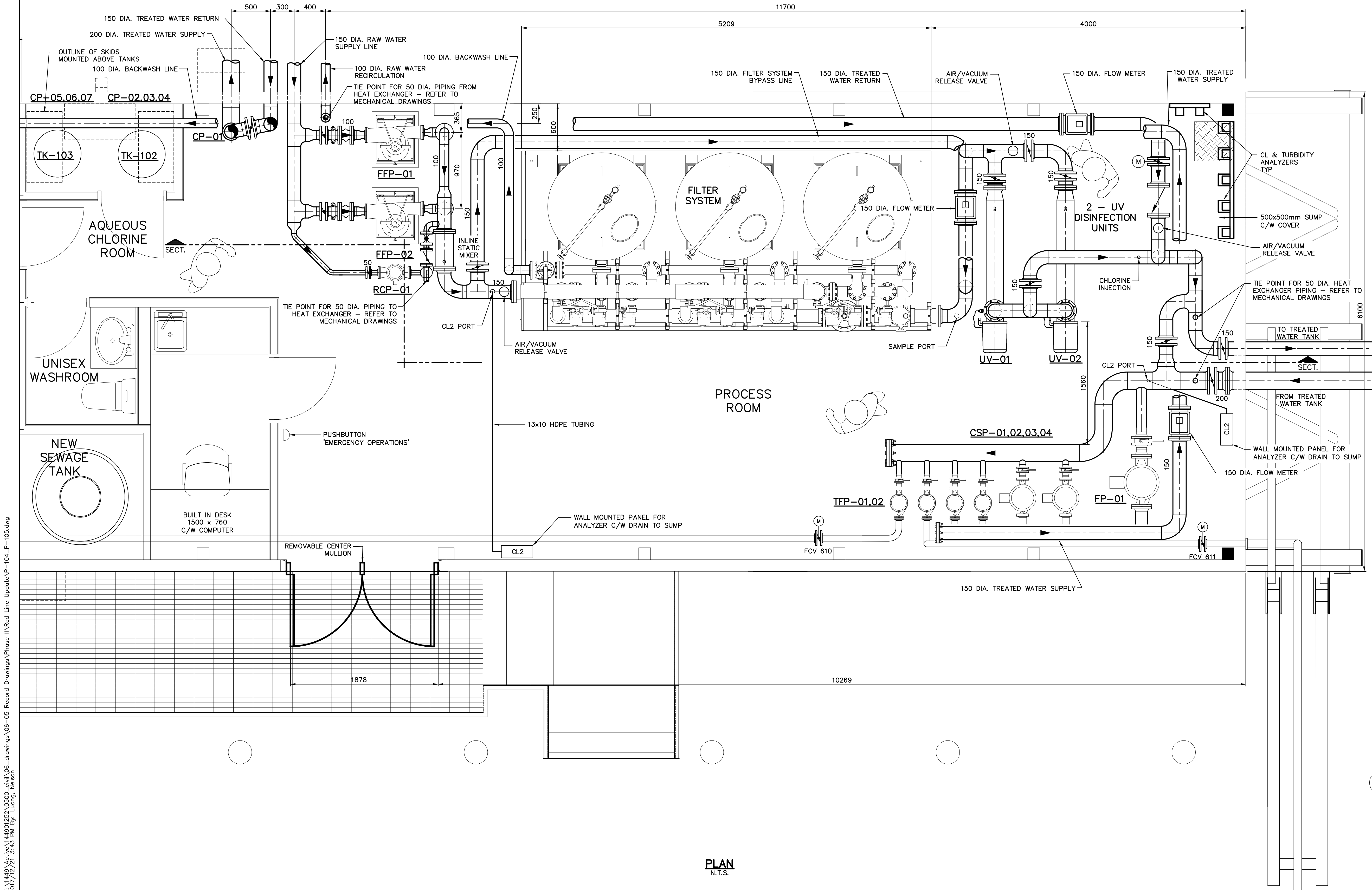
POTABLE WATER SYSTEM
PHASE II
Cambridge Bay, Nunavut

Title
PROCESS ROOM LAYOUT

Project No. 144901252 Scale N.T.S.

Drawing No. Sheet Revision

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PLAN
N.T.S.

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2017/12/21 3:43 PM By: J. Long, Nelson

ORIGINAL SHEET - ANSI D



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Consultants

Legend

1. ALL PIPING OUTSIDE OF SKIDS 75 DIA. AND LARGER TO BE SCH.40 304 STAINLESS STEEL.

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Revision	By	Appd.	YY.MM.DD
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C ISSUED FOR CONSTRUCTION	CV	SK	14.05.26
B ISSUED FOR TENDER	CV	SK	14.02.21
A ISSUED FOR 50% REVIEW	BWB	BN	12.11.06
Issued	By	Appd.	YY.MM.DD

File Name: P-04_P-05.DWG	BWB	BN	BN	12.11.06
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AS-BUILT DRAWING

Permit-Seal

Client/Project

GOVERNMENT OF NUNAVUT

POTABLE WATER SYSTEM PHASE II

Cambridge Bay, Nunavut

Title

PROCESS ROOM SECTION AND DETAILS

Project No.

144901252

Scale
N.T.S.

Drawing No.

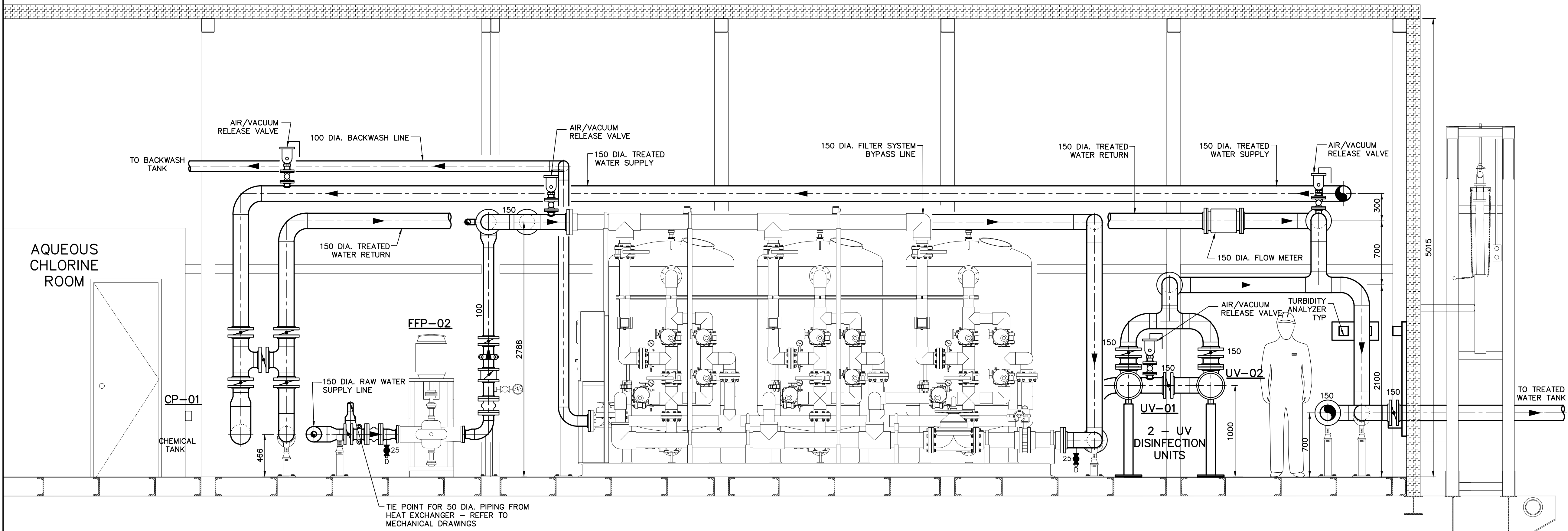
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Revision

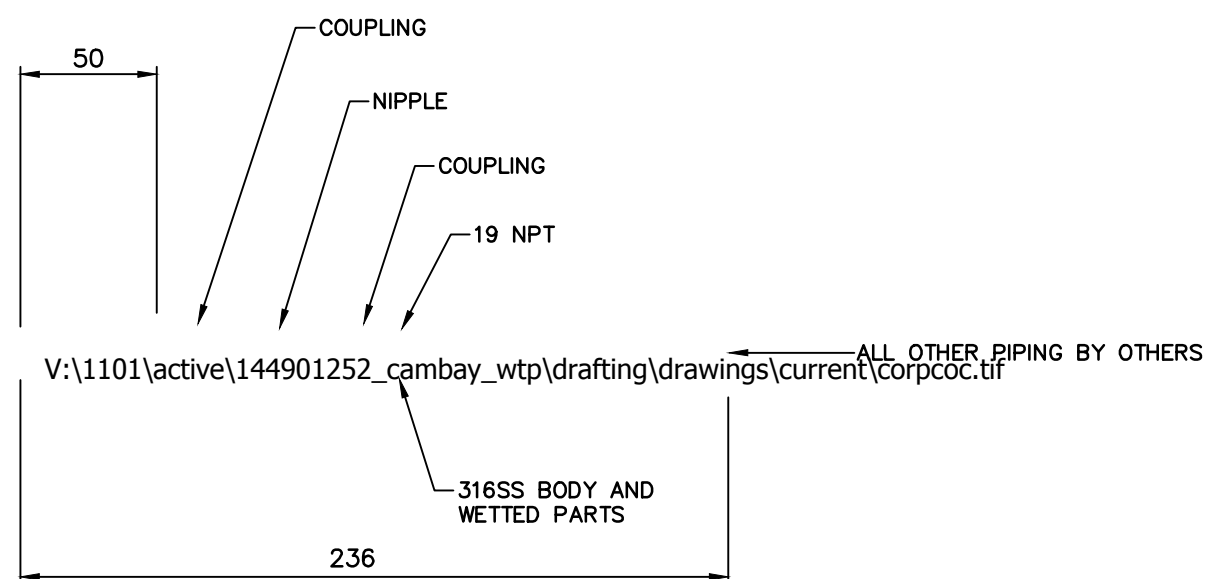
P-105

of

C



SECTION
N.T.S.



- TYPICAL FOR ALL CHEMICAL INJECTION POINTS
- ALL MATERIALS TO BE 316SS

CORPORATION STOP DETAIL
N.T.S.

N.T.S

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2017/12/21 3:43 PM By: Luong, Nelson

ORIGINAL SHEET - ANSI D

AS-BUILT DRAWING

Client/Project
GOVERNMENT OF NUNAVUT

POTABLE WATER SYSTEM
PHASE II
Cambridge Bay, Nunavut

Title
**MECHANICAL
SITE PLAN &
LEGEND**

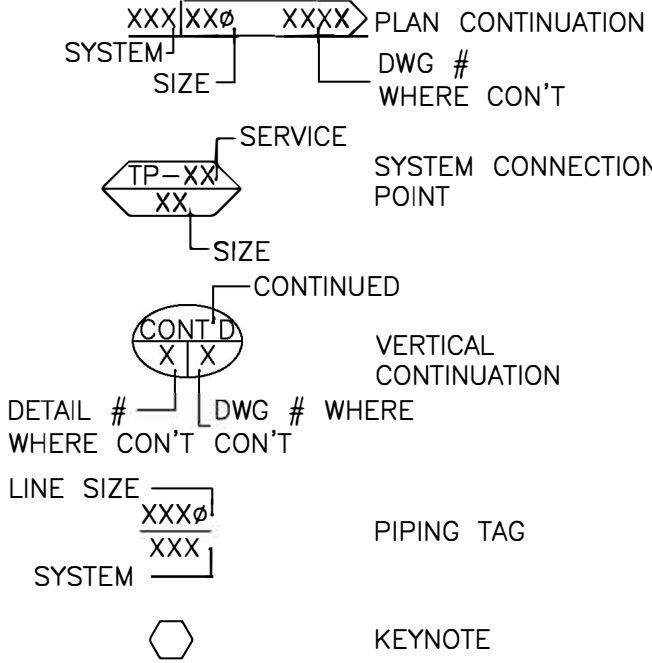
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Drawing No. M-101

Scale
AS NOTED

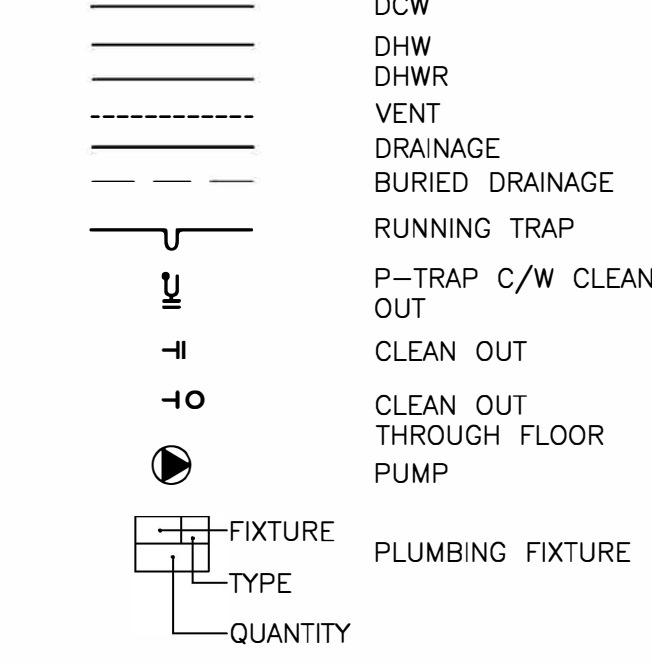
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Revision
0

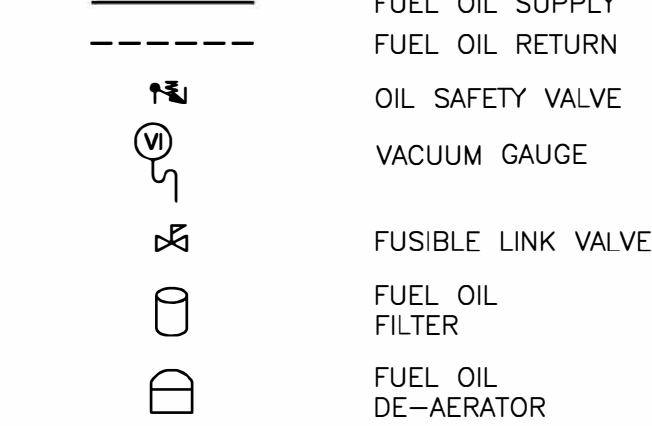
GENERAL LEGEND



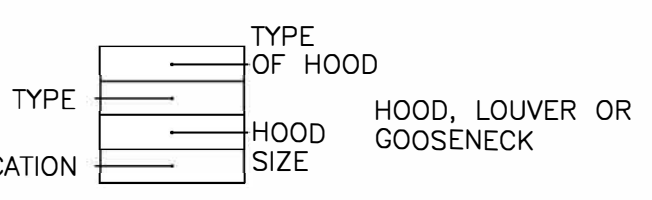
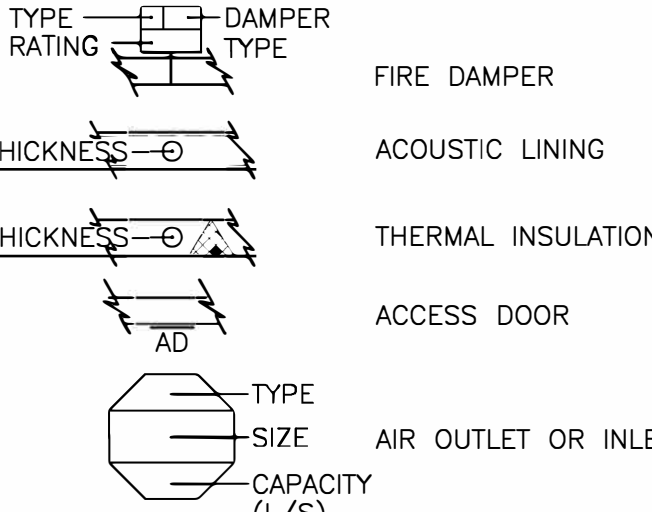
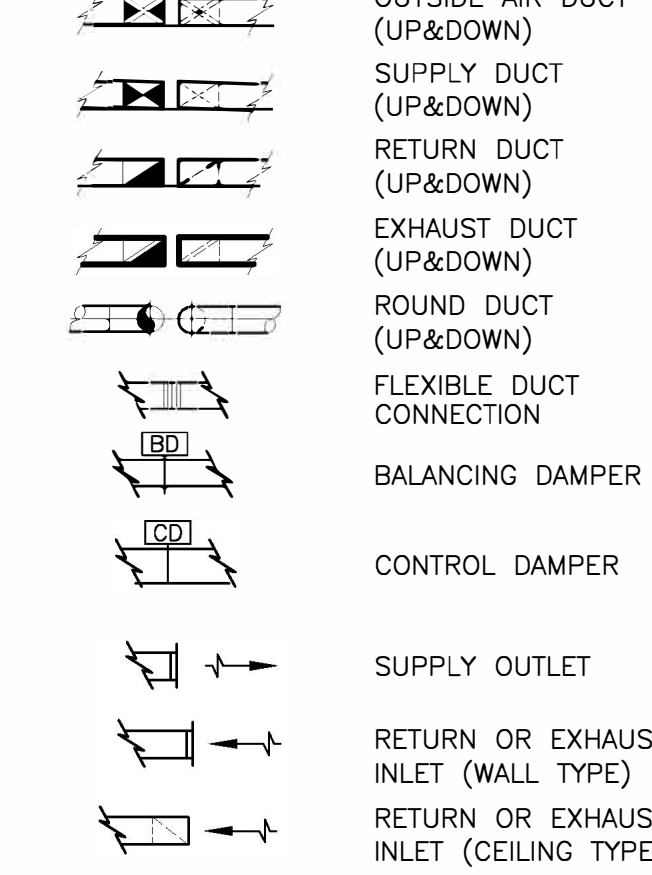
PLUMBING LEGEND



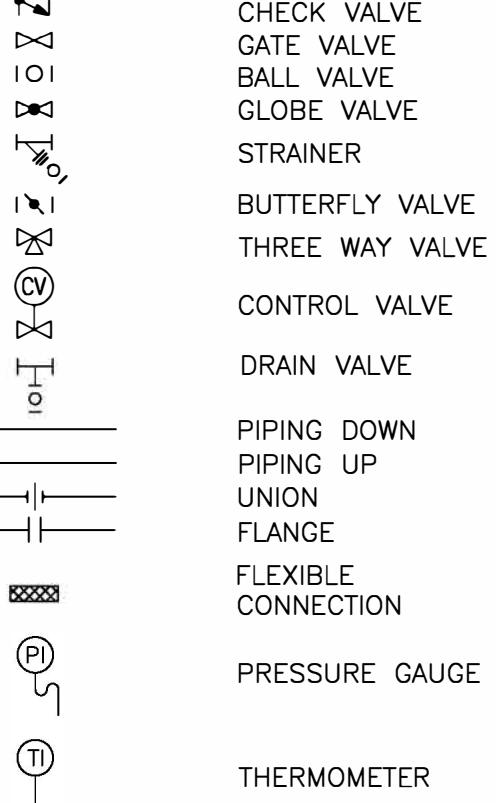
FUEL OIL LEGEND



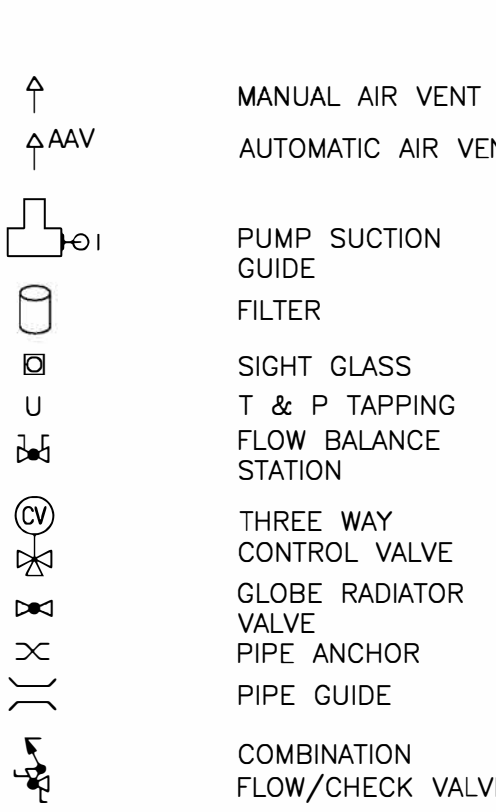
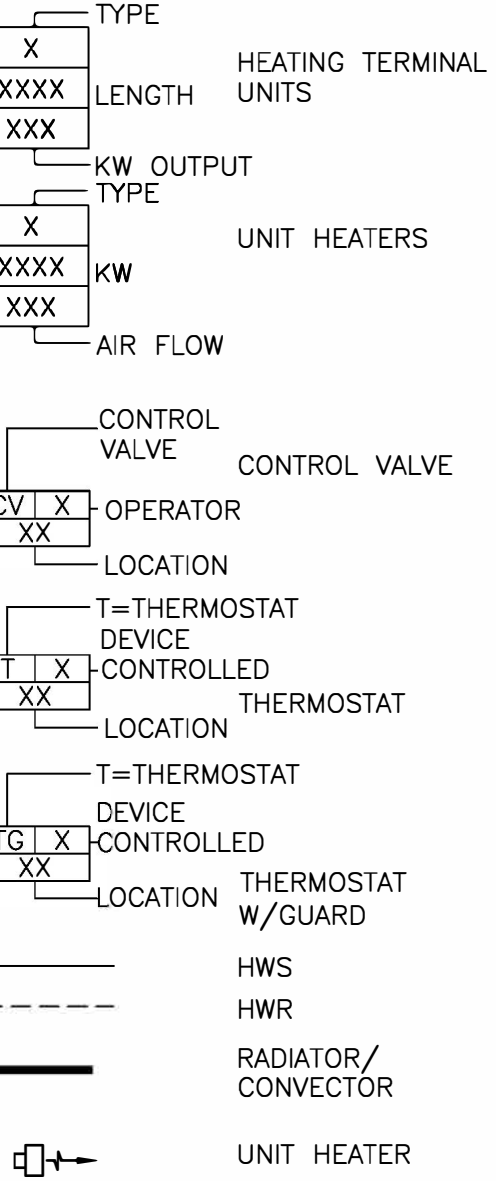
VENTILATION LEGEND



GENERAL PIPING LEGEND



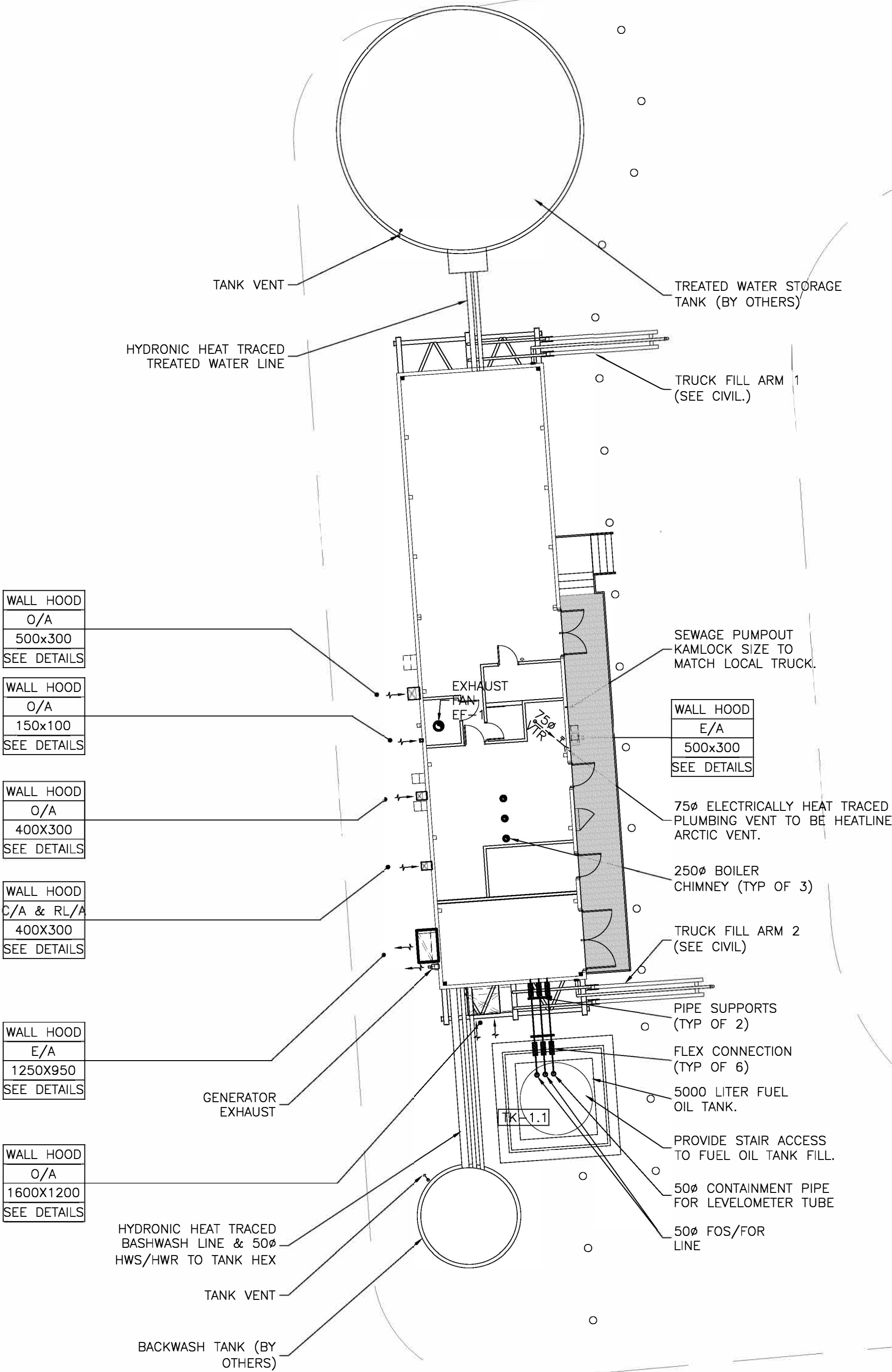
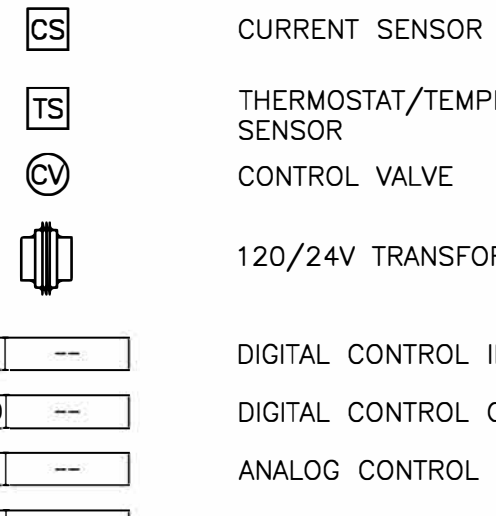
HEATING LEGEND



FIRE PROTECTION LEGEND



CONTROLS LEGEND



1 MECHANICAL SITE PLAN AND LEGEND
SCALE: 1:150



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Legend

Notes

[illegible]

Permit-Seal

AS-BUILT DRAWING

Client/Project

GOVERNMENT OF NUNAVUT

POTABLE WATER SYSTEM
PHASE II

Cambridge Bay, Nunavut

Title

MECHANICAL
FUEL OIL, PLUMBING &
FIRE PROTECTION LAYOUT

Project No. 144901252	Scale AS NOTED
Drawing No.	Sheet Revision

M-201

2 of 9

0

Revision	By	Appd.	YY.MM.DD
0 AS-BUILT DRAWING	IF	BM	17.12.08
Issued	By	Appd.	YY.MM.DD

File Name: 144901252	BM	BM	BM	13.12.19
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

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AS-BUILT DRAWING

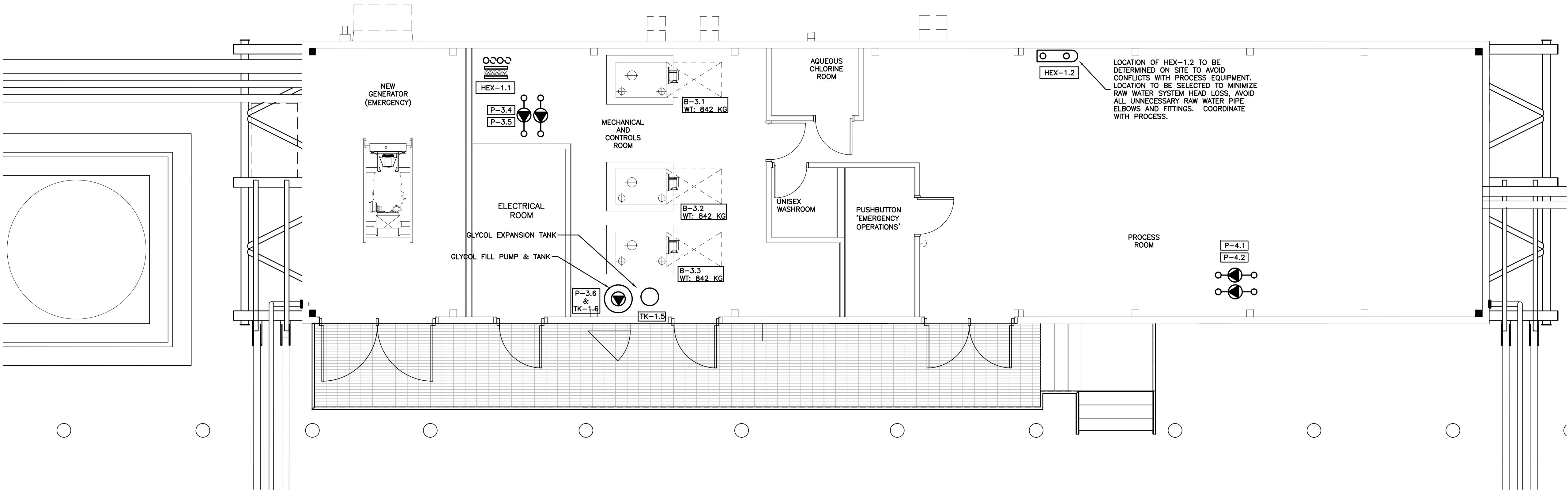
Client/Project
GOVERNMENT OF NUNAVUT

POTABLE WATER SYSTEM
PHASE II
Cambridge Bay, Nunavut

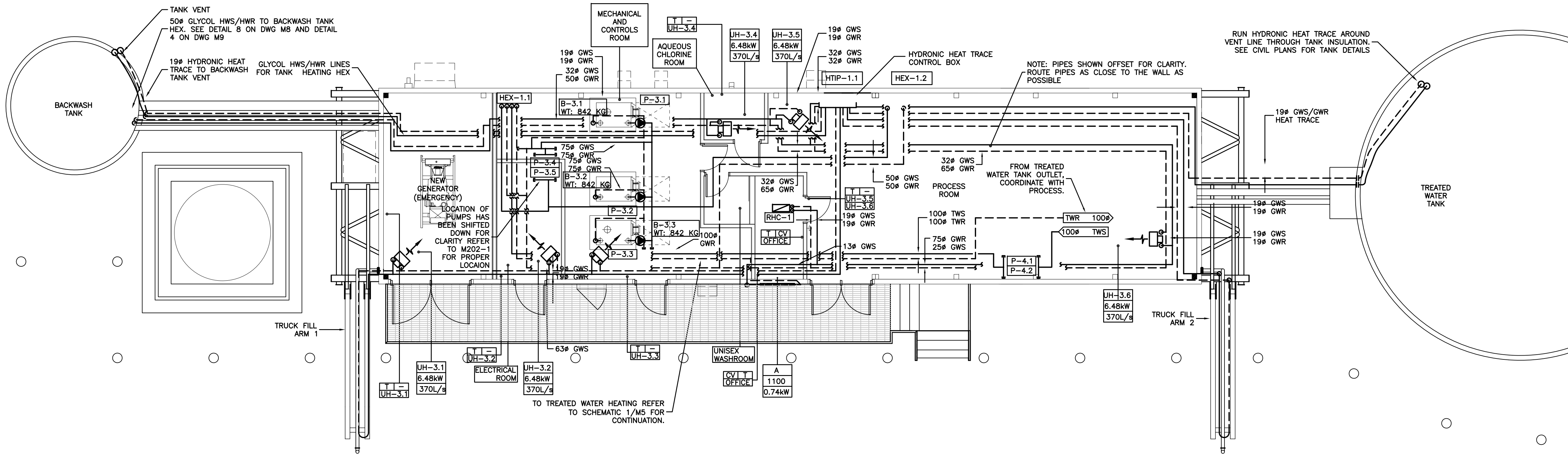
Title
MECHANICAL
HEATING LAYOUT &
PROCESS CONNECTIONS

Project No. 144901252	Scale AS NOTED
Drawing No.	Sheet Revision

M-202 3 of 9 0



1 PROCESS CONNECTIONS & HEATING LAYOUT - LOW LEVEL
SCALE: 1:50



2 PROCESS CONNECTIONS & HEATING LAYOUT - HIGH LEVEL
SCALE: 1:75



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Legend

File Name: 144901252	BM	BM	BM	13.12.19
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

AS-BUILT DRAWING

POTABLE WATER SYSTEM
PHASE II
Cambridge Bay, Nunavut

Project No. 144901252	Scale AS NOTED
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M-601 5 of 9 0





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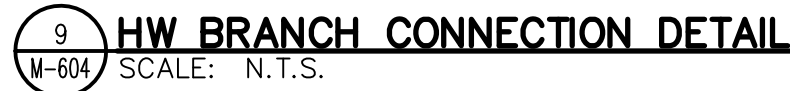
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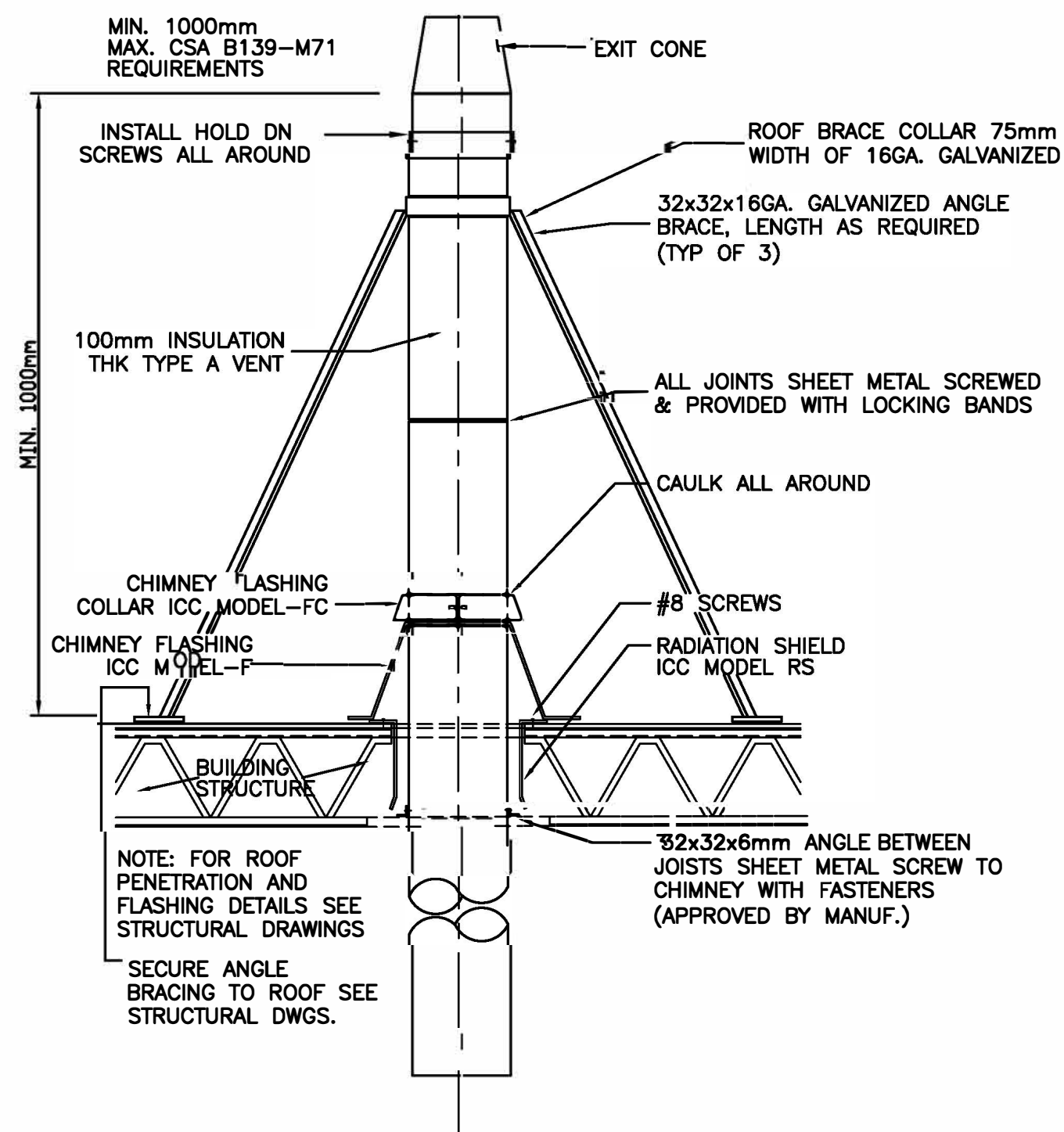
POTABLE WATER SYSTEM
PHASE II
Cambridge Bay, Nunavut

Project No. 144901252	Scale AS NOTED
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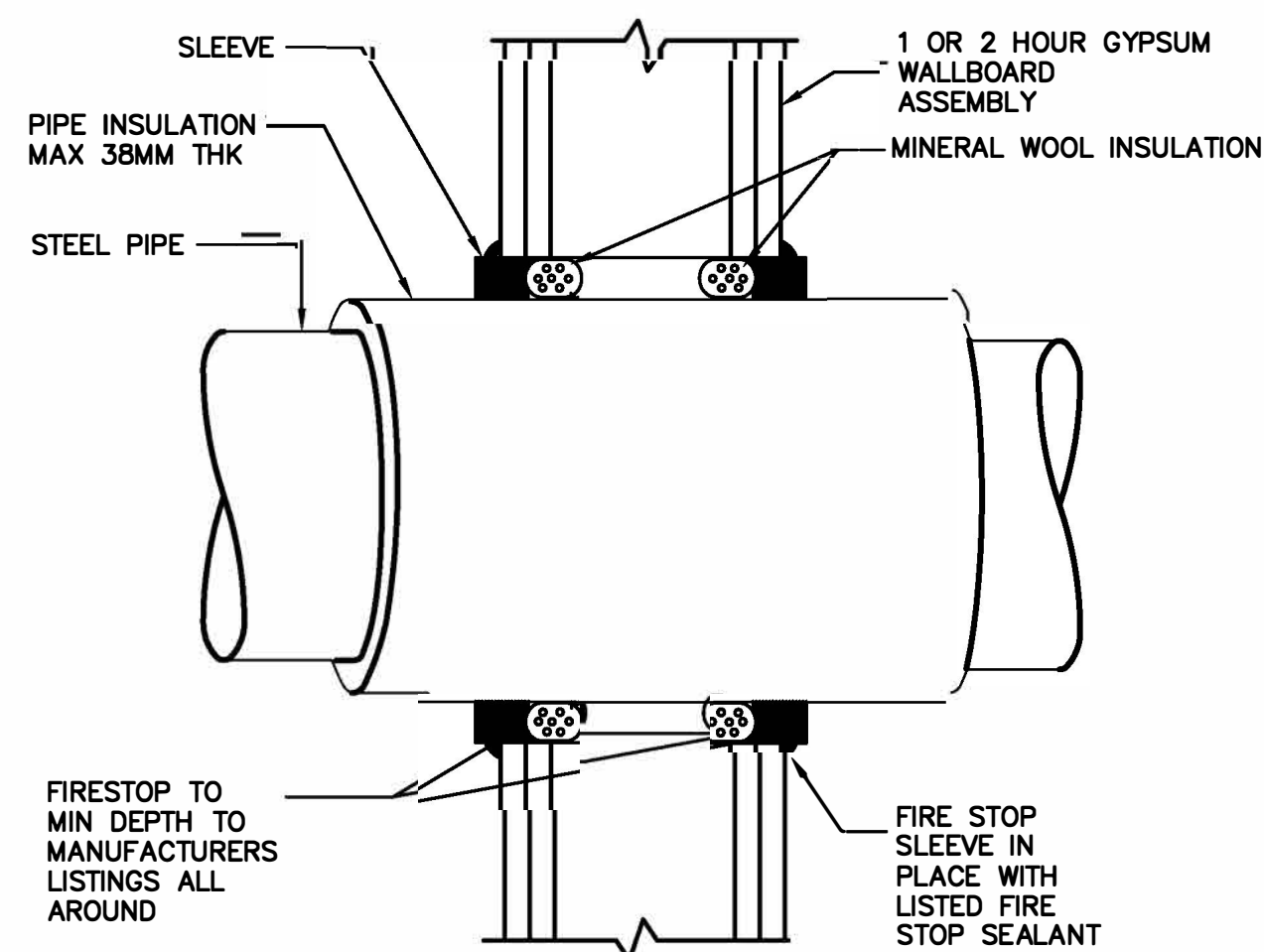
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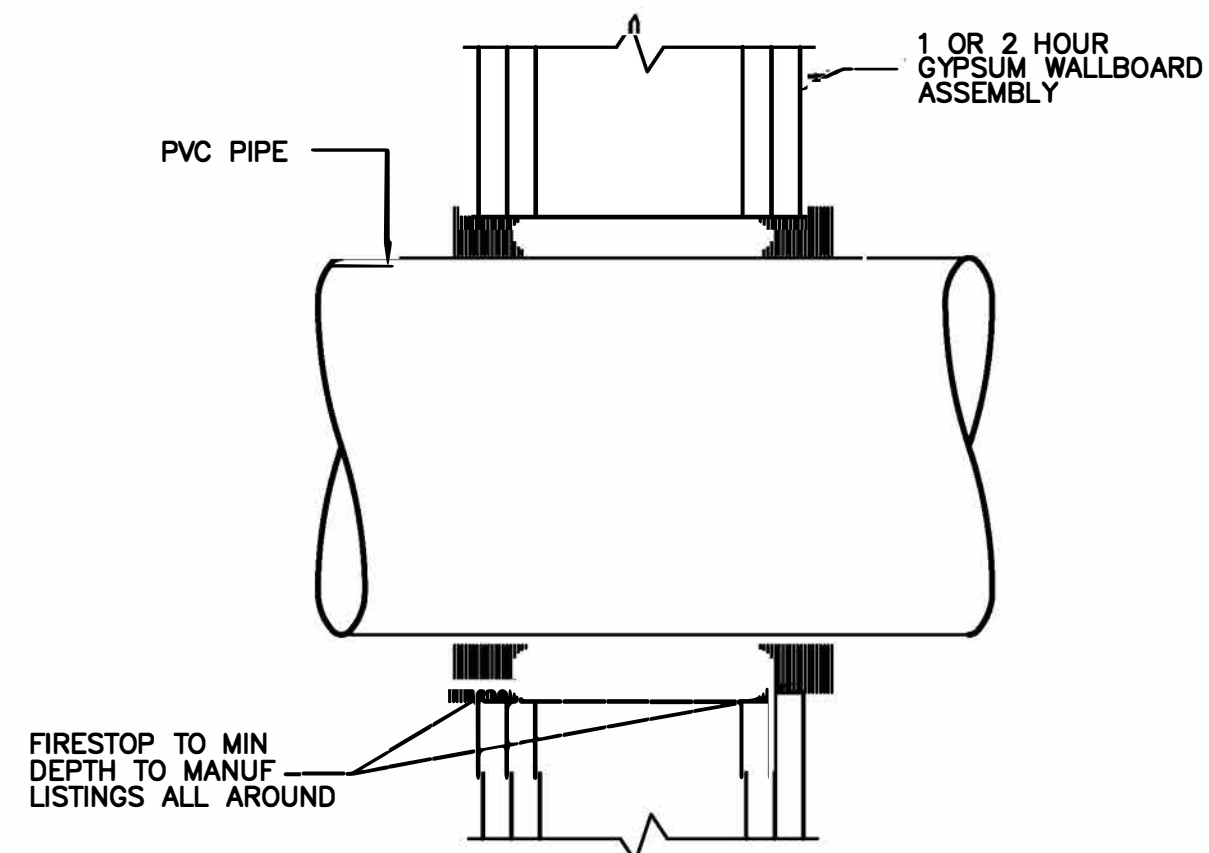




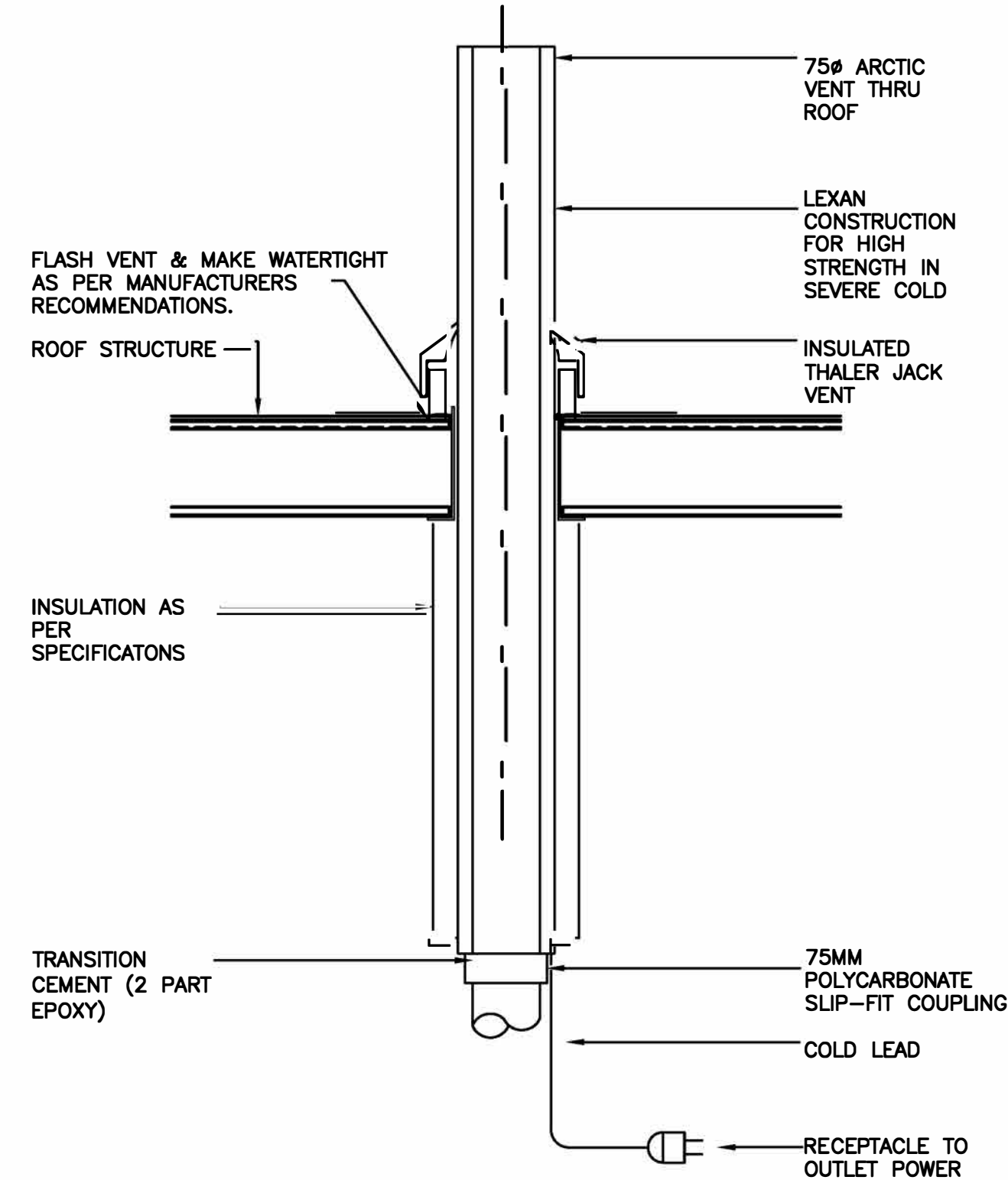
1 BOILER-CHIMNEY-DETAIL-(TOP).
M-605 SCALE: N.T.S.



9 METALLIC-INSULATED-PIPE-FIRE-STOP-DETAIL
M-605 SCALE: N.T.S.

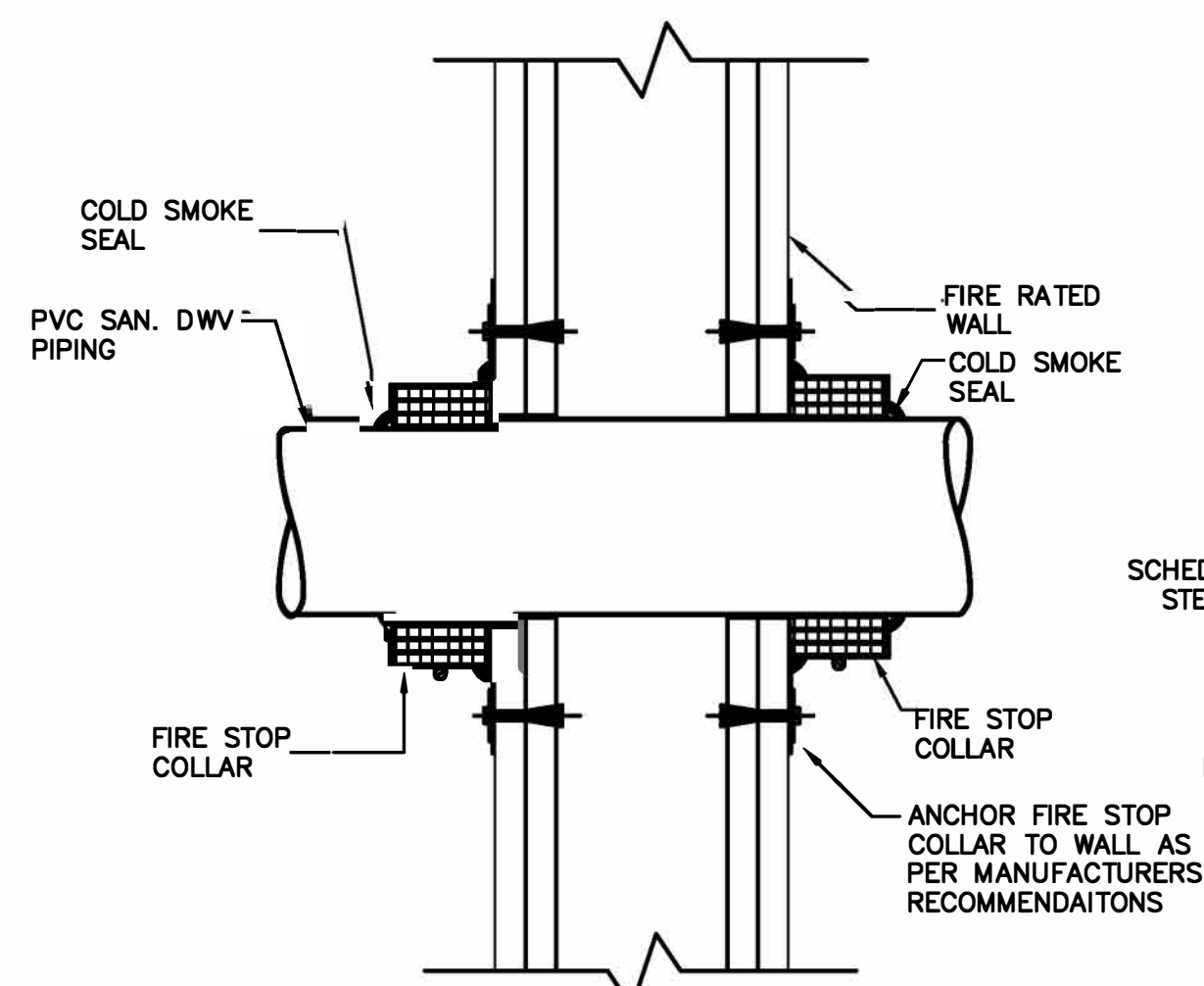


10 ~~PVC-500 AND SMALLER PIPE FIRE STOP DETAIL~~
M-605 SCALE: N.T.S.



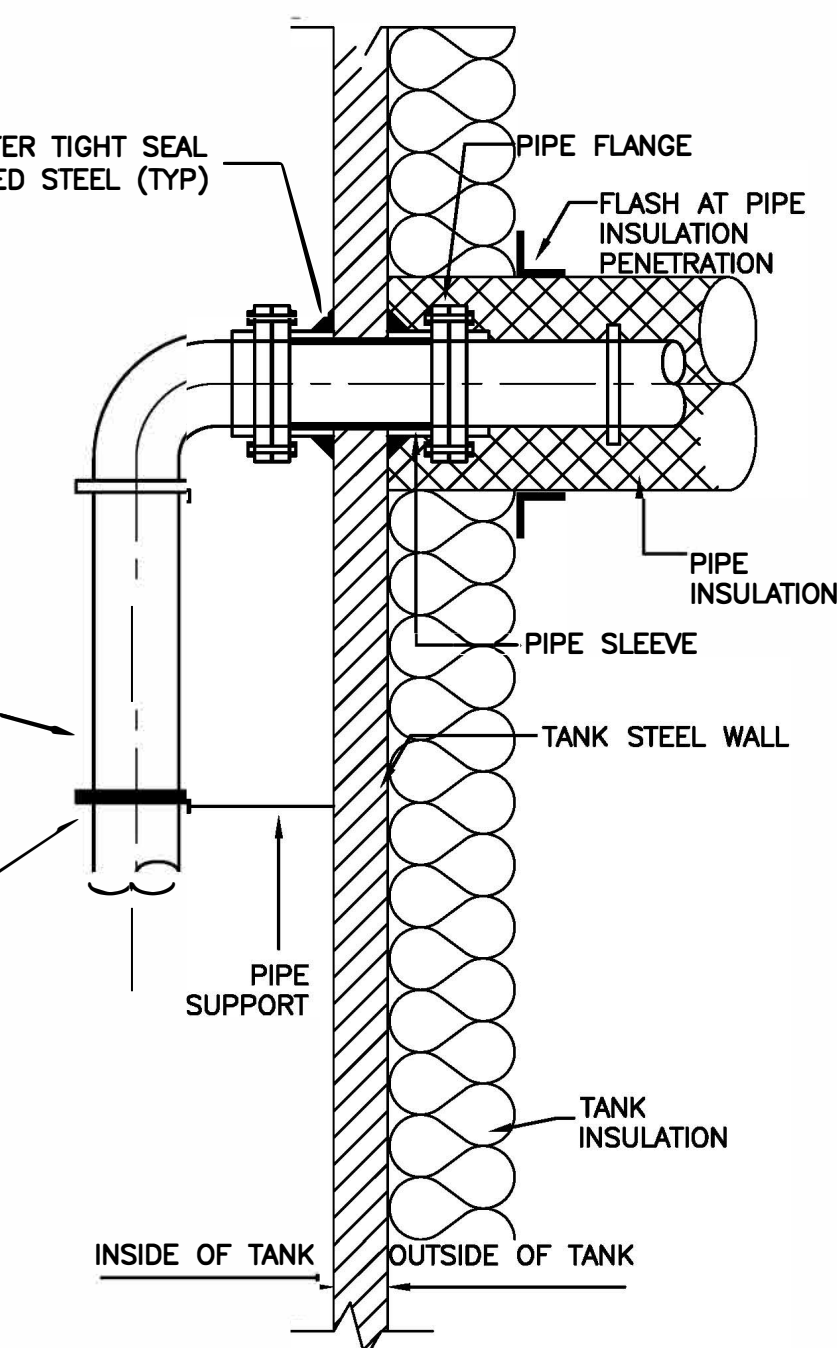
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M-605

~~VENT-THROUGH-ROOF-W/-ARCTIC-VENT~~
SCALE: N.T.S.

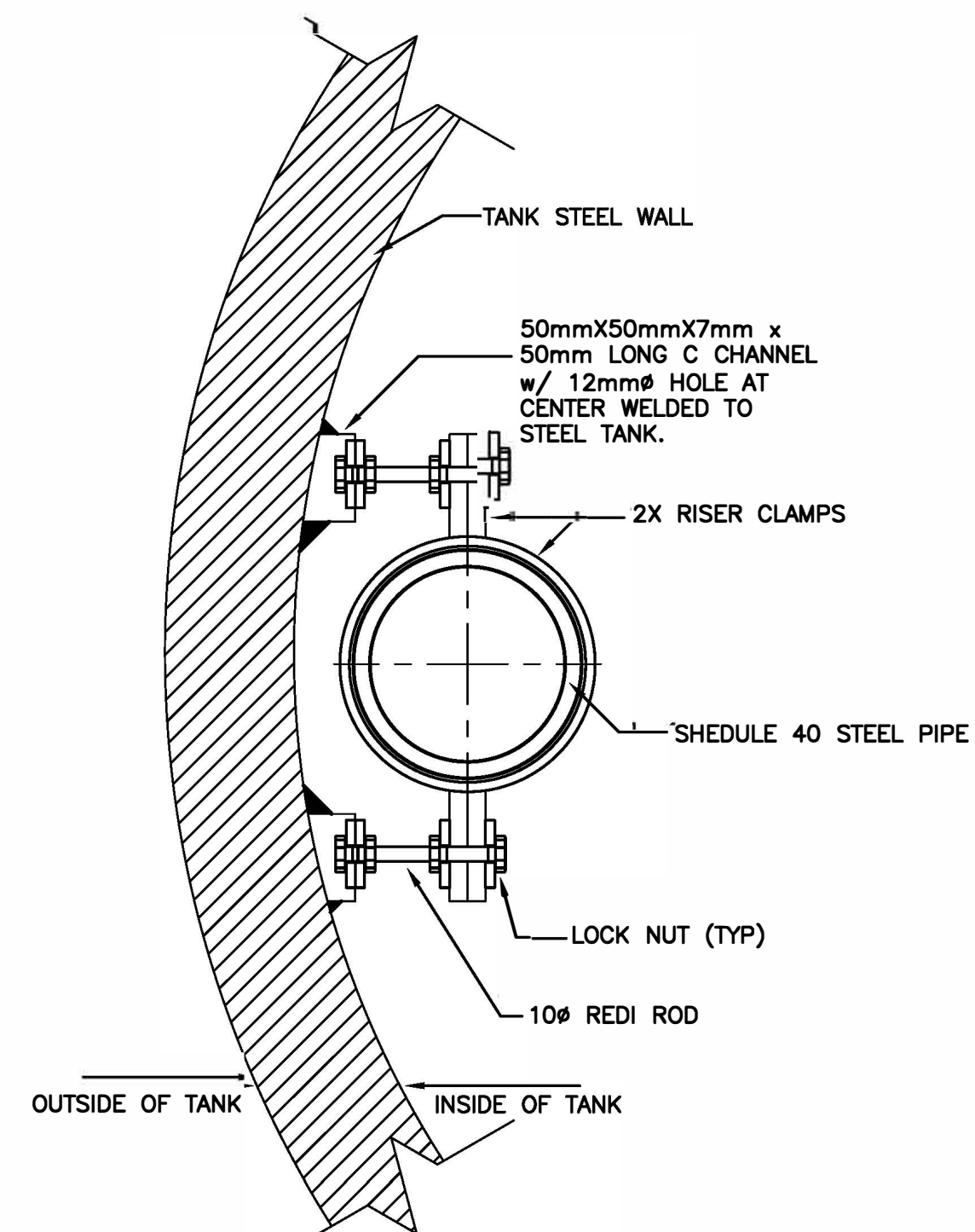


8
M-605

PVC-630 AND LARGER PIPE FIRE STOP DETAIL
SCALE: N.T.S.

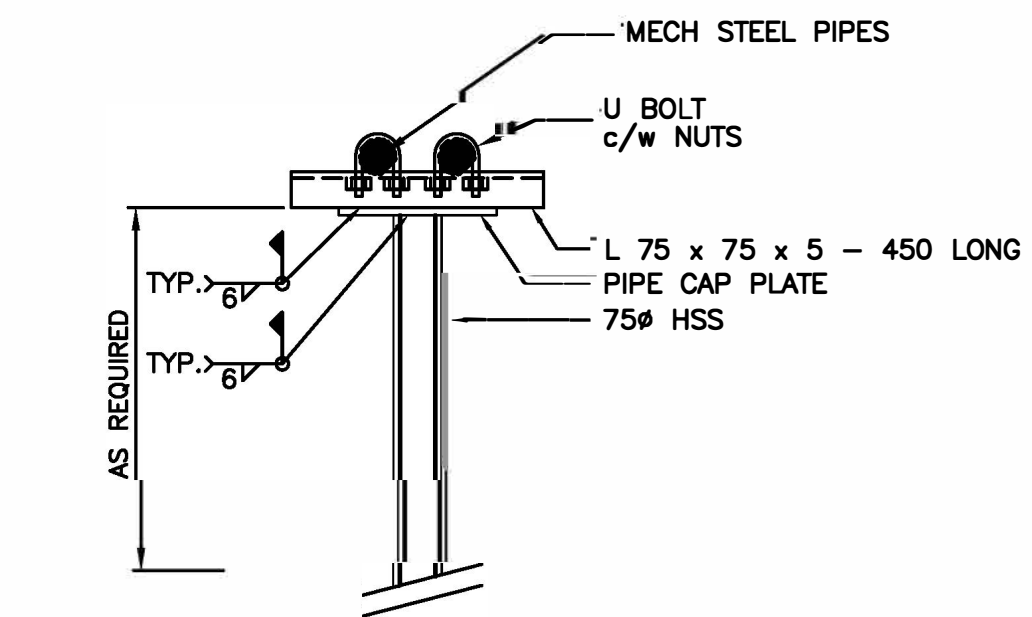


6 **PIPE-THROUGH-STEEL-TANK-DETAIL**
M-605 SCALE: N.T.S.



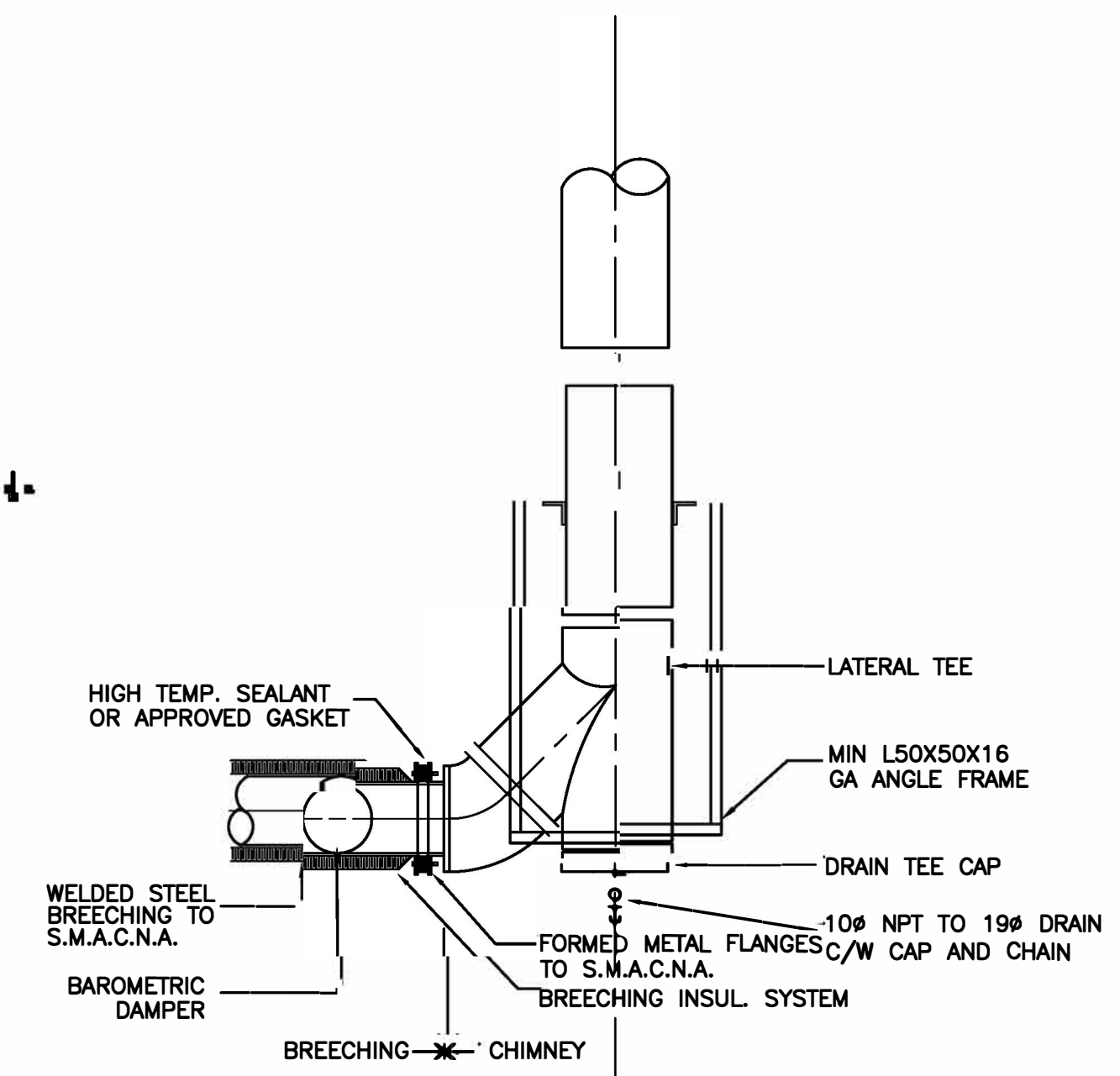
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M-605

PIPE SUPPORT AT STEEL TANK WALL
SCALE: N.T.S.

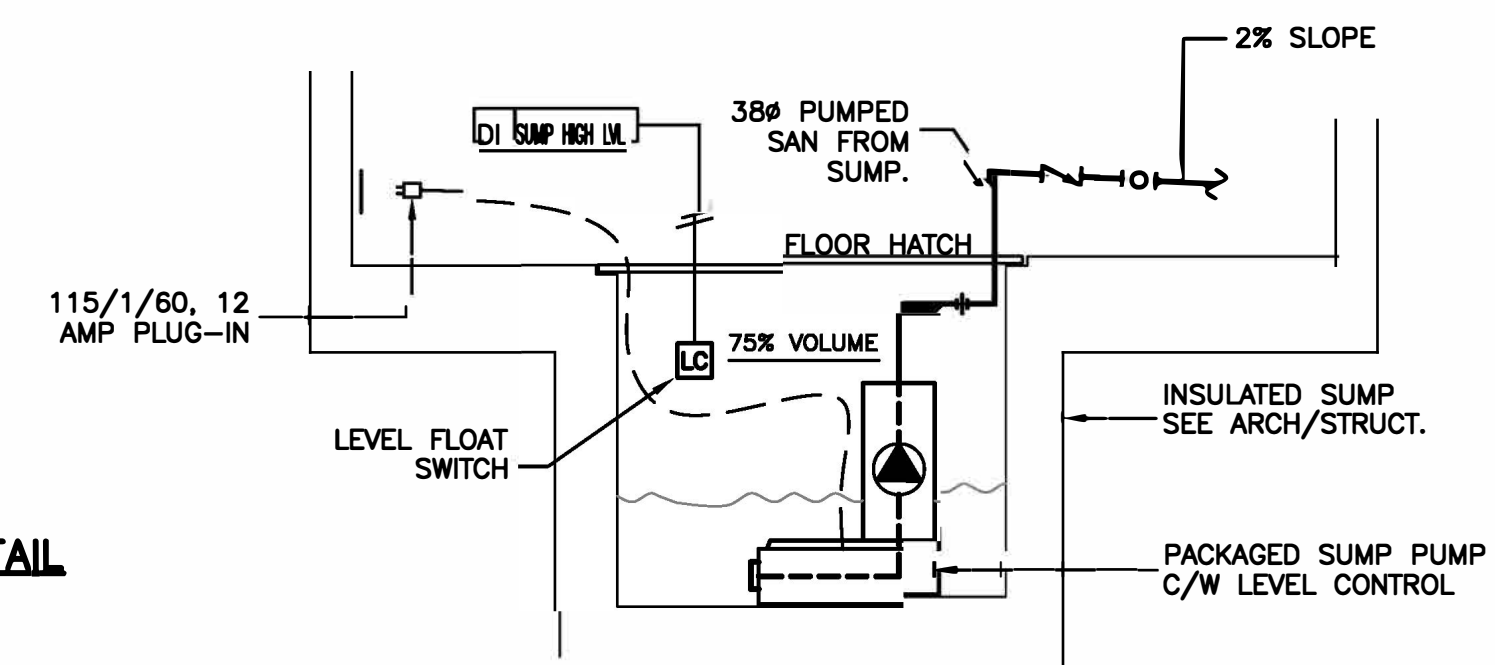


4
M-605

FUEL - OIL - PIPE - SUPPORT - DETAIL
SCALE: N.T.S.



7 BOILER-CHIMNEY-DETAIL-(BOTTOM)
M-605 SCALE: N.T.S.



5
M-605

SUMP-PUMP-DETAIL
SCALE: N.T.S.

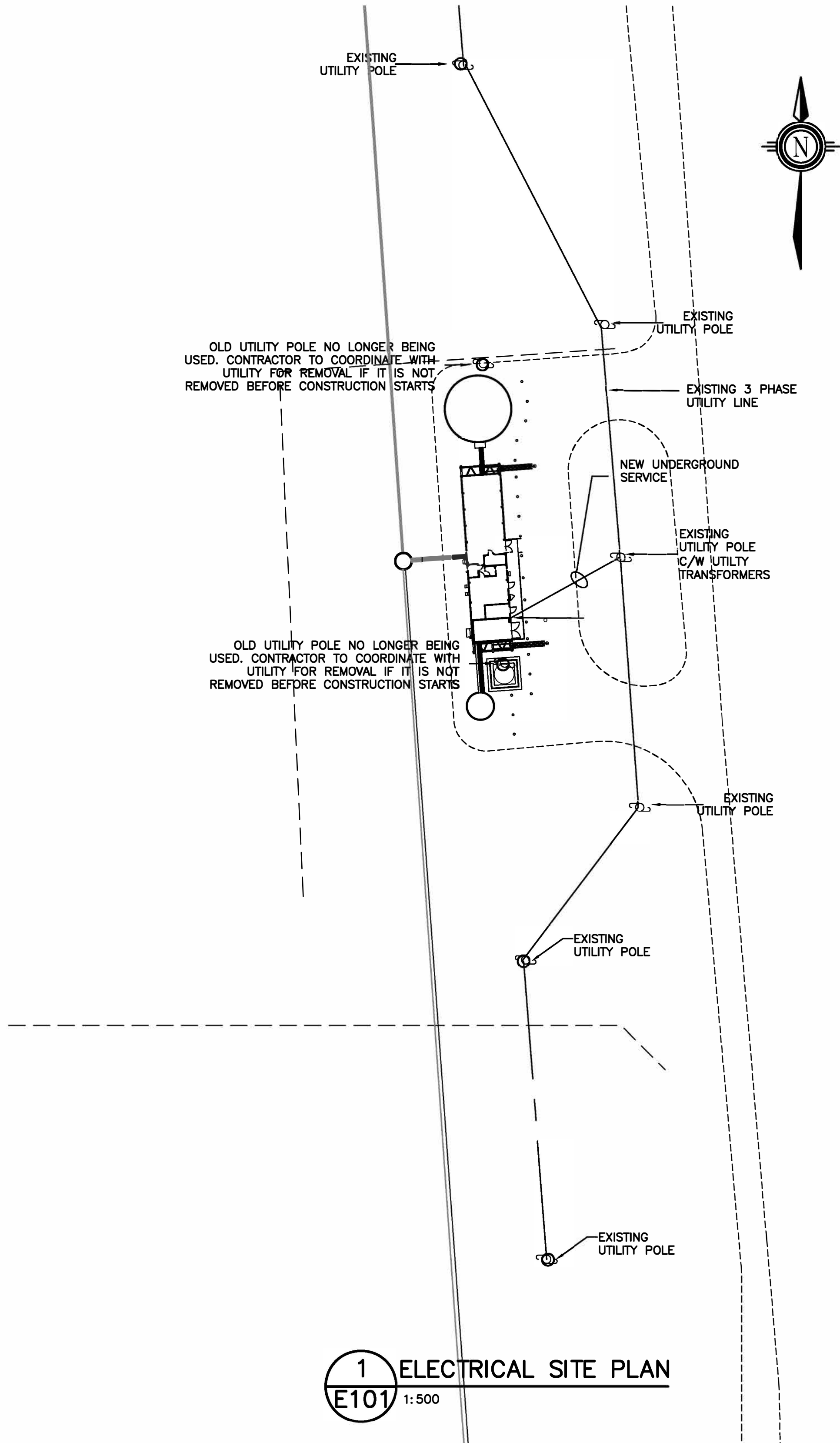
ELECTRICAL LEGEND		
LIGHTING		
	CEILING MOUNT H.I.D.	
	EMERGENCY LIGHTING BATTERY PACK C/W HEADS	
	PHOTO-ELECTRIC CELL	
	DOUBLE REMOTE HEAD	
	SURFACE FLUORESCENT	
	WALL MOUNT EXIT	
	WALL MOUNT H.I.D.	
SWITCHES		
	RELAY WITH H-O-A	'3' INDICATES 3-WAY
	SINGLE POLE SWITCH	'4' INDICATES 4-WAY
	DOUBLE GANG SWITCH	'mp' MOTOR PROTECTION SWITCH
	DISCONNECT SWITCH	'p' INDICATES PILOT LIGHT
		'k' INDICATES KEY OPERATED
		'2' INDICATES 2-POLE
RECEPTACLES		
	DUPLEX RECEPTACLE	WP - INDICATES WEATHERPROOF
		a - ABOVE COUNTER
		GFR - GROUND FAULT RECPET.
COMMUNICATIONS		
	CAT 6 STRUCTURED WIRING OUTLET WITH TWO RJ45 JACKS AND TWO CABLES IN 21 MM CONDUIT.	
MISCELLANEOUS		
	JUNCTION BOX	
	MOTOR	
	SURFACE MOUNT ELECTRICAL PANEL	
	UNDERGROUND CONDUCTOR OR CONDUIT	

ABBREVIATION	
AFF	ABOVE FINISH FLOOR
CEC	CANADIAN ELECTRICAL CODE
QEC	QULLIQ ENERGY CORPORATION
AFG	ABOVE FINISH GRADE
CON	CONDUCTOR
CU	COPPER
GRS	GALVANIZED RIGID STEEL
C	CONDUIT
GND	GROUND
GBPG	GOOD BUILDING PRACTICE GUIDELINES (NUNAVUT)

DRAWING LIST	
E1	ELECTRICAL SITE PLAN AND DETAILS
E2	ELECTRICAL FLOOR PLANS
E3	SINGLE LINE DIAGRAM, PANEL SCHEDULE AND DETAILS
E4	LUMINAIRE SCHEDULES AND DETAILS
E5	MOTOR SCHEDULE

KEYNOTES:

- REFER TO SINGLE LINE DIAGRAM FOR CABLE AND CONDUIT SIZE AND TYPE.
- BUILDING TO BE BUILT IN SECTIONS FOR SHIPPING AND ASSEMBLED ON SITE. REFER TO ARCHITECTURAL DOCUMENTS FOR SHIPPING SPLIT LOCATIONS. PROVIDE JUNCTION BOXES AT EACH LOCATION WHERE CONDUIT AND WIRING ENTER/EXIT A SHIPPING SECTION. ONCE ON SITE, CONNECT AND MAKE OPERATIONAL ALL ELECTRICAL SYSTEMS.
- BUILDING STRUCTURES BUILT OUTSIDE THE TERRITORY SHALL BE IN COMPLIANCE OF NUNAVUT TERRITORY ELECTRICAL SAFETY BULLETIN # 28.1.00, DATED; NOVEMBER 18, 2010.
- STANDARD METERING CONFIGURATIONS WILL BE INSTALLED AND CONFIGURED IN ACCORDANCE WITH NUNAVUT SUPPLY AUTHORITY QULLIQ ENERGY CORPORATION (QEC) METERING STANDARDS.
- CURRENT TRANSFORMERS (CT'S) METERS, ASSOCIATED WIRING EQUIPMENT WILL BE SUPPLIED BY THE CORPORATION.
- CSA APPROVED METER SOCKETS AND CT CABINETS WILL BE SUPPLIED AND INSTALLED AS REQUIRED BY QEC, METERING EQUIPMENT IN ACCORDANCE WITH RULE 6-402, 6-404 AND 6-406 OF THE CEC.



2 SERVICE MAST ELEVATION
E101 1:75

1 ELECTRICAL SITE PLAN
E101 1:500

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Consultants

Legend

Notes

Record Drawings

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Revision	By	Appd.	YY.MM.DD
E	AS-BUILT DRAWING	NJB	NJB 17.11.30
D	ISSUED FOR CONSTRUCTION	njb	WO 14.05.26
C	ISSUED FOR TENDER	njb	WO 14.02.21
B	ISSUED FOR 80% REVIEW	njb	WO 13.12.20
A	ISSUED FOR 50% REVIEW	njb	WO 12.11.09
Issued	By	Appd.	YY.MM.DD
File Name:	144901252	njb	JN 13.12.19
		Dwn.	Chkd.

Permit-Seal

AS-BUILT DRAWING

Client/Project

GOVERNMENT OF NUNAVUT

POTABLE WATER SYSTEM
PHASE II

Cambridge Bay, Nunavut

Title

ELECTRICAL SITE PLAN
AND DETAILS

Project No.
144901252

Scale
AS NOTED

Drawing No.

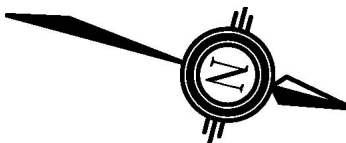
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Revision

E-101

1 of 5

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Revision	By	Appd.	YY.MM.DD
E AS-BUILT DRAWING	NJB	NJB	17.11.30
D ISSUED FOR CONSTRUCTION	njb	WO	14.05.26
C ISSUED FOR TENDER	njb	WO	14.02.21
B ISSUED FOR 80% REVIEW	njb	WO	13.12.20
A ISSUED FOR 50% REVIEW	njb	WO	12.11.09
Issued	By	Appd.	YY.MM.DD

File Name: 144901252	njb	JN	njb	13.12.19
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

Permit-Seal

AS-BUILT DRAWING

Client/Project
GOVERNMENT OF NUNAVUT

POTABLE WATER SYSTEM
PHASE II
Cambridge Bay, Nunavut

Title
ELECTRICAL PLANS

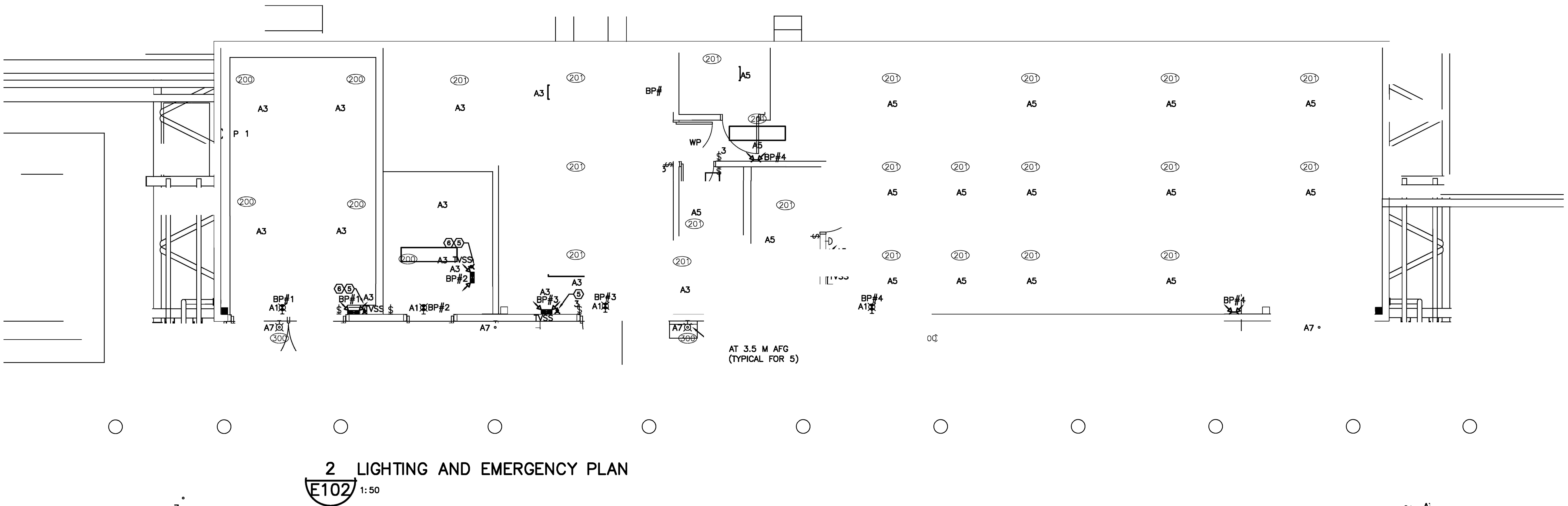
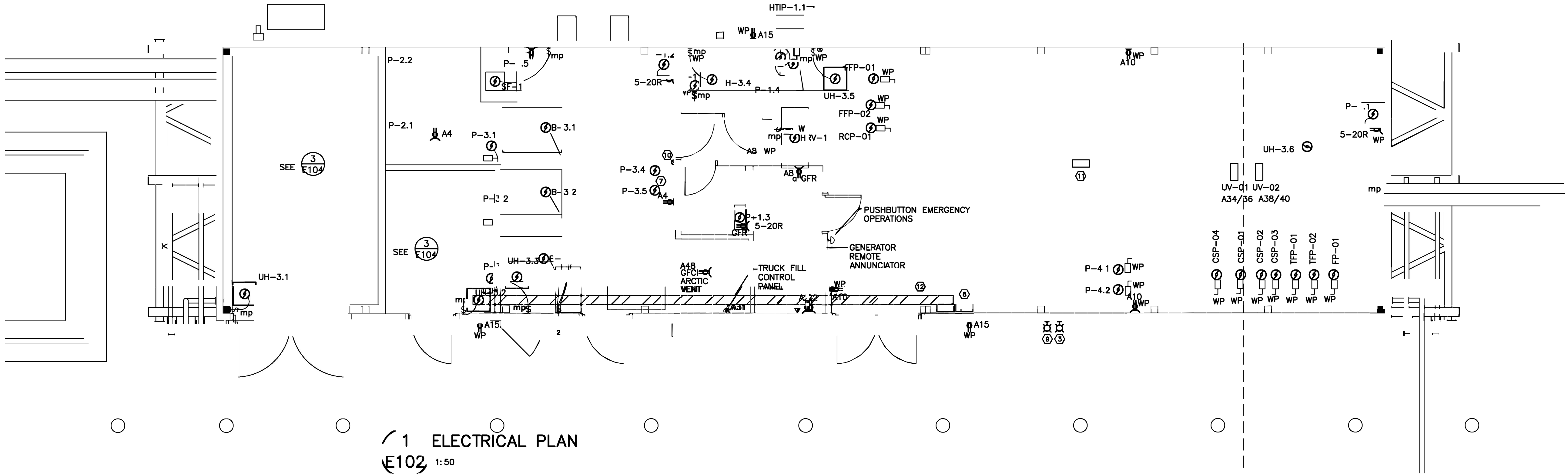
Project No. 144901252 Scale **AS NOTED**

Drawing No. Sheet Revision

E-102 2 of 5 **0**

KEYNOTES:

- MCC SHOWN ON 1-E103
- EMERGENCY BOILER DISCONNECT SWITCHES AT 1600MM A.F.F. PROVIDE SIZE 2 NAME PLATES, RED BACKGROUND WITH WHITE LETTERS READING "BOILER 1 EMERGENCY DISCONNECT", "BOILER 2 EMERGENCY DISCONNECT" AND "BOILER 3 EMERGENCY DISCONNECT".
- AMBER STROBE FOR MECHANICAL ALARM TO BE RIGIDLY MOUNTED TO RIGID CONDUIT AND INSTALL ABOVE BUILDING AND TO BE VISIBLE FROM MAIN ROAD. SEE SECTION 283200
- EXTERIOR LIGHTING PHOTOCELL INSTALL HIGHER ABOVE BUILDING, AWAY FROM OBSTRUCTION AND ARTIFICIAL LIGHT SOURCES, LOOKING NORTH.
- EMERGENCY BATTERY PACK ON TVSS RECEPTACLE.
- EMERGENCY BATTERY OPERATING TIME 120MIN (2HOURS).
- VSD SUPPLIED BY DIV 23 INSTALLED BY DIV 26. IN MCC PROVIDE BREAKER ONLY FOR MOTORS P3.4 AND P3.5
- PLC BY PROCESS CONTROLS PROVIDE 4 CIRCUITS TO PLC A35/A37/A39/A40. A39 TO HAVE 1P20AMP BREAKER
- ALARM LIGHT SUPPLIED AND INSTALLED BY PROCESS CONTROLS
- JUNCTION BOX FOR POWER TO MECHANICAL CONTROL PANELS. PROVIDE POWER FROM CCT A23. PANELS TO BE SUPPLIED AND WIRED BY DIV 23, CONTAINS CONTROL PANELS CP-1, CP-2, CP-3 AND CP-4.
- PROCESS CONTROL PANEL.. PROVIDE OJNE 20 AMP CIRCUIT (A24) TO PANEL. PROCESS PACKAKAGE TO BE PRE-WIRED REFER TO PROCESS CONTROL DRAWINGS FOR FIELD WIRING.
- 200MM WIDE VENTED CABLE TRAY. SUPPORT FROM CEILING. BOND CABLE TRAY TO GROUND



	By	Appd.	YY.MM.DD
E AS-BUILT DRAWING	_NJB	_NJB	17.11.30
D ISSUED FOR CONSTRUCTION	_njb	_WO	14.05.26
C ISSUED FOR TENDER	_njb	_WO	14.02.21
B ISSUED FOR 80% REVIEW	_njb	_WO	13.12.20
A ISSUED FOR 50% REVIEW	_njb	_WO	12.11.09
Issued	By	Appd.	YY.MM.DD

File Name: 144901252	_njb	_JN	_njb	13.12.19
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

AS-BUILT DRAWING

Client/Project
GOVERNMENT OF NUNAVUT

POTABLE WATER SYSTEM
PHASE II
Cambridge Bay, Nunavut

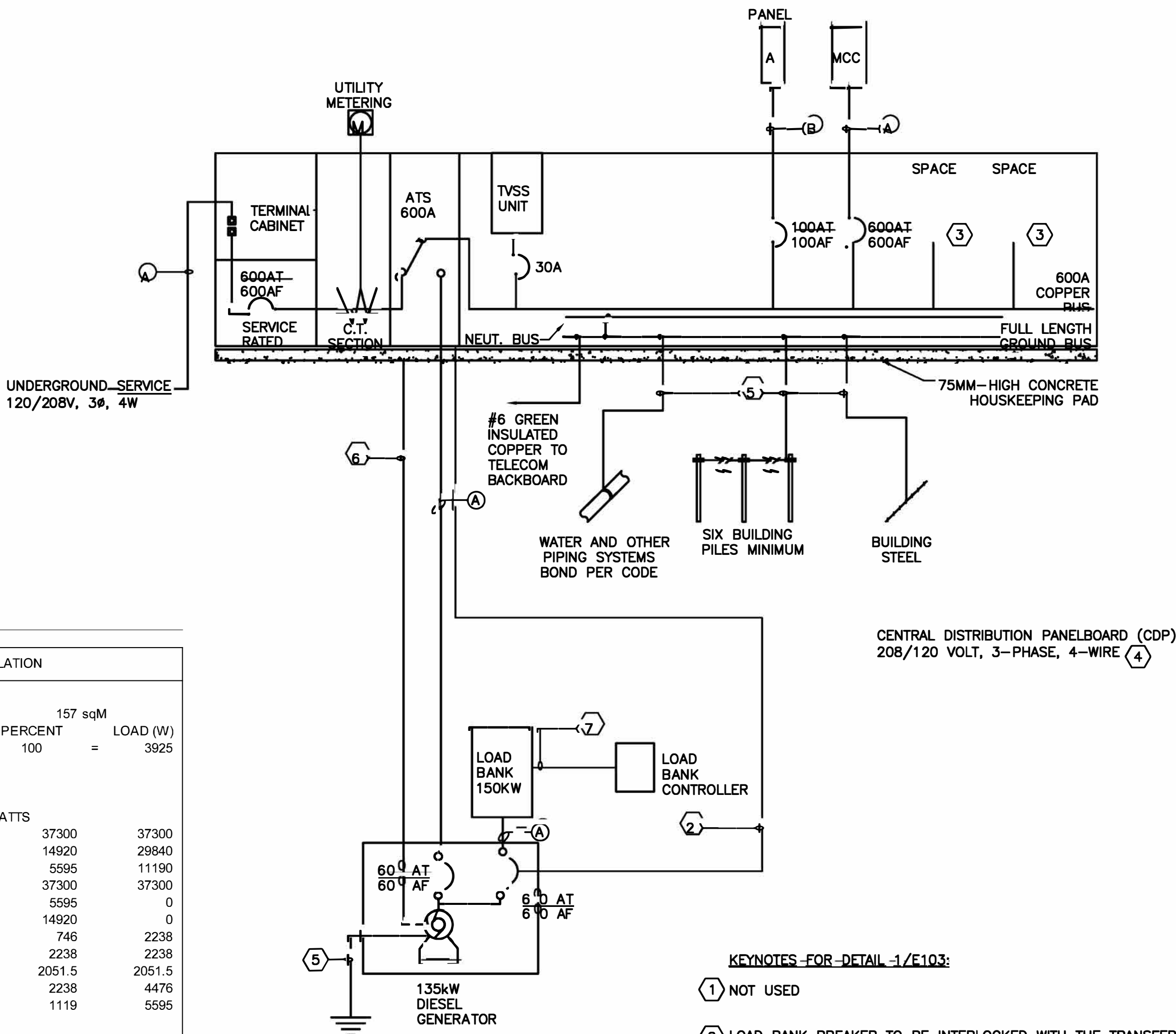
Title
SINGLELINE DIAGRAM
AND DETAILS

Project No. 144901252	Scale NTS	Revision
Drawing No.	Sheet	

E-103

3 of 5

0



CABLE SCHEDULE

①	3 RUNS OF 4 CON 350MCM AWG CU RW90-XLPE PLUS 1 #3 AWG CU GND IN 78MM C
②	4 CON #3 AWG CU RW90-XLPE PLUS 1 #8 AWG CU GND IN 35MM C

1 SINGLE LINE DIAGRAM

E103

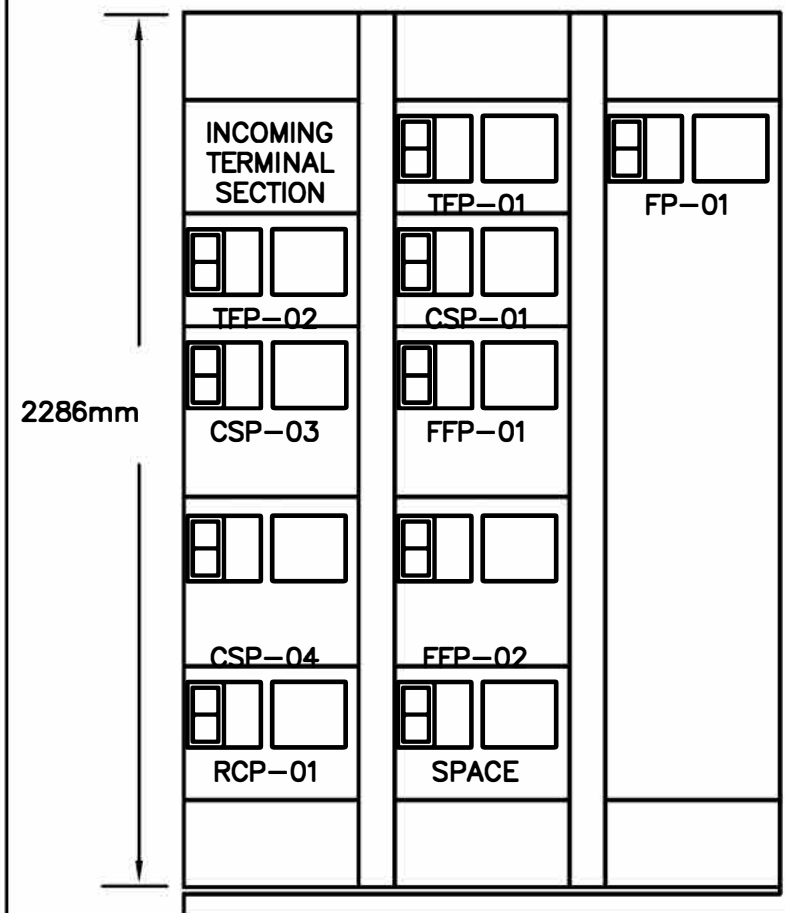
PANEL: A													
VOLTS: 120/208 PHASE: 3 WIRE: 4					LOCATION: ELECTRICAL ROOM FEEDER: SEE SINGLE LINE					BUSS: 1C0 MTG: SURFACE			
CIRC.	BRKR	WATTS			DESCRIPTION	DESCRIPTION	WATTS			BRKR	CIRC.		
		A	B	C			A	B	C				
1	1P15	100			EXIT SIGNS	TELE. BACKBOARD RECEPT	125			1P15	2		
3	1P15		800		LIGHTS & EMERGENCY LIGHTS	RECEPTACLES ELECT & MECH RM		375		1P15	4		
5	1P15			1100	LIGHTS & EMERGENCY LIGHTS	RECEPTACLES G IN ROOM			500	1P15	6		
7	1P15	510			EXTERIOR LIGHTS	RECEPTS MECH & PROC RM	375			1P15	8		
9	1P15		200		B-3.1	RECEPTS PROC RM		500		1P15	10		
11	1P15			200	B-3.2	EF-1			150	1P15	12		
13	1P15	200			B-3.3	SF-1	50			1P15	14		
15	1P15		250		EXTERIOR RECEPTACLES	P-1.1		700		1P15	16		
17	1P15			200	HRV	P-1.2			700	1P15	18		
19	1P15	1500			GENERATOR BLOCK HEATER	P-1.3	850			1P15	20		
21	1P15		250		GENERATOR BATTERY CHARGER	RECEPT OFFICE		100		1P15	22		
23	1P15			100	MECHANICAL CONTROLS	PROCESS CONTROL PANEL (PLC)				1P15	24		
25	1P15				SPACE	UH-3.5/3.6	350			1P15	26		
27	1P15				SPACE	P-4.5		400		1P15	28		
29	1P15				SPACE	UH-3.1/3.2			350	1P15	30		
31	1P15	100			TRUCK FILL CNTL PNL	UH 3.3/3.4	350			1P15	32		
33	1P15		150		HTIP	UV-01		520		2P15	34		
35	1P15			250	PLC				520		36		
37	1P15	500			PLC	UV-02	520			2P15	38		
39	1P20		1000		PLC			520			40		
41	1P15			500	PLC	DHWH			500	3P15	42		
43	3P25	750			P-3.4		500				44		
45			750					500			46		
47				750		ARTIC VENT				75	1P15	48	
49	3P25	750			P-3.5	p-1.4	400				1P15	50	
51			750			SPACE						52	
53				750		SPACE						54	
55					SPACE	SPACE						56	
57					SPACE	SPACE						58	
59					SPACE	SPACE						60	
61					SPACE	SPACE						62	
63					SPACE	SPACE						64	
65					SPACE	SPACE						66	
67					SPACE	SPACE						68	
69					SPACE	SPACE						70	
71					SPACE	SPACE						72	
73					SPACE	SPACE						74	
75					SPACE	SPACE						76	
77					SPACE	SPACE						78	
79					SPACE	SPACE						80	
81					SPACE	SPACE						82	
83					SPACE	SPACE						84	
TOTAL		4410	4150	3850				3520	3615	2795	TOTAL		
PHASE A TOTAL =					7930								
PHASE B TOTAL =					7765								
PHASE C TOTAL =					6645								
PANEL TOTAL =					22340		@ 120/208 VOLTS 3 PHASE		62.0 AMPS				
REMARKS													

DEMAND CALCULATIONS AS PER C22.1-09

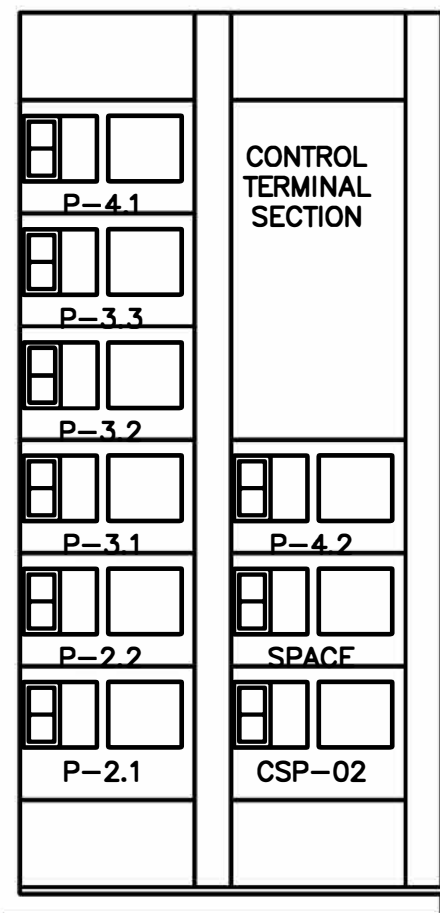
SERVICE FEEDER CALCULATION

INDUSTRIAL AREA					157 sqM
BASIC AREA CALC	AREA	W/sqM	PERCENT	=	LOAD (W)
	157	25	100	=	3925
SPECIAL LOADS					
	NUMBER	HP	WATTS		
FP-01	1	50	37300		37300
FFP	2	20	14920		29840
TFP	2	7.5	5595		11190
FP	1	50	37300		37300
CSP-1/2	0	7.5	5595		0
CSP 3/4	0	20	14920		0
CP-1	3	1	746		2238
PROCESS CONTROLS	1	3	2238		2238
MECH MISC	1	2.75	2051.5		2051.5
CIRC PUMPS	2	3	2238		4476
HEATING PUM HEATING	5	1.5	1119		5595
SUB TOTAL					= 132228.5
15% SPARE PER GBPG-4.4.3					19834
TOTAL					152063

NOTE: CSP PUMPS OPERATE IN A STAGED MANNER.
WORST CASE SENARIO IS WITH CSP-1/2 AND CSP-3/4 OFF
AND FP-01 RUNNING



- NOTES:
1. MOTOR FP-01 HAS AN ELECTRONIC SOFT START. TO BE MOUNTED IN MCC. SEE SPECIFICATION SECTION 26 29 10.2.7
 2. ENSURE ACTUAL VOLTAGE DROP ON THE FEEDERS SUPPLYING PANEL DOES NOT EXCEED THE REQUIREMENTS C.E.C. RULE 8-102.
 3. MINIMIZE THE LENGTH OF SECONDARY CABLING RUNS.



75MM-HIGH CONCRETE
HOUSKEEPING PAD

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Consultants

Legend

Notes

Record Drawings

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Revision	By	Appd.	YY.MM.DD
E	AS-BUILT DRAWING	NJB	NJB 17.11.30
D	ISSUED FOR CONSTRUCTION	njb	WO 14.05.26
C	ISSUED FOR TENDER	njb	WO 14.02.21
B	ISSUED FOR 80% REVIEW	njb	WO 13.12.20
A	ISSUED FOR 30% REVIEW	njb	WO 12.11.09
Issued	By	Appd.	YY.MM.DD

File Name: 144901252	njb	JN	njb	13.12.19
	Dwn.	Chkd.	Dsgn.	YY.MM.DD

Permit-Seal

AS-BUILT DRAWING

Client/Project
GOVERNMENT OF NUNAVUT

POTABLE WATER SYSTEM
PHASE II
Cambridge Bay, Nunavut

Title
LUMINAIRE SCHEDULE
AND DETAILS

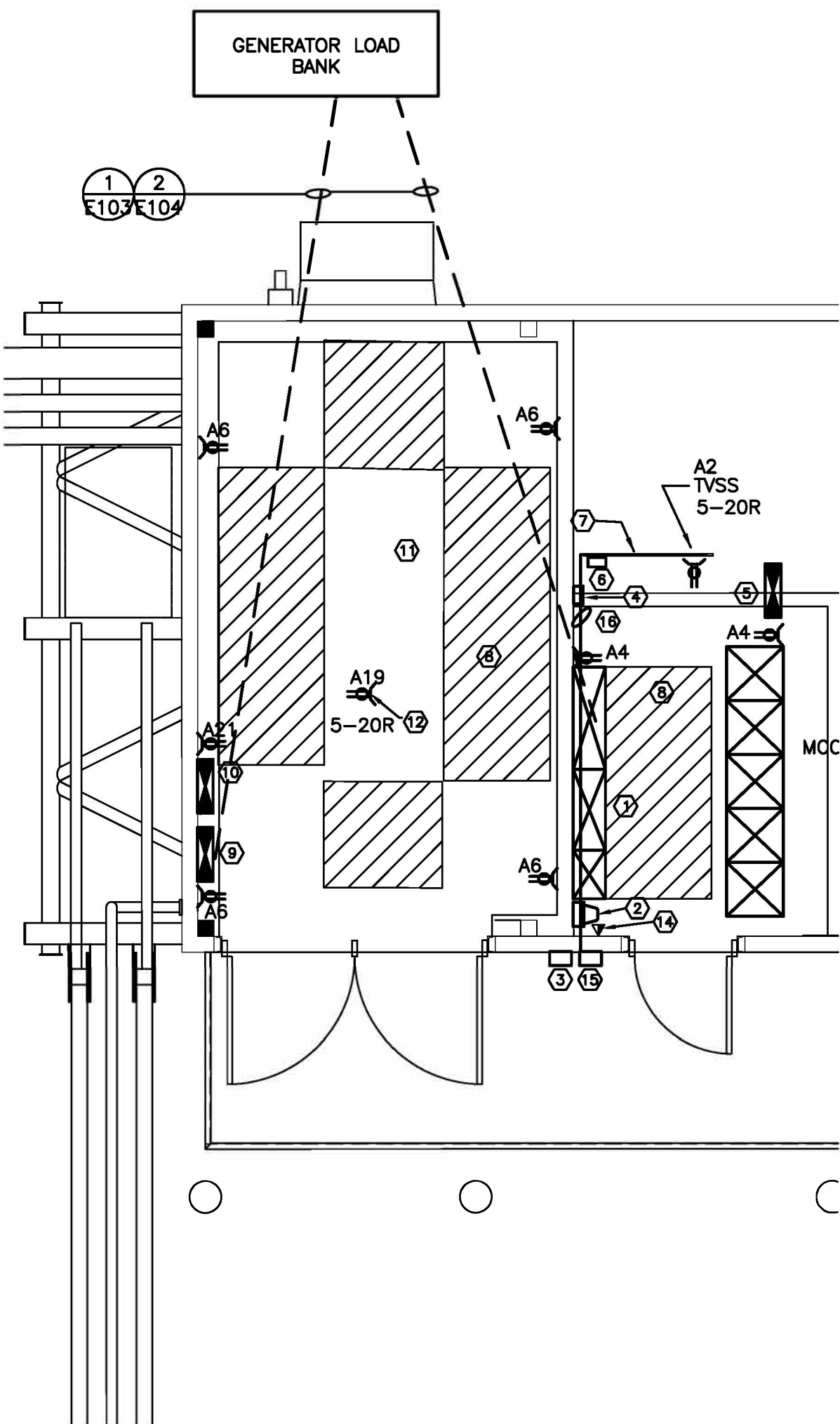
Project No. 144901252	Scale AS NOTED
Drawing No. E-104	Sheet 4 of 5
	Revision 0

LUMINAIRE SCHEDULE

TYPE: 200 DESCRIPTION:	SURFACE OR PENDENT MOUNTED FLUORESCENT STRIPLIGHT
HOUSING:	1219 MM LONG DIE FORMED STEEL CHANNEL
FINISH:	BAKED WHITE ENAMEL
BALLAST:	ELECTRONIC PROGRAM RAPID START, 120V, 10% THD
LAMP:	TWO F32T8
ACCESSORIES:	WIRE GUARD
MOUNTING:	CHAIN HANGERS AND ACCESSORIES
MANUFACTURERS:	METALUX STW-232-120V-ER81 OR APPROVED EQUAL
TYPE: 201 DESCRIPTION:	SURFACE OR PENDENT MOUNTED VAPORTIGHT INDUSTRIAL FLUORESCENT LUMINAIRE
HOUSING:	1265 MM LONG FIBERGLASS HOUSING IS REINFORCED POLYESTER AND SELF-EXTINGUISHING PLASTIC WITH WATERTIGHT HUBS FOR CONDUIT ENTRY
LENS:	HIGH IMPACT CLEAR LOW BRIGHTNESS PATTERN POLYCARBONATE
BALLAST:	ELECTRONIC PROGRAM RAPID START, 120V, 10% THD
LAMP:	TWO F32T8
MOUNTING:	CHAIN HANGING SET AND ACCESSORIES
LISTING:	UL/CUL LISTED FOR WET LOCATIONS
MANUFACTURER:	METALUX VT2-232-LEX-120-ER8--WL OR APPROVED EQUAL
TYPE: 300 DESCRIPTION:	EXTERIOR WALL MOUNTED HID
HOUSING:	DIE CAST ALUMINUM
LENS:	PATTERNED TAMPERED GLASS
FINISH:	DARK BRONZE POLYESTER POWER COAT
BALLAST:	-30 DEGREE, HIGH POWER FACTOR, 120V
LAMP:	ONE 70 WATT HPS
LISTING:	UL WET LOCATION LISTED, CSA CERTIFIED
ACCESSORIES:	MOUNTING ACCESSORIES AS REQUIRED - SEE DRAWINGS
MANUFACTURER:	LUMARK WALLY CUTOFF OR APPROVED EQUAL
TYPE: 301 DESCRIPTION:	EXTERIOR TRUCK FILL ARM MOUNTED HID
HOUSING:	DIE CAST ALUMINUM
FINISH:	DARK BRONZE POLYESTER POWDER PAINT
GASKET:	FULL CIRCUMFERENCE SILICON GASKET
BALLAST:	-40 DEGREE, HIGH POWER FACTOR, 120V
LAMP:	ONE 50 WATT HPS
LISTING:	UL WET LOCATION LISTED
ACCESSORIES:	MOUNTING ACCESSORIES AS REQUIRED - SEE DRAWINGS
MANUFACTURER:	LUMARK FALCON HP-SF-50HP-H-120V-TR-SF/WG OR APPROVED EQUAL

NOTES:

- THIS LUMINAIRE SCHEDULE IS NOT COMPLETE WITHOUT A COPY OF THE PROJECT DOCUMENTS CONTAINING THE ELECTRICAL SPECIFICATIONS.
- VERIFY LUMINAIRE VOLTAGE WITH BRANCH CIRCUIT SUPPLYING POWER TO LUMINAIRE PRIOR TO ORDERING.
- VERIFY AND COORDINATE ALL CEILING TYPES WITH LUMINAIRE LOCATIONS.
- PROVIDE LUMINAIRES COMPLETE WITH LAMP AND ALL ACCESSORIES FOR MOUNTING AS SHOWN ON DRAWINGS. FOR EXACT CEILING AND WALL TYPES REFER TO ARCHITECTURAL DRAWINGS.
- ALL FLUORESCENT LAMPS TO COMPLY WITH LOCAL AND NATIONAL TOXICITY RULES AND REGULATIONS, WHERE AVAILABLE.
- SPECIFIED MANUFACTURERS ARE APPROVED TO SUBMIT BID WHERE SPECIFIED. INCLUSION DOES NOT RELIEVE MANUFACTURER FROM PROVIDING PRODUCT AS DESCRIBED.
- EQUALS SHALL MEET THE DESCRIPTIONS LISTED AND IDENTIFIED BY THE CATALOG NUMBER INDICATED FOR ALL ELEMENTS AND PROPERTIES. THE MERE FACT THAT THE SERIES IS LISTED HEREIN DOES NOT AUTOMATICALLY QUALIFY ANY LUMINAIRE OF SUCH FAMILY AS EQUAL.

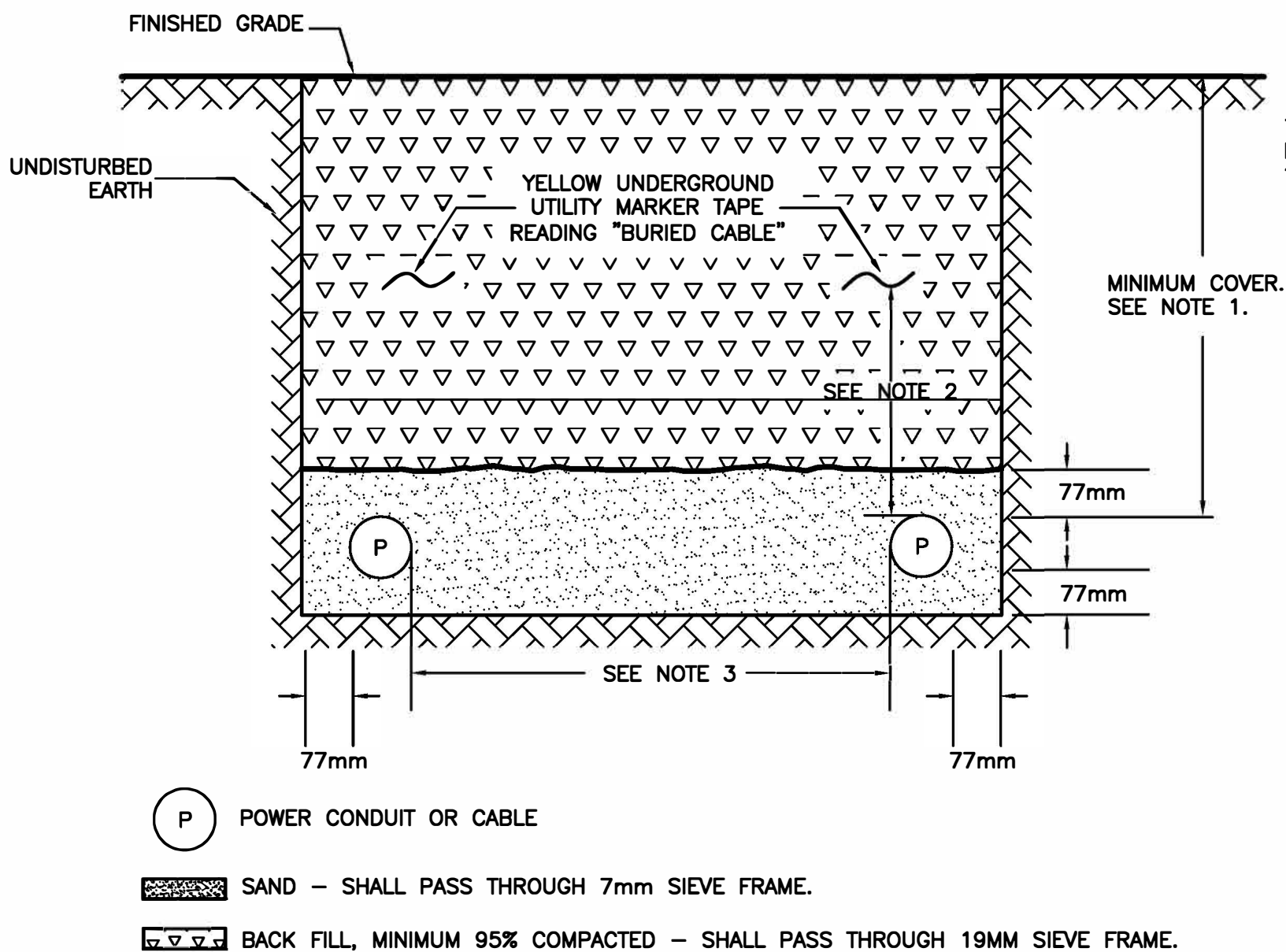


1 GENERATOR AND ELECTRICAL ROOM PLAN
E104

SCALE : 1:50

KEY NOTES TO 1/E4 DETAIL:

- CDP
- UTILITY METER
- UTILITY COMPANY LOCKBOX INSTALL AT 1700MM AFF. PROVIDE ONE KEY.
- EXTRIOR LIGHTING CONTROL BOX.
- PANEL A
- VOICE AUTODIALLER
- TELEPHONE BACKBOARD 2438MM HIGH X 1219MM WIDE AND 19MM THICK G1S PLYWOOD FINISHED WITH FIRE RETARDANT PAINT.
- ENSURE 1M CLEARANCE AT ALL TIME IN FRONT OF ELECTRICAL EQUIPMENT.
- LOAD BANK CONTROLLER.
- BATTERY CHARGER.
- GENERATOR
- GENERATOR BLOCK HEATER RECEPTACLE, COORDINATE THE LOCATION PRIOR TO ROUGH IN.
- NOT USED.
- PROVIDE ONE CAT6 CABLE AND JACK.
- OVERHEAD SERVICE MAST LOCATIONS.
- TELEPHONE CONDUIT FEEDER FROM MAST TO TELEPHONE BACKBOARD. SEE DETAIL 2/E101 FOR SIZE.

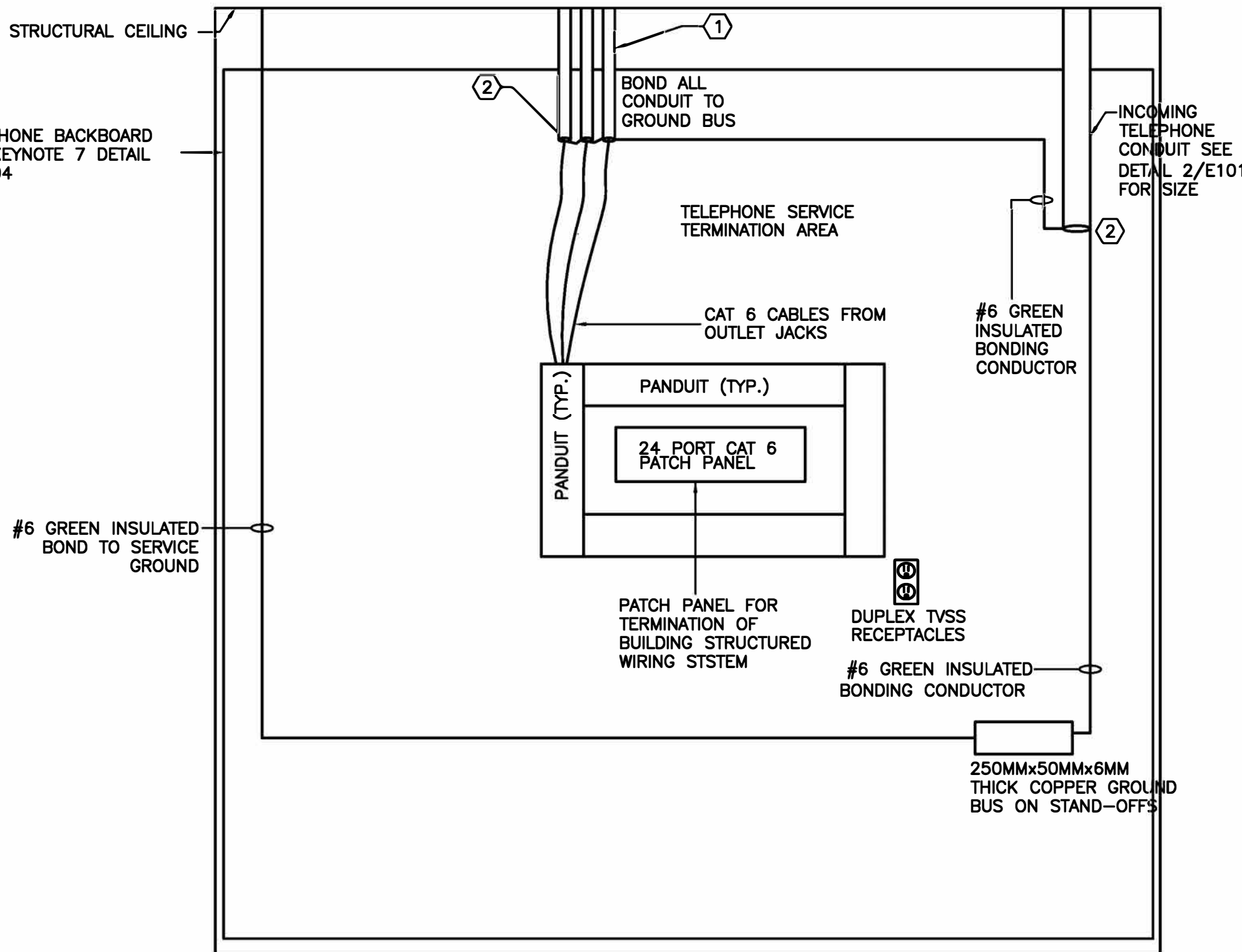


NOTES:

- MINIMUM COVER TO BE IN ACCORDANCE WITH CEC RULES 12-012 AND 60-600. REDUCED MINIMUM COVER PER CEC IS ACCEPTABLE, WHERE MECHANICAL PROTECTION IS PROVIDED ACCORDINGLY.
- MARKER TAPE TO BE APPROXIMATELY HALF WAY BETWEEN FINISHED GRADE AND CONDUIT OR CABLE.
- SEPARATION BETWEEN POWER AND COMMUNICATION CABLES TO BE 300 MM MINIMUM FOR NON-METALLIC SHEATHED COMMUNICATION CABLES OR NON-METALLIC CONDUIT, 100 MM MINIMUM FOR METALLIC SHEATHED CABLE OR METALLIC CONDUIT.

2 UNDERGROUND CONDUCTOR INSTALLATION
E104

SCALE : N.T.S.



KEYNOTES TO THIS DETAIL:

- CONDUITS FROM STRUCTURED OUTLET BOXES WITH PULL CORD.
- PROVIDE PLASTIC BUSHING AT THE END OF CONDUITS.
- ALL STRUCTURED WIRING MUST CONFORM TO THE GOVERNMENT OF NUNAVUT COMMUNITY AND GOVERNMENT SERVICES (CGS-IPS) STRUCTURED CABLING GUIDELINES VERSION 1.5 JUNE 2012.

3 TELEPHONE BACKBOARD DETAIL
E104

SCALE : N.T.S.

\\s1\apps\civil\144901252\0405_dwg\04 Working Drawings\as-built\041252A-cb.dwg
20/11/2021 PM By: Ekanaka, Neil

Mechanical Equipment List (Electrical Discipline)																																							
(List of Electrically Connected Mechanical Equipment)																																							
ABBREVIATIONS:										CONTROLS:										ACCESSORIES:										POWER SOURCES:									
M = Mechanical (Divisions 21/22/23/25)										BAS = Building Autom.Sys. (DDC)										HO = On-off switch										N = Normal (non-emergency) Source									
E = Electrical (Division 26)										CP = System Control Panel (e.g irrigation controller)										HOA = Hand-off-auto switch										FP = Fire Pump Source									
FLA = Full load current (in amperes)										ES = End Switch										SFOA = Slow-fast-off-auto switch										LS = Life Safety Source									
MCA = Minimum circuit ampacity										ET = Electronic Thermostat										PLR = Run pilot light										NLS = Non-Life-Safety Source									
MOP = Maximum overcurrent protection (applicable to circuit breakers only unless otherwise noted)										FA = Fire Alarm										PLO = Off pilot light																			
BAS = Building Automation System										FS = Flow Switch										TRB = Trip reset pushbutton																			
ESS = Electronic Soft Start										GS = Gas Sensor										MTR = c/w integral energy metering																			
MAG = Magnetic Starter										H = Humidity Sensor										STD = Standard: HOA, PLR, PLO, PLT, and TRB																			
MAG2 = Magnetic Starter (2 speed)										I = Interlock																													
MAN = Manual Motor Starter										LVS = Level Switch																													
MRR = Motor Rated Relay										PS = Pressure Switch																													
VSD = Variable Speed Drive										TC = Time Clock																													
PCS1 = Packaged Control System (Integral to Load)										T = Thermostat or space sensor if BAS controlled																													
PCS2 = Packaged Control System (Separate from Load[s])										TS = Tamper Switch																													
MCC = Motor Control Centre										VS = Variable Speed Switch																													
MDC = Motor Distribution Centre ('four-plex' or similar small grouped motor control)										WS = Wall Switch																													
CDP = Central Distribution Panel																																							
LOOSE = Individually-mounted Motor Starter/Relay																																							
UNIT I.D.	UNIT DESCRIPTION	LOCATION	TYPE OF EQUIPMENT	VOLTS	PH	Hz	INDIVIDUAL MOTOR		PACKAGE UNIT		PACKAGE/ HEATER/ OTHER	# OF CONN- ECTIONS	STARTER			DISCONNECT			CONTROLS			ACCESSORIES			FIRE ALARM					POWER SOURCE (MCC/MDC/CDP/ PANEL)	SELECTION OF O/C PROTECTION, CONDUCTORS, AND RACEWAYS					NOTES			
							FLA	HP	MCA	MOP	KW		GROUPING	TYPE	SUPPLIED BY	INSTALLED BY	WIRED BY	SUPPLIED BY	INSTALLED BY	WIRED BY	TYPE(S)	SUPPLIED BY	INSTALLED BY	WIRED BY	TYPE(S)	SUPPLIED BY	INSTALLED BY	WIRED BY	INTERFACE REQUIRED		AUTO ON	AUTO OFF	HOA SWITCH IN CACF (OR NEAR ANNUNCIATOR)	DUCT SMOKE	PWR SOURCE		BREAKER RATING	# OF WIRES	WIRE SIZE (COPPER)
P-1.1	Sump Pump	Process Room	Individual Motor	115	1	60	5.8	0.33					1	LOOSE	MRR	E	E	E	E	E	E	LVS	M	M	M													CORD CONNECTED	
P-1.2	Sump Pump	Process Room	Individual Motor	115	1	60	5.8	0.33					1	LOOSE	MRR	E	E	E	E	E	E	LVS	M	M	M													CORD CONNECTED	
P-1.3	Sanipius Pump	Washroom	Individual Motor	115	1	60	7.2	0.4					1	LOOSE	MRR	E	E	E	E	E	E	LVS	M	M	M													CORD CONNECTED	
P-1.4	DW Pressure Pump	Mechanical Room	Individual Motor	115	1	60	5.8	0.3					1	MCC	MRR	E	E	E	E	E	E	PS	M	M	M	HOA	E	E	E										
P-2.1	FO Transfer Pump	Mechanical Room	Individual Motor	208	3	60	2.3	0.5					1	MCC	MRR	E	E	E	E	E	E	LVS	M	M	M	HOA	E	E	E										
P-2.2	FO Transfer Pump	Mechanical Room	Individual Motor	208	3	60	2.3	0.5					1	MCC	MRR	E	E	E	E	E	E	LVS	M	M	M	HOA	E	E	E										
B-3.1	HW Boiler	Mechanical Room	Package Unit (Single Connection)	115	1	60	4.4				0.3725		1					E	E	E	E	CP	M	M	M													Control by Tekmar Boiler Controller (CP-1)	
B-3.2	HW Boiler	Mechanical Room	Package Unit (Single Connection)	115	1	60	4.4				0.3725		1					E	E	E	E	CP	M	M	M													Control by Tekmar Boiler Controller (CP-1)	
B-3.3	HW Boiler	Mechanical Room	Package Unit (Single Connection)	115	1	60	4.4				0.3725		1					E	E	E	E	CP	M	M	M													Control by Tekmar Boiler Controller (CP-1)	
P-3.1	Primary HW Circ Pump	Mechanical Room	Individual Motor	208	3	60	6	1.5					1	MCC	MRR	E	E	E	E	E	E	CP	M	M	M	HOA	E	E	E									Control by Tekmar Boiler Controller (CP-1)	
P-3.2	Primary HW Circ Pump	Mechanical Room	Individual Motor	208	3	60	6	1.5					1	MCC	MRR	E	E	E	E	E	E	CP	M	M	M	HOA	E	E	E									Control by Tekmar Boiler Controller (CP-1)	
P-3.3	Primary HW Circ Pump	Mechanical Room	Individual Motor	208	3	60	6	1.5					1	MCC	MRR	E	E	E	E	E	E	CP	M	M	M	HOA	E	E	E									Control by Tekmar Boiler Controller (CP-1)	
P-3.4	Secndary HW Circ Pump	Mechanical Room	Individual Motor	208	3	60	11	3					1	LOOSE	VSD	M	M	E	E	E	E	CP	M	M	M	HOA	E	E	E									Control by Tekmar Pump Sequencer (CP-2)	
P-3.5	Secndary HW Circ Pump	Mechanical Room	Individual Motor	208	3	60	11	3					1	LOOSE	VSD	M	M	E	E	E	E	CP	M	M	M	HOA	E	E	E									Control by Tekmar Pump Sequencer (CP-2)	
P-4.1	Treated Water Tank Heat Pumps	Process Room	Individual Motor	208	3	60	6	1.5					1	MCC	MRR	M	M	E	E	E	E	CP	M	M	M	HOA	E	E	E									Control by Tekmar Pump Sequencer (CP-3)	
P-4.2	Treated Water Tank Heat Pumps	Process Room	Individual Motor	208	3	60	6	1.5					1	MCC	MRR	M	M	E	E	E	E	CP	M	M	M	HOA	E	E	E									Control by Tekmar Pump Sequencer (CP-3)	
P-4.5	Glycol Makeup Pump	Mechanical Room	Cord-connected Equipment	115	1	60	4.4				fractional		1																										
			Package Unit (Single Connection)	115	1	60					0.125		1					E	E	E	E	ET	M	M	M														
HTIP-1.1	Heat Trace Injection Panel	Process Room	Individual Motor	115	1	60							1	LOOSE	MRR	E	E	E	E	E	E	T	M	M	M														
UH-3.1	Unit Heater	Generator Rm	Individual Motor	115	1	60	4.4	0.053					1	LOOSE	MRR	E	E	E	E	E	E	T	M	M	M														
UH-3.2	Unit Heater	Electrical Room	Individual Motor	115	1	60	4.4	0.053					1	LOOSE	MRR	E	E	E	E	E	E	T	M	M	M														
UH-3.3	Unit Heater	Mechanical Room	Individual Motor	115	1	60	4.4	0.053					1	LOOSE	MRR	E	E	E	E	E	E	T	M	M	M														
UH-3.4	Unit Heater	Chlorine Room	Individual Motor	115	1	60	4.4	0.053					1	LOOSE	MRR	E	E	E	E	E	E	T	M	M	M														
UH-3.5	Unit Heater	Process Room	Individual Motor	115	1	60	4.4	0.053					1	LOOSE	MRR	E	E	E	E	E	E	T	M	M	M														
UH-3.6	Unit Heater	Process Room	Individual Motor	115	1	60	4.4	0.053					1	LOOSE	MRR	E	E	E	E	E	E	T	M	M	M														
HRV-1	Heat Recovery Ventilator	Process Room	Package Unit (Single Connection)	115	1	60	4.4		9.5	12	0.186		1	LOOSE	MRR	E	E	E	E	E	E	CP	M	M	M														
SF-1	Mech Room Cooling Fan	Mechanical Room	Individual Motor	115	1	60	4.4	0.066					1					E	E	E	E	T	M	M	M														
EF-1	Exhaust Fan	Chlorine Room	Individual Motor	115	1	60	4.4	0.01					1					E	E	E	E	WS	E	E	E														
DHWH-1	Domestic Hot Water Heater	Process Room	Electric Heater	208	3	60	2.3				1.5		1																										
CP-1	Tekmar 268 Boiler Controller	Mechanical Room	Cord-connected Equipment	115	1	60	4.4				fractional		1																										
CP-2	Tekmar 132 Pump Sequencer	Mechanical Room	Cord-connected Equipment	115	1	60	4.4				fractional		1																										
CP-3	Tekmar 132 Pump Sequencer	Mechanical Room	Cord-connected Equipment	115	1	60	4.4				fractional		1																										
CP-4	Tekmar 152 Setpoint Controller	Mechanical Room	Cord-connected Equipment	115	1	60	4.4				fractional		1																										
FFP-01	Filter Feed Pump	Process Room	Individual Motor	208	3	60	48	15					1	MCC	MRR	E	E	E	E	E	E	CP	P	P	P	HOA	PC	PC	PC										
FFP-02	Filter Feed Pump	Process Room	Individual Motor	208	3	60	48	15					1	MCC	MRR	E	E	E	E	E	E	CP	P	P	P	HOA	PC	PC	PC										
TFP-01	Truck Fill Pump	Process Room	Individual Motor	208	3	60	17.5	5					1	MCC	MRR	E	E	E	E	E	E	CP	P	P	P	HOA	E	E	E										
TFP-02	Truck Fill Pump	Process Room	Individual Motor	208	3	60	17.5	5					1	MCC	MRR	E	E	E	E	E	E	CP	P	P	P	HOA	E	E	E										
FP-01	Fire Pump	Process Room	Individual Motor	208	3	60	150	50					1	MCC	VSD	M	M	E	E	E	E	CP	P	P	P	HOA	E	E	E										
CSH-01	Community Supply Pump	Process Room	Individual Motor	208	3	60	17.5	5					1	MCC	MRR	E	E	E	E	E	E	CP	P	P	P	HOA	E	E	E										
CSH-02	Community Supply Pump	Process Room	Individual Motor	208	3	60	17.5	5					1	MCC	MRR	E	E	E	E	E	E	CP	P	P	P	HOA	E	E	E										
CSH-03	Community Supply Pump	Process Room	Individual Motor	208	3	60	48	15					1	MCC	MRR	E	E	E	E	E	E	CP	P	P	P	HOA	E	E	E										
CSH-04	Community Supply Pump	Process Room	Individual Motor	208	3	60	48	15					1	MCC	MRR	E	E	E	E	E	E	CP	P	P	P	HOA	E	E	E										
RCF-1	Recirc Pump	Process Room	Individual Motor	208	3	60	3.2	0.75					1	MCC	MRR	E	E	E	E	E	E	CP	P	P	P	HOA	E	E	E										