

Diagram illustrating the SN15 Level/Temp Conduit Detail. The detail shows a vertical conduit assembly passing through a roof and a wall. The assembly consists of a 1" [25] SCH40 pipe with a 12" [300] long threaded section (shipped loose) and a 6" [152] section inside the wall. The pipe is secured with a 1" [25] NPT 3000# full coupling and a 1" [25] SCH40 pipe with a 6" [150] long threaded section (shipped loose). The detail is labeled SN15 LEVEL/TEMP CONDUIT DETAIL.

**PRECISION NOTES:**

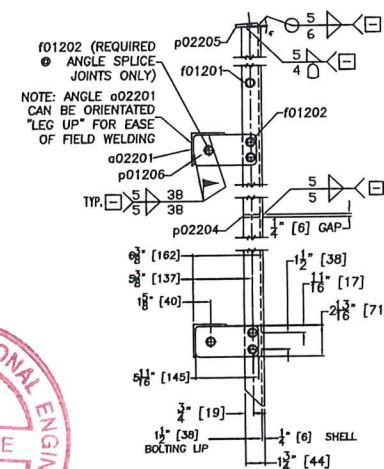
ALL FACE PIPING AND BRACKETS NOT SHOWN ARE SUPPLIED AND INSTALLED BY OTHERS

FIELD WELDING INCLUDES THE FOLLOWING:

1. 96" WIDE FLOOR SECTIONS WELDED TO 12 GA BACKING STRIP
2. FLOOR TO SHELL WELDS (FILLET WELD INSIDE AND OUT)
3. VERTICAL SEAMS (ASSEMBLE 10 SECTIONS BY BOLTING AND APPLY FLARE BEVEL GROOVE WELD FROM I.D.
5. FIT AND WELD ALL BRACKET SUPPORTS
6. ROOF ASSEMBLY REQUIRES NO WELDING, (BOLTED AND CAULKED ONLY)

SN#7	4"100	SOH	4	10/12/20	150#	WELD NECK	R.F.	SUCTION NOZZLE	
SN#10	1"125	SOH	1	12		COUPLING	NPT	CONDUIT FOR LEVEL/TEMP. TRANSMITTER CABLES	
SN#13	4"100	SOH	4	10/12/20	150#	WELD NECK	R.F.	SUCTION NOZZLE	
SN#10	8"200	SOH	4	10/12/20	150#	WELD NECK	R.F.	OVERFLOW	
SN#8	8"200	SOH	4	10/12/20	150#	WELD NECK	R.F.	VENT	
SN#3	2"50	SOH	4	10/12/20	150#	WELD NECK	R.F.	GLYCOL SUPPLY	
SN#2	2"50	SOH	4	10/12/20	150#	WELD NECK	R.F.	GLYCOL RETURN	
SN#1	4"100	SOH	4	10/12/20	150#	WELD NECK	R.F.	INLET	
Rmh#1	30"750	3/8"10	21000			-	PLATE	F.F.	30" X 30" HIND ROOF ACCESS HATCH
Smh#1	36"950	3/8"10	21000			API	FLANGE	F.F.	30" API SHELL MAINWAY C/W DAWT ARM
MARK	SIZE	SOH	WALL	PROJ.	ASA	TYPE	FACE		
OPENING	NECK				FLANGE	FACE		SERVICE OR REMARKS	SUB ASSEM. PART NO.

B ROOF PANEL DETAIL  
B02003 SCALE: N.T.S.




**WALL PANEL DETAILS**  
 SCALE: N.T.S.

A circular red seal for a Registered Professional Engineer. The outer ring contains the text "REGISTERED PROFESSIONAL ENGINEER" at the top and "NTNU" at the bottom. The center of the seal contains the name "G.W. THORPE" and the word "LICENSEE" below it. A handwritten signature, "G.W. Thorpe", is written across the center of the seal.

Sep 24/20

ASSOCIATED DRAWINGS / DESIGN STANDARDS		REVIEWS
<u>WELDING PROCEDURES</u>		END USER
<p>[A] WPS PARR-B3-3 P1 TO P1 GTAW</p> <p>[B] WPS PARR-P1/P8 P1 TO P8 GTAW</p> <p>[C] WPS PARR-B3-1 P8 TO P8 GTAW</p> <p>[E] WPS PARR-P1-5 P1 TO P1 GMAW</p> <p>[F] WPS PARR-P8 P8 TO P8 GMAW</p> <p>[J] WPS PARR-P1-4 P1 TO P1 FCAW</p> <p>[M] WPS PARR-P8-4 P8 TO P8 FCAW</p> <p>[H] WPS PARR-P1-6 P1 TO P1 GMAW</p>		<p>ARVIAT, NUNAVUT WATER TREATMENT FACILITY AND RAW WATER STORAGE</p>
		CONSULTANT
		<p>BI PURE WATER (CANADA) INC. SURREY, BC</p>

<p>A. SECTION LETTER OR DETAIL NUMBER</p> <p>B. DRAWING WHERE SECTION IS DRAWN</p> <p>C. SHEET WHERE SECTION IS DRAWN</p>	<p>DRAWING STATUS</p> <p>AS BUILT</p>
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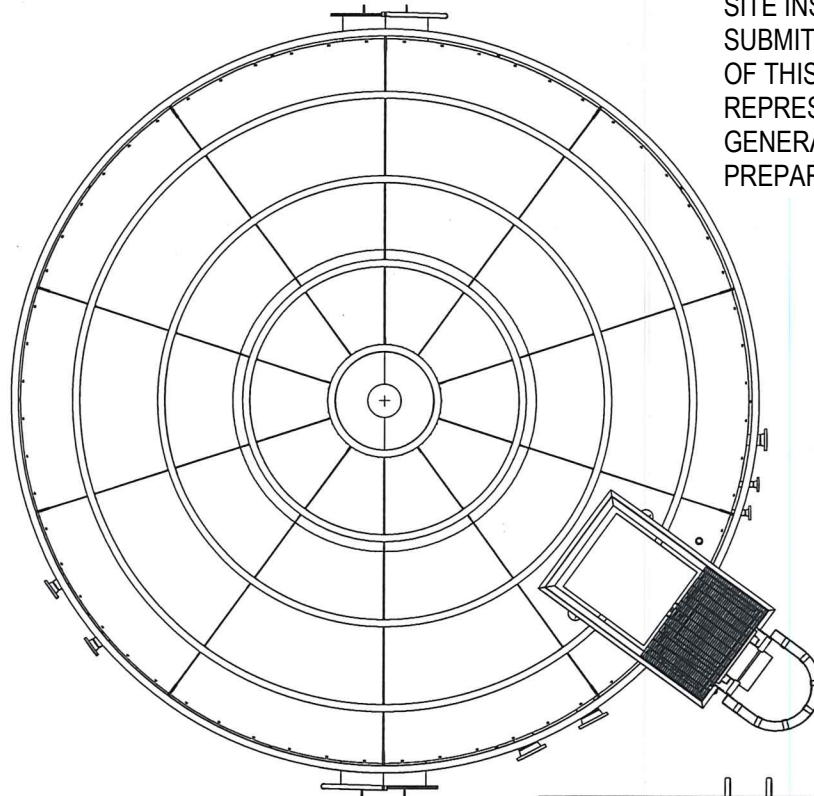
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 <h1 style="margin: 0;">PARR METAL FABRICATORS</h1> <h2 style="margin: 0;">~STEEL~STAINLESS~ALUMINUM~</h2>				
PROJECT		ARVAT		
		WATER TREATMENT FACILITY AND RAW WATER STORAGE		
LOCATION		ARVAT		
		NUNAVUT		
TITLE		PROCESS WASTEWATER STORAGE TANK		
		WATER TANK, GENERAL ARRANGEMENT AND DETAILS, TANK T1		
JOB NO.	DWG. No.	SCALE	DATE	REVISION
J0256	J0256-02 SHT 01 OF 01	AS PLOTTED	DS	JAN 8, 2018
REFERENCE	PROJECT OTT-00236239-AD DWGS P-207,208			



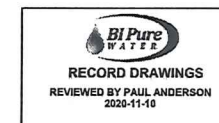
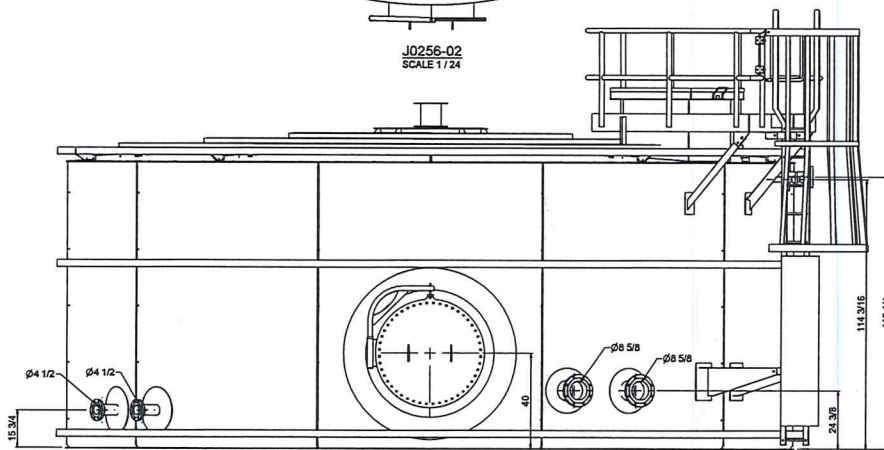
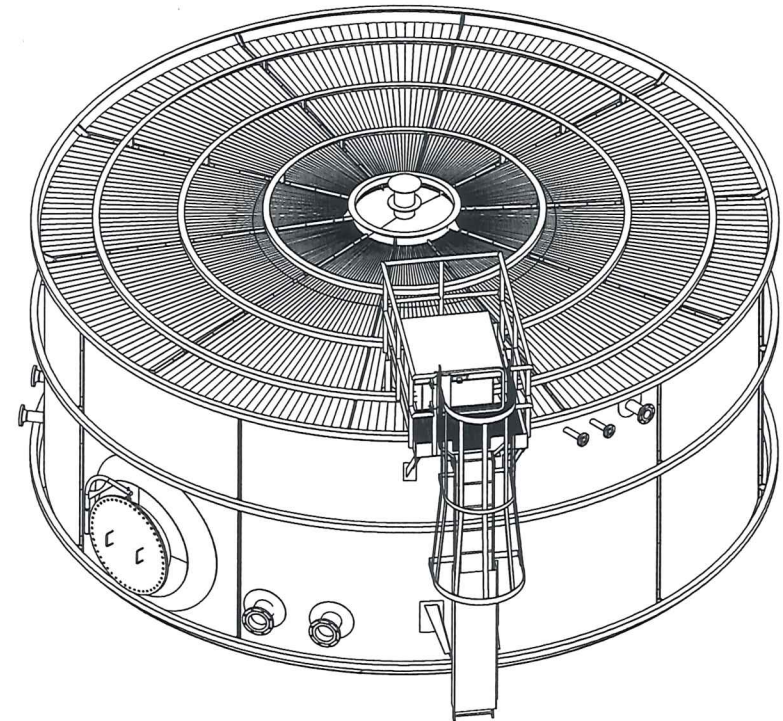
J0256-02 PARTS

THIS RECORD DRAWING WAS PREPARED  
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SITE INSPECTIONS BY EXP STAFF, AND DATA  
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PROCESS  
WASTEWATER  
STORAGE TANK  
15-TK-01



J0256-02  
SCALE 1/24



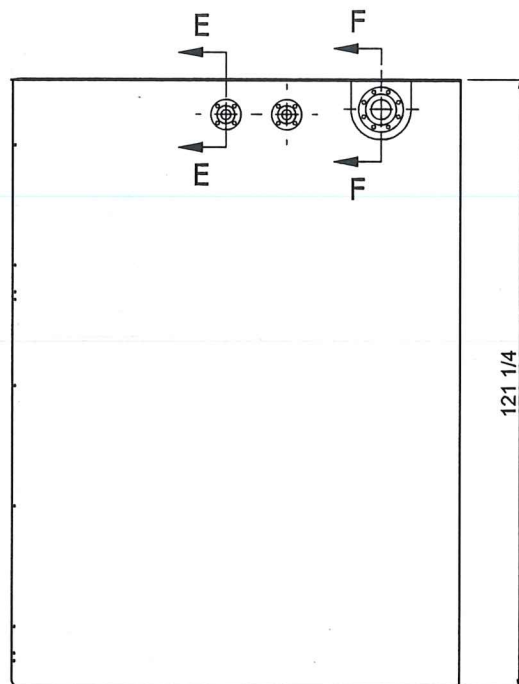
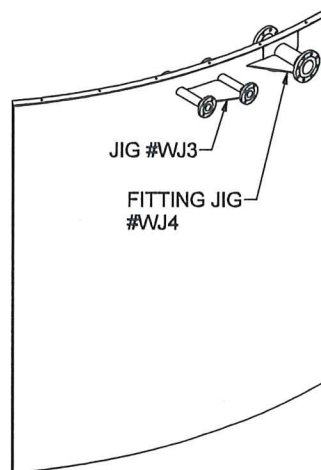
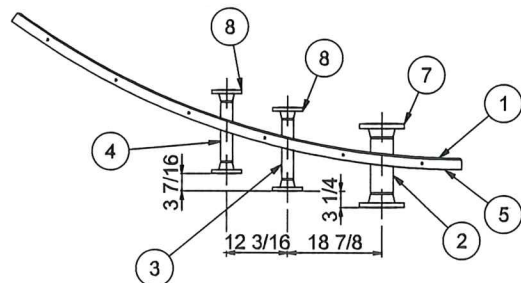
<b>PME</b>		<b>PARR METAL FABRICATORS LIMITED</b>	
PROJECT		WATER TREATMENT TANKS	
CLIENT		BI-PURE WATER	
TITLE		PROCESS WASTEWATER STORAGE TANK	
DWG #	ISSUED	DATE	SIZE (INCHES)
30268	DS	3/18/2018	D J0256-02
SCALE AS NOTED	REV	SHEET 1 OF 1	

Nov 17/20

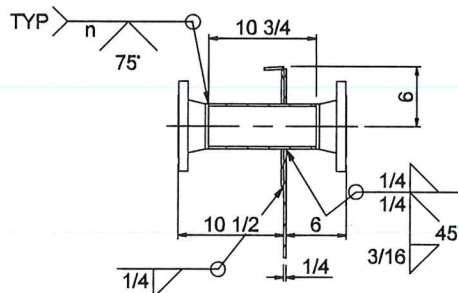


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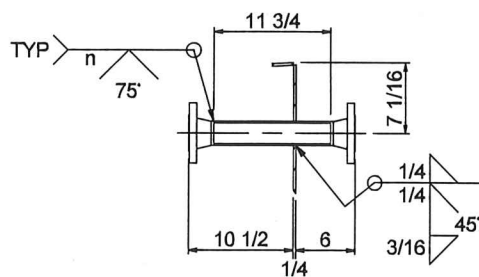
NO.	QTY	PART #	DESCRIPTION	UNIT WT.	COMMENTS
1	1	p02204	1/4 M.S. - 97 13/16 x 121	839.5	
2	1	n02205	4" SCH 40 MS PIPE x 10 3/4	9.7	
3	1	n02206	2" SCH 40 MS PIPE x 11 3/4	3.6	
4	1	n02207	2" SCH 40 MS PIPE x 11 3/4	3.6	
5	1	p02202	1/4 M.S. - 90 7/16 x 30 27/32	13.6	
6	1	p02223	1/4 M.S. - 11 5/8 x 12 1/16	7.7	
7	2		4" - 150# RFWN FLANGE	16.3	
8	4		2" - 150# RFWN FLANGE	6.3	



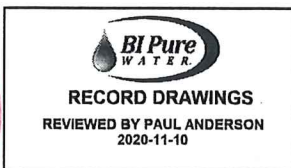
**B02202**  
SCALE 1 / 24



**SECTION F-F**  
SCALE 1 / 12



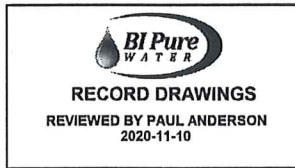
**SECTION E-E**  
SCALE 1 / 12



NOTE: n = NOZZLE WALL THICKNESS

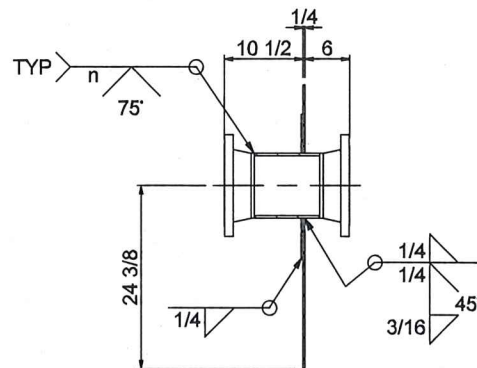
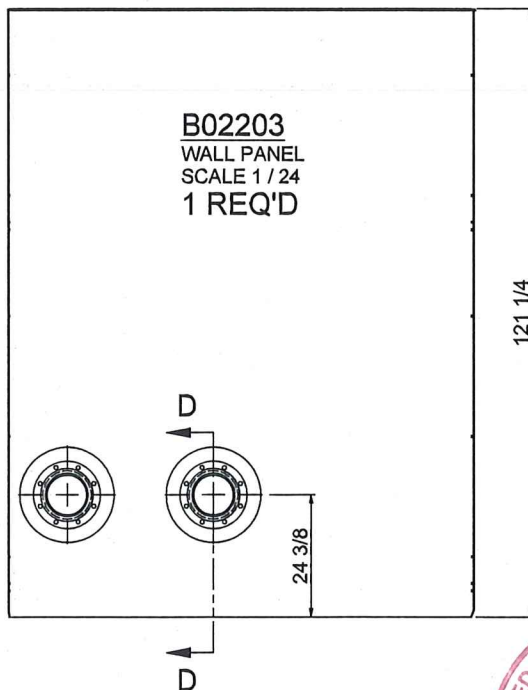
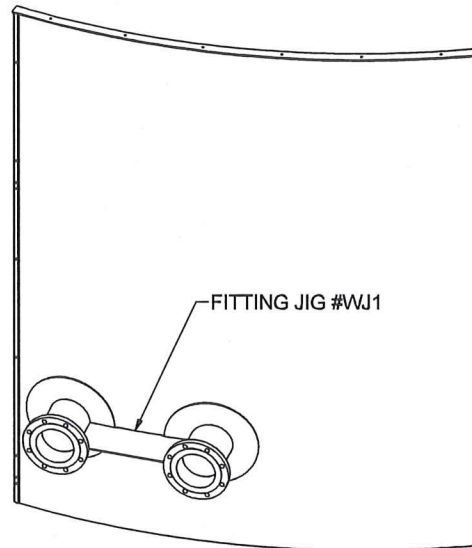
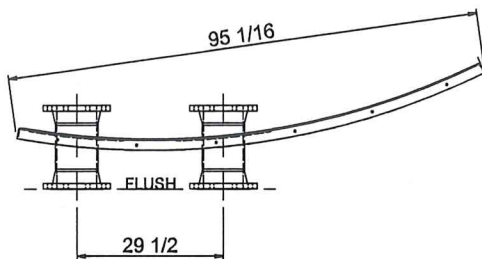
Nov 17/20





NO.	QTY	PART #	DESCRIPTION	UNIT WT.	COMMENTS
1	1	p02205	1/4 M.S. - 97 13/16 x 121	832.9	
2	1	n02204	8" SCH 40 MS PIPE x 8 3/4	20.9	
3	1	n02203	8" SCH 40 MS PIPE x 8 3/4	20.9	
4	1	p02202	1/4 M.S. - 90 7/16 x 30 27/32	13.6	
5	4		8" - 150# RFWN FLANGE	40.3	
6	1	p02224	- 1 x 1	16.0	
7	1	p02225	- 1 x 1	16.0	

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SECTION D-D  
SCALE 1 / 16



NOTE: n = NOZZLE WALL THICKNESS



PARR METAL FABRICATORS  
LIMITED  
-STEEL-STAINLESS-ALUMINUM-

J0268

DS

PROJ

DATE 3/16/2018

INT

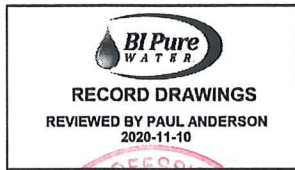
WALL PANEL

BI-PURE WATER

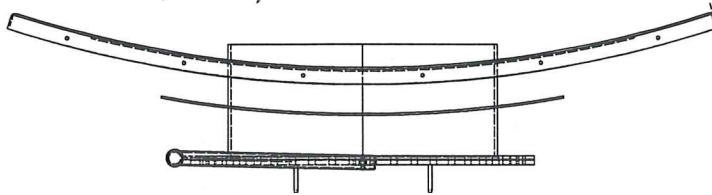
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REV



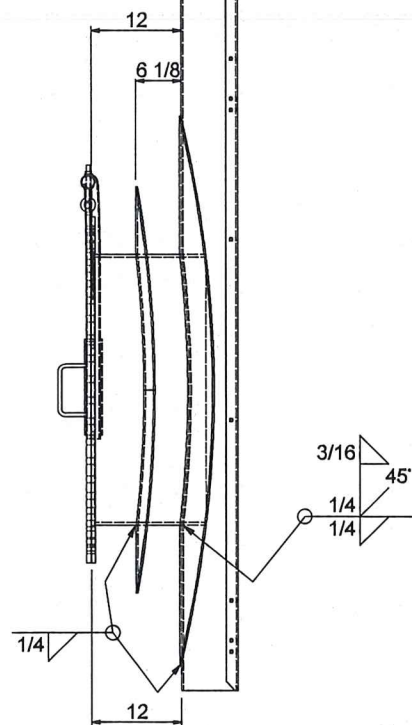
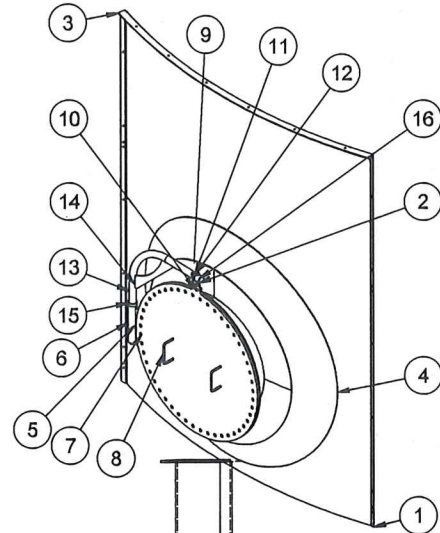
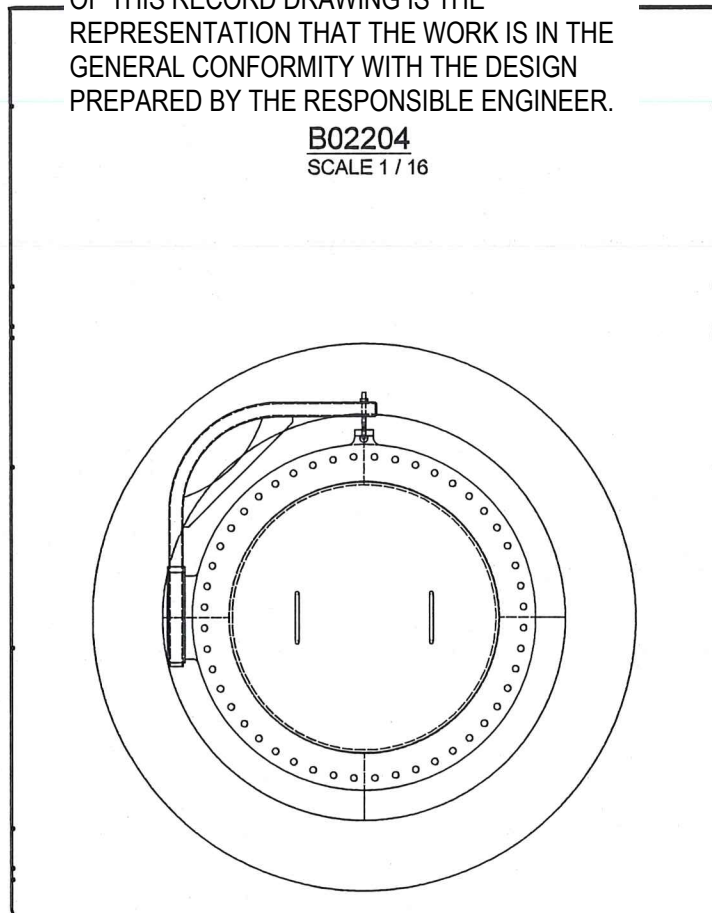


NO.	QTY	PART #	DESCRIPTION	UNIT WT.	COMMENTS
1	1	p02206	1/4 M.S. - 97 13/16 x 121	768.7	
2	1	p02M01	3/8 M.S. - 14 15/16 x 111 15/16	178.1	
3	1	p02202	1/4 M.S. - 90 7/16 x 30 27/32	13.6	
4	1	p02221	1/4 M.S. - 73 13/32 x 72 3/4	224.2	
5	1	pM02	1/2 M.S. - 46 x 47	88.8	
6	1	hM01	2" SCH 80 MS PIPE x 12	5.0	
7	1	pM03	5/8 M.S. - 46 x 46	290.3	
8	2	bM01	1/2"Ø MS BAR x 12 7/8	0.7	
9	1	bM02	3/4"Ø MS BAR x 2 1/2	0.3	
10	1	3016T44	1/2-13 X 4 1/2 SHANK MS EYE BOLT	0.5	
11	1	WASHER	1/2" UNC WASHER	0.0	
12	1	NUT	1/2" UNC HEX NUT	0.0	
13	1	hM02	1 1/2" SCH 40 MS PIPE x 55	12.5	
14	1	pM04	1/4 M.S. - 3 1/4 x 20 3/4	3.0	
15	1	hM03	2" SCH 80 MS PIPE x 3/4	0.3	
16	1	pM05	3/16 M.S. - 1 21/32 x 1 21/32	0.1	
17	2	p02226	1/4 M.S. - 27 x 27 1/8	22.6	
18	2	p02227	1/4 M.S. - 27 x 27 1/8	22.6	



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**B02204**  
SCALE 1 / 16



NOTE: n = NOZZLE WALL THICKNESS



PARR METAL FABRICATORS  
LIMITED  
-STEEL-STAINLESS-ALUMINUM-

J0268  
3/16/2018

DS  
PROJ

WALL PANEL

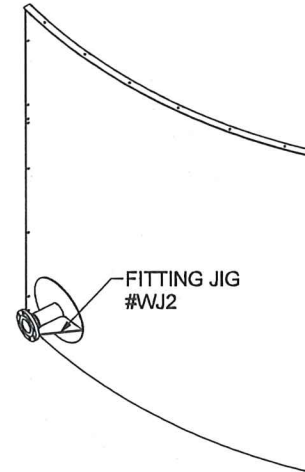
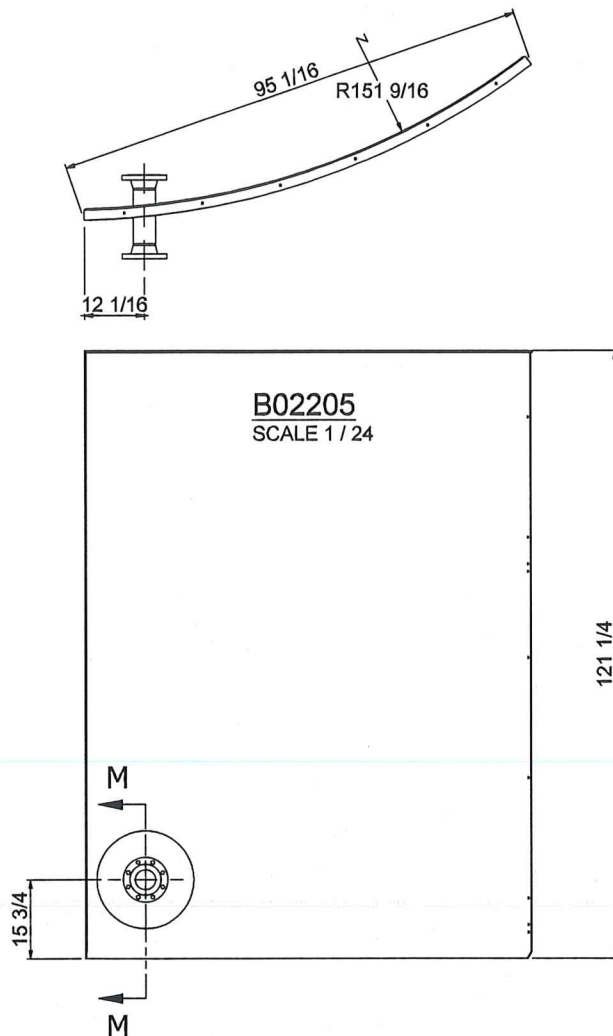
BI-PURE WATER

B02204

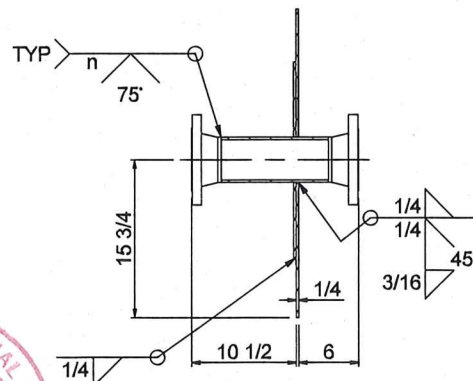
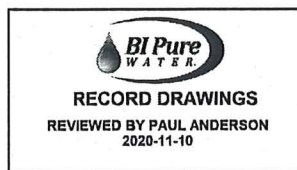
REV



NO.	QTY	PART #	DESCRIPTION	UNIT WT.	COMMENTS
1	1	p02207	1/4 M.S. - 97 13/16 x 121	840.2	
2	1	n02202	4" SCH 40 MS PIPE x 10 3/4	9.7	
3	1	p02202	1/4 M.S. - 90 7/16 x 30 27/32	13.6	
4	1	p02222	1/4 M.S. - 19 x 19 3/32	20.1	
5	2		4" - 150# RFWN FLANGE	16.3	



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**SECTION M-M**  
SCALE 1 / 12

NOTE: n = NOZZLE WALL THICKNESS



PARR METAL FABRICATORS  
LIMITED  
-STEEL-STAINLESS-ALUMINUM-

J0268  
3/16/2018

DS  
PROT

WALL PANEL

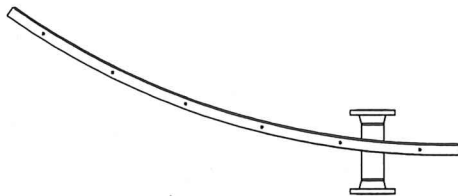
BI-PURE WATER

DWG

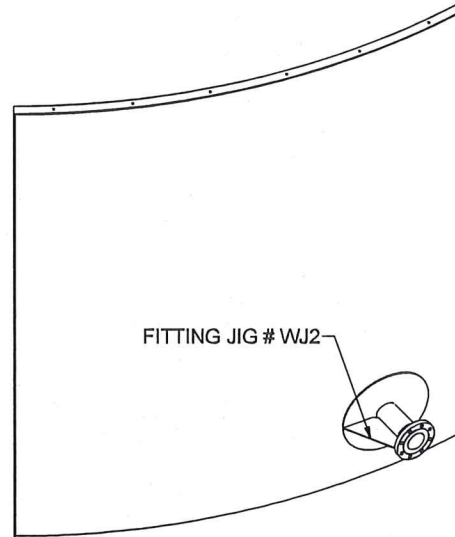
B02205

REV

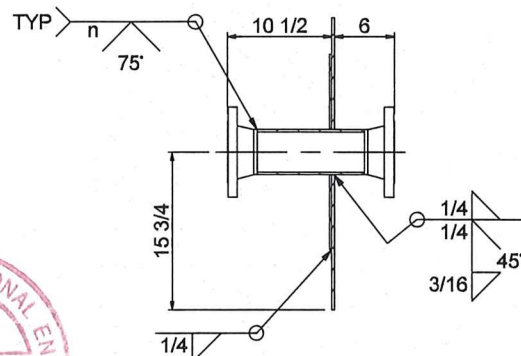
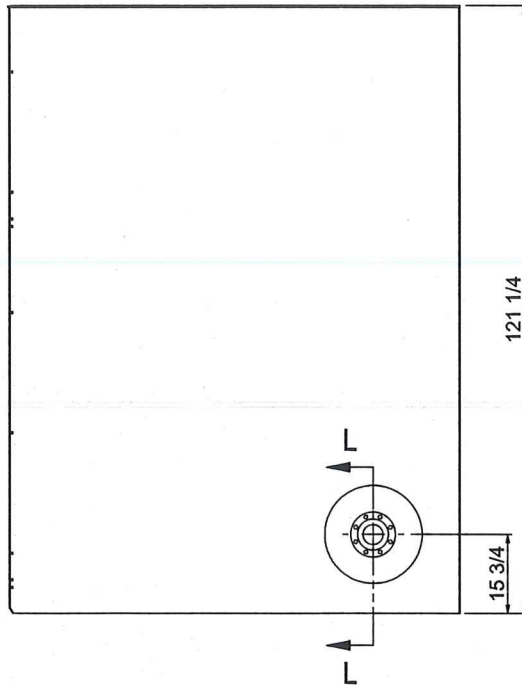
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**B02206**  
 SCALE 1 / 24

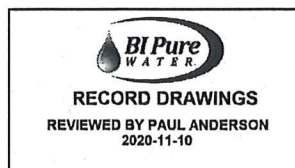


**PWW JIGS**  
 SCALE 1 / 24



**SECTION L-L**  
 SCALE 1 / 12

NOTE: n = NOZZLE WALL THICKNESS



**PARR METAL FABRICATORS  
 LIMITED**  
 -STEEL-STAINLESS-ALUMINUM-

DATE JOB 3/16/2018 30268

INTEND DS PROT

WALL PANEL

BI-PURE WATER

DWG

B02206

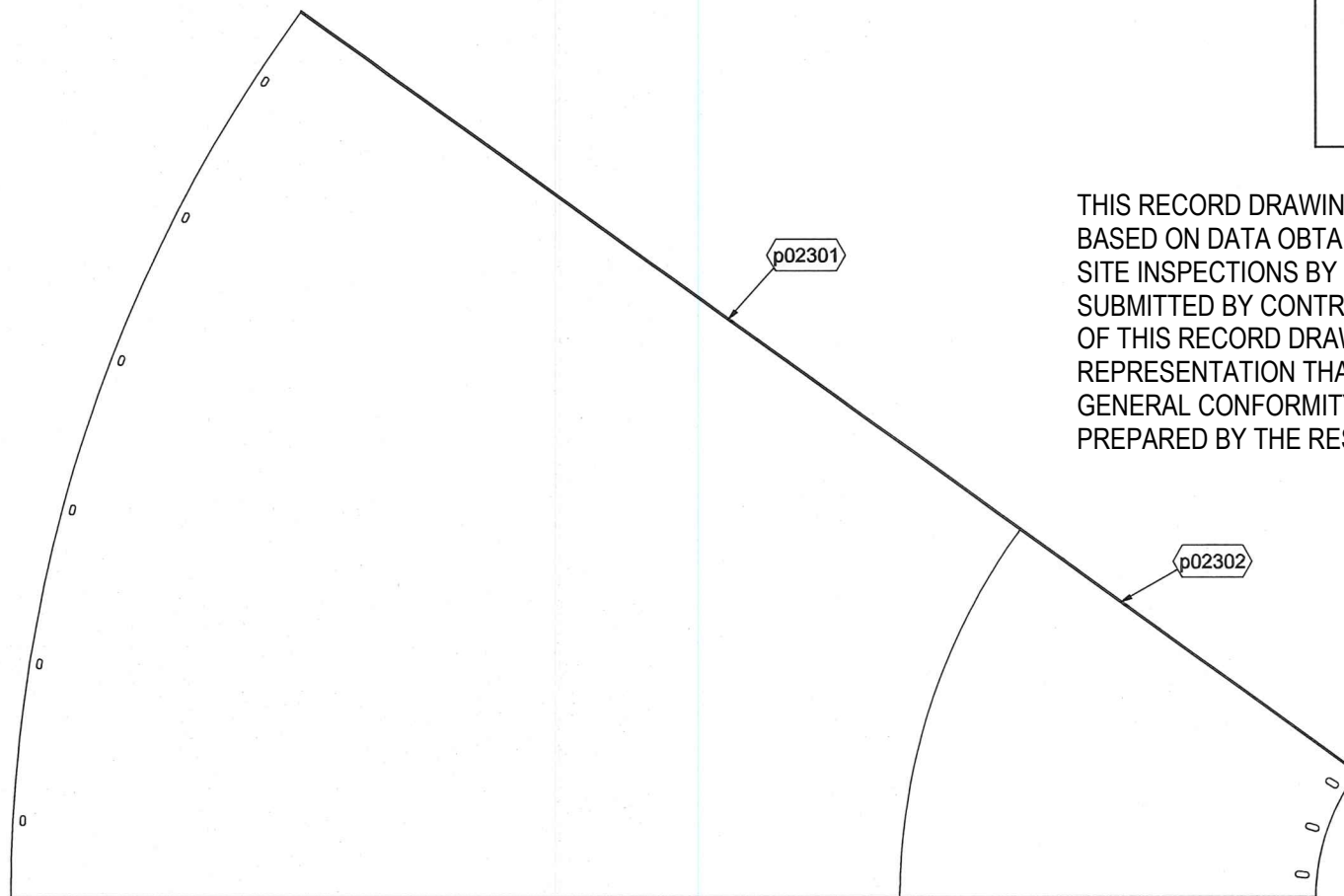
REV





**RECORD DRAWINGS**  
REVIEWED BY PAUL ANDERSON  
2020-11-10

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**B02301**  
ROOF PANEL  
SCALE 1 / 12  
9 REQ'D



PARR METAL FABRICATORS  
LIMITED  
~STEEL~STAINLESS~ALUMINUM~

DATE JOB J0268  
1/5/2018

TITLE DRAWING DS PROJ

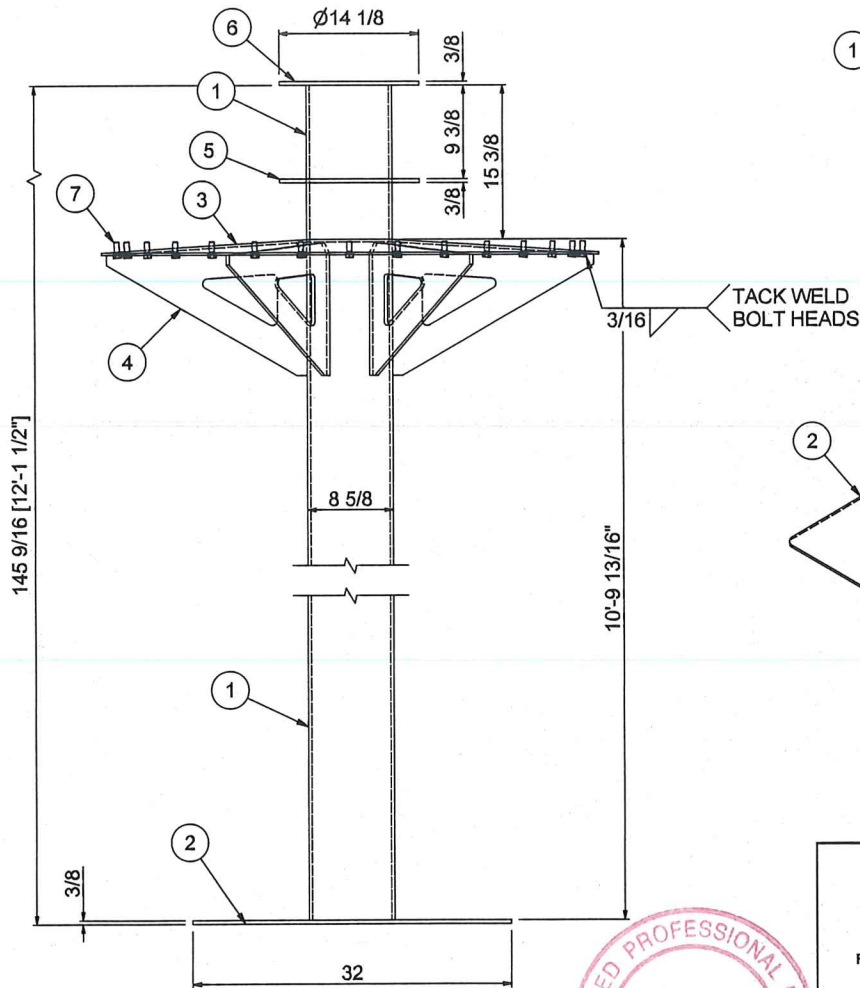
BI-PURE WATER  
ROOF PANEL



B02301

NO.	QTY	PART #
1	1	n02401
2	1	p02402
3	2	p02404
4	6	p02403
5	1	p02405
6	1	p02406
7	30	

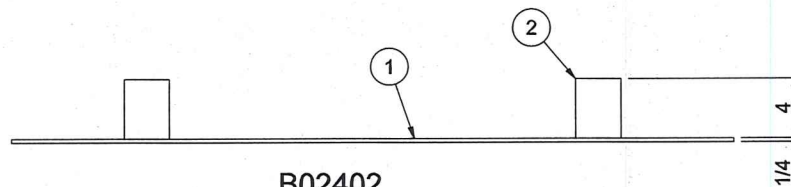
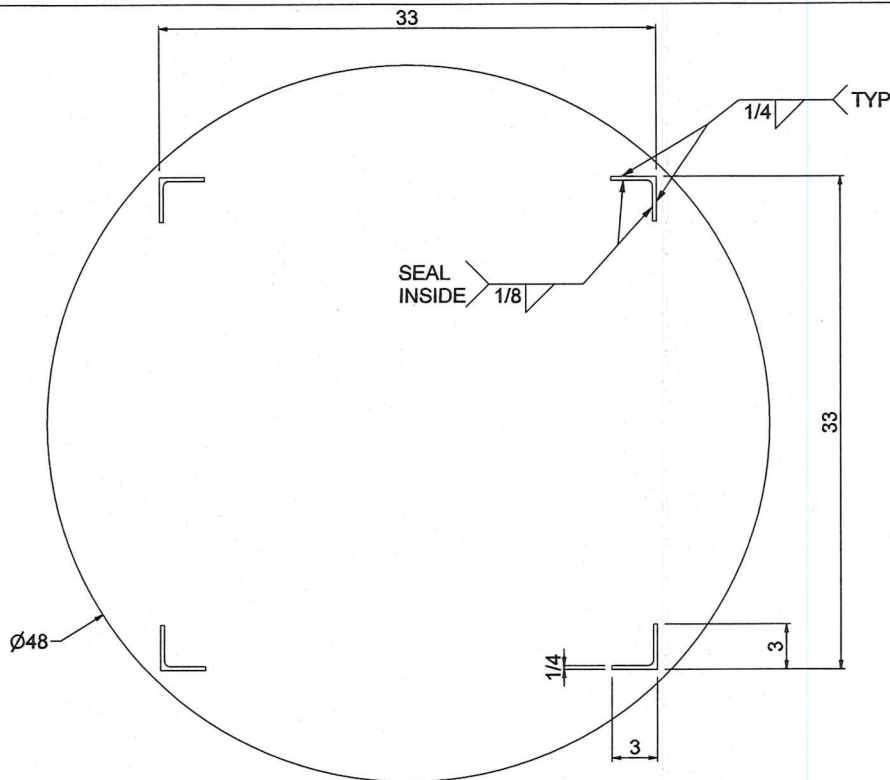
Technical drawing of a circular part, likely a wheel or a disc, showing dimensions and a parts list. The drawing includes a central circular hole, a dashed square outline, and a dashed circle. Dimensions are provided for the overall size (32), the central hole (32), and the distance from the center to the outer edge (32). A 60-degree angle is indicated. The parts list identifies components: 1 (n02401), 2 (p02402), 3 (p02404), 4 (p02403), 5 (p02405), 6 (p02406), and 7 (30).



REGISTERED PROFESSIONAL ENGINEER  
G.W. THOMP  
LICENSEE  
*G.W. Thompson*  
ALL WELDS 1/4" FI  
Nov 17/20

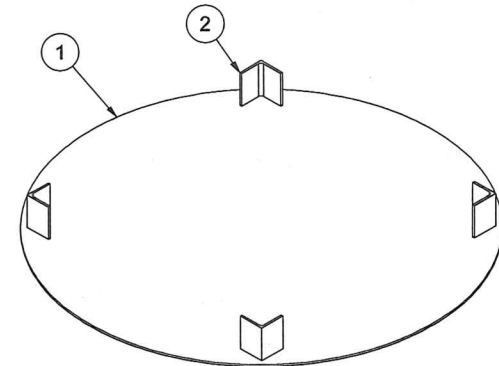
ALL WELDS 1/4" FILLET WELD ALL AROUND (SEAL WELD)





**B02402**  
COLUMN STRIKER PLATE  
SCALE 1/8  
1 REQ'D

NO.	QTY	PART #	DESCRIPTION	UNIT WT.	COMMENTS
1	1	p02401	1/4 M.S. - 48 x 48	128.5	
2	4	a02401	L3x3x1/4 MS ANGLE X 4 LG	1.7	



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PARR METAL FABRICATORS  
LIMITED  
-STEEL-STAINLESS-ALUMINUM-

JOB NO. J0268  
DATE 4/20/2018

DS  
NT/NU

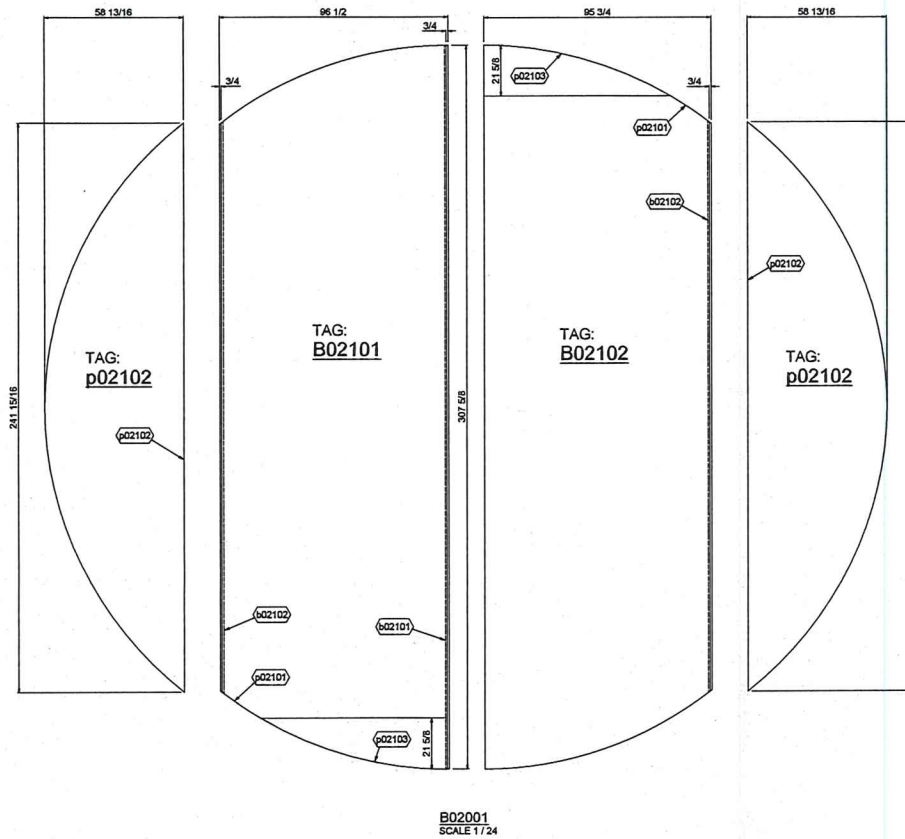
BI-PURE WATER  
COLUMN STRIKER PLATE

B02402

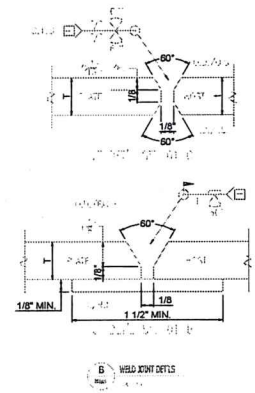
REV

J0256-02 PARTS

NO	QTY	PART #	DESCRIPTION	UNIT WT	COMMENTS
1	2	p02102	5/16 M.S. - 58 13/16 x 241 15/16	880.3	
2	2	p02101	5/16 M.S. - 95 x 286	2515.3	
3	2	p02103	5/16 M.S. - 21 5/8 x 78 21/32	102.1	
4	1	p02101	1 1/2 x 18 M.S. FB - 367 5/8	16.4	
5	2	p02102	1 1/2 x 18 M.S. FB - 243 3/32	12.9	



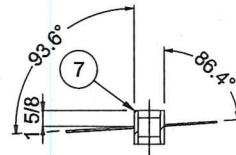
THIS RECORD DRAWING WAS PREPARED  
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PREPARED BY THE RESPONSIBLE ENGINEER.



<b>P.M.F.</b>		<b>PARR METAL FABRICATORS LIMITED</b>	
PROJECT		-STEEL-STAINLESS-ALUMINUM-	
CLIENT		BH-PURE WATER	
TITLE		FLOOR ASSEMBLY	
JOB #	DRAWN	DATE	REV
302568	DS	3/18/2018	D
SCALE AS NOTED		REF	SHEET 1 OF 1

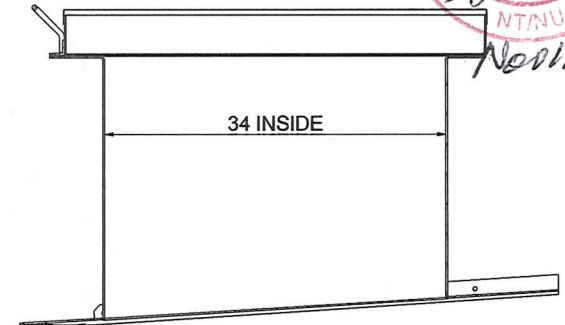
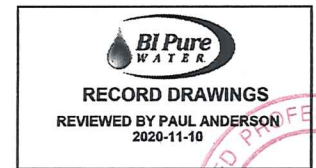
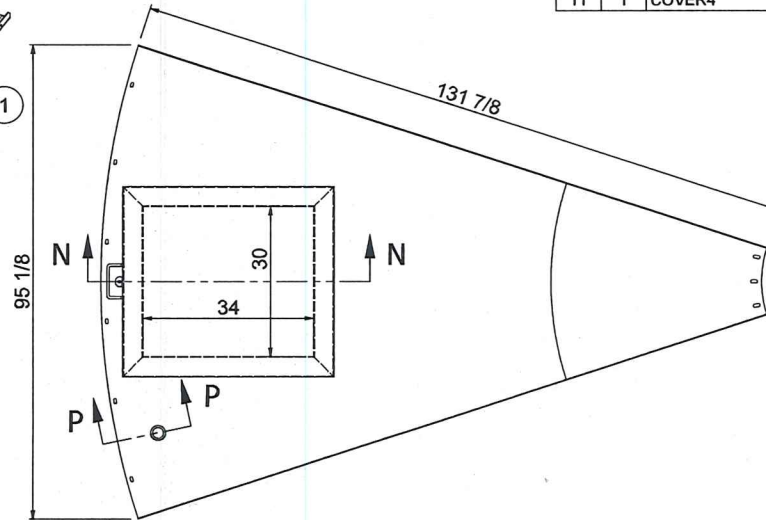
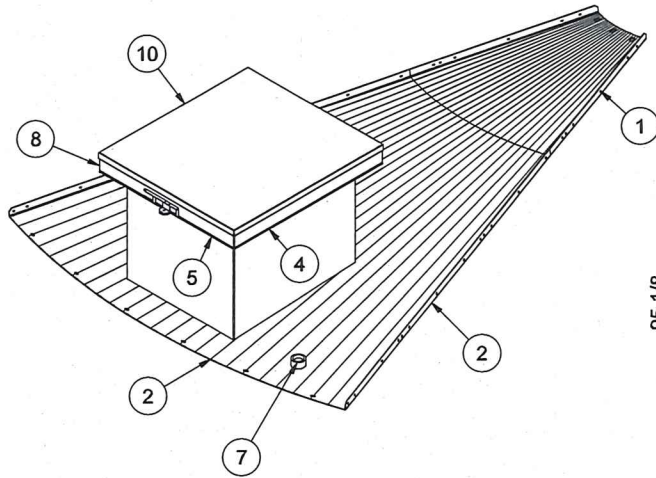


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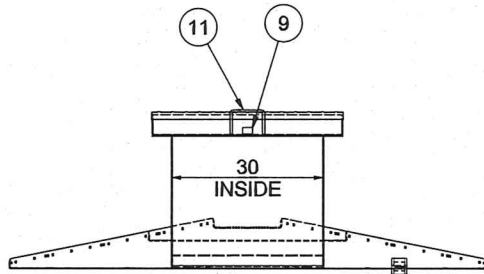


SECTION P-P  
SCALE 1 / 12

NO.	QTY	PART #	DESCRIPTION	UNIT WT.	COMMENTS
1	1	p02302	3/16 M.S. - 40 9/16 x 46 27/32	67.9	
2	1	p02303	3/16 M.S. - 93 1/32 x 103 5/32	287.6	
3	1	p02304	3/16 M.S. - 29 27/32 x 42	53.1	
4	1	p02305	3/16 M.S. - 29 27/32 x 42	53.1	
5	1	p02306	3/16 M.S. - 31 3/8 x 38	48.7	
6	1	p02307	3/16 M.S. - 27 3/4 x 38	45.2	
7	1		2" NPT - 3M FULL COUPLING	3.2	
8	1	COVER1	11 ga. M.S. - 45 17/32 x 49 17/32	74.7	
9	1	COVER2	1 1/2x1 1/2x3/16 MS ANGLE x 2	0.3	
10	1	COVER3	16 ga. M.S. - 41 x 45	31.3	
11	1	COVER4	1/2Ø MS BAR x 16 3/4	1.0	



SECTION N-N  
SCALE 1 / 12



B02302  
ROOF PANEL  
SCALE 1 / 24  
1 REQ'D



PARR METAL FABRICATORS  
LIMITED  
-STEEL-STAINLESS-ALUMINUM-

JOB NO. J0268  
DATE 1/5/2018

DS  
PROJ

BI-PURE WATER  
ROOF PANEL

DWG

B02302

REV

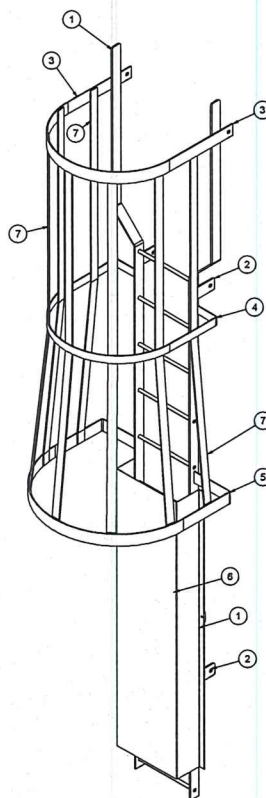
Technical drawing of a ladder showing front and side views with dimensions.

**Front View (Top):** Shows a ladder with a top width of 30. The ladder has a central vertical support and two side rails. The side rails are wider at the top and bottom and narrower in the middle. The central support has a wider base.

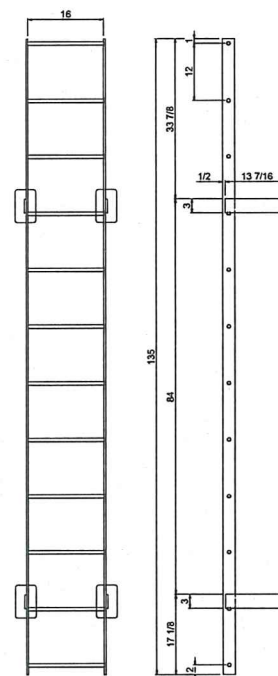
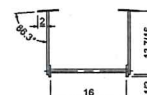
**Side View (Bottom):** Shows the ladder from the side, indicating a total height of 16. The side view shows the rungs and the side rail. The side rail has a small vertical section at the top, possibly a handle or a support.

[illegible]

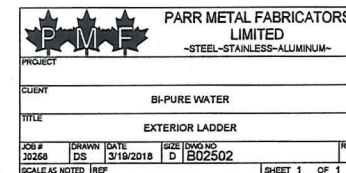
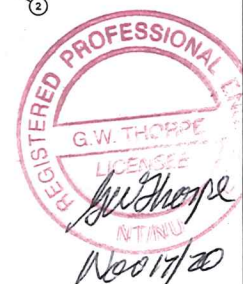
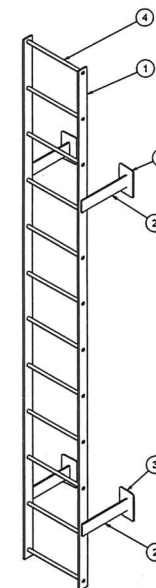
NO	QTY	PART #	DESCRIPTION	UNIT WT	COMMENT
1	2	001522	2 1/2 x 3/8 M.S. FLAT BAR - 186 1/16	49.1	
2	1	001506	3/8 M.S. - 3 x 6 1/2	2.0	
3	1	001006	3 x 1/4 M.S. FLAT BAR - 85 1/4	18.1	
4	1	001007	2 x 1/4 M.S. FLAT BAR - 68 3/4	12.6	
5	1	001008	3/8 M.S. FLAT BAR - 85 1/4	18.1	
6	12	001511	3/4" MS ROUND BAR 1/2 3/8"	2.1	
7	7	001522	2 x 1/4 M.S. FLAT BAR - 94	13.3	
8	1	001515	16 ga. M.S. - 33 1/16 x 72	41.7	
9	1	001503	2x2x1/4 M.S ANGLE - x 3	0.8	
10	3	446520	1/2 MELD-IN ALUM. HINDS CW 3/8"	0.0	
			1/2 GILL DR.		



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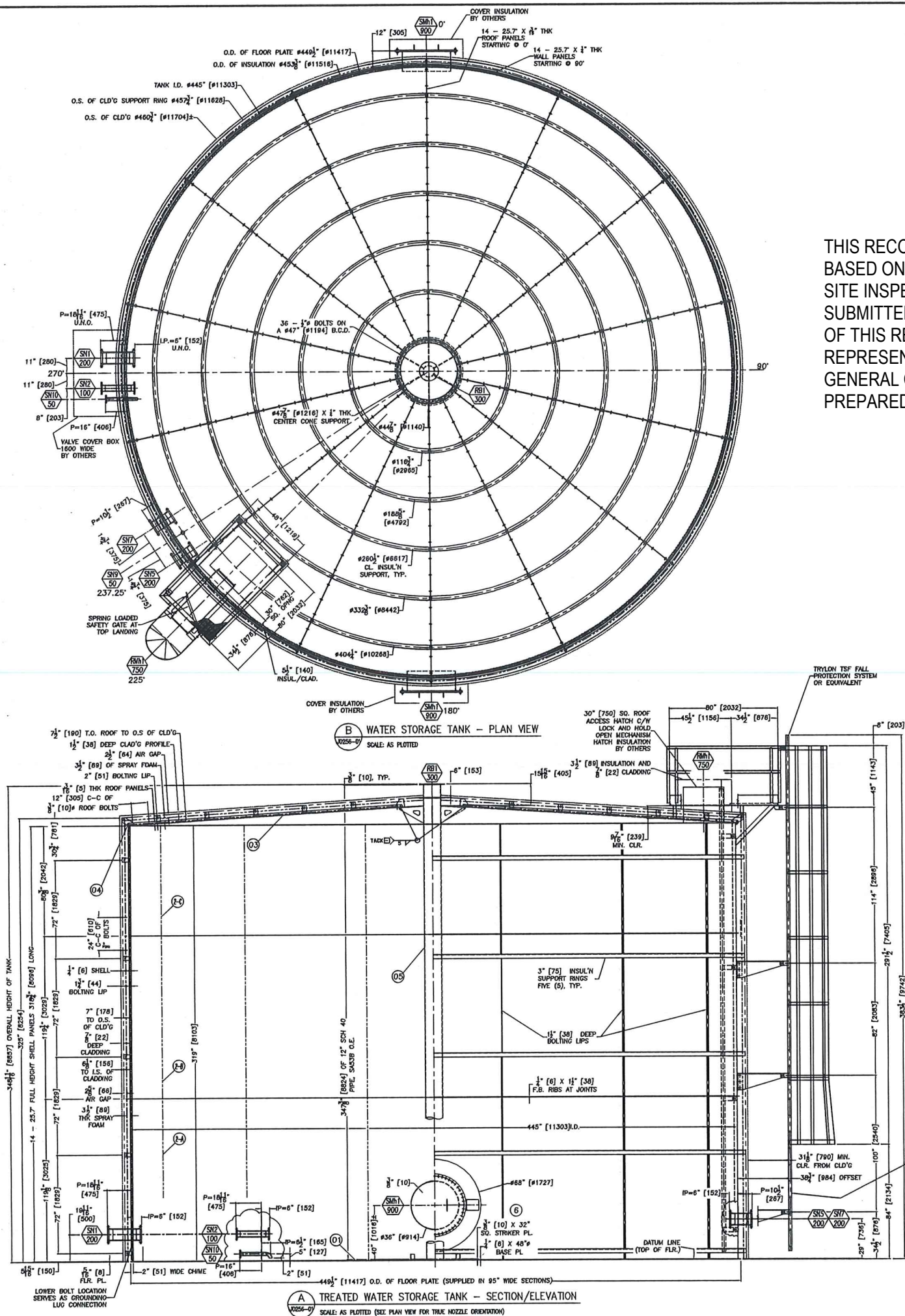
B02503  
INTERIOR LADDER  
SCALE 1 / 12  
1 REQ'D











#### EXTERIOR TANK COATING

1. BLAST EXTERIOR TO SP-6 COMMERCIAL BLAST
  2. BLOW DOWN MATERIAL TO REMOVE ALL SPENT BLAST MEDIA
  3. MASKING JOINTS FOR FIELD WELDING
  4. PRIME EXTERIOR WITH DIMETCOTE 9.85 % ZINC @ 2-4 MILS DFT
  5. INTERMEDIATE COAT EXTERIOR WITH AMERCOAT 385 @ 5-10 MILS DFT
- FOR THE EXTERIOR LADDER AND PLATFORM, THE PAINT WILL BE 1 ENAMEL TOP COAT OVER ALKYL PRIMER

#### INTERIOR TREATED WATER TANK COATING

1. BLAST INTERIOR TO SP-5 WHITE METAL BLAST
2. BLOW DOWN MATERIAL TO REMOVE ALL SPENT BLAST MEDIA
3. MASKING JOINTS FOR FIELD WELDING
4. PAINT 2 COATS OF SHERWIN WILLIAMS TANK CLAD HS @ 5 MILS DFT PER COAT

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#### FABRICATION NOTES:

ALL WELDING TO BE DONE BY QUALIFIED CWB CERTIFIED WELDERS TO CSA W47.1 AND W59, LATEST EDITION AND ADDENDUMS, UNLESS NOTED OTHERWISE.

SPlicing OF STEEL MEMBERS IS NOT PERMITTED WITHOUT PRIOR WRITTEN PERMISSION BY THE ENGINEER.

STEEL PLATE SPECIFICATIONS SHALL MEET OR EXCEED 44W (G40.21-300W).

PIPE & FITTINGS THICKNESS AND RATING PER STANDARDS AND SPECIFICATIONS PROVIDED.

ALL PLATE AND SHAPE COMPONENTS INCLUDING ANGLE, BEAMS, CHANNEL, REPAIRS, GUSSETS, FISH PLATES AND CONNECTIONS PLATES TO BE CNC OR MECHANICALLY CUT. HAND TORCH CUTTING OF CONNECTION BOLT HOLES AND/OR SLOTS IS NOT PERMITTED.

WELDS TO BE CONTINUOUS U.N.O. SINGLE FILLET WELDS TO BE 11 MIN. DOUBLE FILLET WELDS TO BE 7/8 MIN. BUTT WELDS TO BE FULL PENETRATION. RUN OFF TABS MUST BE USED. FLARE BEVEL GROOVE WELDS TO BE 3/16" MIN. WELDS SHALL BE NEAT IN APPEARANCE, FREE OF SLAG, UNDERCUTS AND OTHER DEFECTS.

U.N.O. EXTERNAL LOADING BY OTHERS.

DIMENSIONAL TOLERANCES SHALL BE IN ACCORDANCE WITH API 650 LATEST EDITION AND ADDENDUM. NOZZLE DIMENSION TOLERANCES SHALL BE  $\pm 1/4"$  &  $\pm 2.5'$  FROM LEVEL UNLESS NOTED OTHERWISE.

NOZZLE-TANK INTERSECTIONS TO BE RADIUS  $1/8"$  MINIMUM & INTERNAL PROJECTIONS AS NOTED.

1" NPT TELL TALE HOLES REQUIRED ON ALL EXTERNAL REPAIRS.

TANK COMPONENTS SHALL BE CLEAN OF SCALE, OIL, WELD SPATTER AND OTHER FOREIGN MATTER BEFORE TESTING & PAINTING.

PROTECT ALL MACHINED SURFACES AND FLANGES WITH 3/8" PLYWOOD EXTENDED 5/8" PAST EDGES, SECURE THROUGH MINIMUM OF 4 BOLTS HOLES. PROTECT THREADED CONNECTIONS PRIOR TO SHIPPING.

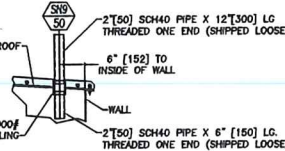
ALL PERTINENT ASPECTS OF THE DESIGN TO MEET OR EXCEED THE REQUIREMENTS OF API 650, AWSA D100, NBCC, AND NSF 61.

#### ERECTION NOTES:

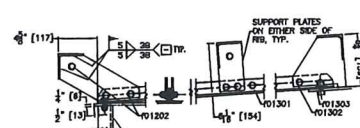
ALL FACE PIPING AND BRACKETS NOT SHOWN ARE SUPPLIED AND INSTALLED BY OTHERS.

FIELD WELDING INCLUDES THE FOLLOWING:

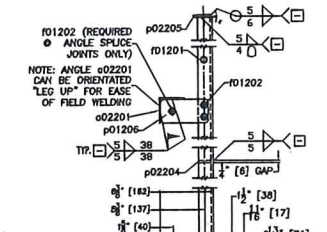
1. 96" WIDE FLOOR SECTIONS WELDED TO 12 GA BACKING STRIP
2. FLOOR TO SHELL WELDS (FILLET WELD INSIDE AND OUT)
3. VERTICAL SEAMS (ASSEMBLE 14 SECTIONS BY BOLTING AND APPLY FLARE BEVEL GROOVE WELD FROM I.D.)
5. FIT AND WELD ALL INSULATION SUPPORTS
6. ROOF ASSEMBLY REQUIRES NO WELDING, (BOLTED AND CAULKED ONLY)



SN9 LEVEL/TEMP CONDUIT DETAIL



ROOF PANEL DETAIL



WALL PANEL DETAILS

#### TANK SPECIFICATIONS

MK	ITEM	SPECIFICATION	MATERIAL GRADE(S)
01	FLOOR	5/16" [8] PLATE, 2" WIDE CHIME	44W (G40.21-300W)
02	SHELL	1/4" [6] FULL HEIGHT 14-25.7 SEGMENTS, ASSEMBLY BOLTED AND WELDED	44W (G40.21-300W)
03	ROOF	3/16" [5] BOLTED COVER (NO WELDS), SEAL JOINTS (POLYURETHANE SEALANT) PRIOR TO BOLTING	44W (G40.21-300W)
04	RM ANGLE	1/4" [6] PLATE, WELDED CORNER TO CORNER WITH SHELL SEGMENTS & BOLTED TO RING	44W (G40.21-300W)
05	CENTER COLUMN	12" [30] SCH 40 PIPE C/W 3/8" [10] X 36" SO SINKER PL & 1/4" [6] X 48" BASE PL	SA 53.5 LF 2
06	ANS FLANGES	150# RHW, SCH 40 TO MATCH PIPE AND FITTINGS	SA 333 OR 6/44W (G40.21-300W)
07	NOZZLE NECKS	UNO, SCH 40 FOR 2" [50] & UNDER, SCH 40 OVER 2" [50], RATE NOZZLES 1/4" [6] MIN	SA 333 OR 6/44W (G40.21-300W)
08	REPAIRS	API ROUND, 1/4" [6] THK, UNO, (SHELL NOZZLES OVER 2" [50] ONLY)	44W (G40.21-300W)
09	SHELL MANWAY	36" API SHELL MANWAY, 3/8" [10] NECK, 5/8" [16] RLC 1/2" [12] COVER, W/DRIFT	44W (G40.21-300W)
10	BRI/WAVE PLATE	TO API 650 STD, 1/4" [6] BRACKET, 1/2" [12] GAUGE STAINLESS, LASER ENGRAVED	44W (G40.21-300W) 18-8 S.S.
11	GASKETS	1/8" [5] NON-ASBESTOS, RING GASKETS FOR ANS FLGS, FULL FACE FOR API NOZ.	J.C. STYLE 2100/DURLON 8500 O.A.E.
12	SHAPES	STANDARD AND/OR FORMED FROM PLATE	44W (G40.21-300W)
13	LIFTING LUGS	N/A (LIFT TANK COMPONENTS USING BOLTING SLOTS/HOLES)	-
14	CHAIRS	N/A	-
15	FASTENERS	NOZZLES: B7 STUDS & HX HEX NUTS, TANK BOLTING ASTM A-320 MIN.	SA 193/194 B7, A-320 (PLATED)
16	CLADDING SUP.	3/16" [5] PLATE AND FABRICATED ANGLES	44W (G40.21-300W)

#### SCHEDULE OF OPENINGS

DESIGN DATA	NAME PLATE
<b>SPECIFICATION</b>	<b>REFERENCE CODE(S)</b>
REFERENCE CODE(S)	API 650, 12TH EDITION, 2016 ADD., AWSA D100, NBCC, & NSF 61
STAMPING	API 650 (SEE NAME PLATE)
EQUIP/SERIAL NUMBER	16-TX-01/0256-01
MINIMUM METAL	-40°C
OPERATING TEMP.	VARIES
DESIGN	50°C
OPERATING DESIGN	ATM. PLUS STATIC HEAD
TEST	ATM. PLUS STATIC HEAD
CORROSION ALLOW	15 (1/16") NETTED SURFACES PAINTED
PHWT/IMPACT TEST	N/A
JOINT EFF.	70% (NO RADIOGRAPHY)
N.D.E. CRITERIA	SHOP VISUAL ONLY
LOADING	WIND LOAD: 120 KM/H, SNOW LOAD: 120 kg/m <sup>2</sup> , ROOF LOAD: 60 kg/m <sup>2</sup> , SEISMIC: Group N/A
SURFACE AREA	488 SQ. M. - SHELL, FLOOR AND ROOF ONLY
HEAT TRACING	BY OTHERS
INSULATION/CLADDING	3 1/2" (89) POLYURETHANE C/W METAL CLADDING
SURFACE PREP.	WIRE BRUSH CLEAN WELDS, SOLVENT CLEAN TO SSPC-SP1-B2, SAND BLAST TO SSPC-SP6-91
PAINTING	REFER TO PART 2 OF SECTION 09 99 - COATINGS FOR WELDED TANKS, PROJECT NO. 15300-00253, ARVIAT WATER TREATMENT AND STORAGE ON-SITE TOUCHUPS BY OTHERS
OPERATING VOLUME	778,611 LITRES (TO OVERFLOW)
FLOODED (H <sub>2</sub> O)	813,017 LITRES
CU. FT. (CU. M.)	28,711 CU. FT. (813 CU. M.)
CONTENTS	EMPTY
HAZARDS	N/A
WATER TREATMENT	VARIES
PRODUCT 1.0/DESIGN 1.0	853,760 KG
SPECIFIC GRAVITY	40,750 KG
FILL RATES (LPM)	1000 IN/2,400 OUT

WELDING PROCEDURES	END USER
<b>WPS PARR-B3-3</b>	<b>P1 TO P1 GTAW</b>
<b>WPS PARR-P1/PB</b>	<b>P1 TO P8 GTAW</b>
<b>WPS PARR-B3-1</b>	<b>P8 TO P8 GTAW</b>
<b>WPS PARR-P1-5</b>	<b>P1 TO P1 GMAW</b>
<b>WPS PARR-PB</b>	<b>P8 TO P8 GMAW</b>
<b>WPS PARR-P1-4</b>	<b>P1 TO P1 FCAW</b>
<b>WPS PARR-PB-4</b>	<b>P8 TO P8 FCAW</b>
<b>WPS PARR-P1-6</b>	<b>P1 TO P1 MCAW</b>

REVISIONS	DESCRIPTION	DATE	BY	CHK	APP
5	11/05/19 AS BUILT				
4	03/14/19 REVISED AS PER CLIENT COMMENTS				
3	03/06/18 REVISED AS PER CLIENT COMMENTS				
2	01/16/18 REVISED AS PER CLIENT COMMENTS				
1	12/28/17 REVISED AS PER CLIENT COMMENTS				
0	12/20/17 ISSUED FOR CLIENT REVIEW				

ASSOCIATED DRAWINGS / DESIGN STANDARDS	REVISIONS
<b>WELDING PROCEDURES</b>	<b>END USER</b>
<b>A</b> WPS PARR-B3-3	<b>P1 TO P1 GTAW</b>
<b>B</b> WPS PARR-P1/PB	<b>P1 TO P8 GTAW</b>
<b>C</b> WPS PARR-B3-1	<b>P8 TO P8 GTAW</b>
<b>D</b> WPS PARR-P1-5	<b>P1 TO P1 GMAW</b>
<b>E</b> WPS PARR-PB	<b>P8 TO P8 GMAW</b>
<b>F</b> WPS PARR-P1-4	<b>P1 TO P1 FCAW</b>
<b>G</b> WPS PARR-PB-4	<b>P8 TO P8 FCAW</b>
<b>H</b> WPS PARR-P1-6	<b>P1 TO P1 MCAW</b>

REVISIONS	DESCRIPTION	DATE	BY	CHK	APP
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0	12/20/17 ISSUED FOR CLIENT REVIEW				

DESIGN DATA	NAME PLATE
<b>SPECIFICATION</b>	<b>REFERENCE CODE(S)</b>
REFERENCE CODE(S)	API 650, 12TH EDITION, 2016 ADD., AWSA D100, NBCC, & NSF 61
STAMPING	API 650 (SEE NAME PLATE)
EQUIP/SERIAL NUMBER	16-TX-01/0256-01
MINIMUM METAL	-40°C
OPERATING TEMP.	VARIES
DESIGN	50°C
OPERATING DESIGN	ATM. PLUS STATIC HEAD
TEST	ATM. PLUS STATIC HEAD
CORROSION ALLOW	15 (1/16") NETTED SURFACES PAINTED
PHWT/IMPACT TEST	N/A
JOINT EFF.	70% (NO RADIOGRAPHY)
N.D.E. CRITERIA	SHOP VISUAL ONLY
LOADING	WIND LOAD: 120 KM/H, SNOW LOAD: 120 kg/m <sup>2</sup> , ROOF LOAD: 60 kg/m <sup>2</sup> , SEISMIC: Group N/A
SURFACE AREA	488 SQ. M. - SHELL, FLOOR AND ROOF ONLY
HEAT TRACING	BY OTHERS
INSULATION/CLADDING	3 1/2" (89) POLYURETHANE C/W METAL CLADDING
SURFACE PREP.	WIRE BRUSH CLEAN WELDS, SOLVENT CLEAN TO SSPC-SP1-B2, SAND BLAST TO SSPC-SP6-91
PAINTING	REFER TO PART 2 OF SECTION 09 99 - COATINGS FOR WELDED TANKS, PROJECT NO. 15300-00253, ARVIAT WATER TREATMENT AND STORAGE ON-SITE TOUCHUPS BY OTHERS
OPERATING VOLUME	778,611 LITRES (TO OVERFLOW)
FLOODED (H <sub>2</sub> O)	813,017 LITRES
CU. FT. (CU. M.)	28,711 CU. FT. (813 CU. M.)
CONTENTS	EMPTY
HAZARDS	N/A
WATER TREATMENT	VARIES
PRODUCT 1.0/DESIGN 1.0	853,760 KG
SPECIFIC GRAVITY	40,750 KG
FILL RATES (LPM)	1000 IN/2,400 OUT

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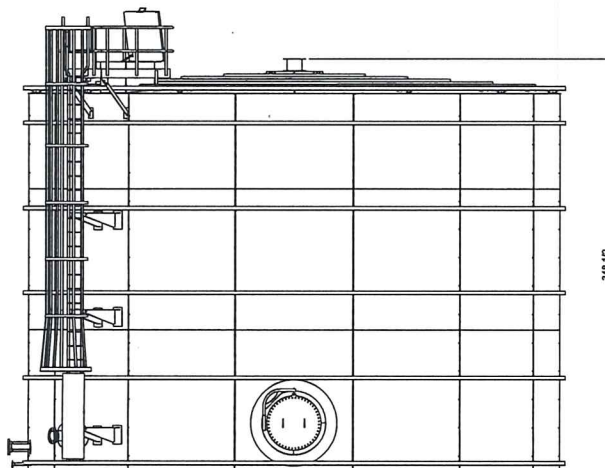
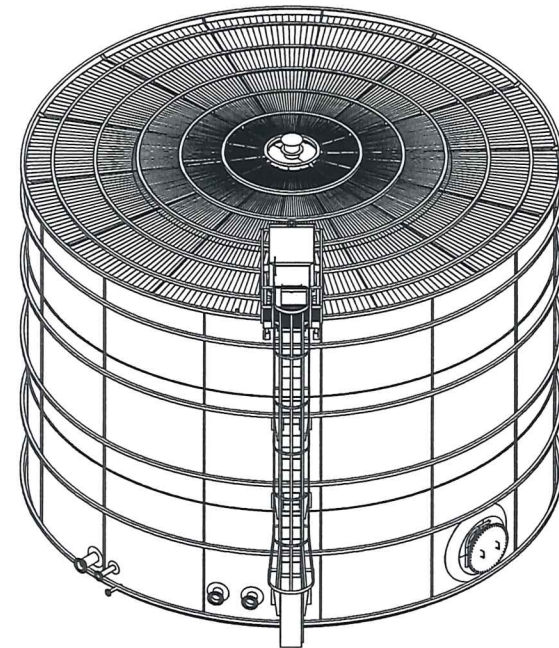
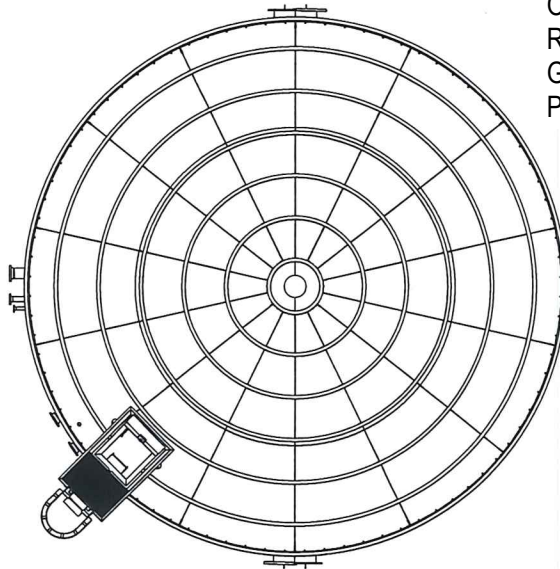




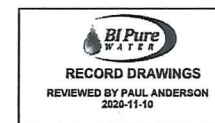
J0256-01 PARTS

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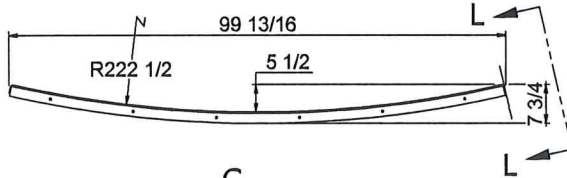
TREATED WATER  
 STORAGE TANK  
 18-TK-01



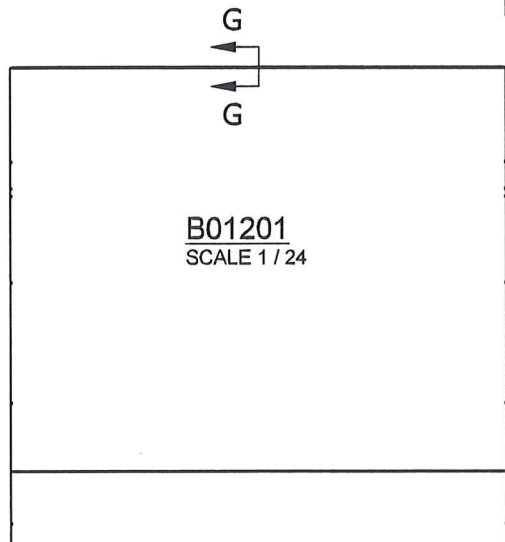
J0256-01  
 TREATED WATER STORAGE TANK  
 SCALE 1/4" = 1'-0"  
 1 REQ'D



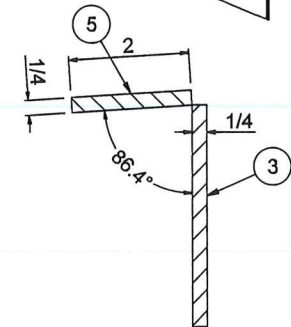
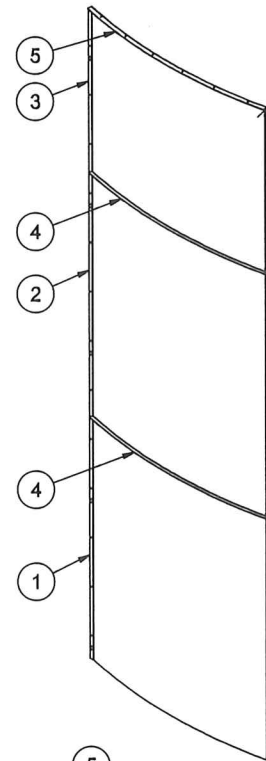
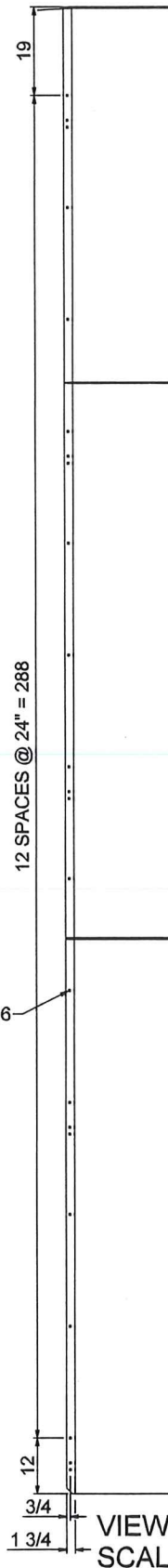
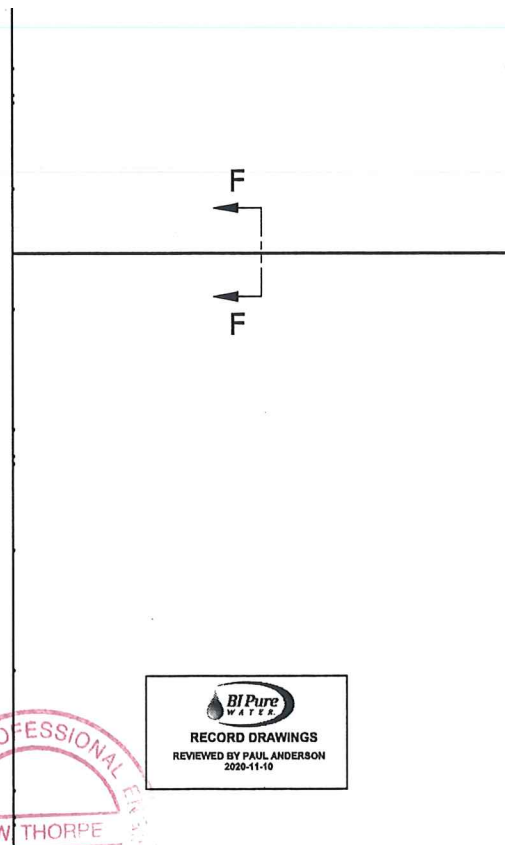
<b>P.M.F.</b>		<b>PARR METAL FABRICATORS LIMITED</b>	
PROJECT		WATER TREATMENT TANKS	
CLIENT		BI-PURE WATER	
TITLE		TREATED WATER STORAGE TANK	
JOB #	DRAWN	DATE	SIZE (INCHES)
30258	DS	3/14/2018	D J0256-01
SCALE AS NOTED		REF	SHEET 1 OF 1



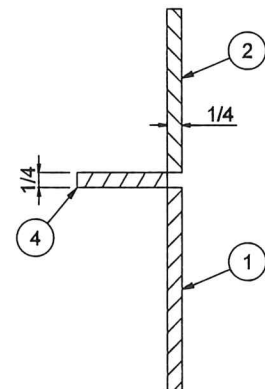
NO.	QTY	PART #	DESCRIPTION	UNIT WT.	COMMENTS
1	1	p01201	1/4 M.S. - 102 13/32 x 119	866.4	
2	1	p01202	1/4 M.S. - 102 13/32 x 119	866.5	
3	1	p01203	1/4 M.S. - 102 13/32 x 80 1/4	584.3	
4	2	p01204	1/4 M.S. - 6 31/32 x 99 5/16	10.6	
5	1	p01206	1/4 M.S. - 7 1/2 x 99 9/16	14.1	



THIS RECORD DRAWING WAS PREPARED  
BASED ON DATA OBTAINED FROM PERIODIC  
SITE INSPECTIONS BY EXP STAFF, AND DATA  
SUBMITTED BY CONTRACTORS. THE ISSUANCE  
OF THIS RECORD DRAWING IS THE  
REPRESENTATION THAT THE WORK IS IN THE  
GENERAL CONFORMITY WITH THE DESIGN  
PREPARED BY THE RESPONSIBLE ENGINEER.

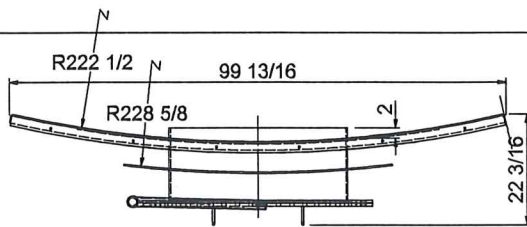


SECTION G-G  
SCALE 1/2



SECTION F-F  
SCALE 1/2

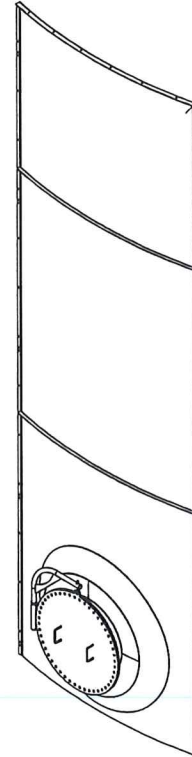
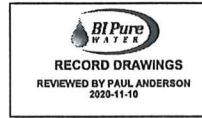




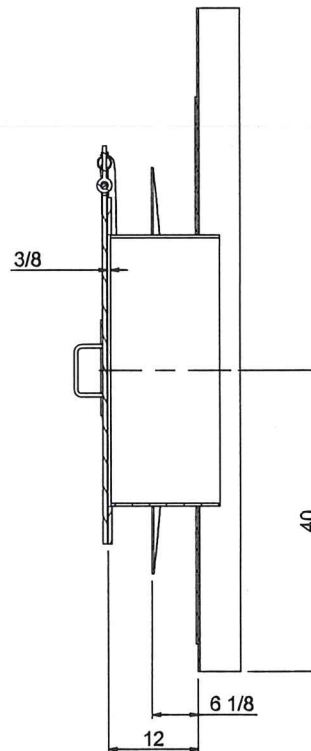
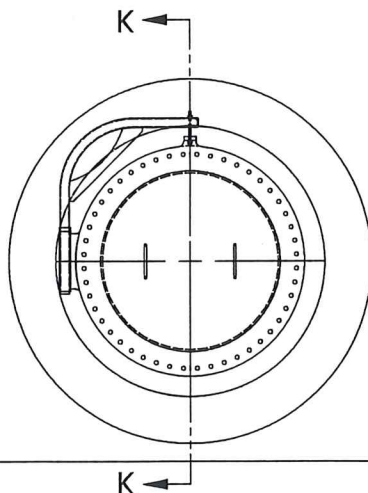
**B01202**  
SCALE 1 / 24

THIS RECORD DRAWING WAS PREPARED  
BASED ON DATA OBTAINED FROM PERIODIC  
SITE INSPECTIONS BY EXP STAFF, AND DATA  
SUBMITTED BY CONTRACTORS. THE ISSUANCE  
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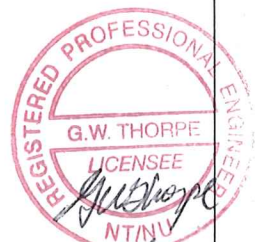
NO.	QTY	PART #	DESCRIPTION	UNIT WT.	COMMENTS
1	1	p01202	1/4 M.S. - 102 13/32 x 119	866.5	
2	1	p01203	1/4 M.S. - 102 13/32 x 80 1/4	584.3	
3	2	p01204	1/4 M.S. - 6 31/32 x 99 5/16	10.6	
4	1	p01206	1/4 M.S. - 7 1/2 x 99 9/16	14.1	
5	1	p01207	1/4 M.S. - 102 13/32 x 119	793.8	
7	1	p01221	1/4 M.S. - 73 1/32 x 72 3/4	223.2	
8	1	p01M01	3/8 M.S. - 14 19/32 x 111 29/32	174.0	
9	1	B01MH1		402.2	
10	2	p01224	1/4 M.S. - 27 x 27 1/16	22.5	
11	2	p01225	1/4 M.S. - 27 x 27 1/16	22.5	



319



**SECTION K-K**  
SCALE 1 / 16



PARR METAL FABRICATORS  
LIMITED  
-STEEL-STAINLESS-ALUMINUM-

J0268  
12/19/2017

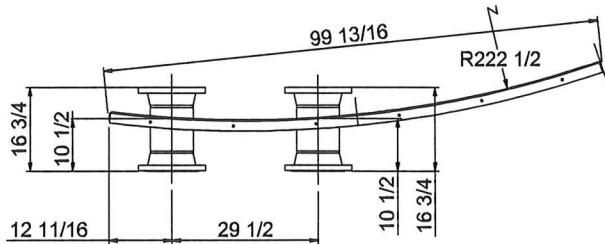
DS  
PROJ

WALL PANEL ASSEMBLY

BI-PURE WATER

B01202





NO.	QTY	PART #	DESCRIPTION	UNIT WT.	COMMENTS
1	1	p01202	1/4 M.S. - 102 13/32 x 119	866.5	
2	1	p01203	1/4 M.S. - 102 13/32 x 80 1/4	584.3	
3	2	p01204	1/4 M.S. - 6 31/32 x 99 5/16	10.6	
4	1	p01206	1/4 M.S. - 7 1/2 x 99 9/16	14.1	
5	1	p01208	1/4 M.S. - 102 13/32 x 119	858.0	
6	1	n01203	8 SCH40 MS PIPE x 8 3/4	20.9	
7	1	n01204	8 SCH40 MS PIPE x 8 3/4	20.9	
8	4		8" - 150# RFWN FLANGE	40.3	
9	2	p01222	1/4 M.S. - 19 x 19 1/32	15.9	

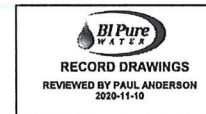
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B01203  
SCALE 1 / 24

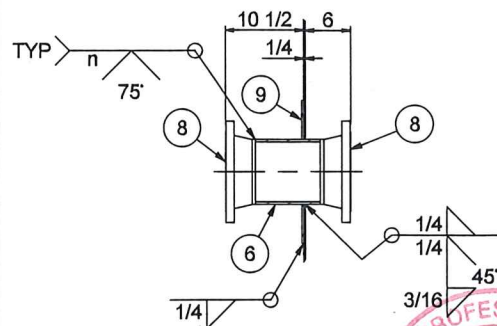
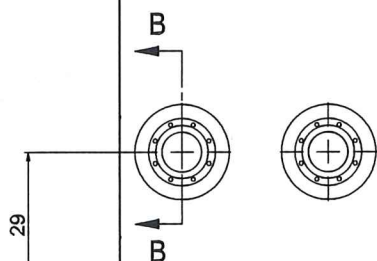
THIS RECORD DRAWING WAS PREPARED  
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SITE INSPECTIONS BY EXP STAFF, AND DATA  
SUBMITTED BY CONTRACTORS. THE ISSUANCE  
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PREPARED BY THE RESPONSIBLE ENGINEER.



B01203  
SCALE 1/64



319



SECTION B-B  
SCALE 1 / 16

NOTE: n = NOZZLE WALL THICKNESS



PARR METAL FABRICATORS  
LIMITED  
-STEEL-STAINLESS-ALUMINUM-

J0268  
12/19/2017

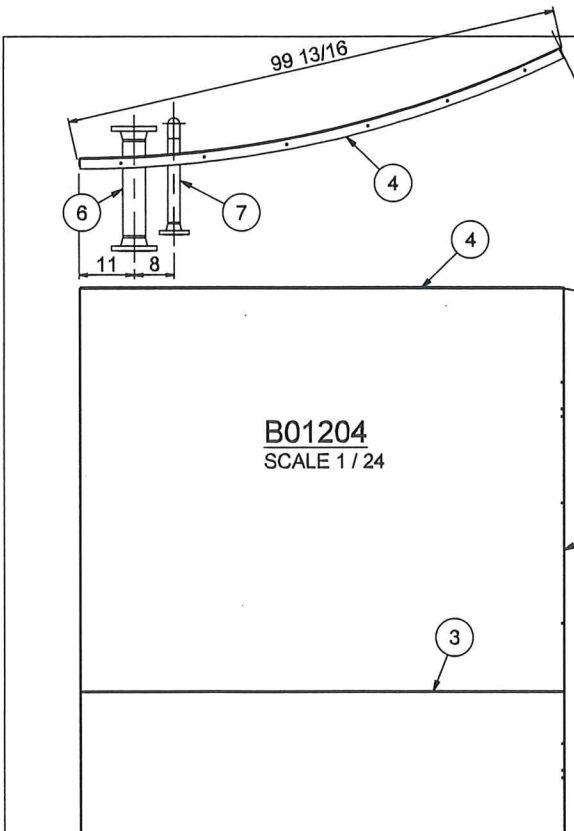
DS  
PROJ

WALL PANEL ASSEMBLY

BI-PURE WATER

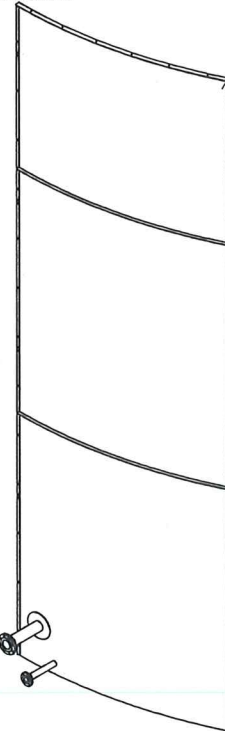
B01203

REGISTERED PROFESSIONAL  
G.W. THORPE  
LICENSEE  
Nov 17/20

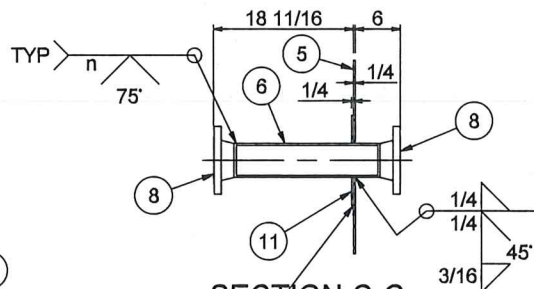
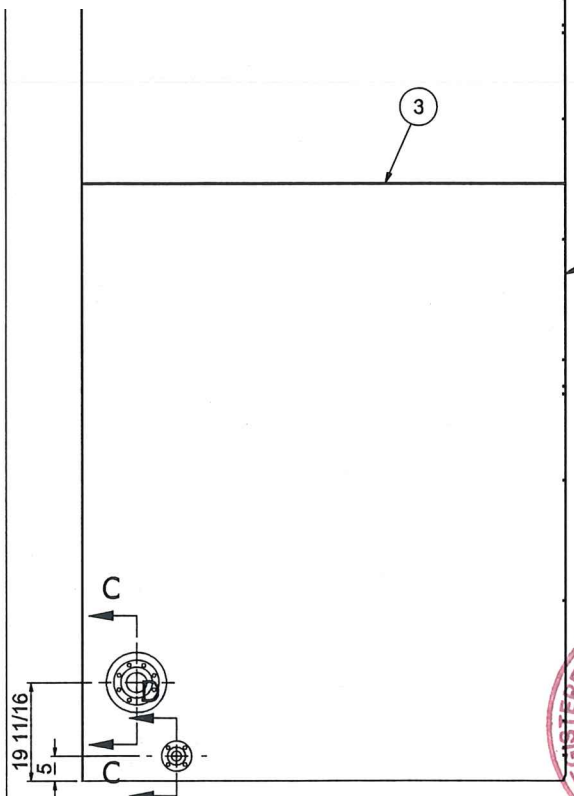


NO.	QTY	PART #	DESCRIPTION	UNIT WT.	COMMENTS
1	1	p01202	1/4 M.S. - 102 13/32 x 119	866.5	
2	1	p01203	1/4 M.S. - 102 13/32 x 80 1/4	584.3	
3	2	p01204	1/4 M.S. - 6 31/32 x 99 5/16	10.6	
4	1	p01206	1/4 M.S. - 7 1/2 x 99 9/16	14.1	
5	1	p01209	1/4 M.S. - 102 13/32 x 119	864.9	
6	1	n01202	4 SCH40 MS PIPE x 18 15/16	17.1	
7	1	n01205	2 SCH40 MS PIPE x 16 3/4	5.1	
8	2		4" - 150# RFWN FLANGE	16.3	
9	1		2" - 150# RFWN FLANGE	6.3	
10	1		2" SCH 40 90 DEG LR ELBOW	1.4	
11	1	p01223	1/4 M.S. - 12 x 12	6.9	

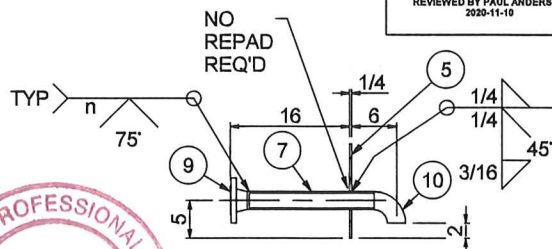
WEIGHT: 2420.525 lbmass



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BASED ON DATA OBTAINED FROM PERIODIC  
SITE INSPECTIONS BY EXP STAFF, AND DATA  
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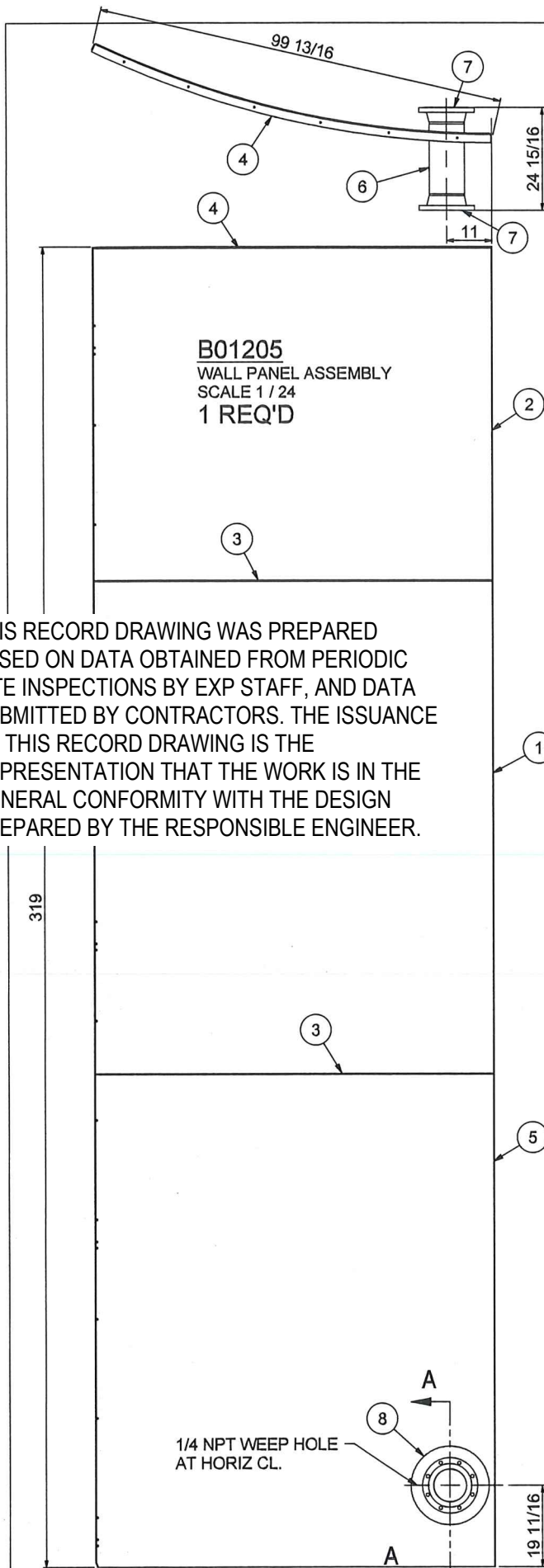


SECTION C-C  
SCALE 1 / 16



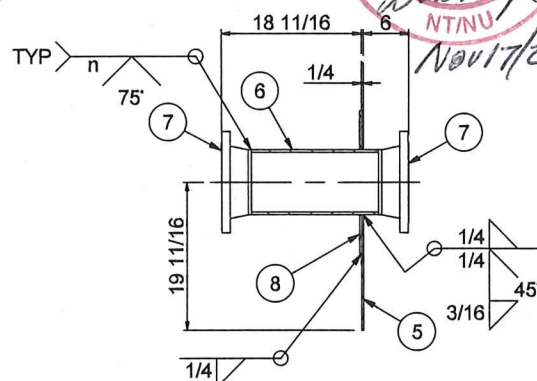
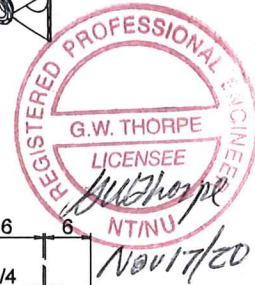
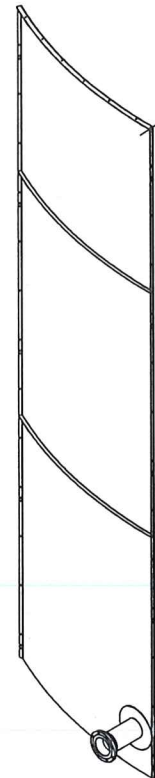
SECTION D-D  
SCALE 1 / 16

NOTE: n = NOZZLE WALL THICKNESS



NO.	QTY	PART #	DESCRIPTION	UNIT WT.	COMMENTS
1	1	p01202	1/4 M.S. - 102 13/32 x 119	866.5	
2	1	p01203	1/4 M.S. - 102 13/32 x 80 1/4	584.3	
3	2	p01204	1/4 M.S. - 6 31/32 x 99 5/16	10.6	
4	1	p01206	1/4 M.S. - 7 1/2 x 99 9/16	14.1	
5	1	p01210	1/4 M.S. - 102 13/32 x 119	862.2	
6	1	n01201	8 SCH40 MS PIPE x 16 15/16	40.4	
7	2		8" - 150# RFWN FLANGE	40.3	
8	1	p01222	1/4 M.S. - 19 x 19 1/32	15.9	

WEIGHT: 2485.365 lbmass



**SECTION A-A**  
**SCALE 1 / 16**

NOTE: n = NOZZLE WALL THICKNESS



PARR METAL FABRICATORS  
LIMITED  
-STEEL-STAINLESS-ALUMINUM-

J0268

DS

PROJ

BI-PURE WATER

WALL PANEL ASSEMBLY

B01205

12/19/2017

DATE

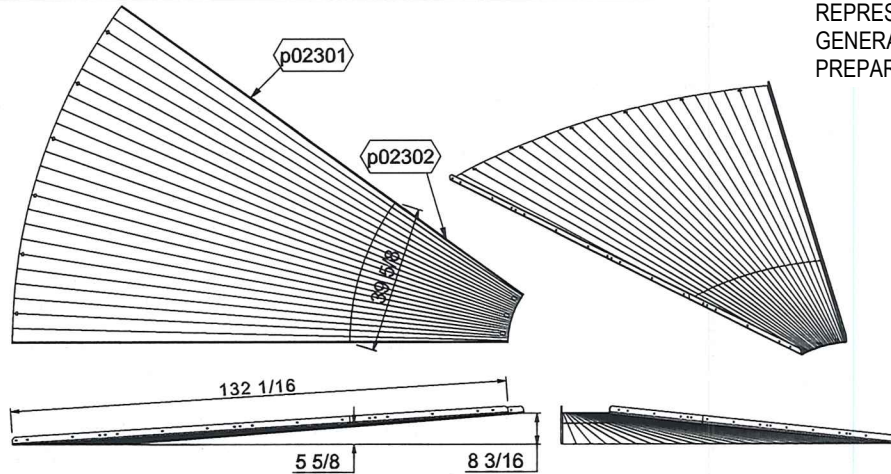
REV

DATE

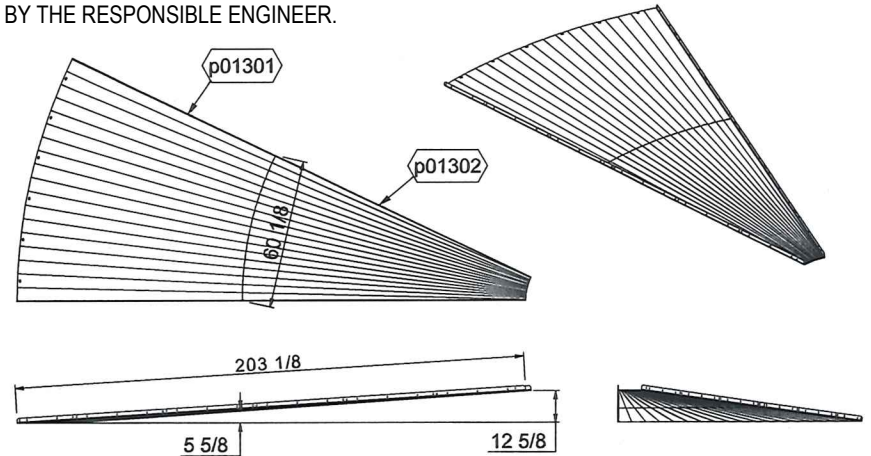
REV



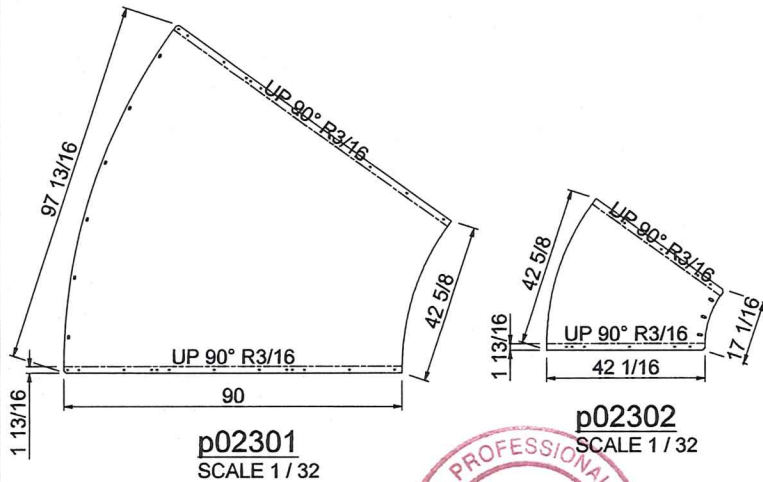
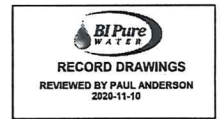
THIS RECORD DRAWING WAS PREPARED  
 BASED ON DATA OBTAINED FROM PERIODIC  
 SITE INSPECTIONS BY EXP STAFF, AND DATA  
 SUBMITTED BY CONTRACTORS. THE ISSUANCE  
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 GENERAL CONFORMITY WITH THE DESIGN  
 PREPARED BY THE RESPONSIBLE ENGINEER.



**B02301**  
 ROOF PANEL  
 SCALE 1 / 32  
 9 REQ'D

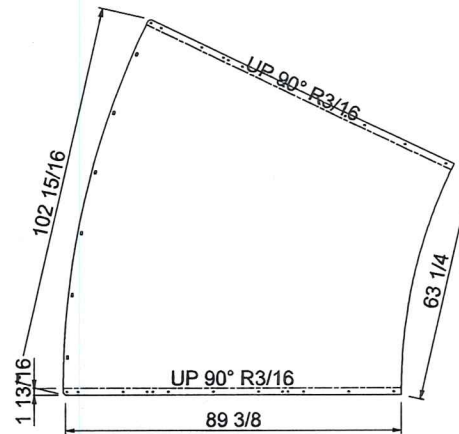


**B01301**  
 ROOF PANEL ASSEMBLY  
 SCALE 1 / 48  
 12 REQ'D

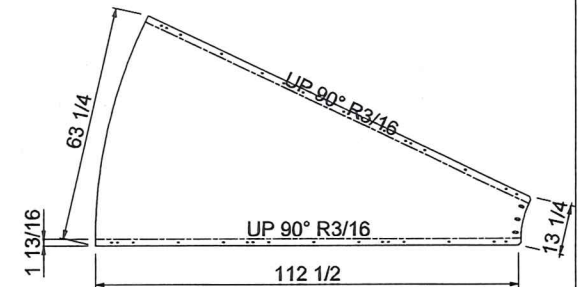


**p02301**  
 SCALE 1 / 32

**p02302**  
 SCALE 1 / 32



**p01301**  
 SCALE 1 / 32



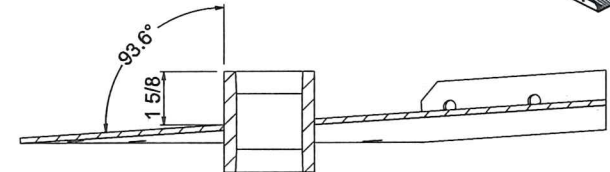
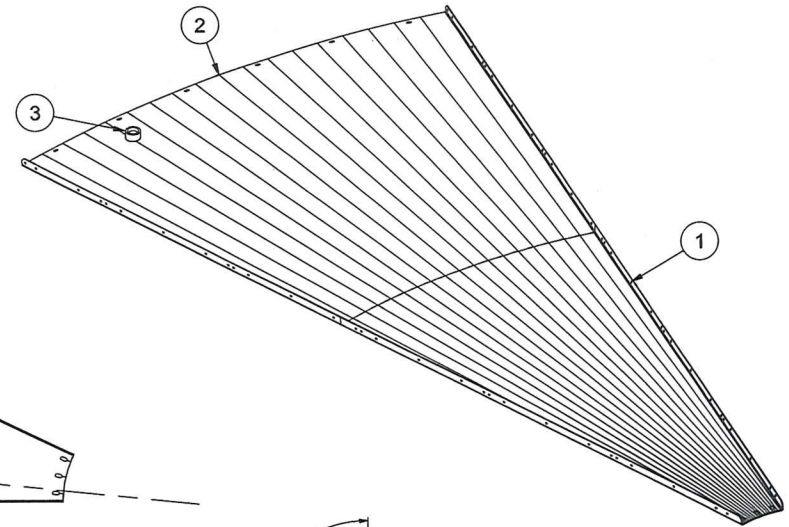
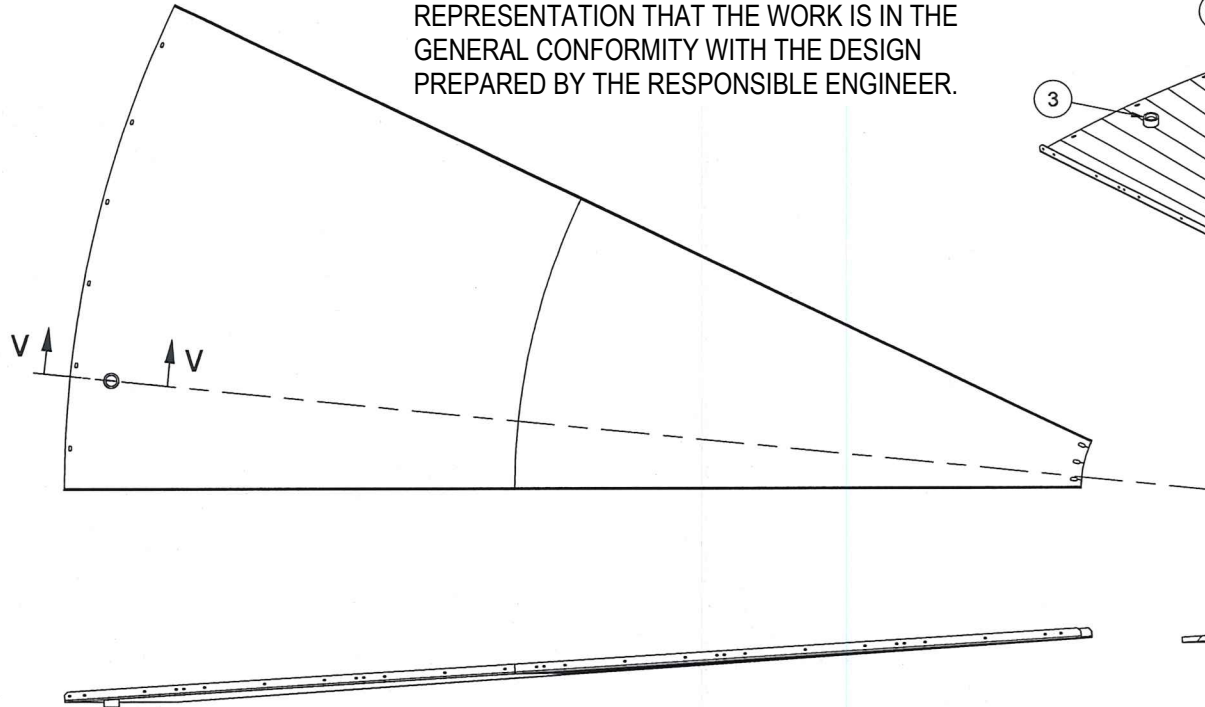
**p01302**  
 SCALE 1 / 32



PARR METAL FABRICATORS LIMITED STEEL-STAINLESS-ALUMINUM	JOB NO. J0268	DATE 1/5/2018	DRAWN BY DS	CHECKED BY PROJ	BI-PURE WATER	REV
					ROOF PANEL	B02301

THIS RECORD DRAWING WAS PREPARED  
 BASED ON DATA OBTAINED FROM PERIODIC  
 SITE INSPECTIONS BY EXP STAFF, AND DATA  
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 PREPARED BY THE RESPONSIBLE ENGINEER.

NO.	QTY	PART #	DESCRIPTION	UNIT WT.	COMMENTS
1	1	p01302	3/16 M.S. - 61 21/32 x 115 3/4	232.2	
2	1	p01304	3/16 M.S. - 100 11/32 x 104 1/32	402.2	
3	1		2" NPT - 3M FULL COUPLING	3.2	



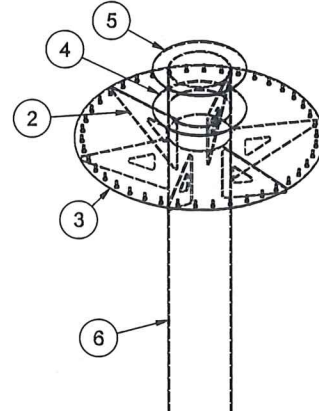
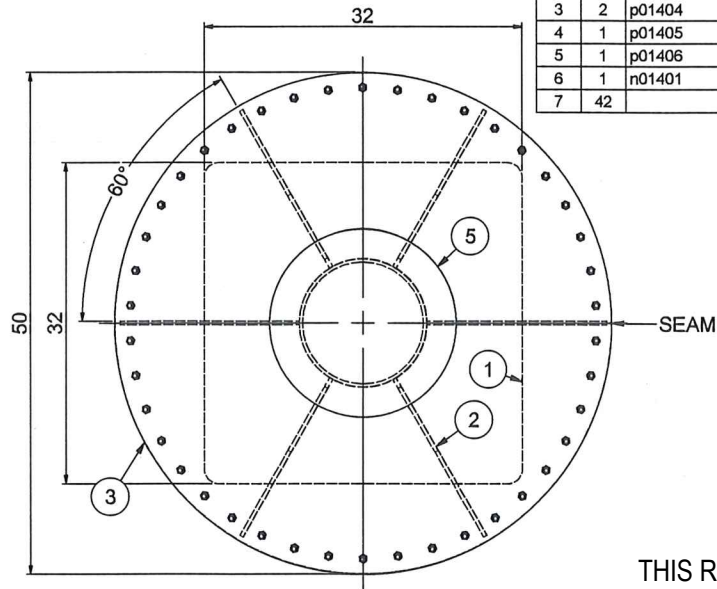
**B01303**  
 ROOF PANEL ASSEMBLY  
 SCALE 1 / 24  
 1 REQ'D

**SECTION V-V**  
 SCALE 1 / 4

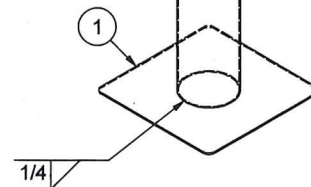
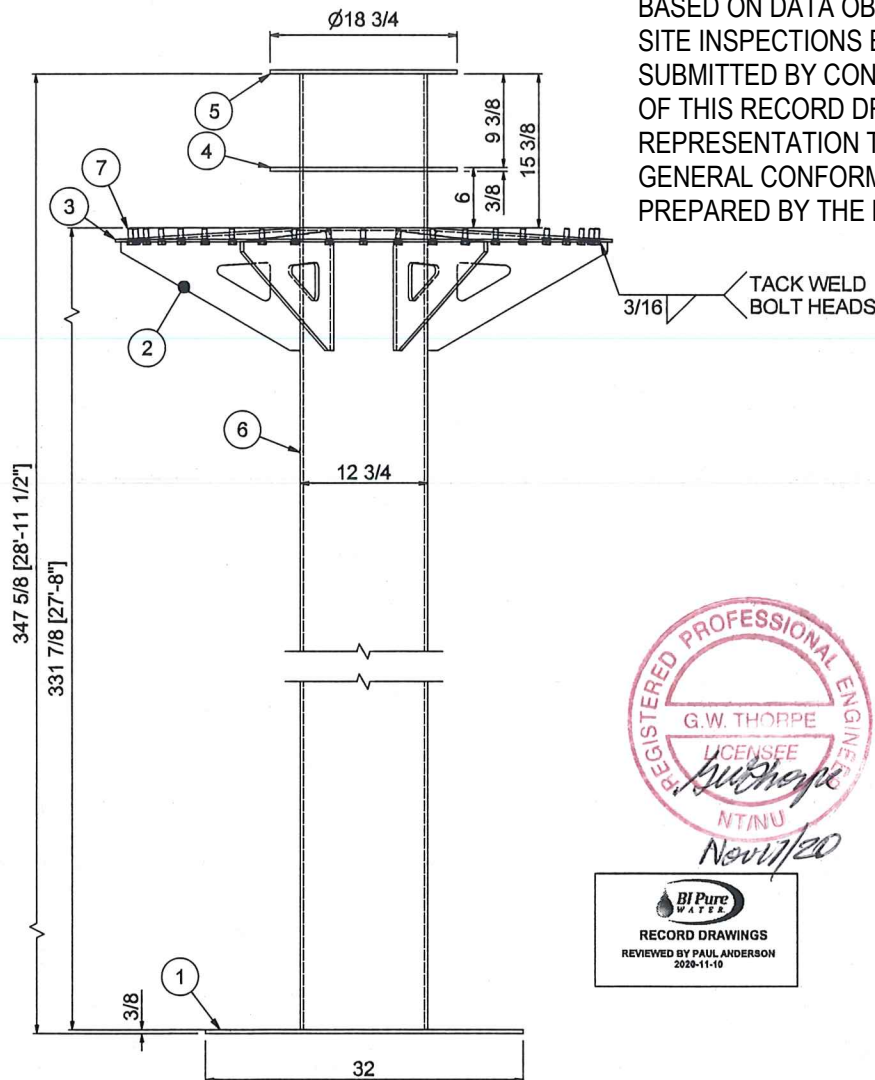


P M F	PARR METAL FABRICATORS LIMITED ~STEEL~STAINLESS~ALUMINUM~	J0268	DS	PROJ	BI-PURE WATER	REV
		12/19/2017	TITLE	ROOF PANEL ASSEMBLY	DWG	B01303

NO.	QTY	PART #	DESCRIPTION	UNIT WT.	COMMENTS
1	1	p01402	3/8 M.S. - 32 x 32	108.8	
2	6	p01403	3/8 M.S. - 11 15/16 x 18 1/8	11.6	
3	2	p01404	1/4 M.S. - 25 1/32 x 50 3/32	64.8	
4	1	p01405	3/8 M.S. - 14 1/8 x 14 1/8	15.7	
5	1	p01406	3/8 M.S. - 18 3/4 x 18 3/4	29.4	
6	1	n01401	12 3/4 SCH 40 PIPE x 347 7/32	1239.6	
7	42		1/2" UNC HEX BOLT X 1.25 LG	0.1	



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**B01401**  
CENTER SUPPORT COLUMN  
SCALE 1 / 12  
1 REQ'D

ALL WELDS 1/4" FILLET WELD ALL AROUND (SEAL WELD)



PARR METAL FABRICATORS  
LIMITED  
-STEEL-STAINLESS-ALUMINUM-

J0268 DS  
12/20/2017

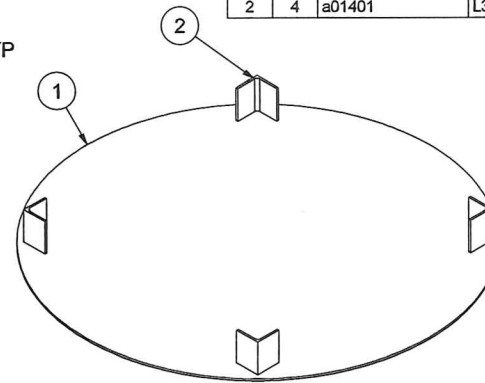
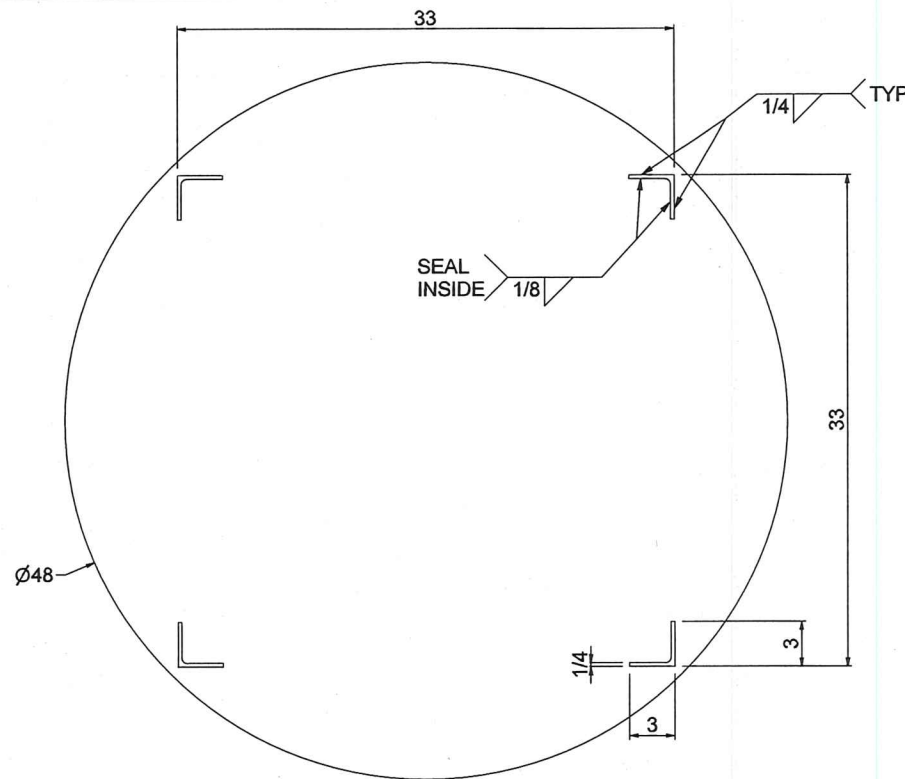
CENTER SUPPORT COLUMN

BI-PURE WATER

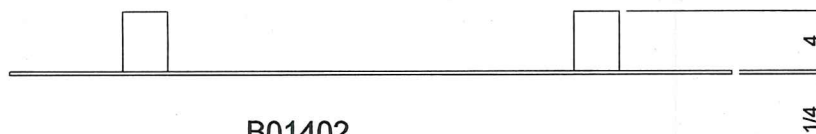
B01401



NO.	QTY	PART #	DESCRIPTION	UNIT WT.	COMMENTS
1	1	p01401	1/4 M.S. - 48 x 48	128.5	
2	4	a01401	L3x3x1/4 MS ANGLE x 4	1.7	



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**B01402**  
COLUMN STRIKER PLATE  
SCALE 1/8  
1 REQ'D



PARR METAL FABRICATORS  
LIMITED  
-STEEL-STAINLESS-ALUMINUM-

JOB NO. J0268  
DATE 12/20/2017

DS  
PROJ.

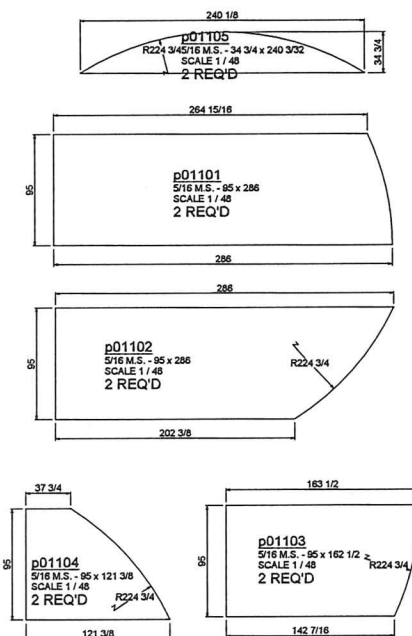
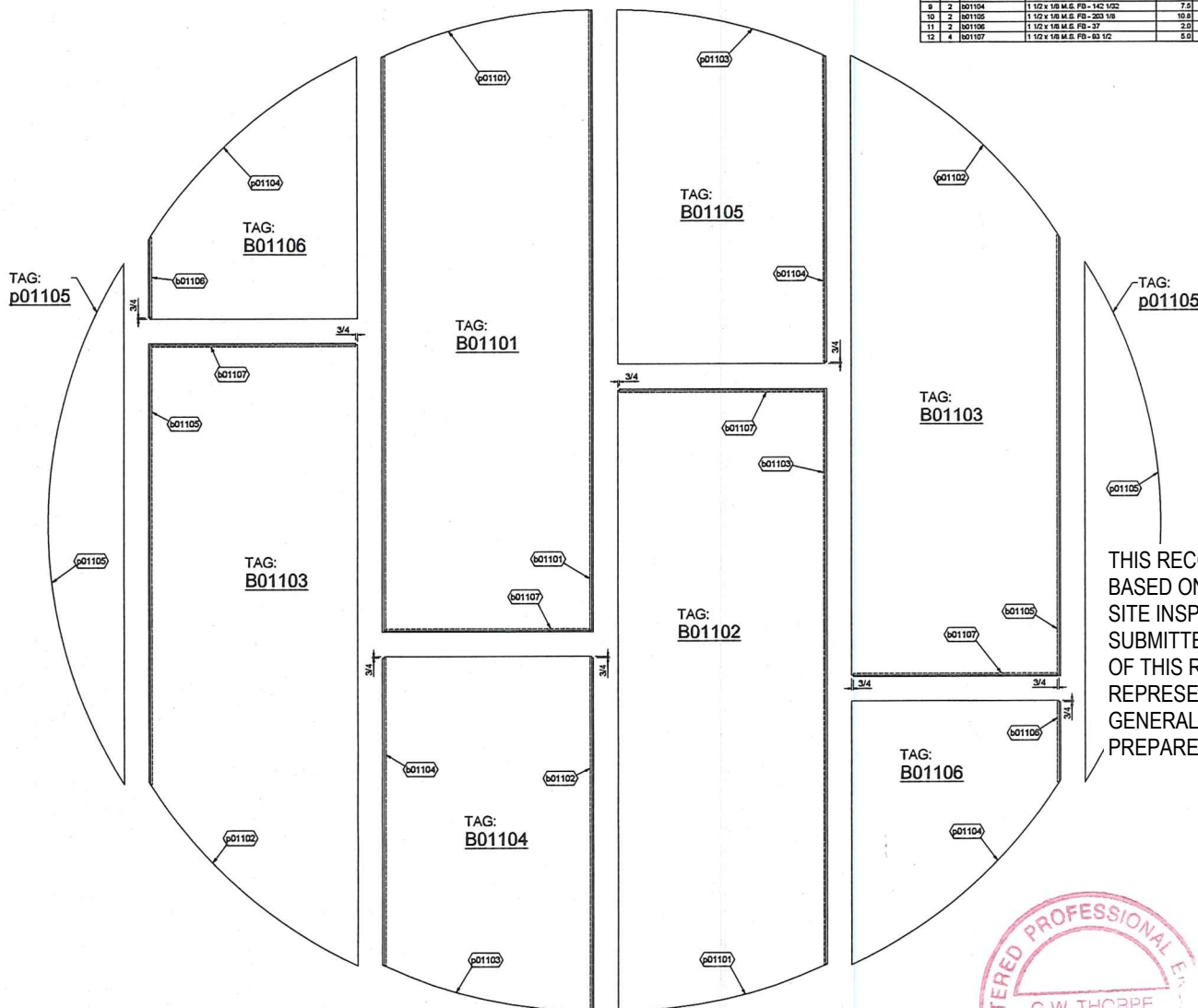
BI-PURE WATER  
COLUMN STRIKER PLATE

DWG

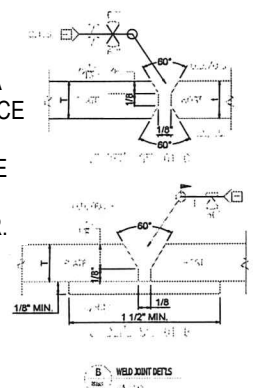
B01402

REV

NO	QTY	PART #	DESCRIPTION	UNIT WT	COMMENTS
1	2	001101	516 M.S. - BGV 280	2353.0	
2	2	001102	516 M.S. - BGV 280	2126.0	
3	2	001103	516 M.S. - BGV 162	1300.9	
4	2	001104	516 M.S. - BGV 127.38	707.0	
5	2	001105	516 M.S. - 34.34 - 240.302	401.4	
6	1	001101	112 L M.B. PG- 230.34	15.3	
7	1	001102	112 L M.B. PG- 162.34	8.0	
8	1	001103	112 L M.B. PG- 262.32	14.7	
9	2	001104	112 L M.B. PG- 142.152	7.5	
10	2	001105	112 L M.B. PG- 203.18	10.0	
11	2	001106	112 L M.B. PG- 37	2.0	
12	1	001107	112 L M.B. PG- 89.3	5.0	

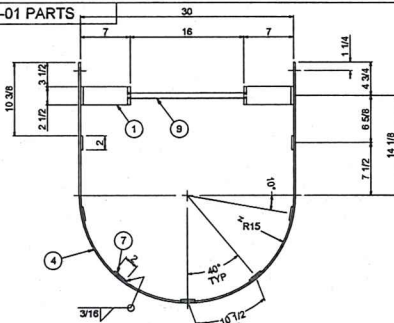


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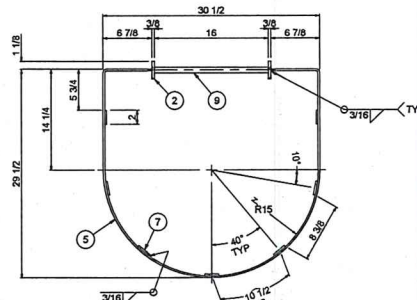


		<b>PARR METAL FABRICATORS LIMITED</b> -STEEL-STAINLESS-ALUMINUM-	
PROJECT		WATER TREATMENT TANKS	
CLIENT		BI-PURE WATER	
TITLE		FLOOR ASSEMBLY	
208 F 30268	DRAWN DS	DATE 3/14/2018	6282 10000 MO D B01100
SCALE AS NOTED / REF		SHEET 1 OF 1	

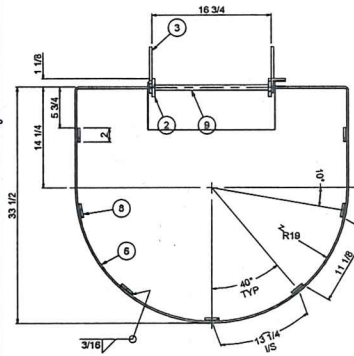
J0256-01 PARTS



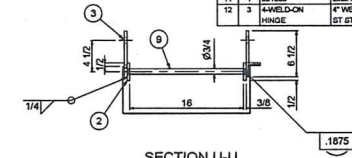
VIEW P-P  
SCALE 1/8



SECTION R-R  
SCALE 1/8

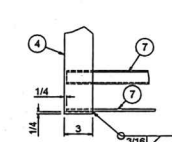
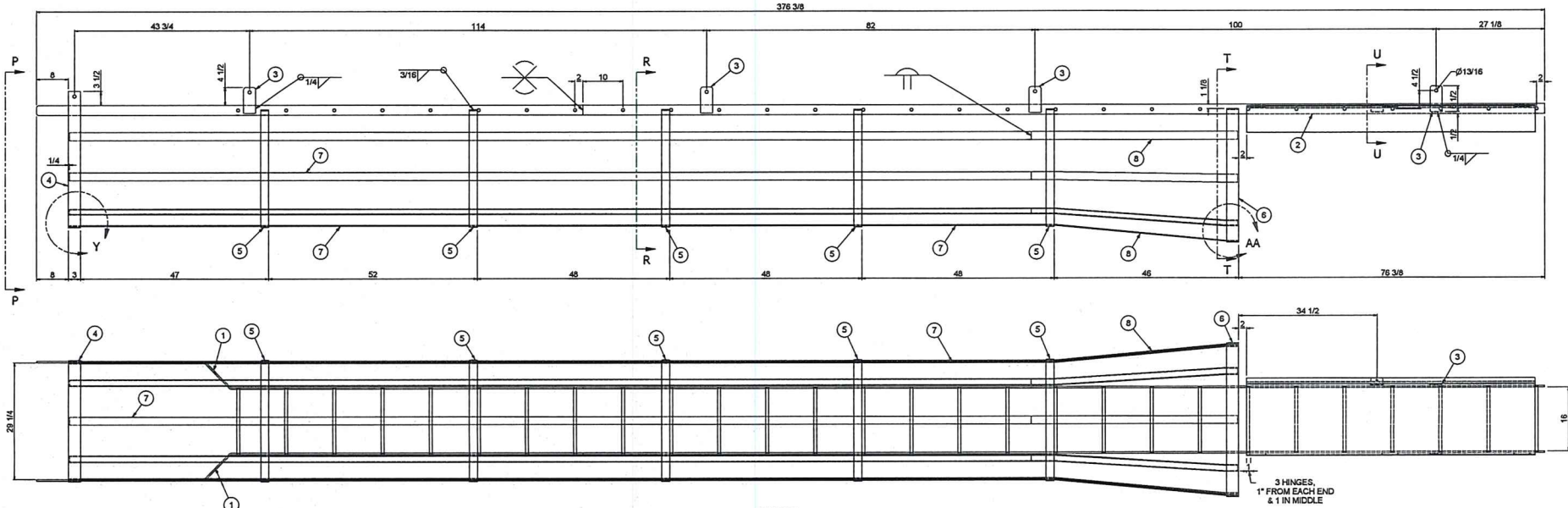


SECTION T-T  
SCALE 1/8

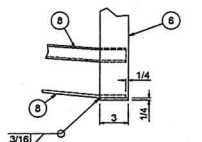


SECTION U-U  
SCALE 1/8

NO.	QTY.	PART #	DESCRIPTION	UNIT WT.	COMMENTS
1	2	001002	2 1/2 x 3/8 M.S. PLAT BAR - 138 15/16	38.6	
2	2	001001	2 1/2 x 3/8 M.S. PLAT BAR - 240	62.8	
3	8	001005	1/8 M.S. - 3 1/2 x 1/2	2.0	
4	1	001006	3 1/4 M.S. PLAT BAR - 85 1/4	18.1	
5	5	001007	2 1/4 M.S. PLAT BAR - 88 3/4	12.6	
6	1	001008	3 1/4 M.S. PLAT BAR - 100 5/16	23.3	
7	7	001009	2 1/4 M.S. PLAT BAR - 240	34.1	
8	7	001010	2 1/4 M.S. PLAT BAR - 51 11/16	7.3	
9	28	001011	3/4 x 3/8 M.S. ROUND BAR - 18 3/8	2.1	
10	1	001012	1/8 M.S. - 3 1/2 x 1/2	2.0	
11	1	001013	2x2x1/8 M.S. ANGLE - 3	41.7	
12	3	4-WELD-ON	4 WELD-ON ALUM. HINGE C/W 3/8" ST. STL. PIN	0.0	



DETAIL Y  
TOP CAGE END  
SCALE 1/6



DETAIL AA  
BOTTOM CAGE END  
SCALE 1/6

B01502  
EXTERIOR LADDER  
SCALE 1/12  
1 REQ'D

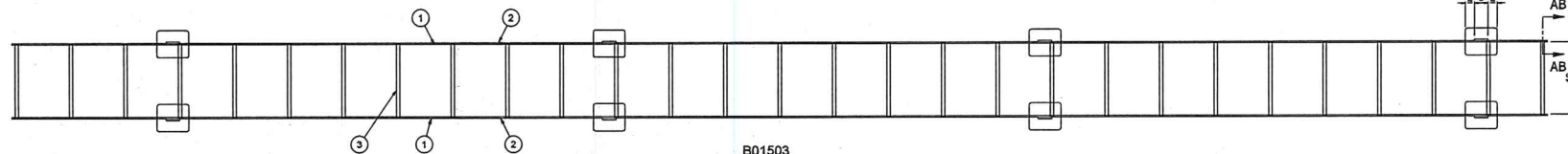
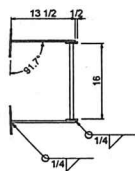
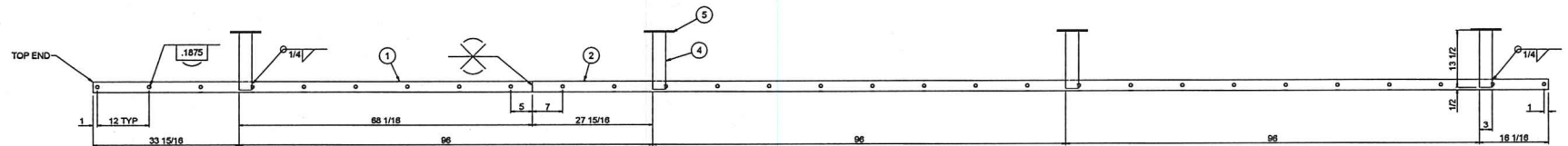
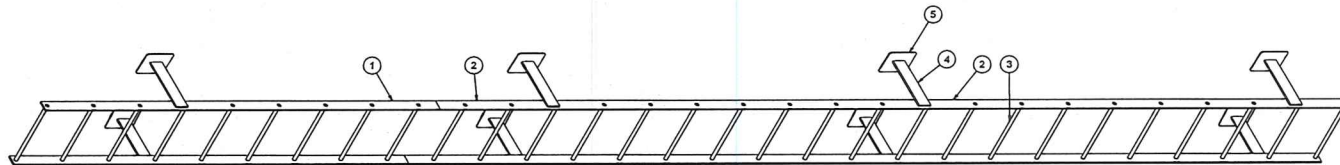
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<b>PARR METAL FABRICATORS LIMITED</b> -STEEL-STAINLESS-ALUMINUM-	
PROJECT: WATER TREATMENT TANKS	
CLIENT: BI-PURE WATER	
TITLE: EXTERIOR LADDER	
208-F	10-KW-N
30256	DS
DATE: 3/14/2018	USER: B01502
SCALE AS NOTED	REV
SHEET 1 OF 1	

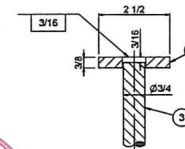


NO.	QTY	PART #	DESCRIPTION	UNIT WT.	COMMENTS
1	2	B01504	2 1/2" x 3/8" M.S. PLAT BAR - 102	28.7	
2	2	B01503	2 1/2" x 3/8" M.S. PLAT BAR - 256	61.7	
3	20	B01511	3/4" x 1/8" M.S. ROUND BAR x 18 3/8"	2.1	
4	8	B01509	3/8" M.S. - 3 x 13 1/2"	4.3	
5	8	B01510	1/4" M.S. - 7 x 6	3.0	



B01503  
INTERIOR LADDER  
SCALE 1/12  
1 REQ'D

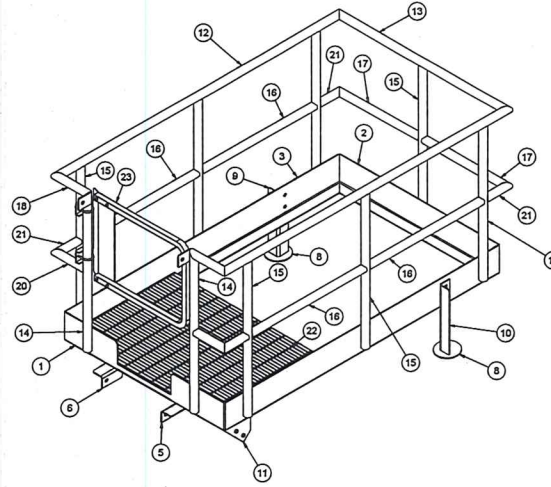
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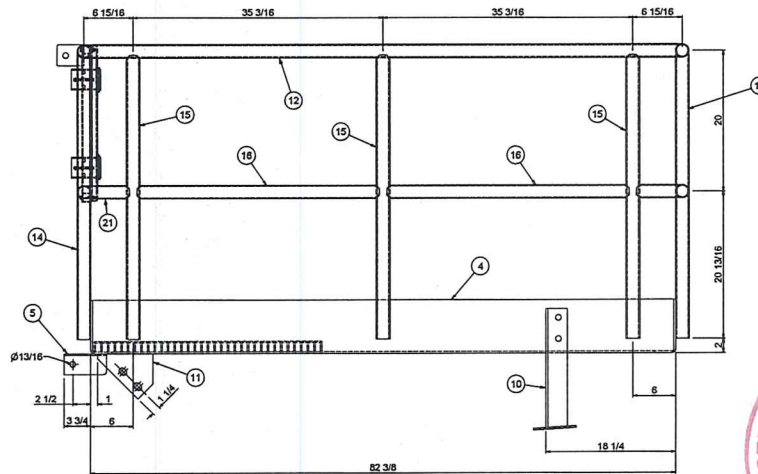
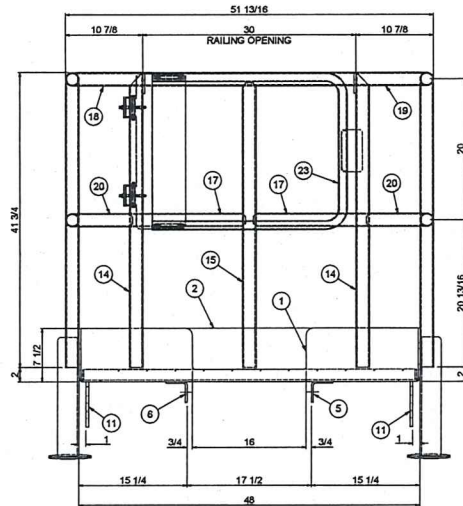
VIEW AB-AB  
SCALE 1/2



P.M.F.		PARR METAL FABRICATORS LIMITED	
PROJECT		WATER TREATMENT TANKS	
CLIENT		BI-PURE WATER	
TITLE		INTERIOR LADDER	
JOB #	DRAWN	DATE	SCALE
J0256	DS	3/14/2018	D B01503
SCALE AS NOTED		REF	SHEET 1 OF 1

[illegible]

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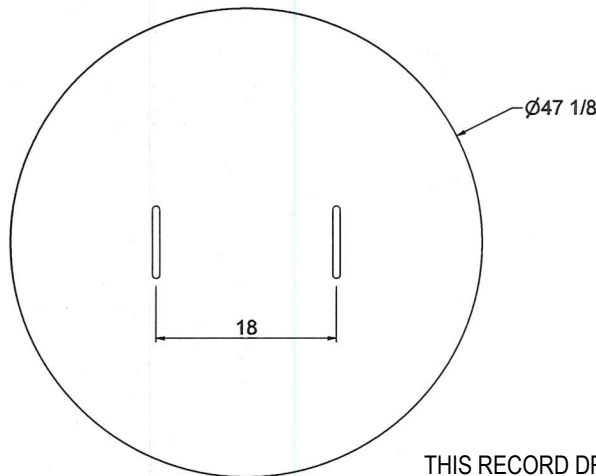
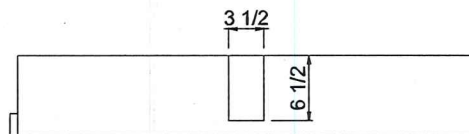
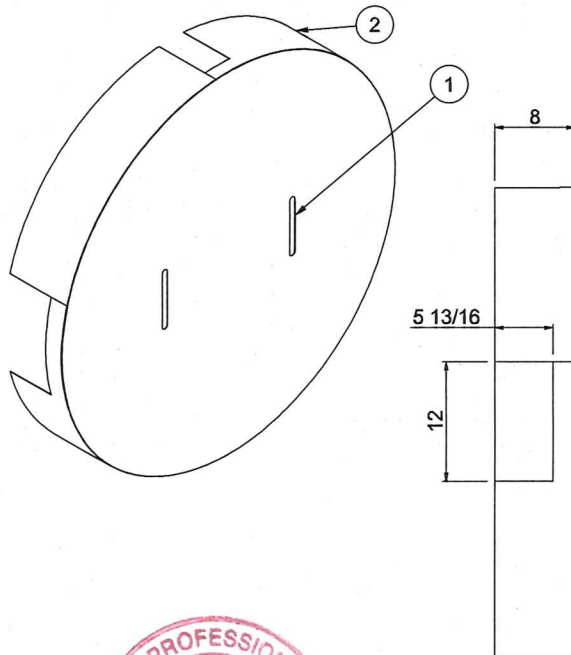


2 PLATFORMS REQ'D



**B01501**  
**ROOF ACCESS PLATFORM**  
**SCALE 1/8**  
**2 REQ'D**

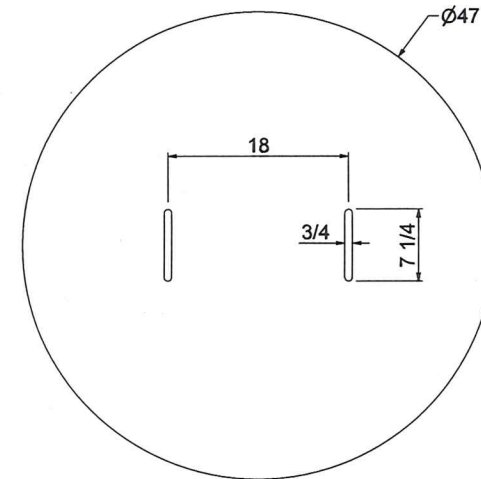
REGISTERED PROFESSIONAL ENGINEER  
G.W. THORPE  
LICENSEE  
No. 1720



# **MANWAY COVER**

SCALE 1 / 12  
4 REQ'D

NO.	QTY	PART #	DESCRIPTION	UNIT WT.	COMMENTS
1	1	pM06	16 ga. M.S. - 47 x 47	29.3	
2	1	pM07	16 ga. M.S. - 8 x 147 27/32	18.5	

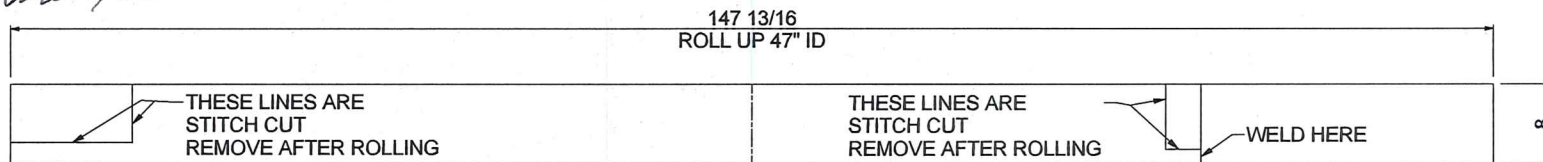


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**pM06**  
16 ga. M.S. - 47 x 47  
SCALE 1 / 12  
**4 REQ'D**



*Nov 17/20*



THESE LINES ARE  
STITCH CUT  
REMOVE AFTER ROLLING

THESE LINES ARE  
STITCH CUT  
REMOVE AFTER ROLLING

WELD HERE



**pM07**  
16 ga. M.S. - 8 x 147 27/32  
SCALE 1 / 12  
**4 REQ'D**



PARR METAL FABRICATORS  
LIMITED  
~STEEL~STAINLESS~ALUMINUM~

DATE JOB  
6/5/2018

TITLE DWN  
DS

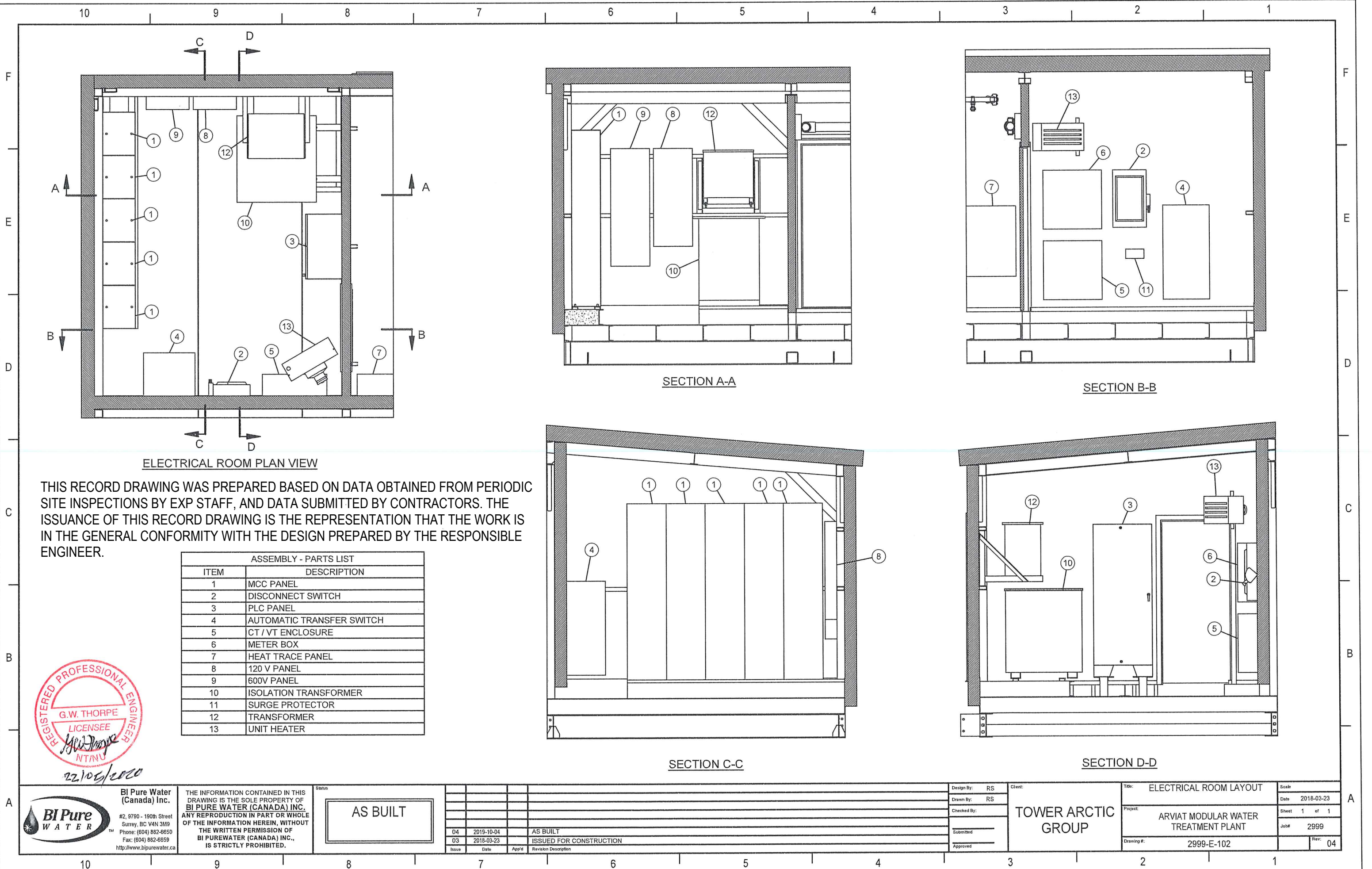
PROJ

DWG

MANWAY COVER

REV





ELECTRICAL ROOM PLAN VIEW

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ASSEMBLY - PARTS LIST	
ITEM	DESCRIPTION
1	MCC PANEL
2	DISCONNECT SWITCH
3	PLC PANEL
4	AUTOMATIC TRANSFER SWITCH
5	CT / VT ENCLOSURE
6	METER BOX
7	HEAT TRACE PANEL
8	120 V PANEL
9	600V PANEL
10	ISOLATION TRANSFORMER
11	SURGE PROTECTOR
12	TRANSFORMER
13	UNIT HEATER



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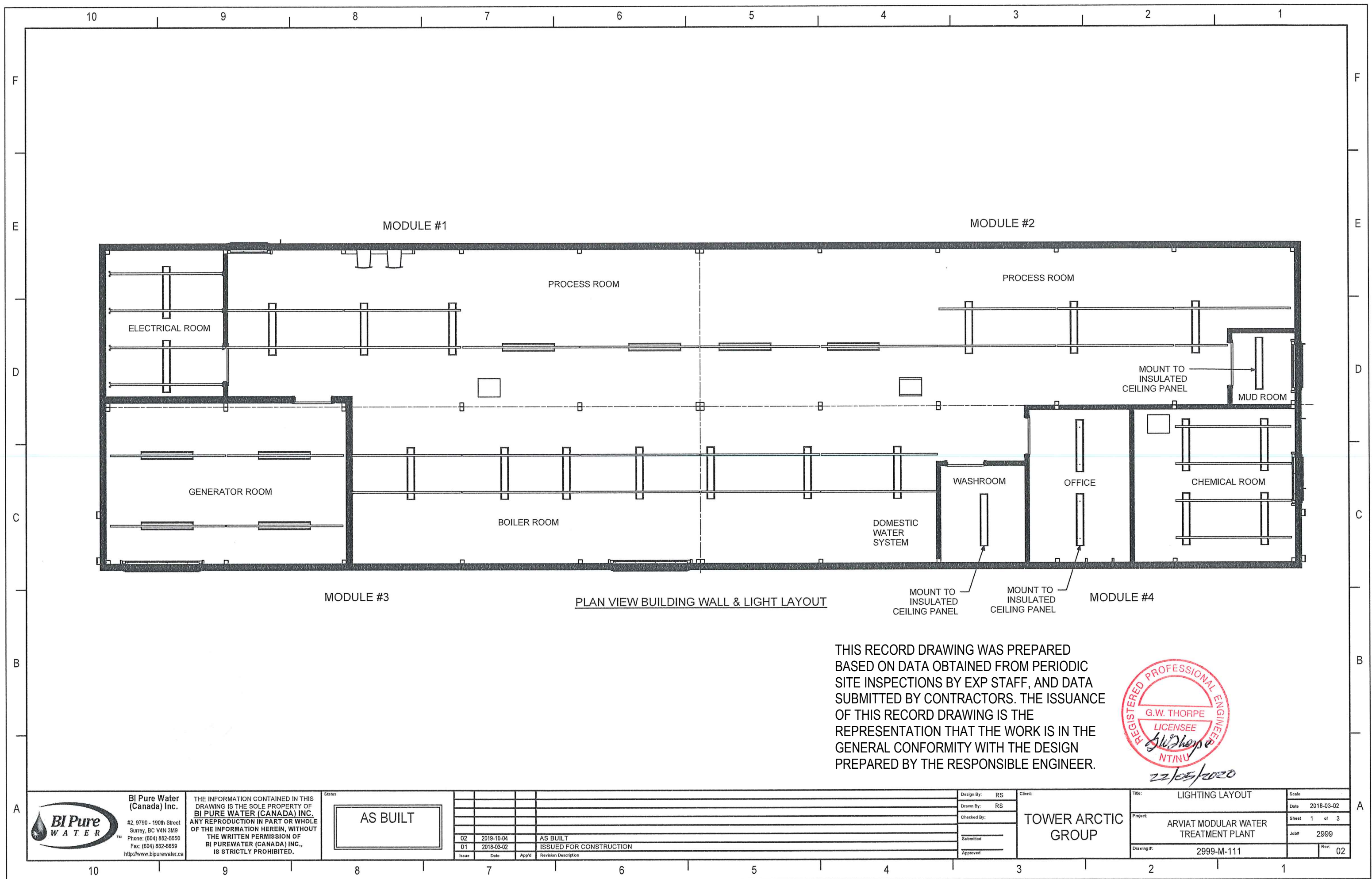
Issue	Date	App'd	Revision Description
04	2019-10-04		AS BUILT
03	2018-03-23		ISSUED FOR CONSTRUCTION

Design By:	RS
Drawn By:	RS
Checked By:	
Submitted	
Approved	

Client: TOWER ARCTIC GROUP

Title:	ELECTRICAL ROOM LAYOUT	Scale:	
Date:	2018-03-23	Sheet:	1 of 1
Project:	ARVIAT MODULAR WATER TREATMENT PLANT	Job#:	2999
Drawing #:	2999-E-102	Rev:	04




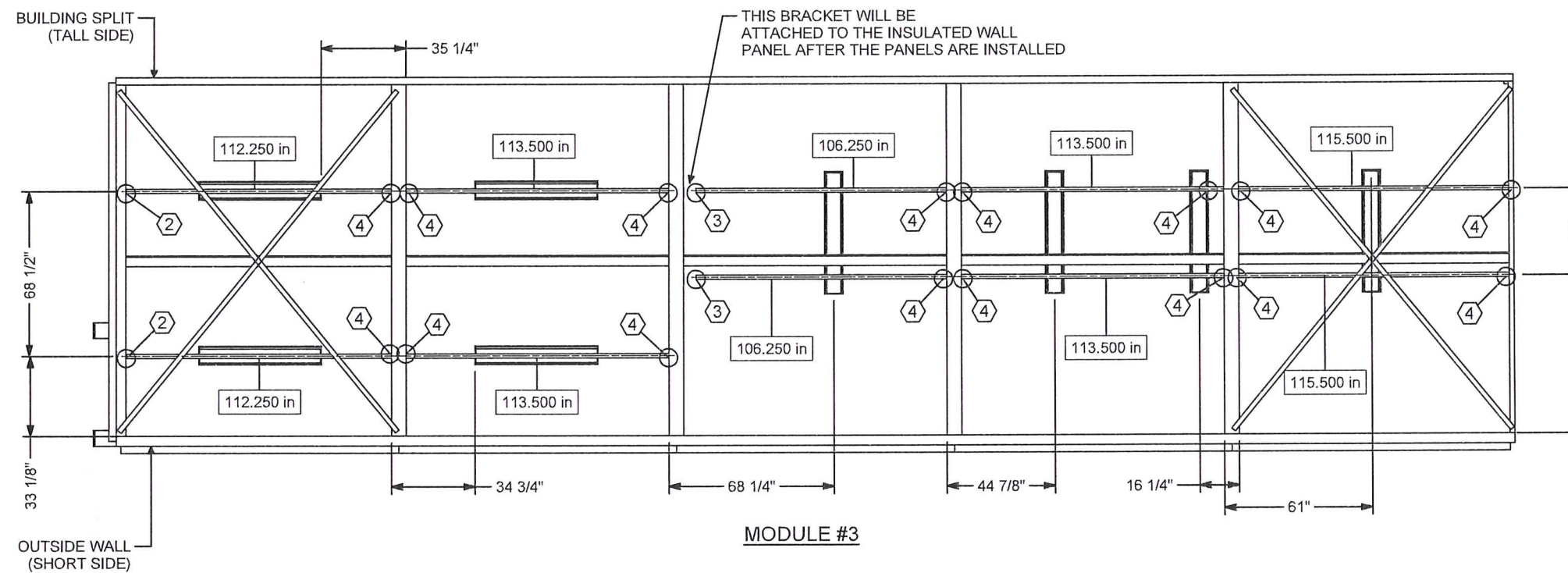
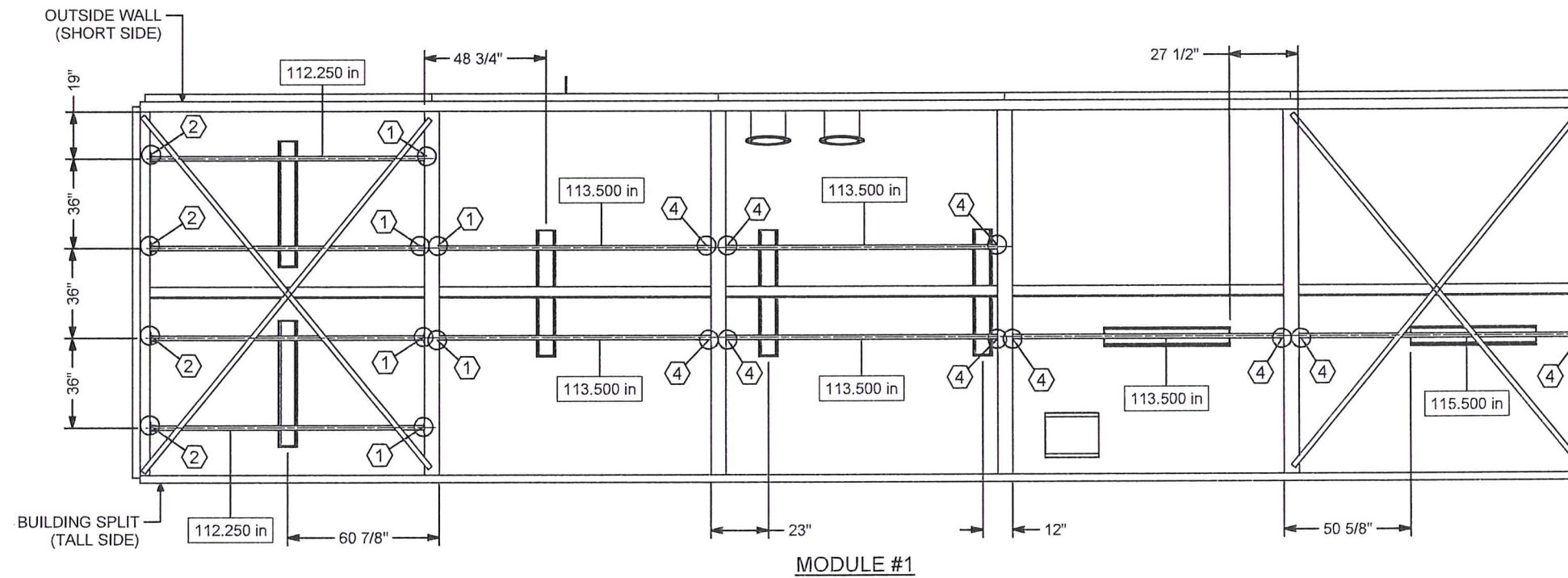


PLAN VIEW BUILDING WALL & LIGHT LAYOUT

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			01 2018-03-02 ISSUED FOR CONSTRUCTION		Drawn By: RS			
					Checked By:			
					Submitted			
					Approved			
			Issue	Date	App'd	Revision Description	Project: ARVIAT MODULAR WATER TREATMENT PLANT	Sheet 1 of 3
							Drawing #: 2999-M-111	Job#: 2999
								Rev: 02



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22/05/2020



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Issue	Date	App'd	Revision Description
02	2019-10-04		AS BUILT
01	2018-03-02		ISSUED FOR APPROVAL

Design By: RS  
Drawn By: RS  
Checked By:  
Submitted:  
Approved:

Client:

TOWER ARCTIC GROUP

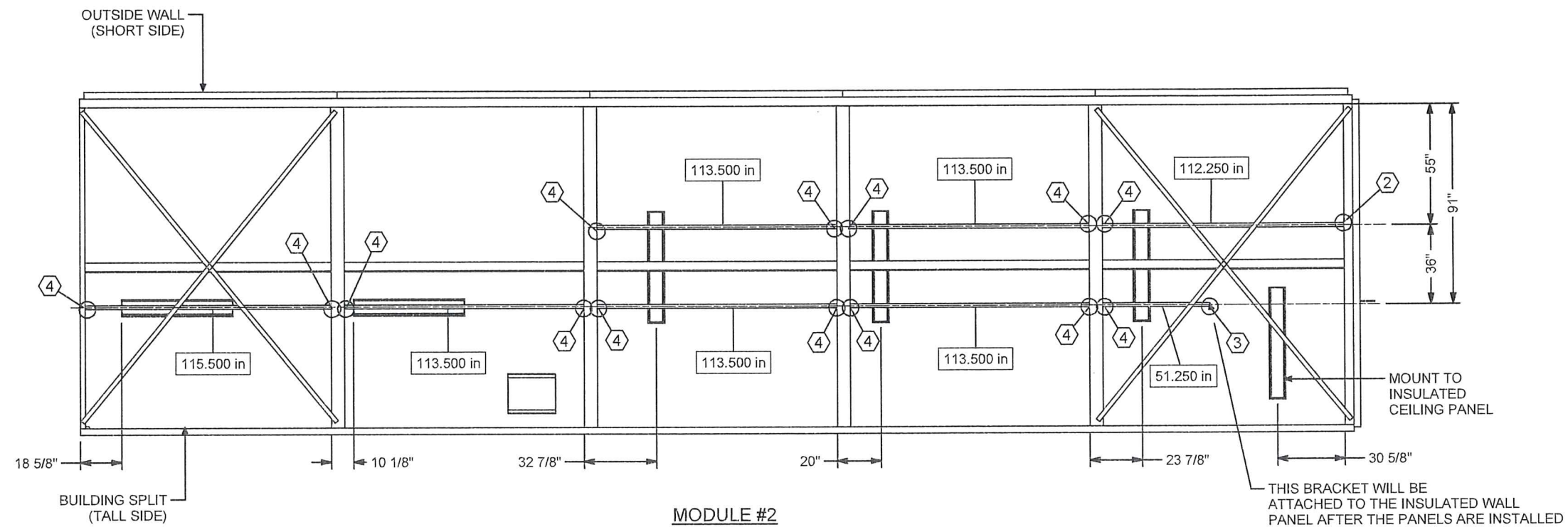
Title: LIGHTING LAYOUT

Project: ARVIAT MODULAR WATER TREATMENT PLANT

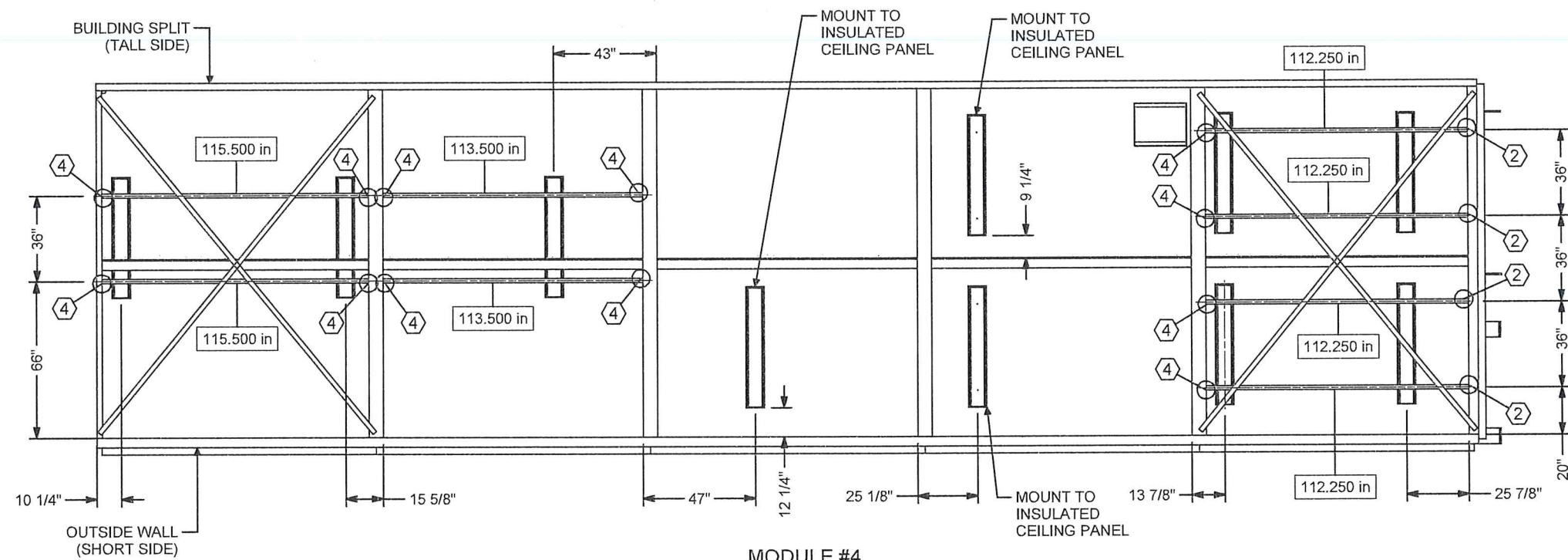
Drawing #: 2999-M-111

Scale: 2018-03-02  
Date: 2018-03-02  
Sheet: 2 of 3  
Job #: 2999  
Rev: 02





MODULE #2



MODULE #4

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Issue	Date	App'd	Revision Description
02	2019-10-04		AS BUILT
01	2018-03-02		ISSUED FOR APPROVAL

Design By: RS  
Drawn By: RS  
Checked By:  
Submitted  
Approved

Client: TOWER ARCTIC GROUP

Title: LIGHTING LAYOUT  
Date: 2018-03-02  
Project: ARVIAT MODULAR WATER TREATMENT PLANT  
Drawing #: 2999-M-111  
Sheet: 3 of 3  
Job #: 2999  
Rev: 02



ASSEMBLY - PARTS LIST							
ITEM	ITEM QTY	DESCRIPTION	SIZE	MATERIAL	MANUFACTURER	MODEL #	SPECIFICATION
1	1	SUMP PUMP	1-1/2"	C.I.	LIBERTY	250	1/3 HP, 1-1/2" FNPT DISCHARGE
2	1	FLOW TRANSMITTER	4"	C.I.	ABB	WATERMASTER	CLASS 150 FLANGE CONNECTION
4	1	BALL VALVE - PVC	1-1/2"	PVC	PRAHER	S6	TRUE UNION, EPDM SEALS
5	1	BALL VALVE - PVC	1"	PVC	PRAHER	S6	TRUE UNION, EPDM SEALS
6	1	BALL VALVE - SS	3/4"	SS	APOLLO	86A-100	3 PIECE, FULL PORT, NPT, 1500 PSI WOG
8	3	BUTTERFLY VALVE	4"	CAST IRON	BRAY	S31	CLASS 150, 250PSI, LUGGED BODY, LEVER HANDLE
9	1	CHECK VALVE	4"	EPDM	EVR	CPI	CLASS 150 ANSI FLANGE CONNECTION
10	2	CHECK VALVE	4"	EPDM	WATERFLEX	WF-3	CLASS 150 ANSI FLANGE CONNECTION
11	1	CHECK VALVE	1-1/2"	PVC	PRAHER	S4	DOUBLE UNION, SOCKET, SS SPRING, EPDM SEALS
12	1	CHECK VALVE	1"	PVC	PRAHER	S4	DOUBLE UNION, SOCKET, SS SPRING, EPDM SEALS
13	4	45 DEGREE ELBOW	4"	PVC	SPEARS	817040	SCH 80, SOC X SOC
14	2	45 DEGREE ELBOW	1"	PVC	SPEARS	817010	SCH 80, SOC X SOC
15	17	90 DEGREE ELBOW	4"	PVC	SPEARS	806040	SCH 80, SOC X SOC
16	2	90 DEGREE ELBOW	1-1/2"	PVC	SPEARS	806015	SCH 80, SOC X SOC
17	1	90 DEGREE ELBOW	1"	PVC	SPEARS	806010	SCH 80, SOC X SOC
19	1	PLUG	1"	PVC	SPEARS	N/A	SCH 80, MPT X FPT
20	1	REDUCER BUSHING	2" X 1"	PVC	SPEARS	837249	SCH 80, SPIG X SOC
21	1	REDUCER BUSHING	2" X 1"	PVC	SPEARS	838249	SCH 80, SPIG X FPT
22	1	REDUCER BUSHING	1" X 3/4"	PVC	SPEARS	838131	SCH 80, SPIG X FPT
23	1	REDUCING TEE	4"x 2"	PVC	SPEARS	801420	SCH 80, SOC X SOC X SOC
24	2	SADDLE	4" X 2"	PVC	SPEARS	866420	SINGLE BRANCH, EPDM O-RING, SS HARDWARE, SOC
25	6	TEE	4"	PVC	SPEARS	801040	SCH 80, SOC X SOC X SOC
26	1	TEE	1"	PVC	SPEARS	801010	SCH 80, SOC X SOC X SOC
28	2	UNION	1-1/2"	PVC	CHEMKOR	857015	SCH 80, SOC X SOC, EPDM O-RING
29	32	VANSTONE FLANGE	4"	PVC	SPEARS	854040	SCH 80, 150#, SOCKET
30	4	VICTAULIC COUPLING - FLEXIBLE #77	4"	D.I.	VICTAULIC	#77	FLEXIBLE COUPLING, 1000PSI, EPDM SEAL
31	15	FLANGE GASKET	4"	EPDM	N/A	N/A	CLASS 150, FULL FACE
32	1	GARDEN HOSE FITTING	3/4" X 3/4"	SS	N/A	N/A	MNPT X HOSE THREAD
33	1	BALL VALVE - PVC	2"	PVC	PRAHER	S6	TRUE UNION, EPDM SEALS
34	1	AIR RELEASE VALVE	2"	PLASTIC	BERMAD		AIR & VACUUM RELEASE, 2" MNPT CONNECTION
H1	6	HANGER ASSEMBLY					
IQ	1	INJECTION QUILL ASSEMBLY					
IS	1	INSTRUMENT SAMPLE ASSEMBLY					
PG	2	PRESSURE GAUGE ASSEMBLY					
PS	2	UNISTRUT PIPE SUPPORT ASSEMBLY					
PT	3	PRESSURE TRANSMITTER ASSEMBLY					
ST	3	SAMPLE TAP ASSEMBLY					
TG	1	TEMPERATURE GAUGE					
TT	1	TEMPERTURE TRANSMITTER					

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 **BI Pure**  
WATER™

**BI Pure Water  
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Status

AS BUILT

02	2019-10-04		AS BUILT
01	2018-03-21		ISSUED FOR CONSTRUCTION
Issue	Date	Ass'd	Revision/Description

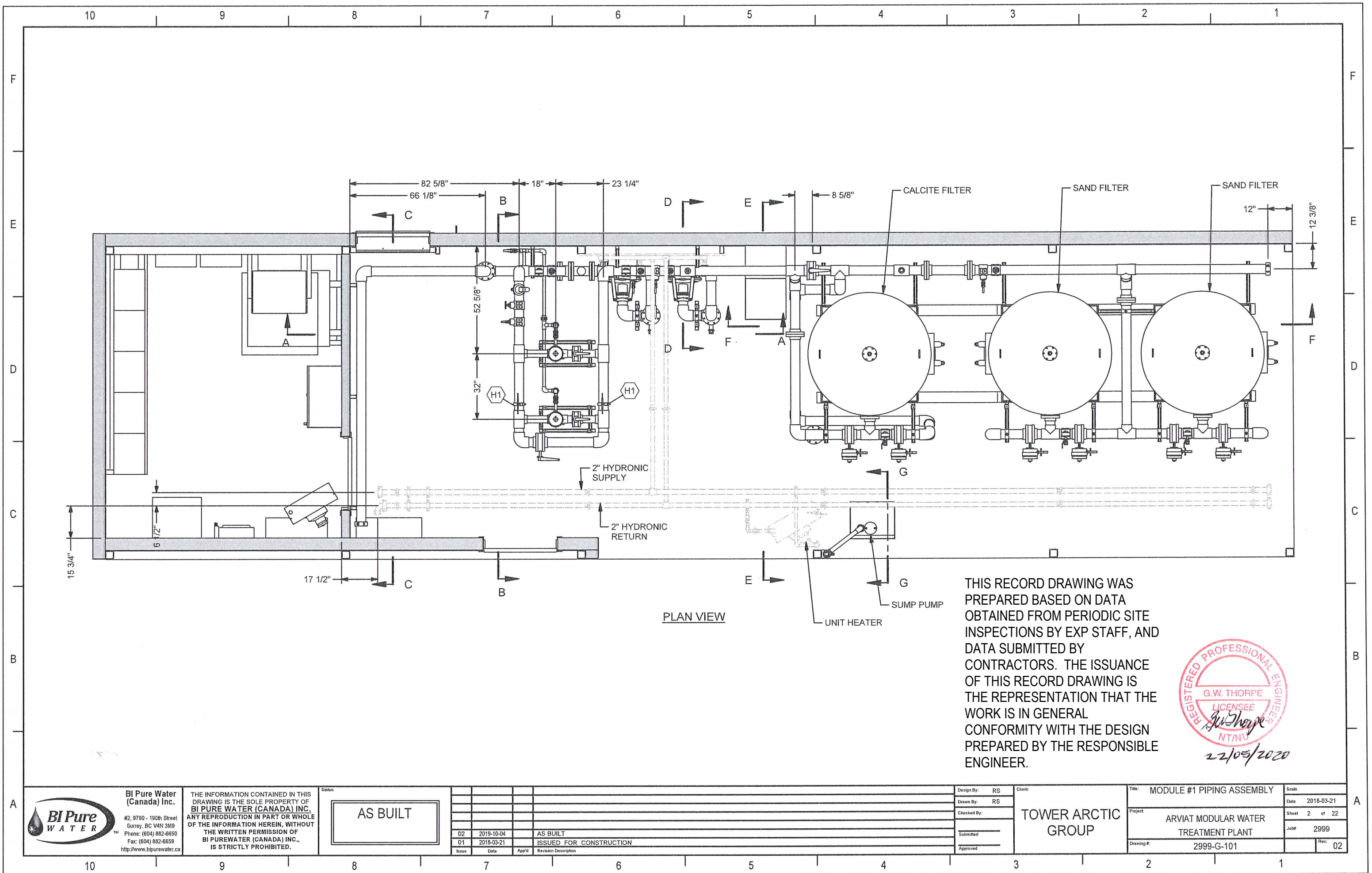
Design By:	RS
Drawn By:	RS
Checked By:	
Submitted	
Approved	

Client:

TOWER ARCTIC  
GROUP

Title: MODULE #1 PIPING ASSEMBLY		Scale:
Project: ARVIAT MODULAR WATER TREATMENT PLANT		Date: 2018-03-21
		Sheet 1 of 22
		Job#: 2999
Drawing #: 2999-G-101	Rev: 02	





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AS BUILT

Issue	Date	App'd	Revision Description
02	2019-10-04		AS BUILT
01	2018-03-21		ISSUED FOR CONSTRUCTION

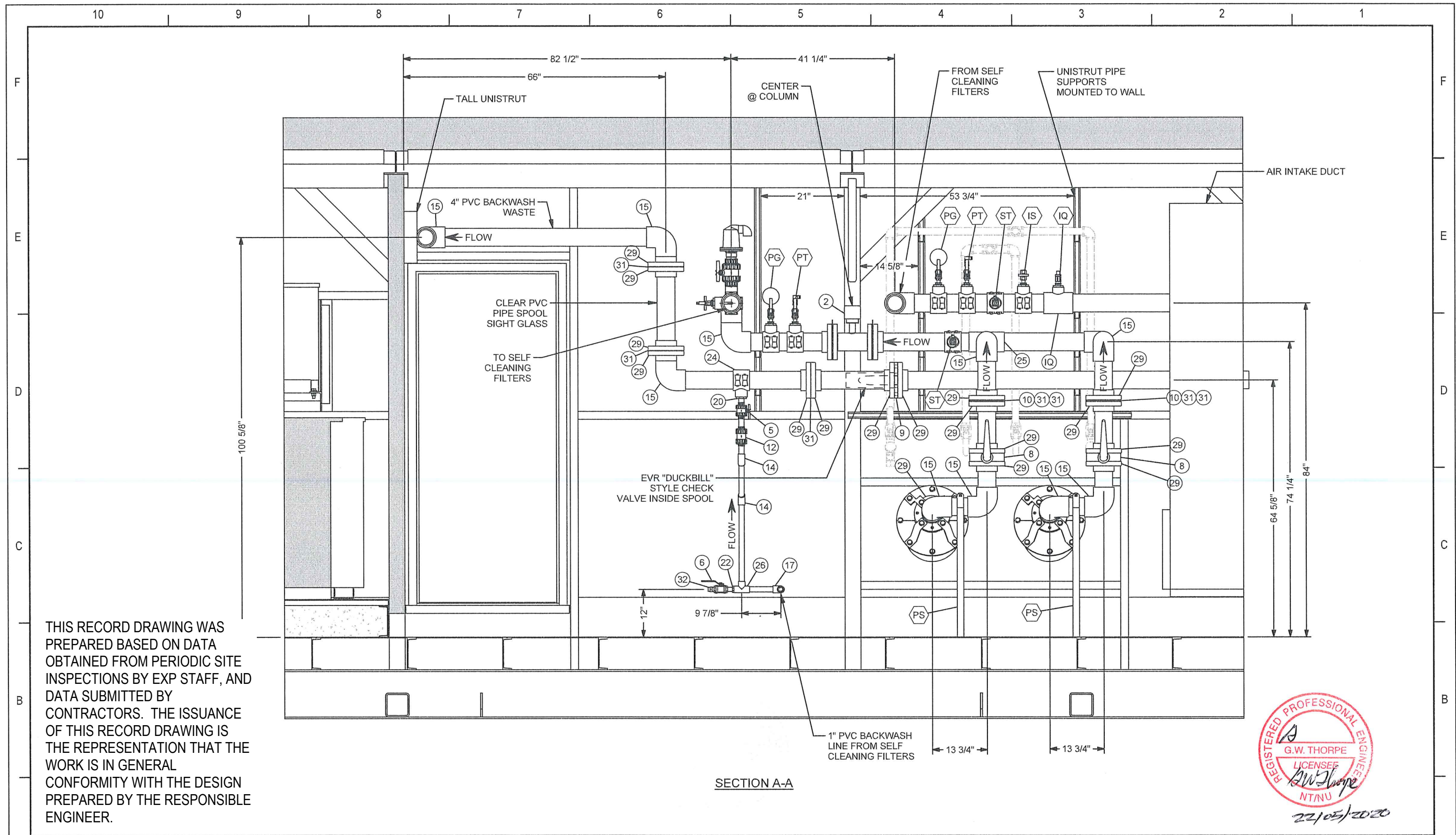
Design By:	RS
Drawn By:	RS
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Submitted	
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Client:

TOWER ARCTIC GROUP

Title:	MODULE #1 PIPING ASSEMBLY	Scale:	
Date:	2018-03-21	Sheet:	2 of 22
Project:	ARVIAT MODULAR WATER TREATMENT PLANT	Job#:	2999
Drawing #:	2999-G-101	Rev:	02






SECTION A-A

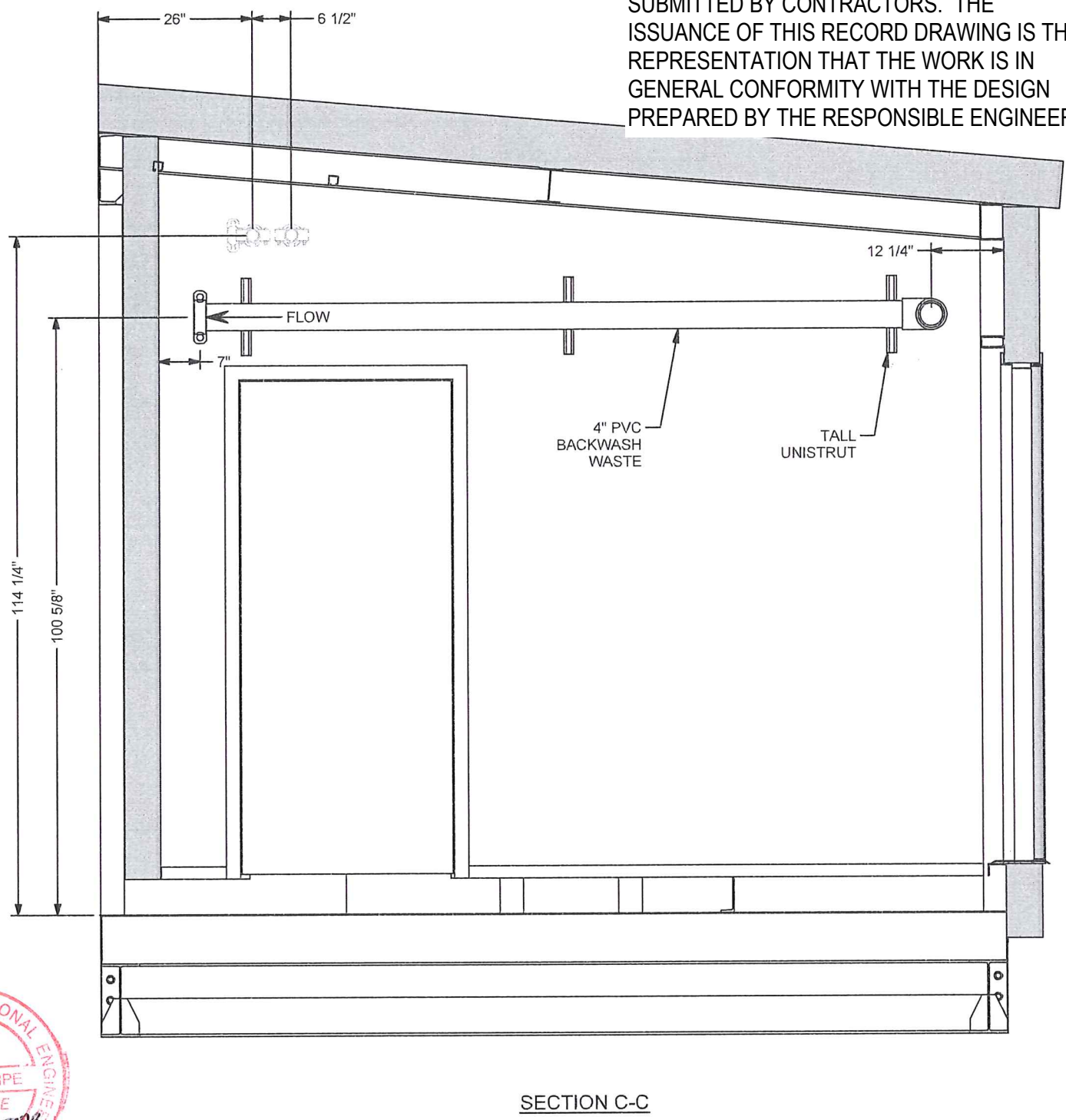
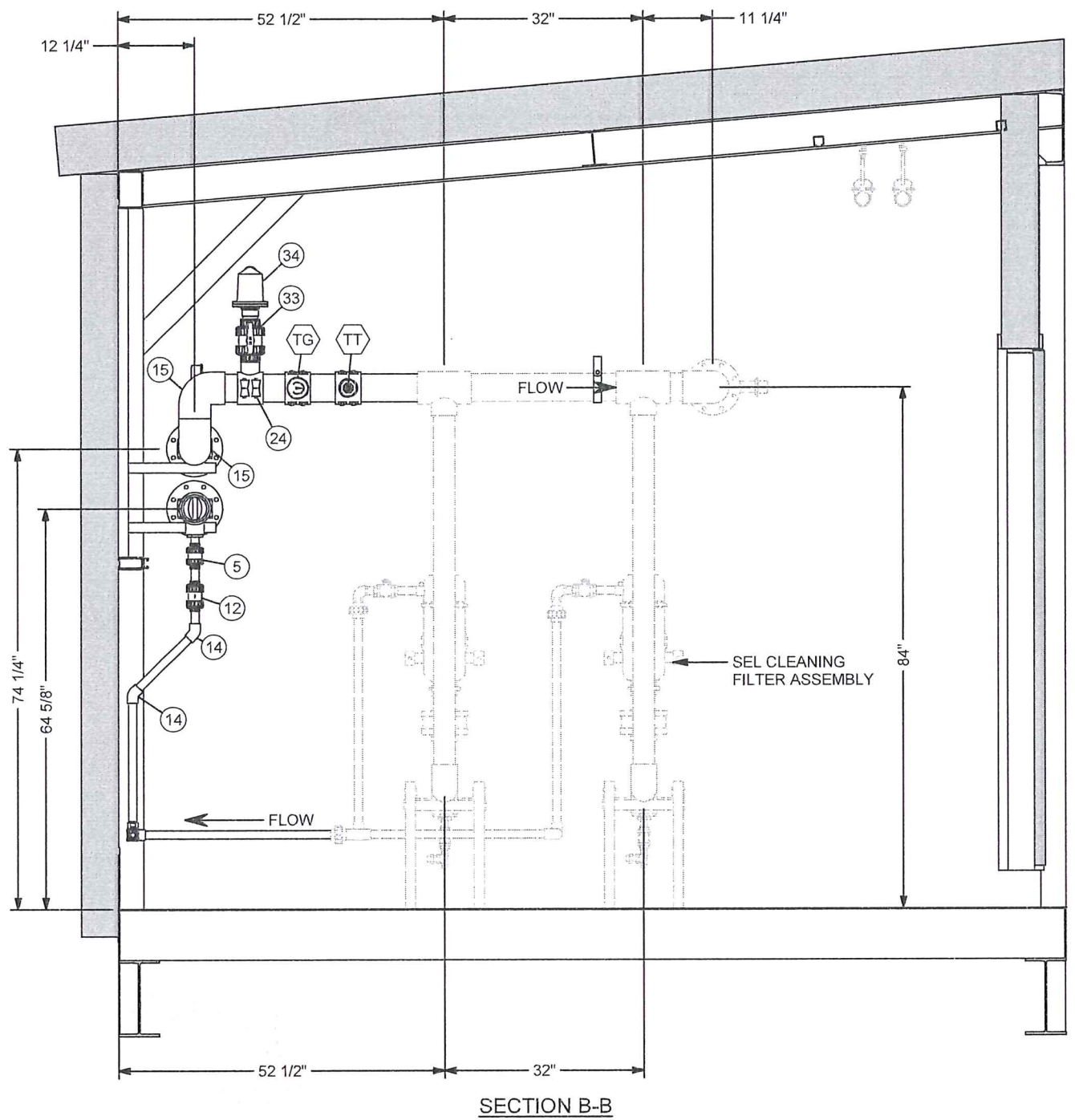
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PREPARED BY THE RESPONSIBLE ENGINEER.



REGISTERED PROFESSIONAL ENGINEER  
G.W. THORPE  
LICENSEE  
*G.W. Thorpe*  
NT/NU  
22/05/2020



**BI Pure Water (Canada) Inc.**  
#2, 9790 - 190th Street  
Surrey, BC V4N 3M9  
Phone: (604) 882-6650  
Fax: (604) 882-6659  
<http://www.bipurewater.ca>

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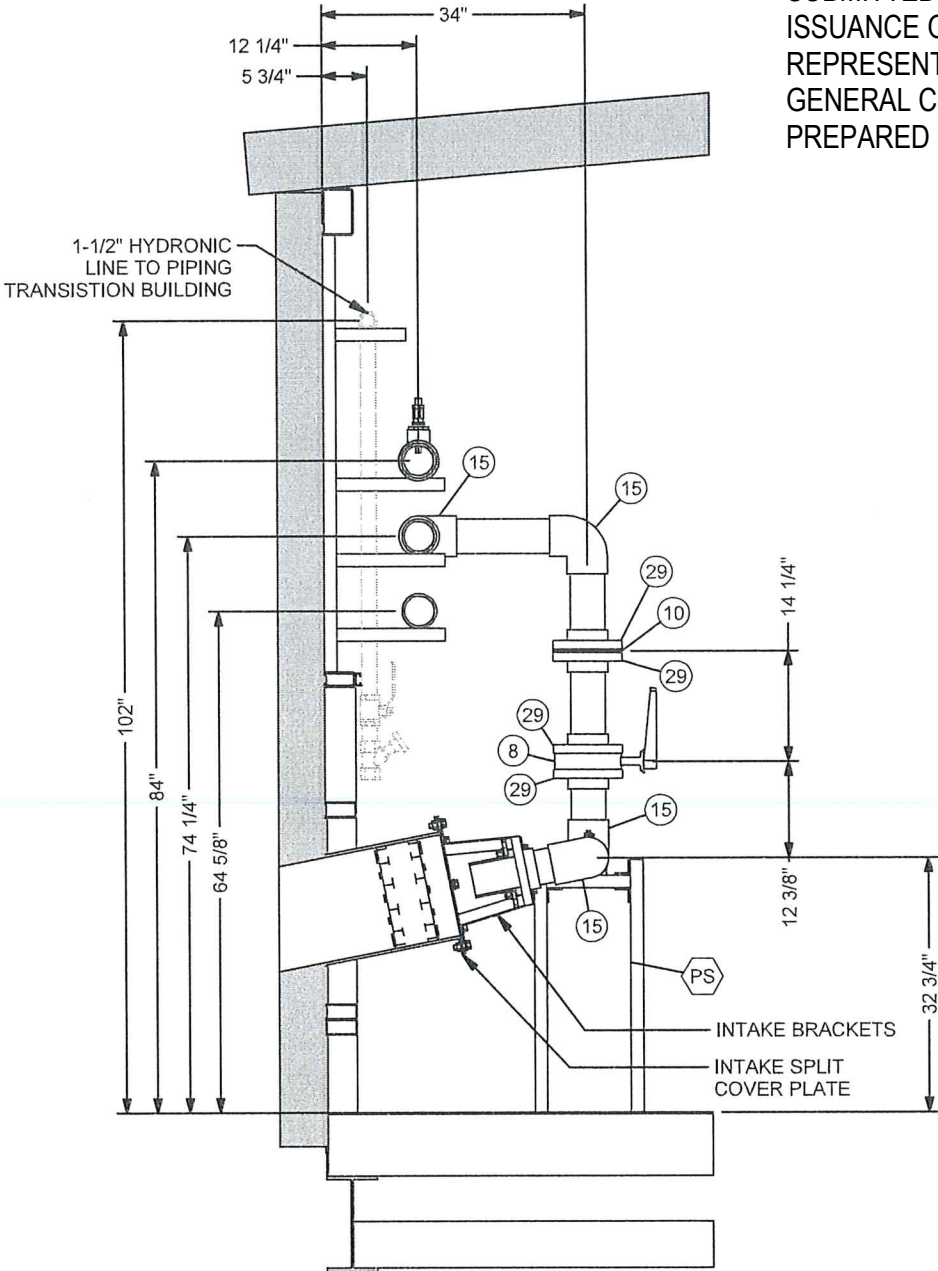
Issue	Date	App'd	Revision Description
02	2019-10-04		AS BUILT
01	2018-03-21		ISSUED FOR CONSTRUCTION

Design By: RS  
Drawn By: RS  
Checked By:  
Submitted:  
Approved:

Client:  
**TOWER ARCTIC GROUP**

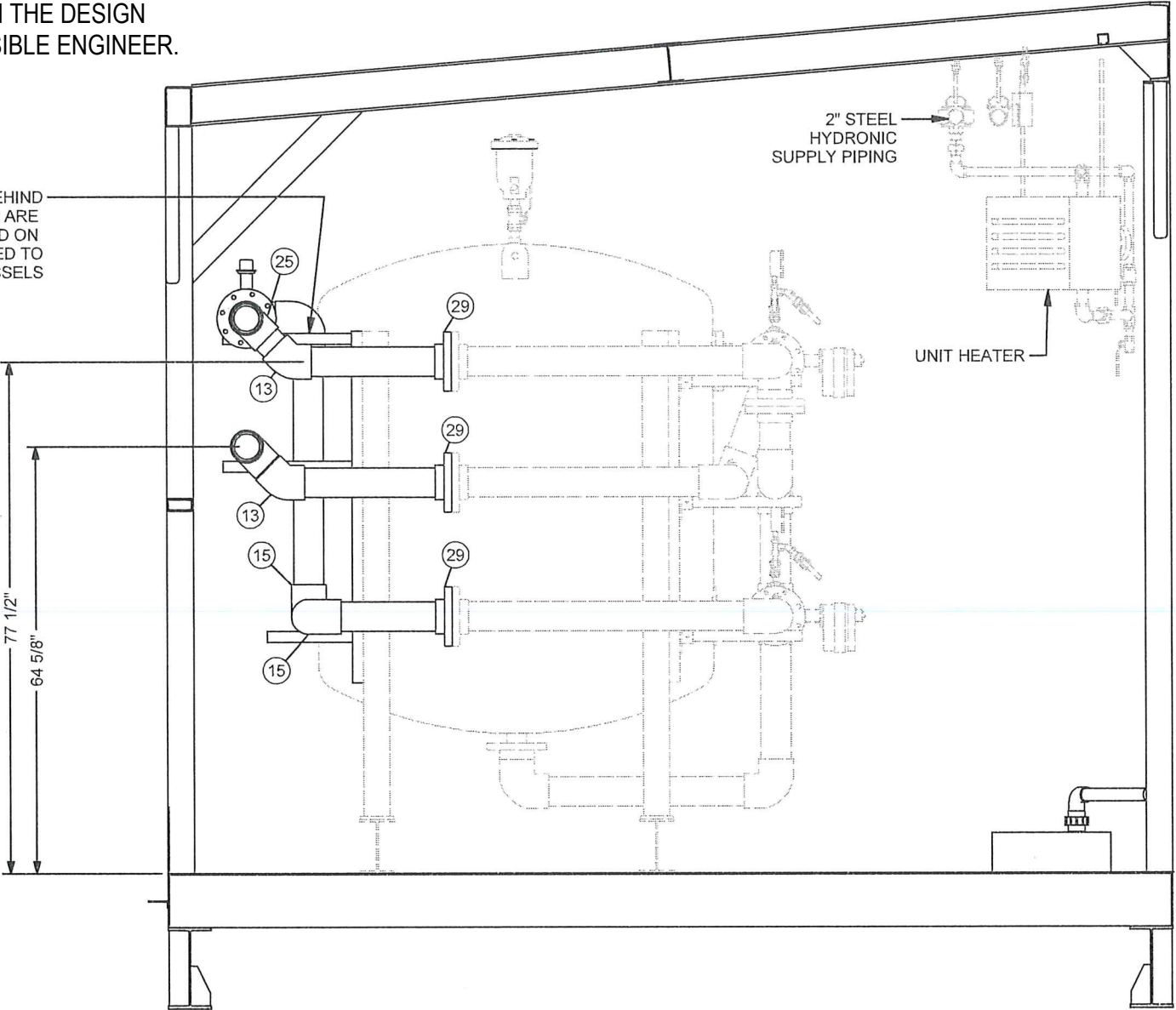
Title:	Scale:
MODULE #1 PIPING ASSEMBLY	2018-03-21
Project:	Sheet 4 of 22
Arviat Modular Water Treatment Plant	Job# 2999
Drawing #: 2999-G-101	Rev: 02

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SECTION D-D

ALL PIPING BEHIND  
FILTER VESSELS ARE  
SUPPORTED ON  
UNISTRUT ATTACHED TO  
FILTER VESSELS



SECTION E-E



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(Canada) Inc.  
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AS BUILT

Issue	Date	App'd	Revision Description
02	2019-10-04		AS BUILT
01	2018-03-21		ISSUED FOR CONSTRUCTION

Design By: RS  
Drawn By: RS  
Checked By:  
Submitted:  
Approved:

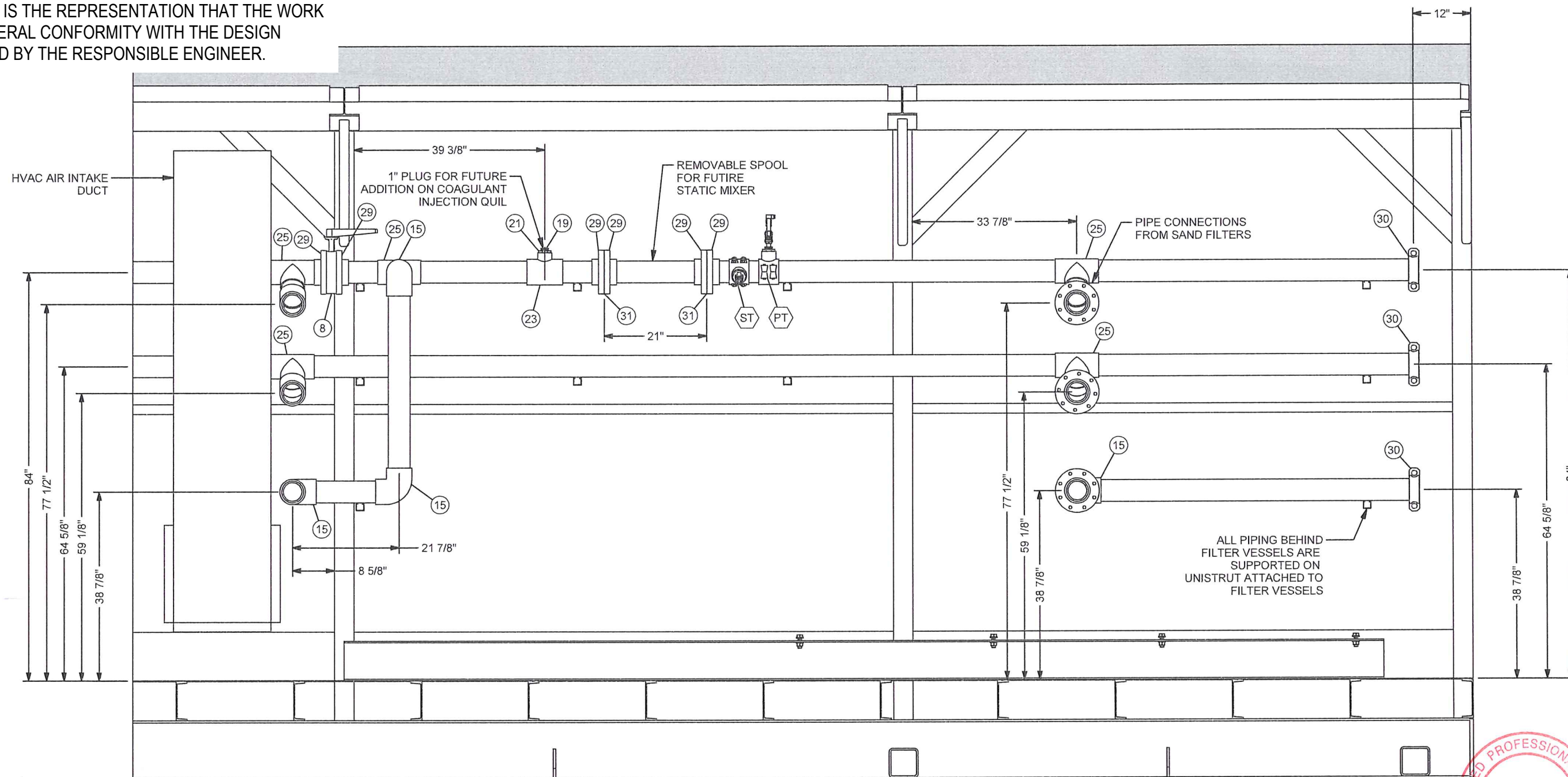
Client:  
**TOWER ARCTIC  
GROUP**

Title: **MODULE #1 PIPING ASSEMBLY**  
Project: **ARVIAT MODULAR WATER  
TREATMENT PLANT**  
Drawing #: **2999-G-101**

Scale:  
Date: 2018-03-21  
Sheet: 5 of 22  
Job#: 2999  
Rev: 02



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SECTION F-F



22/05/2020

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AS BUILT

Issue	Date	App'd	Revision Description
02	2019-10-04		AS BUILT
01	2018-03-21		ISSUED FOR CONSTRUCTION

Design By: RS  
 Drawn By: RS  
 Checked By:  
 Submitted  
 Approved

Client:

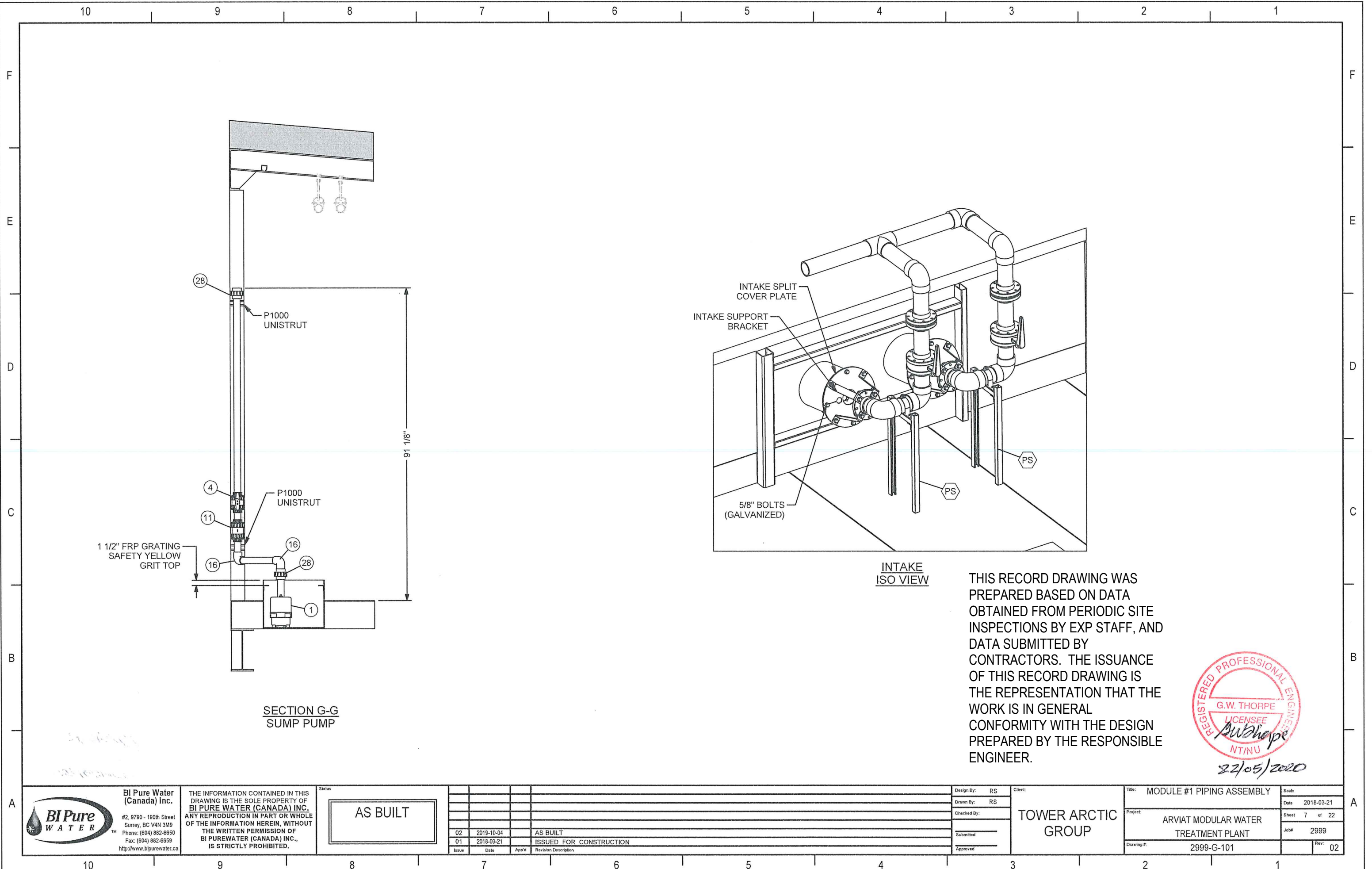
**TOWER ARCTIC GROUP**

Title: MODULE #1 PIPING ASSEMBLY

Project: ARVIAT MODULAR WATER TREATMENT PLANT


Drawing #: 2999-G-101

Scale: 1" = 1'-0"  
 Date: 2018-03-21  
 Sheet: 6 of 22  
 Job #: 2999  
 Rev: 02



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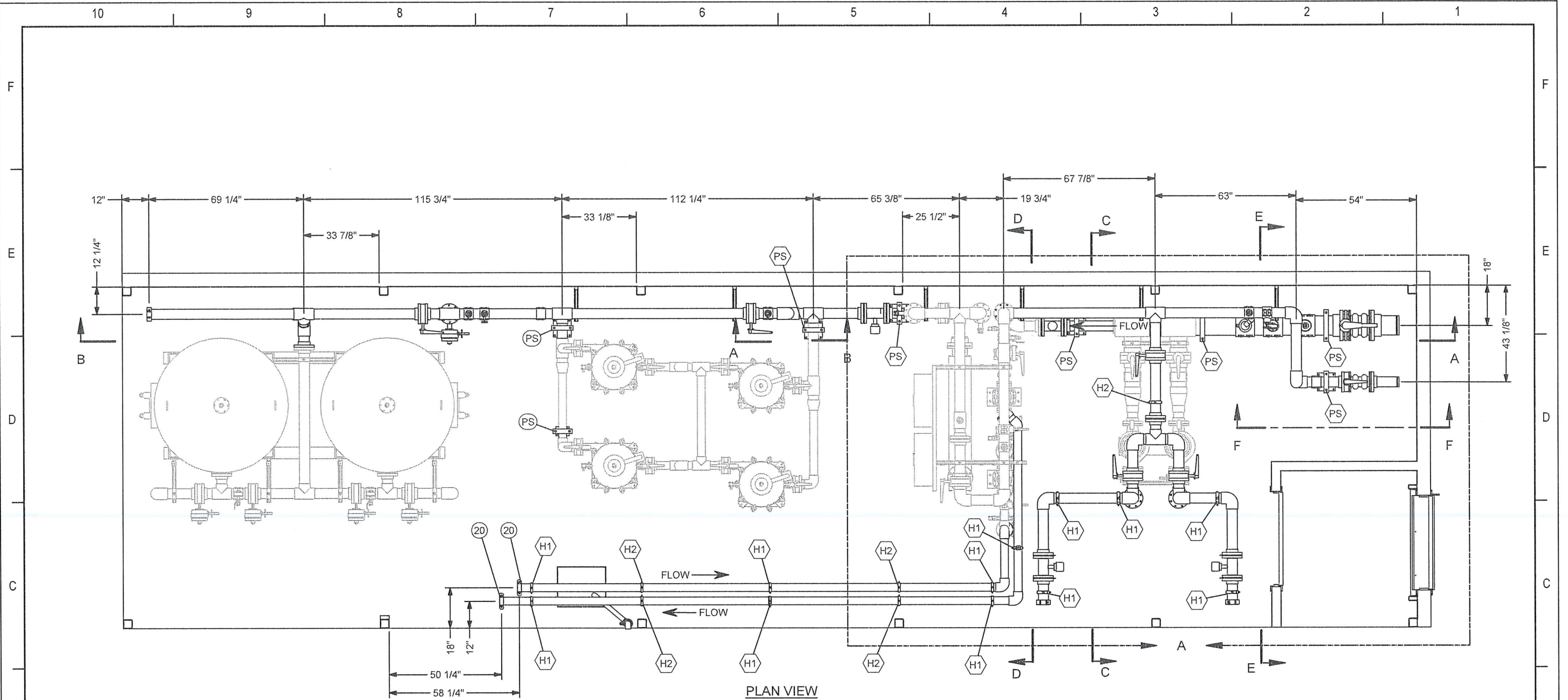
REGISTERED PROFESSIONAL ENGINEER  
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							Drawn By: RS		Date: 2018-03-21	
							Checked By:		Project: ARVIAT MODULAR WATER TREATMENT PLANT	Sheet 7 of 22
							Submitted		Job# 2999	
							Approved		Drawing #: 2999-G-101	Rev: 02
							Issue		Date	App'd
				02	2019-10-04		AS BUILT			
				01	2018-03-21		ISSUED FOR CONSTRUCTION			



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PLAN VIEW

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Surrey, BC V4N 3M9  
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01	2018-03-21		ISSUED FOR CONSTRUCTION

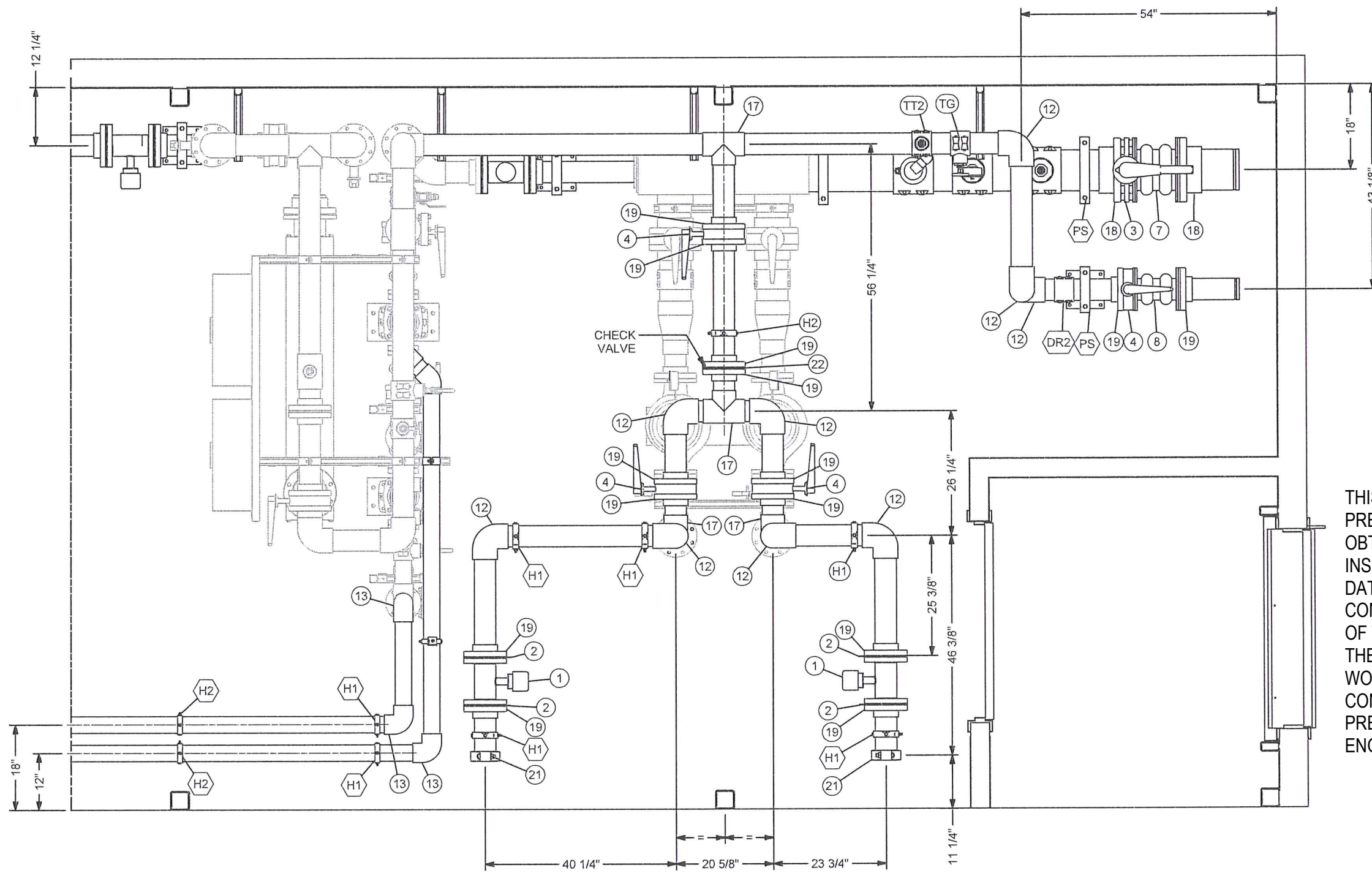
Design By: RS  
Drawn By: RS  
Checked By:  
Submitted:  
Approved:

Client:  
**TOWER ARCTIC  
GROUP**

Title: **MODULE #2 PIPING ASSEMBLY**  
Project: **ARVIAT MODULAR WATER  
TREATMENT PLANT**  
Drawing #: **2999-G-101**

Scale:  
Date: 2018-03-21  
Sheet 9 of 22  
Job#: 2999  
Rev: 02





DETAIL A

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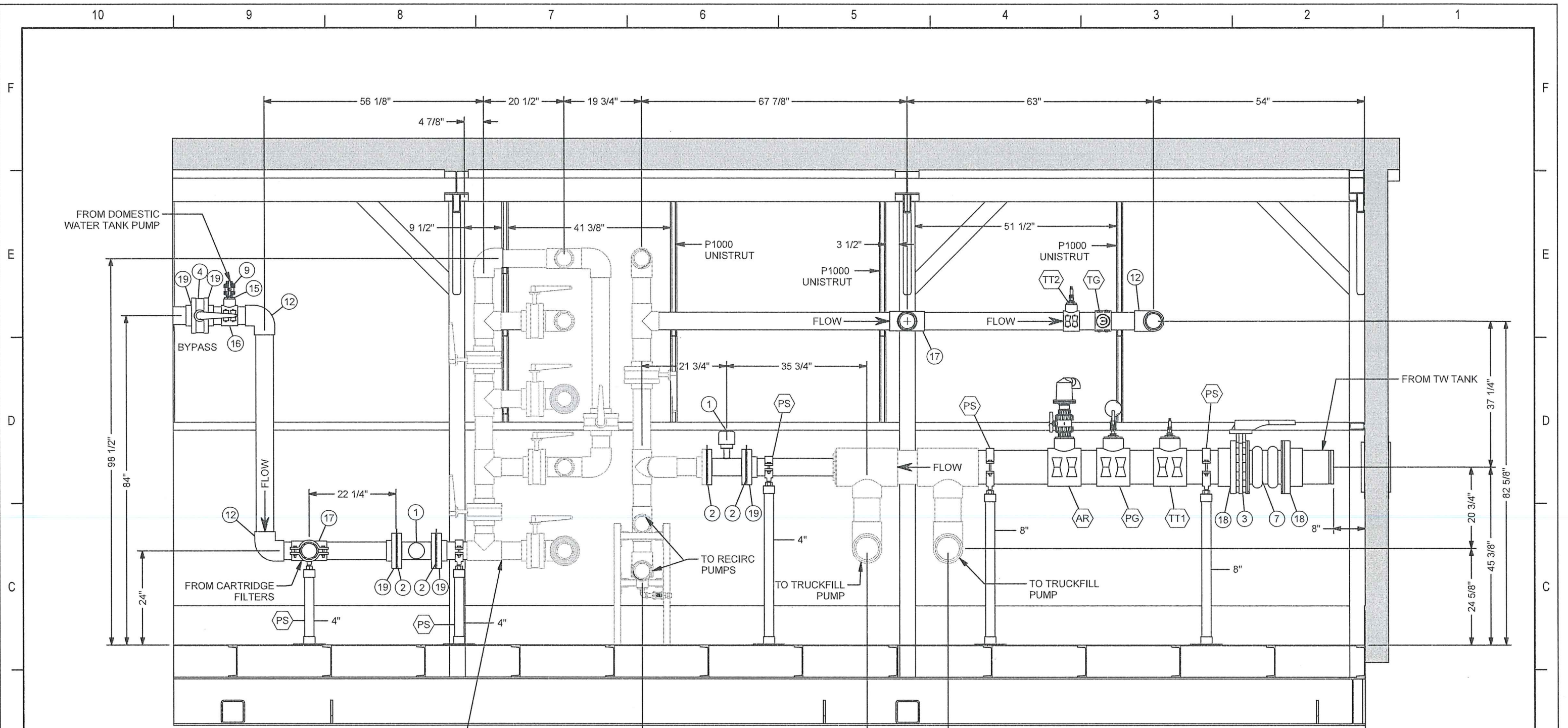
Design By: RS  
Drawn By: RS  
Checked By:  
Submitted:  
Approved:

Client:  
**TOWER ARCTIC GROUP**

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Project: **ARVIAT MODULAR WATER TREATMENT PLANT**  
Drawing #: **2999-G-101**

Scale:  
Date: 2018-03-21  
Sheet: 10 of 22  
Job#: 2999  
Rev: 02





SECTION A-A

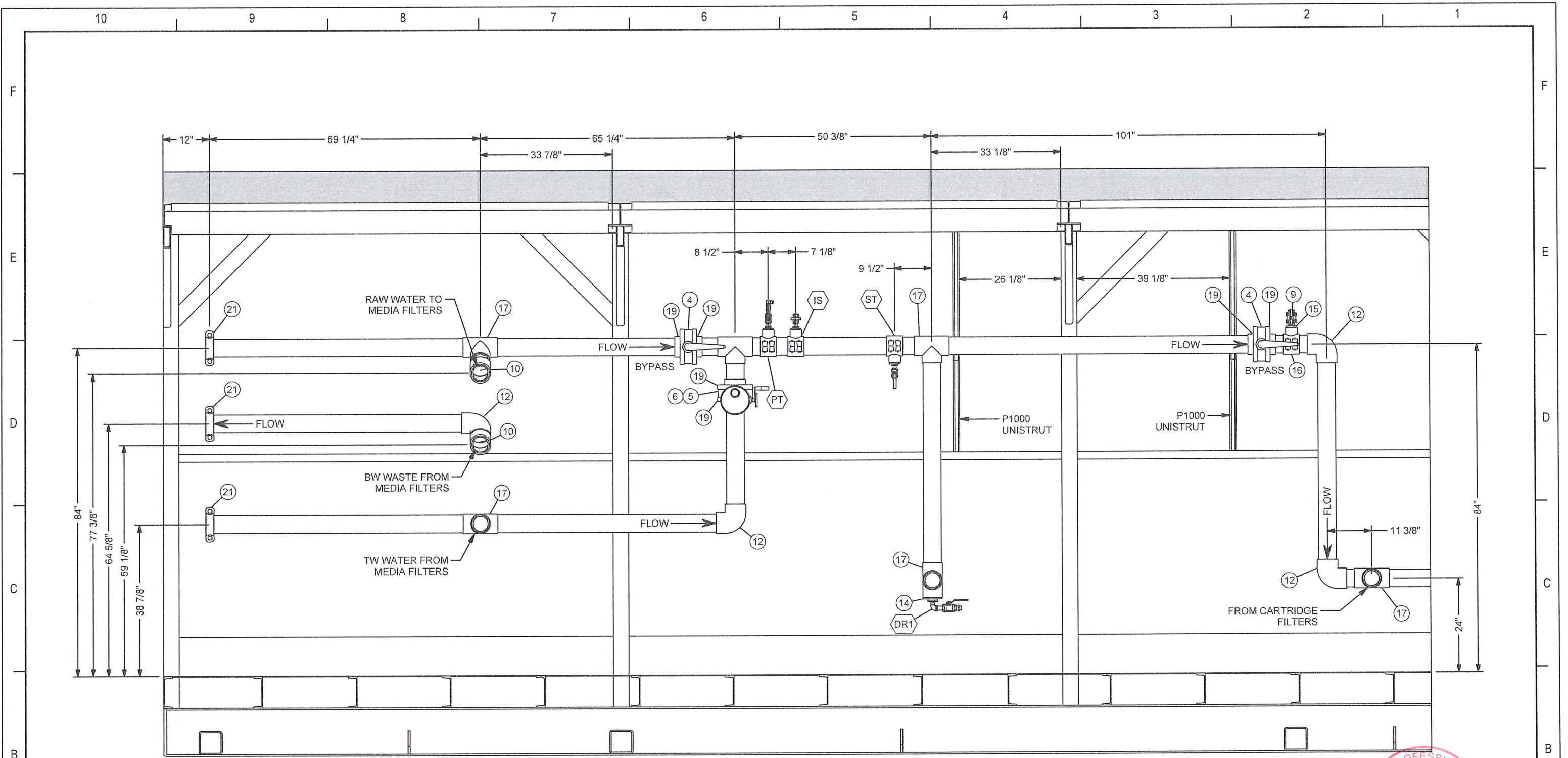
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SECTION B-B

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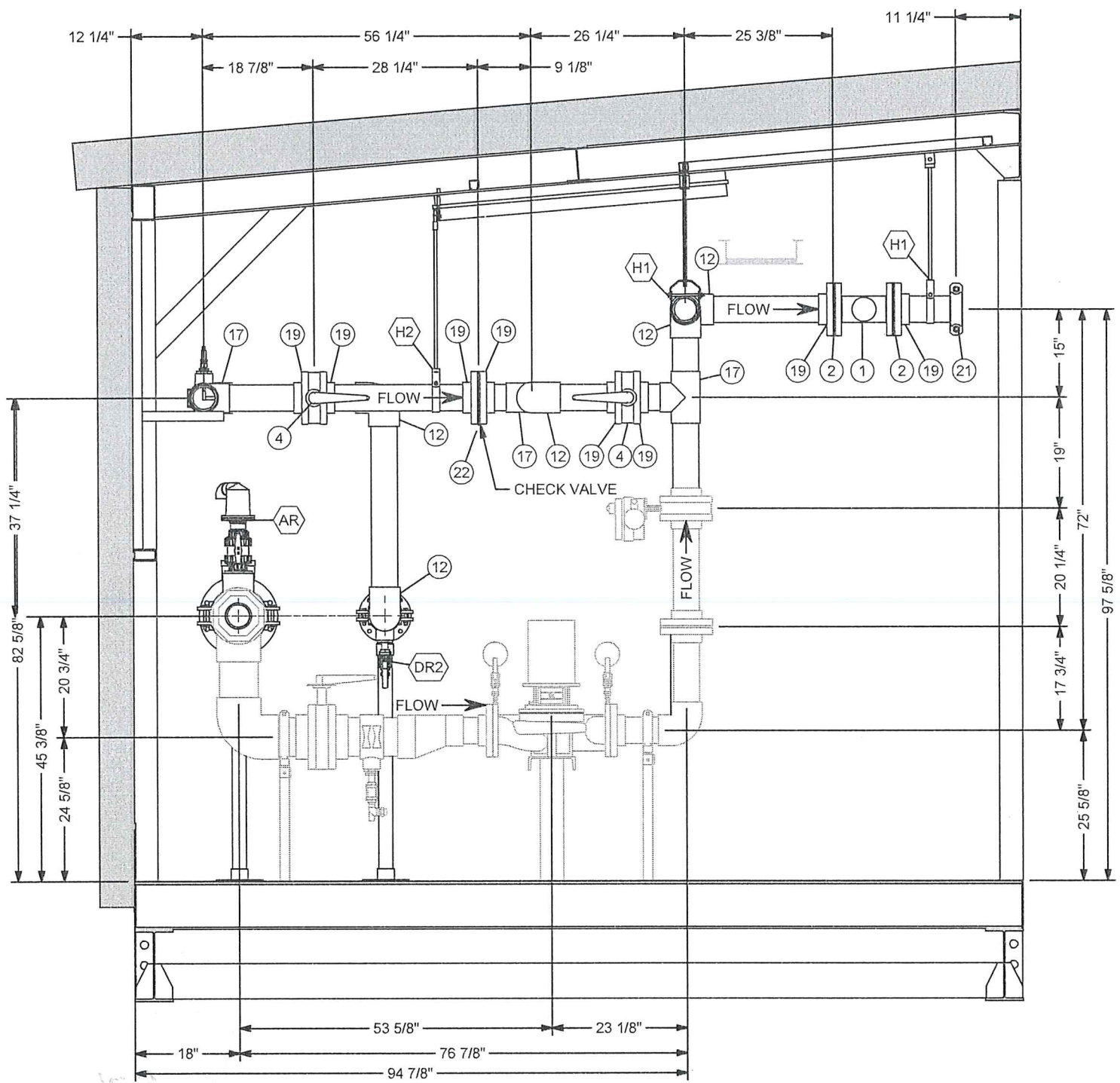


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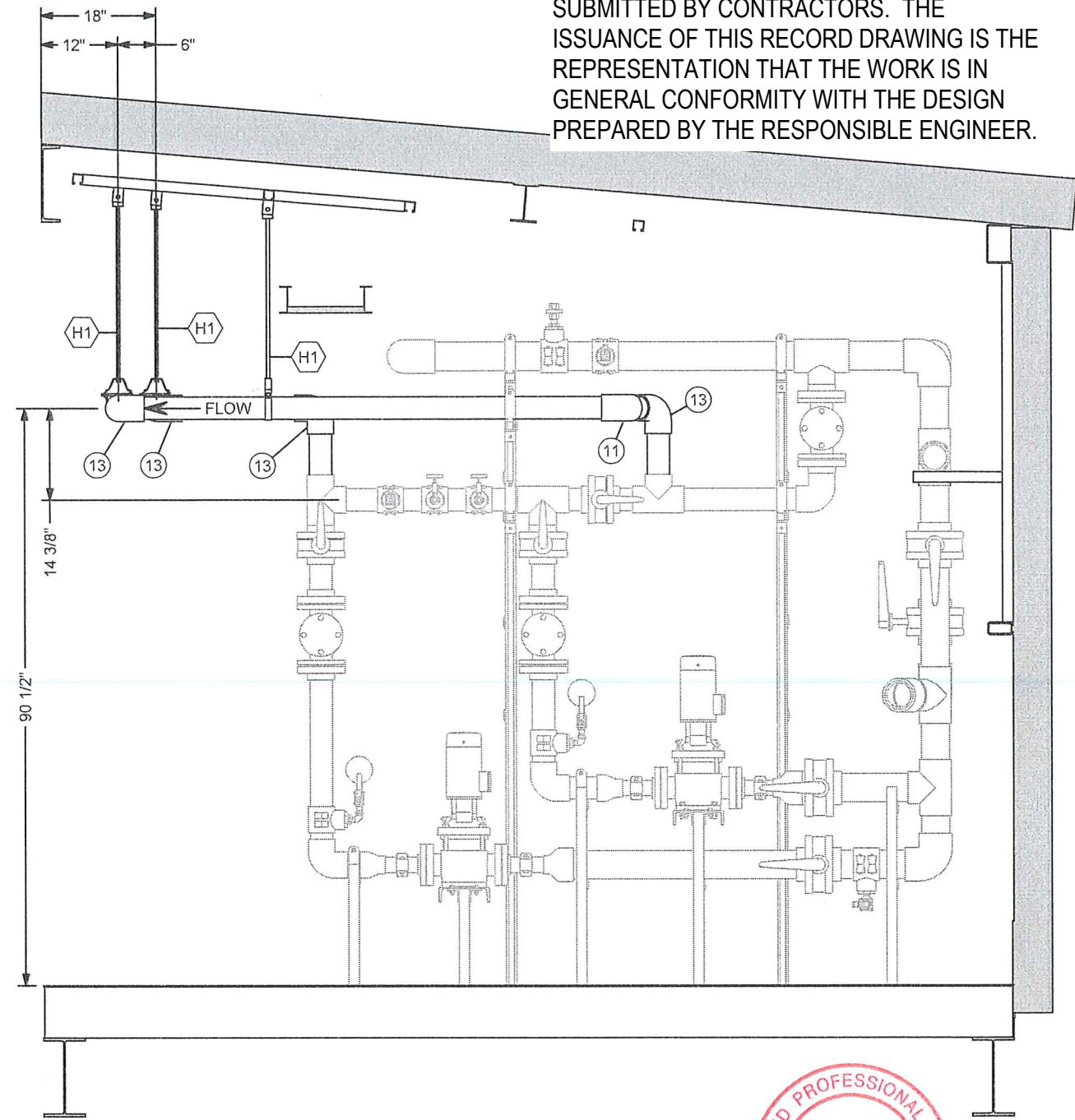
 <div>BI Pure Water (Canada) Inc.</div> <div>#2, 9790 - 190th Street Surrey, BC V4N 3M9 Phone: (604) 882-6650 Fax: (604) 882-6659 http://www.bipurewater.ca</div>	THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF BI PURE WATER (CANADA) INC. ANY REPRODUCTION IN PART OR WHOLE OF THE INFORMATION HEREIN, WITHOUT THE WRITTEN PERMISSION OF BI PURE WATER (CANADA) INC., IS STRICTLY PROHIBITED.	<div>Status</div> <div>AS BUILT</div>					Title: MODULE #2 PIPING ASSEMBLY		Scale: 2018-03-21			
							Project: ARVIAT MODULAR WATER TREATMENT PLANT		Sheet 12 of 22			
							Drawing #: 2999-G-101		Job#: 2999			
									Rev: 02			
			02	2019-10-04		AS BUILT	Design By: RS		TOWER ARCTIC GROUP		Client:	
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							Checked By:					
							Submitted					
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SECTION C-C



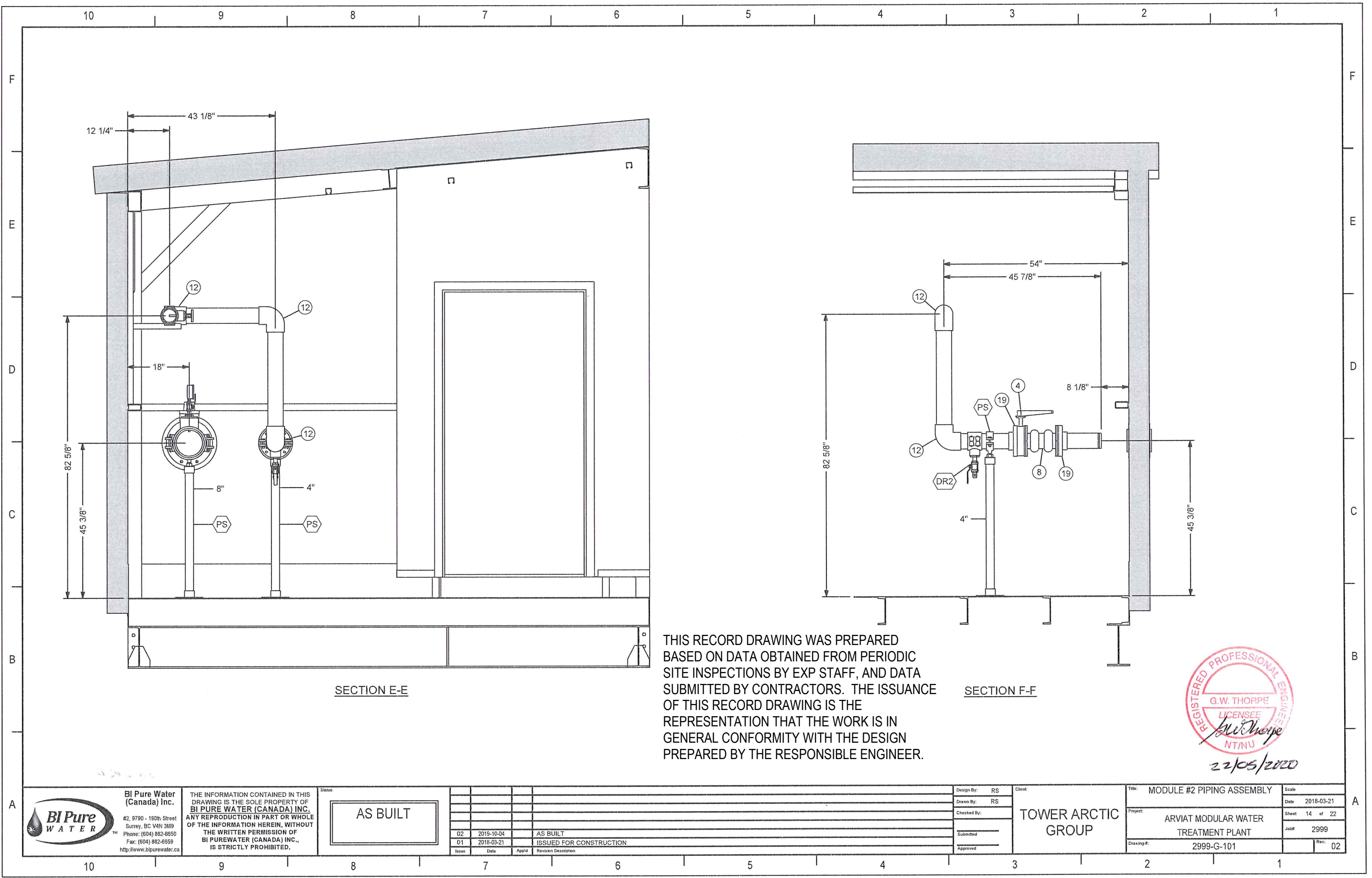
SECTION D-D



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SECTION E-E

SECTION F-F

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Submitted	
Approved	

TOWER ARCTIC  
GROUP

Title: MODULE #2 PIPING ASSEMBLY  
Project: ARVIAT MODULAR WATER  
TREATMENT PLANT  
Drawing #: 2999-G-101

Scale	Date	Sheet	Job#	Rev.
	2018-03-21	14 of 22	2999	02



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E

D

C

B

A

ASSEMBLY - PARTS LIST							
ITEM	ITEM QTY	DESCRIPTION	SIZE	MATERIAL	MANUFACTURER	MODEL #	SPECIFICATION
1	1	UNION	1-1/2"	PVC	CHEMKOR	857015	SCH 80, SOC X SOC, EPDM O-RING
2	2	EXPANSION JOINT	4"	EPDM	MERCER	FLEXMORE 452E	CLASS 150, DOUBLE ARCH
3	4	45 DEGREE ELBOW	4"	PVC	SPEARS	817040	SCH 80, SOC X SOC
4	1	90 DEGREE ELBOW	2"	PVC	SPEARS	806020	SCH 80, SOC X SOC
5	1	90 DEGREE ELBOW	4"	PVC	SPEARS	806040	SCH 80, SOC X SOC
6	1	COUPLER	4"	PVC	SPEARS	N/A	SCH 80, SOC X SOC
7	2	REDUCER BUSHING	2" X 1-1/2"	PVC	SPEARS	837251	SCH 80, SPIG X SOC
8	1	REDUCING TEE	4"x 2"	PVC	SPEARS	801420	SCH 80, SOC X SOC X SOC
9	1	TEE	2"	PVC	SPEARS	801020	SCH 80, SOC X SOC X SOC
10	8	VANSTONE FLANGE	4"	PVC	SPEARS	854040	SCH 80, 150#, SOCKET
11	3	VICTAULIC COUPLING - FLEXIBLE #77	2"	D.I.	VICTAULIC	#77	FLEXIBLE COUPLING, 1000PSI, EPDM SEAL
12	5	VICTAULIC COUPLING - FLEXIBLE #77	4"	D.I.	VICTAULIC	#77	FLEXIBLE COUPLING, 1000PSI, EPDM SEAL
H1	3	PIPE HANGER ASSEMBLY	4"				

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REGISTERED PROFESSIONAL ENGINEER  
G.W. THORPE  
LICENSEE  
NT/NU  
22/05/2020

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Submitted:  
Approved:

Client: TOWER ARCTIC GROUP

Title: MODULE #3 PIPING ASSEMBLY (PROCESS)

Project: ARVIAT MODULAR WATER TREATMENT PLANT

Drawing #: 2999-G-101

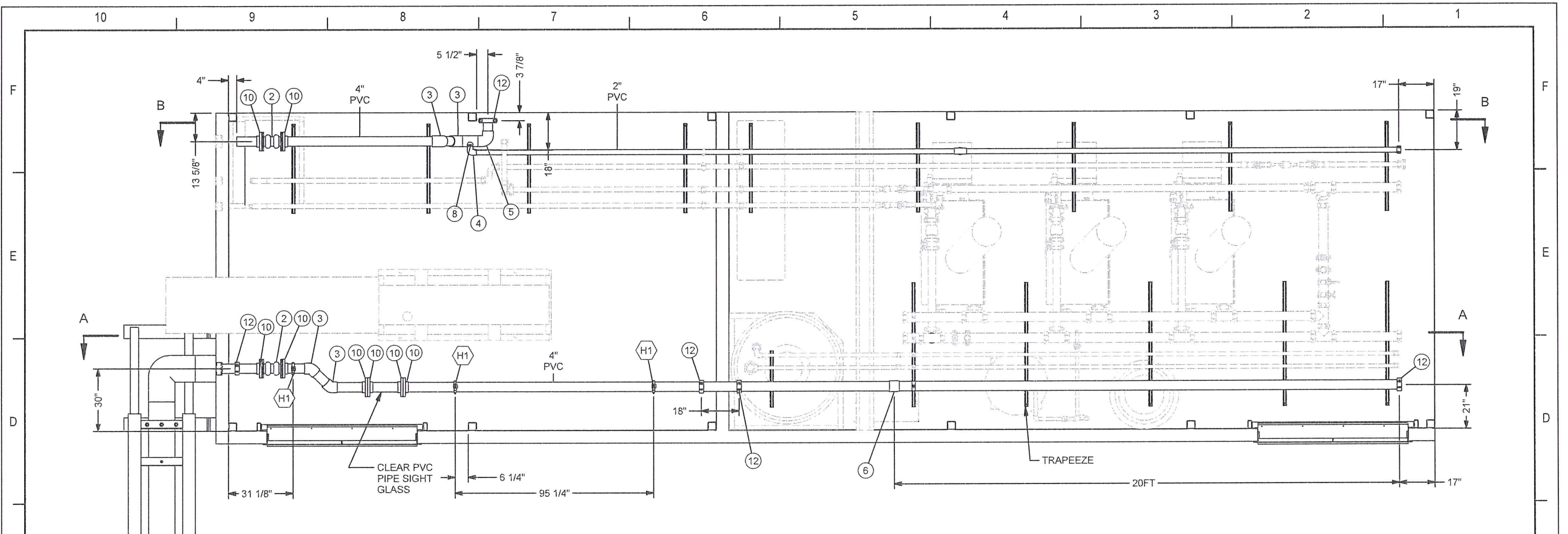
Scale: 2018-03-21

Sheet 15 of 22

Job#: 2999

Rev: 02

10987654321



PLAN VIEW

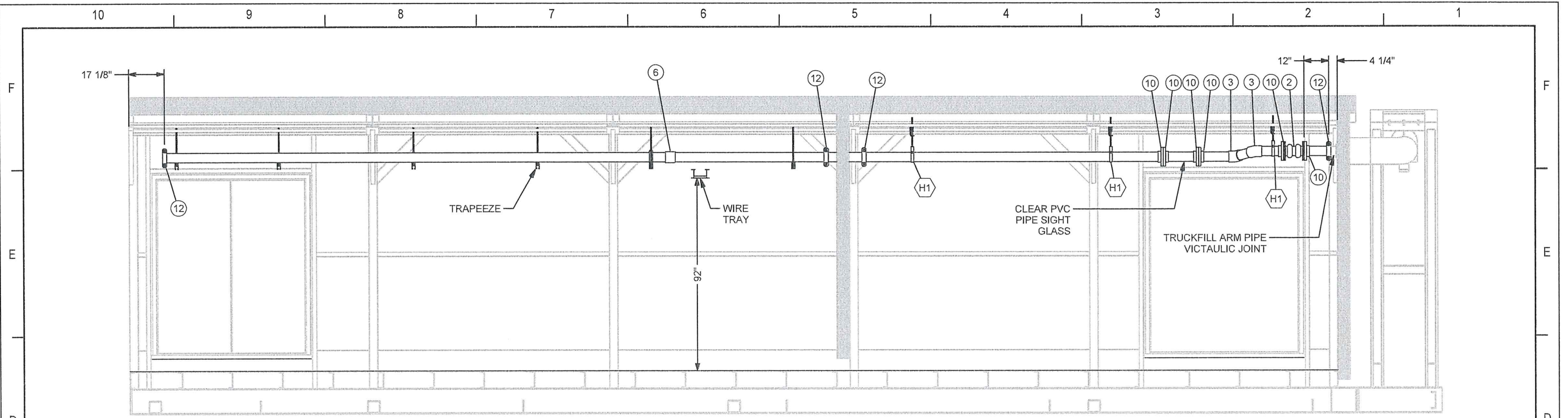
THIS RECORD DRAWING WAS PREPARED BASED ON DATA OBTAINED FROM PERIODIC SITE INSPECTIONS BY EXP STAFF, AND DATA SUBMITTED BY CONTRACTORS. THE ISSUANCE OF THIS RECORD DRAWING IS THE REPRESENTATION THAT THE WORK IS IN GENERAL CONFORMITY WITH THE DESIGN PREPARED BY THE RESPONSIBLE ENGINEER.



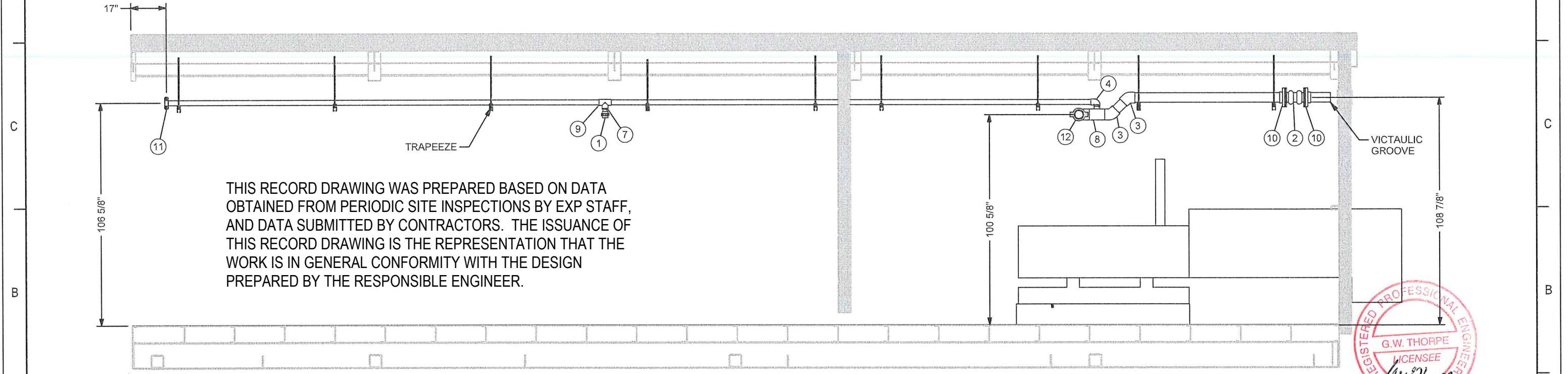
22/03/2020

<p><b>BI Pure Water (Canada) Inc.</b>          #2, 9790 - 190th Street          Surrey, BC V4N 3M9          Phone: (604) 882-6650          Fax: (604) 882-6659  <a href="http://www.bipurewater.ca">http://www.bipurewater.ca</a></p>	<p>THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF BI PURE WATER (CANADA) INC. ANY REPRODUCTION IN PART OR WHOLE OF THE INFORMATION HEREIN, WITHOUT THE WRITTEN PERMISSION OF BI PURE WATER (CANADA) INC., IS STRICTLY PROHIBITED.</p>	<p>Status</p> <div style="border: 1px solid black; padding: 5px; text-align: center;">AS BUILT</div>	<table border="1"> <tr> <th>Issue</th> <th>Date</th> <th>App'd</th> <th>Revision Description</th> </tr> <tr> <td>02</td> <td>2019-10-04</td> <td></td> <td>AS BUILT</td> </tr> <tr> <td>01</td> <td>2018-03-21</td> <td></td> <td>ISSUED FOR CONSTRUCTION</td> </tr> </table>		Issue	Date	App'd	Revision Description	02	2019-10-04		AS BUILT	01	2018-03-21		ISSUED FOR CONSTRUCTION	<p>Design By: RS          Drawn By: RS          Checked By:          Submitted:          Approved:</p>	<p>Client:  <b>TOWER ARCTIC GROUP</b></p>	<p>Title: MODULE #3 PIPING ASSEMBLY (PROCESS)          Project: ARVIAT MODULAR WATER TREATMENT PLANT          Drawing #: 2999-G-101</p>	<p>Scale:          Date: 2018-03-21          Sheet: 16 of 22          Job#: 2999          Rev: 02</p>
			Issue	Date	App'd	Revision Description														
02	2019-10-04		AS BUILT																	
01	2018-03-21		ISSUED FOR CONSTRUCTION																	





SECTION A-A



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SECTION B-B

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			<p>Issue</p> <p>Date</p> <p>App'd</p> <p>Revision Description</p>				



ASSEMBLY - PARTS LIST							
ITEM	ITEM QTY	DESCRIPTION	SIZE	MATERIAL	MANUFACTURER	MODEL #	SPECIFICATION
1	2	SOLENOID VALVE	1"	BRASS	ASCO	8210	FNPT
2	2	UNION	1-1/2"	PVC	CHEMKOR	857015	SCH 80, SOC X SOC, EPDM O-RING
3	1	UNION	2"	PVC	CHEMKOR	857020	SCH 80, SOC X SOC, EPDM O-RING
4	4	UNION	3/4"	PVC	CHEMKOR	857007	SCH 80, SOC X SOC, EPDM O-RING
5	1	SUMP PUMP	1-1/2"	C.I.	LIBERTY	250	1/3 HP, 1-1/2" FNPT DISCHARGE
6	1	EXPANSION JOINT	4"	EPDM	MERCER	FLEXMORE 452E	CLASS 150, DOUBLE ARCH
7	1	BALL VALVE - PVC	1-1/2"	PVC	PRAHER	S6	TRUE UNION, EPDM SEALS
8	2	BALL VALVE - PVC	3/4"	PVC	PRAHER	S6	TRUE UNION, EPDM SEALS
9	1	CHECK VALVE	1-1/2"	PVC	PRAHER	S4	DOUBLE UNION, SOCKET, SS SPRING, EPDM SEALS
10	4	45 DEGREE ELBOW	4"	PVC	SPEARS	817040	SCH 80, SOC X SOC
11	4	90 DEGREE ELBOW	1-1/2"	PVC	SPEARS	806015	SCH 80, SOC X SOC
12	9	90 DEGREE ELBOW	2"	PVC	SPEARS	806020	SCH 80, SOC X SOC
13	7	90 DEGREE ELBOW	3/4"	PVC	SPEARS	806007	SCH 80, SOC X SOC
14	2	90 DEGREE ELBOW	4"	PVC	SPEARS	806040	SCH 80, SOC X SOC
15	1	MALE ADAPTER	1-1/2"	PVC	SPEARS	836015	SCH 80, MPT X SOC
16	2	REDUCER BUSHING	2" X 1-1/2"	PVC	SPEARS	837251	SCH 80, SPIG X SOC
17	2	REDUCER BUSHING	2" X 3/4"	PVC	SPEARS	837248	SCH 80, SPIG X SOC
18	2	REDUCING TEE	4"x 2"	PVC	SPEARS	801420	SCH 80, SOC X SOC X SOC
19	3	TANK ADAPTER	3/4"	PVC	SPEARS	872007	SCH 80, FPT X FPT, EPDM GASKET
20	1	TEE	2"	PVC	SPEARS	801020	SCH 80, SOC X SOC X SOC
21	6	VANSTONE FLANGE	4"	PVC	SPEARS	854040	SCH 80, 150#, SOCKET
22	1	VICTAULIC COUPLING - FLEXIBLE #77	2"	D.I.	VICTAULIC	#77	FLEXIBLE COUPLING, 1000PSI, EPDM SEAL
23	8	VICTAULIC COUPLING - FLEXIBLE #77	4"	D.I.	VICTAULIC	#77	FLEXIBLE COUPLING, 1000PSI, EPDM SEAL
H1	7	PIPE HANGER ASSEMBLY (CLAMP)	2"				
H2	3	PIPE HANGER ASSEMBLY (CLAMP)	4"				
H3	8	PIPE HANGER ASSEMBLY (UNISTRUT)	4"				

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Status:

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02	2019-10-04		AS BUILT		
01	2018-03-21		ISSUED FOR CONSTRUCTION		
Issue	Date	App'd	Revision Description		

Design By:	RS
Drawn By:	RS
Checked By:	
Submitted	
Approved	

Client:

TOWER ARCTIC GROUP

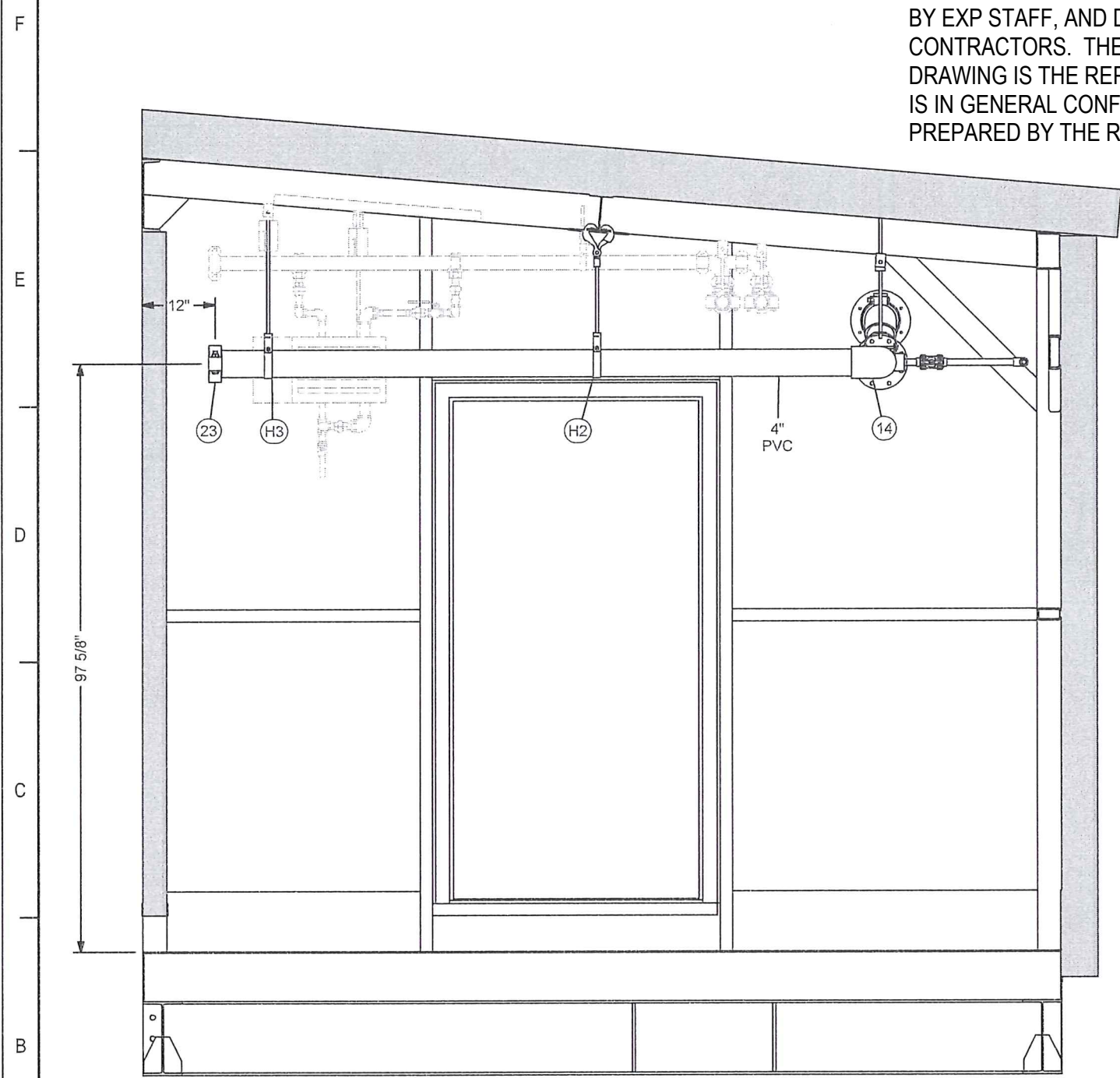
Title:	MODULE #4 PIPING ASSEMBLY (PROCESS)	Scale:	
Project:	ARVIAT MODULAR WATER TREATMENT PLANT	Date:	2018-03-21
Drawing #:	2999-G-101	Sheet:	18 of 22
		Job#:	2999
		Rev:	02



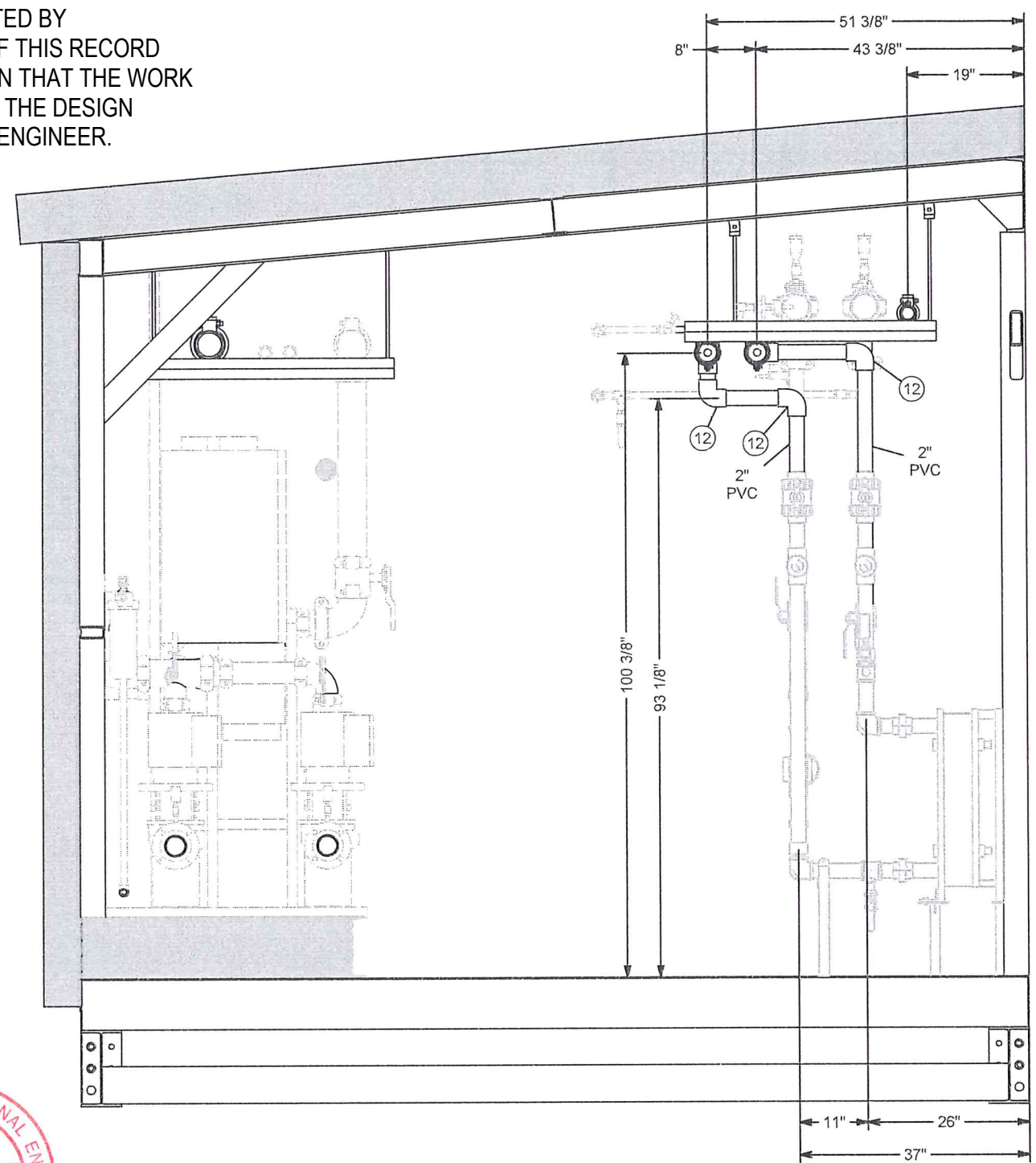




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SECTION A-A



SECTION B-B



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Issue	Date	App'd	Revision Description
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01	2018-03-21		ISSUED FOR CONSTRUCTION

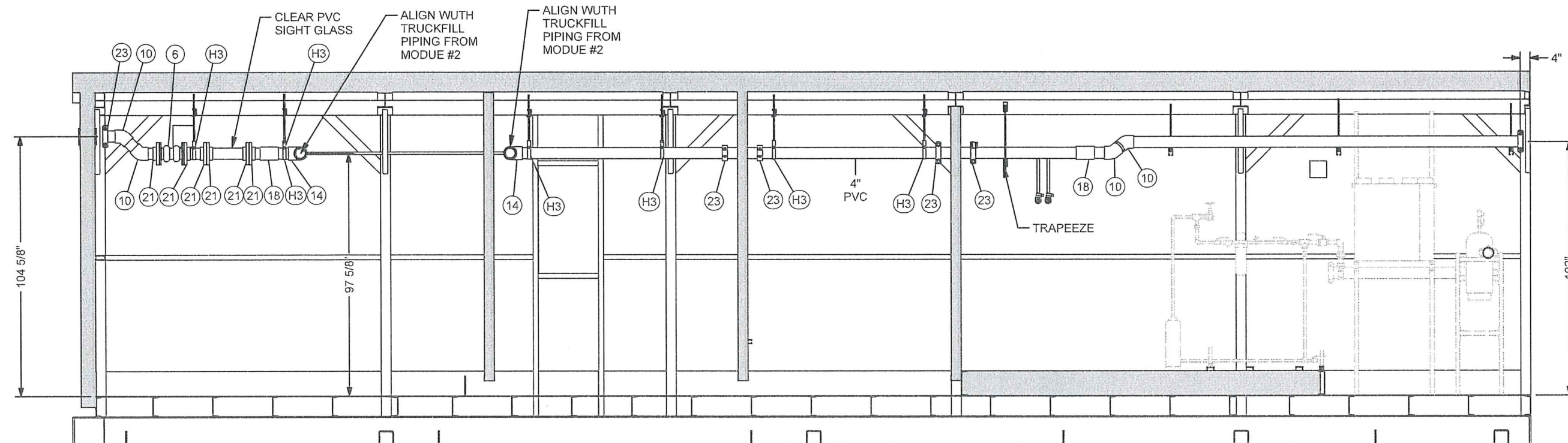
Design By: RS  
Drawn By: RS  
Checked By:  
Submitted:  
Approved:

Client:  
**TOWER ARCTIC GROUP**

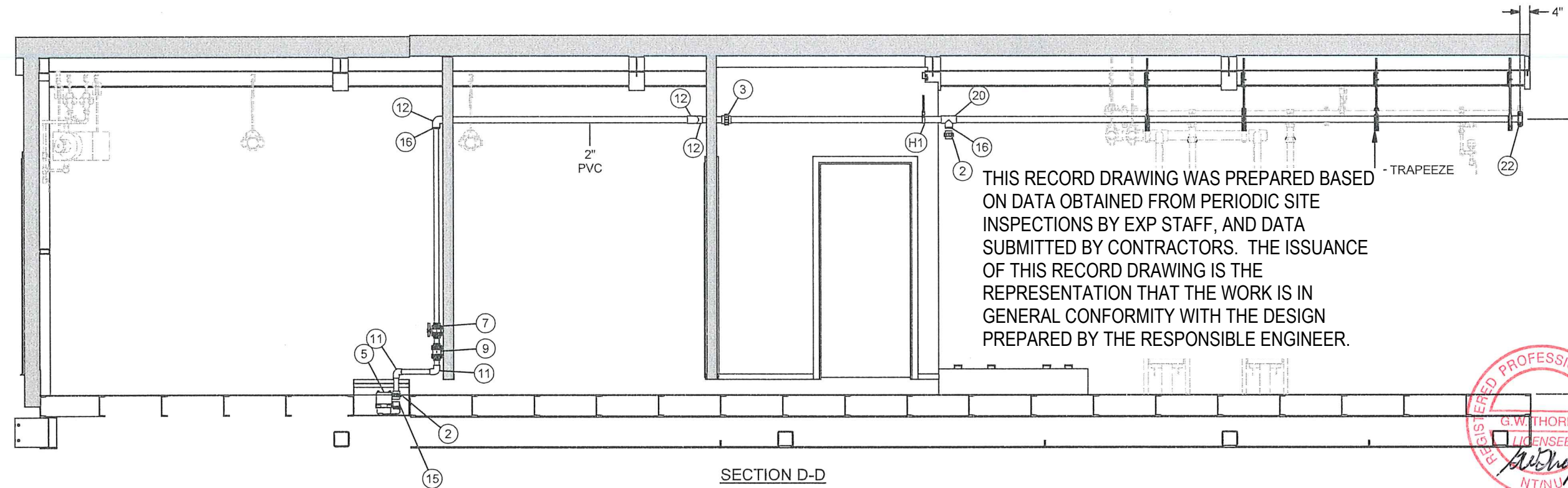
Title: **MODULE #4 PIPING ASSEMBLY (PROCESS)**  
Project: **ARVIAT MODULAR WATER TREATMENT PLANT**  
Drawing #: **2999-G-101**

Scale:  
Date: 2018-03-21  
Sheet: 20 of 22  
Job #: 2999  
Rev: 02





SECTION C-C



SECTION D-D

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Issue	Date	App'd	Revision Description
02	2019-10-04		AS BUILT
01	2018-03-21		ISSUED FOR CONSTRUCTION

Design By: RS  
 Drawn By: RS  
 Checked By:  
 Submitted:  
 Approved:

Client: **TOWER ARCTIC GROUP**

Title: **MODULE #4 PIPING ASSEMBLY (PROCESS)**  
 Project: **ARVIAT MODULAR WATER TREATMENT PLANT**  
 Drawing #: **2999-G-101**

Scale: 2018-03-21  
 Sheet: 21 of 22  
 Job#: 2999  
 Rev: 02

TRUCKFILL  
ARM DRAIN LINE

SECTION E-E

THIS RECORD DRAWING WAS  
PREPARED BASED ON DATA  
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INSPECTIONS BY EXP STAFF, AND  
DATA SUBMITTED BY  
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Issue	Date	App'd	Revision Description
02	2019-10-04		AS BUILT
01	2018-03-21		ISSUED FOR CONSTRUCTION

Design By:	RS
Drawn By:	RS
Checked By:	
Submitted	
Approved	

Client:

TOWER ARCTIC  
GROUP

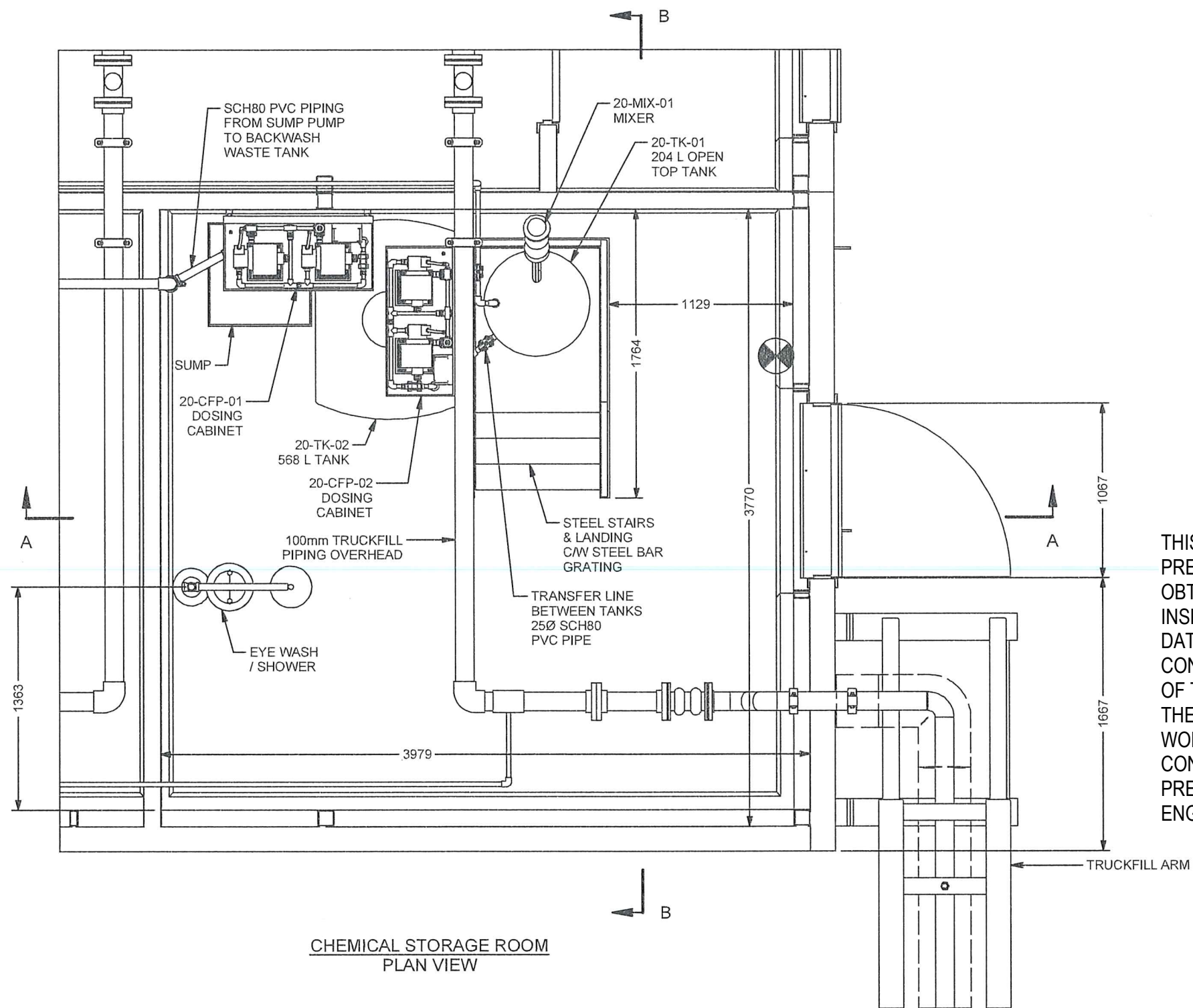
Title: MODULE #4 PIPING ASSEMBLY  
(PROCESS)

Project: ARVIAT MODULAR WATER  
TREATMENT PLANT

Drawing #: 2999-G-101

Scale	2018-03-21
Sheet	22 of 22
Job#	2999
Rev:	02





CHEMICAL STORAGE ROOM  
PLAN VIEW

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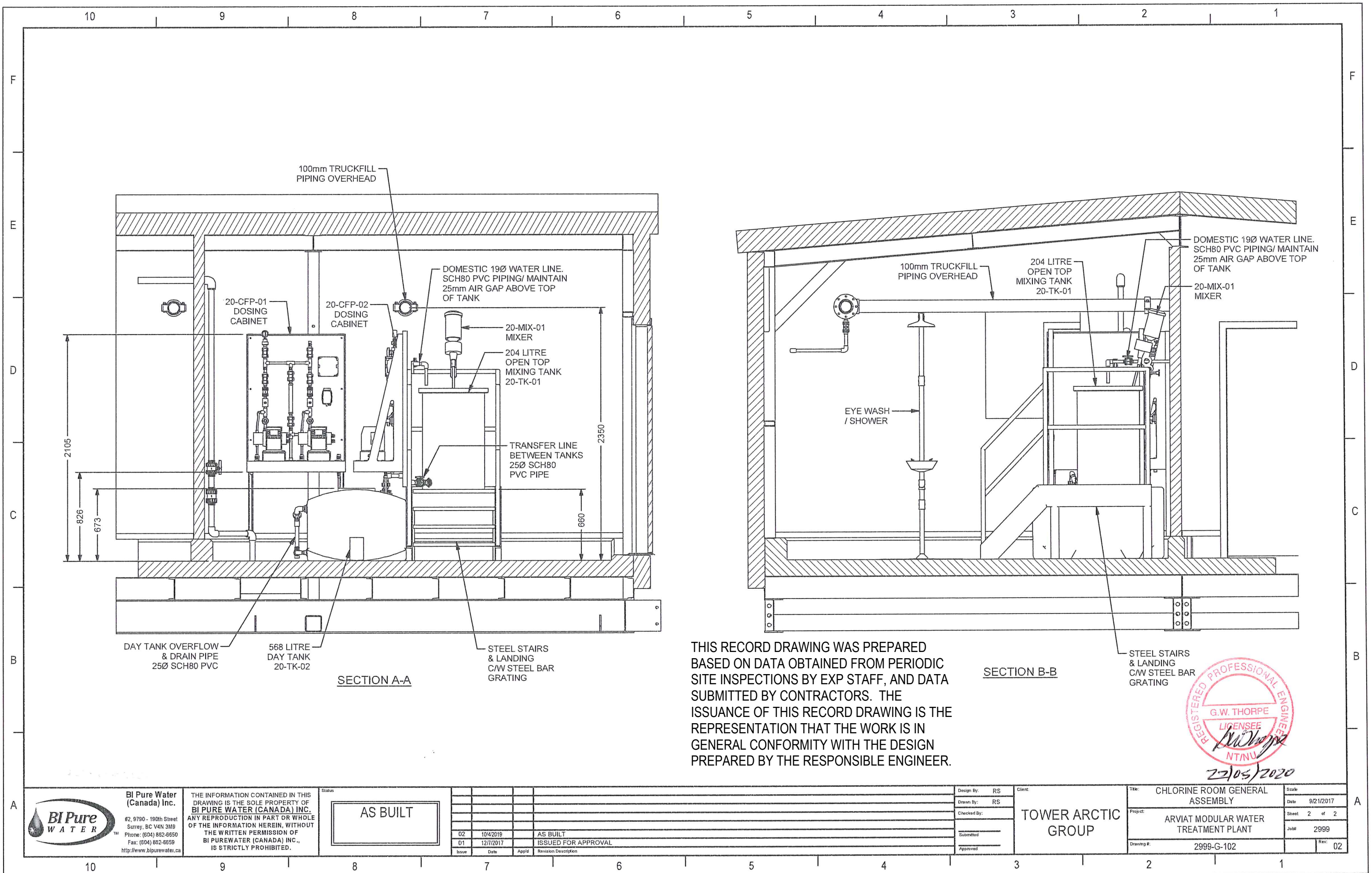
Issue	Date	App'd	Revision Description
02	10/4/2019		AS BUILT
01	12/7/2017		ISSUED FOR APPROVAL

Design By:	RS
Drawn By:	RS
Checked By:	
Submitted	
Approved	

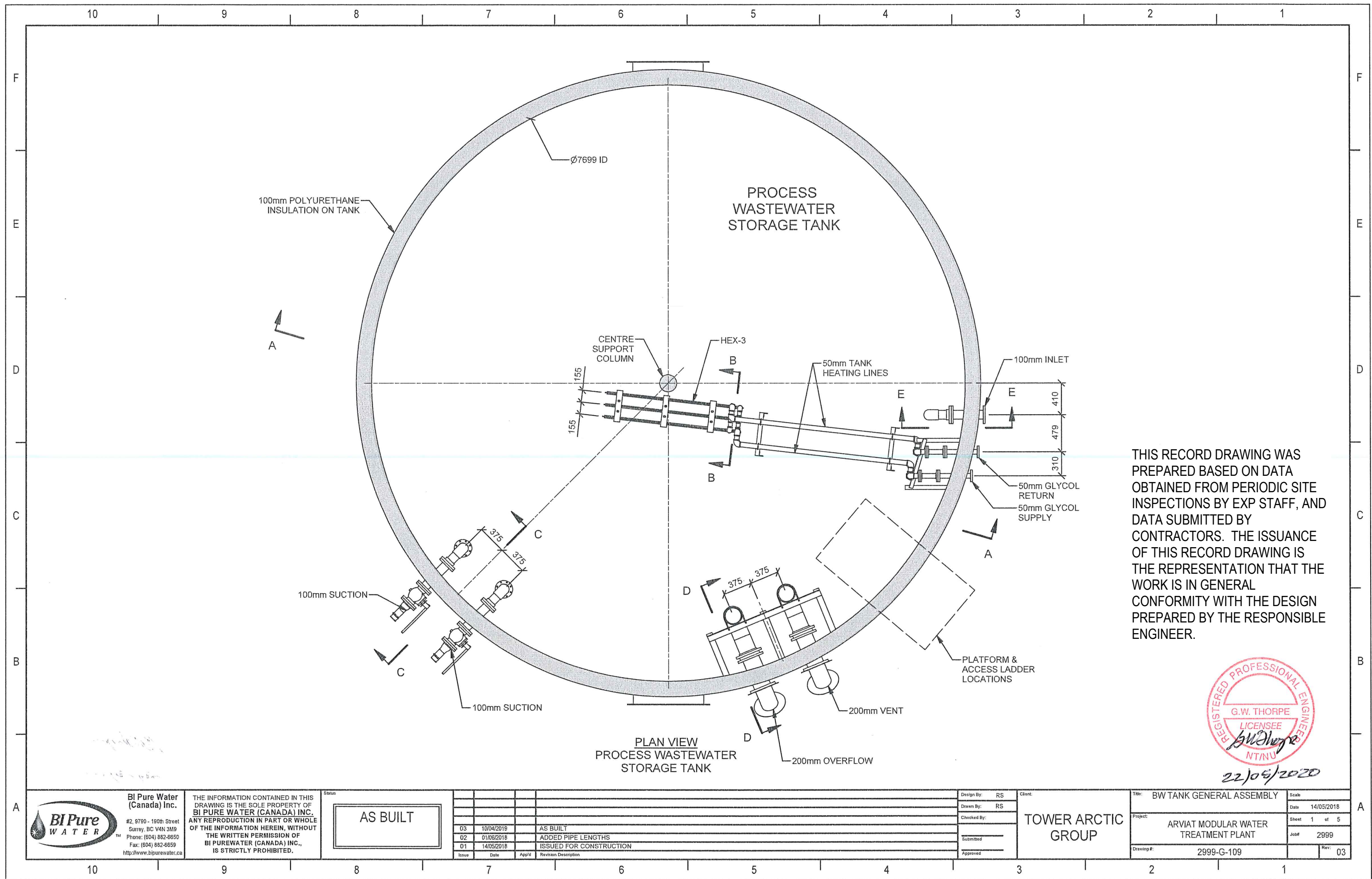
TOWER ARCTIC  
GROUP

Title:	CHLORINE ROOM GENERAL ASSEMBLY	Scale:	
Project:	ARVIAT MODULAR WATER TREATMENT PLANT	Date:	9/21/2017
Sheet:	1 of 2	Job#	2999
Drawing #:	2999-G-102	Rev:	02









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Status

AS BUILT

Issue	Date	App'd	Revision Description
03	10/04/2019		AS BUILT
02	01/06/2018		ADDED PIPE LENGTHS
01	14/05/2018		ISSUED FOR CONSTRUCTION

Design By: RS  
Drawn By: RS  
Checked By:  
Submitted  
Approved

Client:

TOWER ARCTIC GROUP

Title:

BW TANK GENERAL ASSEMBLY

Scale

Date 14/05/2018

Project:

ARVIAT MODULAR WATER TREATMENT PLANT

Sheet 1 of 5

Drawing #:

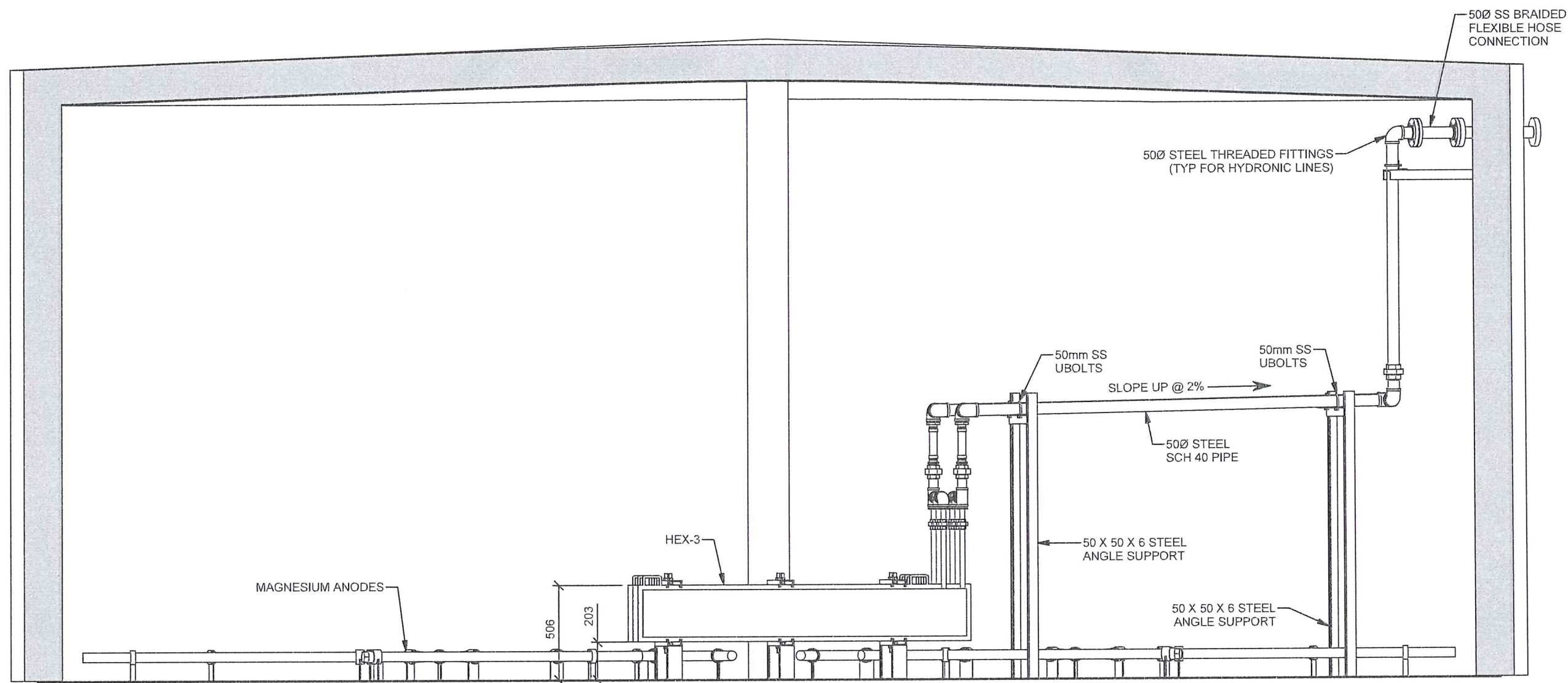
2999-G-109

Job#

2999

Rev:

03



SECTION A-A  
HEAT EXCHANGER PIPING

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Issue	Date	App'd	Revision Description
03	10/04/2019		AS BUILT
02	01/06/2018		ADDED PIPE LENGTHS
01	14/05/2018		ISSUED FOR CONSTRUCTION

Design By: RS  
Drawn By: RS  
Checked By:  
Submitted:  
Approved:

Client:

TOWER ARCTIC GROUP

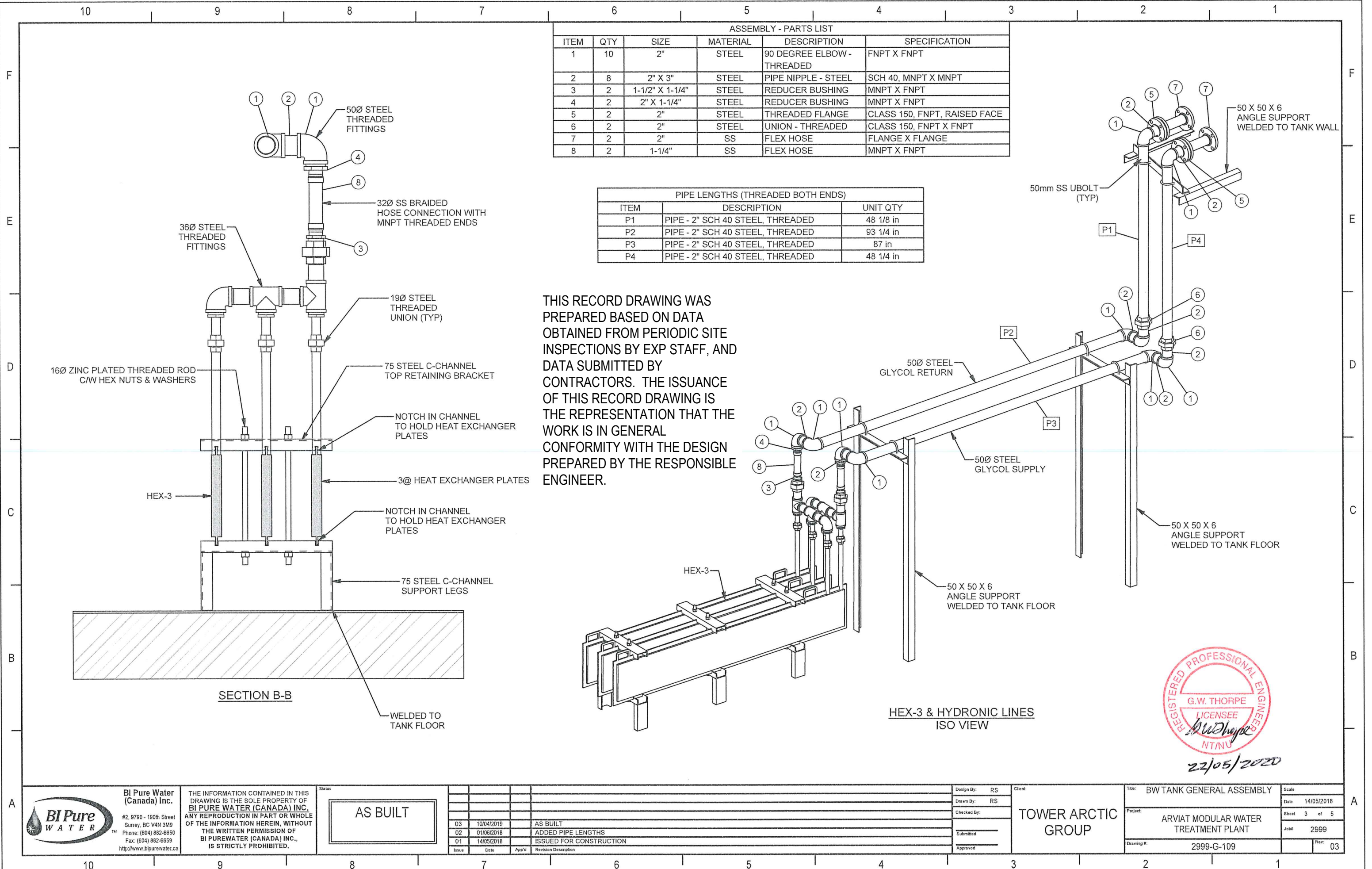
Title: BW TANK GENERAL ASSEMBLY

Project: ARVIAT MODULAR WATER TREATMENT PLANT

Drawing #: 2999-G-109

Scale: 14/05/2018  
Sheet: 2 of 5  
Job#: 2999  
Rev: 03





ASSEMBLY - PARTS LIST					
ITEM	QTY	SIZE	MATERIAL	DESCRIPTION	SPECIFICATION
1	10	2"	STEEL	90 DEGREE ELBOW - THREADED	FNPT X FNPT
2	8	2" X 3"	STEEL	PIPE NIPPLE - STEEL	SCH 40, MNPT X MNPT
3	2	1-1/2" X 1-1/4"	STEEL	REDUCER BUSHING	MNPT X FNPT
4	2	2" X 1-1/4"	STEEL	REDUCER BUSHING	MNPT X FNPT
5	2	2"	STEEL	THREADED FLANGE	CLASS 150, FNPT, RAISED FACE
6	2	2"	STEEL	UNION - THREADED	CLASS 150, FNPT X FNPT
7	2	2"	SS	FLEX HOSE	FLANGE X FLANGE
8	2	1-1/4"	SS	FLEX HOSE	MNPT X FNPT

PIPE LENGTHS (THREADED BOTH ENDS)		
ITEM	DESCRIPTION	UNIT QTY
P1	PIPE - 2" SCH 40 STEEL, THREADED	48 1/8 in
P2	PIPE - 2" SCH 40 STEEL, THREADED	93 1/4 in
P3	PIPE - 2" SCH 40 STEEL, THREADED	87 in
P4	PIPE - 2" SCH 40 STEEL, THREADED	48 1/4 in

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**AS BUILT**

Issue	Date	App'd	Revision Description
03	10/04/2019		AS BUILT
02	01/06/2018		ADDED PIPE LENGTHS
01	14/05/2018		ISSUED FOR CONSTRUCTION

Design By: RS  
Drawn By: RS  
Checked By:  
Submitted:  
Approved:

Client: **TOWER ARCTIC GROUP**

Title: **BW TANK GENERAL ASSEMBLY**  
Project: **ARVIAT MODULAR WATER TREATMENT PLANT**  
Drawing #: **2999-G-109**

Scale:  
Date: **14/05/2018**  
Sheet: **3 of 5**  
Job#: **2999**  
Rev: **03**



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100mm POLYURETHANE INSULATION ON TANK

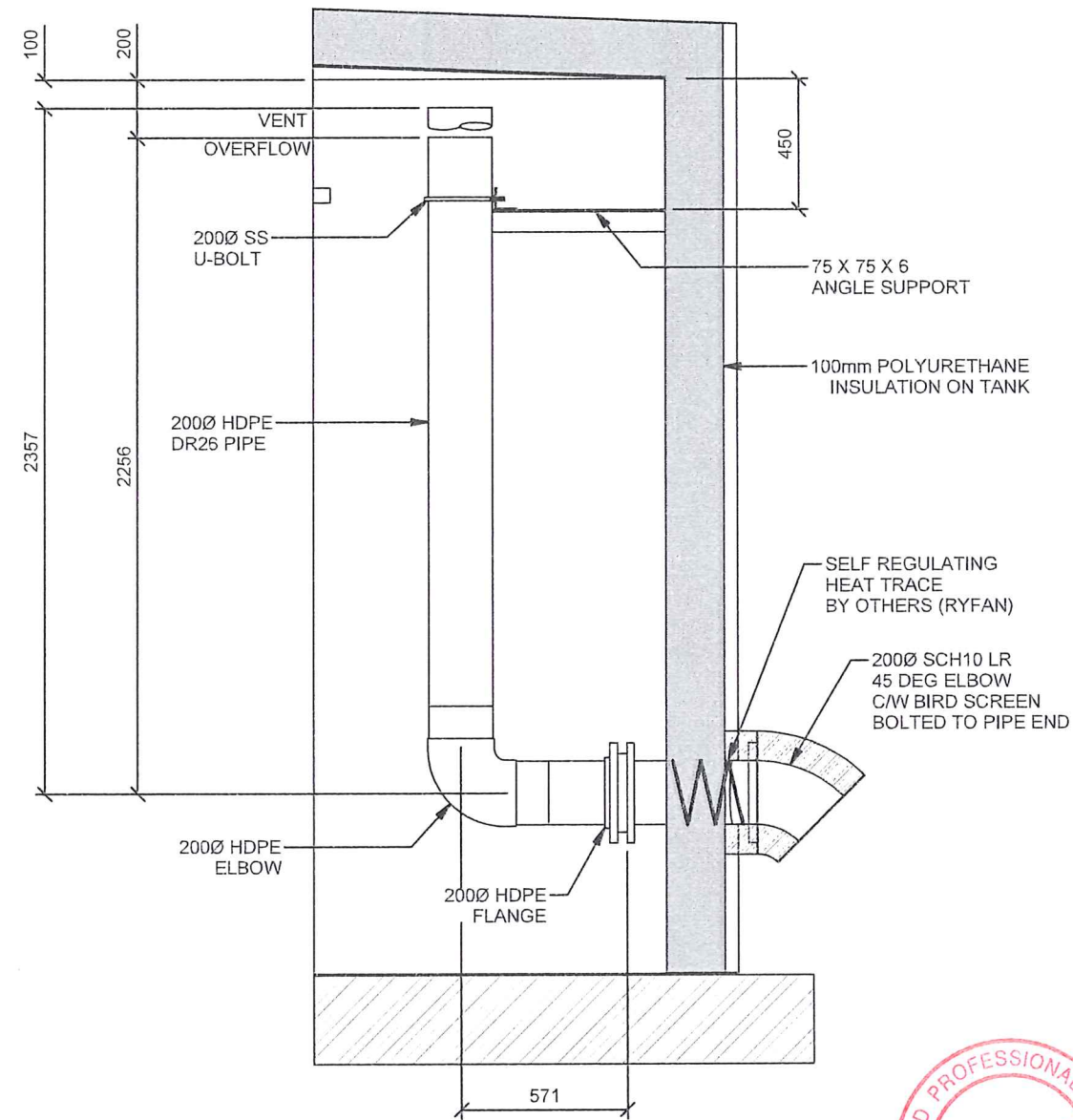
SELF REGULATING HEAT TRACE BY OTHERS (RYFAN)

100mm LEVER OPERATED PLUG VALVE C/W REMOVABLE WRENCH.

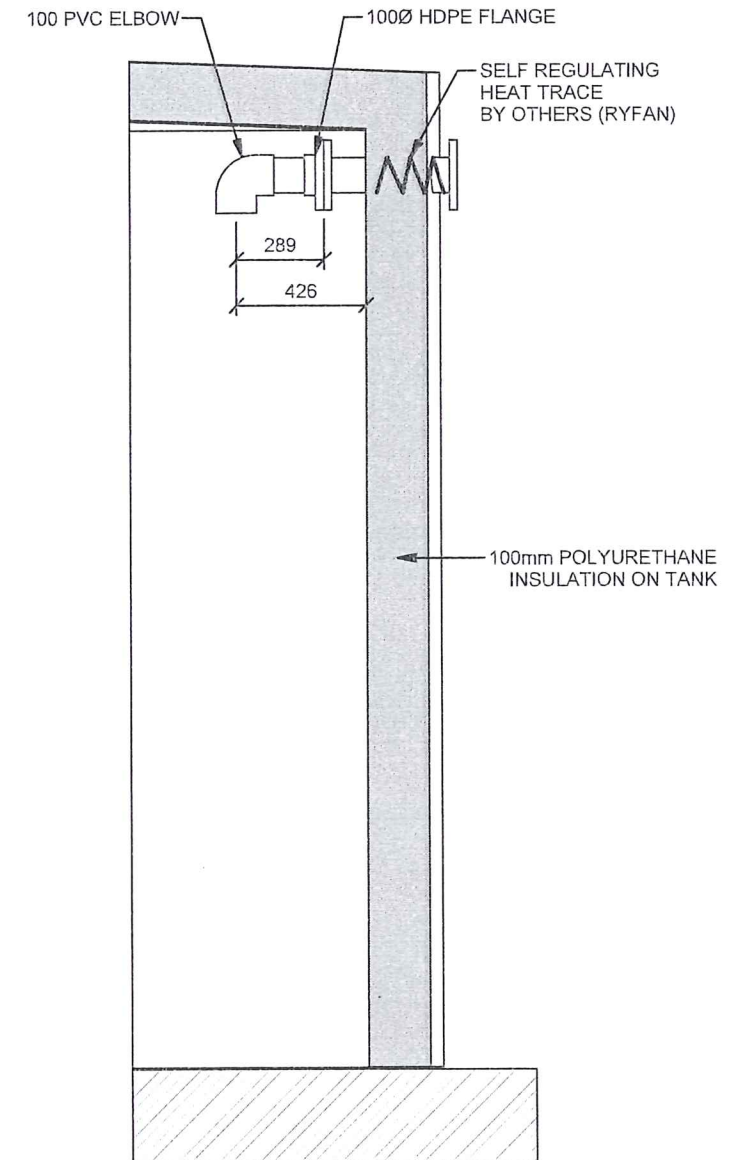
75Ø SS FNPT X 75Ø MALE CAMLOCK C/W DUST CAP

100Ø X 75Ø SS ECCENTRIC REDUCER

SECTION C-C  
SUCTION NOZZLE



SECTION D-D  
OVERFLOW / VENT



SECTION E-E  
INLET NOZZLE



22/05/2020

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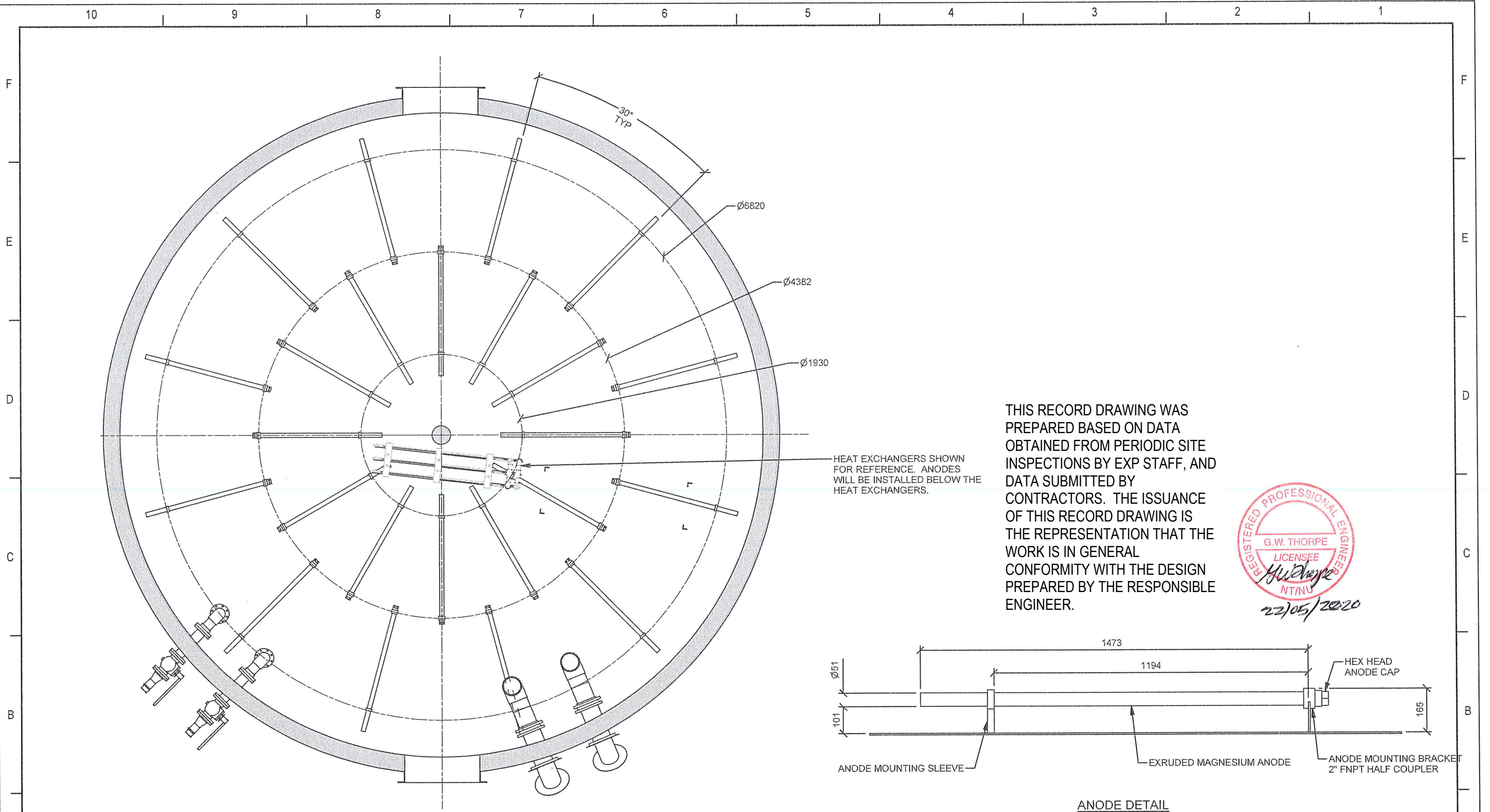
Issue	Date	App'd	Revision Description
03	10/04/2019		AS BUILT
02	01/05/2018		ADDED PIPE LENGTHS
01	14/05/2018		ISSUED FOR CONSTRUCTION

Design By:	RS
Drawn By:	RS
Checked By:	
Submitted:	
Approved:	

TOWER ARCTIC GROUP


Title:	BW TANK GENERAL ASSEMBLY	Scale:	
Date:	14/05/2018	Sheet:	4 of 5
Project:	ARVIAT MODULAR WATER TREATMENT PLANT	Job#:	2999
Drawing #:	2999-G-109	Rev:	03





ANODE LAYOUT

ANODE DETAIL



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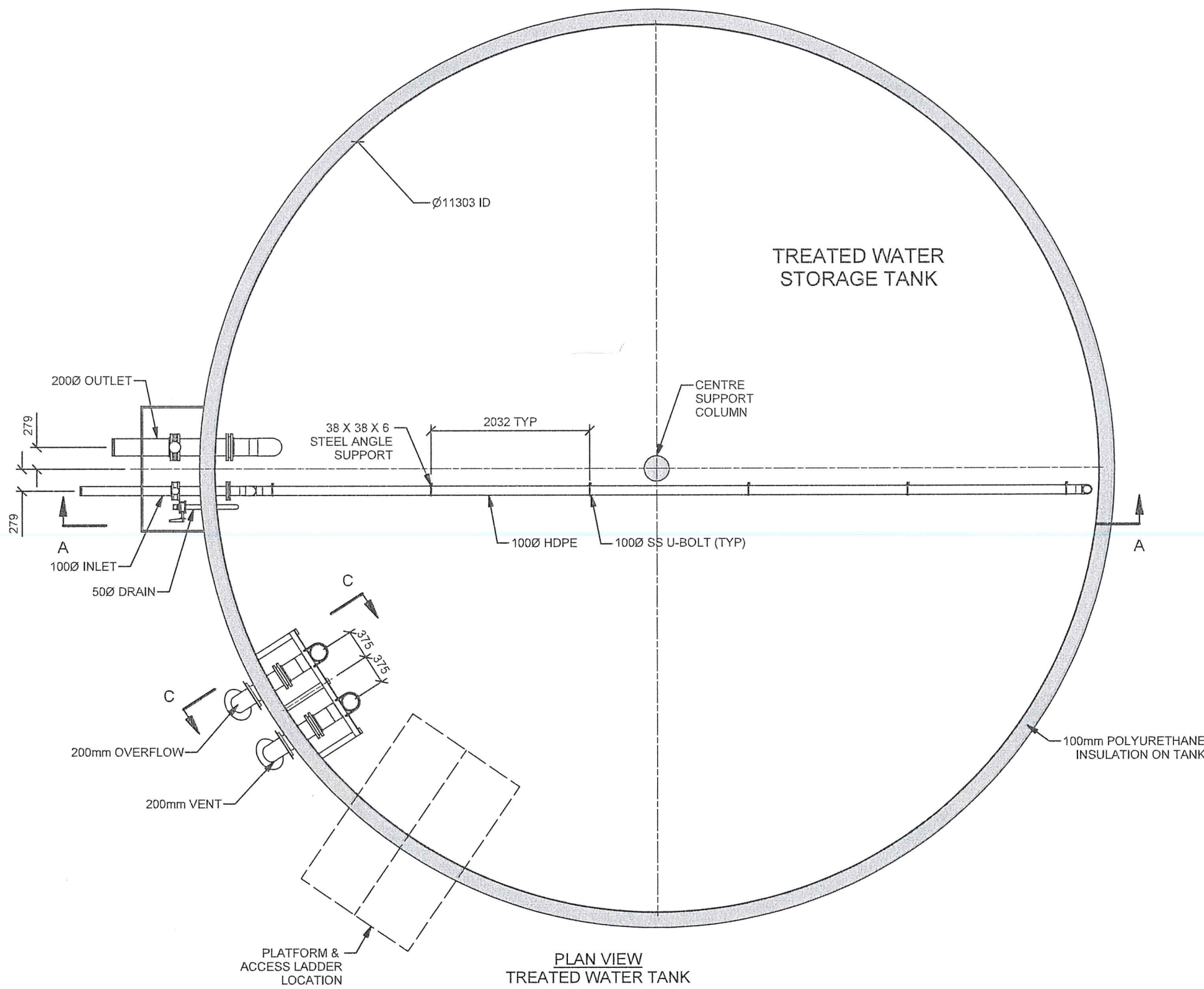
Status: **AS BUILT**

Issue	Date	App'd	Revision Description
03	10/04/2019		AS BUILT
02	01/06/2018		ADDED PIPE LENGTHS
01	14/05/2018		ISSUED FOR CONSTRUCTION

Design By:	RS
Drawn By:	RS
Checked By:	
Submitted:	
Approved:	

Client: **TOWER ARCTIC GROUP**

Title:	BW TANK GENERAL ASSEMBLY	Scale:	
Project:	ARVIAT MODULAR WATER TREATMENT PLANT	Date:	14/05/2018
Drawing #:	2999-G-109	Sheet:	5 of 5
		Job #:	2999
		Rev:	03



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REGISTERED PROFESSIONAL ENGINEER  
G.W. THORPE  
LICENSEE  
NT/NU  
22/05/2020



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Issue	Date	App'd	Revision Description
02	10/04/2019		AS BUILT
01	5/14/2018		ISSUED FOR CONSTRUCTION

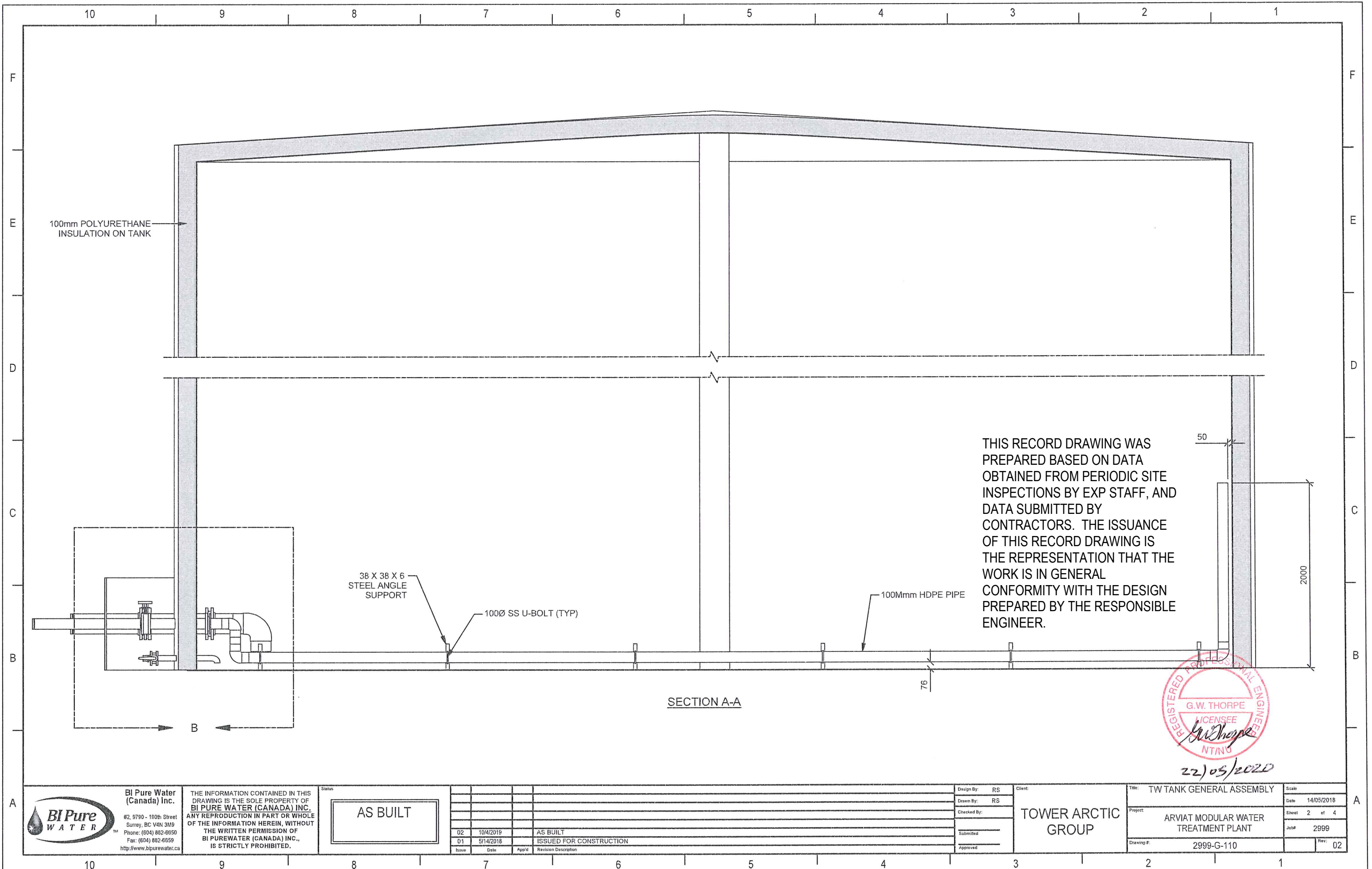
Design By: RS  
Drawn By: RS  
Checked By:  
Submitted  
Approved

Client: TOWER ARCTIC GROUP

Title: TW TANK GENERAL ASSEMBLY  
Project: ARVIAT MODULAR WATER TREATMENT PLANT  
Drawing #: 2999-G-110

Scale: 14/05/2018  
Sheet 1 of 4  
Job# 2999  
Rev: 02





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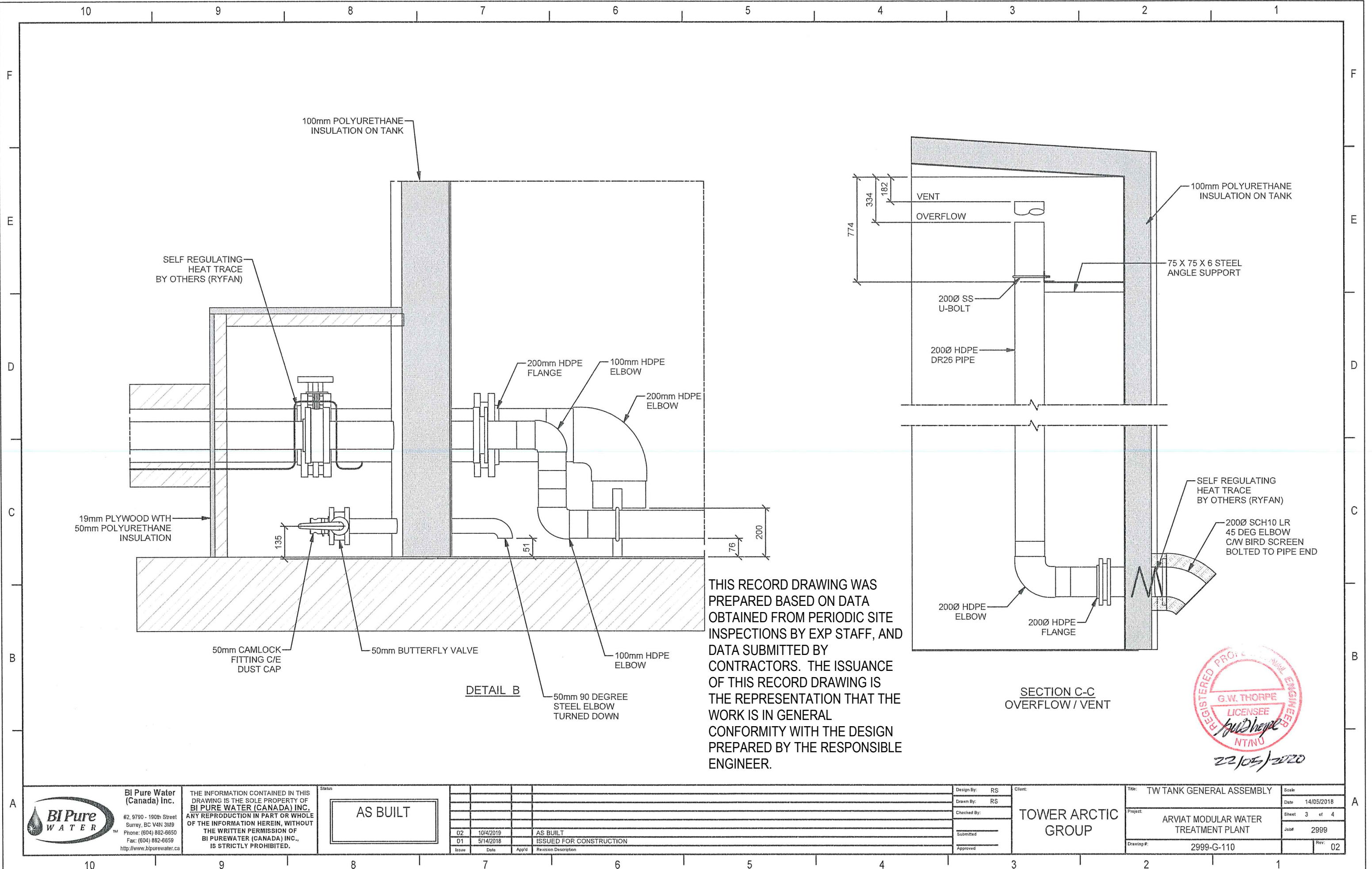
AS BUILT

Issue	Date	App'd	Revision Description
02	10/4/2019		AS BUILT
01	5/14/2018		ISSUED FOR CONSTRUCTION

Design By:	RS
Drawn By:	RS
Checked By:	
Submitted:	
Approved:	

Client:  
**TOWER ARCTIC GROUP**

Title:	TW TANK GENERAL ASSEMBLY	Scale:	
Date:	14/05/2018	Sheet:	2 of 4
Project:	ARVIAT MODULAR WATER TREATMENT PLANT	Job#:	2999
Drawing #:	2999-G-110	Rev:	02



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Issue	Date	App'd	Revision Description
02	10/4/2019		AS BUILT
01	5/14/2018		ISSUED FOR CONSTRUCTION

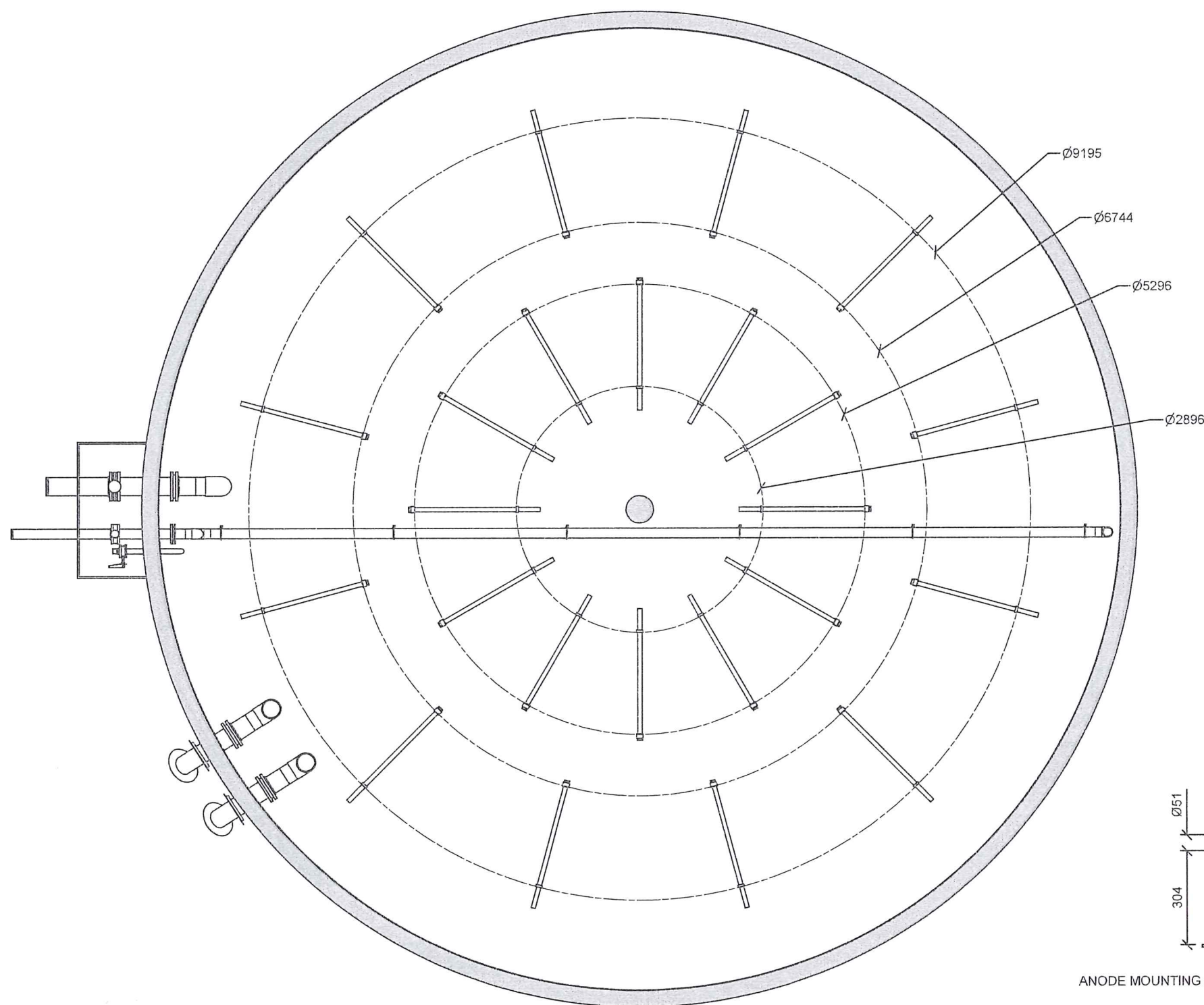
Design By: RS  
Drawn By: RS  
Checked By:  
Submitted:  
Approved:

Client: TOWER ARCTIC GROUP

Title: TW TANK GENERAL ASSEMBLY  
Project: ARVIAT MODULAR WATER TREATMENT PLANT  
Drawing #: 2999-G-110

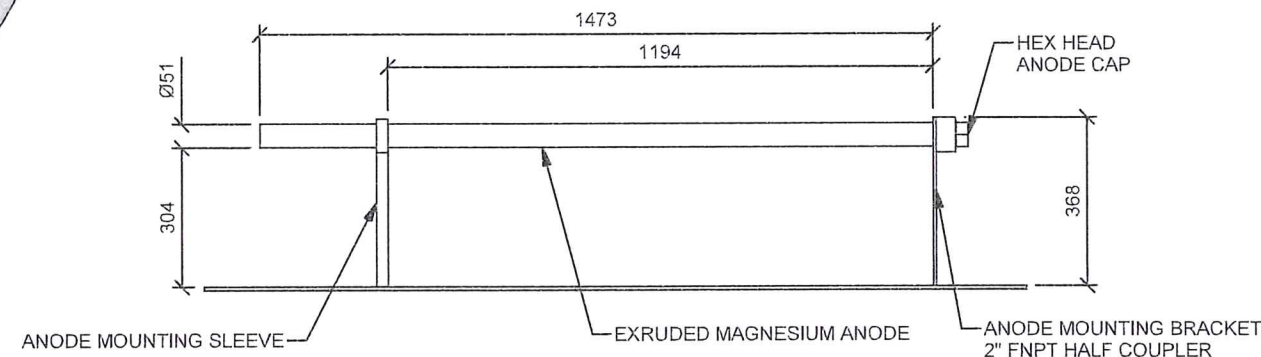
Scale: 14/05/2018  
Sheet 3 of 4  
Job#: 2999  
Rev: 02





ANODE LAYOUT

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ANODE DETAIL



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Issue	Date	App'd	Revision Description
02	10/4/2019		AS BUILT
01	5/14/2018		ISSUED FOR CONSTRUCTION

Design By: RS  
 Drawn By: RS  
 Checked By:  
 Submitted  
 Approved

Client:

TOWER ARCTIC GROUP

Title: TW TANK GENERAL ASSEMBLY

Project: ARVIAT MODULAR WATER TREATMENT PLANT

Drawing #: 2999-G-110

Scale: 14/05/2018  
 Date: 14/05/2018  
 Sheet 4 of 4  
 Job#: 2999  
 Rev: 02





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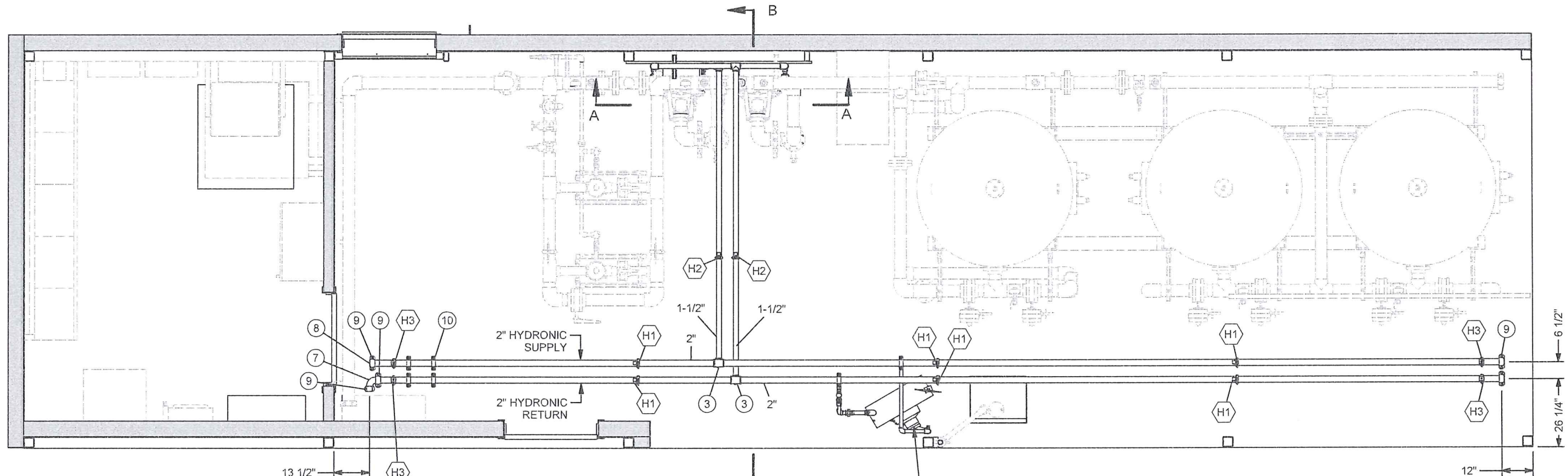
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PLAN VIEW

UNIT HEATER

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Issue	Date	App'd	Revision Description
02	2019-10-04		AS BUILT
01	2018-03-21		ISSUED FOR CONSTRUCTION

Design By:	RS
Drawn By:	RS
Checked By:	
Submitted	
Approved	

Client:

TOWER ARCTIC  
GROUP

Title: MODULE #1 PIPING ASSEMBLY  
(BOILER)

Project: ARVIAT MODULAR WATER  
TREATMENT PLANT

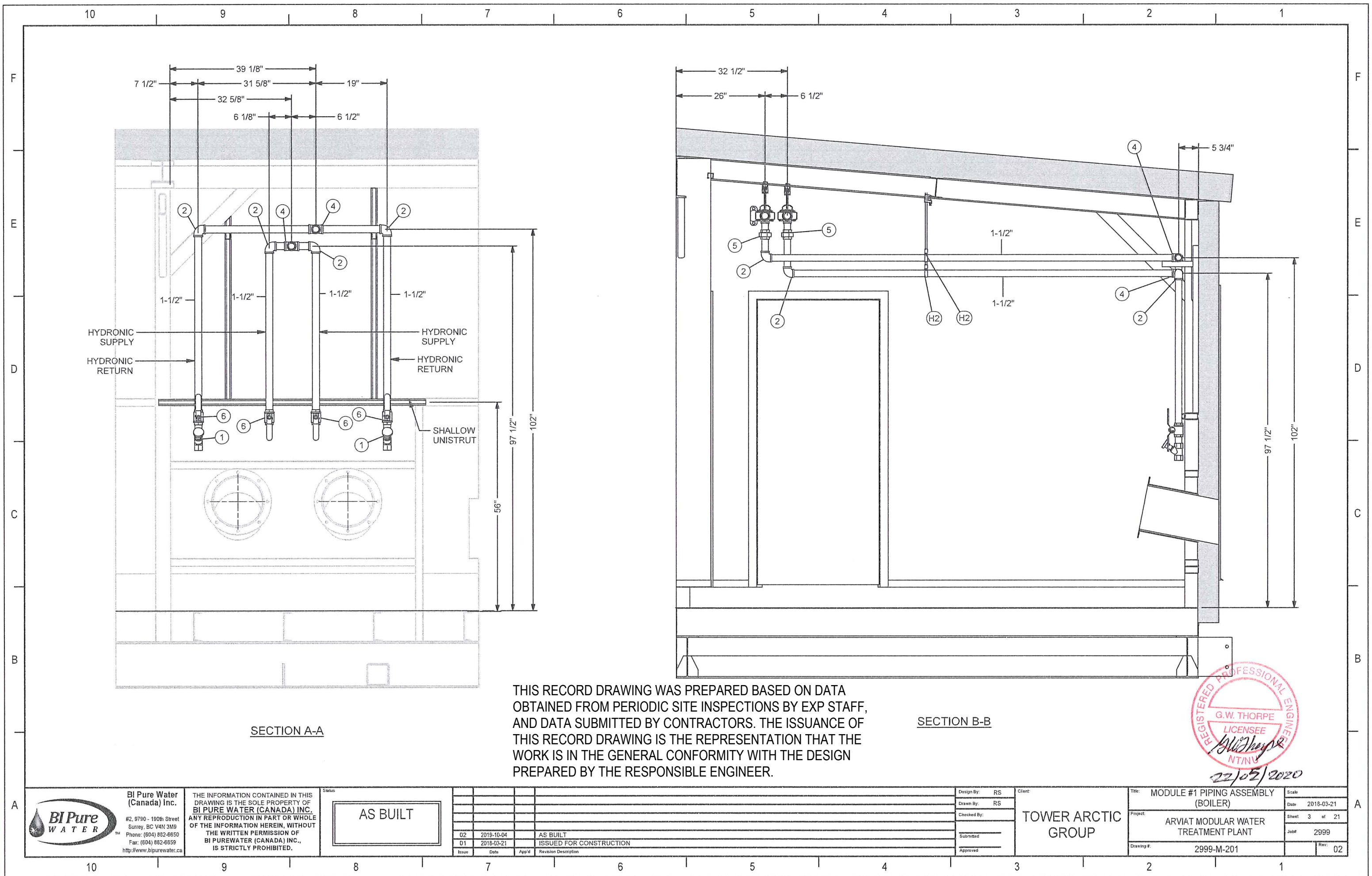
Drawing #: 2999-M-201

Scale:	2018-03-21
Date:	2 of 21
Sheet:	2999
Job#:	Rev: 02

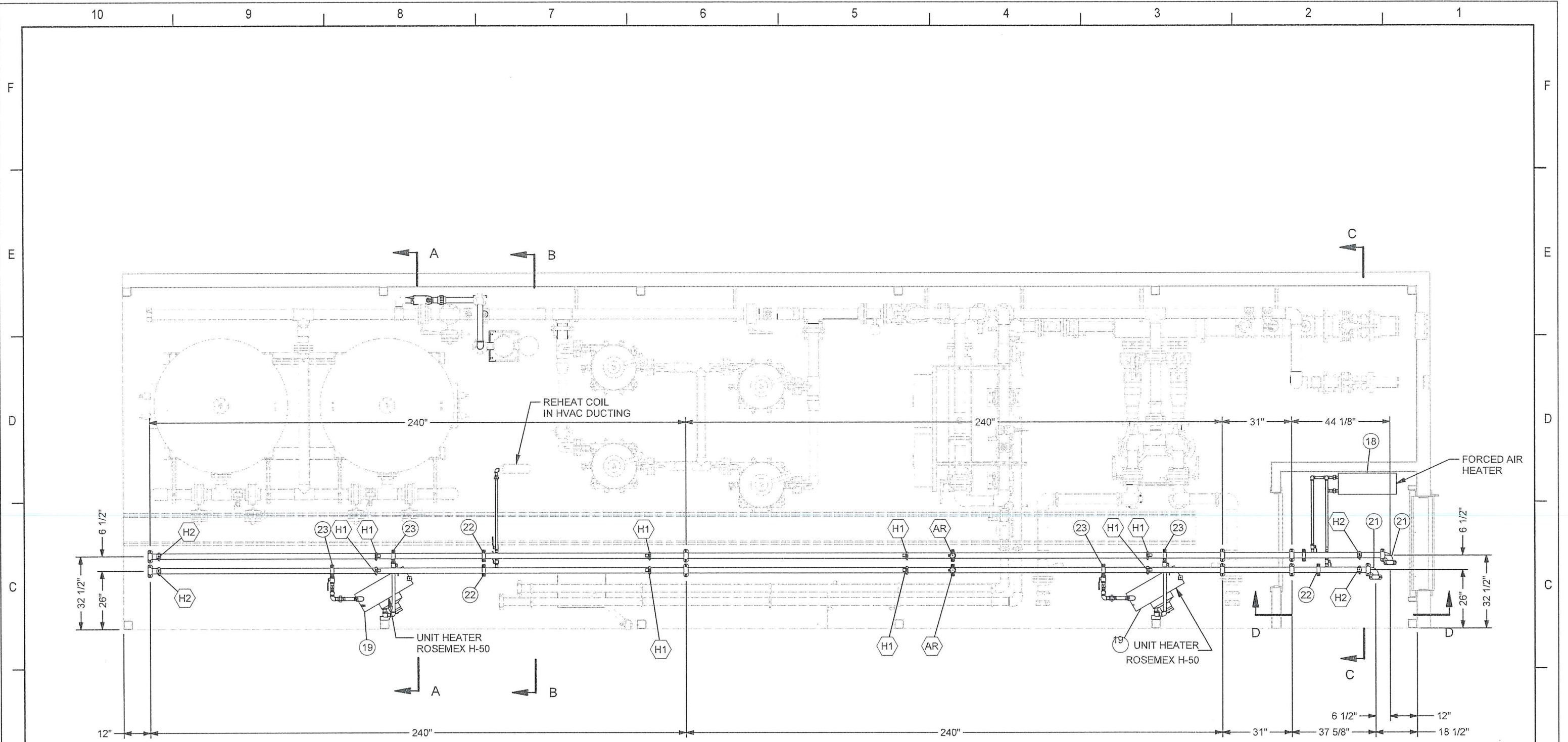












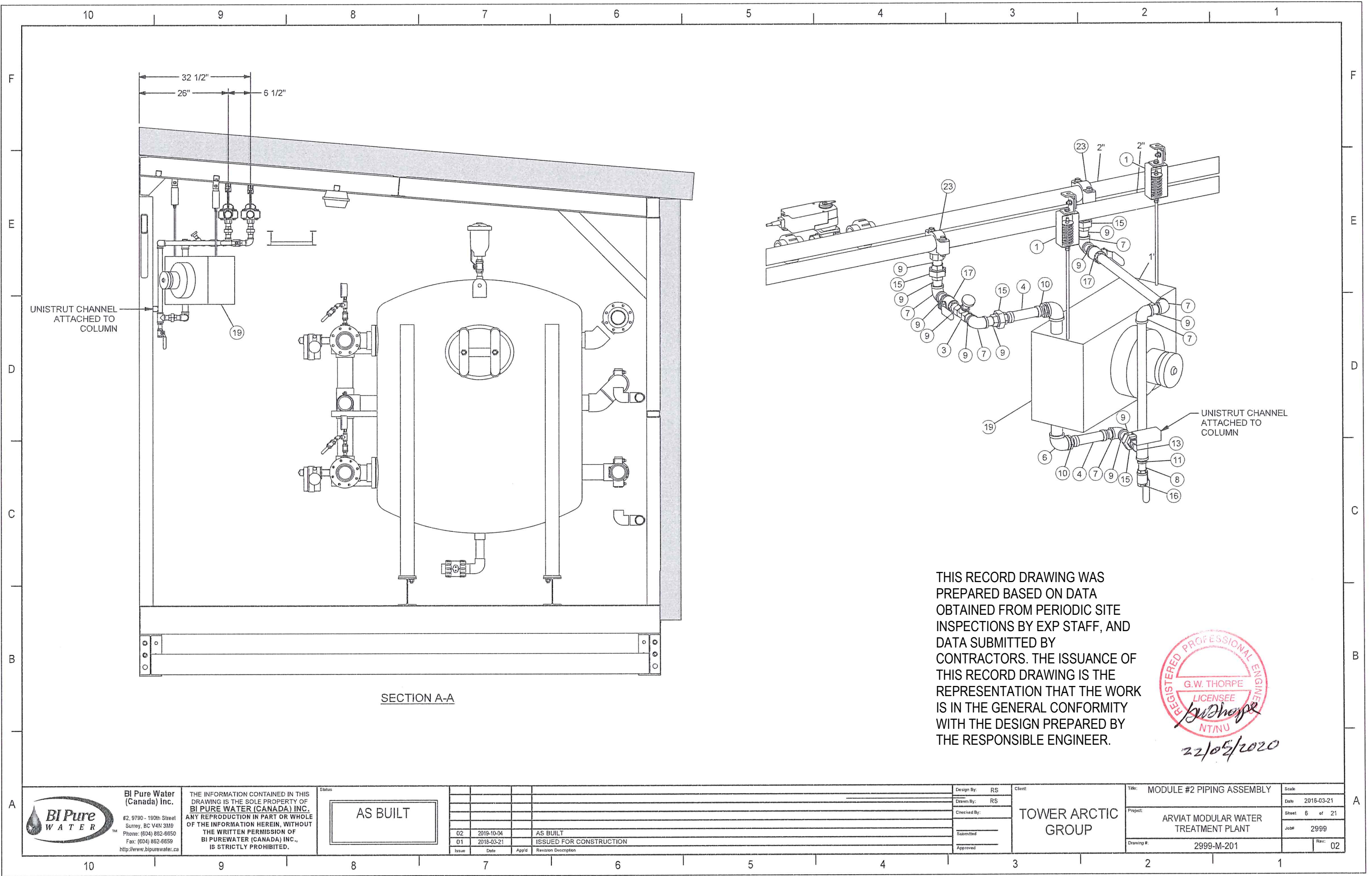
PLAN VIEW

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			Issue	Date	App'd	Revision Description														
			02	2018-10-04		AS BUILT														
			01	2018-03-21		ISSUED FOR CONSTRUCTION														





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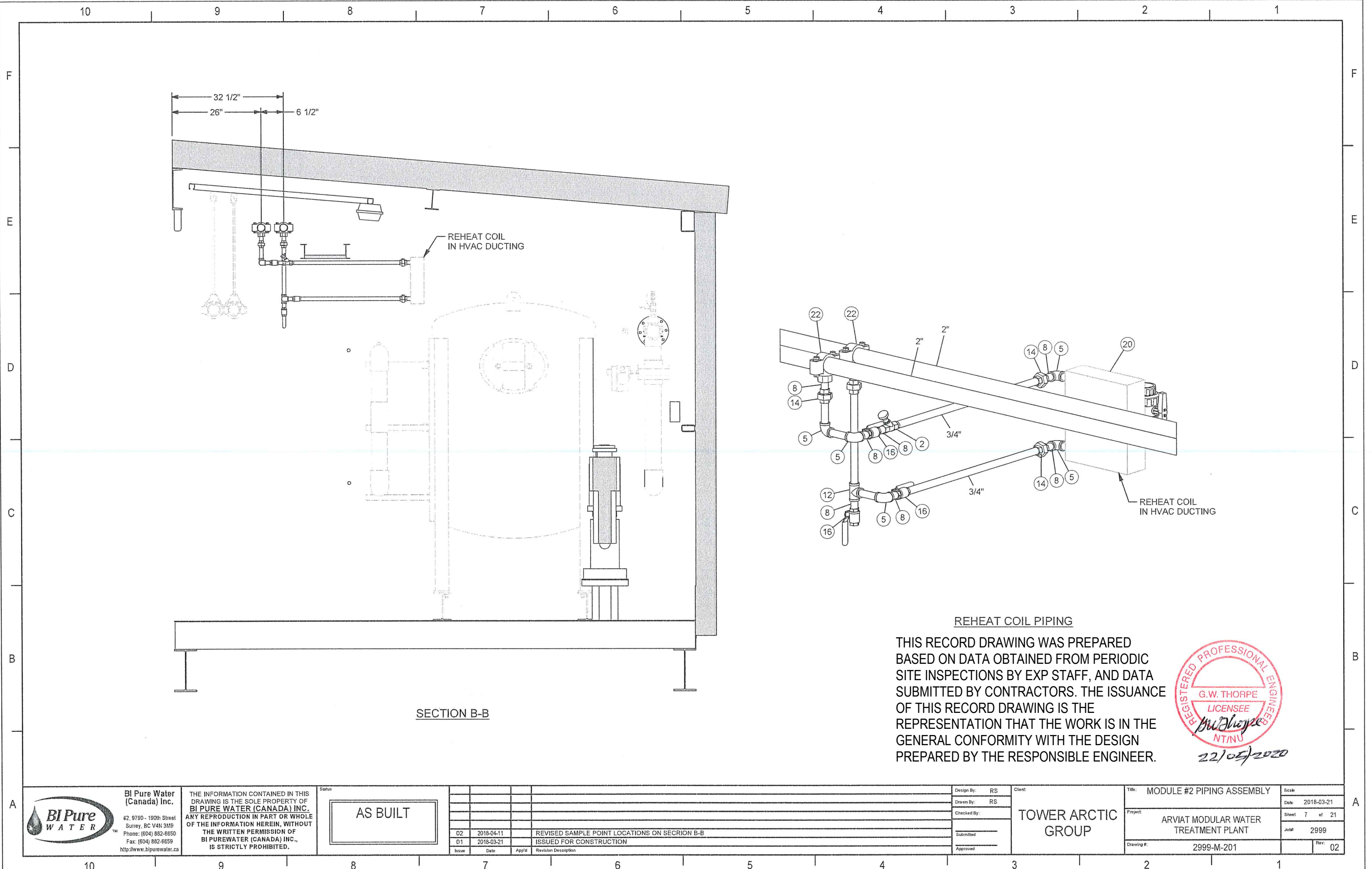
Issue	Date	App'd	Revision Description
02	2019-10-04		AS BUILT
01	2018-03-21		ISSUED FOR CONSTRUCTION

Design By: RS  
Drawn By: RS  
Checked By:  
Submitted:  
Approved:

TOWER ARCTIC GROUP

Title: MODULE #2 PIPING ASSEMBLY  
Project: ARVIAT MODULAR WATER TREATMENT PLANT  
Drawing #: 2999-M-201

Scale: 2018-03-21  
Sheet 6 of 21  
Job #: 2999  
Rev: 02



SECTION B-B

REHEAT COIL PIPING

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Status:

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Issue	Date	App'd	Revision Description
02	2018-04-11		REVISED SAMPLE POINT LOCATIONS ON SECTION B-B
01	2018-03-21		ISSUED FOR CONSTRUCTION

Design By:	RS
Drawn By:	RS
Checked By:	
Submitted	
Approved	

Client:

TOWER ARCTIC  
GROUP

Title: MODULE #2 PIPING ASSEMBLY

Project: ARVIAT MODULAR WATER  
TREATMENT PLANT

Drawing #: 2999-M-201

Scale:	2018-03-21
Sheet 7 of 21	
Job:	2999
Rev:	02







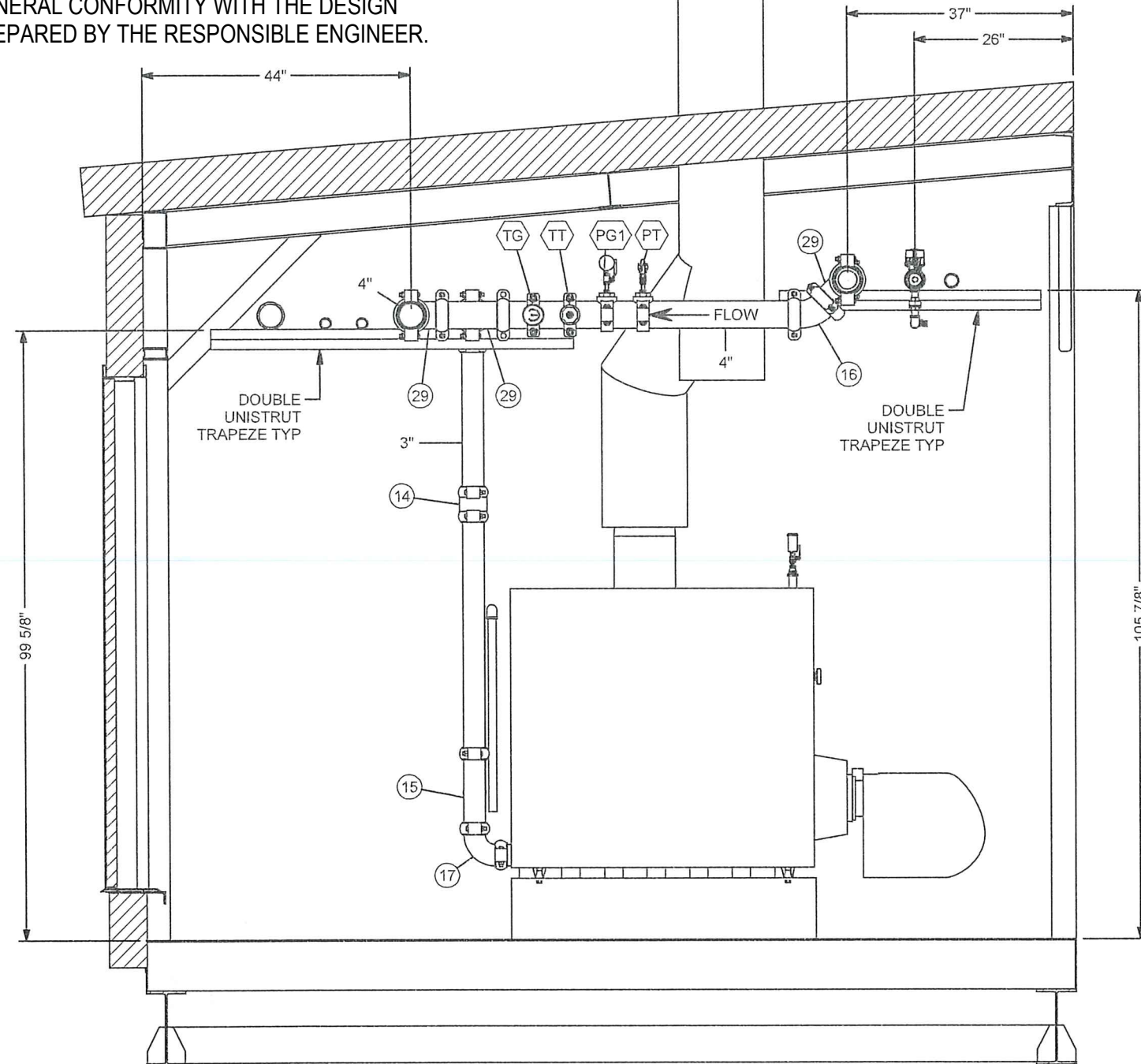




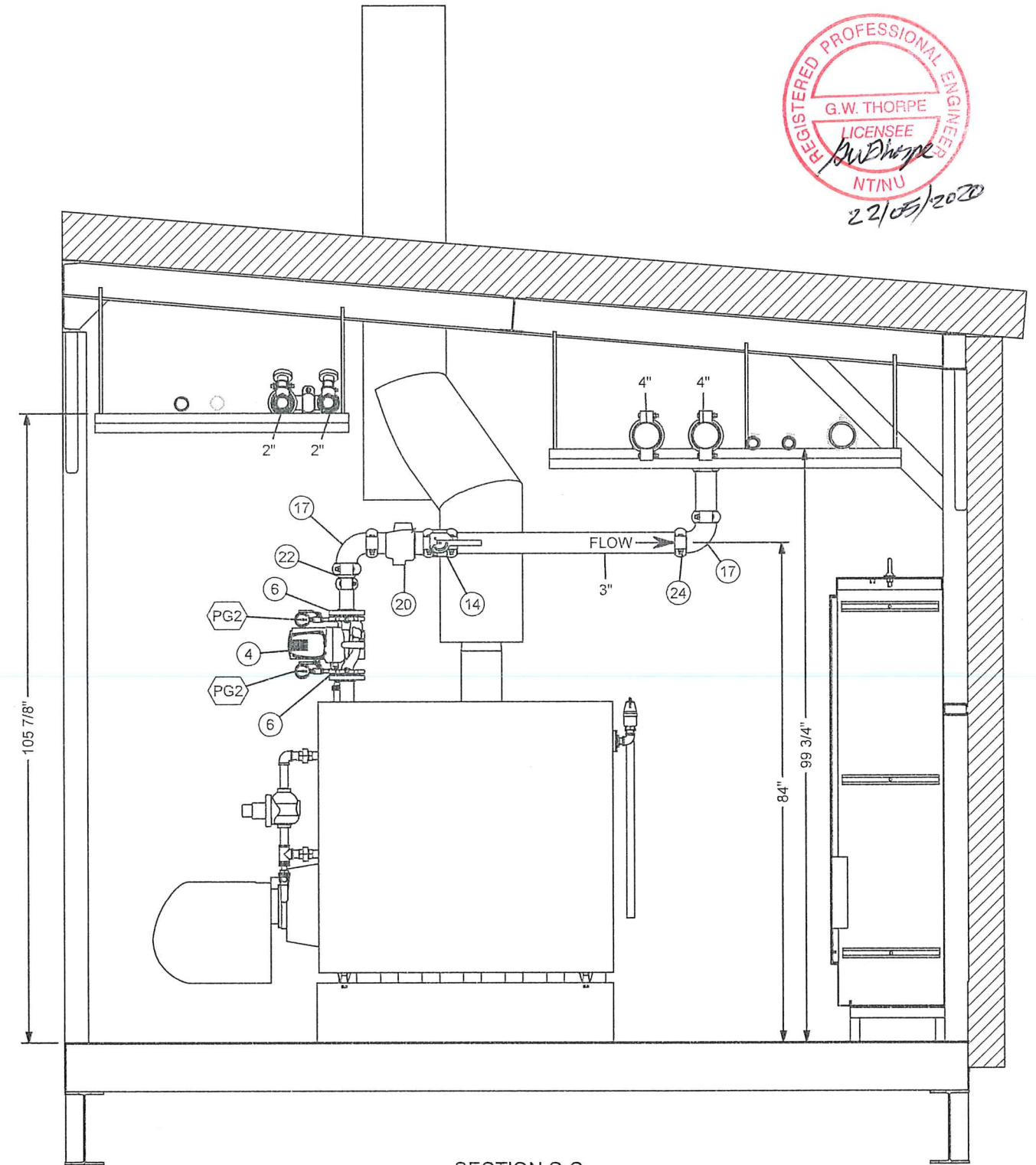




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SECTION B-B



SECTION C-C



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Status

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Issue	Date	App'd	Revision Description
02	2019-10-04		AS BUILT
01	2018-02-16		ISSUED FOR CONSTRUCTION

Design By: RS  
Drawn By: RS  
Checked By:  
Submitted:  
Approved:

Client:

TOWER ARCTIC  
GROUP

Title: MODULE #3 BOILER PIPING

Project: ARVIAT MODULAR WATER  
TREATMENT PLANT

Drawing #: 2999-M-201

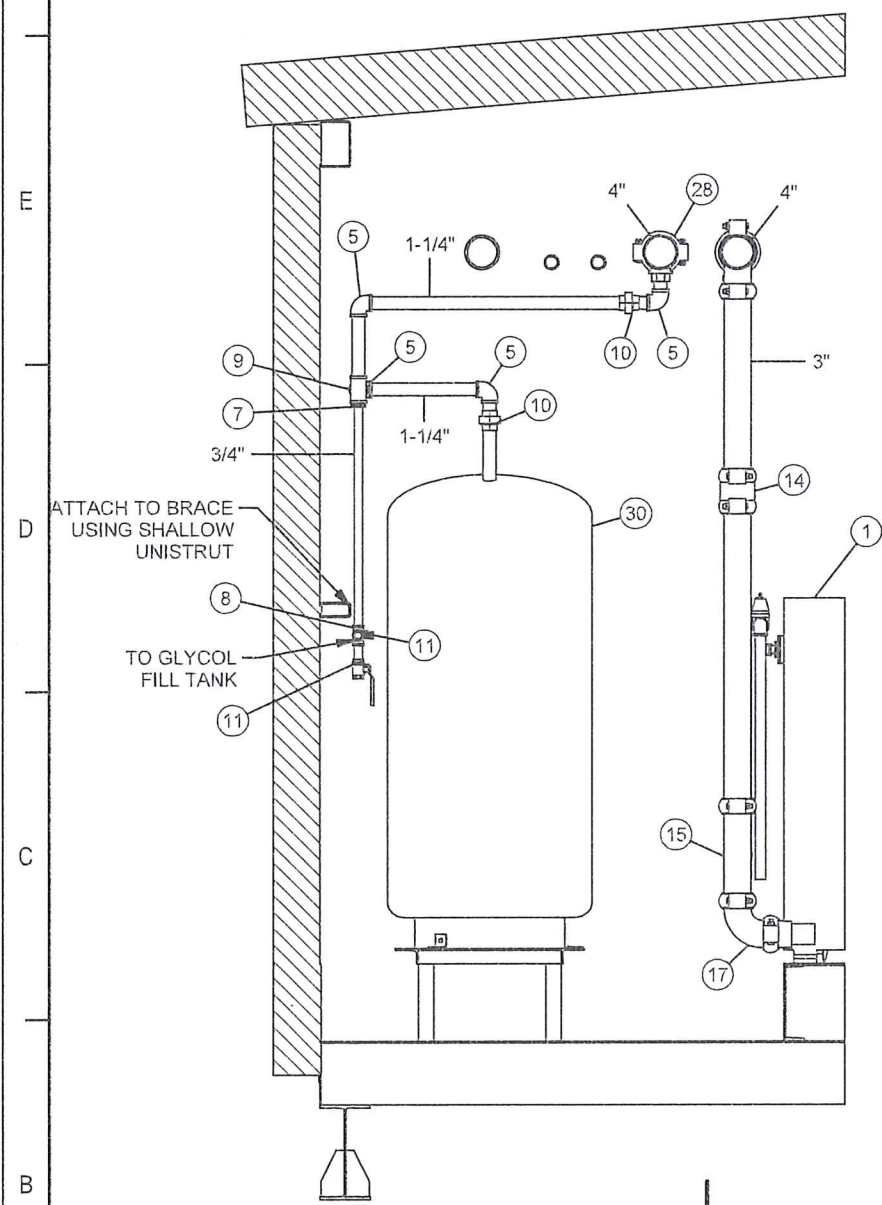
Scale:  
Date: 2018-04-03  
Sheet: 11 of 21  
Job #: 2999  
Rev: 02



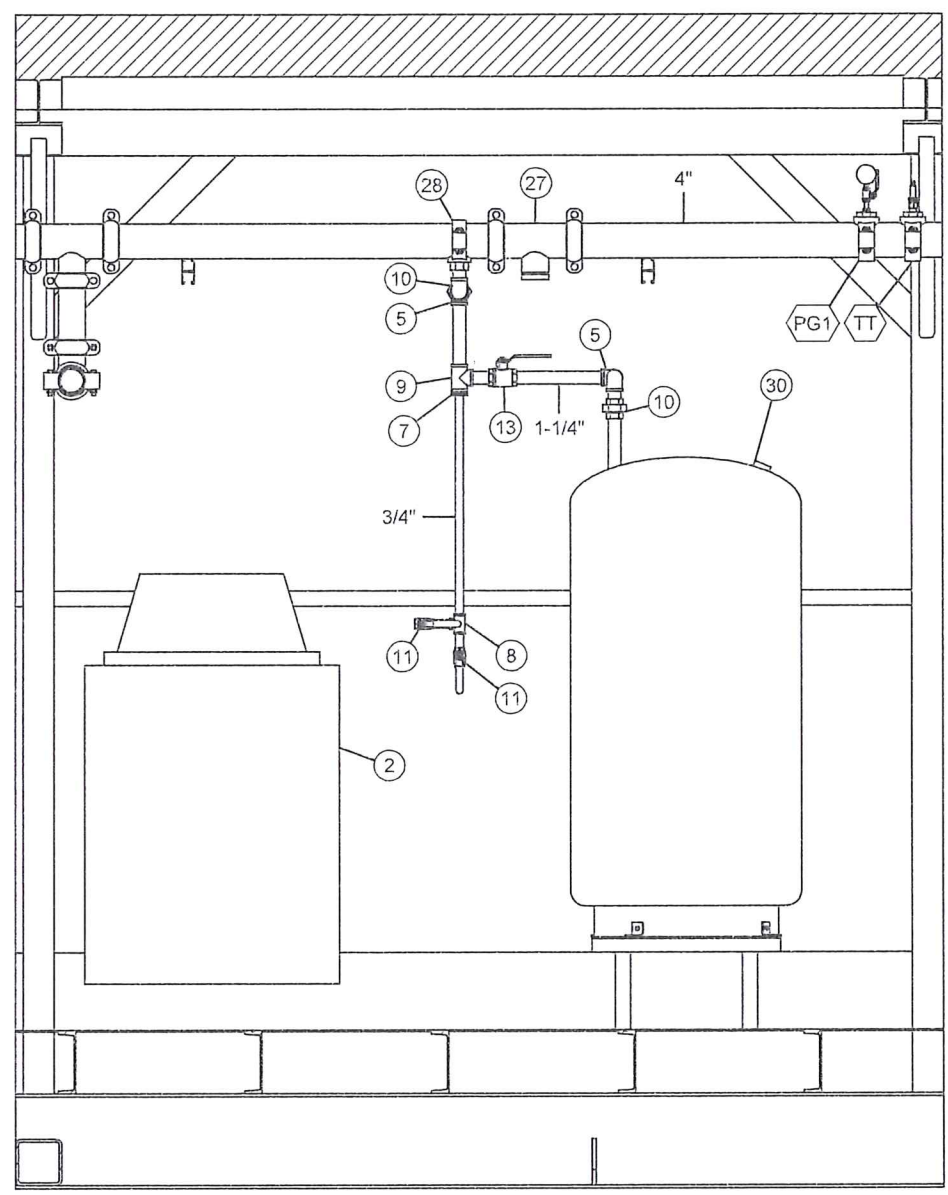
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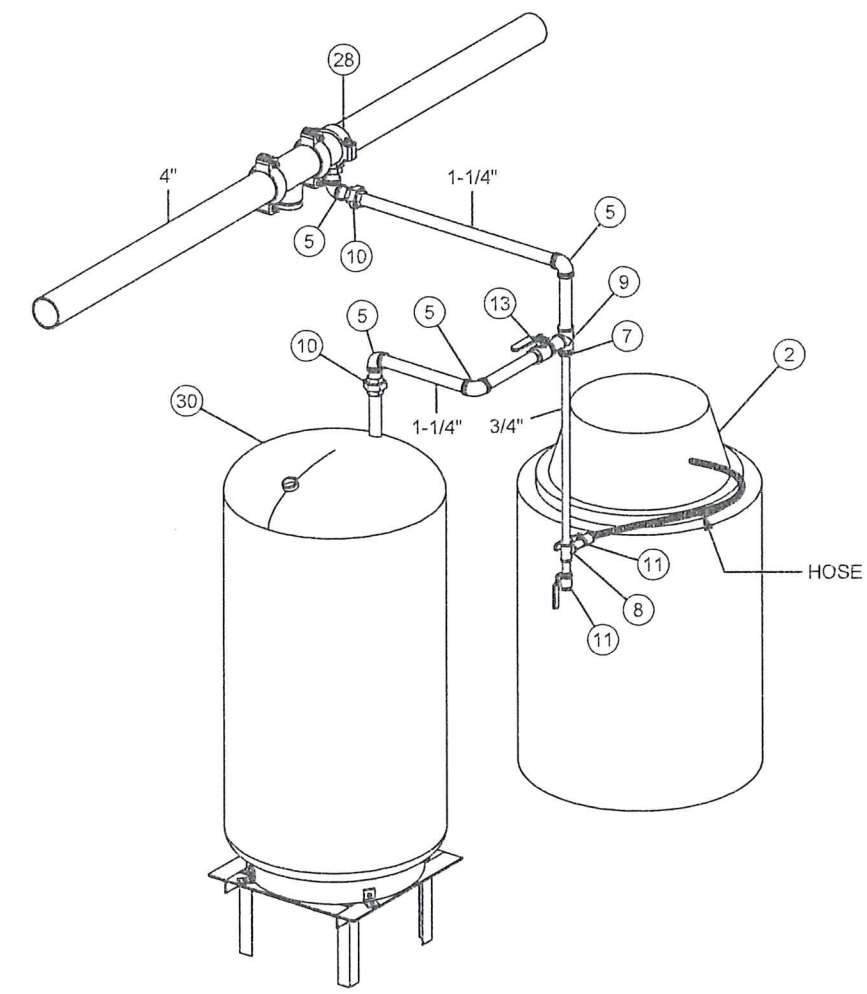
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SECTION D1-D1



SECTION D2-D2



ISO VIEW



22/02/2020



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Issue	Date	App'd	Revision Description
02	2019-10-04		AS BUILT
01	2018-02-16		ISSUED FOR CONSTRUCTION

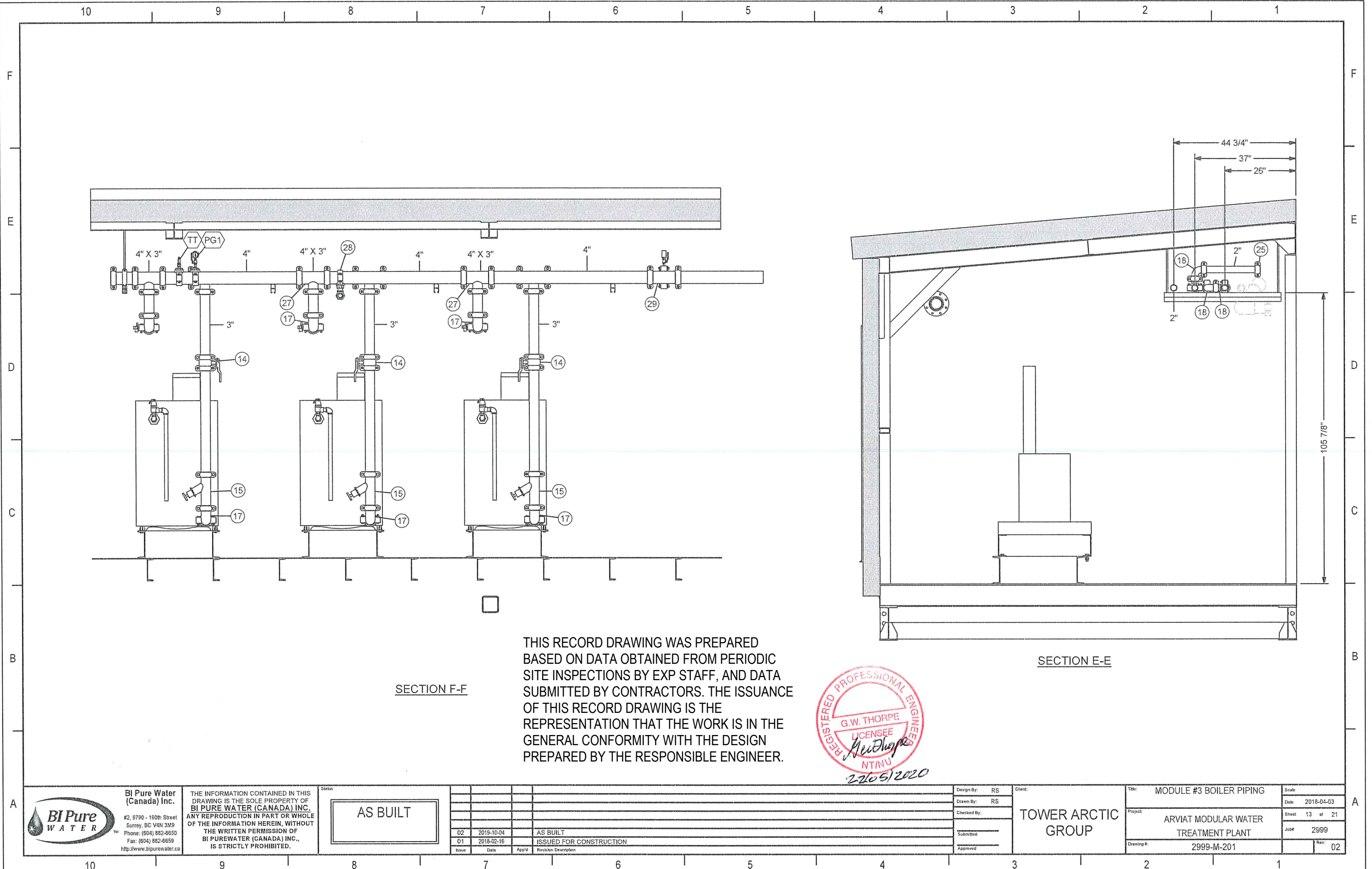
Design By: RS  
 Drawn By: RS  
 Checked By:  
 Submitted  
 Approved

Client:  
**TOWER ARCTIC  
 GROUP**

Title: **MODULE #3 BOILER PIPING**  
 Project: **ARVIAT MODULAR WATER  
 TREATMENT PLANT**  
 Drawing #: **2999-M-201**

Scale  
 Date: 2018-04-03  
 Sheet: 12 of 21  
 Job#: 2999  
 Rev: 02

10 9 8 7 6 5 4 3 2 1






ASSEMBLY - PARTS LIST							
ITEM	QTY	SIZE	MATERIAL	DESCRIPTION	MANUFACTURER	MODEL #	SPECIFICATION
1	1	1-1/2"	BRONZE	GLOBE VALVE			FNPT CONNECTIONS
2	2	AT70X	SS	HEAT EXCHANGER	AIC	AT70X	2" MNPT CONNECTIONS
3	1	3/4"	N/A	SIDE STREAM FILTER	AXIOM	SFP-10-25M	25 MICRON CARTRIDGE, 10" HOUSING
4	1	3/4"	STEEL	BELIMO CONTROL VALVE	BELIMO		FNPT
5	2	3/4"	BRASS	CBV VALVE - THREADED	BELL & GOSSET	CB-3/4 LF	FNPT CONNECTIONS
6	1	3/4"	BRASS	AUTOMATIC AIR VENT	HONEYWELL	EA79	MNPT CONNECTION
7	2	1-1/2"	STEEL	90 DEGREE ELBOW - THREADED	N/A	N/A	CLASS 150, FNPT X FNPT
8	17	3/4"	STEEL	90 DEGREE ELBOW - THREADED	N/A	N/A	CLASS 150, FNPT X FNPT
9	3	1-1/2" X 3/4"	STEEL	REDUCER BUSHING - THREADED	N/A	N/A	CLASS 150, MNPT X FNPT
10	1	1-1/2" X 1-1/2" X 3/4"	STEEL	REDUCING TEE - THREADED	N/A	N/A	CLASS 150, FNPT X FNPT X FNPT
11	1	1-1/2"	STEEL	TEE - THREADED	N/A	N/A	CLASS 150, FNPT X FNPT
12	3	3/4"	STEEL	TEE - THREADED	N/A	N/A	CLASS 150, FNPT X FNPT
13	2	1-1/2"	STEEL	UNION - THREADED	N/A	N/A	CLASS 150, FNPT X FNPT
14	17	3/4"	STEEL	UNION - THREADED	N/A	N/A	CLASS 150, FNPT X FNPT
15	1	3/4"	STEEL	CHEMICAL FEED POT	NEPTUNE	VTF-2HP	2 GAL CAPACITY
16	2	1-1/2"	BRASS	BALL VALVE - BRASS	NVC	V2	FNPT CONNECTIONS, 600 PSI, LEVER HANDLE
17	13	3/4"	BRASS	BALL VALVE - BRASS	NVC	V2	FNPT CONNECTIONS, 600 PSI, LEVER HANDLE
18	1	3"	STEEL	AIR SEPERATOR	ROLAIRTROL	R-3G	GROOVED CONNECTIONS
19	1	4"	D.I.	BUTTERFLY VALVE - VICTAULIC	VICTAULIC	300	GROOVED CONNECTIONS, LEVER HANDLE
20	1	4"	D.I.	VICTAULIC 45 DEGREE ELBOW - STEEL	VICTAULIC	#11	SCH40, VICTAULIC GROOVE
21	4	2"	D.I.	VICTAULIC 90 DEGREE ELBOW	VICTAULIC	#10	GROOVED CONNECTIONS
22	7	4"	D.I.	VICTAULIC 90 DEGREE ELBOW	VICTAULIC	#10	GROOVED CONNECTIONS
23	1	2"	D.I.	VICTAULIC CAP #60	VICTAULIC	#60	GROOVED CONNECTIONS
24	1	4"	D.I.	VICTAULIC CAP #60	VICTAULIC	#60	GROOVED CONNECTIONS
25	4	4" X 3"	D.I.	VICTAULIC CONC REDUCER #50	VICTAULIC	#50	GROOVED CONNECTIONS
26	28	2"	D.I.	VICTAULIC COUPLING - QUICKVIC 107	VICTAULIC	#107	RIGID QUICK COUPLING, 750PSI, EPDM SEAL
27	14	3"	D.I.	VICTAULIC COUPLING - QUICKVIC 107	VICTAULIC	#107	RIGID QUICK COUPLING, 750PSI, EPDM SEAL
28	23	4"	D.I.	VICTAULIC COUPLING - QUICKVIC 107	VICTAULIC	#107	RIGID QUICK COUPLING, 750PSI, EPDM SEAL
29	6	2" X 3/4"	D.I.	VICTAULIC SADDLE - THREADED	VICTAULIC	920N	SADDLE X FNPT
30	2	4" X 1 1/2"	D.I.	VICTAULIC SADDLE - THREADED	VICTAULIC	920N	SADDLE X FNPT
31	5	4" X 2"	D.I.	VICTAULIC SADDLE - THREADED	VICTAULIC	920N	SADDLE X FNPT
32	2	4" X 3/4"	D.I.	VICTAULIC SADDLE - THREADED	VICTAULIC	920N	SADDLE X FNPT
33	4	3"	D.I.	BUTTERFLY VALVE - VICTAULIC	VICTAULIC	300	GROOVED CONNECTIONS, LEVER HANDLE
AR	2			AIR RELEASE VALVE ASSEMBLY			
TG	2			TEMPERATURE GAUGE ASSEMBLY			
H1	3	4"		PIPE HANGER ASSEMBLY (CLAMP)			
H2	6	2"		PIPE HANGER ASSEMBLY (CLAMP)			
H3	6	2"		PIPE HANGER ASSEMBLY (UNISTRUT)			

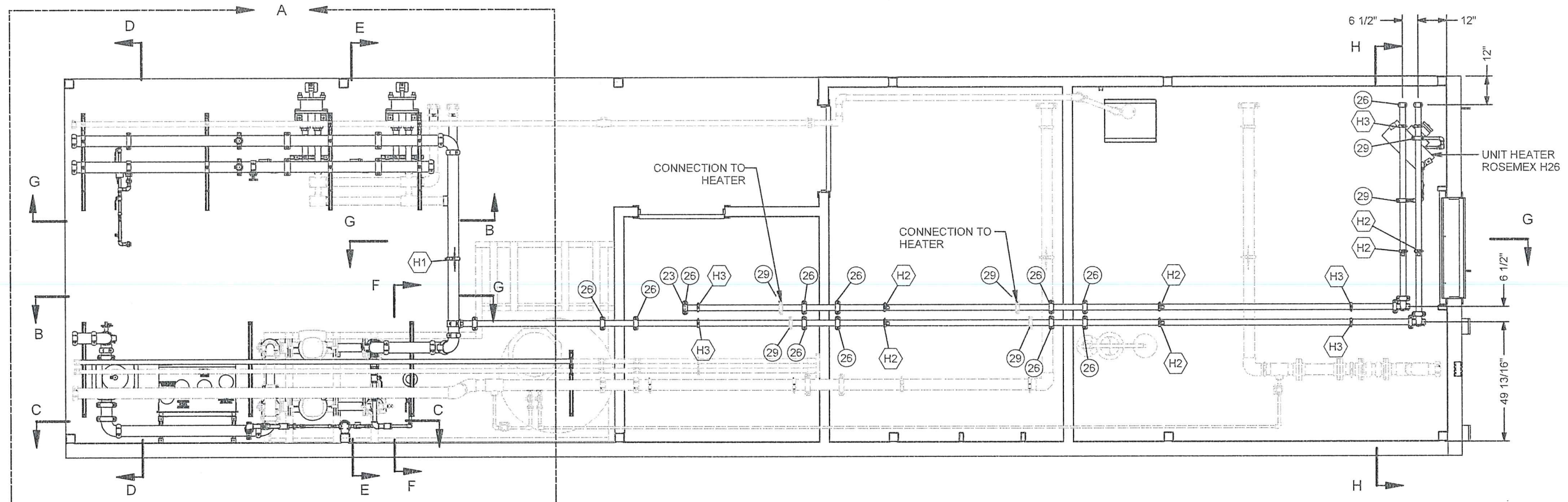
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										Sheet <b>14</b> of <b>21</b> Job# <b>2999</b>			
										Drawing #: <b>2999-M-201</b>	Rev: <b>02</b>		
				02    2015-10-04    _____    AS BUILT 01    2016-02-16    _____    ISSUED FOR CONSTRUCTION									
				Issue    Date    App'd    Revision    Description									





MODULE # 4 PLAN VIEW  
BOILER PIPING

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REGISTERED PROFESSIONAL ENGINEER  
G.W. THORPE  
LICENSEE  
*G.W. Thorpe*  
NT/NU  
22/05/2020



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Issue	Date	App'd	Revision Description
02	2019-10-04		AS BUILT
01	2018-02-16		ISSUED FOR CONSTRUCTION

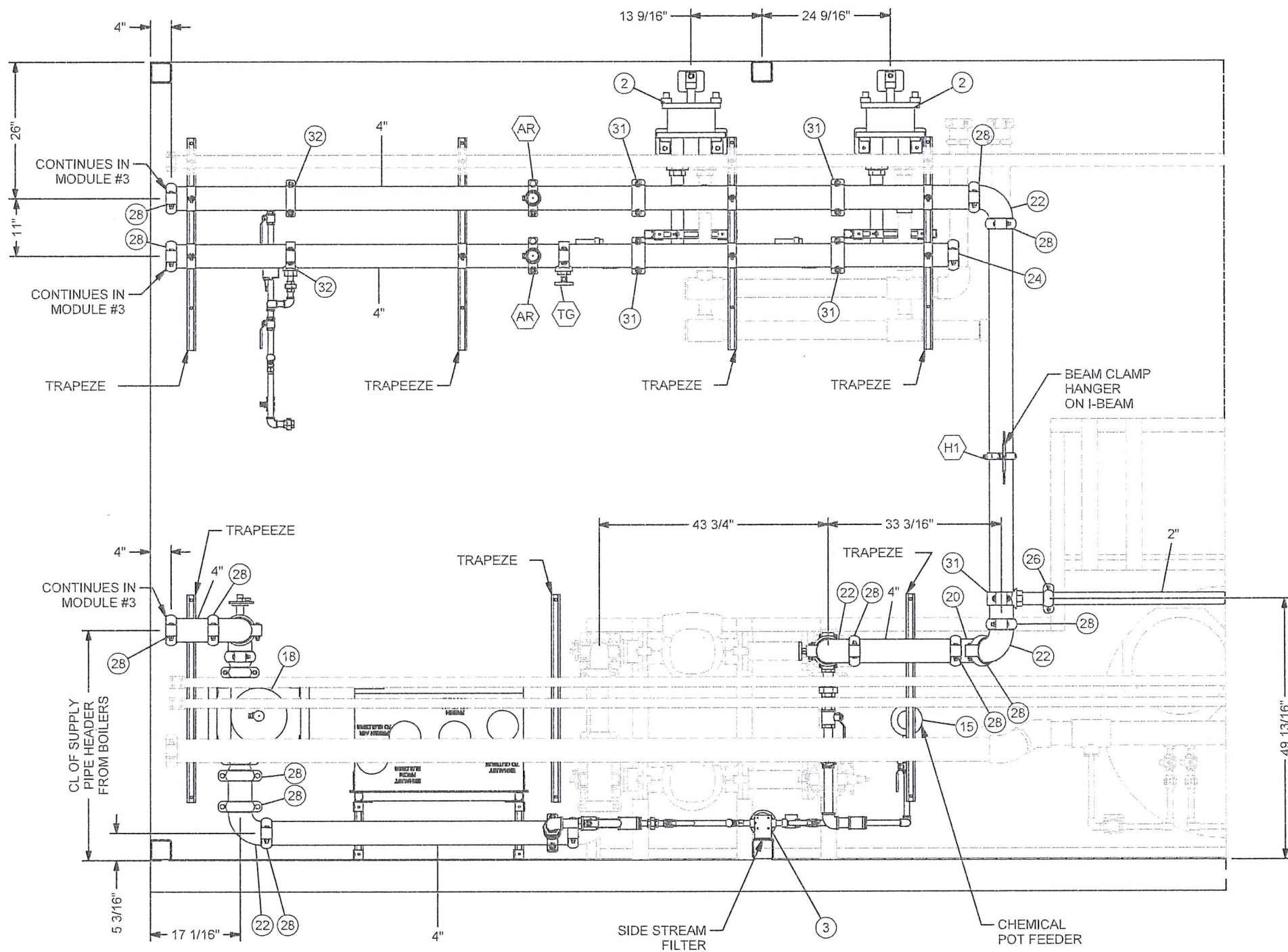
Design By: RS  
Drawn By: RS  
Checked By:  
Submitted:  
Approved:

Client:  
**TOWER ARCTIC  
GROUP**

Title: MODULE #4 BOILER PIPING  
Project: ARVIAT MODULAR WATER  
TREATMENT PLANT  
Drawing #: 2999-M-201

Scale:  
Date: 2018-04-03  
Sheet: 15 of 21  
Job#: 2999  
Rev: 02





DETAIL A

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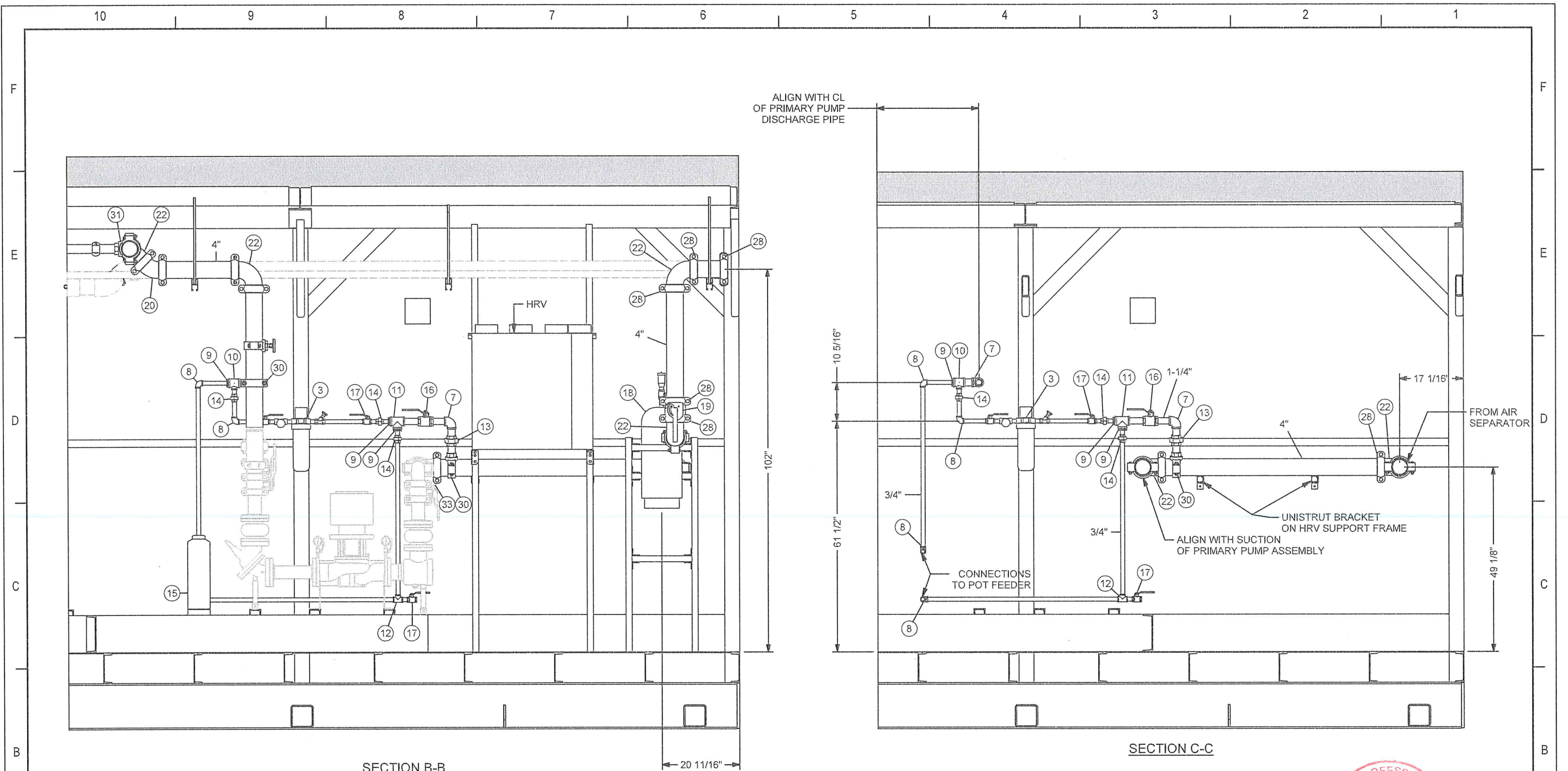
Issue	Date	App'd	Revision Description
02	2019-10-04		AS BUILT
01	2018-02-16		ISSUED FOR CONSTRUCTION

Design By:	RS
Drawn By:	RS
Checked By:	
Submitted:	
Approved:	

TOWER ARCTIC GROUP

Title:	MODULE #4 BOILER PIPING	Scale:	
Date:	2018-04-03	Sheet:	16 of 21
Project:	ARVIAT MODULAR WATER TREATMENT PLANT	Job#:	2999
Drawing#:	2999-M-201	Rev:	02





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Issue	Date	App'd	Revision Description
02	2019-10-04		AS BUILT
01	2018-02-16		ISSUED FOR CONSTRUCTION

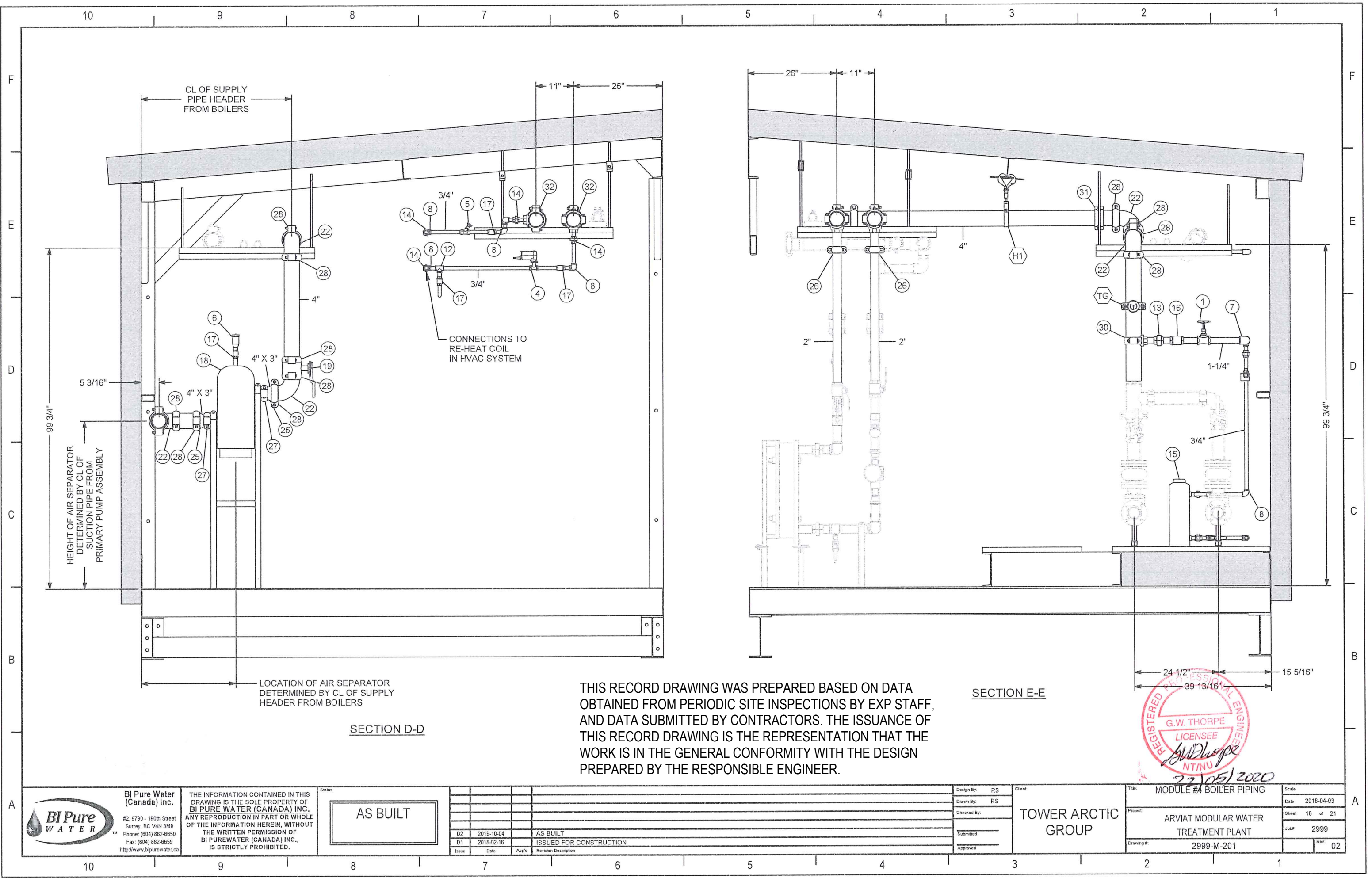
Design By: RS  
 Drawn By: RS  
 Checked By:  
 Submitted  
 Approved

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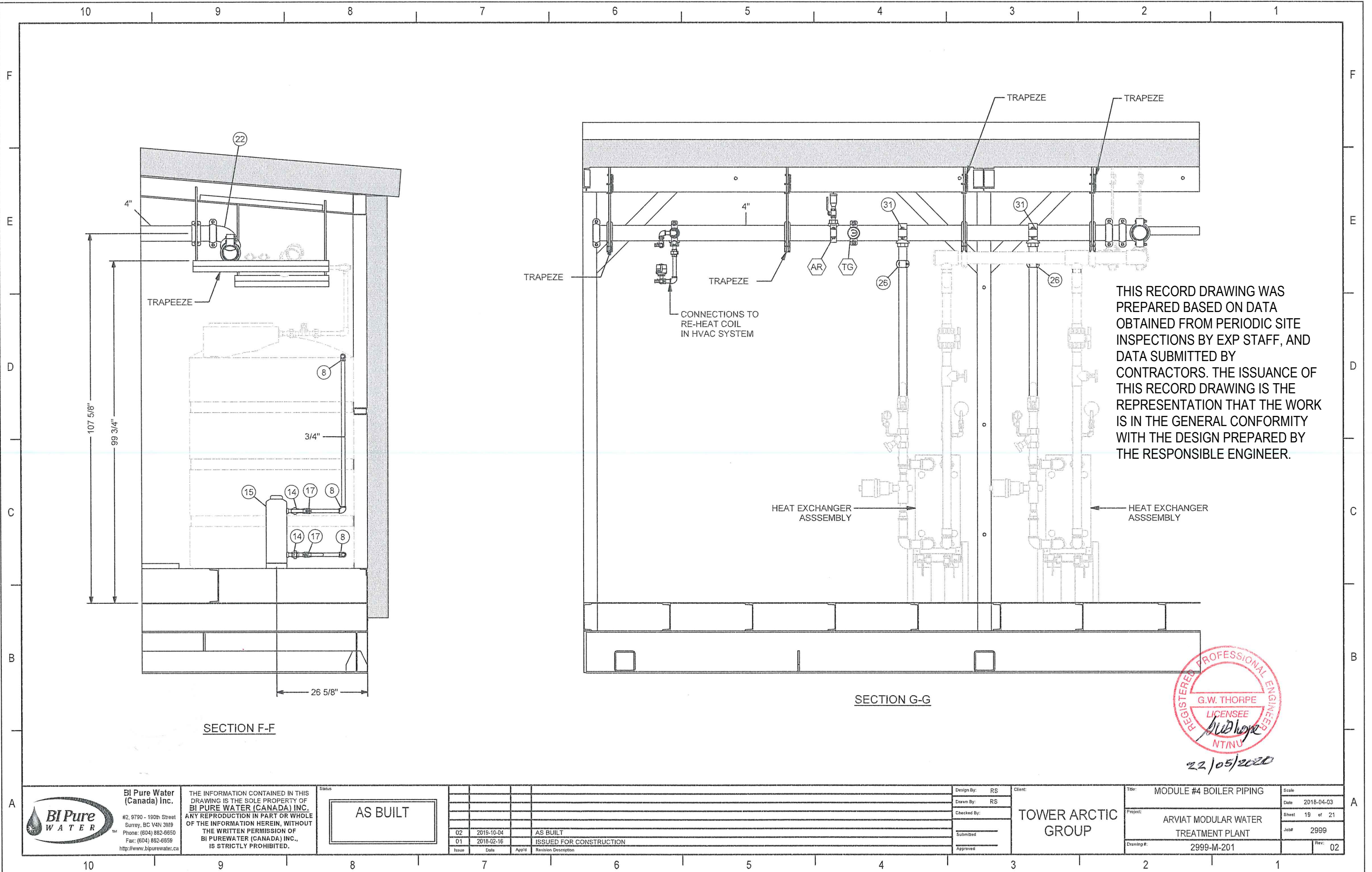
Title: MODULE #4 BOILER PIPING  
 Project: ARVIAT MODULAR WATER TREATMENT PLANT  
 Drawing #: 2999-M-201

Scale: 1" = 1'-0"  
 Date: 2018-04-03  
 Sheet: 17 of 21  
 Job #: 2999  
 Rev: 02









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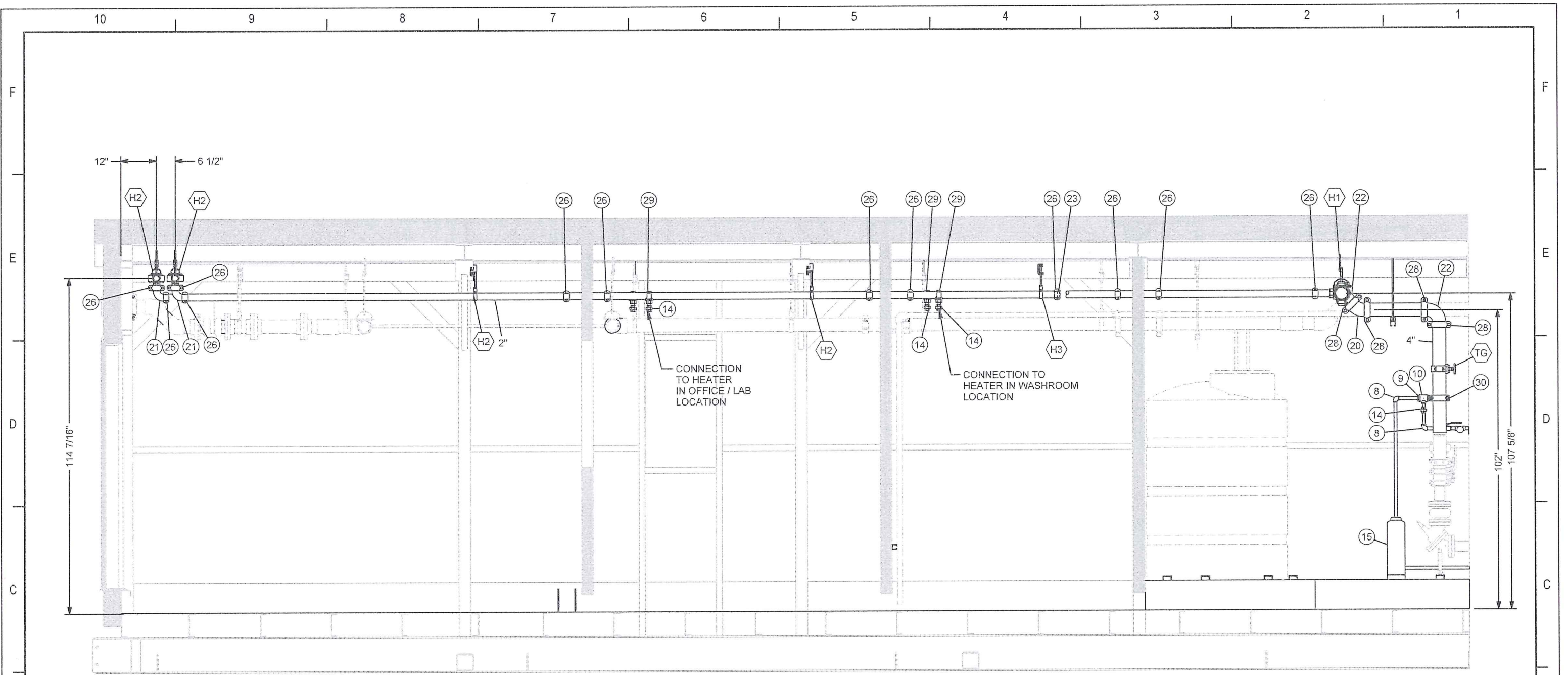
Issue	Date	App'd	Revision Description
02	2019-10-04		AS BUILT
01	2018-02-16		ISSUED FOR CONSTRUCTION

Design By:	RS
Drawn By:	RS
Checked By:	
Submitted	
Approved	

Client: TOWER ARCTIC GROUP

Title: MODULE #4 BOILER PIPING	Scale:
Date: 2018-04-03	
Project: ARVIAT MODULAR WATER TREATMENT PLANT	Sheet: 19 of 21
Job#: 2999	
Drawing #: 2999-M-201	Rev: 02





SECTION G-G

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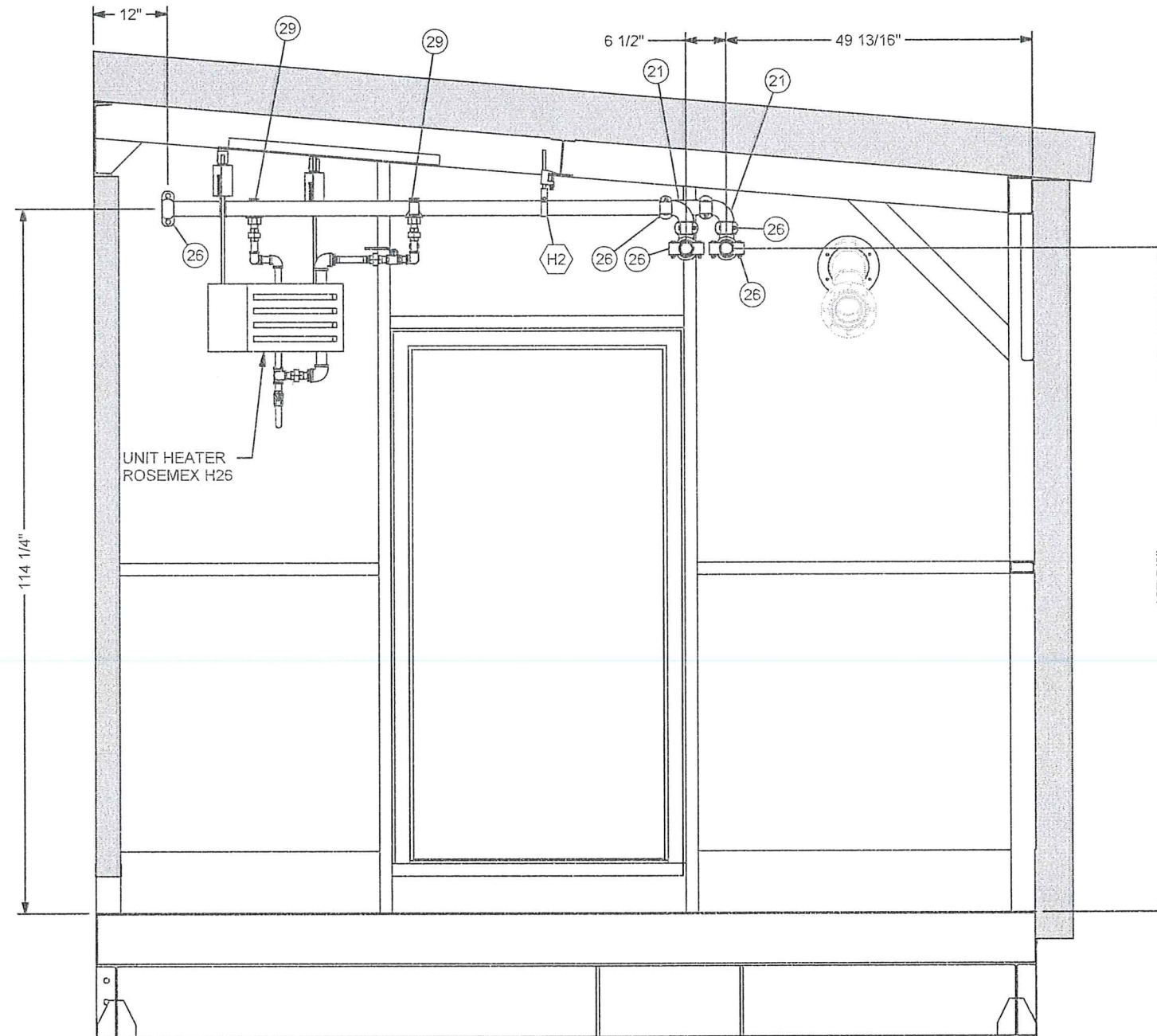
Issue	Date	App'd	Revision Description
02	2019-10-04		AS BUILT
01	2018-02-16		ISSUED FOR CONSTRUCTION

Design By: RS  
 Drawn By: RS  
 Checked By:  
 Submitted:  
 Approved:

Client:  
**TOWER ARCTIC  
 GROUP**

Title: **MODULE #4 BOILER PIPING**  
 Project: **ARVIAT MODULAR WATER  
 TREATMENT PLANT**  
 Drawing #: **2999-M-201**

Scale:  
 Date: 2018-04-03  
 Sheet: 20 of 21  
 Job#: 2999  
 Rev: 02



SECTION H-H

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Issue	Date	App'd	Revision Description
02	2019-10-04		AS BUILT
01	2018-02-16		ISSUED FOR CONSTRUCTION

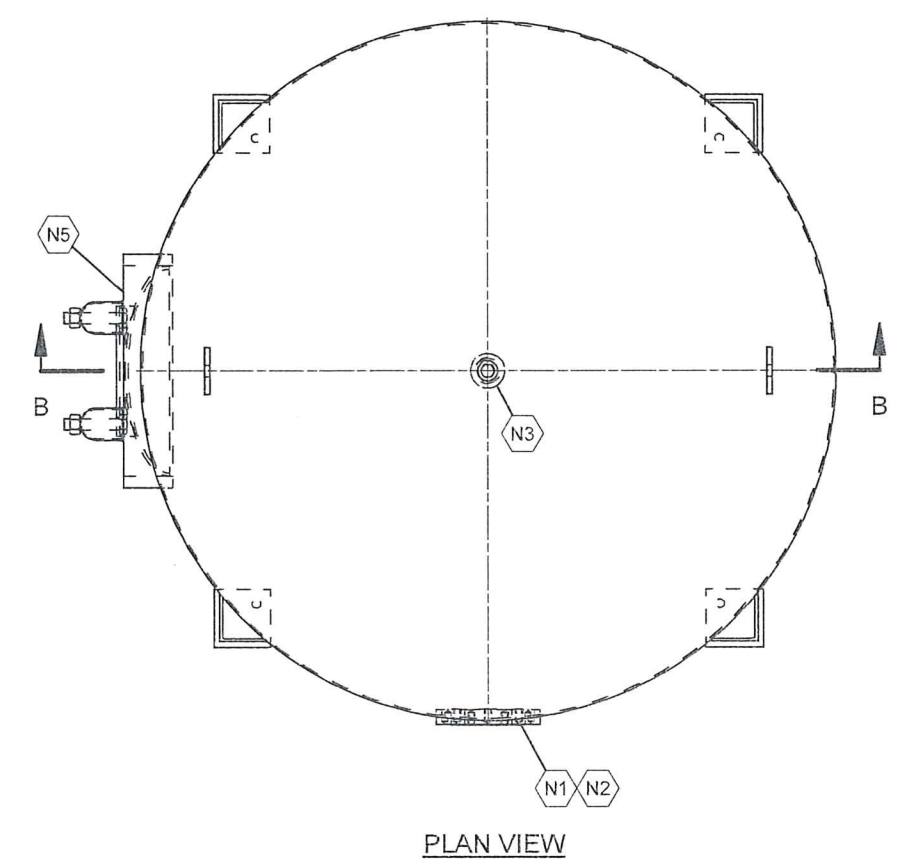
Design By: RS  
 Drawn By: RS  
 Checked By:  
 Submitted:  
 Approved:

TOWER ARCTIC  
 GROUP

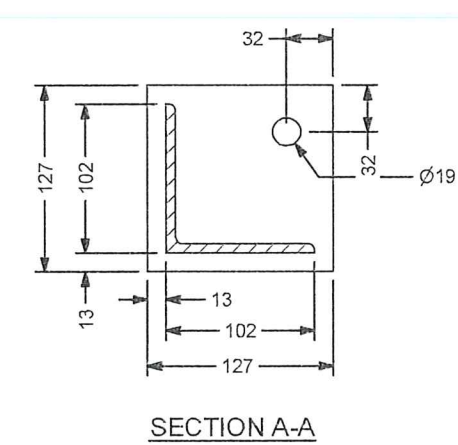
Title: MODULE #4 BOILER PIPING	Scale:
Date: 2018-04-03	
Project: ARVIAT MODULAR WATER TREATMENT PLANT	Sheet: 21 of 21
Job#: 2999	
Drawing #: 2999-M-201	Rev: 02



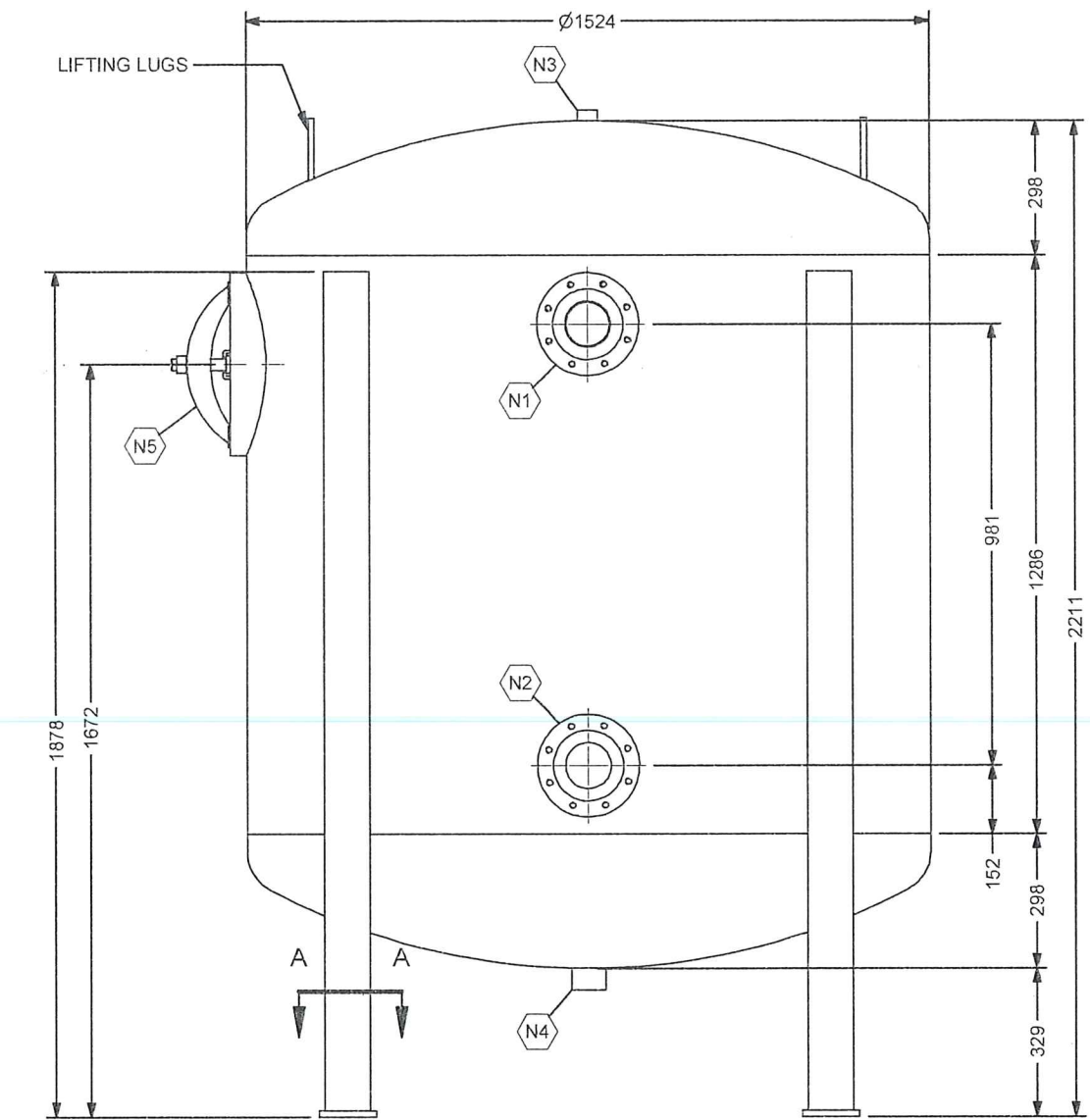
NOTES:  
1. MATERIAL: CARBON STEEL (ASTM A516 GRADE 70)  
2. TANK INTERIOR TO BE BLASTED TO WHITE METAL AND LINED WITH AN EPOXY COATING 6mils THICK DRY FILM THICKNESS. EPOXY COATING SHALL BE ANSI/NSF61 LISTED EPOXY, SUITABLE FOR CONTACT WITH SULFIDES AND FILTER MEDIA.  
3. EXTERNAL COATING TO BE CARBOTHANE  
4. WORKING PRESSURE: 150psig. TO BE HYDROSTATICALLY TESTED AT 150% OF RATED PRESSURE



PLAN VIEW



SECTION A-A



FRONT VIEW

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REGISTERED PROFESSIONAL ENGINEER  
G.W. THORPE  
LICENSEE  
NTNU  
22/05/2020

ASSEMBLY - PARTS LIST					
ITEM	SIZE (IMP)	SIZE (SI)	DESCRIPTION	TYPE	SERVICE
N1	4"	100	DOUBLE TAPPED PAD FLANGE	DDPF	RAW WATER INLET / BACKWASH OUTLET
N2	4"	100	DOUBLE TAPPED PAD FLANGE	DDPF	TREATED WATER OUTLET / BACKWASH INLET
N3	1"	25	HALF COUPLING	HC	AIR RELEASE
N4	1"	25	FULL COUPLING	FC	DRAIN
N5	14X18	350x450	ELLIPTICAL MANWAYMANWAY	MW	MANWAY

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Issue	Date	App'd	Revision Description
03	10/4/2019		AS BUILT
02	11/7/2017		REVISED AS PER NOV 1, 2017 COMMENTS
01	9/21/2017		ISSUED FOR APPROVAL

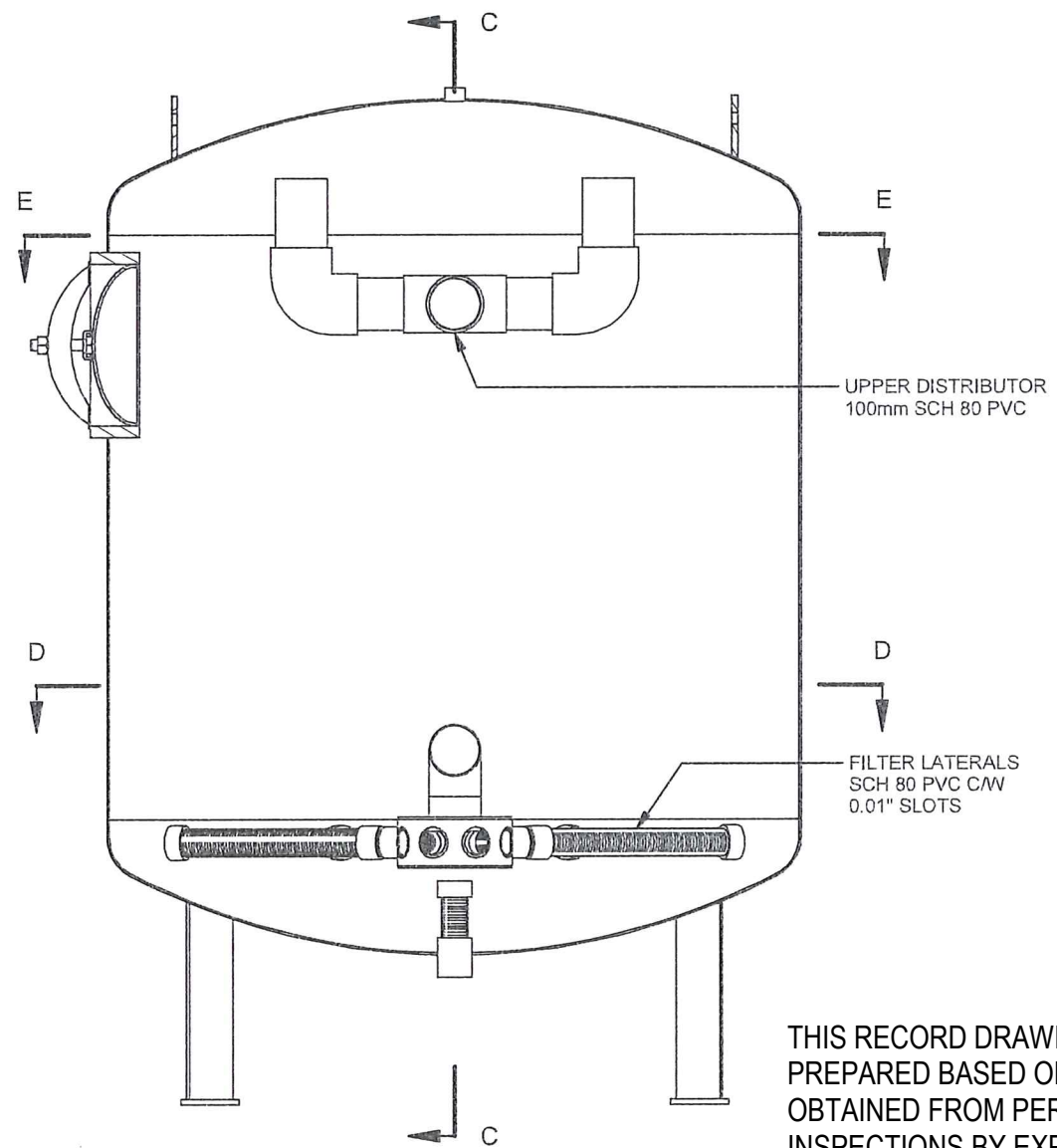
Design By: RS  
Drawn By: RS  
Checked By:  
Submitted:  
Approved:

Client: TOWER ARCTIC GROUP

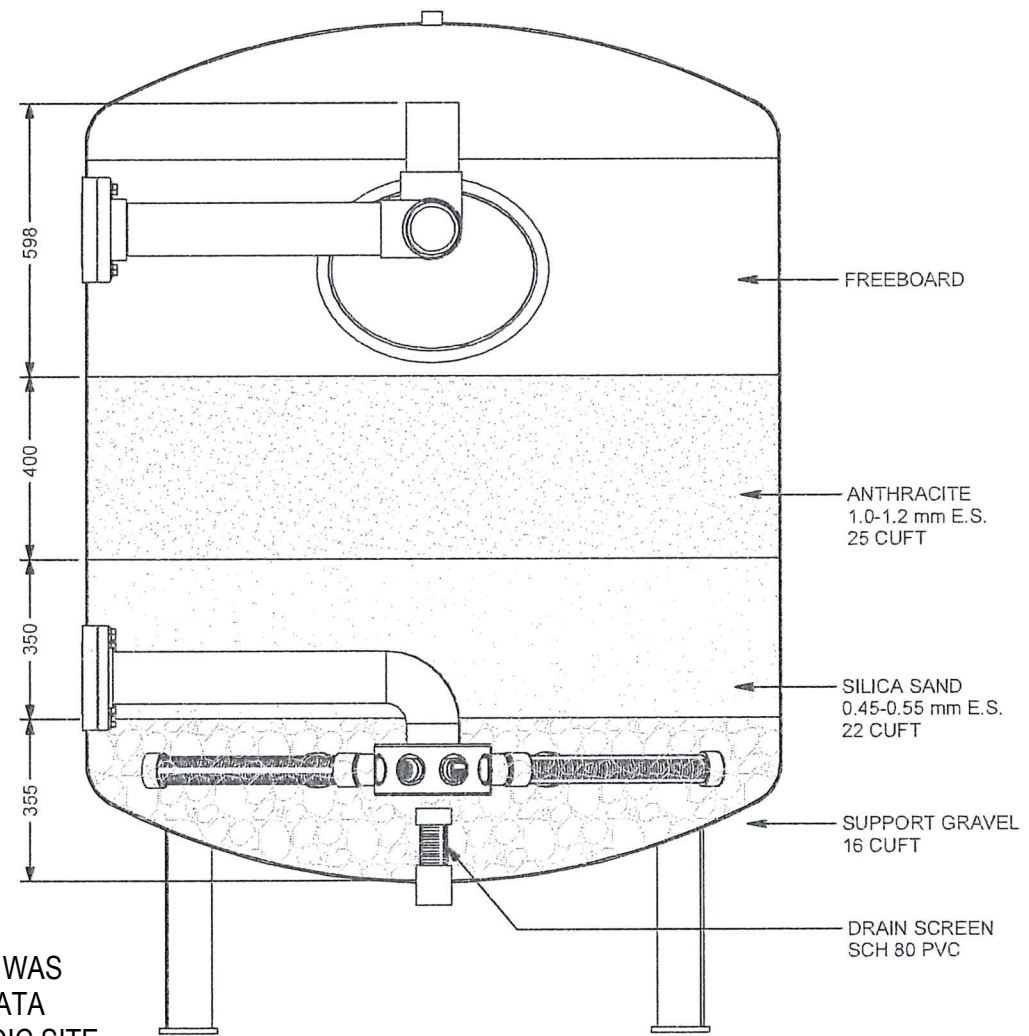
Title: FILTER VESSEL DETAILS  
Date: 9/21/2017  
Project: ARVIAT MODULAR WATER TREATMENT PLANT  
Job#: 2999  
Drawing #: 2999-G-440  
Rev: 03

Scale: 1 of 2

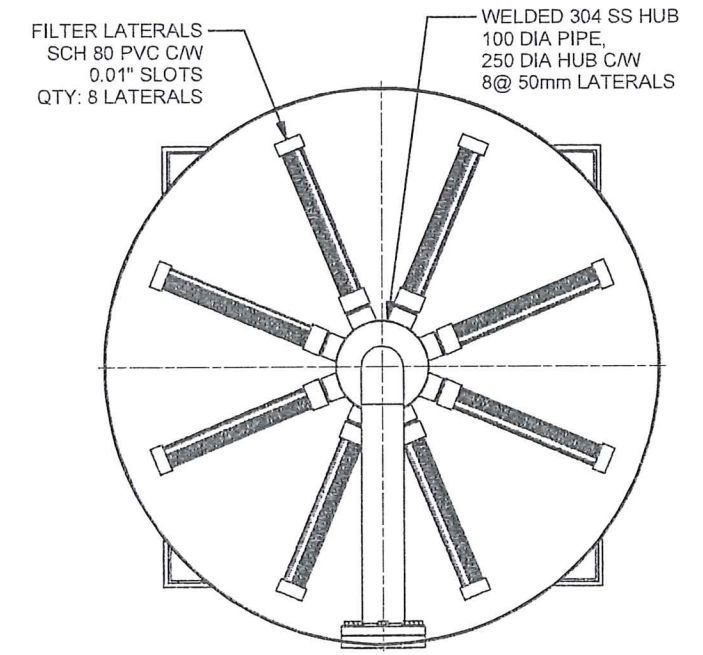
NOTES:  
1. ALL MEDIA CERTIFIED TO NSF 61 STANDARD



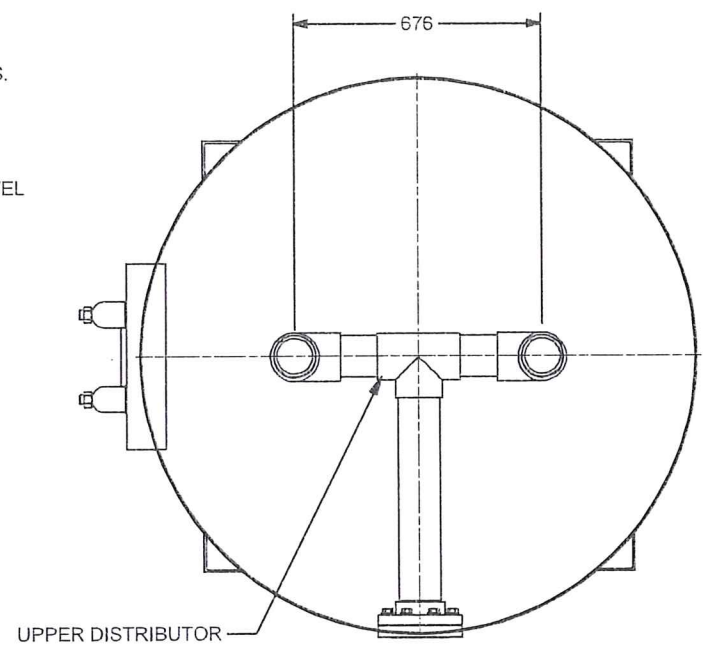
SECTION B-B



SECTION C-C  
FILTER MEDIA



SECTION D-D  
UNDERDRAIN LATERALS



SECTION E-E  
UPPER DISTRIBUTOR

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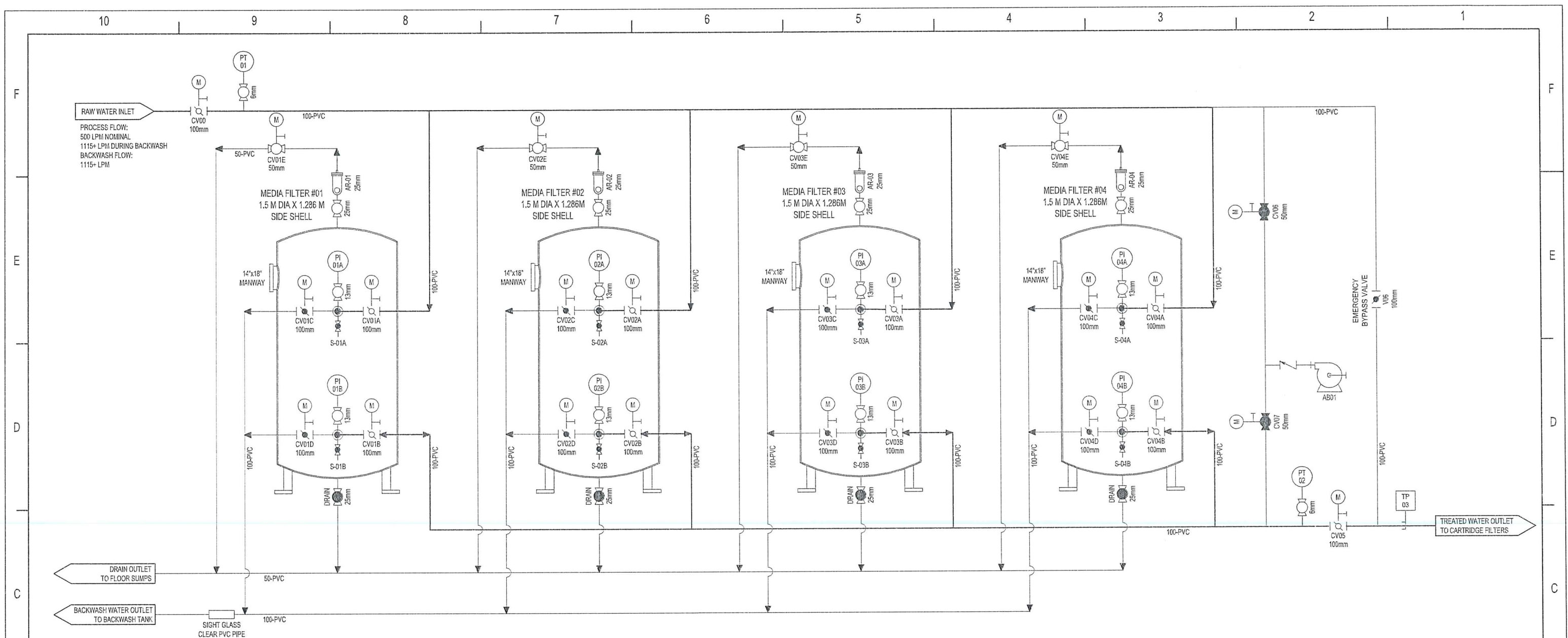
Issue	Date	App'd	Revision Description
03	10/4/2019		AS BUILT
02	11/7/2017		REVISED AS PER NOV 1, 2017 COMMENTS
01	9/21/2017		ISSUED FOR APPROVAL

Design By:	RS
Drawn By:	RS
Checked By:	
Submitted:	
Approved:	

TOWER ARCTIC GROUP

Task:	FILTER VESSEL DETAILS	Scale:	
Project:	ARVIAT MODULAR WATER TREATMENT PLANT	Date:	9/21/2017
Job#: 2999		Sheet:	2 of 2
Drawing #: 2999-G-440		Rev:	03





DESCRIPTION:

1. SKID MOUNTED SYSTEM
2. CONTROL VALVES: 100mm LUG-STYLE BUTTERFLY VALVES
3. MEDIA: SILICA SAND & ANTHRACITE
4. VESSELS: (4) 1.5m DIA X 1.286m SIDESHELL
5. SYSTEM PRESSURE: 150 PSI MAX

OPERATING CONDITIONS

1. FLOW CONFIGURATION: PARALLEL
2. SERVICE FLOW RATE: 500 LPM NOMINAL, 1115+ LPM DURING BACKWASH
3. BACKWASH SOURCE: TREATED WATER FROM VESSELS IN SERVICE
4. OPERATING PRESSURE: 150 PSI MAX

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VALVE POSITION										
FLOW SEQUENCE	TIME (MIN)	CV00	CVxxA	CVxxB	CVxxC	CVxxD	CVxxE	CV05	CV06	CV07
SERVICE	N/A	O	O	O	X	X	O	O	X	X
DRAIN	3	X	O	X	X	O	X	X	O	X
AIR SCOUR	3	X	X	O	O	X	X	X	X	O
SETTLING	2	O	X	O	O	X	O	X	X	X
BACKWASH**	8	O	X	O	O	X	O	X	X	X
FAST RINSE	2	O	O	X	X	O	O	X	X	X
SHUTDOWN	N/A	X	X	X	X	X	O	X	X	X

\*\* VALVE OPERATION SHOWN REPRESENTS THE (1) FILTER VESSEL BEING BACKWASHED AT THE MOMENT. SINCE THE BACKWASH SUPPLY WATER IS BEING SUPPLIED BY THE OTHER REMAINING FILTERS, THE OTHER VESSELS WILL BE OPERATING IN "SERVICE MODE" TO PROVIDE THE TREATED WATER FOR BACKWASH.

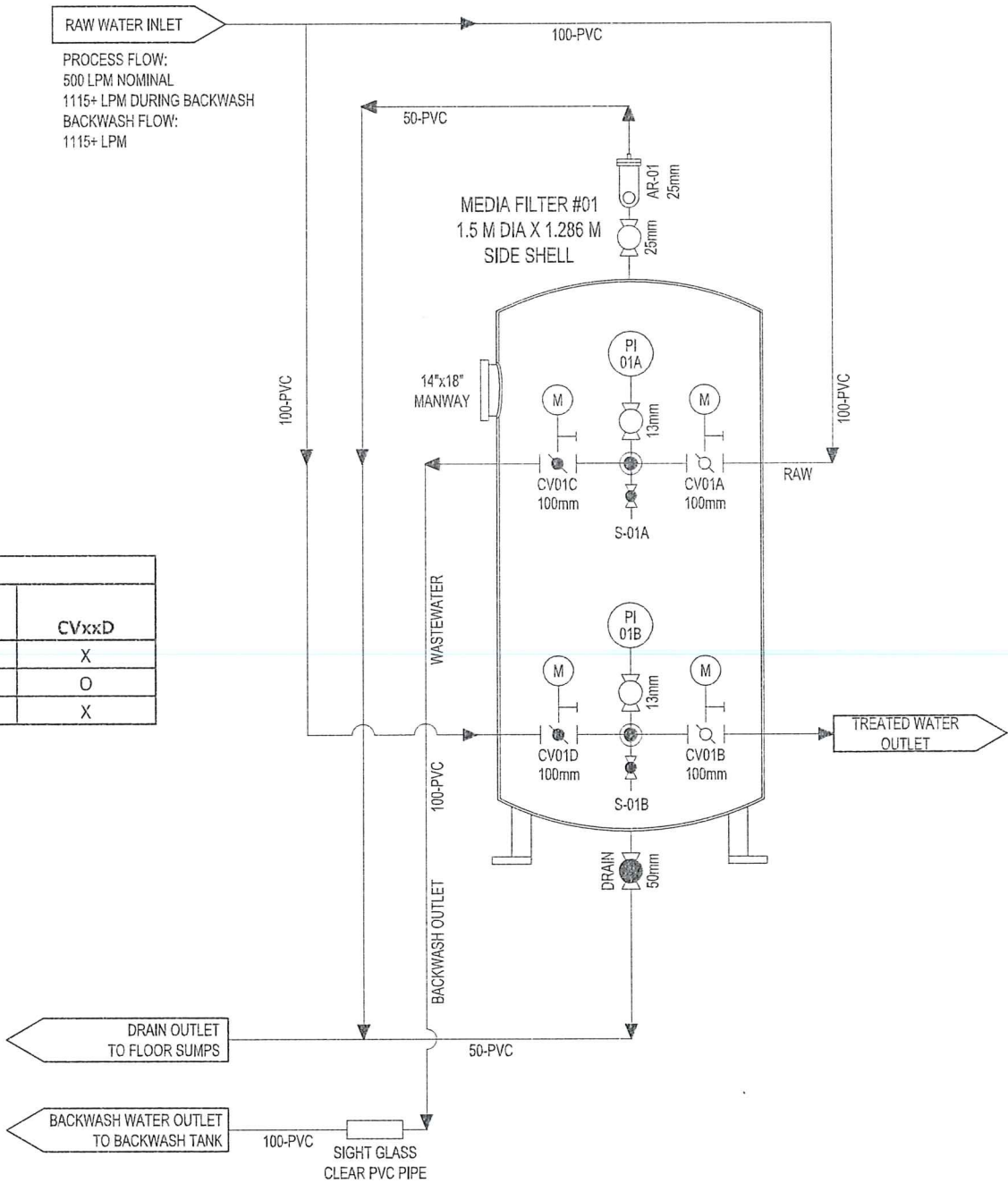
VALVE POSITION					
FLOW SEQUENCE	TIME (MIN)	CVxxA	CVxxB	CVxxC	CVxxD
SERVICE	N/A	O	O	X	X
BACKWASH	10	X	X	O	O
SHUTDOWN	N/A	X	X	X	X

DESCRIPTION:

1. SKID MOUNTED SYSTEM
2. CONTROL VALVES: 100mm LUG-STYLE BUTTERFLY VALVES
3. MEDIA: CALCITE
4. VESSELS: (1) 1.5m DIA X 1.286m SIDESHELL
5. SYSTEM PRESSURE: 150 PSI MAX

OPERATING CONDITIONS

1. FLOW CONFIGURATION: SINGLE
2. SERVICE FLOW RATE: 500 LPM NOMINAL, 1115+ LPM DURING BACKWASH OF MEDIA FILTERS
3. BACKWASH SOURCE: RAW WATER
4. BACKWASH FLOW: 500 LPM
4. OPERATING PRESSURE: 150 PSI MAX



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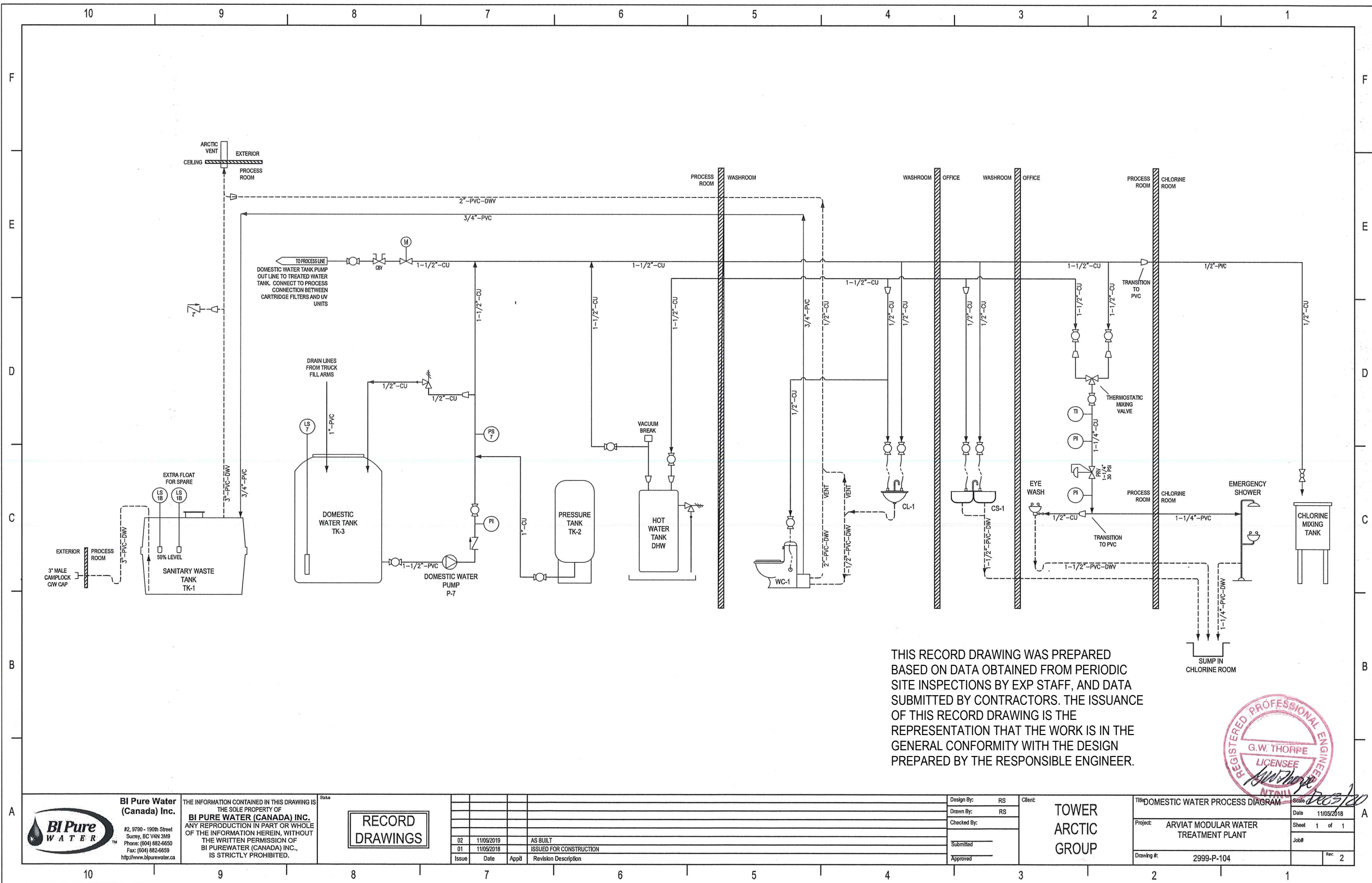
Issue	Date	Appd	Revision Description
02	2018-11-05		AS BUILT
01	2018-04-30		ISSUED FOR CONSTRUCTION

Design By:	JT	Client:	<b>TOWER ARCTIC GROUP</b>
Drawn By:	JT		
Checked By:			
Submitted			
Approved			

Title:	CALCITE FILTER PROCESS DIAGRAM	Scale:	NTS
Project:	ARVIAT MODULAR WATER TREATMENT PLANT	Date:	2018-04-30
Sheet:	1 of 1	Job#:	2999
Drawing #:	2999-P-103	Rev:	02







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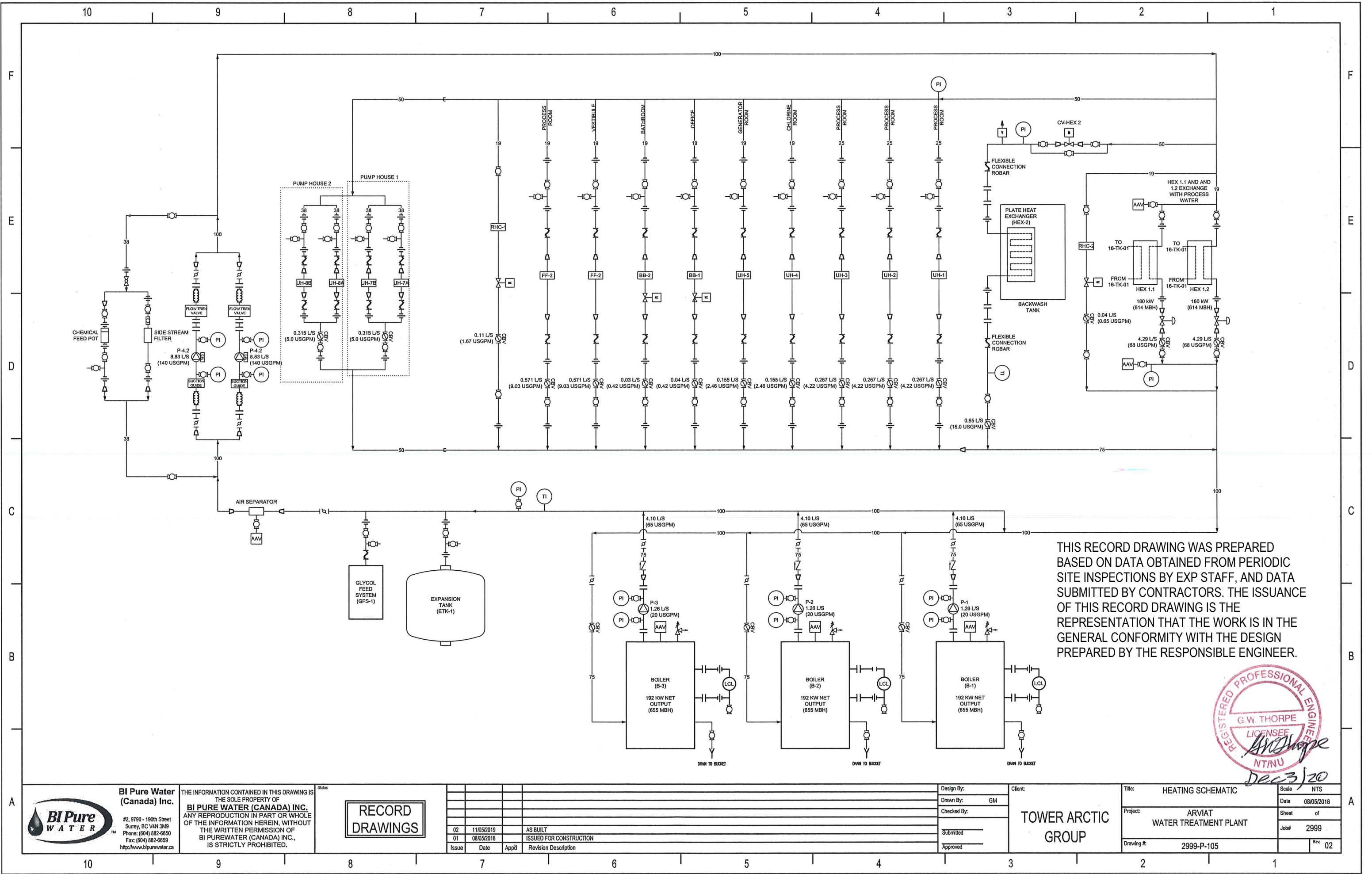
**RECORD DRAWINGS**

Issue	Date	App'd	Revision Description
02	11/05/2019		AS BUILT
01	11/05/2018		ISSUED FOR CONSTRUCTION

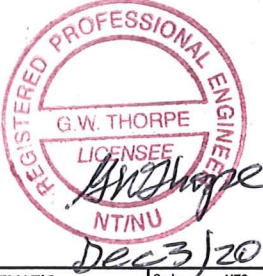
Design By:	RS	Client: <b>TOWER ARCTIC GROUP</b>
Drawn By:	RS	
Checked By:		
Submitted		
Approved		

Title: <b>DOMESTIC WATER PROCESS DIAGRAM</b>		Scale: <b>1/8" = 1'-0"</b>
Project: <b>ARVIAT MODULAR WATER TREATMENT PLANT</b>	Sheet: <b>1 of 1</b>	Date: <b>11/05/2018</b>
Drawing #: <b>2999-P-104</b>	Job#	Rev: <b>2</b>





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**RECORD DRAWINGS**

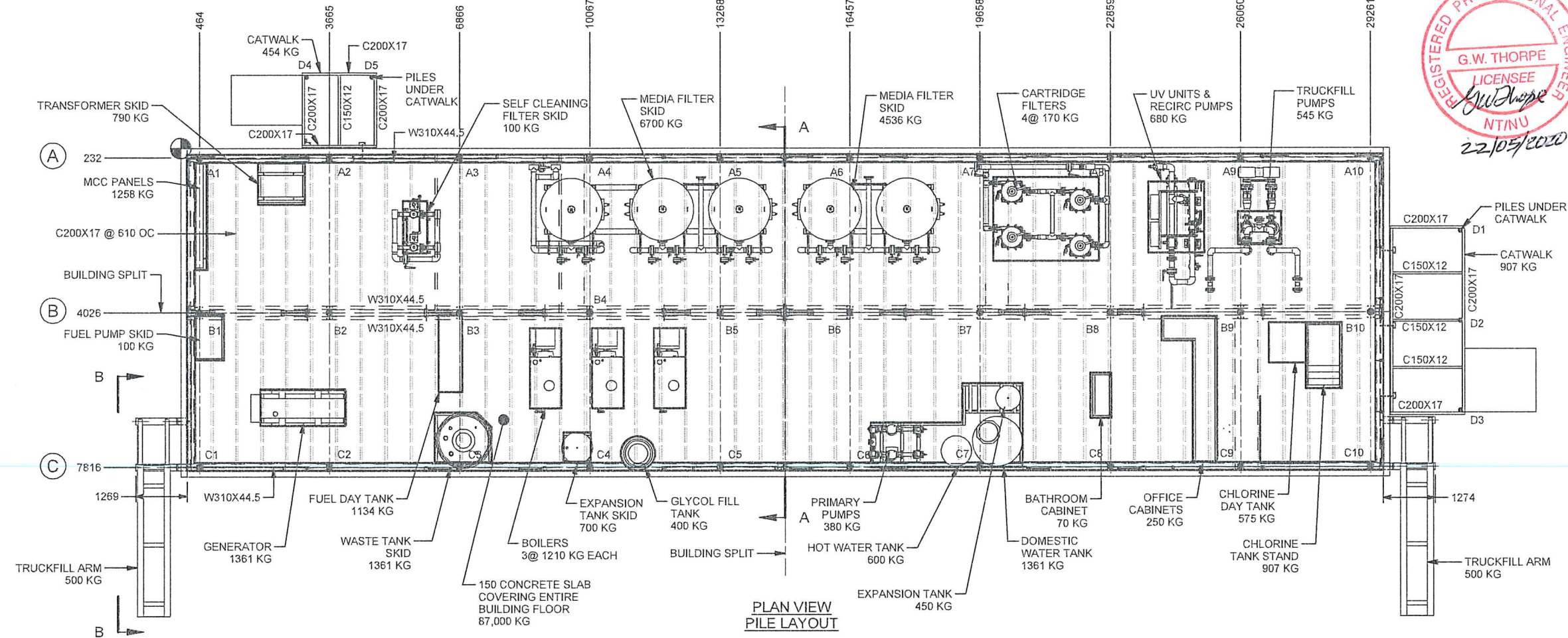
Issue	Date	App'd	Revision Description
02	11/05/2019		AS BUILT
01	08/05/2018		ISSUED FOR CONSTRUCTION

Design By:	Client:
Drawn By: GM	<b>TOWER ARCTIC GROUP</b>
Checked By:	
Submitted	
Approved	

Title:	HEATING SCHEMATIC	Scale:	NTS
Project:	ARVIAT WATER TREATMENT PLANT	Date:	08/05/2018
Drawing #:	2999-P-105	Sheet of	
		Job#	2999
		Rev.	02



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PLAN VIEW  
PILE LAYOUT

PILE SERVICE LOADS						PILE SERVICE LOADS						PILE SERVICE LOADS						PILE SERVICE LOADS					
PILE	VERTICAL DEAD LOAD	VERTICAL LIVE LOAD	VERTICAL SNOW LOAD	HORIZONTAL SEISMIC LOAD	HORIZONTAL WIND LOAD	PILE	VERTICAL DEAD LOAD	VERTICAL LIVE LOAD	VERTICAL SNOW LOAD	HORIZONTAL SEISMIC LOAD	HORIZONTAL WIND LOAD	PILE	VERTICAL DEAD LOAD	VERTICAL LIVE LOAD	VERTICAL SNOW LOAD	HORIZONTAL SEISMIC LOAD	HORIZONTAL WIND LOAD	PILE	VERTICAL DEAD LOAD	VERTICAL LIVE LOAD	VERTICAL SNOW LOAD	HORIZONTAL SEISMIC LOAD	HORIZONTAL WIND LOAD
A1	27.1 kN	22.2 kN	17.3 kN	4.5 kN	6.7 kN	B1	54.3 kN	44.5 kN	34.7 kN	4.5 kN	6.7 kN	C1	27.1 kN	22.2 kN	17.3 kN	4.5 kN	6.7 kN	D1	17.8 kN	7.1 kN		4.5 kN	6.7 kN
A2	54.3 kN	44.5 kN	34.7 kN	4.5 kN	6.7 kN	B2	108.5 kN	44.5 kN	69.4 kN	4.5 kN	6.7 kN	C2	54.3 kN	44.5 kN	34.7 kN	4.5 kN	6.7 kN	D2	4.4 kN	17.8 kN		4.5 kN	6.7 kN
A3	54.3 kN	44.5 kN	34.7 kN	4.5 kN	6.7 kN	B3	108.5 kN	44.5 kN	69.4 kN	4.5 kN	6.7 kN	C3	54.3 kN	44.5 kN	34.7 kN	4.5 kN	6.7 kN	D3	1.8 kN	17.8 kN		4.5 kN	6.7 kN
A4	54.3 kN	44.5 kN	34.7 kN	4.5 kN	6.7 kN	B4	108.5 kN	44.5 kN	69.4 kN	4.5 kN	6.7 kN	C4	54.3 kN	44.5 kN	34.7 kN	4.5 kN	6.7 kN	D4	1.8 kN	17.8 kN		4.5 kN	6.7 kN
A5	54.3 kN	44.5 kN	34.7 kN	4.5 kN	6.7 kN	B5	108.5 kN	44.5 kN	69.4 kN	4.5 kN	6.7 kN	C5	54.3 kN	44.5 kN	34.7 kN	4.5 kN	6.7 kN	D5	1.8 kN	17.8 kN		4.5 kN	6.7 kN
A6	54.3 kN	44.5 kN	34.7 kN	4.5 kN	6.7 kN	B6	108.5 kN	44.5 kN	69.4 kN	4.5 kN	6.7 kN	C6	54.3 kN	44.5 kN	34.7 kN	4.5 kN	6.7 kN						
A7	54.3 kN	44.5 kN	34.7 kN	4.5 kN	6.7 kN	B7	108.5 kN	44.5 kN	69.4 kN	4.5 kN	6.7 kN	C7	54.3 kN	44.5 kN	34.7 kN	4.5 kN	6.7 kN						
A8	54.3 kN	44.5 kN	34.7 kN	4.5 kN	6.7 kN	B8	108.5 kN	44.5 kN	69.4 kN	4.5 kN	6.7 kN	C8	54.3 kN	44.5 kN	34.7 kN	4.5 kN	6.7 kN						
A9	54.3 kN	44.5 kN	34.7 kN	4.5 kN	6.7 kN	B9	108.5 kN	44.5 kN	69.4 kN	4.5 kN	6.7 kN	C9	54.3 kN	44.5 kN	34.7 kN	4.5 kN	6.7 kN						
A10	27.1 kN	22.2 kN	17.3 kN	4.5 kN	6.7 kN	B10	54.3 kN	44.5 kN	34.7 kN	4.5 kN	6.7 kN	C10	27.1 kN	22.2 kN	17.3 kN	4.5 kN	6.7 kN						

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AS BUILT

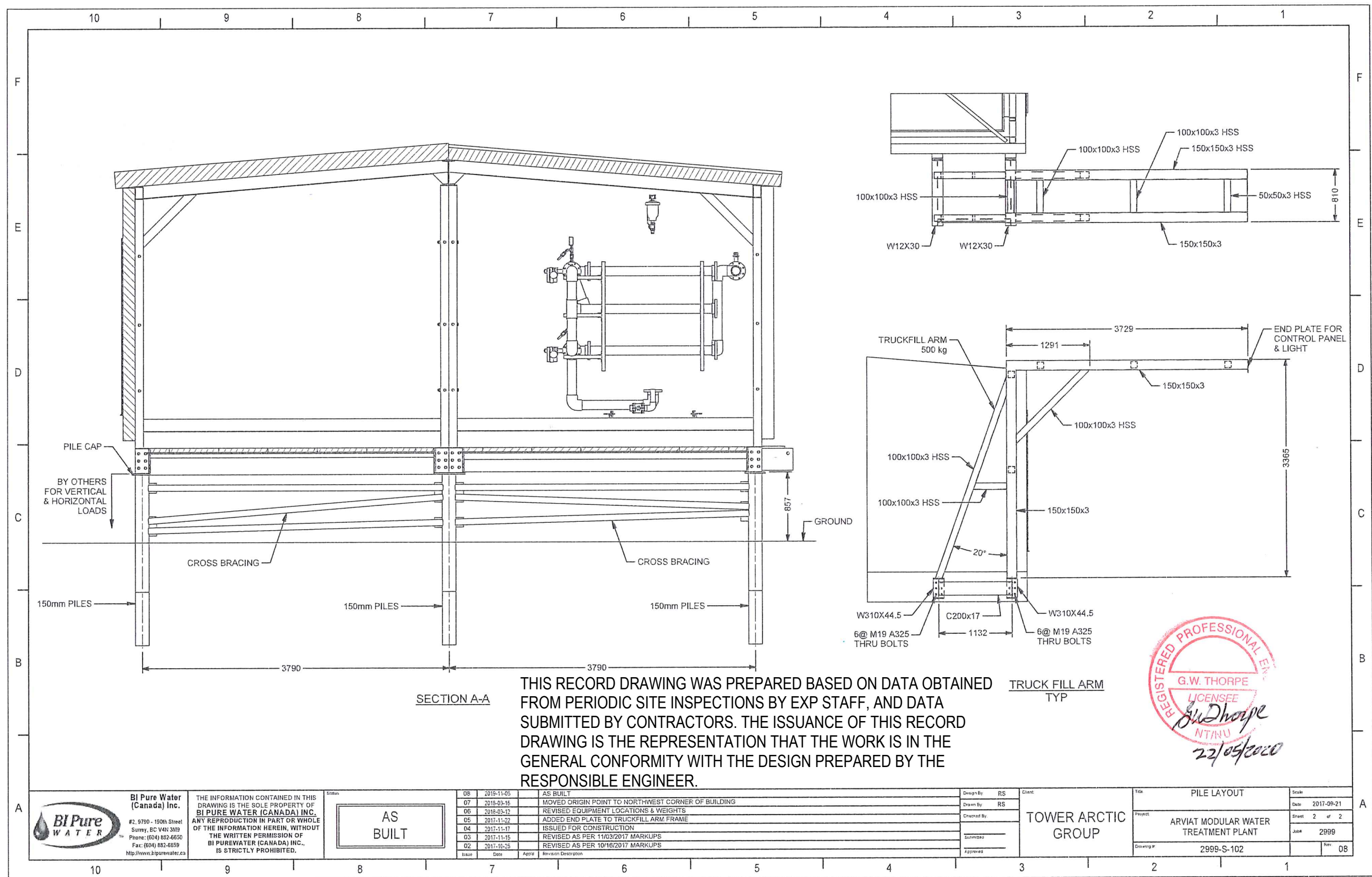
Date	Revised	Description
08/2019-11-05		AS BUILT
07/2019-03-15		MOVED ORIGIN POINT TO NORTHWEST CORNER OF BUILDING
06/2018-03-12		REVISED EQUIPMENT LOCATIONS & WEIGHTS
05/2017-11-23		ADDED END PLATE TO TRUCKFILL ARM FRAME
04/2017-11-17		ISSUED FOR CONSTRUCTION
03/2017-11-15		REVISED AS PER 11/03/2017 MARKUPS
02/2017-10-25		REVISED AS PER 10/16/2017 MARKUPS

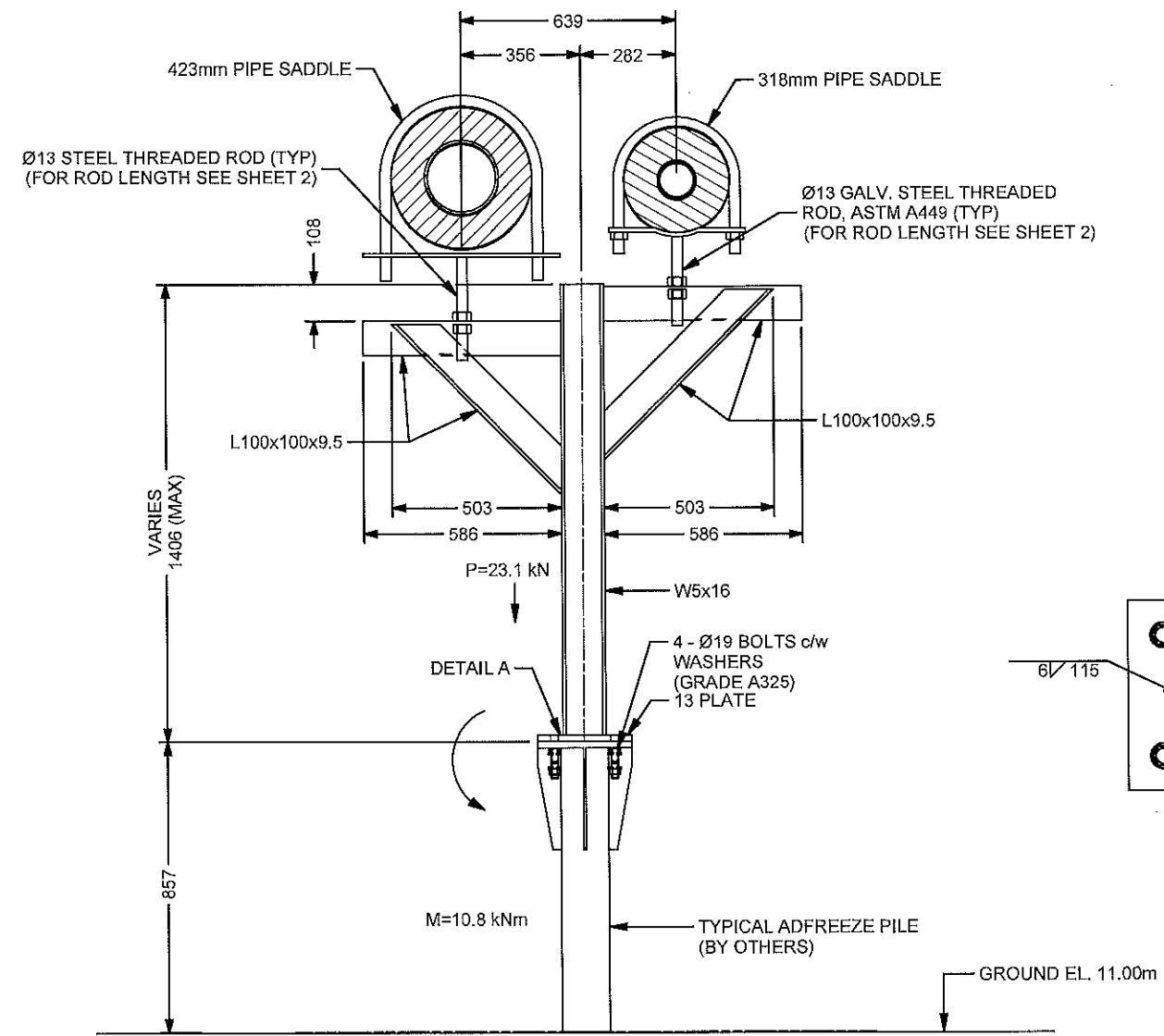
Design By: RS  
Drawn By: RS  
Checked By:  
Submitted:  
Approved:

Client: TOWER ARCTIC GROUP

Title: PILE LAYOUT  
Project: ARVIAT MODULAR WATER TREATMENT PLANT  
Drawing #: 2999-S-102  
Scale: 2017-09-21  
Sheet: 1 of 2  
Job #: 2999  
Rev: 08



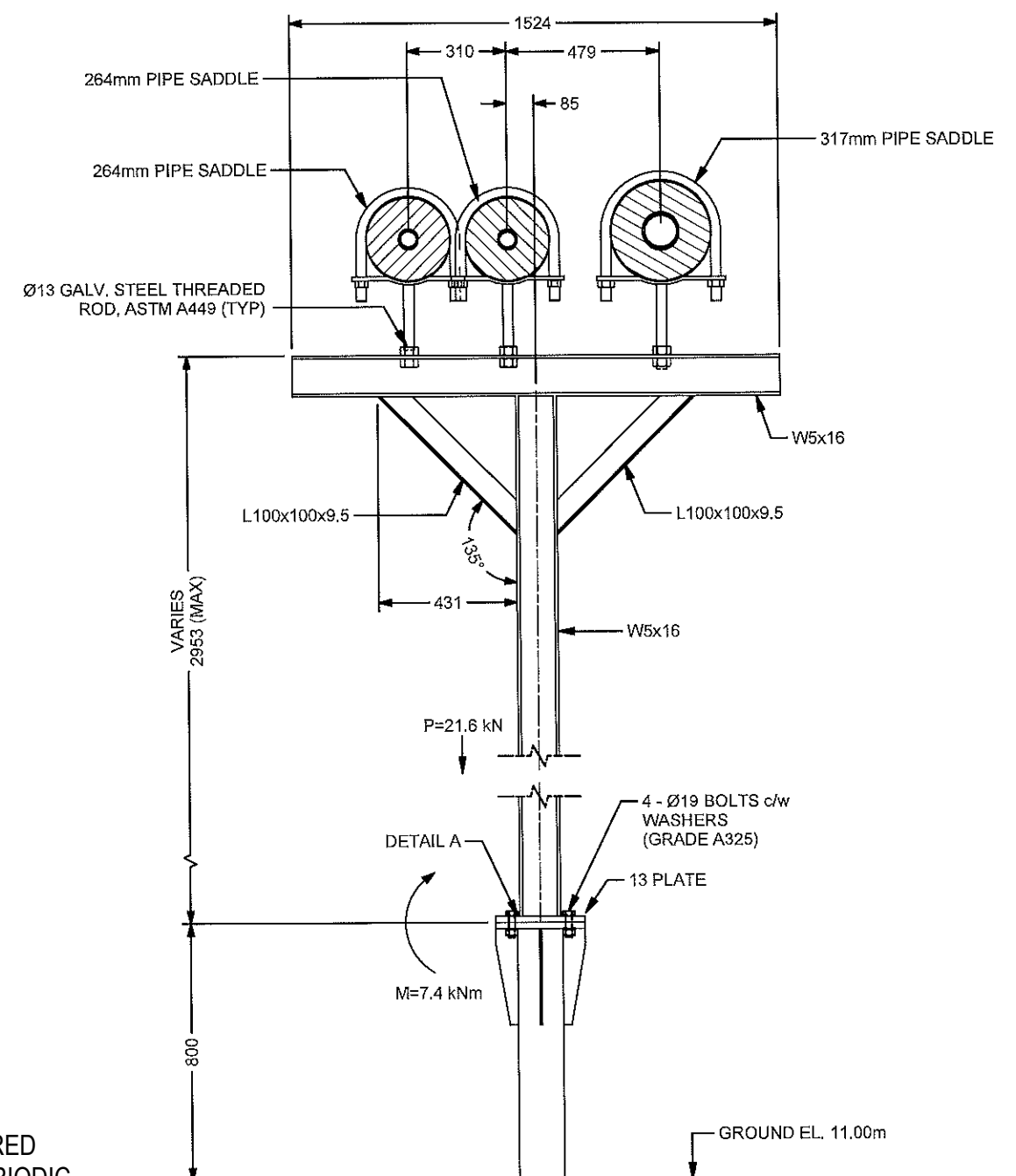




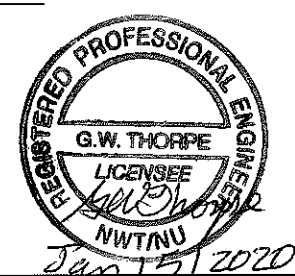
TYPICAL PIPE SUPPORT DETAIL (PS-1)  
(4 PLACES)

NOTE: STEEL PIPE SUPPORTS MEMBERS TO BE SANDBLASTED, GALVANIZED AND EPOXY COATED WITH URETHANE TOP COAT

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TYPICAL PIPE SUPPORT DETAIL (PS-2)  
(2 PLACES)



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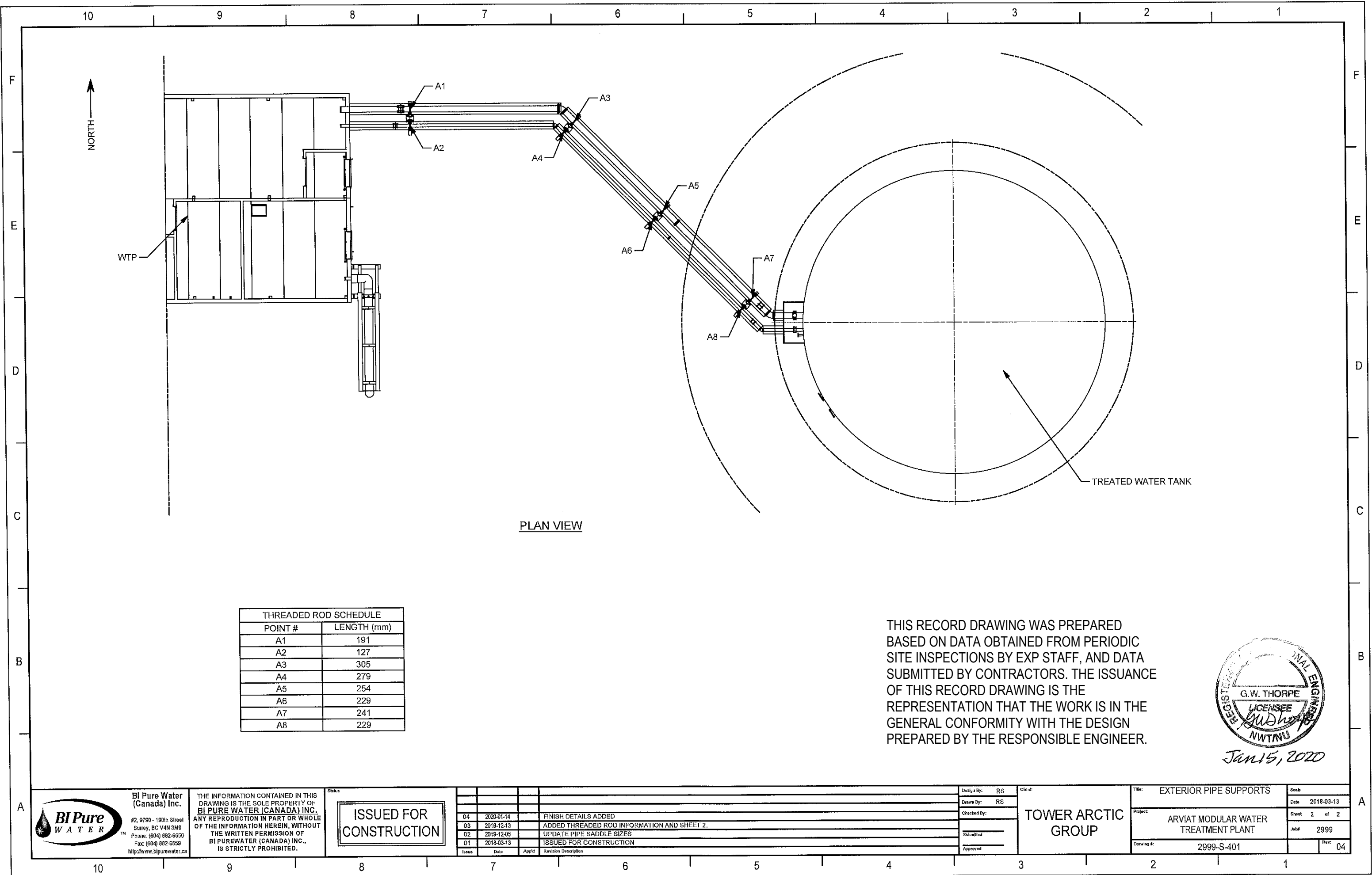
Issue	Date	App'd	Revision Description
04	2020-01-14		FINISH DETAILS ADDED
03	2019-12-13		ADDED THREADED ROD INFORMATION AND SHEET 2.
02	2019-12-05		UPDATE PIPE SADDLE SIZES
01	2018-03-13		ISSUED FOR CONSTRUCTION

Design By: RS  
Drawn By: RS  
Checked By:  
Submitted:  
Approved:

Client: TOWER ARCTIC GROUP

Title: EXTERIOR PIPE SUPPORTS  
Project: ARVIAT MODULAR WATER TREATMENT PLANT  
Drawing #: 2999-S-401  
Date: 2018-03-13  
Sheet 1 of 2  
Job #: 2999  
Rev: 04





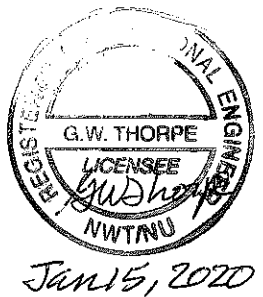
WTP

TREATED WATER TANK

PLAN VIEW

THREADED ROD SCHEDULE	
POINT #	LENGTH (mm)
A1	191
A2	127
A3	305
A4	279
A5	254
A6	229
A7	241
A8	229

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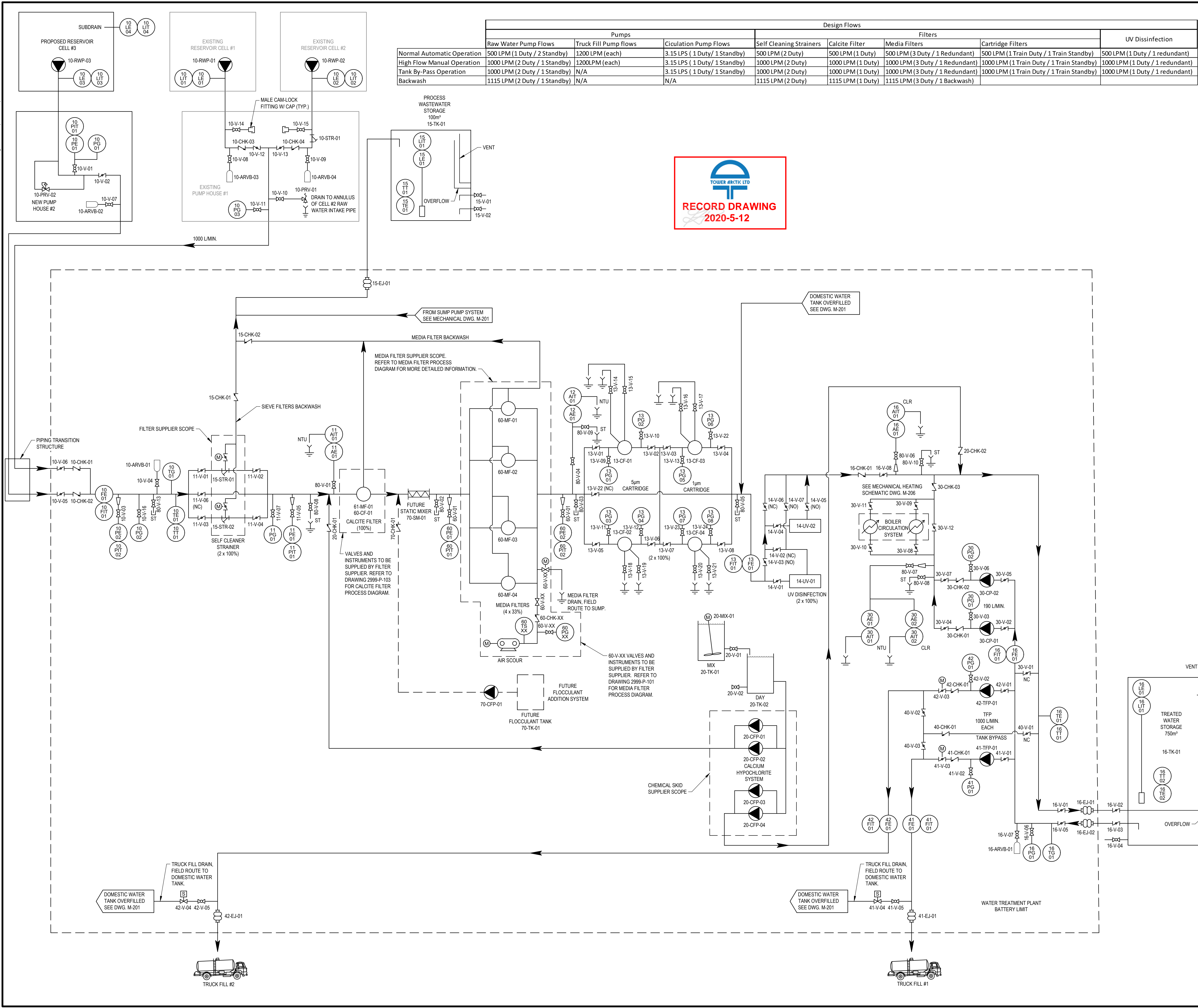
Issue	Date	App'd	Revision Description
04	2020-01-14		FINISH DETAILS ADDED
03	2019-12-13		ADDED THREADED ROD INFORMATION AND SHEET 2.
02	2019-12-06		UPDATE PIPE SADDLE SIZES
01	2018-03-13		ISSUED FOR CONSTRUCTION

Design By:	RS
Drawn By:	RS
Checked By:	
Submitted	
Approved	

TOWER ARCTIC  
GROUP

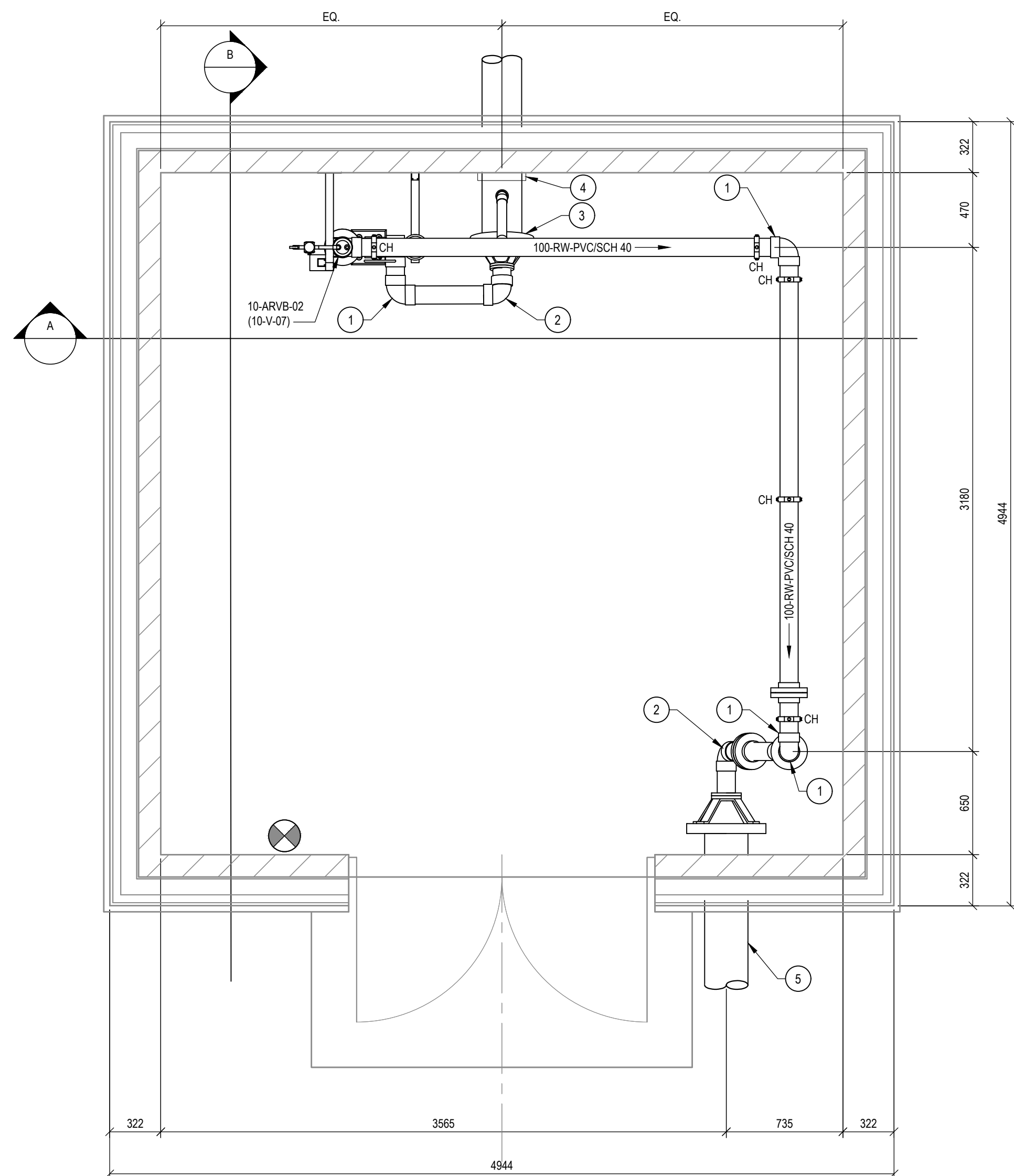
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Project:	ARVIAT MODULAR WATER TREATMENT PLANT
Drawing #:	2999-S-401

Scale	2018-03-13
Sheet	2 of 2
Job#	2999
Rev:	04



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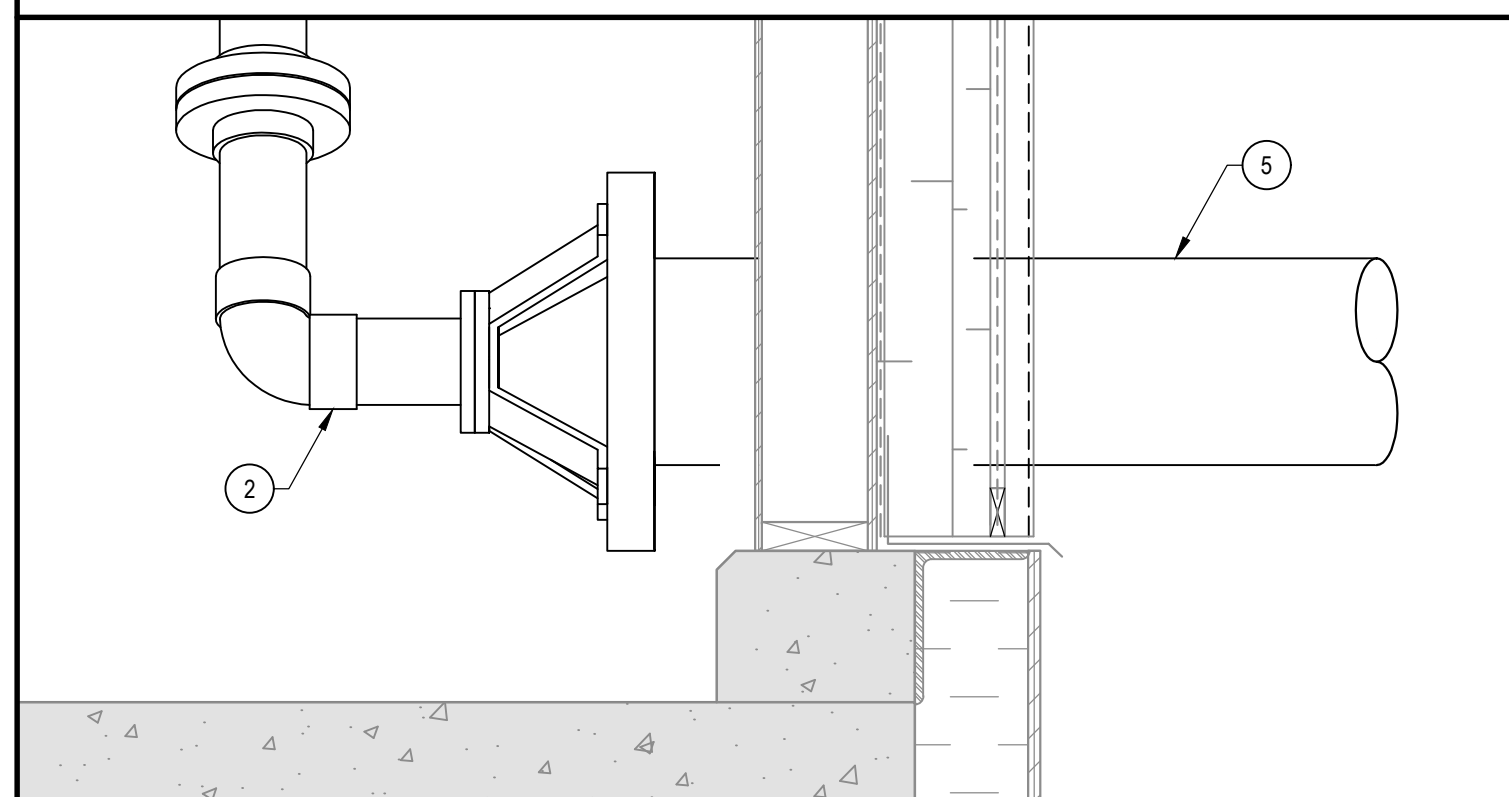
GRID NORTH

NOTES:

REFER TO 'A' SERIES DRAWINGS FOR BUILDING COMPONENTS  
AND TYPICAL PIPE HANGER SUPPORT DETAIL.

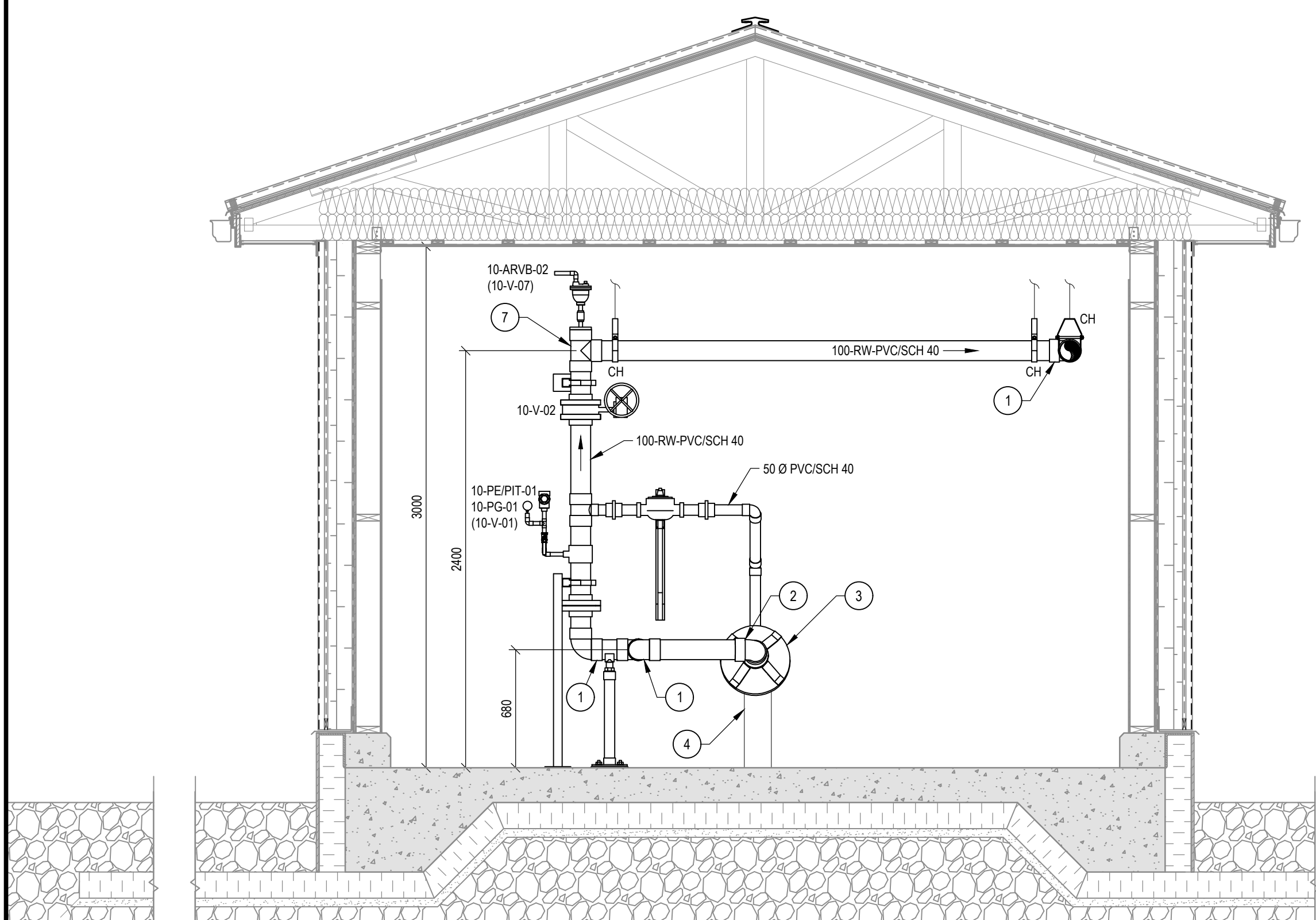
KEYNOTES:

- 1 100mm Ø 90° ELBOW, PVC/SCH 40.
- 2 100mm Ø 90° ELBOW, PVC/SCH 40. ROTATED TO ACHIEVE ALIGNMENT.
- 3 SUBMERSIBLE PUMP CARRIER PIPE.
- 4 STEEL SUPPORT STRUCTURE.
- 5 INSULATED 250 Ø HDPE CARRIER PIPE.
- 6 100 Ø SS BRAIDED HOSE WITH FLANGED ENDS.
- 7 100mm Ø TEE, PVC/SCH 40.



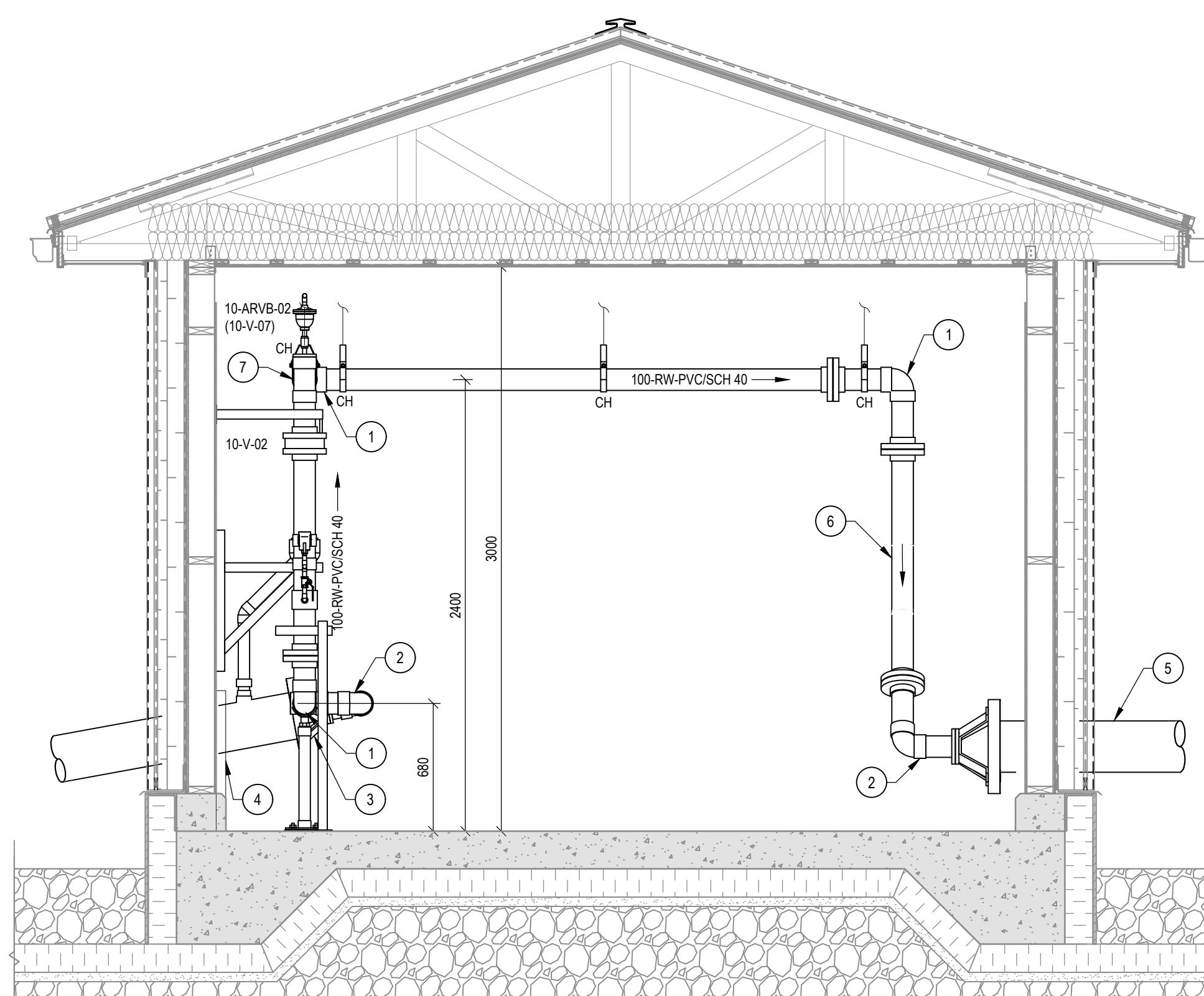
TYPICAL DETAIL

250-RW-HDPE PUMPHOUSE CONNECTION



A SECTION

PUMP HOUSE PIPING



B SECTION

## PUMP HOUSE PIPING

**exp Services Inc.**  
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2	RECORD DRAWING	2020 XXXX.XX
1	RELEASED FOR CONSTRUCTION	2017.AUG.30
No.	Revision	Date

## RECORD DRAWING

Professional Seal(s)



Drawn By:	ARL
Dwg Standards Ckd By:	
Designed By:	JFP
Design Checked By:	
Scale:	AS SHOWN

Project Title	
---------------	--

WATER TREATMENT  
FACILITY AND  
RAW WATER STORAGE  
ARVIAT, NU

Dwg. Title
------------

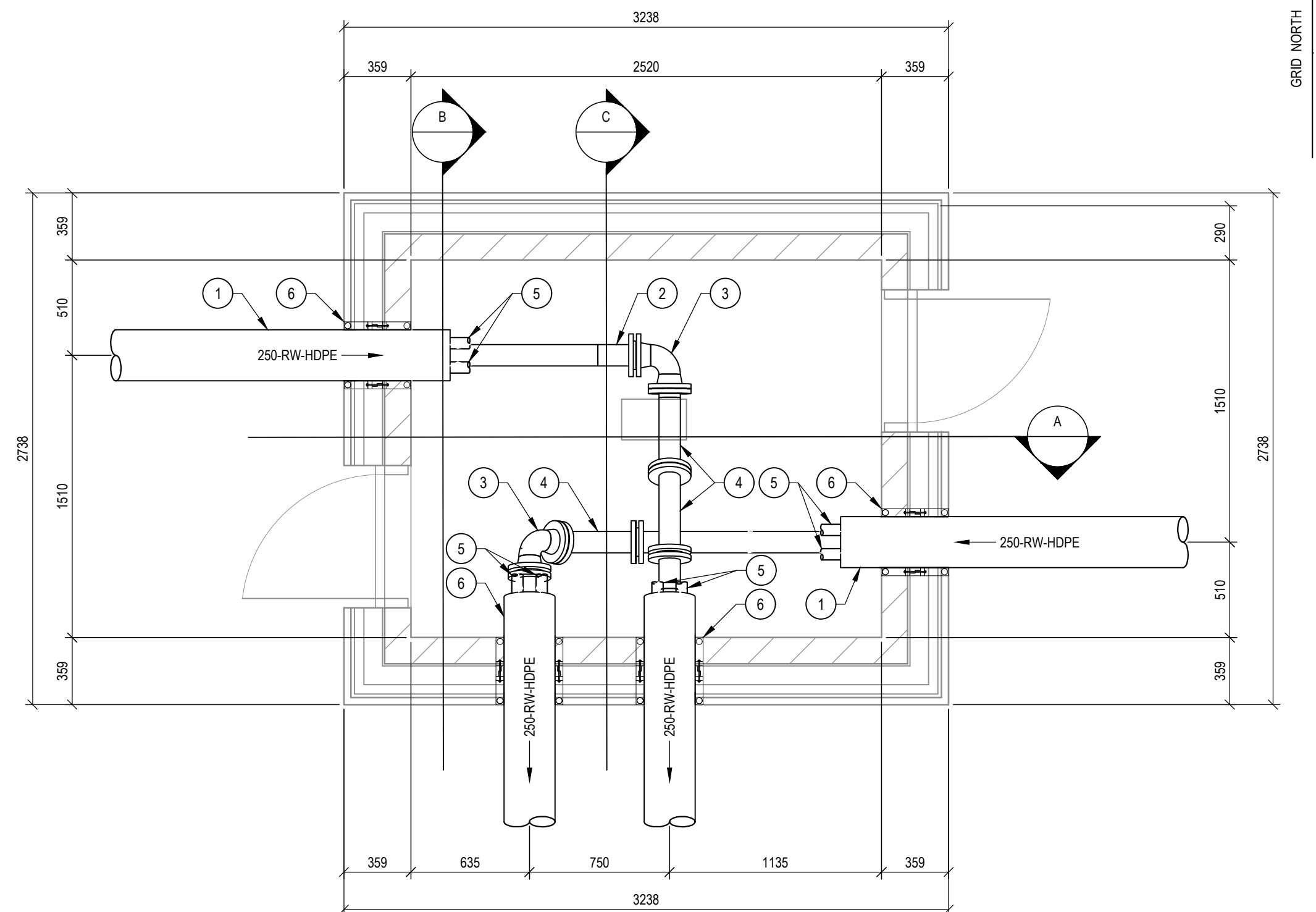
## PUMP HOUSE 2 PIPING PLAN AND SECTIONS

Project No. OTT-00236239-A0

Dwg. No. **P-215**

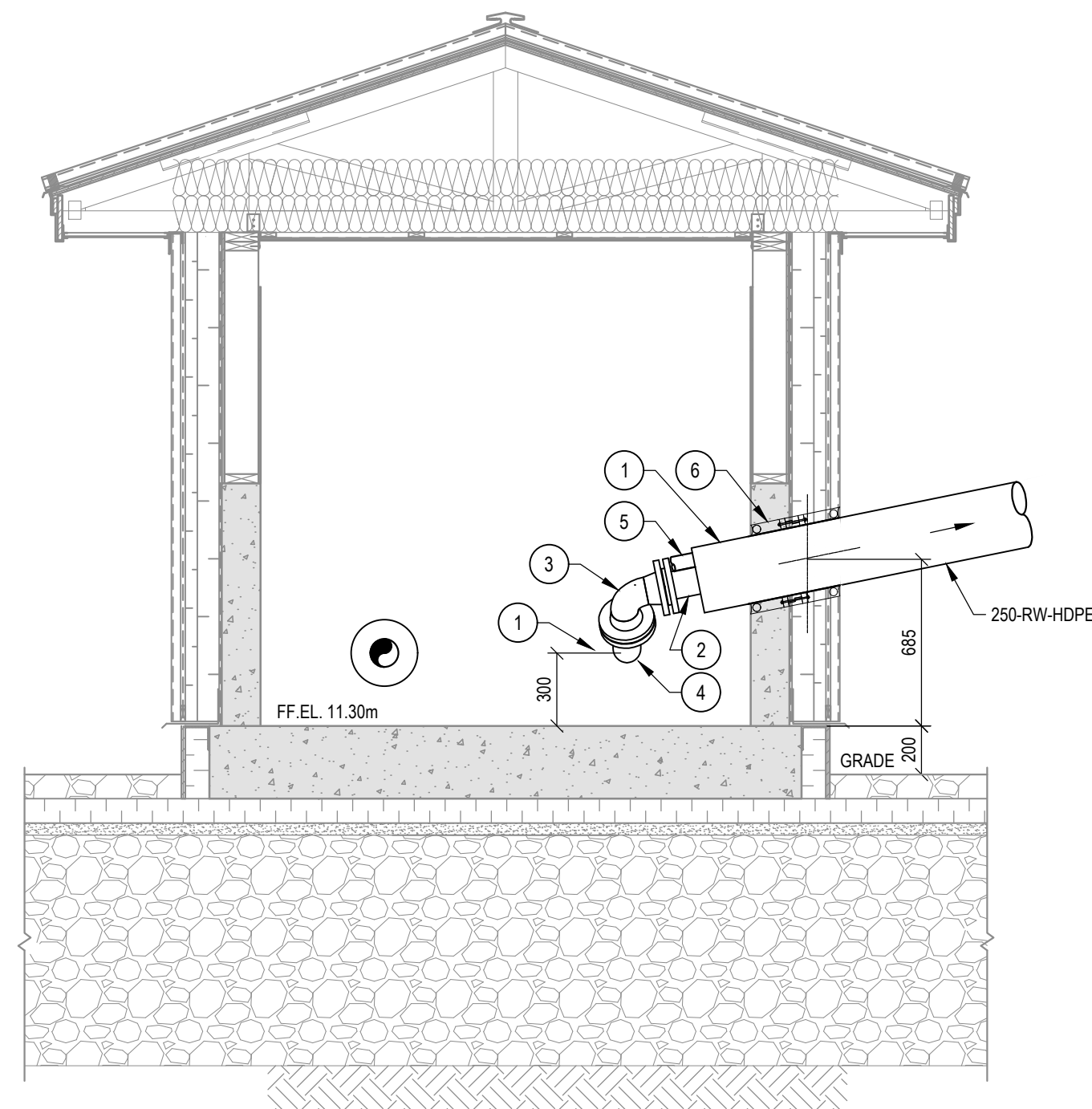
Rev. No.	2
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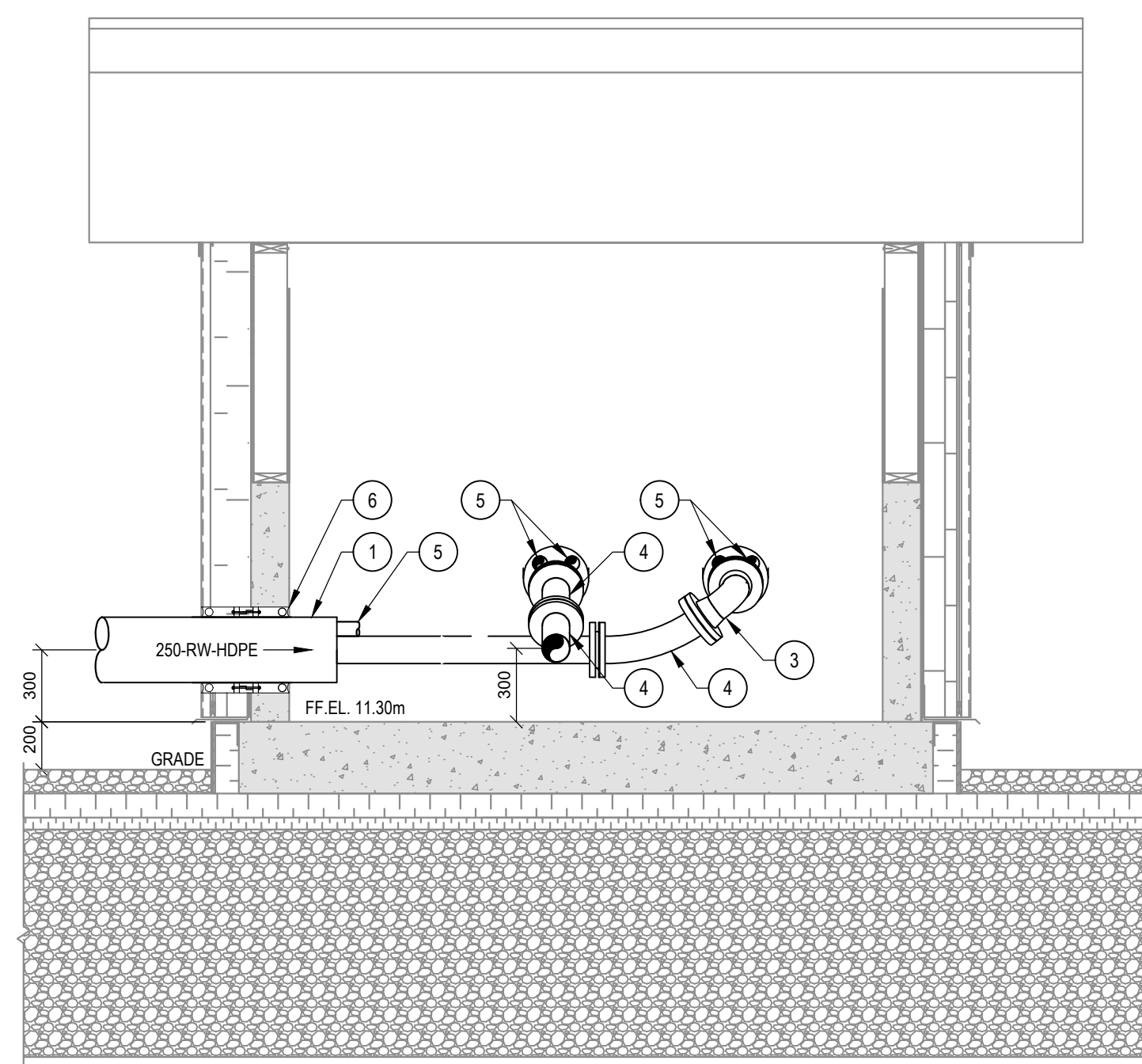
GRID NORTH

1	PLAN
P-201	PIPING TRANSITION STRUCTURE PIPING

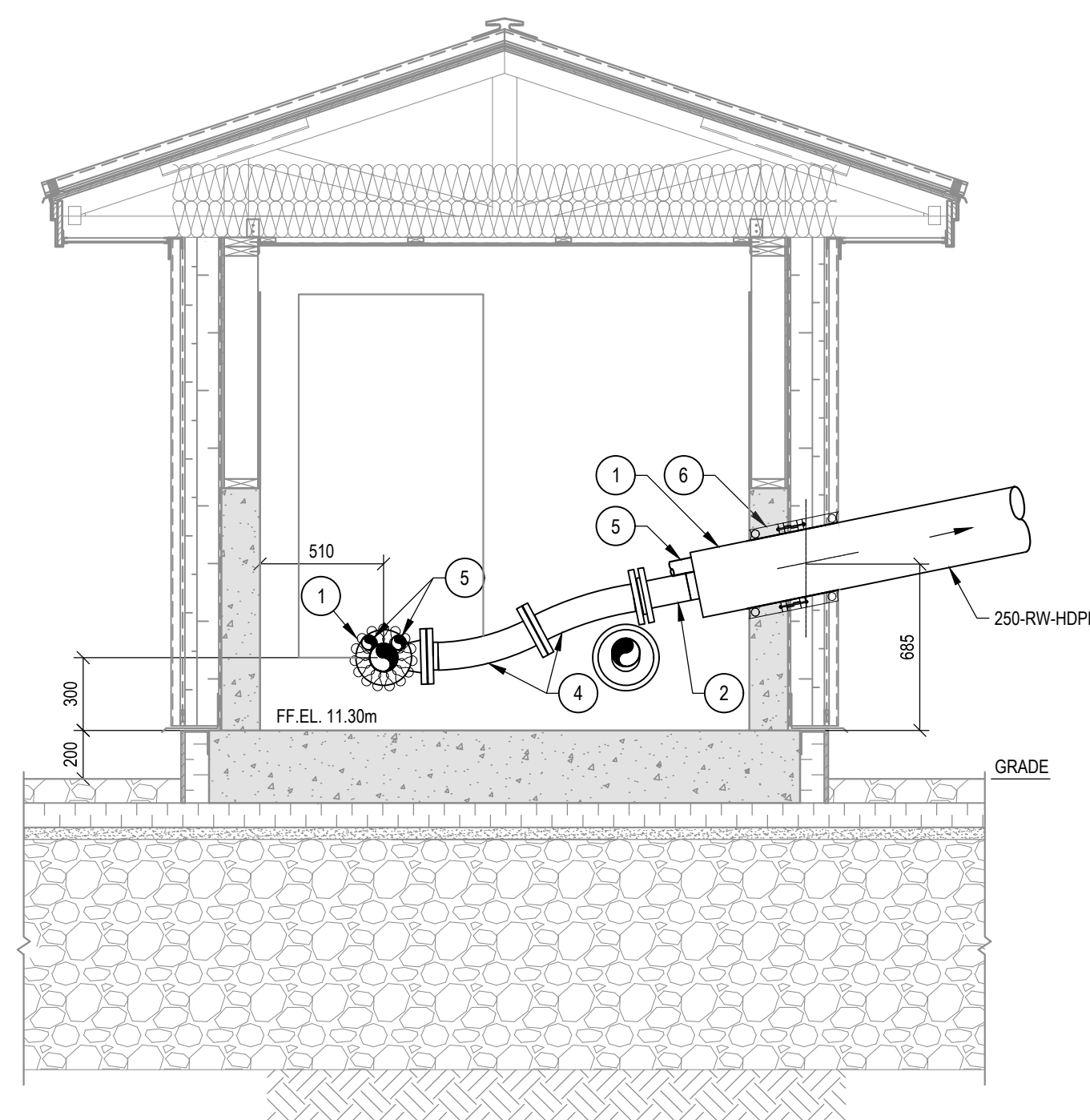


B SECTION

PIPING TRANSITION STRUCTURE PIPING



A SECTION  
PIPING TRANSITION STRUCTURE PIPING



C SECTION  
PIPING TRANSITION STRUCTURE PIPING

KEYNOTES:

- 1 250mm Ø CARRIER PIPE TO BE INSULATED AND HEAT TRACED.
- 2 100-RW-HDPE.
- 3 100mm Ø 90° SS ELBOW W/ SS WELD NECK ON EACH END FOR REMOVAL.
- 4 100mm Ø ALL SS BRAIDED HOSE WITH FLANGED ENDS.
- 5 GLYCOL CIRCULATING SYSTEM.
- 6 MODULAR MECHANICAL SEAL, REFER TO TYPICAL DETAIL ON 'S' SERIES DRAWINGS.

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No.	Issue	Date

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3	RECORD DRAWING	2020.XXX.
2	ELEVATION CHANGE	2018.AUG.
1	RELEASED FOR CONSTRUCTION	2017.AUG.
No.	Revision	Date

**RECORD DRAWING**

Professional Seal(s)



Drawn By:	ARL
Dwg Standards Ckd By:	
Designed By:	JFP
Design Checked By:	
Scale:	AS SHOWN

Project Title

WATER TREATMENT  
FACILITY AND  
RAW WATER STORAGE  
ARVIAT, NU

Dwg. Title
------------

## PIPING TRANSITION STRUCTURE

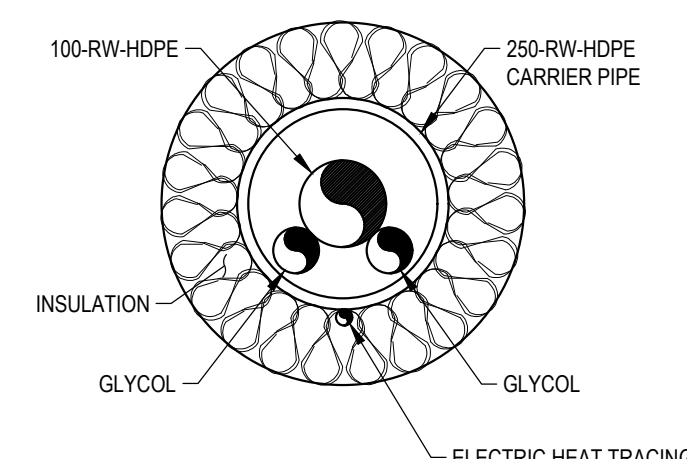
Project No. OTT-00236239-A0

Dwg. No. **P-216**

Rev. No.	3
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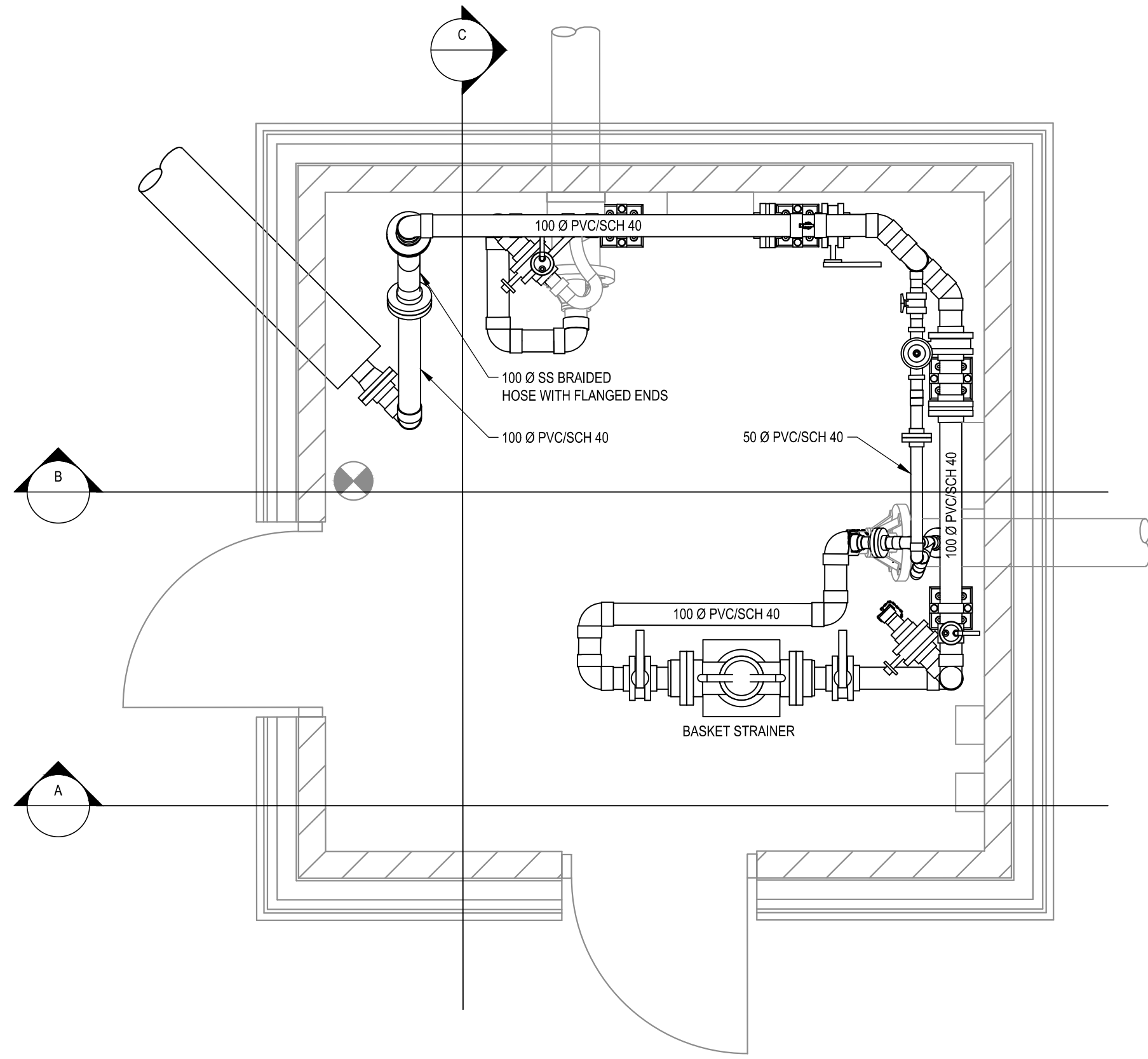
TYPICAL DETAIL

CARRIER PIPE CROSS SECTION NOT TO SCALE

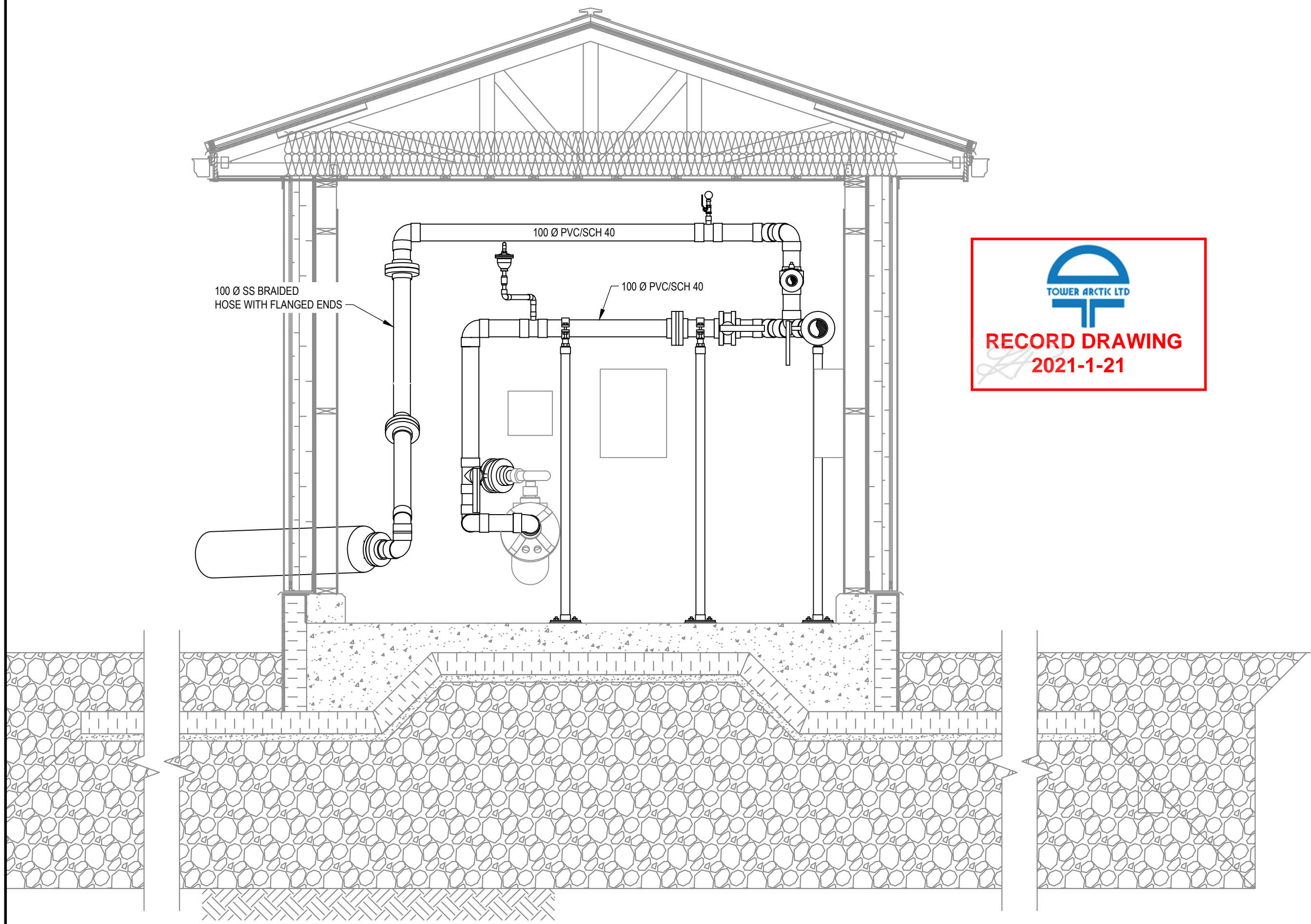




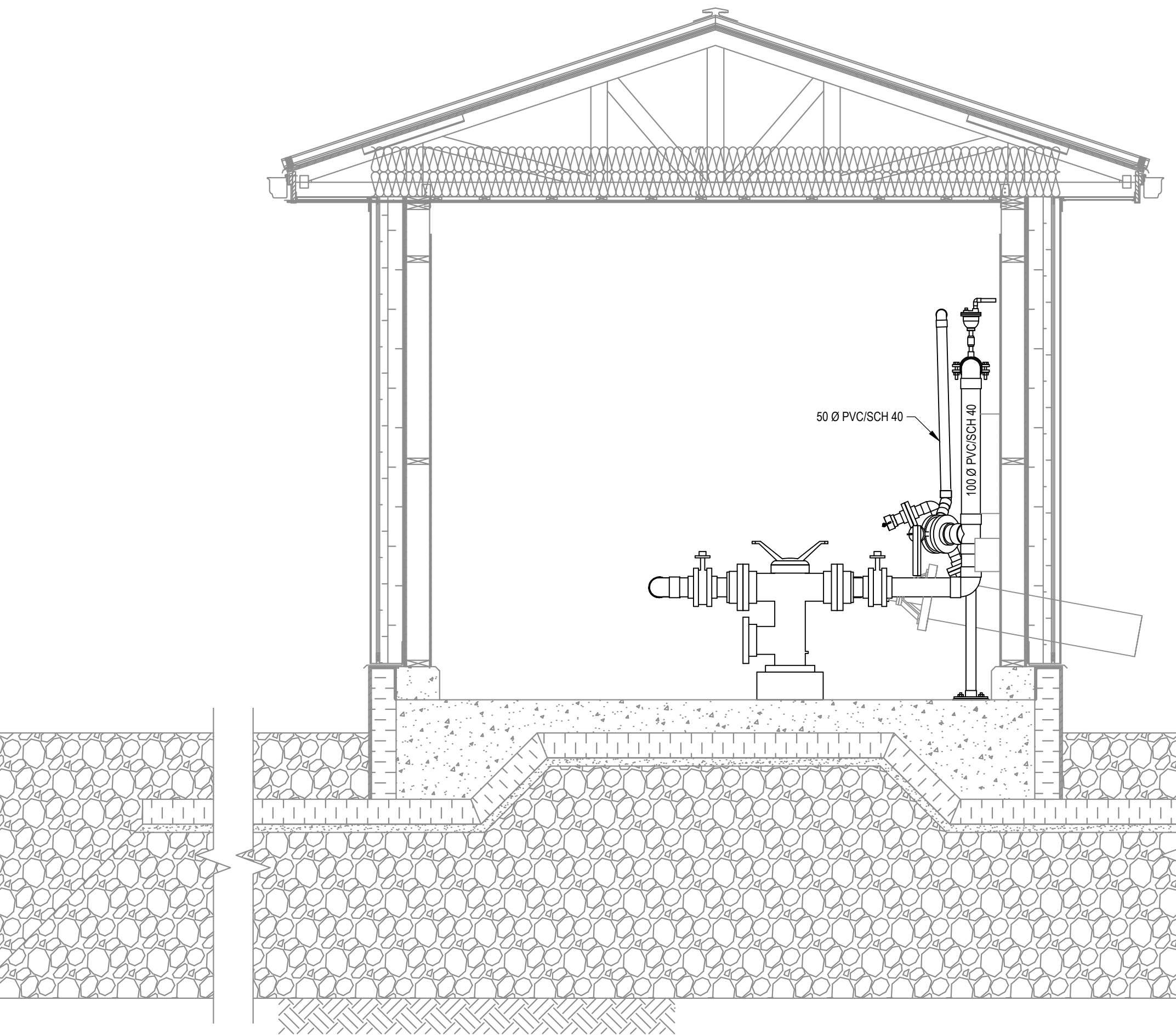
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AL LAWRENCE  
12/10/2020 2:42 PM



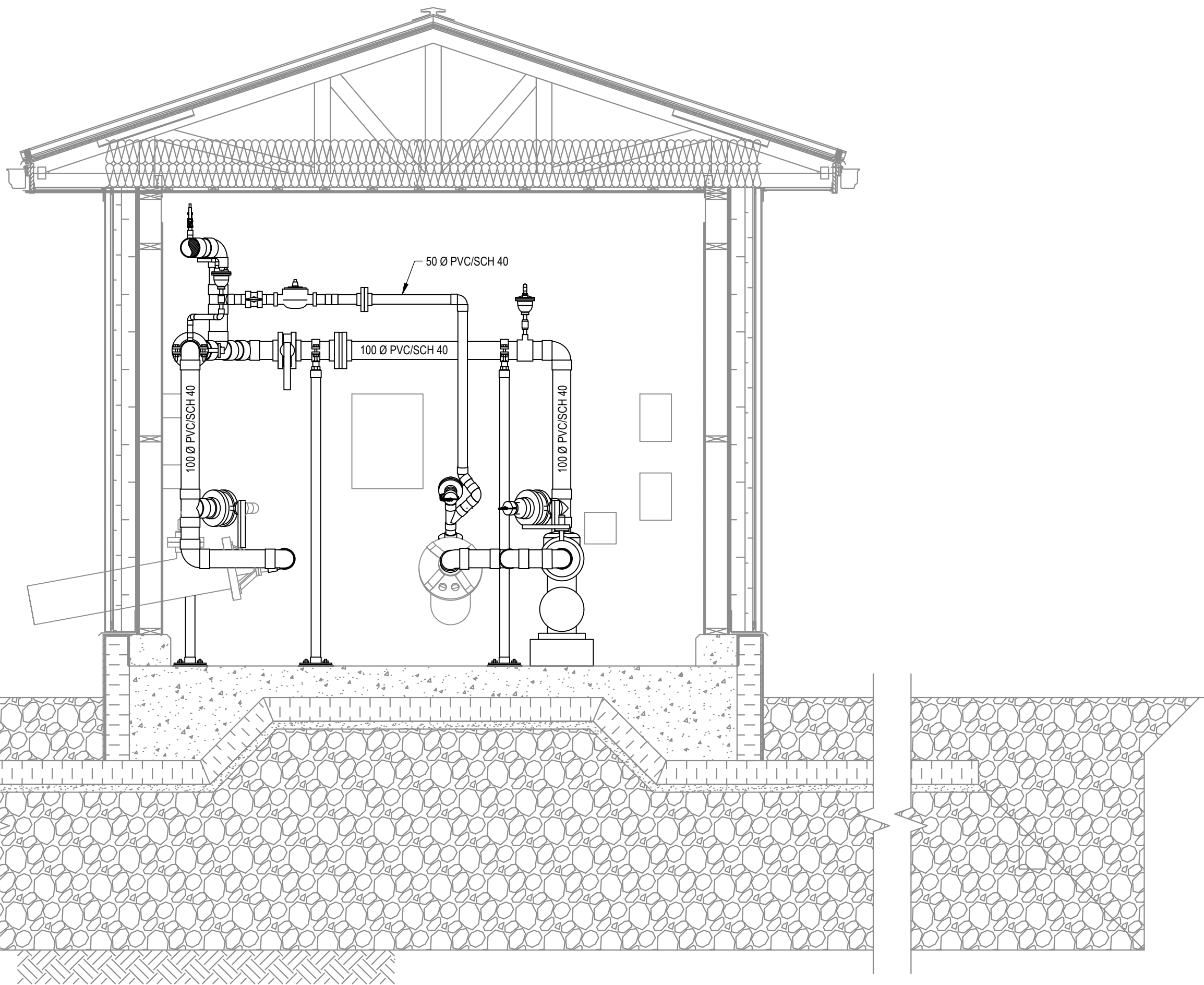
PLAN



SECTION



SECTION



SECTION

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1	RECORD DRAWING	2020.XXX.XX
No.	Revision	Date

**RECORD DRAWING**

Professional Seal(s)

Drawn By:	ARL
Dwg Standards Ckd By:	
Designed By:	JFP
Design Checked By:	
Scale:	AS SHOWN

Project Title

**WATER TREATMENT  
FACILITY AND  
RAW WATER STORAGE  
ARVIAT, NU**

Dwg. Title

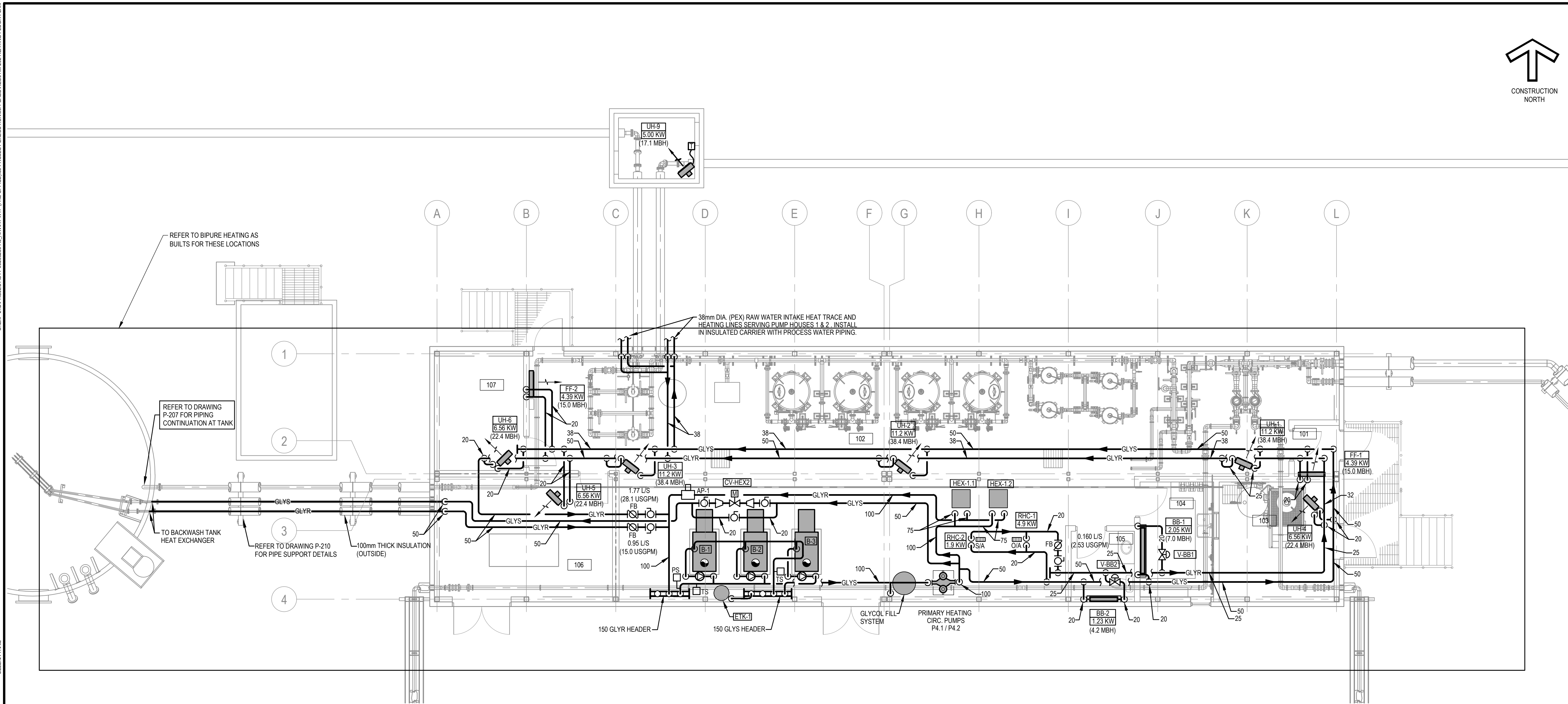
**EXISTING PUMP HOUSE 1  
PIPING PLAN AND  
SECTIONS**

Project No.

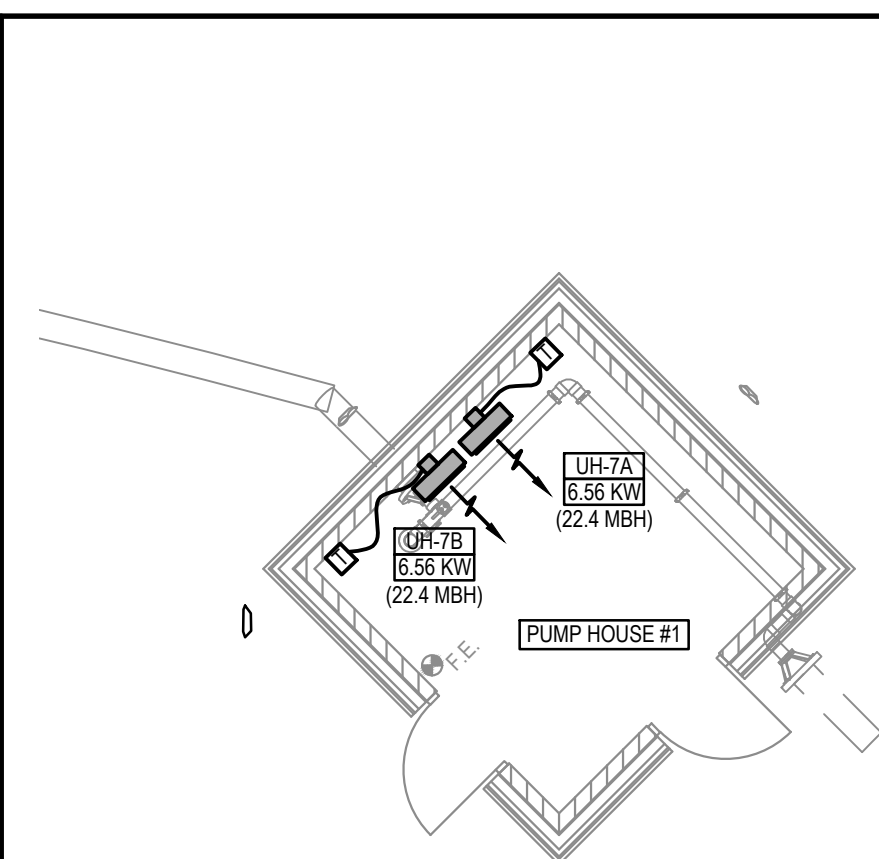
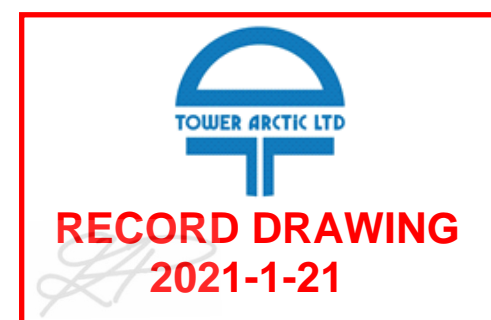
**OTT-00236239-A0**

Dwg. No.	Rev. No.
<b>P-217</b>	<b>1</b>

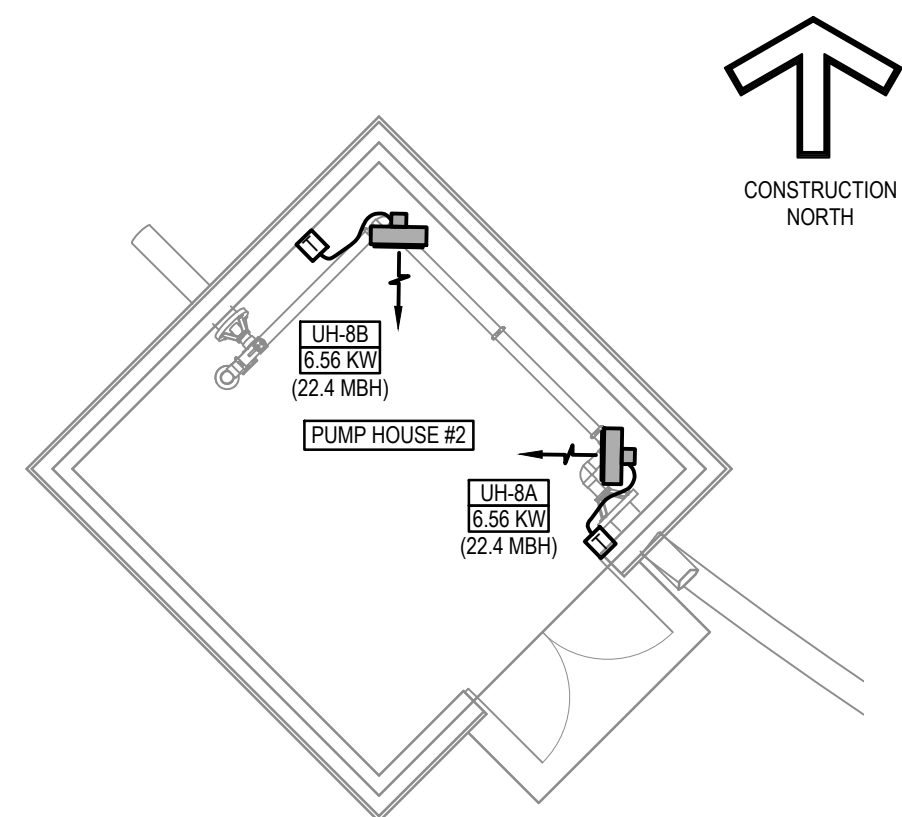




PLAN
HEATING



PLAN
PUMP HOUSE #1 - HEATING



PLAN
PUMP HOUSE #2 - HEATING

RECORD DRAWINGS:  
THIS RECORD DRAWING  
HAS BEEN REVISED TO  
SHOW MECHANICAL  
SYSTEMS AS INSTALLED

PERMIT OF PRACTICE  
EXP SERVICES INC.

Signature \_\_\_\_\_

Date \_\_\_\_\_

PERMIT NUMBER: P483  
NT/NU Association of Professional  
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