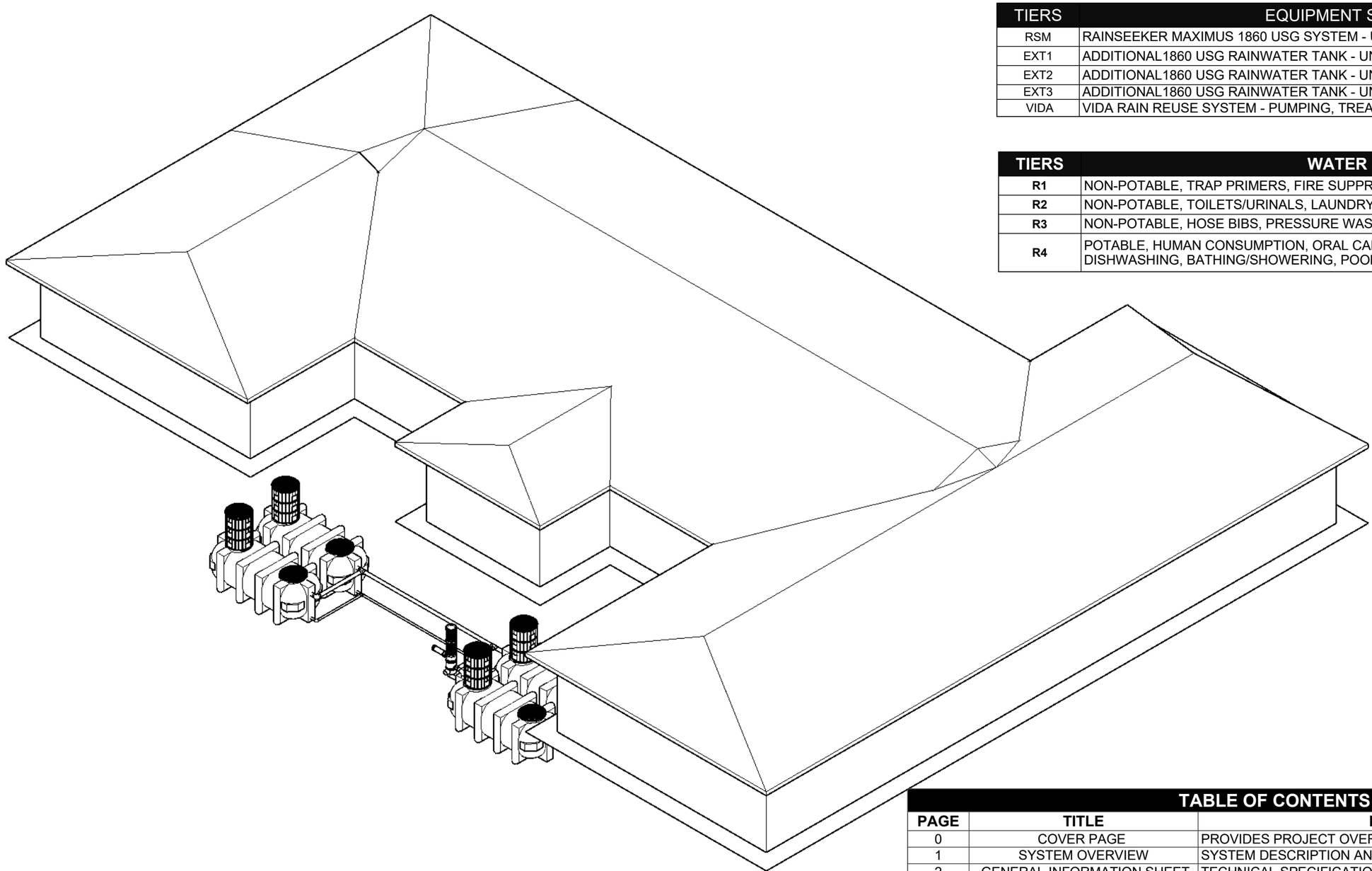

TIERS	EQUIPMENT SCHEDULE
RSM	RAINSEEKER MAXIMUS 1860 USG SYSTEM - UNDERGROUND
EXT1	ADDITIONAL1860 USG RAINWATER TANK - UNDERGROUND CANWEST POLY TANK
EXT2	ADDITIONAL1860 USG RAINWATER TANK - UNDERGROUND CANWEST POLY TANK
EXT3	ADDITIONAL1860 USG RAINWATER TANK - UNDERGROUND CANWEST POLY TANK
VIDA	VIDA RAIN REUSE SYSTEM - PUMPING, TREATMENT AND CONTROL

TIERS	WATER USES
R1	NON-POTABLE, TRAP PRIMERS, FIRE SUPPRESSION, IRRIGATION
R2	NON-POTABLE, TOILETS/URINALS, LAUNDRY MACHINE
R3	NON-POTABLE, HOSE BIBS, PRESSURE WASHING, VEHICLE WASHING
R4	POTABLE, HUMAN CONSUMPTION, ORAL CARE, FOOD PREPARATION, DISHWASHING, BATHING/SHOWERING, POOL/HOT TUBS

COVER PAGE

(SCALE 1:30)

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CLEAN FLO WATER TECHNOLOGIES

CLEANFLO WATER TECHNOLOGIES
250 - 997 Seymour Street
Surrey, BC,
877-306-2146
BENJAMIN@CFWT.CA

DESCRIPTION

THIS SYSTEM IS DESIGN TO MEET BC PLUMBING CODE AND CSA STANDARDS FOR RAINWATER HARVESTING B805.

THE OVERALL SYSTEM DESIGN EMPLOYS A MULTI BARRIER APPROACH TO WATER QUALITY. THE FIRST STEP IS THE PRE-FILTER. THE SECOND STEP IS THE RAINWATER TANK DESIGN. THE THIRD STEP IS THE WATER TREATMENT SYSTEM.

CLEAN FLO SYSTEMS ARE DESIGNED FROM "ROOF TO TAP" ! WITH ATTENTION TO EVERY DETAIL OF YOUR RAINWATER HARVESTING SYSTEM. WHEN YOU PURCHASE THE COMPLETE SYSTEM FROM CLEAN FLO, IT IS PART OF A COMPLETE PACKAGE THAT WE WILL PROVIDE SUPPORT AND SERVICE FOR THE LIFE OF THE SYSTEM

THIS RAINWATER HARVESTING SYSTEM IS DESIGNED AS A PRIMARY SOURCE OF WATER FOR POTABLE PURPOSES, SUCH AS DRINKING, BATHING, TOILETS AND LAUNDRY. WITH BACK-UP WATER SOURCE HAULED BULK POTABLE WATER IF THE RAINWATER TANK IS EMPTY.

THE SYSTEM WILL PROVIDE WATER FOR WATER USES TIER: R4 POTABLE DRINKING WATER

ROOF

THE SYSTEM WILL BE HARVESTING RAIN FROM ONE BUILDING.THE ROOF IS FIBREGLASS SHINGLES.

GUTTER, DOWNPIPES AND CONVEYANCE PIPING

THE GUTTERS, DOWNPIPES, AND CONVEYANCE PIPING IS SIZED BASED ON SPECIFICATIONS FROM THE DESIGNS

PREFILTER

THE SYSTEM WILL REQUIRE ONE (1) PRE-FILTER. THIS PRE-FILTER OPERATES AS BOTH A FIRST FLUSH DIVERTER AND PREFILTER, WITH A FILTER MESH SIZE OF 320 MICRONS. THE FULL CROSS-SECTION (PIPE DIAMETER) OF THE RAINWATER DRAINAGE SYSTEM REMAINS CONTINUOUSLY OPEN, AND THERE ARE NO REDUCTION IN THE CROSS-SECTION OF THIS APPLIANCE IN WHICH DIRT OR WATER CAN COLLECT.

RAINWATER TANK / CISTERN

THIS SYSTEM WILL PROVIDE A TOTAL OF 7,440 USG OF RAINWATER STORAGE. WITH A TOTAL OF FOUR (4) UNDERGROUND RAINWATER TANK, MADE OF POLYETHYLENE. EACH TANK IS 1860 USG. TANK CONNECTIONS, VALVES AND FITTINGS ABOVE FROST ZONE MUST BE WRAPPED IN HEAT CABLE TO PROTECT THESE COMPONENTS FROM FREEZING WHEN INSTALLTING.

THE RAINWATER TANK IS DESIGNED TO PROVIDE SAFE STORAGE OR RAINWATER, WHICH IMPROVES WATER QUALITY BECAUSE OF IT'S DESIGN AND FUNCTION. THE CALMING INLET PREVENTS AGITATION OF SETTLED FINE DUST, THE SKIMMING OVERFLOW REMOVES FLOATING PARTICLES AND THE FLOATING FILTER ENSURES WATER IS DRAWN INTO THE PUMP FROM APPROXIMELY 150 mm (6.0") BELOW THE SURFACE OF THE WATER.

WATER PUMPING AND TREATMENT SYSTEM

CLEAN FLO DETERMINED THE WATER DEMAND TO BE 10 GPM @ 60 PSI. THIS WILL BE PUMPED BY SUBMERCIBLW MULTI STAGE BOOSTER PUMP POWERED BY VFD. THE TREATMENT WILL BE THREE STAGES TO ENSURE WATER IS SAFE AND NO STAINING ON FIXTURES. STAGE ONE IS A SEDIMENT FILTER OF ~15 MICRONS WHICH IS REUSBALE. STAGE TWO A 10 MICRON CARBON FILTER. STAGE THREE 1 MICON ABSLOUTE SEDIMENT FILTER. STAGE FOUR IS ULTRAVIOLET SANITATION.

WATER QUALITY AND TREATMENT

CLEAN FLO DESIGNED THIS SYSTEM TO PRODUCE WATER THAT IS SAFE FOR CSA B805 R4 USES; NAMELY: DRINKING, BATHING, COOKING, TOILET AND LAUNDRY.

SYSTEM OVERVIEW

CLEANFLO WATER TECHNOLOGIES
250 - 997 Seymour Street
Surrey, BC,
877-306-2146
BENJAMIN@CFWT.CA

SYSTEM NAME:

YOUR NAME
YOUR ADDRESS

SYSTEM TYPE:	R4-POTABLE
OWNERS:	YOU
LOCATION:	SOMEWHERE

EMERGENCY CONTACT

FIRST POINT - INSTALLERS	SYSTEM INSTALLERS
SECOND POINT - DESIGNER	CLEANFLO WATER TECHNLOGIES, CANADA, 1-877-306-2146

MAINTENANCE PERSONS

OWNER

SCOPE OF SYSTEM SUPPLY

WATER USES TEIR:	R4 POTBALE
PRIMARY WATER SOURCE:	RAINWATER
SECONDARY WATER SOURCE:	HAULED POTBALE BULK WATER
NUMBER OF PEOPLE SERVED:	5 / DAY
ANNUAL WATER DEMAND:	~236, 000 LITERS
ANNUAL WATER HARVESTED:	~160, 000 LITERS

NUMBER OF FIXTURES

HOSE BIBS:	2
YARD HYDRANT:	0
FAUCETS:	6
LAUNDRY:	1
TOILETS:	5
DISHWASHER:	1
BATH/SHOWER:	3
MECH. EQUIPMENT:	1
FIRE SUPRESSION:	0

SECONDARY WATER SOURCE

TYPE:	POTABLE HUALED BULK WATER
AUTOMATIC TOP-UP SYSTEM	NA
DESCRIPTION / COMMENTS:	

SYSTEM DESIGN AND SPECS.

DESIGNER:	CLEANFLO WATER TECHNLOGIES, 1-877-306-2146
DATE COMPLETED:	MARCH 01, 2021

SYSTEM SPECIFICATIONS

ROOF COLLECTION AREA:	~7,500 SQFT
ROOF MATERIAL:	FIBREGLASS SHINGLES
GUTTER MATERIAL:	PAINTED ALUMINIUM
DOWNSPOUT MATERIAL:	ALUMINUM
CONVEYANCE PIPING MATERIAL:	PVC SDR 35 OR PVC DRAIN PIPE

STORAGE TANK SPECIFICATIONS

TOTAL VOLUME:	7,440 USG
NUMBER OF TANKS:	4
VOLUME OF EACH TANK:	1860 USG
TANK TYPE:	BELOW GROUND POLY
TANK MATERIAL:	POLYETHYLENE

TANK DIMENSIONS

LENGTH:	154"
WIDTH:	68"
HIEGHT:	56 "
DIAMETER:	NA

PRE-FILTER SPECIFICATIONS

TYPE OF PREFILTER:	WISY VORTEX 150
NUMNER OF PRE-FILTERS:	1
PRE-FILTRATION MESH SIZE:	320 MICRONS
MAXIMUIM INLET FLOW RATE:	12 LITERS PER SECOND

PUMP SPECIFICATIONS

BRAND:	DAB WATER TECHNOLOGIES
MODEL:	ESYBOX DIVER
DESIGN FLOW RATE:	10 USGPM
MAXIMUN PSI @ 10 GPM:	77.4 PSI

POWER SPECIFICATIONS

HORSE POWER:	1.3 HP
VOLTAGE:	230 VAC
AMPS:	~ 5.5 A
WATTS:	1300 W

WATER TREATMENT SPECIFICATIONS

TYPE:	CLEANFLO
BRAND:	VIDA RAIN REUSE
MODEL:	VIDAPROSUB
AGE OF EQUIPMENT:	NEW

TOTAL DYNAMIC HEAD

DESIGN FLOW RATE: 10 GPM

SUPPLY PIPE 1.25" @ 100FT (0.7 PSI LOSS/100FT) (NPSH MUST BE MET FOR BOOSTER PUMP)	0.7 PSI /1.6 FT HEAD
TREATMENT SKID PSI LOSS VARIES AS WATER FILTERS BECOME CLOGGED	10 PSI / 35 FT HEAD
DISTRIBUTION PIPE 10GPM - 1.0" @ 20FT (2.6 PSI LOSS/100FT) 10GPM - 0.75" @ 50FT (8.7 PSI LOSS/100FT) 5GPM - 0.5" @ 50FT (10.5 PSI LOSS/100FT) TOTAL 0.52 + 4.4 + 5.3 = 10.2	10.2 PSI / 24 FT HEAD
MINOR LOSSES: VALVES, FITTINGS ~ 20FT (10.5 PSI LOSS/100FT)	2.1 PSI / 4.9 FT HEAD
ELEAVTION HEAD 15FT (1.0 PSI LOSS/2.33FT)	6.4 PSI / 15 FT HEAD
STATIC PSI 40 PSI	40 PSI / 116.5 FT HEAD
TOTAL	**69.4 PSI/122.6 FT HEAD**

-

SYSTEM INFORMATION

CLEANFLO WATER TECHNOLOGIES
250 - 997 Seymour Street
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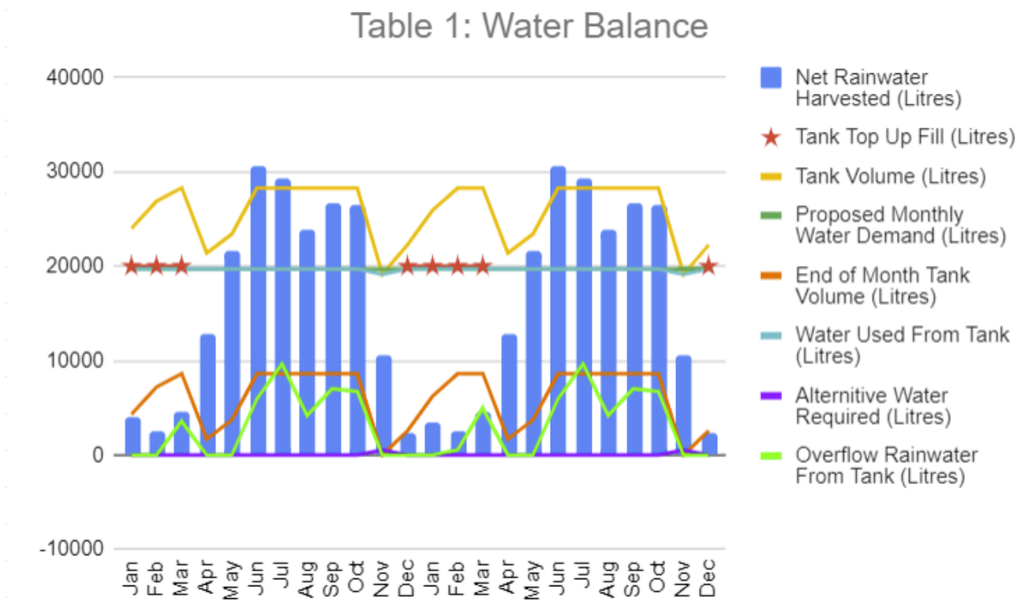
Number of Full Time Occupance	5					
Parameter	Litres / Use	Total Litres / Person	**Roof Material**	FIBERGLASS		
5 Toilet Flushes Per Day	6	30	Intial Loss (mm)	0.5		
Clothes Washer (2.5 loads/week)	56	20	Continous Loss (%)	10%		
Bath/Shower (9L /min @ 5 min)	9	45				
Faucets (5L / min @ 5 min)	5	25	**Prefilter Loss (%)**	10%		
Dishwasher (2 loads/week)	16	4.5	**First Flush Loss (mm/m2)**	0.05		
Leaks	5	5				
Per Capita Daily Water Demand		130	Roof Area (sq m)	710		
			(sq ft)	7642		
Total Daily Water Demand	647.5					
			Total Tank Volume (Litres)	28300		
Monthly Water Demand (30 days)	19425		(US Gallons)	7477		
			Bulk Water Delivery (Litres)	20000		
Annual Water Demand	236338		(US Gallons)	5284		



	Rainfall (mm)	Average # of Days With Rainfall	Intial Loss From Roofing (mm)	Gross Rainwater Harvested (Litres)	Contious Loss From Roofing (Litres)	Loss From First Flush (Litres)	Loss From Prefilter (Litres)	Net Rainwater Harvested (Litres)	Tank Top Up Fill (Litres)	Tank Volume (Litres)	Proposed Monthly Water Demand (Litres)	Net Tank Volume (Litres)	End of Month Tank Volume (Litres)	Water Used From Tank (Litres)	Alternitive Water Required (Litres)	Overflow Rainwater From Tank (Litres)
Jan	8.1	2	1	5041	504	71	447	4019	20000	24019	19695	4325	4325	19695	0	0
Feb	6.7	4	2	3337	334	142	286	2575	20000	26900	19695	7205	7205	19695	0	0
Mar	12	7	4	6035	604	249	518	4665	20000	28300	19695	8605	8605	19695	0	3570
Apr	28.9	12	6	16259	1626	426	1421	12786		21392	19695	1697	1697	19695	0	0
May	47.2	17	9	27477	2748	604	2413	21713		23410	19695	3715	3715	19695	0	0
Jun	65.3	22	11	38553	3855	781	3392	30525		28300	19695	8605	8605	19695	0	5940
Jul	62.1	20	10	36991	3699	710	3258	29324		28300	19695	8605	8605	19695	0	9629
Aug	51.5	18	9	30175	3018	639	2652	23867		28300	19695	8605	8605	19695	0	4172
Sep	55.9	17	9	33654	3365	604	2969	26717		28300	19695	8605	8605	19695	0	7022
Oct	56.5	19	10	33370	3337	675	2936	26423		28300	19695	8605	8605	19695	0	6728
Nov	23.9	10	5	13419	1342	355	1172	10550		19155	19695	-540	0	19155	540	0
Dec	5.6	3	2	2911	291	107	251	2262	20000	22262	19695	2567	2567	19695	0	0
Jan	8.1	4	2	4331	433	142	376	3380	20000	25948	19695	6253	6253	19695	0	0
Feb	6.7	4	2	3337	334	142	286	2575	20000	28300	19695	8605	8605	19695	0	528
Mar	12	7	4	6035	604	249	518	4665	20000	28300	19695	8605	8605	19695	0	4970
Apr	28.9	12	6	16259	1626	426	1421	12786		21392	19695	1697	1697	19695	0	0
May	47.2	17	9	27477	2748	604	2413	21713		23410	19695	3715	3715	19695	0	0
Jun	65.3	22	11	38553	3855	781	3392	30525		28300	19695	8605	8605	19695	0	5940
Jul	62.1	20	10	36991	3699	710	3258	29324		28300	19695	8605	8605	19695	0	9629
Aug	51.5	18	9	30175	3018	639	2652	23867		28300	19695	8605	8605	19695	0	4172
Sep	55.9	17	9	33654	3365	604	2969	26717		28300	19695	8605	8605	19695	0	7022
Oct	56.5	19	10	33370	3337	675	2936	26423		28300	19695	8605	8605	19695	0	6728
Nov	23.9	10	5	13419	1342	355	1172	10550		19155	19695	-540	0	19155	540	0
Dec	5.6	3	2	2911	291	107	251	2262	20000	22262	19695	2567	2567	19695	0	0

WATER BALANCE

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CLEAN FLO WATER TECHNOLOGIES

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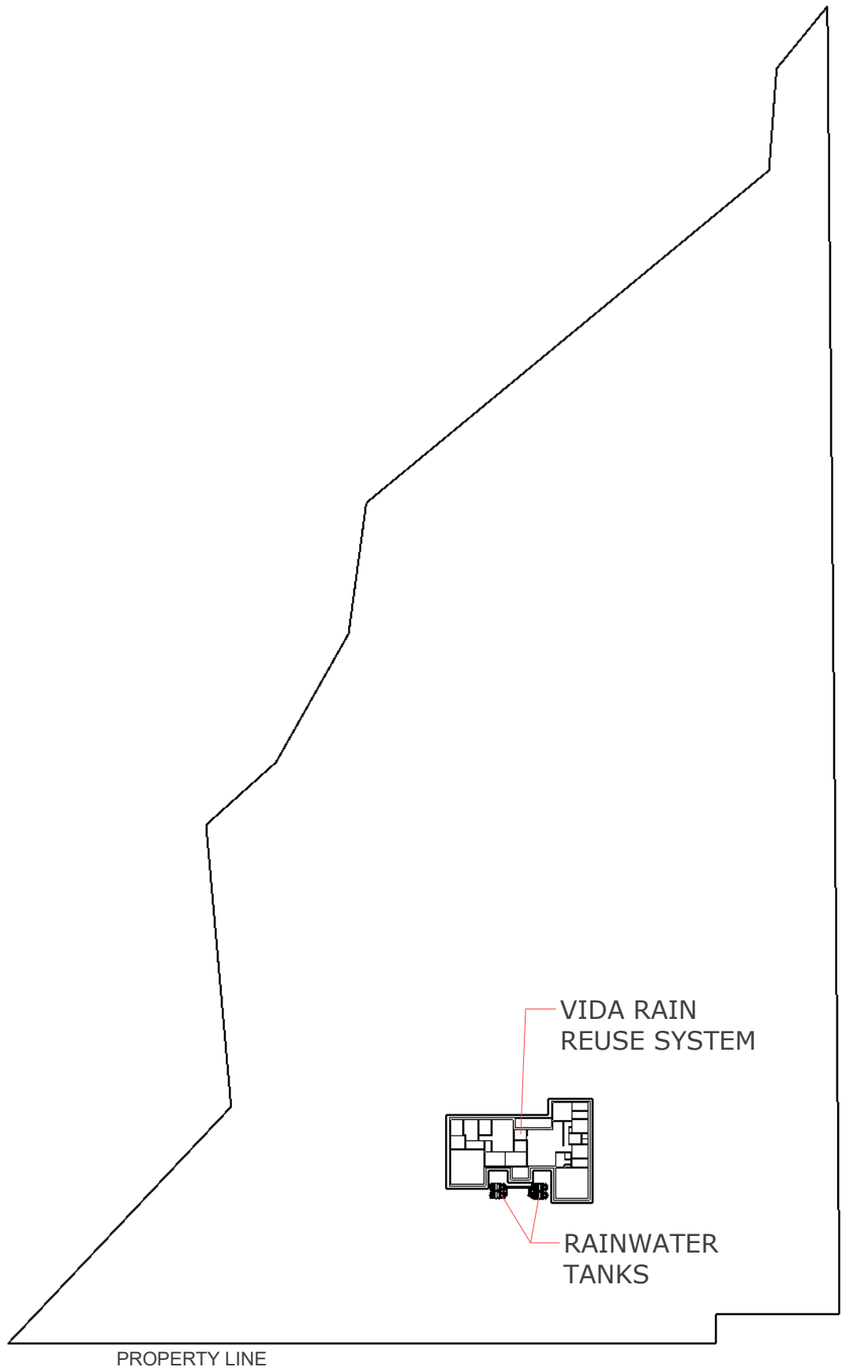

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SITE PLAN

(SCALE 1:1500)

May 4, 2021

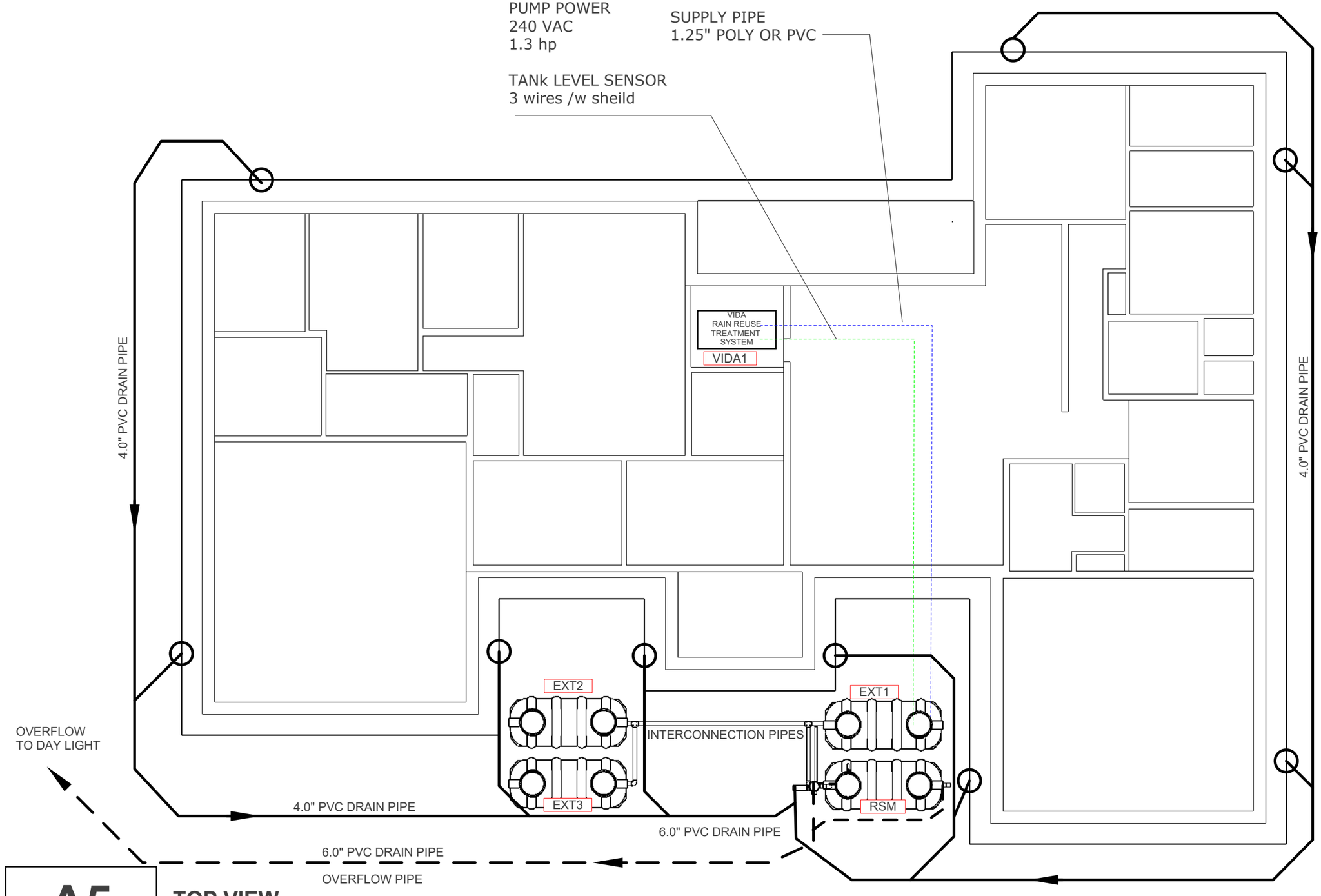
Project Location |

CLEANFLO WATER TECHNOLOGIES

PUMP POWER
240 VAC
1.3 hp

SUPPLY PIPE
1.25" POLY OR PVC

TANk LEVEL SENSOR
3 wires /w sheild



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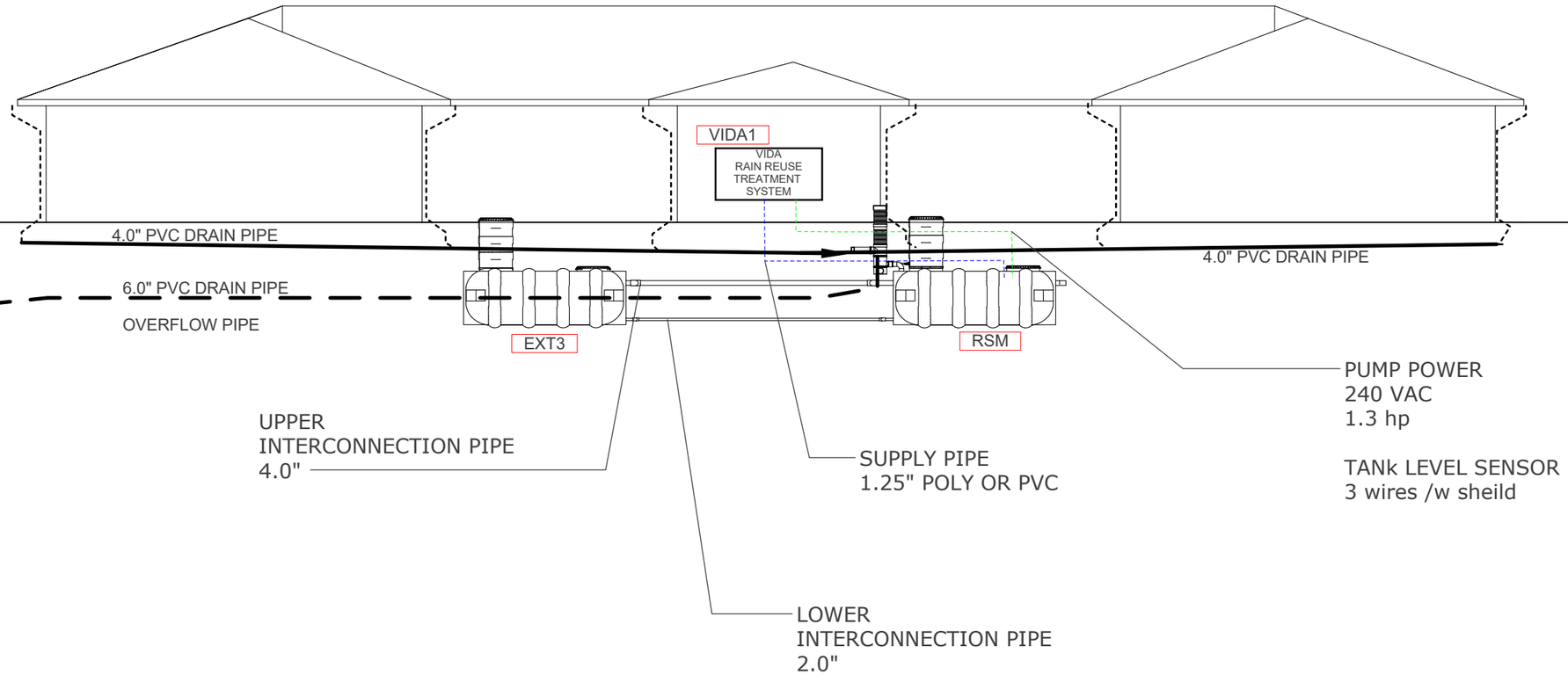
TOP VIEW
(SCALE 1:128)

May 4, 2021

Project Location |

CLEANFLO WATER TECHNOLOGIES



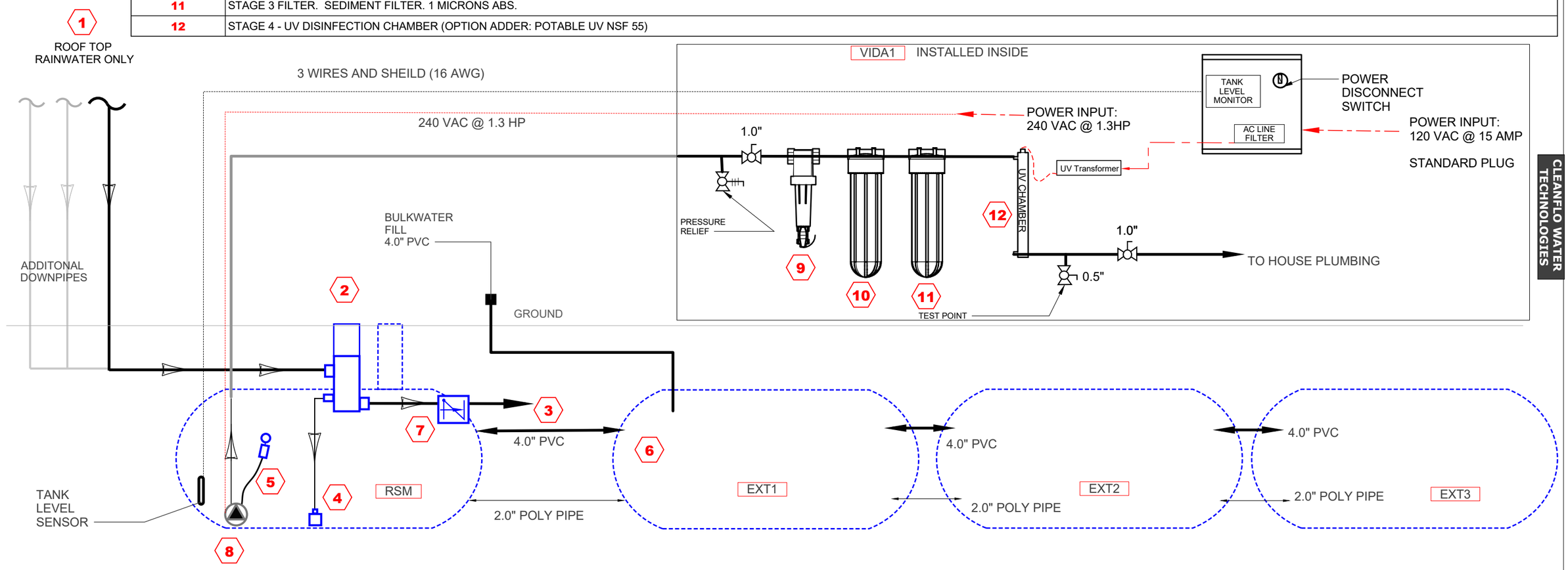
CLEANFLO WATER TECHNOLOGIES

A6

FRONT VIEW

(SCALE 1:128)

SEQUENCE OF OPERATION	
1	RAINWATER IS CAPTURED FROM THE ROOF. USING GUTTERS, ROOF DRAINS, AND PIPING RAINWATER IS CONVEYED TO THE PREFILTER. IF USING RAINWATER FOR POTABLE USE - REFER TO POTABLE ROOF AND GUTTER SPECIFICATION SHEETS.
2	RAINWATER ENTERS PREFILTER SELF CLEANING 3 IN1. PROVEN BASKETLESS TECHNOLOGY PROVIDES: 1) FIRST FLUSH ACTION 2) CONTINUOUS FILTRATION 320 MICRONS 3) AERATOR.
3	RAINWATER OVERFLOWS FROM PREFILTER AND RAINWATER TANK TO A SAFE LOCATION SUCH AS: GROUND, STORM SEWER, SWALE, INFILTRATION GALLERY OR SUMP PIT/ LIFT STATION.
4	FILTERED RAINWATER LEAVES THE PREFILTER AND ENTERS THE TANK VIA STAINLESS STEEL AERATOR AND CALMING INLET DEVICE. WHICH ADDS OXYGEN TO THE RAINWATER AND REDUCES VELOCITY OF INCOMING RAINWATER TO PREVENT AGITATION OF SEDIMENT ON RAINWATER TANK FLOOR.
5	WHEN REUSING RAIN IT FIRST PASSESS THROUGH A STAINLESS STEEL FLOATING INTAKE DEVICE. WHICH DRAWS IN RAINWATER TO THE PUMP FROM 150MM(6.0") BELOW WATER SURFACE WHICH IS THE CLEANEST LENS (LAYER) OF WATER IN TANK.
6	WHEN THE RAINWATER TANK REACHES THE TANK INTERCONNECTION PIPE IT WILL OVERFLOW INTO THE ADDITONAL RAINWATER TANKS.
7	WHEN THE RAINWATER TANK IS FULL OVERFLOWED RAINWATER IS DIRECTED THROUGH THE SKIMMING OVERFLOW, BACKWATER VALVE AND VERMIN GUARD THEN EXITS THE SYSTEM.
8	WHEN PRESSURE IS BELOW SET POINT THE PUMP IN THE RAINWATER TANK WILL TURN ON. WHEN PRESSURE IS AT SET POINT THE PUMP WILL TURN OFF.
9	STAGE 1 FILTER. SEDIMENT FILTER, STAINLESS STEEL SCREEN. REMOVE AND RINSE TO CLEAN. 5 MICRONS
10	STAGE 2 FILTER. CARBON FILTER. 10 MICRONS
11	STAGE 3 FILTER. SEDIMENT FILTER. 1 MICRONS ABS.
12	STAGE 4 - UV DISINFECTION CHAMBER (OPTION ADDER: POTABLE UV NSF 55)



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RAINWATER SCHEMATIC

NOT TO SCALE