



Specifying Rainwater Harvesting

Presented by Cleanflo Water Technologies



About Cleanflo Water Technologies

- > **Offering design, build, supply, installation, and maintenance**
- > **Designing and manufacturing rainwater/stormwater harvesting & reuse equipment since 2012**
- > **Products and services available anywhere in Canada**
- > **UL508A Listed Industrial Control Panel shop**
- > **Multiple locations across Canada**
- > **Family Owned and Operated**
- > **Message from Larry**





Your Host

- > Benjamin Morrison
- > Senior coordinator - product design/build
- > Educated in Water Resources Engineering Technology as Technologist
- > Educated in Electronics and Telecommunications
- > President of CANARM Canadian Association of Rainwater Management
- > Co-Host will handle chats and questions. We may address relevant question during the webinar. Ask Away !!





Benefits of Cleanflo Products

- > All products designed to meet CSA B805 (Referenced in the 2020 NBC)
- > Full product catalog
- > Individual product specification sheets
- > Book Specifications for tender documents
- > Installation Specifications
- > Design, Installation and Maintenance support services





Define the types of Water

- > **Rainwater** is fresh precipitation straight from the sky, that has not touched the ground surface. Roof surfaces maintain the rainwater quality.
- > **Storm Water** is rainwater that has touched the ground surface. Storm water is rainwater that is unmanaged at the source, so it must be managed further down the flow path by storm water systems.
- > **Grey Water** is once used water discharged from washing machines, showers, bathtubs, bathroom sinks. Grey water does not have fecal contamination.



Rainwater Harvesting is two separate technologies working together!

1. Rainwater Collection

The process of collecting rain water from a roof surface and storing the rainwater in a tank.

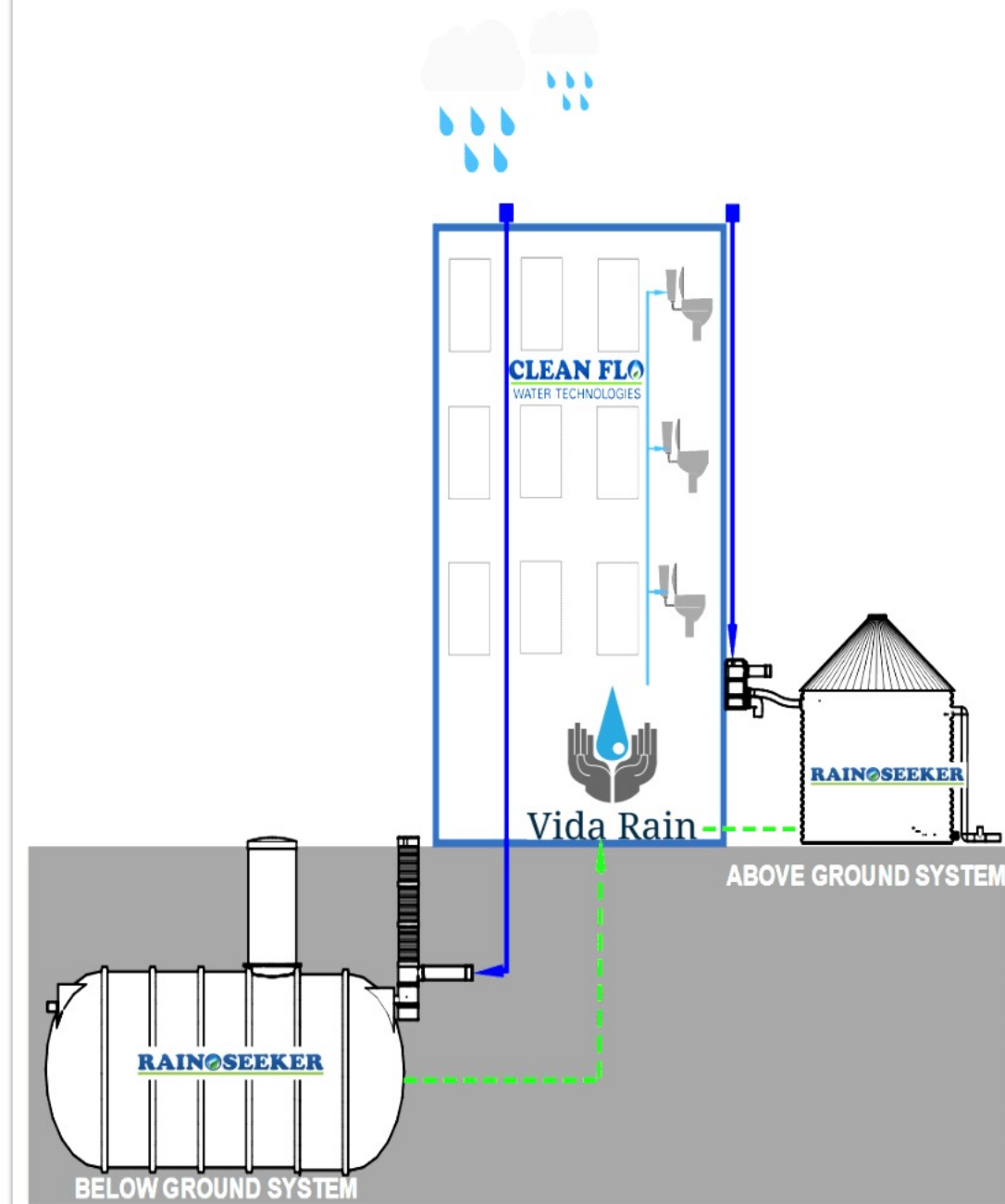
RAINSEEKER

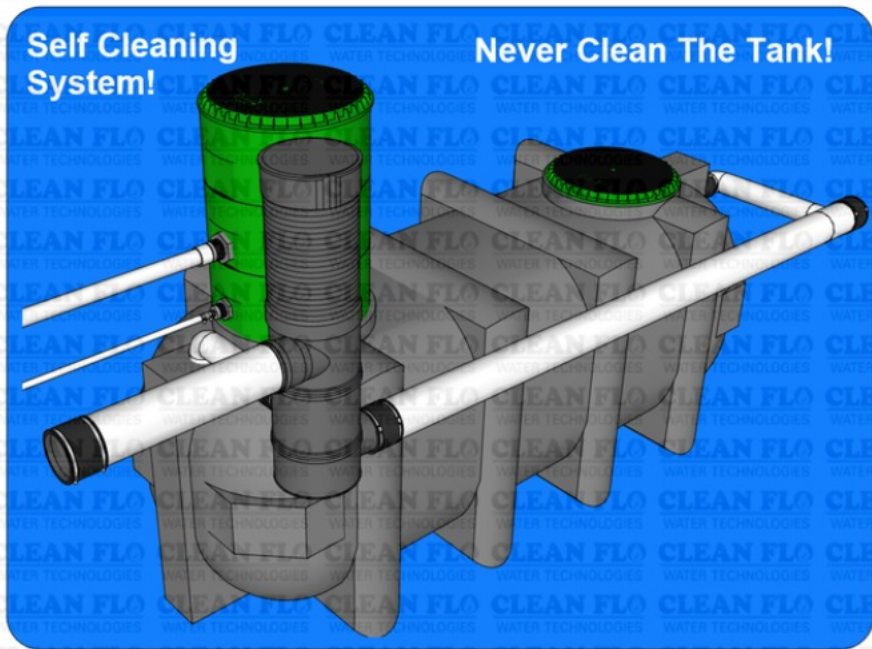
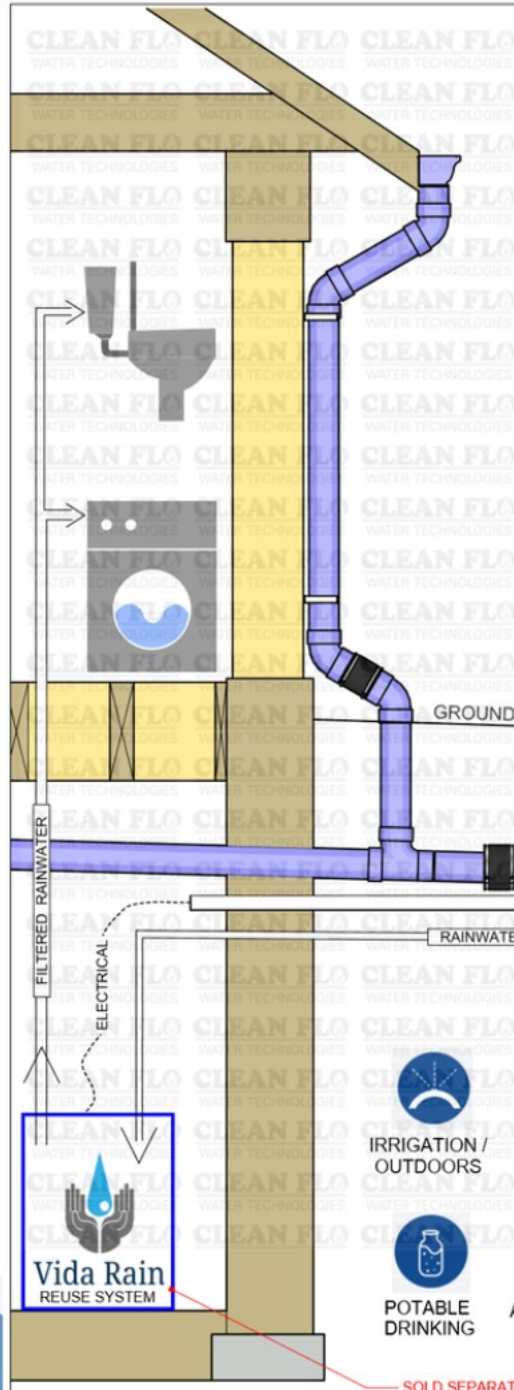
2. Rainwater Reuse

The process of pumping, filtering, sanitizing, and controlling rainwater so the stored rainwater can be reused safely.



Vida Rain





RAINSEEKER

MAXIMUS

Canada's Popular Engineered Rainwater Harvesting Systems

www.harvestingrainwater.ca
1-877-306-2146

FEATURES

- Plug n Play: Ready to install
- Centralized rainwater collection system
- Integrates with all building types
- NEVER clean the rainwater tank
- Integrates with Vida Rain Reuse System (Sold Separately)
- Installation Options:
 - 1) Install On Your Own
 - 2) Cleanflo Supervisor onsite: Provide Support
 - 3) Cleanflo Installs

Cleanflo rainwater harvesting system proactively limits contaminants by utilizing the preventative approach to water supply. This is accomplished by utilizing a 4-step self cleaning system.

An improvement compared to the current avenue to water treatment of retroactively removing contaminants from the source water (i.e. well, lake, river or pond water).

Using the proactive preventative approach, rainwater becomes far less expensive than other water sources because it is much easier to treat and does not need to be moved long distances.

Cleanflo Rainwater Harvesting Systems can supply 100% of your water needs for minimal ongoing costs.

MODEL RSMCPU
MATERIAL POLYETHYLENE
TYPE Underground ONLY
DATE 9.4.20 (V2.0)

FEATURES

- Plug n Play: Ready to install
- Centralized rainwater collection system
- Integrates with all building types
- NEVER clean the rainwater tank
- Integrates with Vida Rain Reuse System (Sold Separately)
- Installation Options:
 - 1) Install On Your Own
 - 2) Cleanflo Supervisor onsite: Provide Support
 - 3) Cleanflo Installs

AVAILABLE ACROSS CANADA



IRRIGATION /
OUTDOORS



TOILETS /
LAUNDRY



POTABLE
DRINKING



ALTERNATIVE
TO A WELL

RAINSEEKER

MAXIMUS

Canada's Popular Engineered
Rainwater Harvesting Systems

www.harvestingrainwater.ca

1-877-306-2146

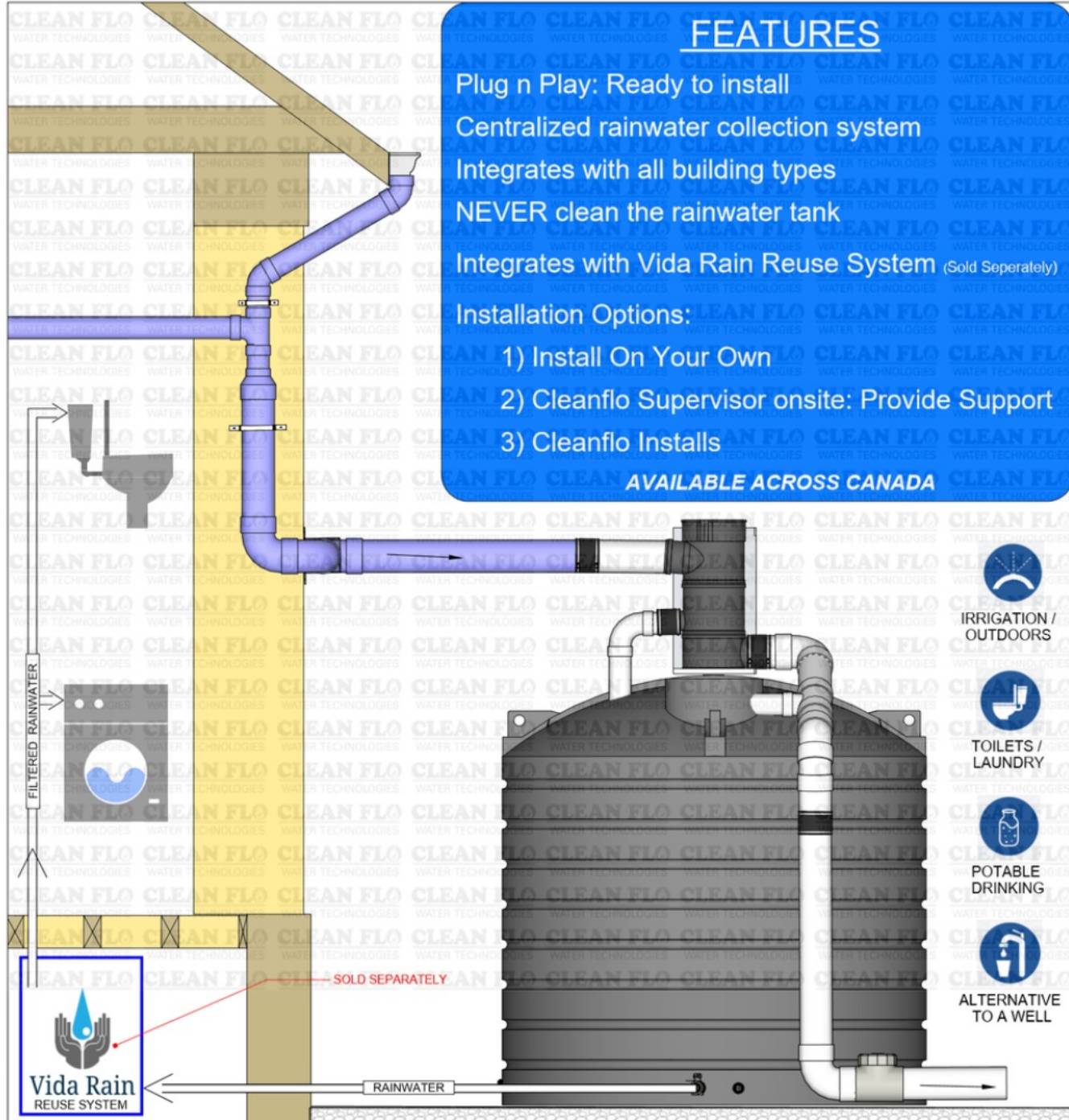
Self Cleaning
System!

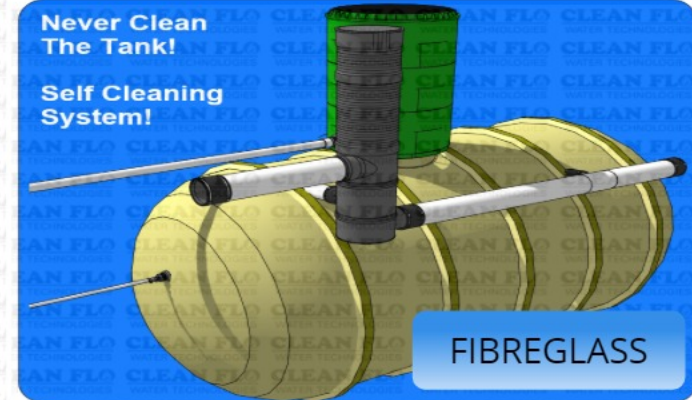
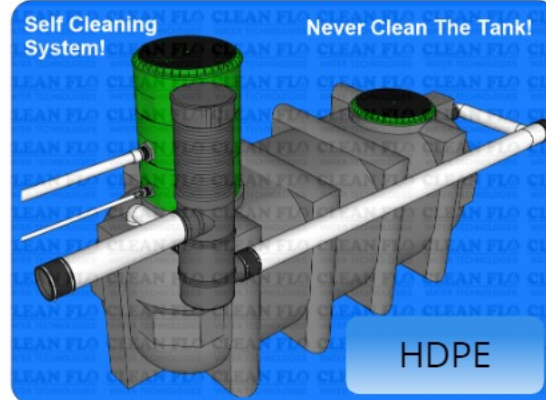
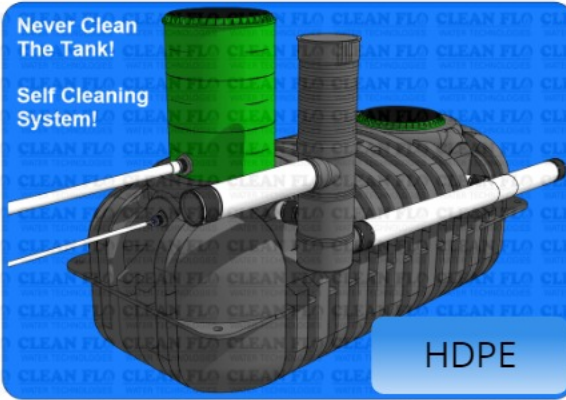
Never Clean
The Tank!



CLEAN FLO
WATER TECHNOLOGIES

MODEL RSMVP
MATERIAL POLYETHYLENE
TYPE ABOVEGROUND ONLY
DATE 11.4.20 (V2.0)





BELOW GROUND

- Frost Protected
- No site plan space
- More Costly / L
- Costly installation / L
- Buoyancy concerns

ABOVE GROUND

- Requires heat for winter
- Requires site plan space
- Less costly / L
- Less costly installation / L
- Seismic requirements





The Rainseeker Maximus Plug n Play Rainwater Collection System is designed to be installed aboveground and connected to any type of building. Utilizing roofing, gutters and downpipes to direct roof top rainwater into the aboveground rainwater tank.

The proven technology provides a maintenance FREE rainwater collection system. The RainSeeker uses a 4 - step system to proactively remove contamination from rainwater before it enters the tank.

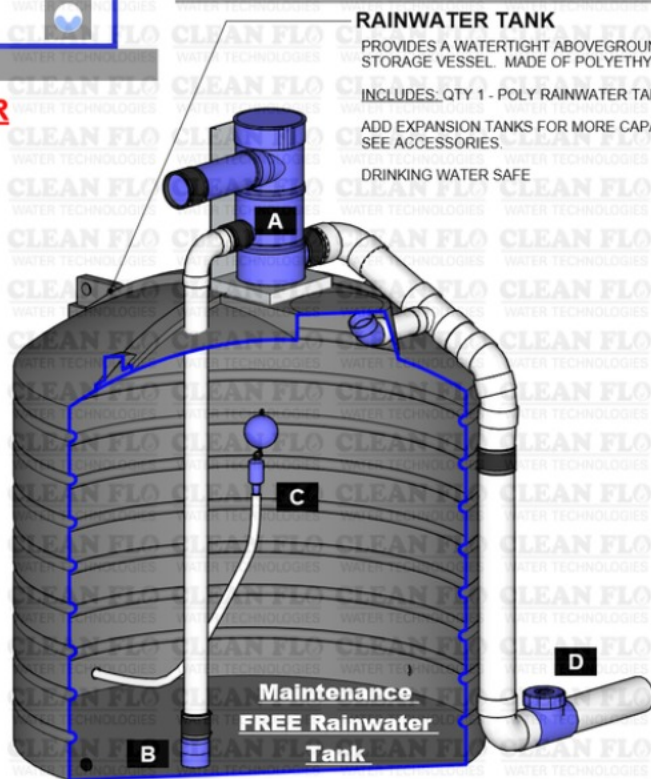
A. Self Cleaning Prefilter (3 IN 1) B. Aerator & Calming Inlet C. Floating Intake D. Backwater Valve

This creates a rainwater tank that NEVER needs to be cleaned, and stores rainwater suitable for any purpose.

Designed to integrate with the **Vida Rainwater Appliance** a Plug n Play rainwater reuse system, pumping and treatment. With both of these technologies working together, Cleanflo provides an easy to integrate Rainwater Harvesting System from roof to tap.

INCLUDED WITH THE RAINSEEKER

BILL OF MATERIALS	
QTY 1	RAINSEEKER POLY TANK UNISEAL FOR INLET 4" UNISEAL FOR OVERFLOW 4" BULKHEAD FOR WATER SUPPLY 1.25" BULKHEAD FOR ELECTRICAL CONDUIT 1.5" ADDITIONAL BULKHEADS 1.25" - QTY 3 BALL VALVES 1.25" - QTY 2 LID
	SELF CLEANING PREFILTER (3 IN 1) LID AND TOP RING 12" STAINLESS STEEL BASKETLESS FILTER MOUNTING BRACKET FILTER LIFTING HANDLE PVC PIPE 6" - 6 FT PVC ELBOW 90 6" - QTY 2 PVC ELBOW 45 6" PVC ELBOW 22.5 6" PVC TEE 6" PVC REDUCER BUSHING 6" TO 4" RUBBER FLEXIBLE COUPLER 6" - QTY 3 RUBBER FLEXIBLE COUPLER 4"
QTY 1	STAINLESS STEEL CALMING INLET RUBBER FLEXIBLE COUPLER 4" PVC PIPE SDR35 4" - 5 FT PVC 90 ELBOW 4"
QTY 1	BACKWATER VALVE VERMIN GUARD PVC PIPE SDR35 4" - 1 FT PVC ELBOW 45 4"
QTY 1	STAINLESS STEEL FLOATING INTAKE PVC 90 ELBOW FPT1.25" CHECK VALVE 1.25" SUCTION HOSE 1.25" - 10 FT HOSE CLAMPS 1.25" - QTY 8 BALL VALVE 1.25" ADAPTER MPT x HB 1.25"
VIDA RAIN: PUMPING & TREATMENT SYSTEM SOLD SEPARATELY	



RAINWATER TANK

PROVIDES A WATERTIGHT ABOVEGROUND STORAGE VESSEL. MADE OF POLYETHYLENE.

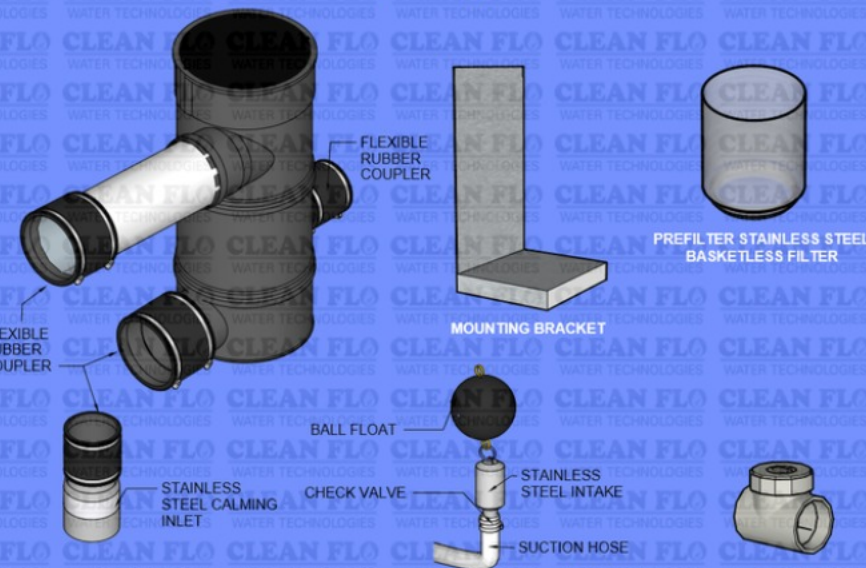
INCLUDES: QTY 1 - POLY RAINWATER TANK

ADD EXPANSION TANKS FOR MORE CAPACITY. SEE ACCESSORIES.

DRINKING WATER SAFE

4 Step Self Cleaning Rain System

A. Self Cleaning Prefilter (3 IN 1)



B. Aerator & Calming Inlet

C. Floating Intake

D. Backwater Valve

MODEL RSMVP

MATERIAL POLYETHYLENE

TYPE ABOVEGROUND ONLY

DATE 11.4.20 (V2.0)

© COPYRIGHT ALL RIGHTS RESERVED 2020

CLEAN FLO
WATER TECHNOLOGIES

www.harvesting rainwater.ca
1-877-306-2146

RAINSEEKER

MAXIMUS

Canada's
Engineered
Rain Systems

SPECIFICATIONS	
MANUFACTURER	CLEANFLO WATER TECHNOLOGIES
MODEL	RAINSEEKER MAXIMUS RSMVP
WATER TYPE	ROOF WATER ONLY
CONNECTIONS	
TANK INLET	150MM (6.0") FLEXIBLE RUBBER COUPLER PAGE A06 - 4
TANK OVERFLOW OUTLET	150MM (6.0") FLEXIBLE RUBBER COUPLER PAGE A06 - 4
WATER SUPPLY OUTLET	BULKHEAD 1.25" FPT. PAGE A06-1
ELECTRICAL CONDUIT	BULKHEAD 1.5" FPT. PAGE A06-1
ADDITIONAL OUTLETS	BULKHEADS 1.25" FPT X QTY 3, BALL VALVE X QTY 2. PAGE A06.

Cleanflo rainwater harvesting system proactively limits contaminants by utilizing the preventative approach to water supply. This is accomplished by utilizing a 4-step self cleaning system.

An improvement compared to the current avenue to water treatment of retroactively removing contaminants from the source water (i.e. well, lake, river or pond water).

Using the proactive preventative approach, rainwater becomes far less expensive than other water sources because it is much easier to treat and does not need to be moved long distances.

Cleanflo Rainwater Harvesting Systems can supply 100% of your water needs for minimal ongoing costs.

FLEXIBLE RUBBER COUPLER
DETAIL PAGE A06-4

WATER SUPPLY OUTLET
1.25" FPT / HOSE BARB

BULKHEADS
DETAIL PAGE
A05 - 1

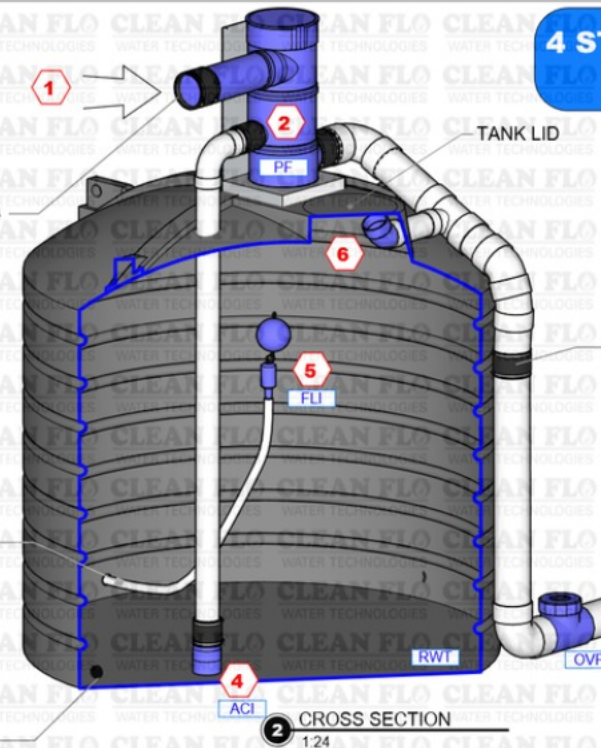
ATTENTION: RAINWATER TANK & PREFILTER MUST OVERFLOW TO A SUITABLE LOCATION SUCH AS:

1. GROUND
2. STORM SEWER
3. SWALE
4. INFILTRATION GALLERY
5. SUMP PIT / LIFT STATION

4 STEP SELF CLEANING RAINWATER SYSTEM Canada's Engineered Rain Systems

EQUIPMENT SCHEDULE

RWT	RAINWATER TANK
PF	PREFILTER SELF CLEANING (3 IN 1)
ACI	STAINLESS STEEL AERATOR AND CALMING INLET
FLI	STAINLESS STEEL FLOATING INTAKE DEVICE
OVF	BACKWATER VALVE AND VERMIN GUARD



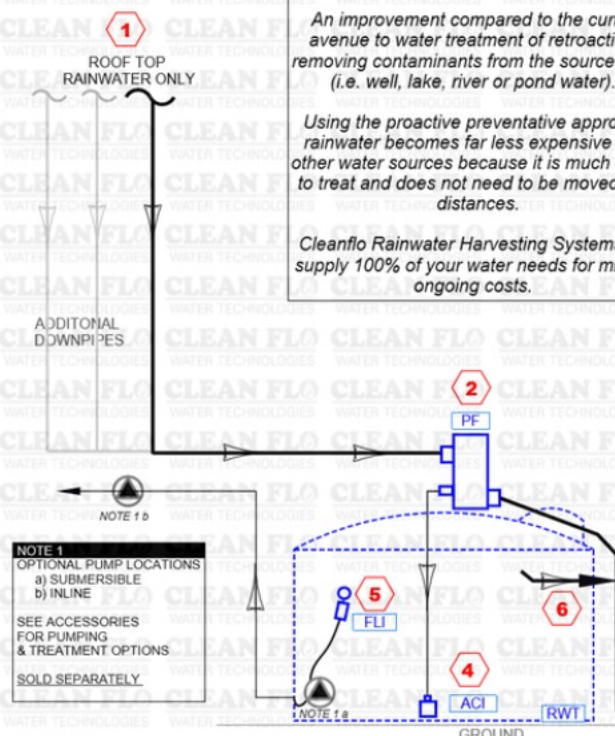
2 CROSS SECTION
1.24

OVERFLOW OPTIONS

1. GROUND
2. STORM SEWER
3. SWALE
4. INFILTRATION GALLERY
5. SUMP PIT / LIFT STATION

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 PASSES 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 IS FULL OVERFLOWED RAINWATER IS DIRECTED THROUGH THE SKIMMING OVERFLOW, BACKWATER VALVE AND VERMIN GUARD THEN EXITS THE SYSTEM.



NOTE 1
OPTIONAL PUMP LOCATIONS
a) SUBMERSIBLE
b) INLINE
SEE ACCESSORIES
FOR PUMPING
& TREATMENT OPTIONS
SOLD SEPARATELY

SCHEMATIC:
RAINSEEKER MAXIMUS

1 NOT TO SCALE

INCLUDES:
ALL BLUE EQUIPMENT

CLEAN FLO
WATER TECHNOLOGIES

www.harvestingrainwater.ca
1-877-306-2146

MODEL RSMVP
MATERIAL POLYETHYLENE
TYPE ABOVEGROUND ONLY
DATE 11.4.20 (V2.0)

© COPYRIGHT ALL RIGHTS RESERVED 2020

RAINSEEKER

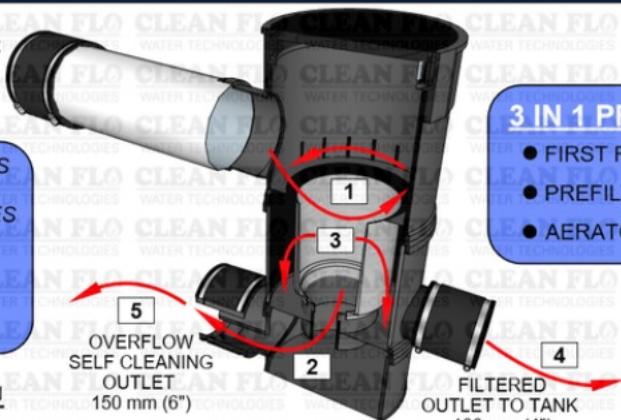
MAXIMUS

Canada's
Engineered
Rain Systems

PF SELF CLEANING PREFILTER - BASKETLESS TECHNOLOGY

THE MOST IMPORTANT STEP IN LIMITING CONTAMINATION IS PRE-FILTERING, WHICH WILL REMOVE SOLID PARTICLES CONTAINING BOTH THE BACTERIA AND THE NUTRIENTS FEEDING THE BACTERIA. THE PRE-FILTER WILL ALSO AERATE AND OXYGENATE THE WATER REDUCING THE BACTERIA. AERATION CAN ALSO HELP OXIDIZE SOME METALS IN THE WATER LIKE IRON, WHICH PRECIPITATE TO THE SURFACE AND ARE REMOVED BY THE SKIMMING OVERFLOW.

RAINWATER INLET
150 mm (6")



3 IN 1 PREFILTER

- FIRST FLUSH
- PREFILTER
- AERATOR

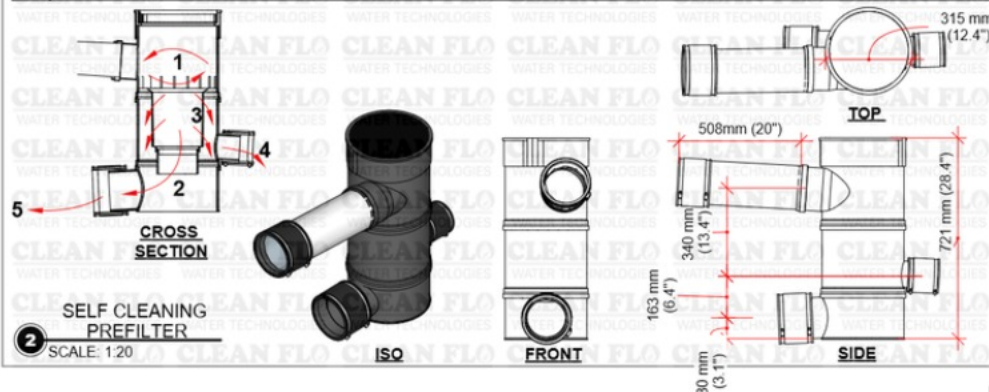
NO MOVING PARTS
NO ELECTRICITY
NO SPRAY NOZZLES

POWERED
100%
BY GRAVITY

1 CROSS SECTION
SCALE: 1:7

SEQUENCE OF OPERATION

- 1 INCOMING RAINWATER IS DIRECTED INTO THE SELF CLEANING PREFILTER
- 2 THE FIRST FLUSH OF RAINWATER MOVES PAST THE FILTER MESH AND OUT THE DIRTY WATER OUTLET, PROVIDING A FIRST FLUSH ACTION
- 3 ONCE THE FILTER MESH IS SUFFICIENTLY WETTED, THEN RAINWATER MOVES THROUGH THE FILTER MESH. FILTERS TO 320 MICRONS.
- 4 FILTER RAINWATER IS DIRECTED OUT THE CLEAN WATER OUTLET TO TANK
- 5 SOME RAINWATER CONTINUES PAST THE SCREEN OUT THE DIRTY WATER OUTLET, PROVIDING A SELF CLEANING ACTION.



BASKETLESS TECHNOLOGY
ELIMINATES TANNIN
CONTAMINATION

CLEAN FLO
WATER TECHNOLOGIES

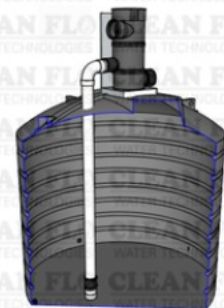
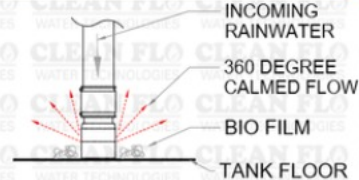
www.harvestingrainwater.ca
1-877-306-2146

ACI STAINLESS STEEL AERATOR & CALMING INLET

THE AERATOR AND CALMING INLET IS DESIGNED TO ADD OXYGEN TO THE RAINWATER AND PREVENT AGITATION OF THE BIOFILM ON THE RAINWATER TANK(S) FLOOR WHEN ADDITIONAL WATER IS COLLECTED. (BIOFILM IS BENEFICIAL FOR THE TANK AND IT MAY REMOVE ADDITIONAL BACTERIA AND METAL FROM THE WATER.) THIS IS ACCOMPLISHED BY COMPLETELY REDUCING THE INFLOWING WATER VELOCITY SO THE TURBULENCE DOES NOT ROTATE WATER ON THE BOTTOM 100 - 200 MM (4-8 INCHES) OF THE TANK. THIS COMPONENT IS MADE OF STAINLESS STEEL AND WILL NOT LEACH TO CONTAMINATE THE WATER SUPPLY.



3 AERATOR & CALMING INLET
SCALE: 1:20



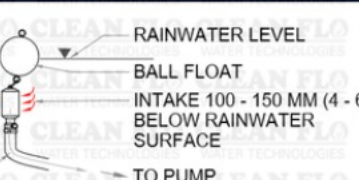
SCALE: 1:60

FLI STAINLESS STEEL FLOATING INTAKE

THE FLOATING UPTAKE FLOATS ON THE SURFACE WITH THE INTAKE POINT 100-150MM (4 - 6 INCHES) BELOW THE SURFACE OF THE WATER. THIS IS WHERE WATER IS THE HIGHEST QUALITY IN THE TANK. ANY PARTICLES HAVE EITHER FLOATED TO THE SURFACE OR SETTLED TO THE BOTTOM. THE FILTER SHOULD NEVER REQUIRE MAINTENANCE, BUT IT WILL STILL BE ACCESSIBLE WITHOUT ENTRY INTO TANK. THIS COMPONENT IS MADE OF STAINLESS STEEL AND POLYPROPYLENE AND WILL NOT LEACH TO CONTAMINATE THE WATER SUPPLY.



4 FLOATING INTAKE
SCALE: 1:20

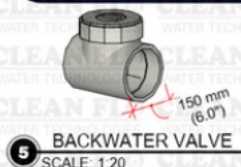


SCALE: 1:60

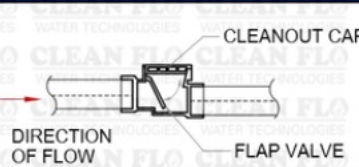
OVF BACKWATER VALVE AND VERMIN GUARD

IN THE EVENT THAT YOUR RAINWATER TANK IS FULL AND ADDITIONAL RAIN CONTINUES TO ENTER, THE SYSTEM WOULD OVERFLOW. THEREFORE A TANK OVERFLOW OUTLET PIPE OF EQUAL OR GREATER VOLUME THAN ANY INLET PIPE(S), IS USED TO DISCHARGE OVERFLOW RAINWATER TO GRADE, STORM SEWER SYSTEM, INFILTRATION GALLERY, OR SUMP/LIFT CHAMBER. THE ANGLED SKIMMING OVERFLOW PIPE INSIDE THE TANK WILL REMOVE FLOATING DEBRIS FROM THE WATER SURFACE.

A BACKFLOW PREVENTER DEVICE IS USED TO PREVENT BACKUP OF WATER, AS WELL AS UNWANTED DEBRIS AND VERMIN FROM ENTERING THE RAINWATER TANK. IT IS LOCATED OUTSIDE CLEANFLOS RAINWATER TANK.



5 BACKWATER VALVE
SCALE: 1:20



SCALE: 1:60

MODEL RSMVP

MATERIAL POLYETHYLENE

TYPE ABOVEGROUND ONLY

DATE 11.4.20 (V2.0)

© COPYRIGHT ALL RIGHTS RESERVED 2020

RAINSEEKER

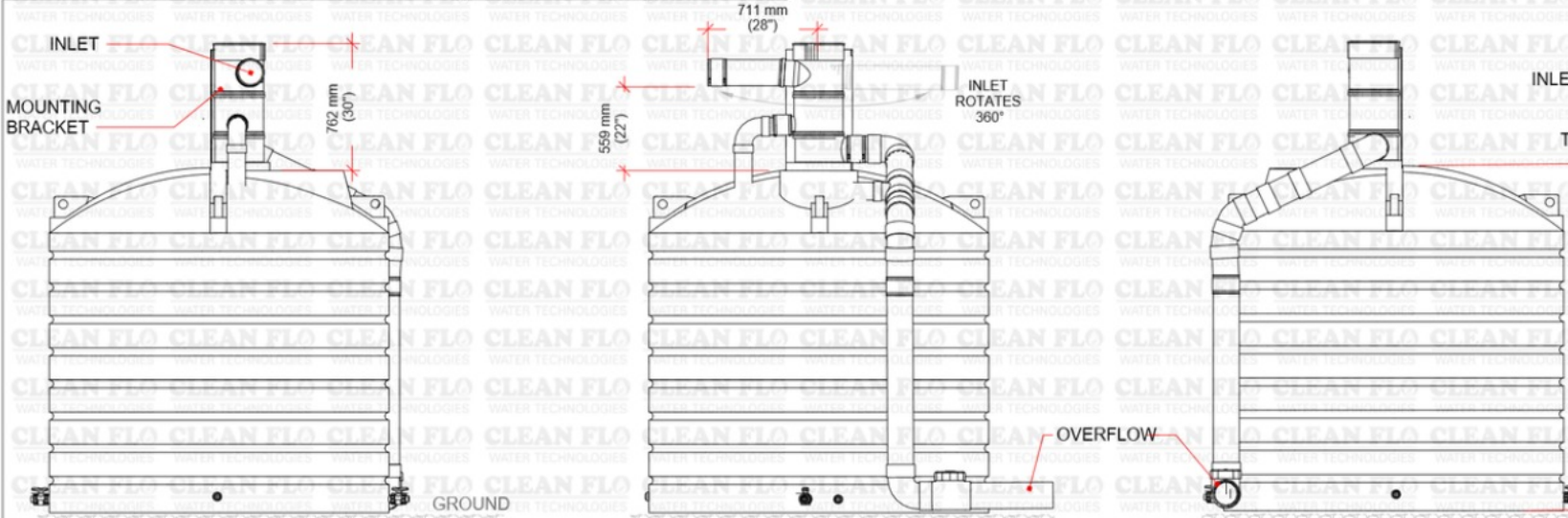
MAXIMUS

Canada's
Engineered
Rain Systems

03

A

SPECIFICATIONS	
MANUFACTURER	CLEANFLO WATER TECHNOLOGIES
MODEL	RAINSEEKER MAXIMUS RSMVP
WATER TYPE	ROOF WATER ONLY
CONNECTIONS	
TANK INLET	150MM (6.0") FLEXIBLE RUBBER COUPLER PAGE A06 - 4
TANK OVERFLOW OUTLET	150MM (6.0") FLEXIBLE RUBBER COUPLER PAGE A06 - 4
WATER SUPPLY OUTLET	BULKHEAD 1.25" FPT. PAGE A06-1
ELECTRICAL CONDUIT	BULKHEAD 1.5" FPT. PAGE A06 -1
ADDITIONAL OUTLETS	BULKHEADS 1.25" FPT X QTY 3, BALL VALVE X QTY 2. PAGE A06



1 SIDE LEFT
SCALE: 1:32

2 FRONT
SCALE: 1:32

3 SIDE RIGHT
SCALE: 1:32

Model	Capacity	Tank Diameter	Tank Height	Total Height	Inlet to Top of Tank	Tank Lid Diameter	Colour Options
RSMVPH07	780 USG (2,952 L)	1524 mm (60")	1753 mm (69")	2515 mm (99")	559 mm (22")	406 mm (16")	BLACK (BATTLE ALGAE) GREY TRANSLUCENT (WHITE)
RSMVPH12	1200 USG (4,542 L)	2108 mm (83")	1524 mm (60")	2286 mm (90")			
RSMVPH15	1500 USG (5,678 L)	2108 mm (83")	1905 mm (75")	2667 mm (105")			
RSMVPH21V	2100 USG (7,949 L)	OVAL: W: 2235 mm (88") L: 2667 mm (105")	1905 mm (75")	2667 mm (105")			
RSMVPH36	3600 USG (13,626 L)	3048 mm (120")	2438 mm (96")	3200 mm (126")			
RSMVPH50	5000 USG (18,925 L)	3048 mm (120")	3175 mm (125")	3937 mm (155")			
RSMVPH60	5000 USG (22,710 L)	3048 mm (120")	3810 mm (150")	4672 mm (180")			
RSMVPH110	11,000 USG (41,635 L)	3747 mm (147.5")	4166 mm (164")	4928 mm (194")		559 mm (22")	

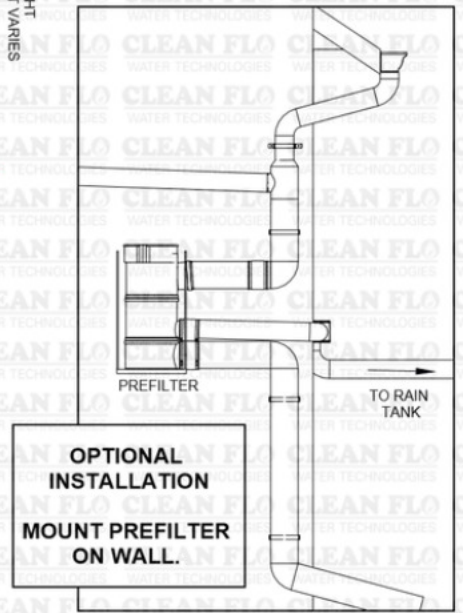
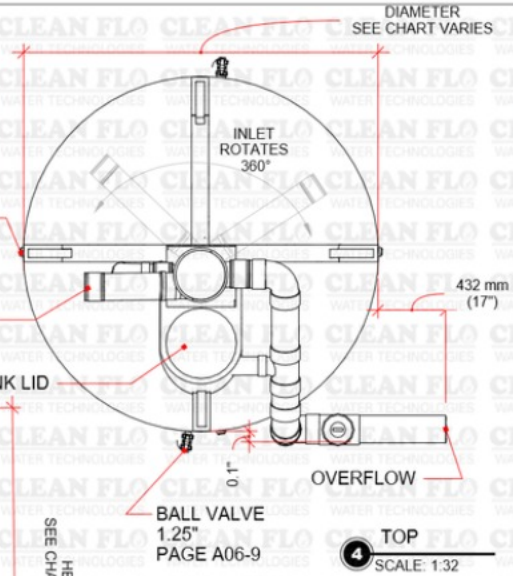
TANK FOUNDATION

PLACE ON FLAT SURFACE.

1) 4" TO 6" COMPACTED ROCK

OR

2) 4" TO 6" STRUCTURAL CONCRETE



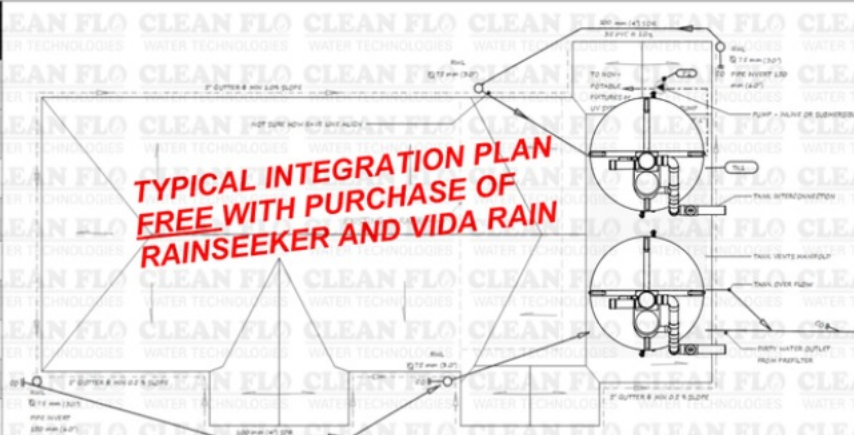
SYSTEM RAINFALL CAPACITY: BASED ON ROOF AREA

ROOF AREA	MAXIMUM RAINFALL 12.0 L/s		90 % FILTER EFFICIENCY 4.2 L/s	
	PER 15 MIN	PER 1 HR	PER 15 MIN	PER 1 HR
93 sq.m. (1000 sq.ft.)	144 mm (5.7 in)	574 mm (23.0 in)	50 mm (2.0 in)	201 mm (8.0 in)
186 sq.m. (2000 sq.ft.)	72 mm (2.8 in)	287 mm (11 in)	25 mm (1.0 in)	100 mm (4.0 in)
279 sq.m. (3000 sq.ft.)	48 mm (1.9 in)	191 mm (8.0 in)	17 mm (0.7 in)	67 mm (3.0 in)
372 sq.m. (4000 sq.ft.)	36 mm (1.4 in)	144 mm (5.7 in)	13 mm (0.5 in)	50 mm (2.0 in)
465 sq.m. (5000 sq.ft.)	29 mm (1.1 in)	115 mm (4.5 in)	10 mm (0.4 in)	40 mm (1.6 in)
557 sq.m. (6000 sq.ft.)	24 mm (0.9 in)	96 mm (3.8 in)	8 mm (0.3 in)	33 mm (1.3 in)
650 sq.m. (7000 sq.ft.)	21 mm (0.8 in)	82 mm (3.2 in)	7 mm (0.3 in)	29 mm (1.1 in)
743 sq.m. (8000 sq.ft.)	18 mm (0.7 in)	72 mm (2.8 in)	6 mm (0.25 in)	25 mm (1.0 in)
836 sq.m. (9000 sq.ft.)	16 mm (0.63 in)	64 mm (2.5 in)	5.6 mm (0.22 in)	22 mm (0.9 in)
929 sq.m. (10000 sq.ft.)	14 mm (0.57 in)	57 mm (2.3 in)	5 mm (0.2 in)	20 mm (0.8 in)

RAINFALL GENERAL CLASSIFICATION

LIGHT RAIN: < 2.5 MM (0.1 IN) PER HR
 MODERATE RAIN: 2.5 MM (0.1 IN) - 7.6 MM (0.3 IN) PER HR
 HEAVY RAIN: 7.6 MM (0.3 IN) - 50 MM (2.0 IN) PER HR
 VIOLENT RAIN: > 50 MM (2.0 IN) PER HOUR

SOURCE: EN.WIKIPEDIA.ORG/WIKI/RAIN#INTENSITY



INTEGRATION PLAN

AN INTEGRATION PLAN PROVIDES DETAILS ON THE INTERCONNECTIVE PIPING AND WIRE THAT IS USED TO CONNECT THE PLUG-N-PLAY SYSTEM TOGETHER. IT DETAILS WHERE AND HOW THE PIPING, WIRE AND OTHER INTERCONNECTIVE MATERIALS ARE INSTALLED. IT WILL ALSO SPECIFY THE SIZE, TYPE AND LENGTHS OF PIPING AND WIRE. THE INTEGRATION PLAN WILL DETERMINE TAKE OFFS AND CREATE A BILL OF INTERCONNECTIVE MATERIALS LIST (BOIM).

WITH AN INTEGRATION PLAN AN ARCHITECT, ENGINEER, BUILDER OR CONTRACTOR CAN EASILY HELP TO FACILITATE THE INSTALLATION. THE INTEGRATION PLAN WILL ALLOW YOU TO EASILY GET INSTALLATION QUOTES, REWORK DESIGNS TO SAVE COSTS AND TO ENSURE THERE ARE NO UNEXPECTED INSTALLATION COSTS.

INSTALLATION OPTION

1	DO IT YOURSELF	OUR RAINWATER HARVESTING SYSTEMS ARE DESIGNED TO BE INSTALLED BY ANY QUALIFIED CONTRACTOR.
2	CLEANFLO SUPERVISOR ONSITE	CLEANFLO WILL PROVIDE A SUPERVISOR ON YOUR PROJECT SITE TO GIVE TRAINING TO YOUR CONTRACTORS. **MOST POPULAR** (ASK ABOUT VIDEO TRAINING)
3	CLEANFLO INSTALLATION SERVICE	CLEANFLO CAN PROVIDE A PARTIAL OR FULL INSTALLATION.

Did you know...? Rainwater VS Stormwater VS Greywater

TYPES OF WATER

RAIN WATER	IS FRESH PRECIPITATION STRAIGHT FROM THE SKY, THAT HAS NOT TOUCHED THE GROUND SURFACE. ROOF SURFACES MAINTAIN THE RAINWATER QUALITY.
STORM WATER	IS RAINWATER THAT HAS TOUCHED THE GROUND SURFACE. STORM WATER IS RAINWATER THAT IS UNMANAGED AT THE SOURCE, SO IT MUST BE MANAGED FURTHER DOWN THE FLOW PATH BY STORM WATER SYSTEMS.
GREY WATER	IS ONCE USED WATER DISCHARGED FROM WASHING MACHINES, SHOWERS, BATHTUBS, BATHROOM SINKS. GREY WATER DOES NOT HAVE FECAL CONTAMINATION. RELATIVELY LOW BOD.
BLACK WATER	IS ONCE USED WATER DISCHARGED FROM KITCHEN SINKS, TOILETS AND URINAL AND MAY CONTAIN FECAL CONTAMINATION. HIGH BOD.
SURFACE WATER	IS WATER PRESENT ON THE EARTH'S SURFACE. (IE: LAKES, STREAMS, RIVERS, ETC.)
GROUND WATER	IS WATER PRESENT BELOW THE EARTH'S SURFACE. (IE: AQUIFERS, WELLS, ETC.)
GUDI WATER	IS GROUNDWATER UNDER DIRECT INFLUENCE OF SURFACE WATER (IE: SHALLOW WELLS, FOUNDATION DRAINAGE, ETC.)
POTABLE WATER	IS WATER SAFE FOR HUMAN CONSUMPTION AND FOOD PREPARATION.
NON-POTABLE WATER	IS WATER NOT SAFE FOR HUMAN CONSUMPTION.

SIZING GUTTER, DOWNPIPE AND UNDERGROUND HORIZONTAL PIPE

CANADIAN NATIONAL BUILDING CODE (NBC)

15 MINUTE HYDRAULIC LOAD METHOD

STEP 1. DETERMINE YOUR 15 MIN RAINFALL. TYPICALLY BASED ON YOUR LOCAL 15 MIN 25 YEAR STORM EVENT.

IF YOU DON'T KNOW USE 30 mm

STEP 2. MULTIPLY THE RAINFALL IN (mm) BY THE ROOF AREA (M sq) DRAINING INTO THE GUTTER, DOWNPIPE OR PIPING BEING SIZED.

THIS RESULT IS THE 15 MIN HYDRAULIC LOAD.

STEP 3. COMPARE THE 15 MIN HYDRAULIC LOAD WITH THE CORRESPONDING TABLES TO SIZE THE GUTTER, DOWNPIPE OR PIPING.

DIVIDING THE 15 MIN HYDRAULIC LOAD BY 900 CONVERTS TO LITERS PER SECOND

NBC GUTTER HYDRAULICS

SIZE OF GUTTER INCHES	GUTTER FLOW AREA CM sq.	MAXIMUM 15 MIN HYDRAULIC LOAD			
		SLOPE			
		1:200 (0.5%)	1:100 (1%)	1:50 (2%)	1:25 (4%)
4	40.5	838	1190	1700	2410
5	63.3	1470	2080	2950	4170
6	91.2	2260	3200	4520	6530
7	124.1	3250	4600	6500	9190
8	162.1	4700	6600	9400	13200
10	253.4	8480	1200	1700	23600

NBC VERTICAL STORM PIPE HYDRAULICS

DIAMETER OF PIPE INCHES	MAXIMUM 15 MIN HYDRAULIC LOAD
3	5000
4	10800
6	31800
8	68300

NBC HORIZONTAL STORM PIPE HYDRAULICS

DIAMETER OF PIPE INCHES	MAXIMUM 15 MIN HYDRAULIC LOAD						
	SLOPE						
	1:400 (0.25%)	1:200 (0.5%)	1:133 (0.75%)	1:100 (1%)	1:68 (1.5%)	1:50 (2%)	1:25 (4%)
3	-	-	-	-	2,390	2,770	3,910
4	-	-	-	4,220	5,160	5,970	8,430
6	-	-	10,700	12,400	15,200	17,600	24,900
8	-	18,900	23,200	26,700	32,800	37,800	53,600
10	-	34,300	41,900	48,500	59,400	68,600	97,000
12	37,400	55,900	68,300	78,700	96,500	112,000	158,000

MODEL RSMVP

MATERIAL POLYETHYLENE

TYPE ABOVEGROUND ONLY

DATE 11.4.20 (V2.0)

© COPYRIGHT ALL RIGHTS RESERVED 2020

CLEAN FLO
WATER TECHNOLOGIES

www.harvestingrainwater.ca
1-877-306-2146

RAINSEEKER

MAXIMUS

Canada's
Engineered
Rain Systems

05

A

1. BULKHEAD

COMPONENTS

- 1 BULKHEAD BASE
- 2 RUBBER SEAL
- 3 TIGHTENING NUT
- 4 INTERIOR FEMALE PIPE THREADS

FUNCTION

PROVIDES A WATER TIGHT SEAL THROUGH A TANK WALL. FEMALE PIPE THREADS ON INTERIOR OF BULKHEAD FITTING, ALLOWING FOR TYPICAL PRESSURIZED PLUMBING CONNECTIONS.



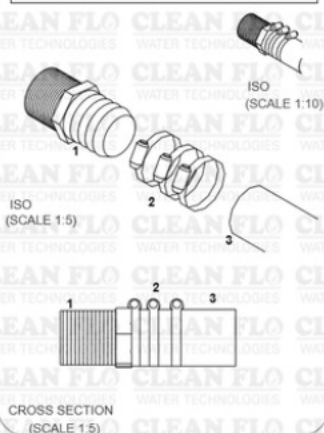
2. HOSE BARB x MPT

COMPONENTS

- 1 HOSE BARB x MPT
- 2 TRIPLE OR DUAL HOSE CLAMPS
- 3 HOSE OR PIPE

FUNCTION

PROVIDES EASY TRANSITION FROM MPT TO HOSE BARB. CONNECT HOSE AND PIPE.



3. PIPE SEAL - RUBBER

COMPONENTS

- 1 PIPE
- 2 PIPE SEAL - RUBBER

FUNCTION

PROVIDES WATER TIGHT SEAL FOR SOLID PIPE THROUGH A TANK WALL FRICTION FIT.



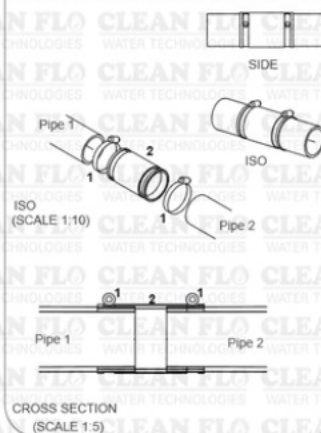
4. FLEXIBLE RUBBER COUPLER

COMPONENTS

- 1 HOSE CLAMPS X 2
- 2 FLEXIBLE COUPLER - RUBBER

FUNCTION

JOINS TWO PIPES PROVIDING A WATER TIGHT SEAL. GRAVITY FLOW ONLY. NON PRESSURIZED CONNECTION.



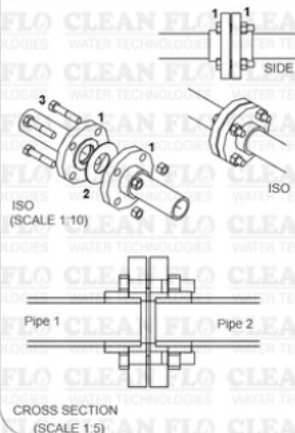
5. FLANGE

COMPONENTS

- 1 FLANGE X 2
- 2 SEAL
- 3 BOLTS, NUTS AND WASHERS X 4

FUNCTION

JOINS TWO PIPES PROVIDING A WATER TIGHT SEAL THAT CAN HANDLE HIGH PRESSURE. (GLUED, THREADED, SWEAT)



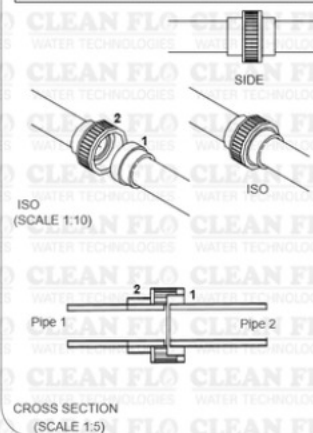
6. UNION

COMPONENTS

- 1 UNION MALE PIPE THREADS
- 2 UNION FEMALE PIPE THREADS

FUNCTION

JOINS TWO PIPES PROVIDING A WATER TIGHT SEAL. GRAVITY FLOW ONLY. NON PRESSURIZED CONNECTION.



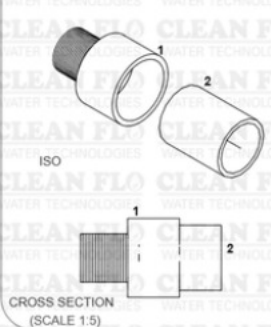
7. PIPE ADAPTER - PVC

COMPONENTS

- 1 PVC ADAPTER
- 2 PVC PIPE

FUNCTION

ADAPT PVC PIPE TO MALE PIPE THREADS. CHEMICAL WELD - PVC PRIMER / CEMENT



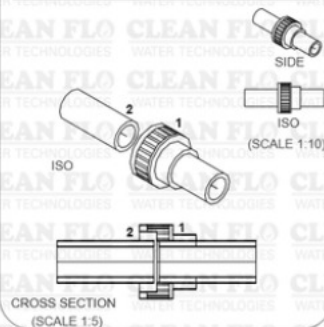
8. COMPRESSION

COMPONENTS

- 1 COMPRESSION FITTING
- 2 PIPE

FUNCTION

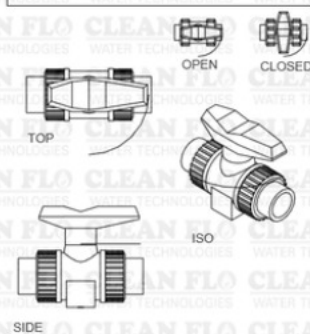
SEALS TO OUTSIDE OF PIPE MAKING A WATER TIGHT CONNECTION THAT CAN HANDLE HIGH WATER PRESSURE



9. BALL VALVE

FUNCTION

PROVIDES A WATER TIGHT VALVE TO TURN OFF OR REDUCE FLOW OF WATER.



10. PRESSURE GAUGE

FUNCTION

MEASURES PRESSURE OF THE WATER IN THE PIPE.



11. FLOW METER

FUNCTION

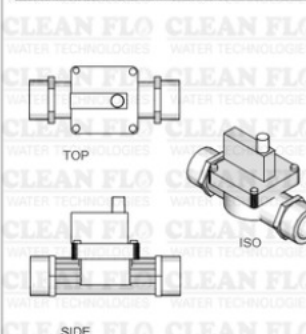
MEASURES THE FLOW RATE OF THE WATER MOVING IN THE PIPE. TOTALIZER TRACKS TOTAL VOLUME OF WATER.



12. SOLENOID VALVE

FUNCTION

BALL VALVE THAT IS CONTROLLED BY AN ELECTRICAL SIGNAL. VALVE CAN BE OPEN AND CLOSED WITH ELECTRICITY.



CLEAN FLO
WATER TECHNOLOGIES

www.harvestingrainwater.ca
1-877-306-2146

MODEL RSMVP
MATERIAL POLYETHYLENE
TYPE ABOVEGROUND ONLY
DATE 11.4.20 (V2.0)

© COPYRIGHT ALL RIGHTS RESERVED 2020

RAINSEEKER

MAXIMUS

Canada's
Engineered
Rain Systems

Questions about RainSeeker ?



Rainwater Harvesting is two separate technologies working together!

1. Rainwater Collection

The process of collecting rain water from a roof surface and storing the rainwater in a tank.

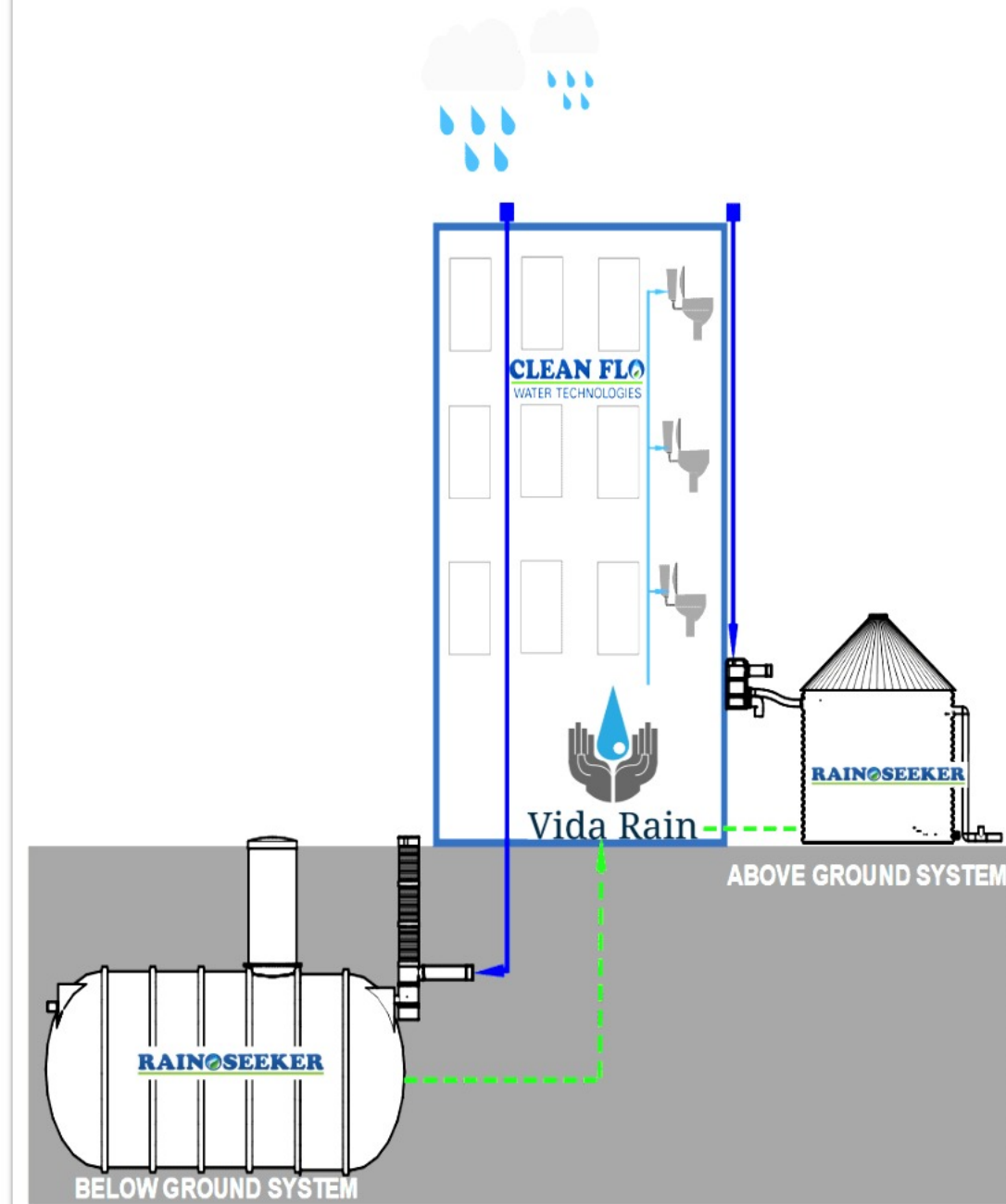
RAINSEEKER

2. Rainwater Reuse

The process of pumping, filtering, sanitizing, and controlling rainwater so the stored rainwater can be reused safely.



Vida Rain



What can rainwater be used for?

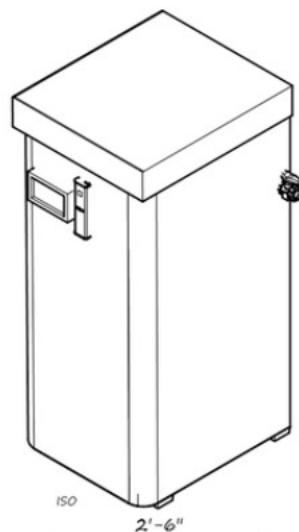
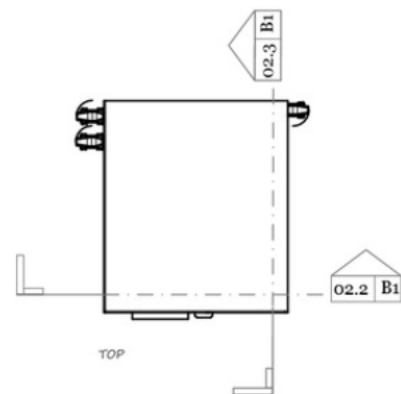


- > Based on CSA B805 four levels of water use, depending on treatment technology.
- > Cleanflo has 3 levels of water use. Joined R2 and R3
- R1 - Optional Filtration (1 stage)
 - Sub Surface irrigation
 - Fire Protection
 - Ice rinks
- R2 & R3 - Filtration and UV-Class B (3 stages)
 - Spray Irrigation
 - Toilet and urinal flushing
 - Clothing washing
 - Cooling tower
 - Hose bibs
 - Pressure Washing
- R4- Multi Stage Filtration and UV-Class A (4 stages)
 - Potable Water
 - Human Consumption
 - Oral Care
 - Bathing/showering
 - Food Preparation
 - Dish washing
 - Pool, hot tubs, spas

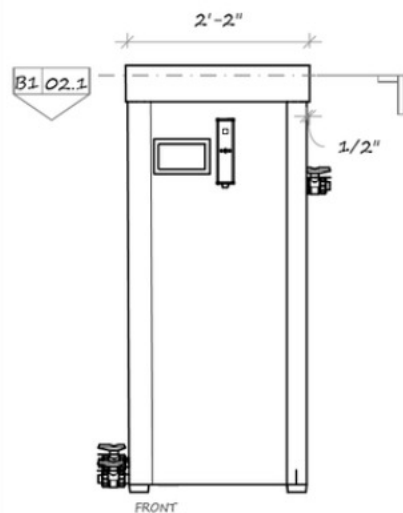


Vida Rain

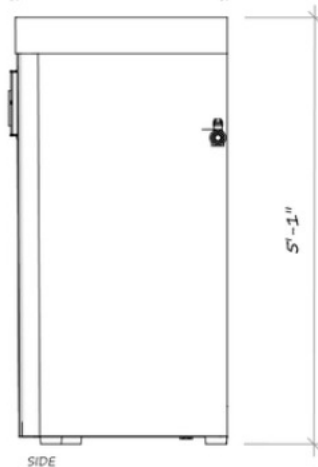




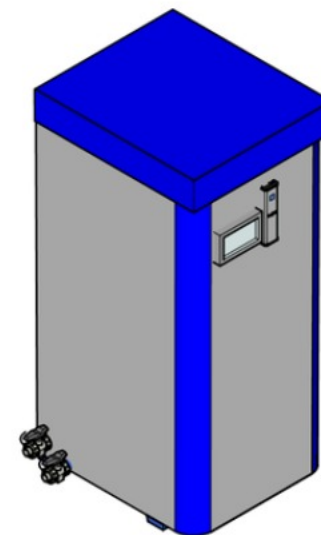
ISO
2'-6"



RAINWATER APPLIANCE
(SCALE 1:20)



- VFD Pump
- Filtration
- UV
- Control
- Monitoring



PUMP OPTIONS - STANDARD HEAD - SPECIFICATIONS

POWER	240 VAC	30 AMP - 60 HZ
WEIGHT	~100 lbs	SHIPPING WEIGHT ~150 lbs
FLOW AND PRESSURE	MAX HEAD	75 PSI @ 0.0 USGPM
	HIGH HEAD	75 PSI @ 6.6 USGPM
	AVERAGE HEAD	40 PSI @ 14.5 USGPM
	MIN HEAD	14 PSI @ 19.8 USGPM

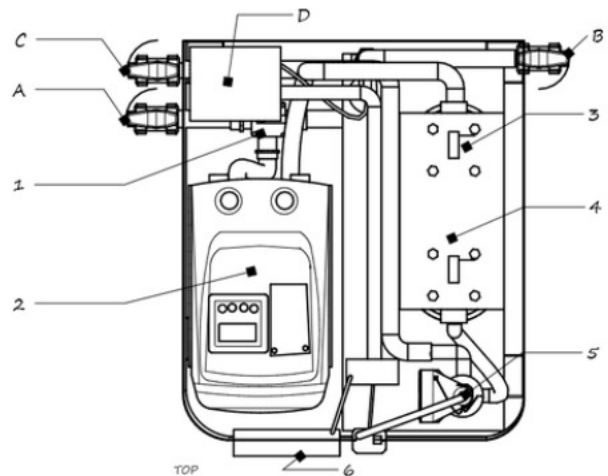
PUMP OPTIONS - HIGH HEAD - SPECIFICATIONS

POWER	240 VAC	30 AMP - 60 HZ
WEIGHT	~120 lbs	SHIPPING WEIGHT ~170 lbs
FLOW AND PRESSURE	MAX HEAD	82 PSI @ 0.0 USGPM
	HIGH HEAD	82 PSI @ 6.6 USGPM
	AVERAGE HEAD	43 PSI @ 22.4 USGPM
	MIN HEAD	14 PSI @ 29.8 USGPM

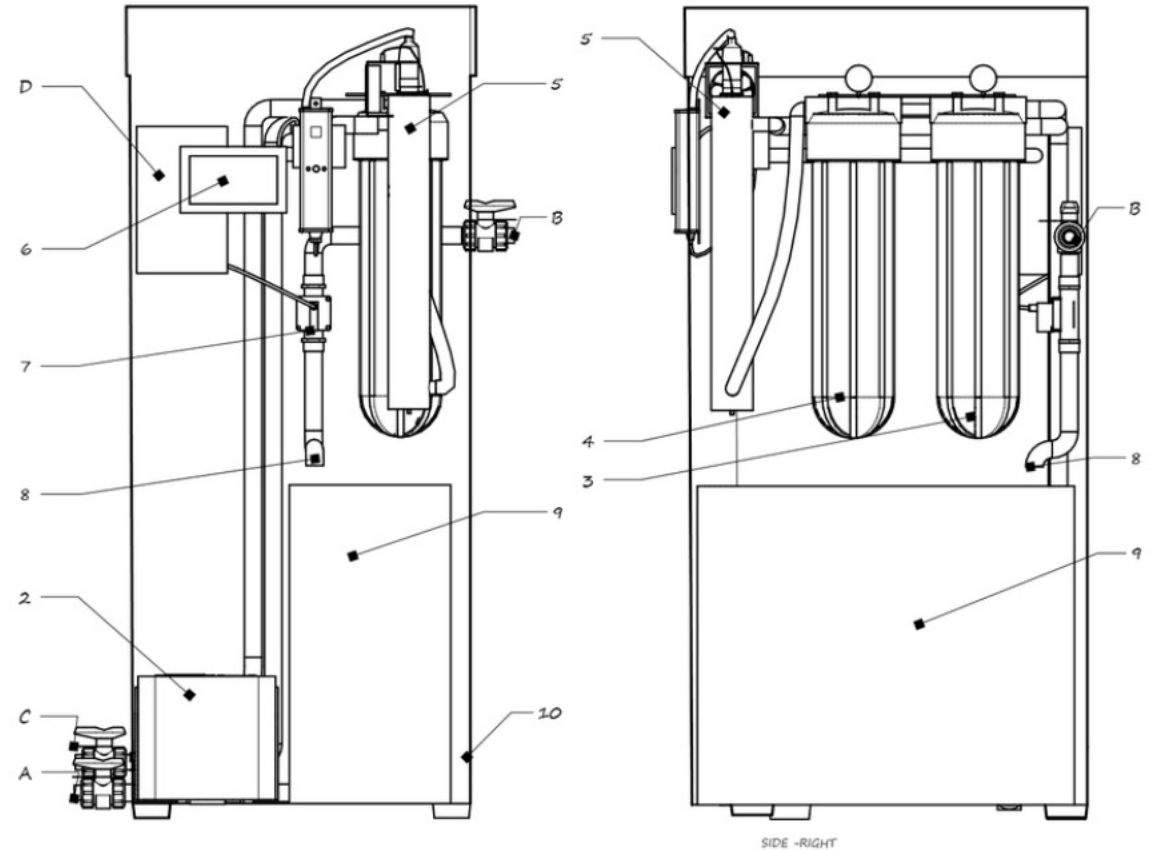
B2

SEQUENCE OF OPERATION - COMPONENTS

A	INLET - RAINWATER FROM RAIN TANK	1" BALL VALVE - FPT
B	INLET - CITY / ALTERNATIVE WATER SOURCE	1" BALL VALVE - FPT
C	OUTLET - TREATED WATER TO END-USE	1" BALL VALVE - FPT
D	POWER CONNECTION - MAIN DISCONNECT SWITCH	240 VAC, 30 A, 60 HZ
1	THREE WAY SOLENOID VALVE - SELECTS RAINWATER OR ALTERNATIVE WATER	TRIGGERS OFF OF LEVEL IN TANK.
2	RAINWATER CONSTANT PRESSURE PUMP - VFD CONTROLLED - BUILT IN PRESSURE TANK.	ADJUSTABLE PRESSURE SETTING. ENERGY EFFICIENT
3	CANISTER CARTRIDGE CARBON FILTER - 10 MICRONS	MONITOR PRESSURE DROP TO DETERMINE MAINTENANCE
4	CANISTER CARTRIDGE SEDIMENT FILTER - 5 MICRONS	MONITOR PRESSURE DROP TO DETERMINE MAINTENANCE
5	UV (ULTRA VIOLET) CHAMBER	SANITIZES THE RAINWATER. BULB CHANGED ANNUALLY
6	TOUCH SCREEN MONITOR	MONITOR THE SYSTEM AND TANK LEVELS. AND HISTORY
7	NC SOLENOID VALVE - TOP UP CITY / ALTERNATIVE WATER RESERVOIR	TRIGGERS ON LOW LEVEL FLOAT IN CITY / ALTERNATIVE RESERVOIR.
8	AIR GAP - ZONE ISOLATION - BACKFLOW PREVENTION.	RAINWATER CANNOT BACKFLOW INTO CITY / ALTERNATIVE WATER SOURCE
9	CITY / ALTERNATIVE WATER SOURCE RESERVOIR	PROVIDES A BUFFER TO INSERT AN AIR GAP ON CITY / ALTERNATIVE WATER.
10	METAL FRAME AND METAL COVER	ENCLOSURE AND MOUNTING SUPPORTS



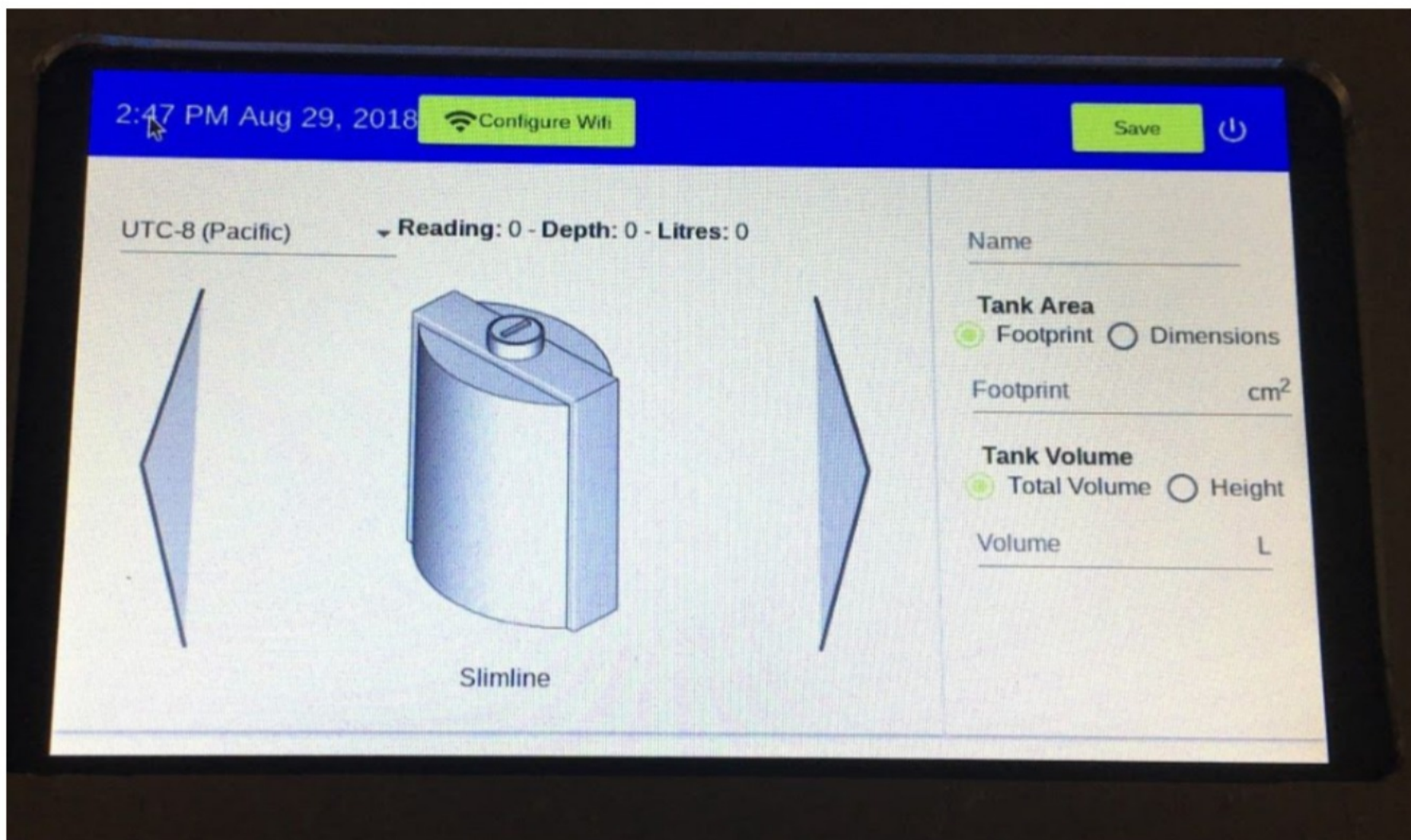
02.1 SECTION CUT - RAINWATER APPLIANCE
(SCALE 1:10)

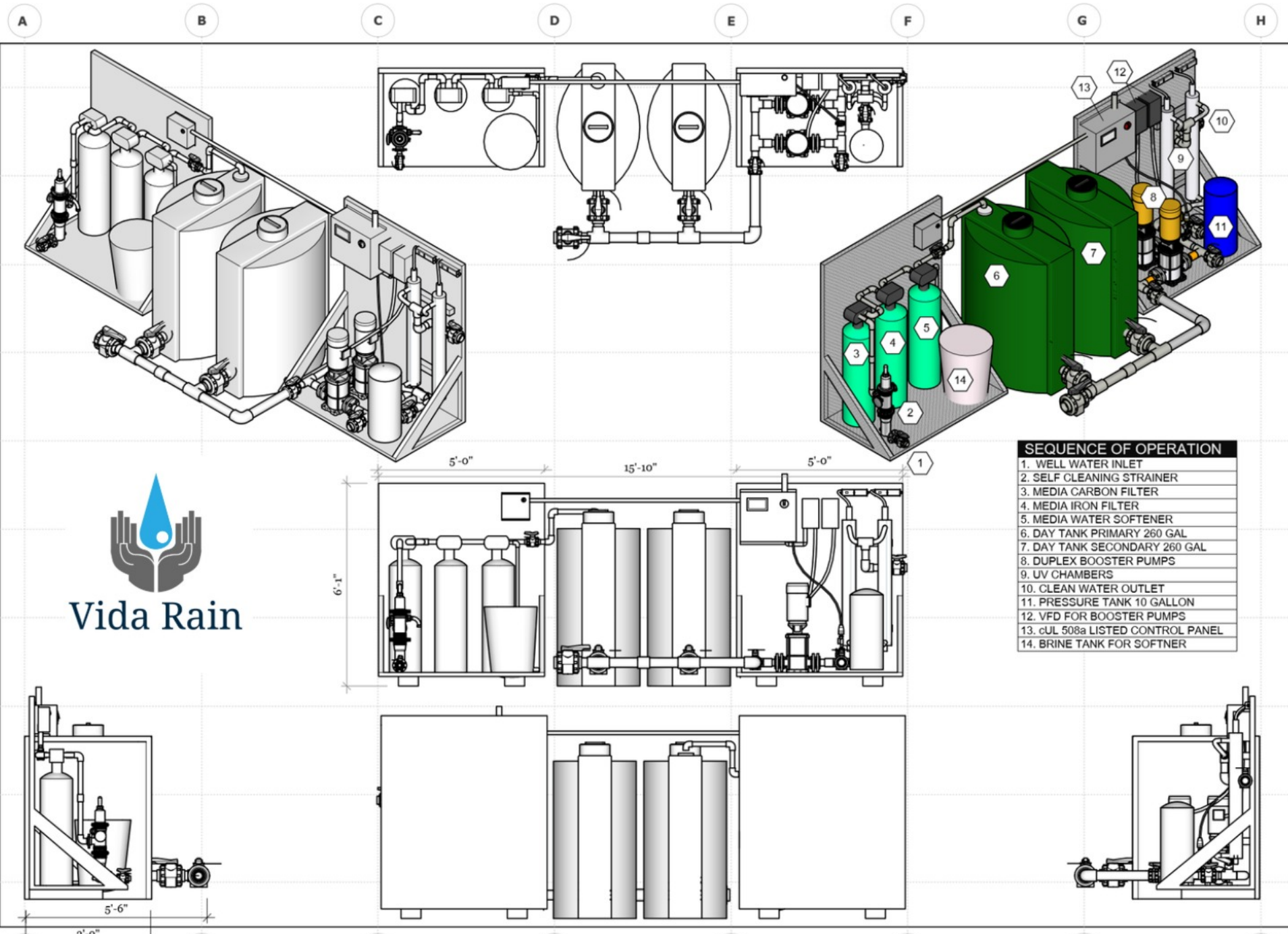


02.2 SECTION CUT - RAINWATER APPLIANCE
(SCALE 1:10)

02.3 SECTION CUT - RAINWATER APPLIANCE
(SCALE 1:10)



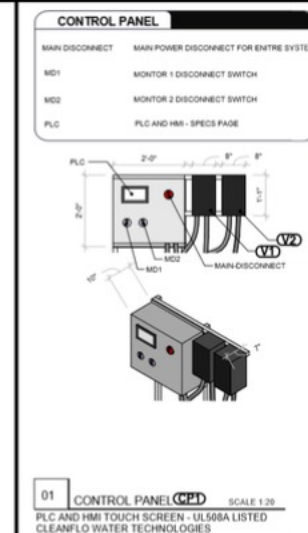
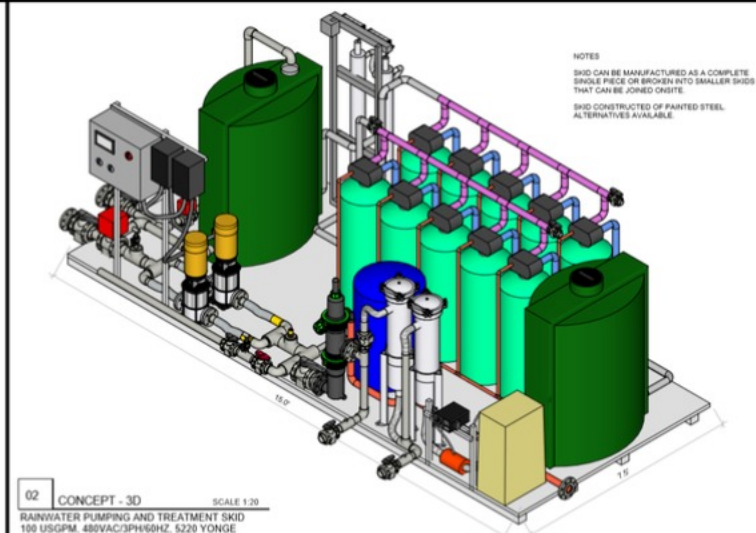
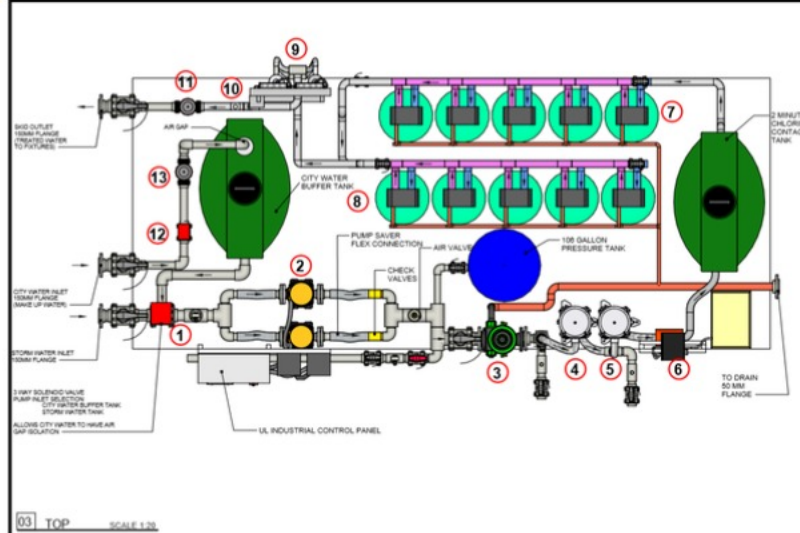




- SEQUENCE OF OPERATION**
1. WELL WATER INLET
 2. SELF CLEANING STRAINER
 3. MEDIA CARBON FILTER
 4. MEDIA IRON FILTER
 5. MEDIA WATER SOFTENER
 6. DAY TANK PRIMARY 260 GAL
 7. DAY TANK SECONDARY 260 GAL
 8. DUPLEX BOOSTER PUMPS
 9. UV CHAMBERS
 10. CLEAN WATER OUTLET
 11. PRESSURE TANK 10 GALLON
 12. VFD FOR BOOSTER PUMPS
 13. cUL 508a LISTED CONTROL PANEL
 14. BRINE TANK FOR SOFTNER

REVISIONS		REMARKS
NO.	DATE	
1		
2		
3		
4		
5		

CLEAN FLO
WATER TECHNOLOGIES



CLEAN FLO
WATER TECHNOLOGIES
TEL: 877.305.2146
SUITE 300 - 3660 MIDLAND AVE, TORONTO
INFO@HARVESTINGRAINWATER.CA
WWW.HARVESTINGRAINWATER.CA

**5220 YONGE STREET
TORONTO, ON**

**STORM WATER
PUMPING AND
TREATMENT SKID**

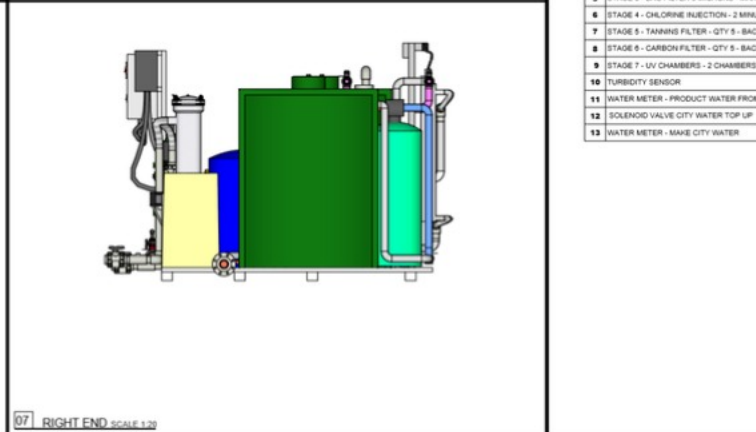
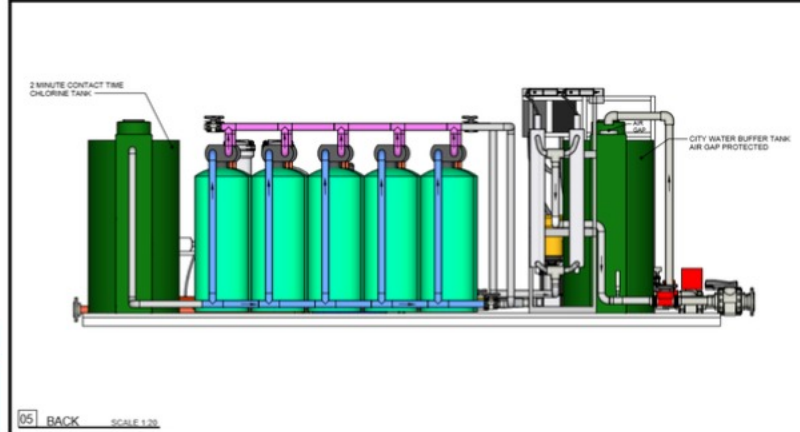
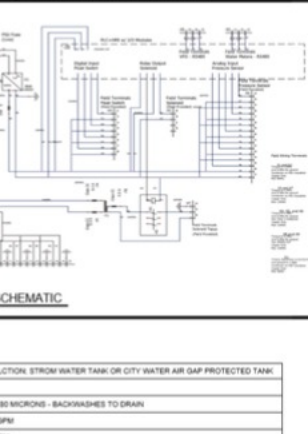
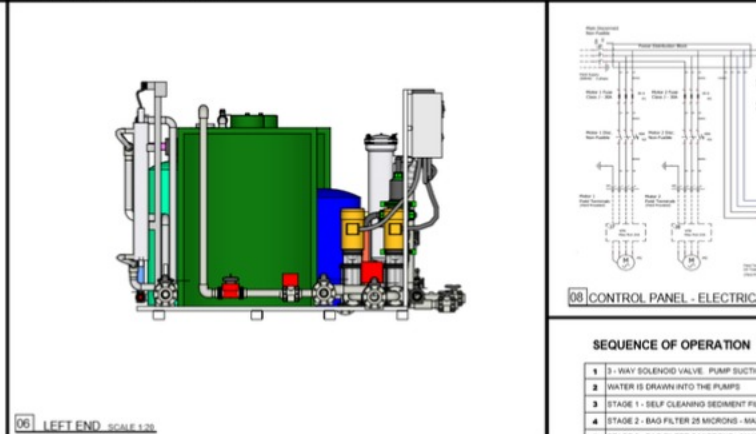
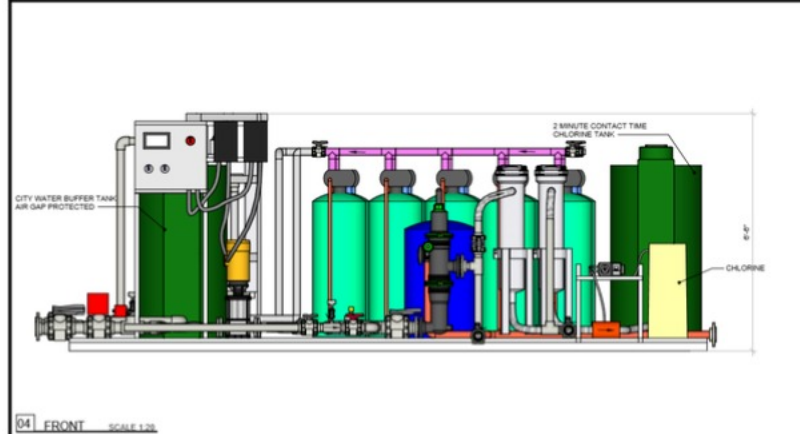
**/W INTERGATED CONTROL
PANEL**

DESIGN FLOW: 100 USGPM
MAX FLOW: 120 USGPM

7 STAGE TREATMENT
SELF CLEANING 80 MICRONS
BAG FILTER 25 MICRONS
BAG FILTER 5 MICRONS
CHLORINE INJECTION
TANNIS FILTRATION
CARBON FILTRATION
UV SANITATION

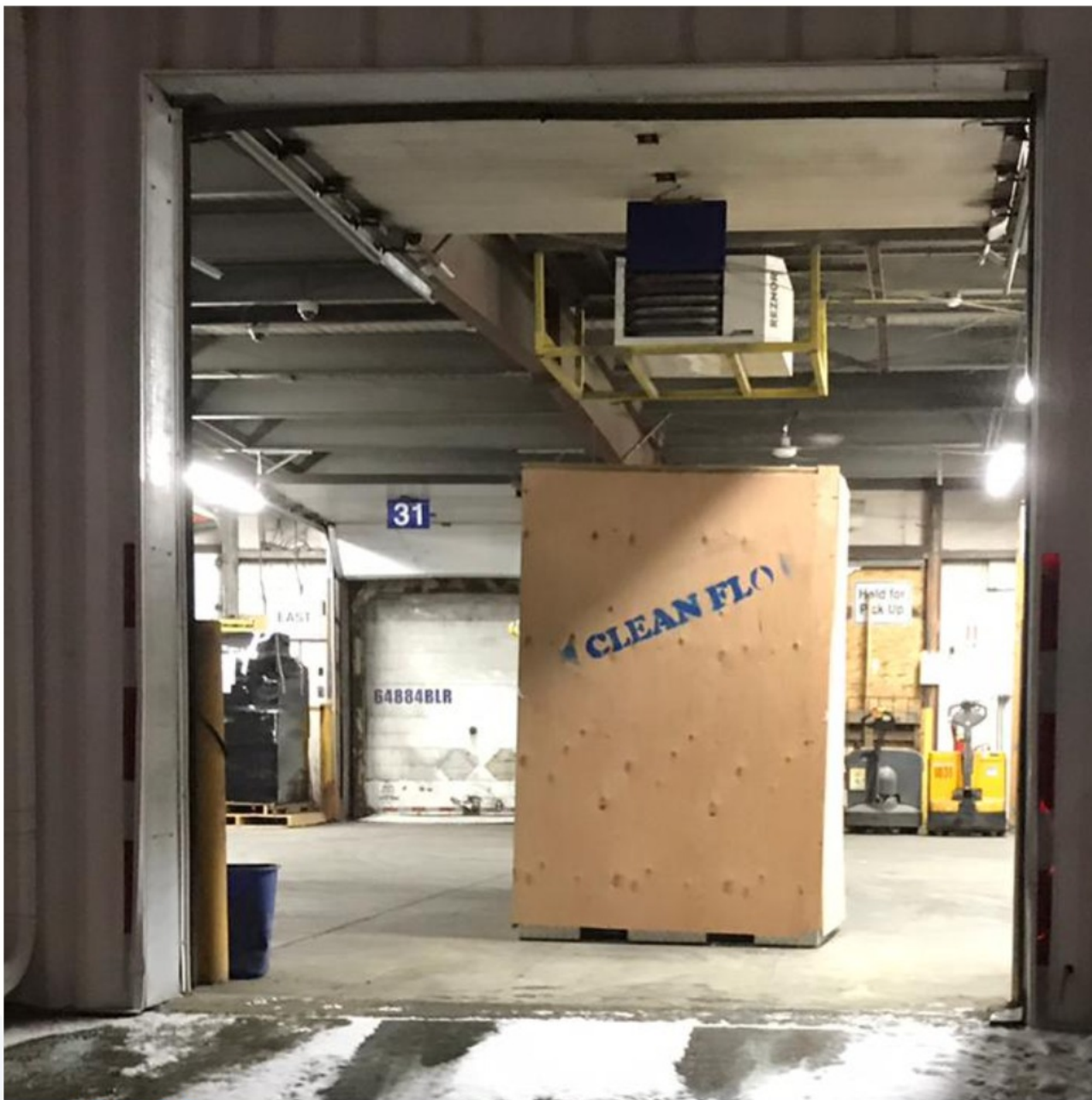
POWER: 480VAC/3PH/60HZ

CONTROLS: PLC AND HMI
SENSORS:
8 x PRESSURE SENSORS
2 x WATER METERS
1 x CHLORINE SENSOR
1 x TURBIDITY SENSOR



SEQUENCE OF OPERATION

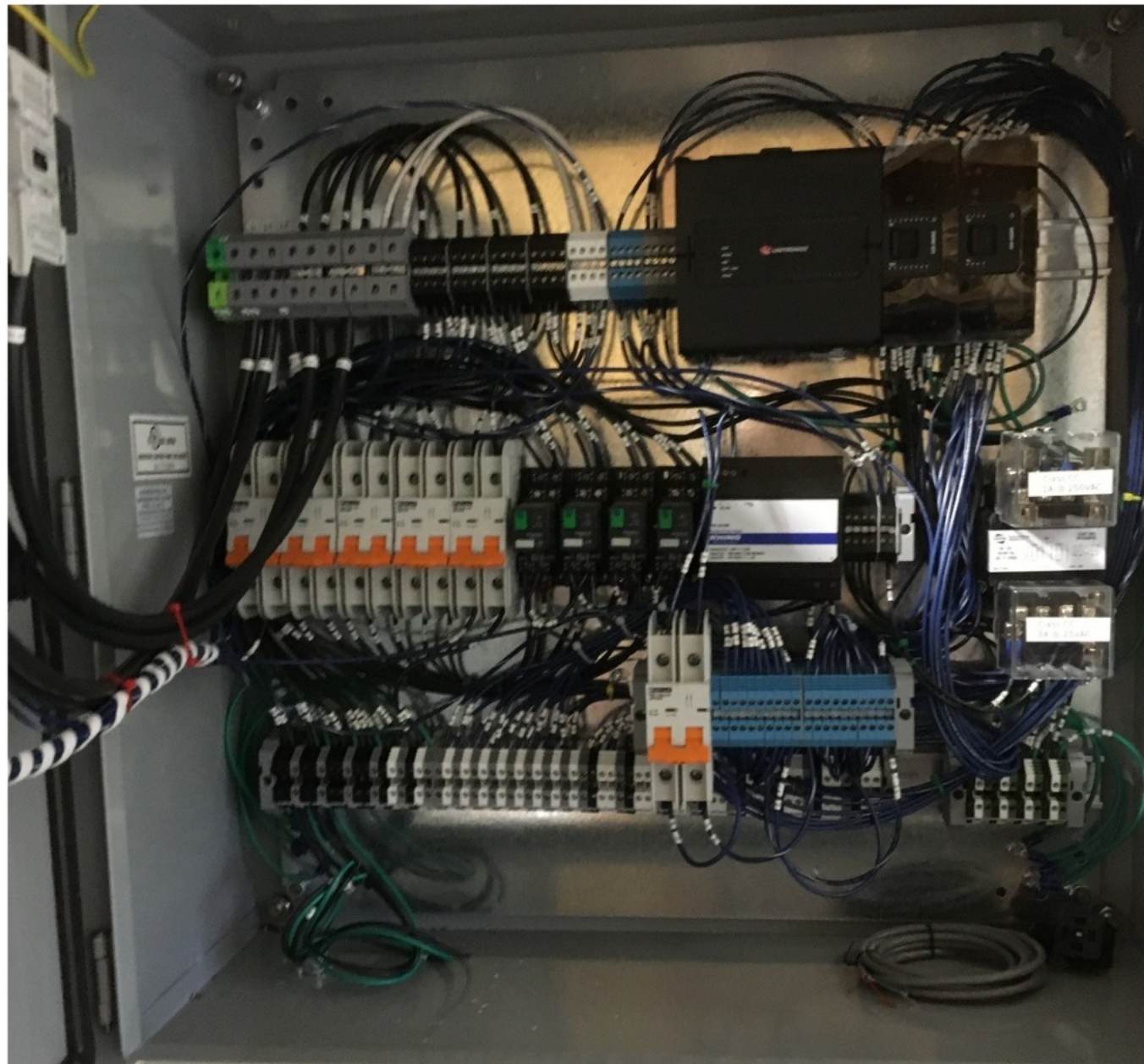
1	3-WAY SOLENOID VALVE - PUMP SUCTION SECTION: STORM WATER TANK OR CITY WATER AIR GAP PROTECTED TANK
2	WATER IS DRAWN INTO THE PUMPS
3	STAGE 1 - SELF CLEANING SEDIMENT FILTER - 80 MICRONS - BACKWASHES TO DRAIN
4	STAGE 2 - BAG FILTER 25 MICRONS - MAX 180 GPM
5	STAGE 3 - BAG FILTER 5 MICRONS - MAX 180 GPM
6	STAGE 4 - CHLORINE INJECTION - 2 MINUTE CONTACT TANK
7	STAGE 5 - TANNIS FILTER - QTY 5 - BACKWASHING
8	STAGE 6 - CARBON FILTER - QTY 5 - BACKWASHING
9	STAGE 7 - UV CHAMBERS - 2 CHAMBERS @ 90 GPM EACH
10	TURBIDITY SENSOR
11	WATER METER - PRODUCT WATER FROM SKID
12	SOLENOID VALVE CITY WATER TOP UP
13	WATER METER - MAKE CITY WATER



UL 508 A



Vida Rain



Questions about Vida ?



Vida Rain

Integration Plan

Connect
the dots !

How to integrate a rainwater harvesting system into your project.

- > Determine collection type
- > Choose location (Tank, Overflow, Vida Rain Reuse)
- > Size your gutters, downpipe, and underground piping
- > Layout inter connective piping and wire (downpipe to tank, tank to overflow, etc.)
- > Record takeoffs for all inter connective piping, wiring, and excavation

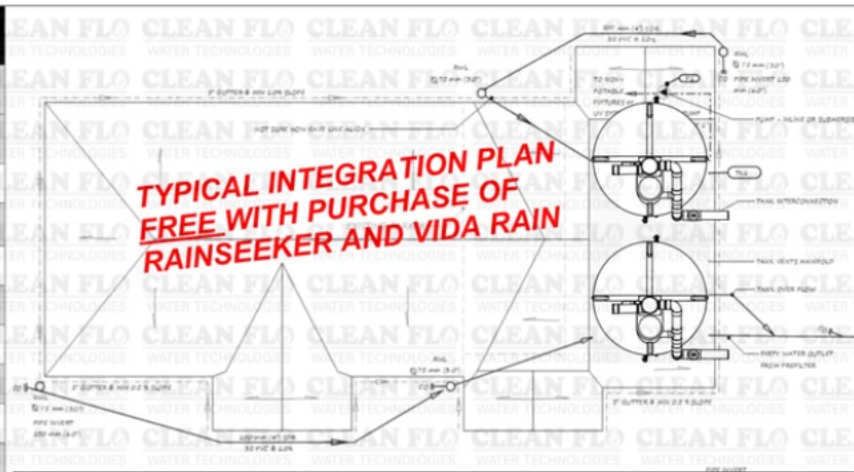
SYSTEM RAINFALL CAPACITY: BASED ON ROOF AREA

ROOF AREA	MAXIMUM RAINFALL 12.0 L/s		90% FILTER EFFICIENCY 4.2 L/s	
	PER 15 MIN	PER 1 HR	PER 15 MIN	PER 1 HR
93 sq.m. (1000 sq.ft.)	144 mm (5.7 in)	574 mm (23.0 in)	50 mm (2.0 in)	201 mm (8.0 in)
186 sq.m. (2000 sq.ft.)	72 mm (2.8 in)	287 mm (11 in)	25 mm (1.0 in)	100 mm (4.0 in)
279 sq.m. (3000 sq.ft.)	48 mm (1.9 in)	191 mm (8.0 in)	17 mm (0.7 in)	67 mm (3.0 in)
372 sq.m. (4000 sq.ft.)	36 mm (1.4 in)	144 mm (5.7 in)	13 mm (0.5 in)	50 mm (2.0 in)
465 sq.m. (5000 sq.ft.)	29 mm (1.1 in)	115 mm (4.5 in)	10 mm (0.4 in)	40 mm (1.6 in)
557 sq.m. (6000 sq.ft.)	24 mm (0.9 in)	96 mm (3.8 in)	8 mm (0.3 in)	33 mm (1.3 in)
650 sq.m. (7000 sq.ft.)	21 mm (0.8 in)	82 mm (3.2 in)	7 mm (0.3 in)	29 mm (1.1 in)
743 sq.m. (8000 sq.ft.)	18 mm (0.7 in)	72 mm (2.8 in)	6 mm (0.25 in)	25 mm (1.0 in)
836 sq.m. (9000 sq.ft.)	16 mm (0.63 in)	64 mm (2.5 in)	5.6 mm (0.22 in)	22 mm (0.9 in)
929 sq.m. (10000 sq.ft.)	14 mm (0.57 in)	57 mm (2.3 in)	5 mm (0.2 in)	20 mm (0.8 in)

RAINFALL GENERAL CLASSIFICATION

LIGHT RAIN: < 2.5 MM (0.1 IN) PER HR
MODERATE RAIN: 2.5 MM (0.1 IN) - 7.6 MM (0.3 IN) PER HR
HEAVY RAIN: 7.6 MM (0.3 IN) - 50 MM (2.0 IN) PER HR
VIOLENT RAIN: > 50 MM (2.0 IN) PER HOUR

SOURCE: EN.WIKIPEDIA.ORG/WIKI/RAIN#INTENSITY



INTEGRATION PLAN

AN INTEGRATION PLAN PROVIDES DETAILS ON THE INTERCONNECTIVE PIPING AND WIRE THAT IS USED TO CONNECT THE PLUG-N-PLAY SYSTEM TOGETHER. IT DETAILS WHERE AND HOW THE PIPING, WIRE AND OTHER INTERCONNECTIVE MATERIALS ARE INSTALLED. IT WILL ALSO SPECIFY THE SIZE, TYPE AND LENGTHS OF PIPING AND WIRE. THE INTEGRATION PLAN WILL DETERMINE TAKE OFFS AND CREATE A BILL OF INTERCONNECTIVE MATERIALS LIST (BOIM).

WITH AN INTEGRATION PLAN AN ARCHITECT, ENGINEER, BUILDER OR CONTRACTOR CAN EASILY HELP TO FACILITATE THE INSTALLATION. THE INTEGRATION PLAN WILL ALLOW YOU TO EASILY GET INSTALLATION QUOTES, REWORK DESIGNS TO SAVE COSTS AND TO ENSURE THERE ARE NO UNEXPECTED INSTALLATION COSTS.

INSTALLATION OPTION

1	DO IT YOURSELF	OUR RAINWATER HARVESTING SYSTEMS ARE DESIGNED TO BE INSTALLED BY ANY QUALIFIED CONTRACTOR.
2	CLEANFLO SUPERVISOR ONSITE	CLEANFLO WILL PROVIDE A SUPERVISOR ON YOUR PROJECT SITE TO GIVE TRAINING TO YOUR CONTRACTORS. **MOST POPULAR ** (ASK ABOUT VIDEO TRAINING)
3	CLEANFLO INSTALLATION SERVICE	CLEANFLO CAN PROVIDE A PARTIAL OR FULL INSTALLATION.

Did you know...? Rainwater VS Stormwater VS Greywater

TYPES OF WATER

RAIN WATER	IS FRESH PRECIPITATION STRAIGHT FROM THE SKY, THAT HAS NOT TOUCHED THE GROUND SURFACE. ROOF SURFACES MAINTAIN THE RAINWATER QUALITY.
STORM WATER	IS RAINWATER THAT HAS TOUCHED THE GROUND SURFACE. STORM WATER IS RAINWATER THAT IS UNMANAGED AT THE SOURCE, SO IT MUST BE MANAGED FURTHER DOWN THE FLOW PATH BY STORM WATER SYSTEMS.
GREY WATER	IS ONCE USED WATER DISCHARGED FROM WASHING MACHINES, SHOWERS, BATHTUBS, BATHROOM SINKS. GREY WATER DOES NOT HAVE FECAL CONTAMINATION. RELATIVELY LOW BOD.
BLACK WATER	IS ONCE USED WATER DISCHARGED FROM KITCHEN SINKS, TOILETS AND URINAL AND MAY CONTAIN FECAL CONTAMINATION. HIGH BOD.
SURFACE WATER	IS WATER PRESENT ON THE EARTH'S SURFACE. (IE: LAKES, STREAMS, RIVERS, ETC.)
GROUND WATER	IS WATER PRESENT BELOW THE EARTH'S SURFACE. (IE: AQUIFERS, WELLS, ETC.)
GUDI WATER	IS GROUNDWATER UNDER DIRECT INFLUENCE OF SURFACE WATER (I.E. SHALLOW WELLS, FOUNDATION DRAINAGE, ETC.)
POTABLE WATER	IS WATER SAFE FOR HUMAN CONSUMPTION AND FOOD PREPARATION.
NON-POTABLE WATER	IS WATER NOT SAFE FOR HUMAN CONSUMPTION.

SIZING GUTTER, DOWNPIPE AND UNDERGROUND HORIZONTAL TAIL PIPE

CANADIAN NATIONAL BUILDING CODE (NBC)

15 MINUTE HYDRAULIC LOAD METHOD

STEP 1. DETERMINE YOUR 15 MIN RAINFALL. TYPICALLY BASED ON YOUR LOCAL 15 MIN 25 YEAR STORM EVENT.
IF YOU DON'T KNOW USE 30 mm

STEP 2. MULTIPLY THE RAINFALL IN (mm) BY THE ROOF AREA (M sq) DRAINING INTO THE GUTTER, DOWNPIPE OR PIPING BEING SIZED.
THIS RESULT IS THE 15 MIN HYDRAULIC LOAD.

STEP 3. COMPARE THE 15 MIN HYDRAULIC LOAD WITH THE CORRESPONDING TABLES TO SIZE THE GUTTER, DOWNPIPE OR PIPING.
DIVIDING THE 15 MIN HYDRAULIC LOAD BY 900 CONVERTS TO LITERS PER SECOND

NBC GUTTER HYDRAULICS

SIZE OF GUTTER INCHES	GUTTER FLOW AREA CM sq.	MAXIMUM 15 MIN HYDRAULIC LOAD			
		SLOPE			
		1:200 (0.5%)	1:100 (1%)	1:50 (2%)	1:25 (4%)
4	40.5	838	1190	1700	2410
5	63.3	1470	2080	2950	4170
6	91.2	2260	3200	4520	6530
7	124.1	3250	4600	6500	9190
8	162.1	4700	6600	9400	13200
10	253.4	8480	1200	1700	23600

NBC VERTICAL STORM PIPE HYDRAULICS

DIAMETER OF PIPE INCHES	MAXIMUM 15 MIN HYDRAULIC LOAD
3	5000
4	10800
6	31800
8	68300

NBC HORIZONTAL STORM PIPE HYDRAULICS

DIAMETER OF PIPE INCHES	MAXIMUM 15 MIN HYDRAULIC LOAD						
	SLOPE						
	1:400 (0.25%)	1:200 (0.5%)	1:133 (0.75%)	1:100 (1%)	1:68 (1.5%)	1:50 (2%)	1:25 (4%)
3	-	-	-	-	2,390	2,770	3,910
4	-	-	-	4,220	5,160	5,970	8,430
6	-	-	10,700	12,400	15,200	17,600	24,900
8	-	18,900	23,200	26,700	32,800	37,800	53,600
10	-	34,300	41,900	48,500	59,400	68,600	97,000
12	37,400	55,900	68,300	78,700	96,500	112,000	158,000

MODEL RSMVP

MATERIAL POLYETHYLENE

TYPE ABOVEGROUND ONLY

DATE 11.4.20 (V2.0)

© COPYRIGHT ALL RIGHTS RESERVED 2020

CLEAN FLO
WATER TECHNOLOGIES

www.harvestingrainwater.ca
1-877-306-2146

RAINSEEKER

MAXIMUS

Canada's
Engineered
Rain Systems

05

A

CLEAN FLO

WATER TECHNOLOGIES

www.harvestingrainwater.ca
1 -877 - 306 -2146

RAIN_{SEEKER}



Vida Rain



benjamin@cfwt.ca