# RAINWATER HARVESTING SYSTEM

# YOUR - RAINWATER SYSTEM

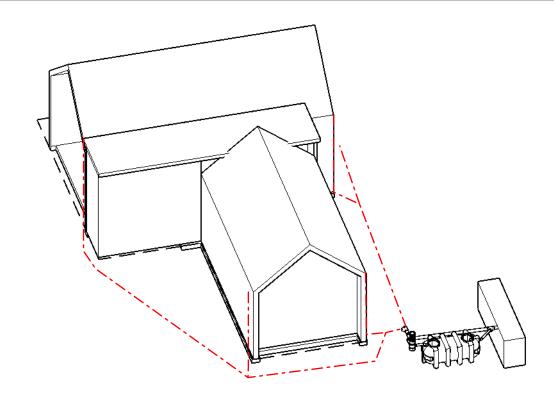
	TAG	EQUIPMENT SCHEDULE	
	RSM	RAINSEEKER MAXIMUS 1000 USG SYSTEM - UNDERGROUND	
	RWT 1	- RAINWATER TANK 1000 USG	
	PRF	- RAINWATER PREFILTER	
	ACL	- SMOOTHING INLET	
	FLI	- FLOATING INTAKE	
	<u>OVF</u>	- SKIMMING OVERFLOW BACKWATER VALVE	,
	TLS	- TANK LEVEL SENSOR	NOT INCLUDED
Ĺ	TLSD	- TANK LEVEL SENSOR DISPLAY	AVILABLE FOR ADDITIONAL FEE
	RPMP	RAINWATER PUMP - 120 VAC	
	UV	DUAL FILTRATION AND UV SYSTEM	
	FOT	FLOAT SWITCH LOW LEVEL	
	SOLV	SOLENOID VALVE 120 VAC - 1 AMP MAX	

TAG	PIPE AND WIRE SCHEDULE	
Α	GUTTER	4" MIN GUTTER (METAL, PVC, PLASTIC)
В	DOWNPIPE	3" MIN DOWNPIPE (METAL, PVC, PLASTIC)
С	UNDERGROUND	4" DIAMETER @ 1.5% SLOPE (PVC DRAIN, SDR35, SCH40)
D	UNDERGROUND	6" DIAMETER @ 0.75% SLOPE (PVC DRAIN, SDR35, SCH40)
E	SUPPLY PIPE UNDERGROUND (BELOW FROST OR HEAT TRACE)	1.25" DIAMETER (PVC, POLY OR COPPER)
F	SUPPLY PIPE INTERIOR	1.0" DIAMETER (PVC, PEX, POLY OR COPPER)
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J	TANK TOP UP - MAKE UP PIPE	2" DIAMETER 1.5% SLOPE (PVC SCH 40 or SCH 80)
K	ELECTIRCAL CONDUIT	1" DIAMETER (PVC OR OTHER BURIAL CONDUIT)

CLEAN FLO WATER TECHNOLOGIES DESIGNED THE SYSTEM TO MEET THE CSA B805 STANDARDS TO PROVIDE A POTABLE RAINWATER HARVESTING WATER SYSTEM.

IF THE INSTALLTION IS IN ACCORDENCE WITH CLEANFLO WRITTEN INSTRUCTION THIS SYSTEM WILL PROVIDE POTABLE WATER. IT IS THE OWNER / OPERATORS RESPONSIBLITY TO ENSURE THE RAINWATER HARVESTING SYSTEM IS INSTALLED AND OPERATING PROPERLY. INITIAL AND ONGOING MAINTENANCE AND MONITORING IS REQUIRED AND MUST BE PERFORMED BY THE OWNER OR UNDER THE OWNER'S DIRECTION.

IF INSTRUCTIONS ARE NOT FOLLWED OR MAINTIANCE IS NOT PERFORMED OR UNKOWN SUBSTANCES ARE INTRUDCED INTO THE RAINWATER SYSTEM THE SYSTEM MAY NOT BE SAFE AND THERFORE REGULAR WATER TESTING IS REQUIRED. CLEANFLO IS NOT RESPONSIBLE FOR THE WATER QUALITY THIS SYSTEM PRODUCES. USE WATER AT YOUR OWN RISK.



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	
	POTABLE, HUMAN CONSUMPTION, ORAL CARE, FOOD PREPARATION, DISHWASHING, BATHING/SHOWERING, POOL/HOT TUBS	

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### **DESCRIPTION**

THIS SYSTEM IS DESIGN TO MEET CANADIAN PLUMBING CODES AND CSA STANDARDS FOR RAINWATER HARVESTING CSA 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 SECONDARY SOURCE OF WATER FOR NON-POTABLE PURPOSES, SUCH AS TOILETS, LAUNDRY AND IRRIGATION. WITH BACK-UP WATER SOURCE FROM DOMESTIC POTBALE WATER IF THE RAINWATER TANK IS EMPTY.

THE SYSTEM WILL PROVIDE WATER FOR WATER USES TIER: R3 - NON-POTABLE DOMESTIC

#### ROOF

THE SYSTEM WILL BE HARVESTING RAIN FROM ONE BUILDING THE ROOF. THE ROOF IS PROVIDED BY OTHERS AND SHOULD BE SUITABLE FOR INTENDED USE.

## **GUTTER, DOWNPIPES AND CONVEYANCE PIPING**

THE GUTTERS, DOWNPIPES, AND CONVEYANCE PIPING IS SIZED BASED ON SPECIFICATIONS FROM THE DESIGNS. THE GUTTERS, DOWNPIPE AND CONVEYANCE PIPING IS PROVIDED BY OTHERS AND SHOULD BE SUITABLE FOR INTENDED USE.

## **PREFILTER**

THE SYSTEM WILL REQUIRE ONE (1) PRE-FILTER. THIS PRE-FILTERS OPERATE 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 1000 USG OF RAINWATER STORAGE. WITH A TOTAL OF ONE (1) BELOW GROUND TANK(S), MADE OF POLYETHYLENE. EACH TANK IS 1000 USG.

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 8 GPM @ 60 PSI. THIS WILL BE PUMPED BY BOOSTER PUMP. THE TREATMENT WILL BE THREE STAGES TO ENSURE WATER IS SAFE TO USE. STAGE ONE IS A SEDIMENT FILTER OF 5. STAGE TWO A 10 MICRON CARBON FILTER. . STAGE THREE IS ULTRAVIOLET SANITATION (UV) SYSYEM.

#### WATER QUALITY AND TREATMENT

CLEAN FLO DESIGNED THIS SYSTEM TO PRODUCE WATER THAT IS SAFE FOR CSA B805 R3 USES; NAMELY NON-POTABLE DOMESTIC.

# WATER TESTING

## **DANGER!!**

IF THERE ARE ANY NOTICEABLE CHANGES IN WATER QUALITY (IE. COLOUR, SMELL, TASTE, ETC.) STOP USING WATER AND PERFORM BOTH BACTERIOLOGICAL AND CHEMICAL TESTS IMMEDIATELY.

## **BACTERIOLOGICAL TEST**

THIS TEST SHOULD BE PERFORMED AT A FREQUENCY OF SIX MONTHS AT A LOCAL ACCREDITED WATER TESTING LAB. BACTERIOLOGICAL SAMPLES WILL RAPIDLY BECOME UNREPRESENTATIVE OF THE WATER SUPPLY IF THE TEST IS NOT PERFORMED SOON AFTER TAKING THE SAMPLE

THESE TESTS INCLUDE BUT ARE NOT LIMITED TO: E.COLI, AND TOTAL COLIFORMS

## **CHEMICAL TEST**

THIS TEST SHOULD BE PERFORMED AT A FREQUENCY OF ONE YEAR AT AN ACCREDITED WATER TESTING LAB. WHILE CHEMICAL TESTS ARE LESS TIME SENSITIVE, IT IS ADVISED TO DELIVER YOUR SAMPLE TO THE LAB WITHIN 24 HOURS OF TAKING THE SAMPLE

THESE TEST INCLUDE BUT ARE NOT LIMITED TO: HEAVY METALS, TOTAL ORGANIC CARBON, PH, TURBIDITY, TOTAL DISSOLVED SOLIDS, NITRATES, HARDNESS, AND CONDUCTIVITY.

## POTENTIAL LOCAL TEST FACILITY

WHEN USING THE SERVICES OF A LOCAL TESTING FACILITY THEY WILL ENSURE THE TEST RESULTS AND TOLERANCES CONFORM TO LOCAL REGULATIONS ON WATER QUALITY.

# WATER TEST RESULTS

PLEASE KEEP A LOG OF TEST RESULTS IN THE TABLE AT THE BACK OF THIS DOCUMENT. PLEASE FILE THE ORIGINAL WATER TEST RESULT DOCUMENTATION IN THE FOLDER AT THE BACK OF THESE DOCUMENTS.

#### WATER TESTING LOG

PERFORM A BACTERIOLOGICAL TEST ON THE WATER EVERY 6 MONTHS PERFORM A CHEMICAL TEST ON THE WATER EVERY YEAR

STORE THE ORIGINAL WATER QUALITY TEST RESULTS IN FOLDER AT BACK

THE FIRST WATER TEST SHOULD BE RECORED BELOW AS THE BASELINE WATER TEST.

BASELINE TEST DATE (DD/MM/YYYY)	TEST COMPLETE DATE (DD/MM/YYYY)	TEST RESULT



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**SYSTEM NAME:** YOUR - RAINWATER SYSTEM

SYSTEM TYPE: R2-R3 NON-POTABLE

OWNERS: YOUR

LOCATION: 123 ADDRESS

**EMERGENCY CONTACT** 

FIRST POINT - INSTALLERS ABC1234 CONTRACTING

SECOND POINT - DESIGNER

CLEANFLO WATER TECHNLOGIES, CANADA

1-877-306-2146

MAINTENANCE PERSONS OWNER

**SCOPE OF SYSTEM SUPPLY** 

WATER USES TEIR: R2 AND R3 NON POTBALE

PRIMARY WATER SOURCE: RAINWATER
SECONDARY WATER SOURCE: CITY BACK UP
NUMBER OF PEOPLE SERVED: 6 / DAY

**NUMBER OF FIXTURES** 

LAUNDRY:

HOSE BIBS:

YARD HYDRANT: 0

FAUCETS:

TOILETS:

DISHWASHER:

BATH/SHOWER: 0
MECH. EQUIPMENT: 0

FIRE SUPRESSION:

**SECONDARY WATER SOURCE** 

TYPE: CITY BACK UP

AUTOMATIC BY-PASS SYSTEM CITY WATER TANK TOP UP

**SYSTEM DESIGN AND SPECS.** 

**DESIGNER:** CLEANFLO WATER TECHNLOGIES, 1-877-306-2146

**DATE COMPLETED:** NOV 2021

SYSTEM SPECIFICATIONS

ROOF COLLECTION AREA: ~ 2159 SQFT

ROOF MATERIAL: METAL

GUTTER MATERIAL:

**DOWNSPOUT MATERIAL:** 

ALUMINUM, PVC SDR 35, PVC DRAIN PIPE

CONVEYANCE PIPING MATERIAL: ALUMINUM, PVC SDR 35, PVC DRAIN PIPE

**METAL** 

**STORAGE TANK SPECIFICATIONS** 

TOTAL VOLUME: 1000 USG

NUMBER OF TANKS: 1

**VOLUME OF EACH TANK:** 1000 USG

TANK TYPE:BELOW GROUNDTANK MATERIAL:POLYETHYLENE

TANK DIMENSIONS

 LENGTH:
 133"

 WIDTH:
 62"

 HIEGHT:
 51 "

 DIAMETER:
 NA

PRE-FILTER SPECIFICATIONS

TYPE OF PREFILTER: WISY VORTEX

NUMNER OF PRE-FILTERS: 1

**PRE-FILTRATION MESH SIZE**: 320 MICRONS

MAXIMUIM INLET FLOW RATE: 12 LITERS PER SECOND

**PUMP SPECIFICATIONS** 

**BRAND**: CLEANFLO VFD CONSTANT PRESSURE SYSTEM

MODEL: DABS DTRON 2
DESIGN FLOW RATE: 8 USGPM
MAXIMUN PSI @ 10 GPM: 74 PSI

**POWER SPECIFICATIONS** 

 HORSE POWER:
 1.1 HP

 VOLTAGE:
 115 VAC

 AMPS:
 ~ 7.5 A

 WATTS:
 1500 W

WATER TREATMENT SPECIFICATIONS

TYPE: CLEANFLO

BRAND: VIDA REUSE

MODEL: COMR3
AGE OF EQUIPMENT: NEW

**7 MIN PEAK WATER DEMAND** 

FLOW RATE QUANTITY (LPM)

RUN TIME 7 MIN PEAK **FIXTURES** 8.3 SHOWER OR BATH 7 MIN 0 L 5.3 7 MIN **HOSE BIB** 37.1 L 2.7 1 FLUSH PER TOILET 6.0L/FLUSH 18.0 L 1.6 KITCHEN SINK 0.5 MIN 0

19

7.6

TOTAL 7 MIN PEAK 155 L

100L/CYCLE

30L/CYCLE

LPM 22 US GPM 5.8

100 L

BASED ON THIS PEAK DEMAND CLEANFLO SPECIFIES A MAX FLOW RATE OF 8 US GPM.

**TOTAL DYNAMIC HEAD** 

DESIGN FLOW RATE: 8 GPM

<u>SUPPLY PIPI</u>

WASHING MACHINE

DISHWASHER

1.0" @ 50FT (2.5 PSI LOSS/100FT) 1.25 PSI / 2.9 FT HEAD (NPSH MUST BE MET FOR BOOSTER PUMP)

TREATMENT SKID

PSI LOSS VARIES AS WATER FILTERS BECOME 10 PSI / 23 FT HEAD CLOGGED

**DISTRIBUTION PIPE** 

8 GPM - 1.0" @ 20FT (2.5 PSI LOSS/100FT) 8 GPM - 0.75" @ 50FT (8.7 PSI LOSS/100FT) 4 GPM - 0.5" @ 50FT (10.5 PSI LOSS/100FT)

TOTAL 0.5 + 4.4 + 5.3 = 10.2

MINOR LOSSES: VALVES, FITTINGS 2.1 PSI / 4.9 FT HEAD

· 20FT (10.5 PSI LOSS/100F

ELEAVATION HEAD
20ET (1.0 PSI J. OSS/2 33ET)
8.6 PSI / 20 FT HEAD

STATIC PSI

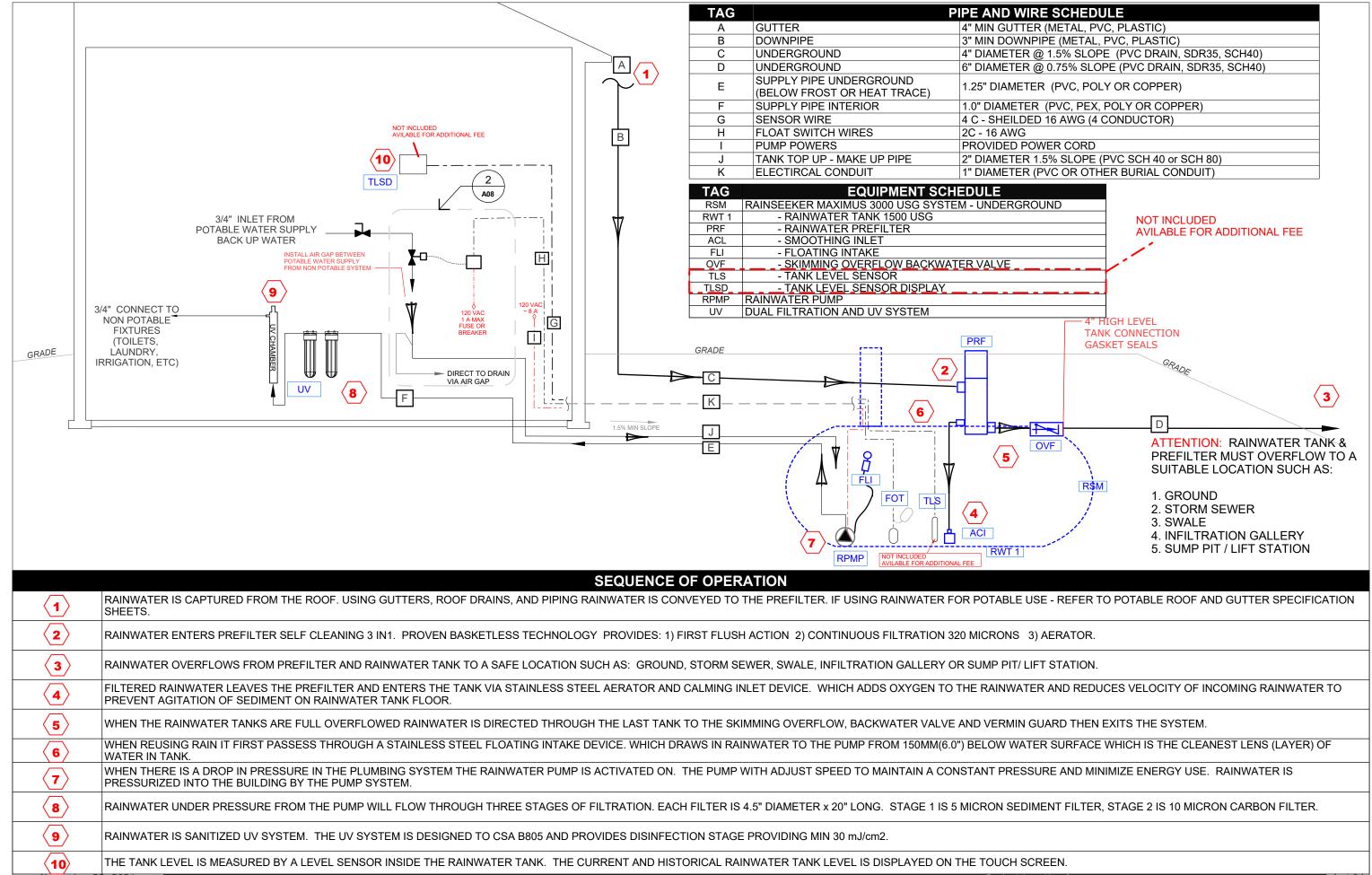
30 PSI / 70 FT HEAD

TOTAL 62 PSI / 144 FT HEAD

CLEAN FLO
WATER TECHNOLOGIES

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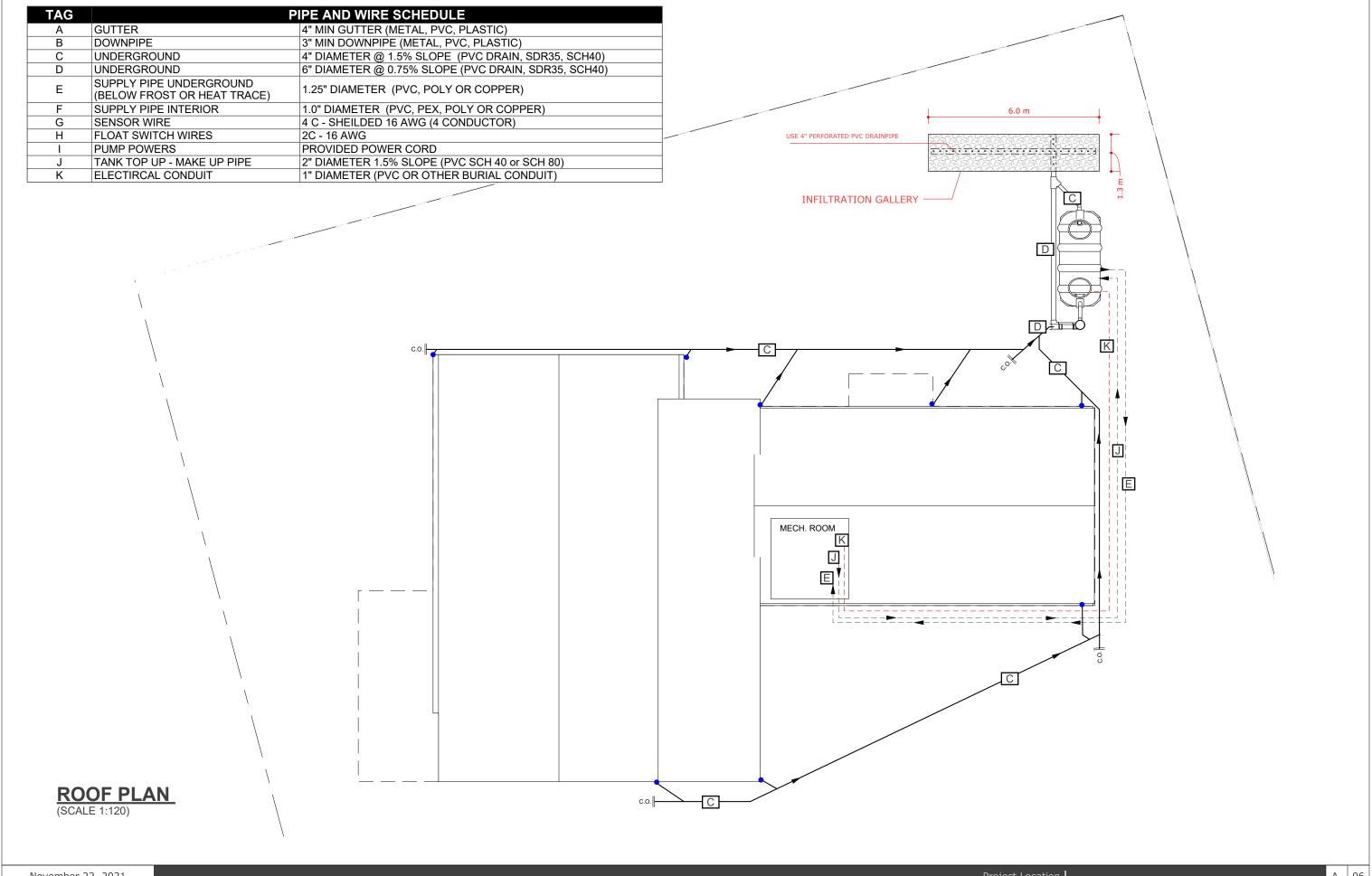




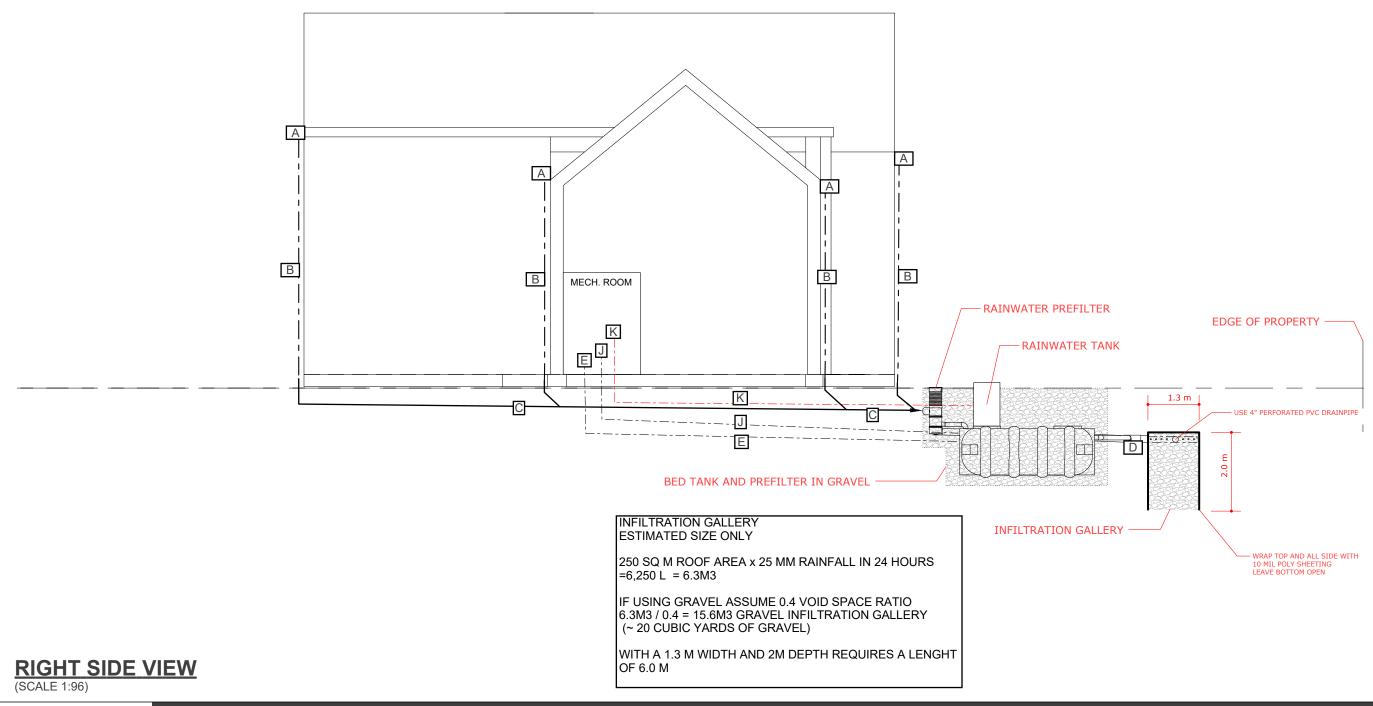


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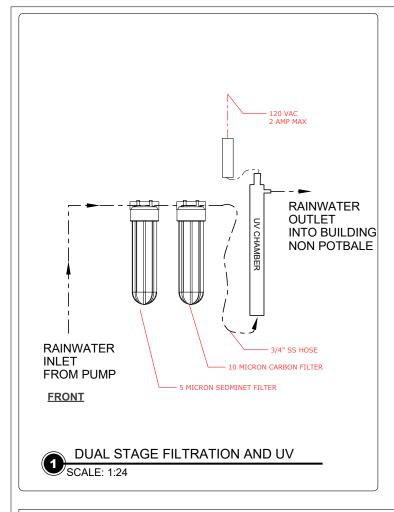


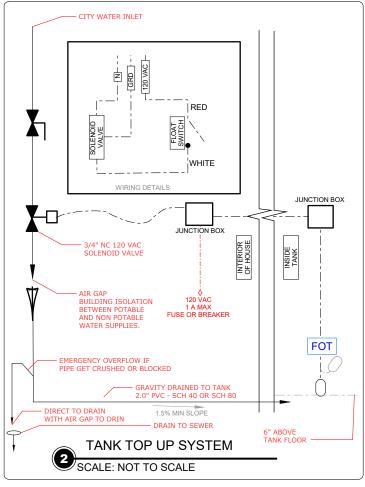
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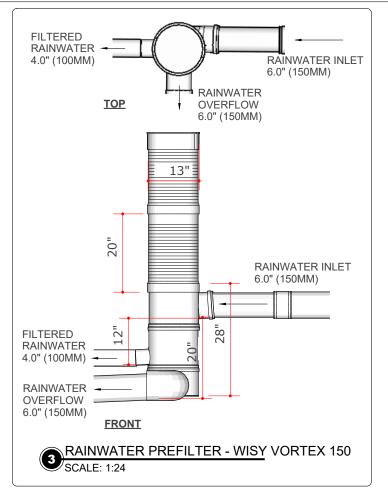


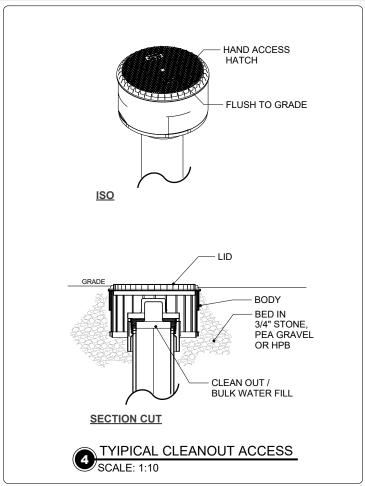
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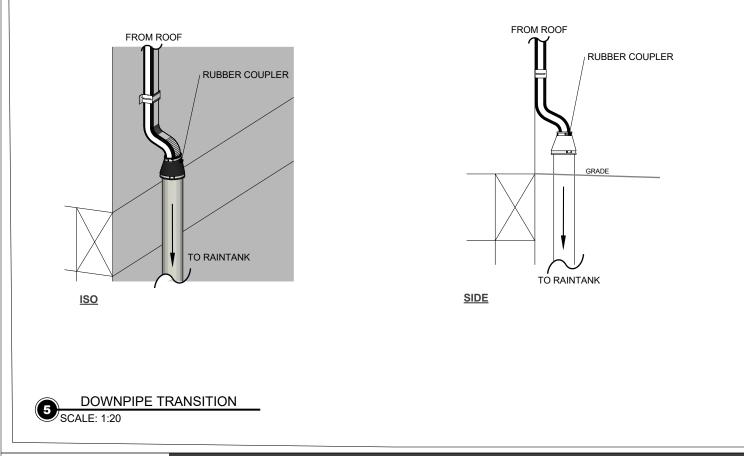
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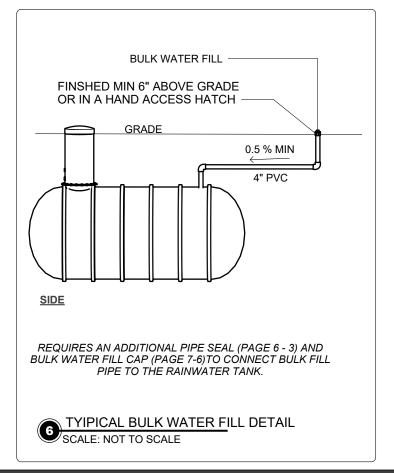


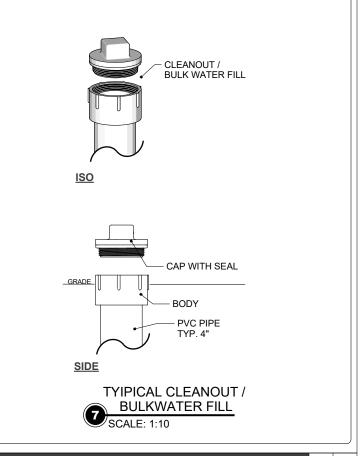












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