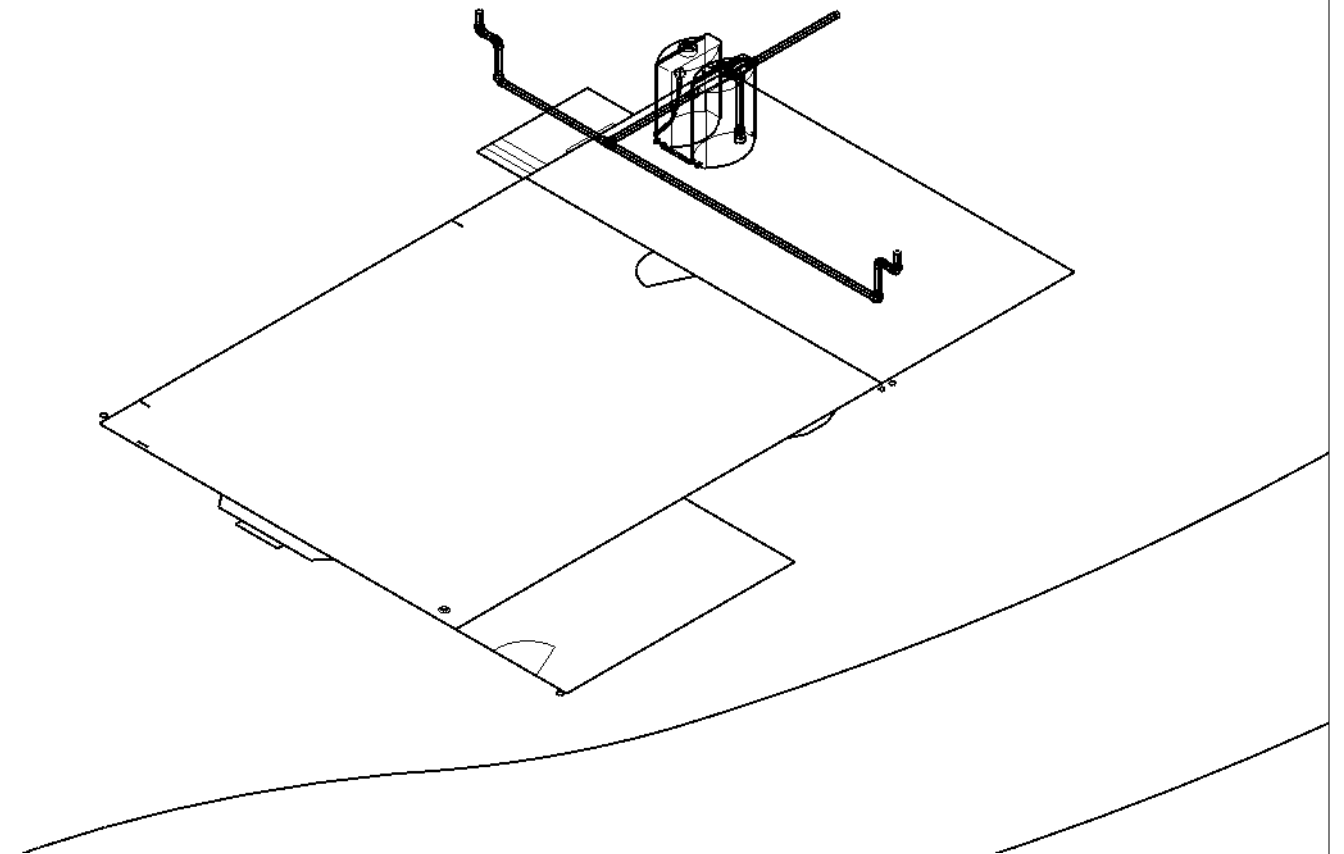


# RAINWATER HARVESTING SYSTEM

YOUR - HARVESTING SYSTEM

YOUR ADDRESS



TAG	EQUIPMENT SCHEDULE
RSM	RAINSEEKER 540 USG SYSTEM - ABOVEGROUND
RWT 1	- RAINWATER TANK 270 USG
PRF	- RAINWATER PREFILTER
ACL	- SMOOTHING INLET
FLI	- FLOATING INTAKE
BWV	- BACKWATER VALVE
RWT 2	- RAINWATER TANK EXPANSION 270 USG
RPMP	RAINWATER PUMP
UV	TRIPLE FILTRATION AND UV SYSTEM
SOL	UV SOLENOID SHUT-OFF

TAG	PIPE AND WIRE SCHEDULE
A	GUTTER EXISTING GUTTER
B	DOWNPIPE EXISTING DOWNPIPE. MIN 3"
C	CONYANCE PIPING 4" DIAMETER @ 1.5% SLOPE MIN.
D	SUPPLY PIPE INTERIOR 1.0" DIAMETER (PVC, PEX, POLY OR COPPER)
E	PUMP POWERS PROVIDED POWER CORD - 50 ft

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

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 RESPONSIBILITY 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.

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VANCOUVER MAIN OFFICE  
250 - 997 Seymour Street  
Vancouver, BC V6B 3M1

PH: 778 - 200 - 7356  
TF: 877-306-2146

SASKATCHEWAN MAIN OFFICE  
5 Commercial Drive  
Craik, SK S0G 0V0  
PO Box 128

PH: 306-988-7909  
TF: 877-306-2146

TORONTO MAIN OFFICE  
Toronto, ON

PH: 647 931-3356  
TF: 877-306-2146

**A 01**

**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 PRIMARY SOURCE OF WATER FOR POTABLE PURPOSES, SUCH AS DRINKING, COOKING, BATHING, TOILETS, LAUNDRY. WITH BACK-UP WATER SOURCE FROM HAULED BULK POTABLE WATER IF THE RAINWATER TANK IS EMPTY.

THE SYSTEM WILL PROVIDE WATER FOR WATER USES TIER: R4 - POTABLE DOMESTIC

**ROOF**

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

**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. THESE PRE-FILTERS OPERATE AS BOTH A FIRST FLUSH DIVERTER AND PREFILTER, WITH A FILTER MESH SIZE OF 400 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 540 USG OF RAINWATER STORAGE. WITH A TOTAL OF TWO (2) ABOVE GROUND TANK(S), MADE OF POLYETHYLENE. EACH TANK IS 270 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 MULTI STAGE BOOSTER PUMP POWERED BY VFD. THE TREATMENT WILL BE THREE STAGES TO ENSURE WATER IS SAFE TO USE. STAGE ONE IS A SEDIMENT FILTER OF 15 MICRONS WHICH PROVIDES A SELF CLEANING FLUSH TO DRAIN. STAGE TWO A 10 CARBON FILTER. STAGE THREE A 1 MICRON ABSOLUTE SEDIMENT FILTER. STAGE FOUR IS ULTRAVIOLET SANITATION SYSEM NSF 55 CLASS A.

**WATER QUALITY AND TREATMENT**

CLEAN FLO DESIGNED THIS SYSTEM TO PRODUCE WATER THAT IS SAFE FOR CSA B805 R4 USES; NAMELY 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



VANCOUVER MAIN OFFICE  
250 - 997 Seymour Street  
Vancouver, BC V6B 3M1

PH: 778 - 200 - 7356  
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SASKATCHEWAN MAIN OFFICE  
5 Commercial Drive  
Craik, SK S0G 0V0  
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PH: 306-988-7909  
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Toronto, ON

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**A 02**

**SYSTEM NAME:** YOUR RAINWATER HARVESTING SYSTEM

**SYSTEM TYPE:** R4-POTABLE  
**OWNERS:** YOU  
**LOCATION:** YOUR ADDRESS

**EMERGENCY CONTACT**

**FIRST POINT - INSTALLERS** OWNERS INSTALLED  
**SECOND POINT - DESIGNER** CLEANFLO WATER TECHNOLOGIES, 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 BULK WATER  
**NUMBER OF PEOPLE SERVED:** 2 / DAY

**NUMBER OF FIXTURES**

**HOSE BIBS:** 1  
**YARD HYDRANT:** 0  
**FAUCETS:** 4  
**LAUNDRY:** 1  
**TOILETS:** 2  
**DISHWASHER:** 1  
**BATH/SHOWER:** 2  
**MECH. EQUIPMENT:** 0  
**FIRE SUPPRESSION:** 0

**SECONDARY WATER SOURCE**

**TYPE:** HAULED BULK POTABLE WATER  
**AUTOMATIC BY-PASS SYSTEM** N/A

**SYSTEM DESIGN AND SPECS.**

**DESIGNER:** CLEANFLO WATER TECHNOLOGIES, 1-877-306-2146  
**DATE COMPLETED:** JULY 15, 2021

**SYSTEM SPECIFICATIONS**

**ROOF COLLECTION AREA:** ~ 1000 SQFT  
**ROOF MATERIAL:** ASPHALT (NSF 61 OR NSF P151 COATING)  
**GUTTER MATERIAL:** PAINTED STEEL (NSF 61 OR NSF P151 COATING)  
**DOWNSPOUT MATERIAL:** ALUMINUM, PVC SDR 35, PVC DRAIN PIPE (NSF 61 OR NSF P151 INTERIOR COATING)  
**CONVEYANCE PIPING MATERIAL:** ALUMINUM, PVC SDR 35, PVC DRAIN PIPE (NSF 61 OR NSF P151 INTERIOR COATING)

**STORAGE TANK SPECIFICATIONS**

**TOTAL VOLUME:** 540 USG  
**NUMBER OF TANKS:** 2  
**VOLUME OF EACH TANK:** 270 USG  
**TANK TYPE:** ABOVE GROUND  
**TANK MATERIAL:** POLYETHYLENE

**TANK DIMENSIONS**

**LENGTH:** 47"  
**WIDTH:** 30"  
**HIEGHT:** 66 "  
**DIAMETER:** NA

**PRE-FILTER SPECIFICATIONS**

**TYPE OF PREFILTER:** WISY LINEAR SS  
**NUMNER OF PRE-FILTERS:** 1  
**PRE-FILTRATION MESH SIZE:** 400 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**

FIXTURES	QUANTITY	FLOW RATE (LPM)	RUN TIME	7 MIN PEAK
SHOWER OR BATH	2	8.3	7 MIN	116.6 L
LAVATORY	2	5.3	0.5 MIN	5.3L
1 FLUSH PER TOILET	3	2.7	6.0L/FLUSH	18L
KITCHEN SINK	0	1.6	0.5 MIN	0
WASHING MACHINE	0	19	100L/CYCLE	0
DISHWASHER	0	7.6	30L/CYCLE	0

**TOTAL 7 MIN PEAK 140L**

BASED ON THIS PEAK DEMAND CLEANFLO SPECIFIES A MAX FLOW RATE OF 8 US GPM. **LPM 20 US GPM 5.3**

**TOTAL DYNAMIC HEAD**

**DESIGN FLOW RATE: 8 GPM**

**SUPPLY PIPE**

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 CLOGGED 10 PSI / 23 FT HEAD

**DISTRIBUTION PIPE**

8 GPM - 1.0" @ 20FT (2.5 PSI LOSS/100FT)  
8 GPM - 0.75" @ 50FT (8.7 PSI LOSS/100FT) 10.2 PSI / 24 FT HEAD  
4 GPM - 0.5" @ 50FT (10.5 PSI LOSS/100FT)  
TOTAL 0.5 + 4.4 + 5.3 = 10.2

**MINOR LOSSES: VALVES, FITTINGS**

~ 20FT (10.5 PSI LOSS/100FT) 2.1 PSI / 4.9 FT HEAD

**ELEVATION HEAD**

20FT (1.0 PSI LOSS/2.33FT) 8.6 PSI / 20 FT HEAD

**STATIC PSI**

30 PSI 30 PSI / 70 FT HEAD

**TOTAL**

**62 PSI / 144 FT HEAD**



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250 - 997 Seymour Street  
Vancouver, BC V6B 3M1

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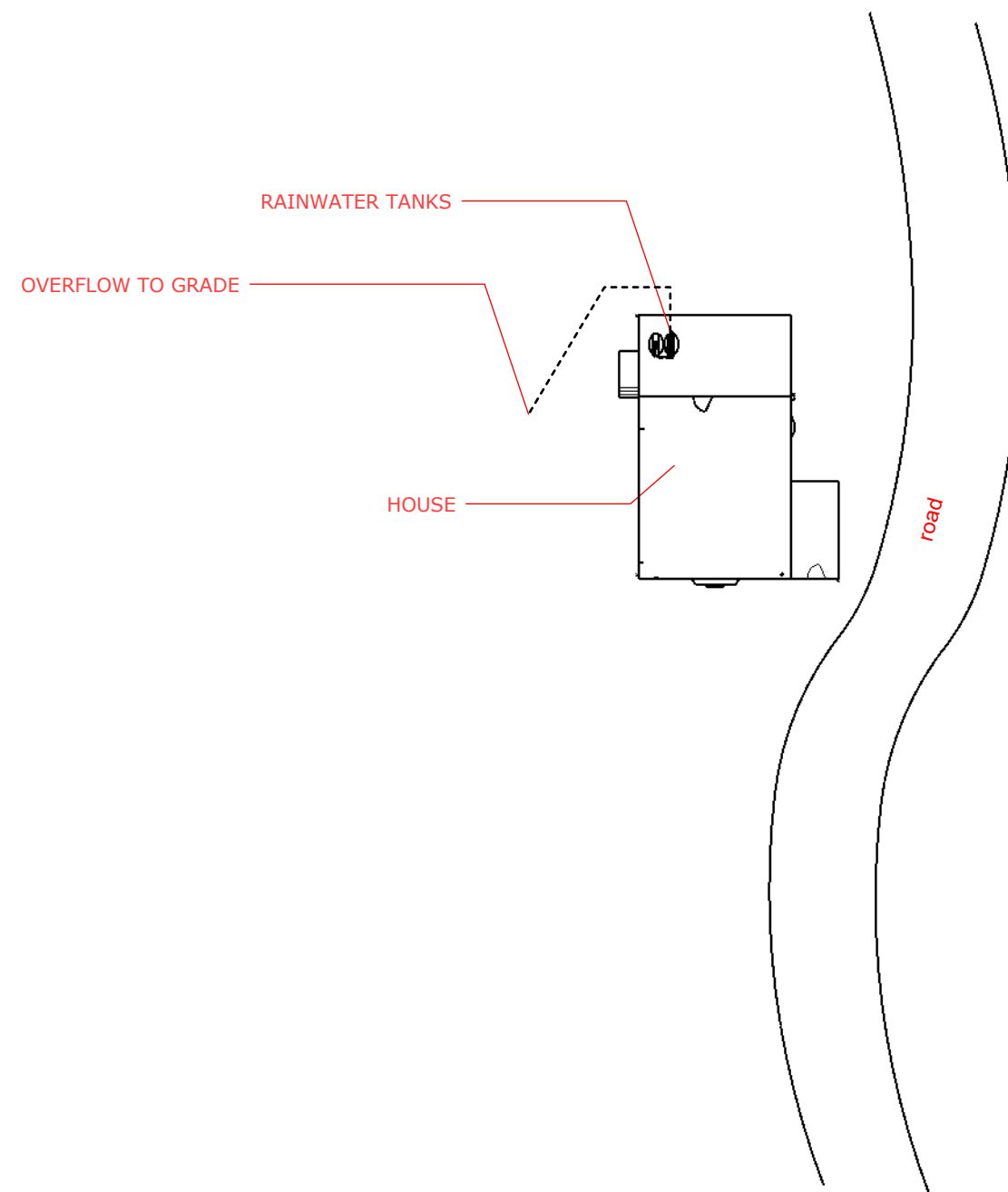
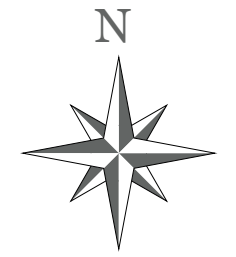
SASKATCHEWAN MAIN OFFICE  
5 Commercial Drive  
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**A 03**



## SITE PLAN

EXISTING DOWNPIPE  
MOVE TO OPPOSITE END

RESLOPE EXISTING GUTTER

RESLOPE EXISTING GUTTER

TERMINATE WITH (BWV)  
BACK WATER VALVE

OVERFLOW RAINWATER  
TO GRADE

EXISTING DOWNPIPE  
MOVE TO END

CONNECT TO HOME PLUMBING

TWO NEW DOWNPIES  
JOIN AND FEED INTO HOUSE

CORE CONCRETE  
SEAL WITH HYDRAULIC CEMENT  
OR MECHANICAL SEAL

IF REQUIRED TRENCH  
TO REVEAL PIPE BELOW GRADE

TRAP DOOR

EQUIPMENT SCHEDULE	
RSM	RAINSEEKER 540 USG SYSTEM - ABOVEGROUND
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RWT 2	- RAINWATER TANK EXPANSION 270 USG
RPMP	RAINWATER PUMP
UV	TRIPLE FILTRATION AND UV SYSTEM
SOL	UV SOLENOID SHUT-OFF

PIPE AND WIRE SCHEDULE		
A	GUTTER	EXISTING GUTTER
B	DOWNPIPE	EXISTING DOWNPIPE, MIN 3"
C	CONYANCE PIPING	4" DIAMETER @ 1.5% SLOPE MIN. (PVC DRAIN PIPE OR SDR 35)
D	SUPPLY PIPE INTERIOR	1.0" DIAMETER (PVC, PEX, POLY OR COPPER)
E	PUMP POWERS	PROVIDED POWER CORD - 50 ft

POWER POLE

EXISTING DOWNPIPE  
MOVE

OPTIONAL  
RUN PIPE ALONG GROUND  
UNDER WINDOW

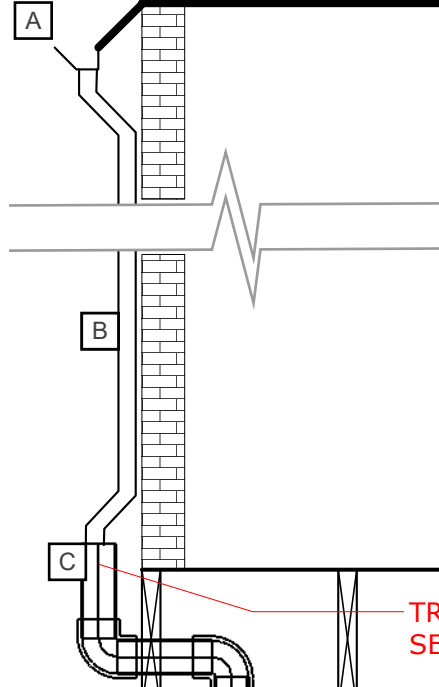
OPTIONAL  
NEW DOWNPIPE

NEW GUTTER  
OPTIONAL

TWO EXISTING DOWNPIPE  
JOIN AND FEED INTO HOUSE

**ROOF PLAN**  
(SCALE 1:48)

CLEANFLO WATER  
TECHNOLOGIES

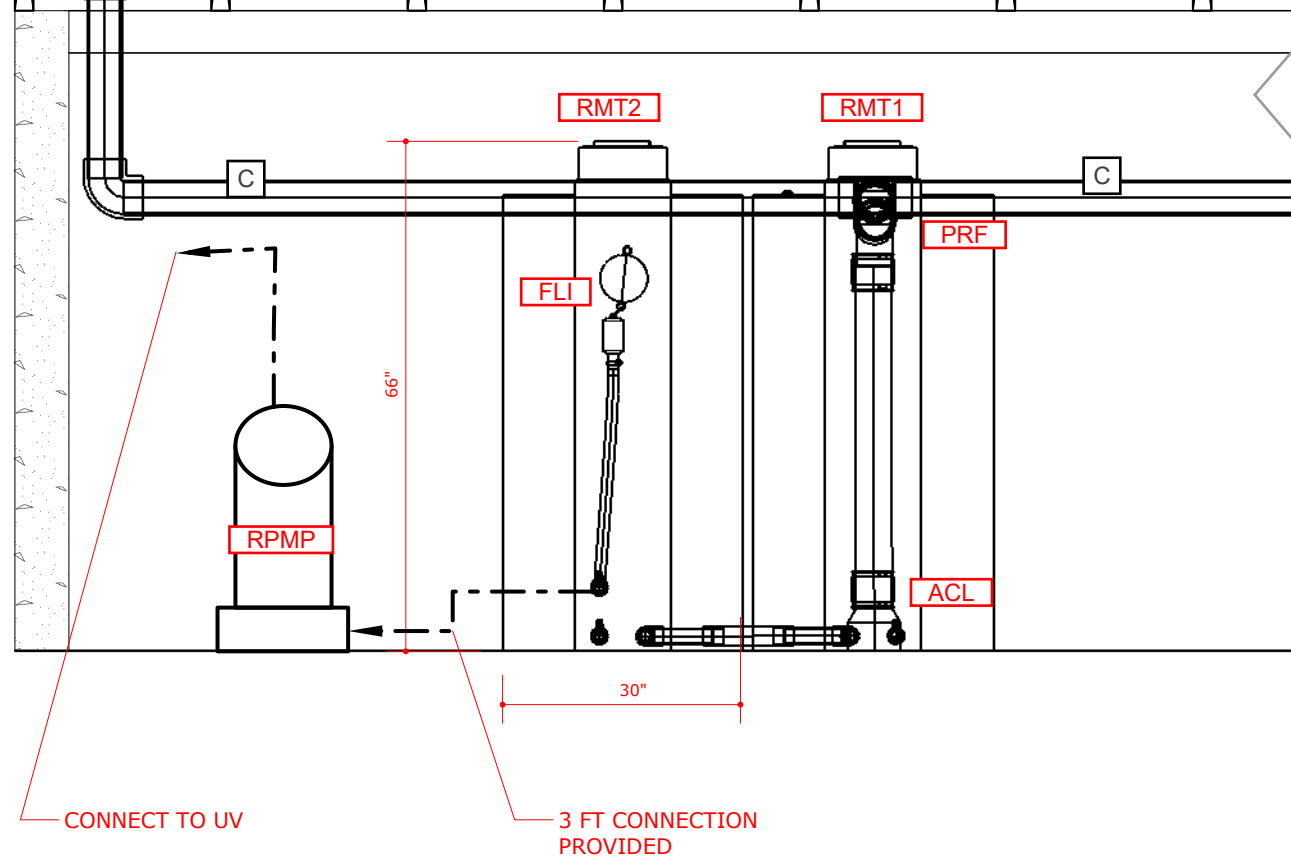


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TAG	PIPE AND WIRE SCHEDULE
A	GUTTER EXISTING GUTTER
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C	CONYANCE PIPING 4" DIAMETER @ 1.5% SLOPE MIN. (PVC DRAIN PIPE OR SDR 35)
D	SUPPLY PIPE INTERIOR 1.0" DIAMETER (PVC, PEX, POLY OR COPPER)
E	PUMP POWERS PROVIDED POWER CORD - 50 ft

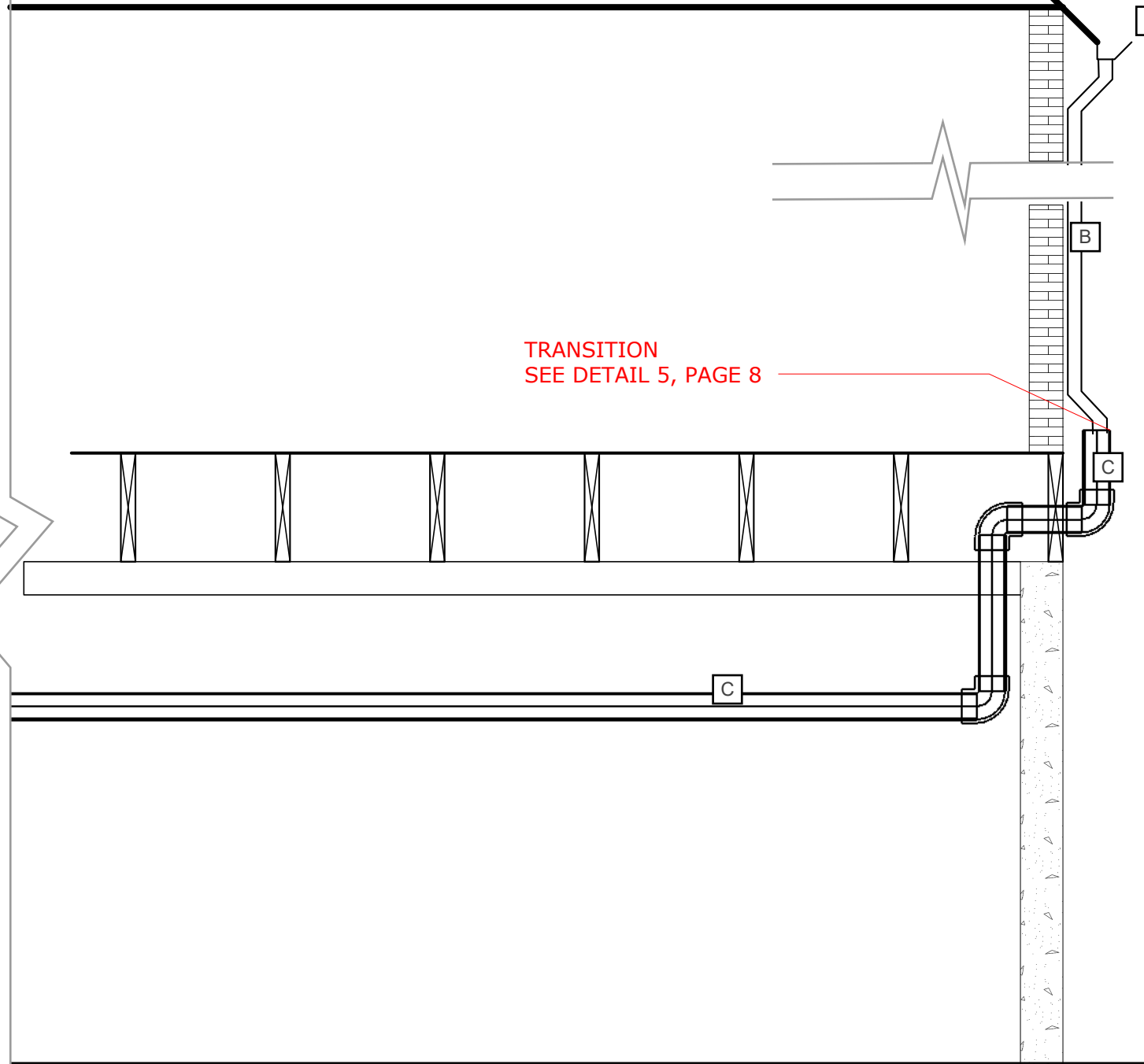
TRANSITION  
SEE DETAIL 5, PAGE 8

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SEE DETAIL 5, PAGE 8



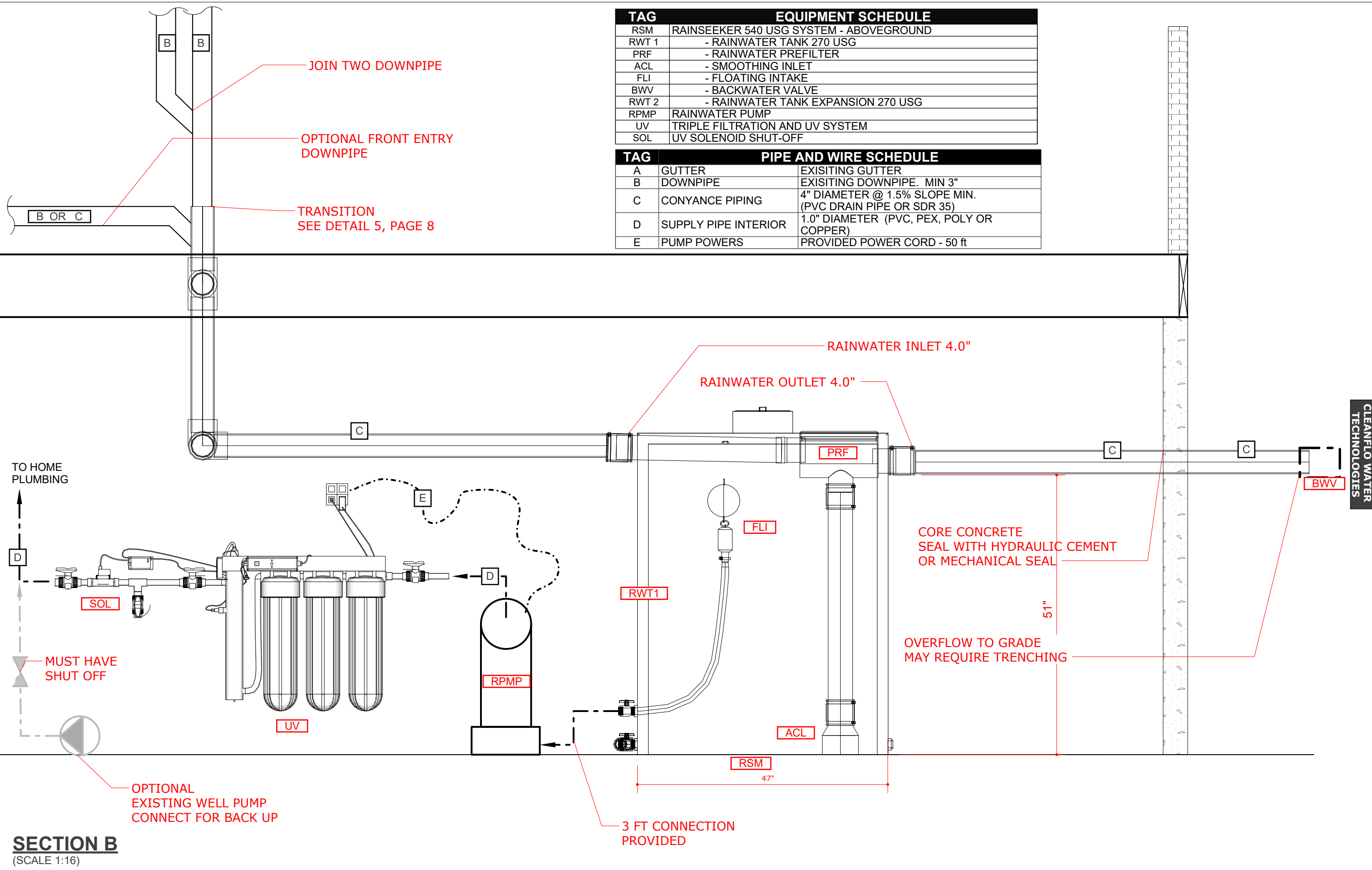
CONNECT TO UV

3 FT CONNECTION  
PROVIDED



CLEANFLO WATER  
TECHNOLOGIES

**SECTION A**  
(SCALE 1:24)



TAG		EQUIPMENT SCHEDULE	
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D	SUPPLY PIPE INTERIOR	1.0" DIAMETER (PVC, PEX, POLY OR COPPER)	
E	PUMP POWERS	PROVIDED POWER CORD - 50 ft	

**SECTION B**  
(SCALE 1:16)

