

TK-01
FEED WATER TANK
(CLIENT SCOPE)
CAPACITY : 1000 USG
MOC : PE
TYPE : VERTICAL
QUANTITY : 1 No.

TK-02
PRODUCT WATER TANK
(CLIENT SCOPE)
CAPACITY : 3000 USG
MOC : PE
TYPE : VERTICAL
QUANTITY : 1 No.

TK-03
REJECT WATER TANK
(CLIENT SCOPE)
CAPACITY : 4000 USG
MOC : PE
TYPE : VERTICAL
QUANTITY : 1 No.

TK-04
CIP/FLUSH TANK
(CLIENT SCOPE)
CAPACITY : 1000 USG
MOC : PE
TYPE : VERTICAL
QUANTITY : 1 No.

P-01
FEED PUMP

P-02
HIGH PRESSURE PUMP

P-03
CIP/FLUSH PUMP

MMF-01
MMF FILTER

S-01
RO PRESSURE VESSEL-1
RO PRESSURE VESSEL-2
RO PRESSURE VESSEL-3

CF-01A
CARTRIDGE FILTERS

CF-02A
CARTRIDGE FILTERS

DTK-01
Dosing Tank 40 Ltr

CP
CONTROL PANEL

LSL-01
LEVEL SWITCH

PS-01
PRESSURE SWITCH

PS-02
PRESSURE SWITCH

PS-03
PRESSURE SWITCH

PS-04
PRESSURE SWITCH

PS-05
PRESSURE SWITCH

PS-06
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PS-185
PRESSURE SWITCH

MECHANICAL SYMBOLS

PIPE LINE/PIPING

MAIN PROCESS LINE
(ARROW INDICATES DIRECTION OF FLUID FLOW)

CONCENTRIC REDUCER

ECCENTRIC REDUCER, FLUSH TOP

ECCENTRIC REDUCER, FLUSH BOTTOM

CLASSX CLASSY
INDICATION OF CHANGE OF PIPING CLASS

CLASS X
CLASS Y

VALVES

MANUAL BUTTERFLY VALVE

MOTORIZED BUTTERFLY VALVE

MANUAL BALL VALVE

MOTORIZED BALL VALVE

MANUAL GLOBE VALVE

NEEDLE VALVE

SAMPLING VALVE (PVC)

CHECK VALVE

PRESSURE RELIEF VALVE

GENERAL

BELLOW (FLANGED)

FLEXIBLE HOSE (FLANGED)

AIR VENT

DRAIN LINE

TIE-IN

OTHERS PIPELINE CONTRACTOR

SCOPE DEFINITION

EQUIPMENT

PUMP

AIR BLOWER

DOSING PUMP

PRESSURE VESSEL

CARTIDGE FILTER

MULTIMEDIA FILTER

STIRRER (MIXER)

ERT (PRESSURE BOOSTER)

WATER HEATER

CONTROL PANEL

VARIABLE FREQUENCY DRIVE

INSTRUMENT SYMBOLS

FM

ELECTROMAGNETIC FLOW METER

FM

ROTAMETER

PG

PRESSURE GAUGE

PT

PRESSURE TRANSMITTER

LSL

LEVEL SWITCH LOW

LAL

LEVEL ALARM LOW

LT

LEVEL TRANSMITTER

LSH

LEVEL SWITCH HIGH

DPS

DIFFERENTIAL PRESSURE SWITCH

DPT

DIFFERENTIAL PRESSURE TRANSMITTER

HPS

HIGH PRESSURE SWITCH

LPS

LOW PRESSURE SWITCH

ELECTRICAL CABLE

SOFT LINK/SYSTEM
INTERNAL GENERATED SIGNAL

◇

INTERLOCK LOGIC FUNCTION

XX
YYY

LOCAL MOUNTED INSTRUMENT
(BASIC SYMBOL)
XX = FIRST TWO DIGITS OF
UNIT NUMBER
Y = INSTRUMENT FUNCTION CODE
ZZZ= SERIAL NUMBER

○

CONTROL ROOM MOUNTED
INSTRUMENT

○

LOCAL PANEL MOUNTED
INSTRUMENT

INSTRUMENT IDENTIFICATION AND NUMBERING SYSTEM

PROPERTY MEASURED	INSTRUMENT FUNCTIONS										
	FIRST LETTER	TRANS-MITTER	INDICATING	STATUS DISPLAY	RECORDING	CONTROLLING	INTEGRATING	SWITCHING	EMERGENCY ACTUATING	ALARM	
DESCRIPTION	Q	T	I	B	R	C	Q	S	Z	A	
FLOW	F	FT	FI		FR	FC	FQ	FS	FZ	FA	
HAND				HB		HC		HS	HZ		
LEVEL	L	LT	LI		LR	LC		LS	LZ	LA	
PRESSURE	P	PT	PI		PR	PC		PS	PZ	PA	
PRESSURE DIFFERENTIAL	PD	PDT	PDI		PDR	PDC		PDS	PDZ	PDA	
QUALITY ANALYSIS OR CONCENTRATION	Q	QT	QI	QB	QR	QC		QS	QZ	QA	
SPEED	S	ST	SI		SR	SC		SS	SZ	SA	
TEMPERATURE	T	TT	TI		TR	TC		TS	TZ	TA	
MOVEMENT DISPLACEMENT	G	GT	GI	GB	GR				GZ		
WEIGHT, MASS OR LOAD	W	WT	WI		WR	WC		WS	WZ	WA	
ANY OTHER PROPERTY	X	XT	XI		XR	XC			XZ	XA	
MULTI VARIABLE	U										
COMPUTING FUNCTION	Y							YS	YZ	YA	

ABBREVIATIONS (INSTRUMENTS)

ESD - EMERGENCY SHUTDOWN

H - HIGH

HH - HIGH HIGH

FM - FLOW METER

FE - FLOW ELEMENT

FI - FLOW INDICATION

FIT - FLOW INDICATION TRANSMITTER

TVP - TRUE VAPOUR PRESSURE

L - LOW

OR - OVERRIDE

LL - LOW LOW

SR - SPLIT RANGE

GENERAL

CONTINUATION ARROWS :

1) LEFT SIDE OF SHEET:
FROM EQUIPMENT ON PREVIOUS SHEET
TO EQUIPMENT ON PREVIOUS SHEET

2) RIGHT SIDE OF SHEET :
TO EQUIPMENT ON NEXT SHEET
FROM EQUIPMENT ON NEXT SHEET

REVISION TRIANGLE

PIPING IDENTIFICATION

LINE NUMBER

2"- P 15 003-600CS3

PIPING CLASS/MATERIAL

LINE SUB-NUMBER

FIRST TWO DIGITS OF PROCESS UNIT 200

SERVICE INDICATION

NOMINAL PIPE SIZE

ABBREVIATION (GENERAL)

A/G - ABOVE GROUND

B/G - BELOW GROUND

CC - CORROSION COUPON

CI - CHEMICAL INJECTION

CK - CASTELLOC KEYED VALVE

D - DRAIN

EL - ELEVATION

FB - FULL BORE

FO - FLUSHING OUT

GO - GEAR OPERATED

HC - HOSE CONNECTION

IH - INSPECTION HOLE

LC - LOCKED CLOSED

LO - LOCKED OPEN

M - MOTOR

MH - MAN HOLE

MOV - MOTOR OPERATED VALVE

NC - NORMALLY CLOSED

NNF - NORMALLY NO FLOW

NO - NORMALLY OPEN

PVV - PRESSURE VACUUM VALVE

CP - CONTROL PANEL

MMF - MULI MEDIA FILTER

ERT - ENERGY RECOVERY TURBINE

RE - REFERENCE ELECTRODE

RO - RESTRICTION ORIFICE

RV - RELIEF VALVE

SC - SAMPLE COLLECTION

SCR - SCREWED CONNECTION

SP - SET POINT

TSO - TIGHT SHUT OFF

UC - UTILITY CONNECTION

V - VENT

CS - CARBON STEEL

PE - POLY ETHYLENE

PP - POLY PROPYLENE

GRE - GLASS REINFORCED EPOXY

SS - STAINLESS STEEL

DSS - DUPLEX STAINLESS STEEL

SDSS- SUPER DUPLEX STAINLESS STEEL

CS3 - CARBON STEEL WITH 3MM CORROSION ALLOWANCE

CSTD(PE) - CARBON STEEL WITH 1MM CORROSION ALLOWANCE & POLYETHYLENE LINED

NOTES

DESCRIPTION

DRAWING NUMBER

REFERENCE DRAWINGS

DEM

celar

شركة مياه البحيرة

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United Arab Emirates
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www.celarwater.com

JOB No. CWE/2022/ROP/3112

REV. 0

SHEET 2

SCALE NTS

ISSUED FOR APPROVAL

APPROVAL

PROJECT DRAWING REVISION

AREA : UAE

PROJECT : BRACKISH WATER REVERSE OSMOSIS PLANT

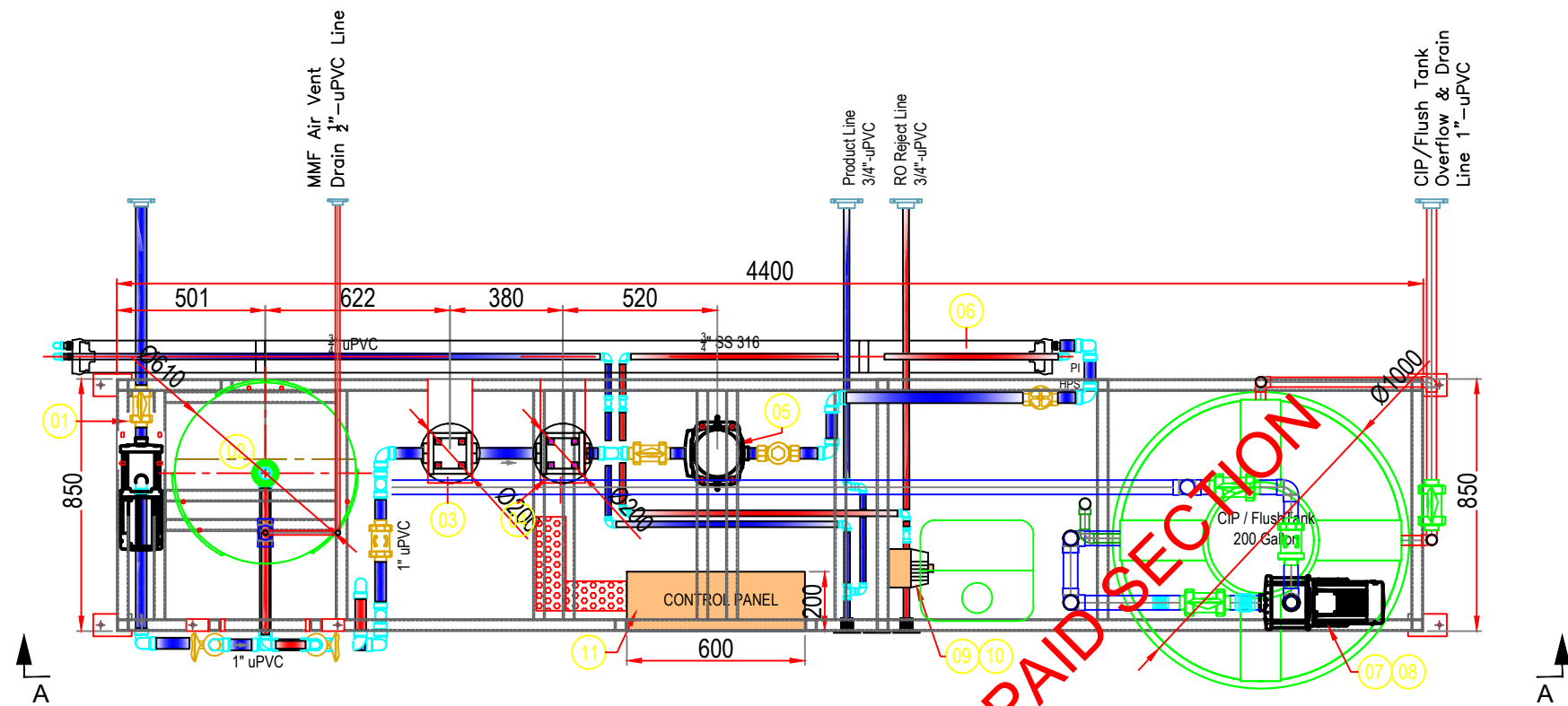
DWG.TYPE :

DESCRIPTION : 10,000 US GALLONS PER DAY

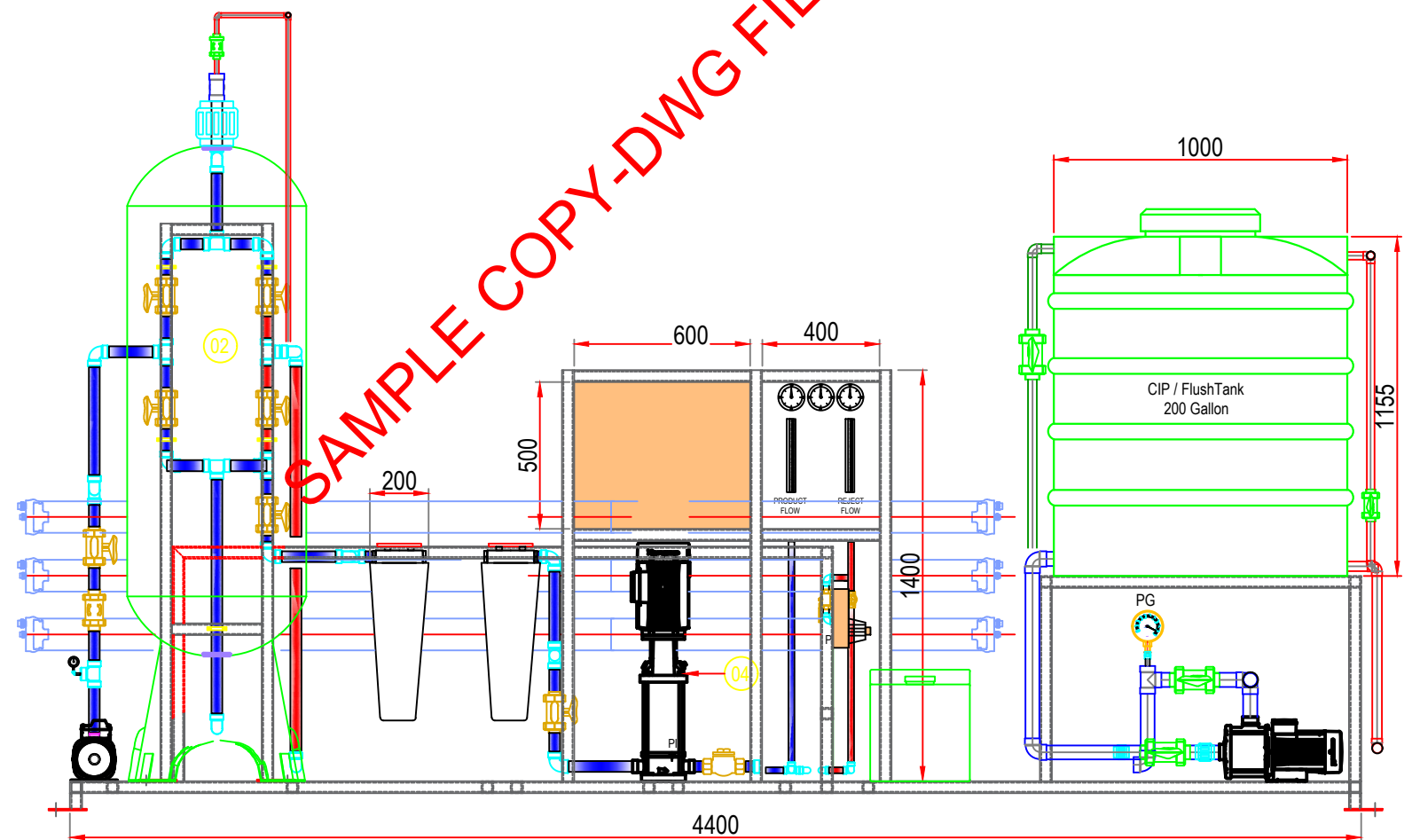
SCALE : 0 1 2 3 4 5 6

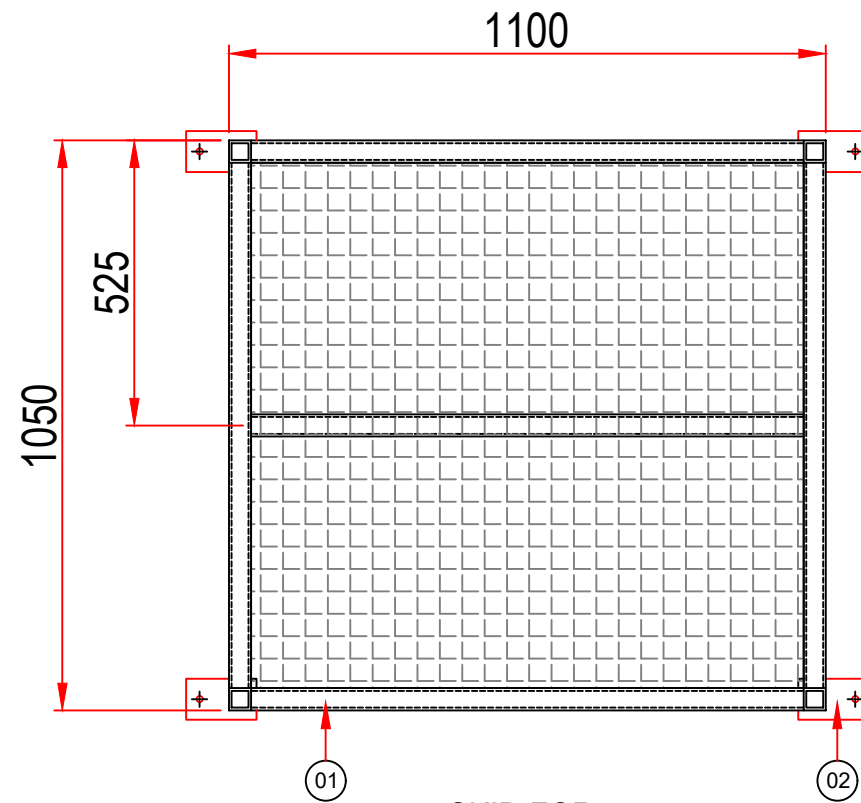
CAD DRAWN

M/S AI-FARDAN

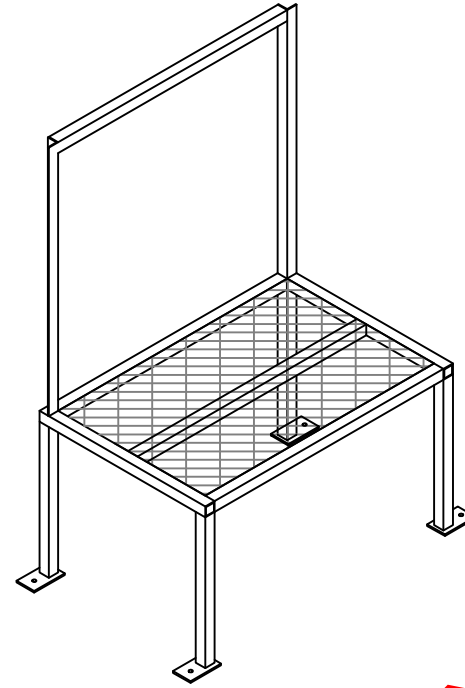


PLAN VIEW

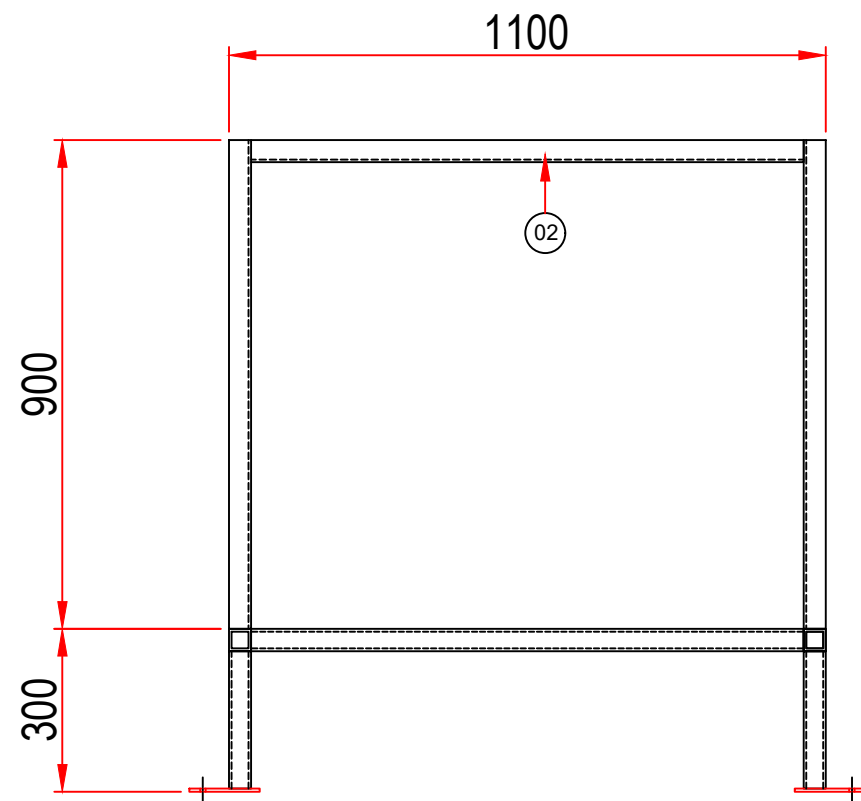




SKID FOR
CIP / FLUSH TANK (200 GALLON)

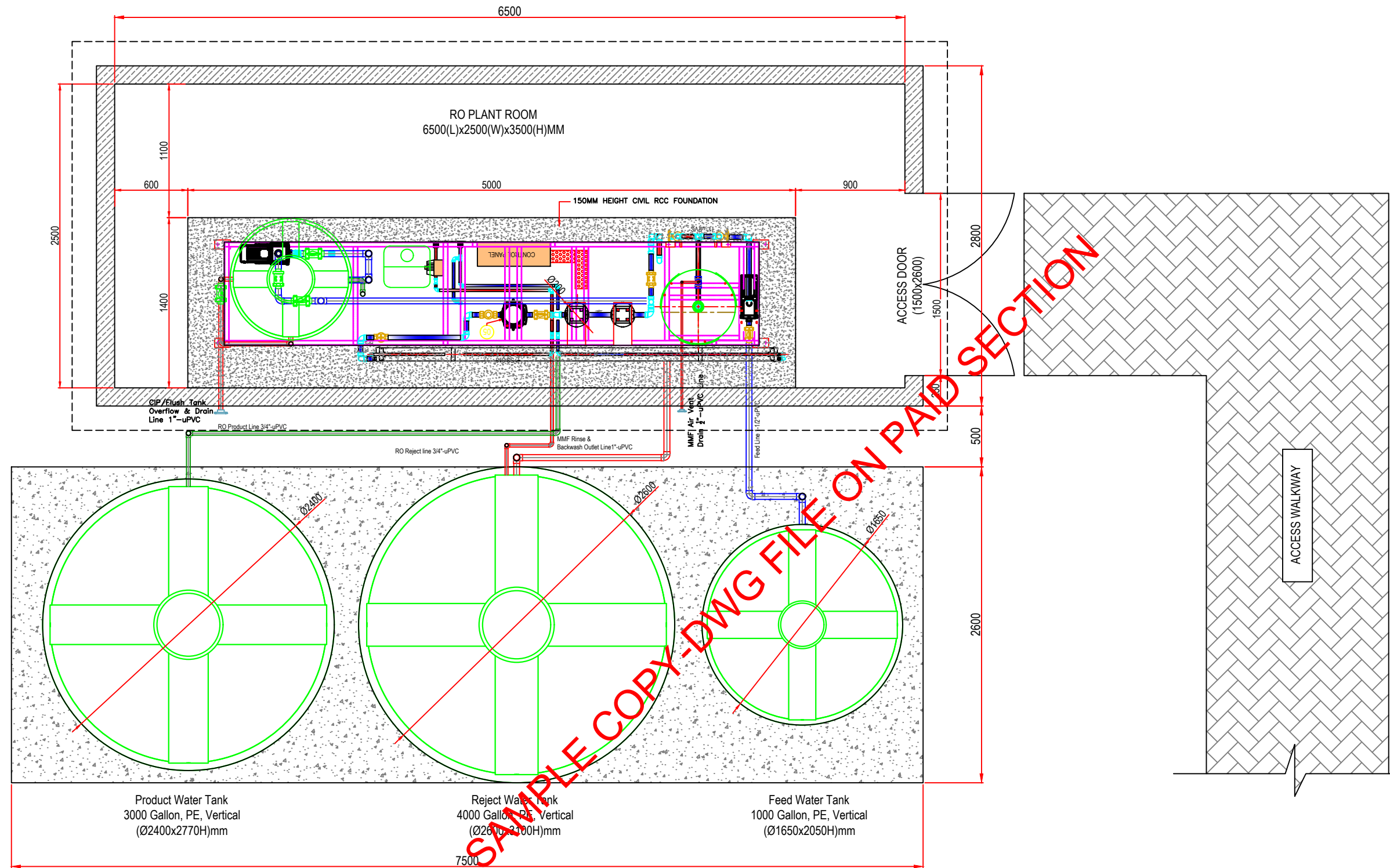


Isometric View



ELEVATION

Bill of Material			
Sl No.	Description	Material	Qty
01	Box Section (40x40x3mm)	MSEP	7 Mtr
02	L-Angle (40x40x3mm)	MSEP	3 Mtr
03	Base Plate (130x75x6mm)	MSEP	4 Nos



SITE LAYOUT PLAN VIEW

NOTE:
1. ALL DIMENSIONS ARE IN MM.
2. CELAR SHALL PROVIDE 150MM PROJECTION PIPE OUTSIDE THE CONTAINER FOR FEED, REJECT, PERMEATE & DRAIN. AFTER THAT IT WILL BE CLIENT RESPONSIBILITY TO ROUTE IT TO THE FINAL DESTINATION AS PER SITE LAYOUT.

