DOWLAND

DRINKING WATER TREATMENT PLANT (DWTP) PACKAGE

FILTERBOXX WATER TREATMENT SYSTEMS

CONTROL NARRATIVE

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FilterBoxx Project # 010705

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DOWLAND
NWT, Canada

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CONTROL NARRATIVE

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1. CONTROL NARRATIVE

1.1 Overview

This water treatment facility is designed to treat the well water from the Dowland construction site. The facility consists of the following micro systems:

- Feed control
- Clarification
- Raw Water Storage
- Suspended Solids Filtration and Removal
- Chemical Injection (i.e. maintenance and normal operations)
- Treated Water Storage
- Effluent Distribution System
- System Controller (SC) and operator interface
- Motor Control Panel (MCP)

The drinking water treatment facility, or DWTP, is fed from the raw water source by means of the Raw Water Pump (by Others) directly into the Laminar Plate Clarifier, TK-1000. A laminar plate clarifier is used to reduce the amount of suspended solid free-flow through the system filtration units. It is designed to handle variable suspended solid flows and amounts. Moreover, the accumulated solids can be flushed/drained out quite easily by the operations staff.

To achieve the low micron filtration level desired while utilizing an automated, back-flushable filter, FilterBoxx proposes to use the advanced Vortisand® sand filtration system. The Vortisand® filters provide a filtration that is 10 times finer than the traditional sand filters. The filter is designed to achieve 0.45 micron solid removals and its high performance results from a unique concept that combines centrifugal separation and sand filtration.

The typical depth down flow filter approach uses a media bed that hold solids at a rate of 2 to 5 pounds of solids per cubic feet. The Vortisand® filters work on cross flow filtration, like a membrane system, which allows the water to maintain a cleaning action at the top of the ultra fine media working layer. If this same Vortisand® media was used in a conventional down flow design, the filter would blind over and channeling would quickly develop throughout the bed. This technology allows Vortisand® to filter down to 0.45 micron, easily carry away solids during backwash and maintain higher filter efficiency.

The conventional down flow depth filter technology can only filter down to 10 – 15 microns and to achieve 10 micron filtration a filter cake must be formed at the top of the filter bed. Typically after backwash the filter can only reduce solids down to 15 – 20 micron until a new filter cake is developed and then filtration may decrease to 10 micron. The filtered water quality therefore changes throughout the filtration cycle. Once the filter cake creates a higher then design pressure differential, the solid captured in the top lay of the conventional filter bed can channel down through the bed and out the bottom distribution piping, resulting in a surge of Total Suspended Solids (TSS) back into the filter effluent.

Another significant difference in the two technologies is that the depth filter will require higher water flow during backwash, requiring a larger pipe to be installed on both the backwash supply and the backwash wastewater discharge. Typically, a down flow filter will use 25% to 50% more total backwash water over the same period, resulting in higher utility and higher wastewater cost.

The system proposed includes one (1) 12" diameter Vortisand® filters.

The treated water effluent from the Vortisand® filters will pass through the Ultraviolet (UV) disinfection system. As the final effluent passes around the quartz UV light tubes, the bacteria or viruses that were not filtered by the Vortisand® filtration system will be rendered "inactive" or dead.

1.2 Control System

The DWTP equipment is controlled automatically by a programmable System Controller, or SC. The facility operator will interface with the system by means of a Motor Control Panel, or MCP. The operator will not have access to any of the operating parameters, such as Alert/Alarm set points, except for a few timers such as the Vortisand Filter Backwash frequency and duration. Alerts/Alarms are displayed at the MCP through a **RED** indication light and will require operator action before the system can resume its normal course.

The following information is provided on the DWTP MCP for SC-controlled devices:

Pumps/Blowers/ Motors:	Device selector toggle switch: **HAND/OFF/AUTO**
Device Operation/ Indication:	Device status indication lights: **GREEN** for ON or RUNNING
Sequencing Timers:	Manual timer relay blocks located inside the MCP
System Alert/Alarm:	System Alert/Alarm status indication light: **RED** is for Alert/Alarm
System Alert/Alarm Reset Pushbutton:	System Alert/Alarm Reset Pushbutton to acknowledge and clean any system Alerts/Alarms

The DWTP **does not have** a system wide operation mode control switch that would enable the system operator to **RUN** or turn **OFF** the entire system. The DWTP SC requires that ALL device toggle switches be in **AUTO** as well as be clear of any Alerts/Alarms to run normally. If one or more devices are not in **AUTO**, the WWTP will fail to operate correctly and poor waste water treatment could result.

IMPORTANT NOTICE:

ONLY QUALIFIED PERSONNEL SHOULD ATTEMPT TO OVERRIDE EQUIPMENT (I.E. RUN DEVICES IN HAND) AND DOING SUCH

INCORRECTLY COULD RESULT IN DAMAGE TO THE SYSTEM AND/OR INJURY.

1.3 Emergency Stop Disconnect, ESD

An **EMERGENCY STOP DISCONNECT, or ESD** push-button is located on the MCP. When this push-button is pushed in, all pumps, motors and blowers in the system are disabled and turned **OFF** regardless of their current settings and all valves will de-energize. The ESD push-button is hardwired to interrupt power to the SC's digital outputs. When the ESD push-button is reset, (i.e. physically pulled out) all devices will return to their original operating state.

IMPORTANT NOTICE:

THE OPERATOR MUST BE CAREFUL WHEN RESETTING THE MCP ESD PUSHBUTTON; DEVICES CAN START UP SUDDENLY AND COULD STARTLE THE OPERTOR AND CAUSE PERSONAL INJURY.

1.4 System Power Failure/Interruption

The DWTP will **NOT RESTART AUTOMATICALLY** after a power interruption. When power is restored after a power interruption, the entire unit will remain **OFF** until the operations staff resolves the issues causing the power interruption and presses the MCP System Alert/Alarm Reset Pushbutton.

The once the MCP System Alert/Alarm Reset Pushbutton is pressed the system will continue on with its "last state" operation.

2. Alert/Alarm Handling

1. All Alerts/Alarms are displayed on the MCP with a **RED** light.

2. Once the operator has performed the necessary service to clear the Alert/Alarm condition(s) and prevent them from re-occurring, the MCP System Alert/Alarm Reset Pushbutton should be pressed to reset and clear the Alert/Alarm from the screen. If the Alert/Alarm condition(s) still physically exists after it has been reset, the system will indicate the issue with the **RED** indication light after the Alert/Alarm time delay has elapsed.

2.1 Alert versus Shutdown Alarms

Alerts do not cause any device to stop or close, nor do they cause the WWTP system to shut down. The operator should take Alerts as a warning that the system needs attention. Rather than shutting down

devices due to these alerts, continued operation is allowed with the intention that operator attention can provide uninterrupted system operation and production of good quality water from this equipment.

If the DWTP system experiences a ***Shutdown Alarm***, the system will shut down and the appropriate devices will be automatically stopped/closed (i.e. AUTO-OFF or AUTO-CLOSE), according to the shutdown sequence in the Device Sequencing Chart (DSC).

When the Alarm has been reset via the MCP System Reset pushbutton, the unit will start up.

For example, if a pump is running in its auto condition and an Alarm occurs, the SC will stop the pump and the system and the Alarm indication light will appear. Once the operator has reset the Alarm and restarted the system, as described above, the pump will restart in auto (provided that interlock conditions that permit the pump to run are satisfied). If the Alarm condition still exists, another Alarm will be generated and the pump will stop again.

An Alert and/or Alarm will cause the MCP Alert/Alarm indication light to turn on. If the Alert/Alarm condition is cleared before the operator has silenced the horn or acknowledged the Alert/Alarm, the indication light will automatically turn off.

IMPORTANT NOTICE:

Please note that the following sections are simple overviews of how the WWTP is meant to operate. There are other pieces of documentation that need to be reviewed in conjunction with the System Control Narrative, such as the system Piping and Instrumentation Drawings (P&IDs), Process Flow Drawings, System Controls Chart (SCC), Device Sequencing Chart (DSC), and system Operation and Maintenance (O&M) manual. This documentation will describe the system in greater depth.

3. System Mode of Operation Selection

The entire DWTP is split in three (3) areas:

a) Clarification,
b) Vortisand Sand Filtration, and
c) Treated Water Distribution.

The equipment in all three (3) areas is either in **RUN** or **OFF** mode.

3.1.1 RUN Mode

RUN mode is considered the "normal operation" of the entire system and should be seen as the automatic operation and can be performed by the operator by selecting **AUTO** on ALL the system device Hand-Off-Auto toggle switches located on the Main Control Panel (MCP). During **RUN** mode operator intervention is not required unless an Alert/Alarm is active.

When in **RUN** mode, the system will perform the following control functions:

- Level control of all feed and storage tanks (includes associated equipment)
- Vortisand Sand Filtration system
- Treated Water Distribution system

Please refer to the DWTP Device Sequencing Chart (DSC) for detailed information on the sequencing steps when the system is placed in **ONLINE** mode.

3.1.2 OFF Mode

The system can be shut off by the system operator by selecting the **OFF** mode selection at the MCP. Turning the system to **OFF** mode will stop and close all devices in a safe and orderly manner to prevent damage to the operating staff and system equipment. Please refer to the DWTP Device Sequencing Chart (DSC) for detailed information on the sequencing steps when the system is placed in **OFF** mode.

3.1.3 Raw Water Feed Flow Measurement

A Flow Indicating Element, FE/FI-9090, measures the flow rate of the incoming raw water. This flow is used by the operations staff to calculate the total input for the DWTP per time period (i.e. USGPM). This value is not used by the automated SC to control the system, and is only for indication purposes.

3.1.4 Raw Water Feed, Clarification and Raw Water Holding Tank

The Raw Water feed and Clarification portion of this system is composed of a submersible well pump, supplied by Others, and a Laminar Plate Clarification system. The Raw Water Holding tank will store the treated water effluent from the Clarification system.

The Raw Water feed pump, P-XXXX (tag to be determined by Others), is controlled by the level in the Laminar Plate Clarification tank, TK-1000. The system SC will control the Raw Water Pump (i.e. start and stop) based on the level switches inside the tank, LSLL-1085 and LSHH-1086.

The treated water from the Clarification system will overflow directly into the Raw Water Holding tank, TK-1500, where it will be used to feed the Vortisand Filtration system (refer to the following section).

As a safety precaution, the high-high level switch floats, LSHH-1086 and LSHH-1586, are located near the top of the tank Clarification tank, TK-1000, and Raw Water Holding tank, TK-1500. When tripped this switch will sound off an alarm and shut the entire system down indicating possible tank overflow.

3.1.5 Vortisand Filtration System

The Vortisand Filtration System is a self-contained and controlled system that operates by means of its own (i.e. independent) Programmable Logic Controller, or PLC. The Vortisand system PLC uses level control instrumentation in the Raw Water Tank, TK-1500, and Treated Water Tank, TK-6000, to control the operations of the Vortisand System Feed Pump, P-3000, and Backwash Pump, P-3100.

The Vortisand system is equipped with automatic valves that open and close based on the sequential operation of the Vortisand filtration system.

A pressure differential switch is mounted to the inlet/discharge of the Vortisand filtration vessel and is used to monitor the fouling rate of the filtration media located inside the filtration vessel.

The Vortisand system PLC will also send a General Alarm signal, UA-XXXX, to the DWTP SC if any problems arise in the operation of the Vortisand system.

The Vortisand system Feed Pump, P-3000, feeds water from TK-1500 to the Vortisand filter vessels. The Vortisand system PLC will start and stop P-3000 based on the following constraints:

a) the level in the TK-1500,
b) the level in TK-6000
c) the Backwash frequency of the Vortisand filter vessels
d) the operating pressure of the Vortisand filter vessels

3.1.6 Vortisand Filtration System Operation

The Vortisand filter system is controlled by its own stand alone PLC. The PLC will open and close the filter vessel valves based on the sequential mode of operation. There are five (5) and are as follows:

a) Filter Vessel Feed Valve, FV-3050
b) Filter Vessel Effluent Valve, FV-3053
c) Filter Vessel Backwash Valve, FV-3150
d) Filter Vessel to Drain Valve, FV-3051
e) Filter Vessel Backwash to Drain Valve, FV-3052

3.1.7 Vortisand Filtration System Backwash

The Vortisand filtration system vessels are backwashed intermittently based on the following:

a) operation duration,
b) pressure drop across the filter vessel, and

c) operator initiated sequence

The filter vessels will be flushed with treated water effluent at a rate of 40 to 60 USGPM.

3.1.8 Vortisand Filtration System Effluent Monitoring, Chemical Injection and Treated Water Storage Tank

The treated Vortisand filtration system effluent flows from the filter vessel to the system Treated Water Storage tank, TK-6000. While the effluent is flowing into TK-6000 it is dosed with 0.1 to 0.5 mg/L Sodium Hypochlorite (NaOCl) by means of chemical pump, CP-5000.

The treated water effluent will be stored in TK-6000 as feed for the treated water distribution pumps.

3.1.9 Treated Water Holding Tank and Pump Distribution System

The level in the TK-6000 is monitored by level switches, LSLL/L/H/HH-6088/87/86/85. The level switches will send a signal to the SC where it is used as a level controller for the start/stop operation of the Vortisand filtration system Backwash Pump, P-3100.

The Treated Water Holding Tank, TK-6000, has a few drain ports for miscellaneous uses.

The distribution system is made up of two (2) pumps, P-6100 and P-6200, that pressurize a diaphragm tank, F-6500. F-6500 is designed to sustain discharge pressure on the distribution system (by others) of 75 PSIG. Pumps P-6100/6200 will start and stop based on the pressure inside F-6500.

3.1.10 Chemical Injection Systems

There is one (1) chemical injection system located in the following areas:

- Vortisand Filter Treated Water Effluent
  - Sodium Hypochlorite

Refer to the rest of this manual and the DWTP DSC for details on how these systems are operated and controlled.

DRAWING SET FOR

DOWLAND CONTRACTING LTD.
DRINKING WATER TREATMENT PACKAGE (DWTP)
PROJECT # C-10-71103

FilterBoxx™

Packaged Water Treatment Solutions

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FilterBoxx™

CLIENT: DOWLAND CONTRACTING LTD.

TITLE: DOWLAND CONTRACTING LTD. DRINKING WATER TREATMENT PLANT TITLE PAGE

NO.	DATE	REVISION DESCRIPTION	BY	CHK'D
00	[illegible]	NOT CONNECTED	M	KS

DRAWN BY:	G.CATTANI
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CHECKED BY:	G.CATTANI
DATE:	29-MAY-07
APPROVED BY:	K.DLOUGH
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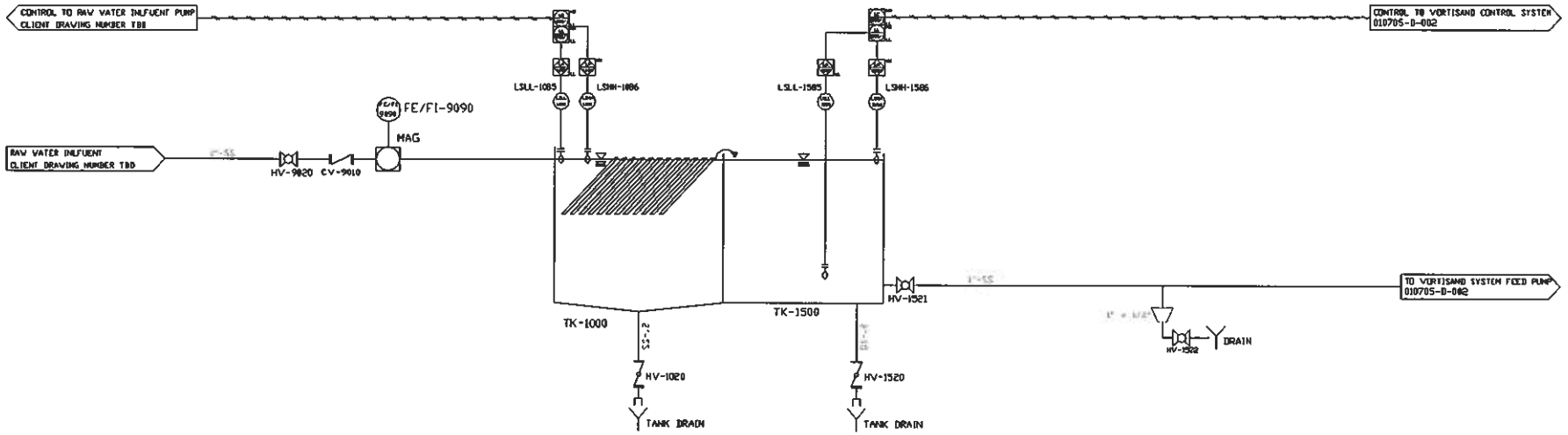
PLOT SCALE	N/A
REV.	000
SHEET No.	1 OF 5

LAMELLA PLATE CLARIFIER, TK-1000
DIMENSIONS (IMP) XX (D) x XX (L) x XX (W) (FT)
TOTAL VOLUME (IMP) XXX (FT3)
DIMENSIONS (MET) XX (D) x XX (L) x XX (W) (M)
TOTAL VOLUME (IMP) XX (M3)
CONSTRUCTION MATERIAL OF ALL TANKS: 5052 ALUMINUM

RAW WATER HOLDING TANK, TK-1500
DIMENSIONS (IMP) XX (D) x XX (L) x XX (W) (FT)
TOTAL VOLUME (IMP) XXX (FT3)
DIMENSIONS (MET) XX (D) x XX (L) x XX (W) (M)
TOTAL VOLUME (IMP) XX (M3)
CONSTRUCTION MATERIAL OF ALL TANKS: 5052 ALUMINUM



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TITLE: DOWLAND CONTRACTING LTD. DRINKING WATER TREATMENT PLANT RAW WATER TREATMENT

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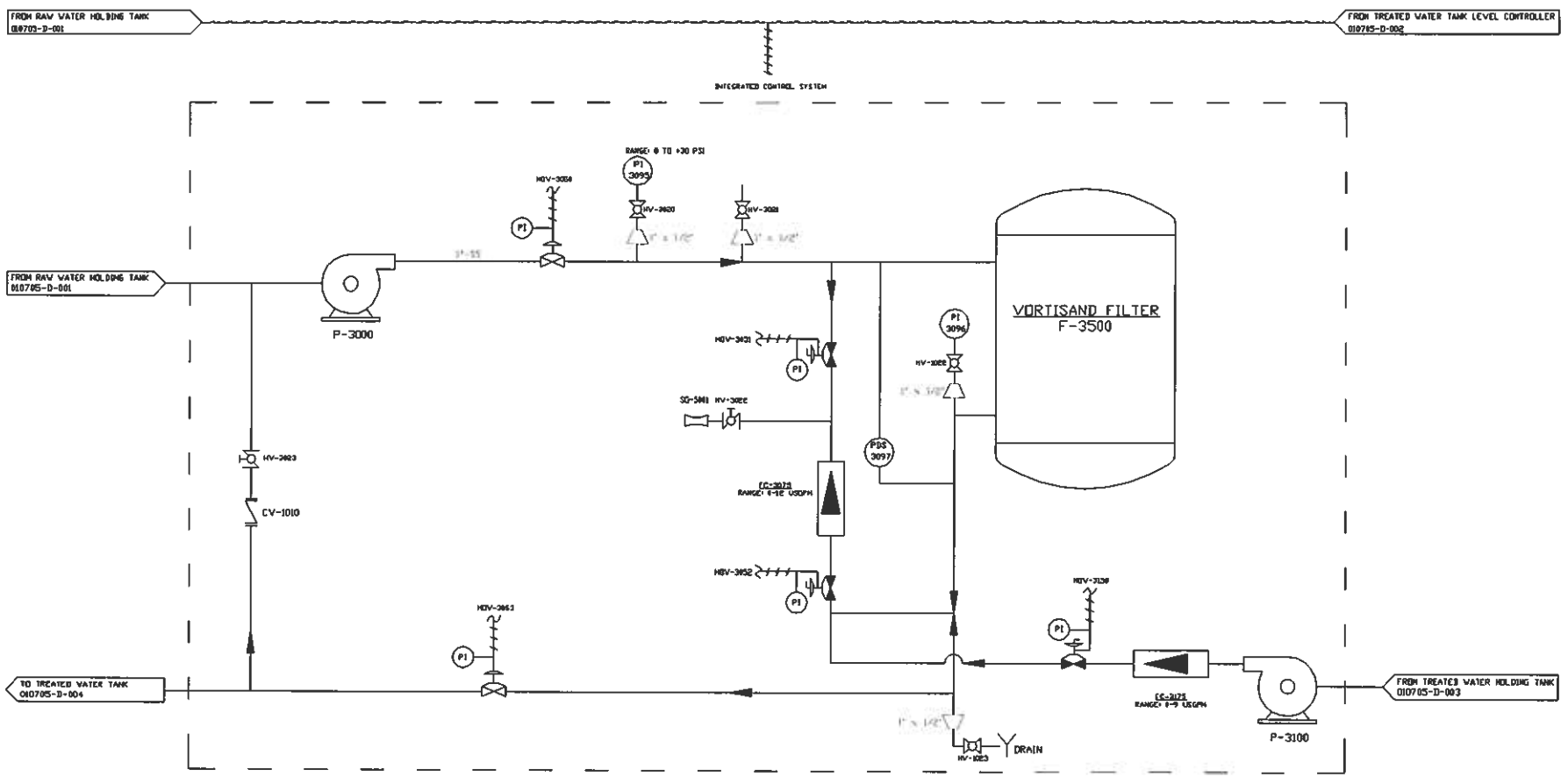
DRAWING No.: 010705-D-002
DATE: 29-MAY-07
SCALE: N/A
REV.: 000
SHEET No.: 2 OF 5

VORTISAND FILTRATION SYSTEM FEED PUMP, P-3000
MANUFACTURER:
MODEL:
TYPE:
ELECTRICAL:
RISER:

VORTISAND FILTRATION SYSTEM BACKWASH PUMP, P-3100
MANUFACTURER:
MODEL:
TYPE:
ELECTRICAL:
RISER:

VORTISAND FILTRATION VESSEL, F-3500
DIMENSIONS (IMP): XX (D) x XX (H) (FT)
TOTAL VOLUME (IMP): XX (FT3)
DIMENSIONS (METR): XX (D) x XX (H) (M)
TOTAL VOLUME (IMP): XX (M3)
CONSTRUCTION MATERIAL OF ALL TANKS: 5052 ALUMINUM



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CLIENT:
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TITLE:
DOWLAND CONTRACTING LTD.
DRINKING WATER TREATMENT PLANT
VORTISAND FILTRATION WATER SYSTEM

No.	DATE	REVISION DESCRIPTION	BY	CHK'D
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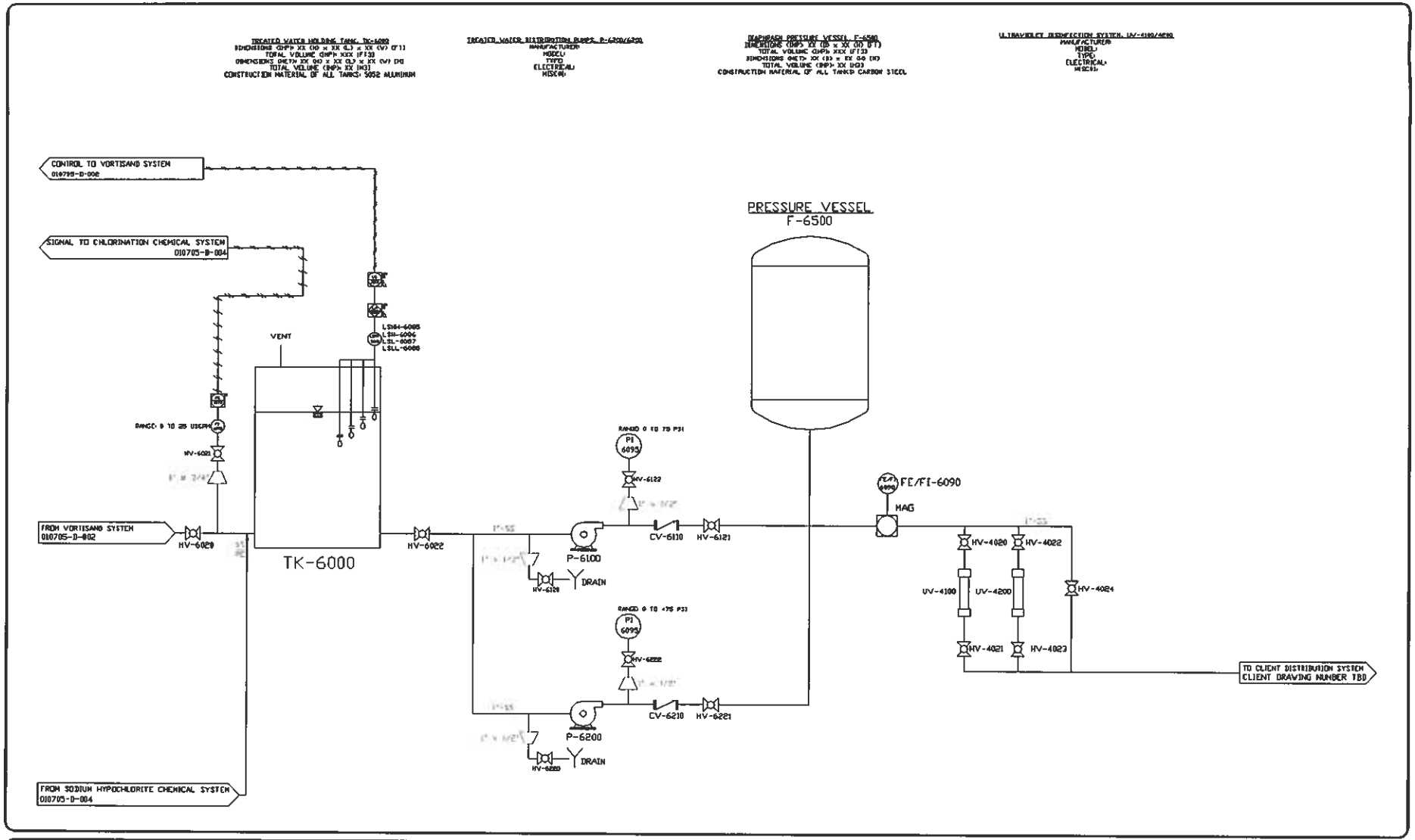

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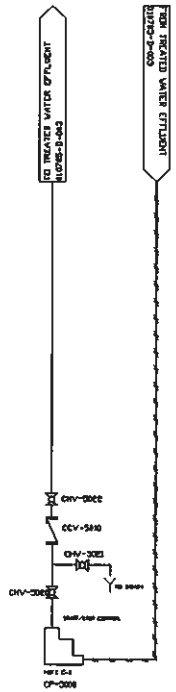

CHLORINE INJECTION PUMP (P-3000)
DISINFECTION SYSTEM
TYPE: DIAPHRAGM METERING PUMP
MANUFACTURER: PROMINENT
MODEL: TBD
HP: N/A
VOLTAGE: 120 V, 1 PH
RATED CAPACITY: TBD

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CLIENT: DOWLAND CONTRACTING LTD.

TITLE: DOWLAND CONTRACTING LTD. DRINKING WATER TREATMENT PLANT CHEMICAL DOSING SYSTEMS

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SHEET No.: 4 OF 5

INSTRUMENTATION IDENTIFICATION

	LOCATED ON SKID CONTROL PANEL	FIELD MOUNTED	AUXILIARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR
DISCRETE INSTRUMENTS	⊖	○	⊖
MAN MACHINE INTERFACE (MMI)	▭		▭
COMPUTER/DCS FUNCTION	⬡		⬡
PROGRAMMABLE LOGIC CONTROL	⊠		⊠

INSTRUMENT HEAT TRACED & INSULATED

INSTRUMENTS SHARING COMMON HOUSING

METERS

- POSITIVE DISPLACEMENT
- MAG — MAGNETIC FLOW
- VORTEX — VORTEX FLOW
- INLINE FLOW INDICATOR
- TURBINE
- CALIBRATION COLUMN
- LSLL LC — ULTRASONIC LOCI

VALVES

- GATE
- KNIFE GATE
- GLOBE
- BALL
- BUTTERFLY
- CHECK
- NEEDLE
- PINCH
- PLUG
- BALL CHECK
- DIAPHRAGM
- MUD VALVE
- ANGLE
- THREE-WAY
- VALVE WITH BLEED
- CONTROL VALVE WITH DIAPHRAGM ACTUATOR (SINGLE ACTING) AND POSITIONER
- CONTROL VALVE WITH CYLINDER ACTUATOR (SINGLE ACTING) AND POSITIONER
- PRESSURE REGULATOR SELF CONTAINED
- PRESSURE REGULATOR EXTERNAL PILOT
- BACK PRESSURE REGULATOR
- BACK PRESSURE REGULATOR W/ PILOT
- PRESSURE RELIEF
- PRESSURE / VACUUM RELIEF
- GAS SOLENOID ACTUATED
- ELECTRO SOLENOID ACTUATED
- N.O. — VALVE, NORMALLY CLOSED
- N.C. — CONTROL VALVE, FAIL CLOSE

PUMPS & EQUIPMENT

- CENTRIFUGAL PUMP
- SUBMERSIBLE PUMP
- POSITIVE DISPLACEMENT BLOWER WITH FILTER AND SILENCER
- CHEMICAL FEED PUMP
- INLINE PUMP
- SUMP PUMP
- TURBINE PUMP
- AIR OPERATED DIAPHRAGM PUMP
- PROGRESSIVE CAVITY PUMP

MIXER — STATIC MIXER — MECHANICAL INLINE MIXER

EJECTOR — HEATING/COOLING COIL PULSATION DAMPENER

BASKET-TYPE STRAINER — CARTRIDGE FILTER — UF MEMBRANE

RO MEMBRANE — UV STERILIZER

LINE TYPES & TAGS

- MAIN PROCESS LINE
- SECONDARY PROCESS LINE
- EXISTING PROCESS LINE
- PNEUMATIC SIGNAL
- ELECTRICAL SIGNAL
- CAPILLARY TUBING
- CONTROL SYSTEM DATA LINK
- HYDRAULIC SIGNAL
- FLEXIBLE HOSE
- SKID EDGE
- GRADE
- OPTIONAL ITEM
- INSTRUMENT AIR SUPPLY
- INSTRUMENT GAS SUPPLY
- ELECTRICAL INTERLOCK
- PIPE W/INSULATION
- PIPE W/INSULATION & TRACING
- LINE CONTINUATION (ONE WAY FLOW)
- LINE CONTINUATION (TWO WAY FLOW)
- MOTOR

FITTINGS & SYMBOLS

- CONCENTRIC REDUCER
- ECCENTRIC REDUCER
- BLIND FLANGE
- PIPE CAP
- CONE STRAINER
- SPECTACLE BLIND CLOSED
- SPECTACLE BLIND OPEN
- Y-TYPE STRAINER
- DIAPHRAGM BADGE SEAL
- EXPANSION BELLOWS
- INJECTION QUILL
- CAMLOCK CONNECTION

LINE NUMBERING SYSTEM

P-W-10-CS-101

- LINE NUMBER
- MATERIAL
- LINE SIZE
- COMMODITY SPEC

DEVICE AND INSTRUMENT IDENTIFICATION TABLE

MEASURED OR INITIATING VARIABLE (NOTE 1) \ DEVICE	PRIMARY ELEMENT	TRANSMITTER	INDICATING TRANSMITTER	INDICATOR	RECORDER	CONTROLLER (NOTE 2)	INDICATING CONTROLLER (NOTE 2)	RECORDING CONTROLLER	SWITCH (NOTE 6)	INDICATING SWITCH (NOTE 2)	TRANSDUCER, RELAY, TRANSLATION, COMPUTATION	FLOW (NOTE 6)	CLOSE, VALVING DEVICE	FLOW LEVER (NOTE 2)
ANALYSIS	A	AT	AIT	AI	AR	AC	ACI	ACR	AS	ASH	ASL	AX		AY
CONDUCTIVITY/RESISTIVITY	CE	CT	CIT	CI	CR	CC	CIC	CRC	CS	CSH	CSL	CX		CY
TURBIDITY				QI	QR	QC	QIC	QRC		QSH	QSL			QY
VOLTAGE				EI	ER	EC	EIC	ERC		ESH	ESL	EX		EY
FLOW RATE	FE	FT	FIT	FI	FR	FC	FIC	FRC	FS	FSH	FSL	FX	FE	FY
FLOW TOTAL				FQI	FQR	FQC	FQIC	FQRC						
FLOW VELOCITY				VI	VR									
HYDRAULIC OPERATION				HI	HR	HC				HSH	HSL	HX		HY
HUMIDITY				MI	MR	MC	MIC	MRC		MSH	MSL	MX		MY
LEVEL	LE	LT	LIT	LI	LR	LC	LIC	LRC	LS	LSH	LSL	LX	LE	LY
MOISTURE				MI										
PRESSURE/VACUUM	PE	PT	PIT	PI	PR	PC	PIC	PRC	PS	PSH	PSL	PX	PE	PY
PRESSURE DIFFERENTIAL	PDE	PDT	PDIT	PDI	PDR	PDC	PDIC	PDRC	PDS	PDSH	PDSL	PDX		PDY
SPEED	SE	ST	SIT	SI	SR	SC	SIC	SRC	SS	SSH	SSL	SX		SY
TEMPERATURE	TE	TT	TIT	TI	TR	TC	TIC	TRC	TS	TSH	TSL	TX		TY
TIME/SEQUENCE				KI	KR	KC	KIC	KRC	KS	KSH	KSL	KX		KY
VIBRATION	VE	VT	VIT	VI	VR				VS	VSH	VSL	VX		VY
WEIGHT/FORCE	WE	WT	WIT	WI	WR				WS	WSH	WSL	WX		WY
POSITION				ZI	ZR	ZC	ZIC	ZRC	ZS	ZSH	ZSL	ZX		ZY
EVENT/STATUS									YS			YX		

PRELIMINARY

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CLIENT: DOWLAND CONTRACTING LTD.

TITLE: DOWLAND CONTRACTING LTD. DRINKING WATER TREATMENT PLANT P&ID LEGEND

NO.	DATE	REVISION DESCRIPTION	BY	CHK'D
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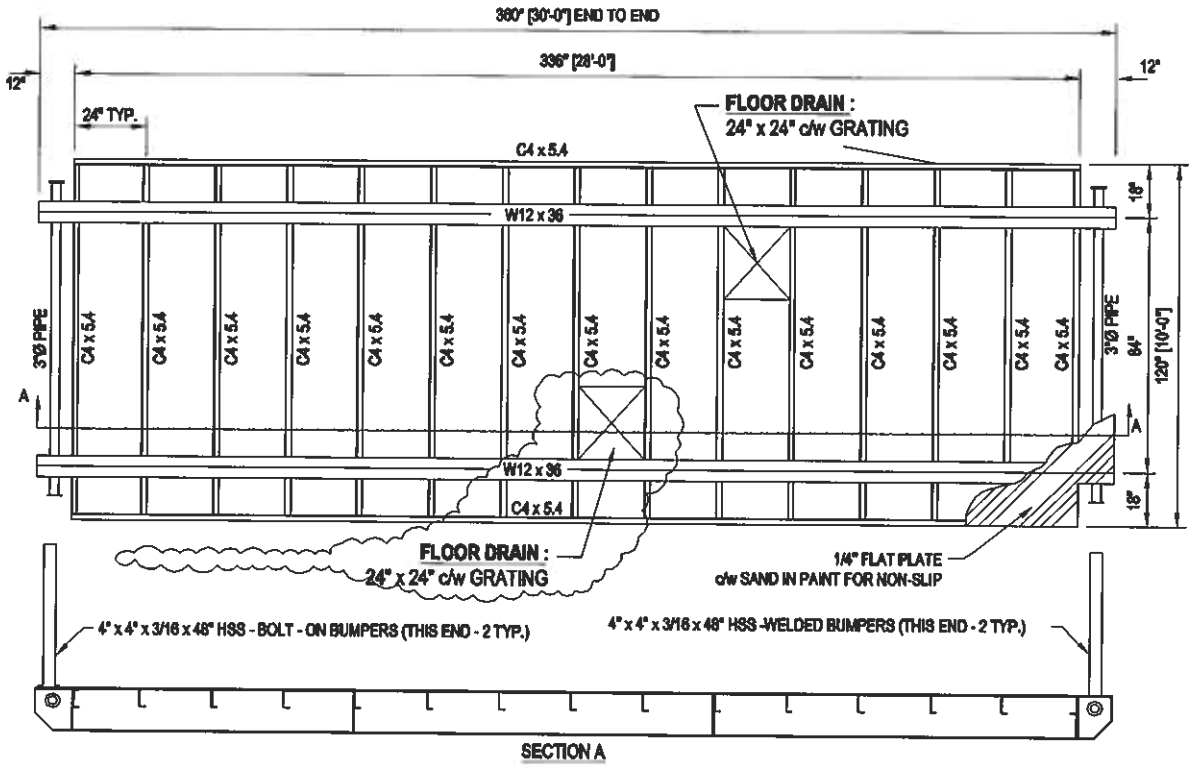
SCALE: N/A
REV.: 000
SHEET No.: 5 OF 5



SECTION A

SKID NOTES :

- SAND BLAST CLEAN (SP-6)
- ZINC CHROMATE PRIMER
- MARINE ENAMEL FINISH
- **2"** SPRAY FOAM INSULATION w/TOWERTHON II FIRE RETARDANT COATING ON THE UNDERSIDE
- DECKING IS STICH WELDED TO BEAMS
- FINISH COLOR IS TO BE **SLATE BLUE (QC260)**
- SUPPLY ONE 24" x 24" SUMP
- SUPPLY ONE 12" X 12" SUMP

PRELIMINARY

FilterBoxx

CLIENT: DOWLAND CONTRACTING LTD.

TITLE: DOWLAND CONTRACTING LTD. DRINKING WATER TREATMENT PLANT SKID DESIGN

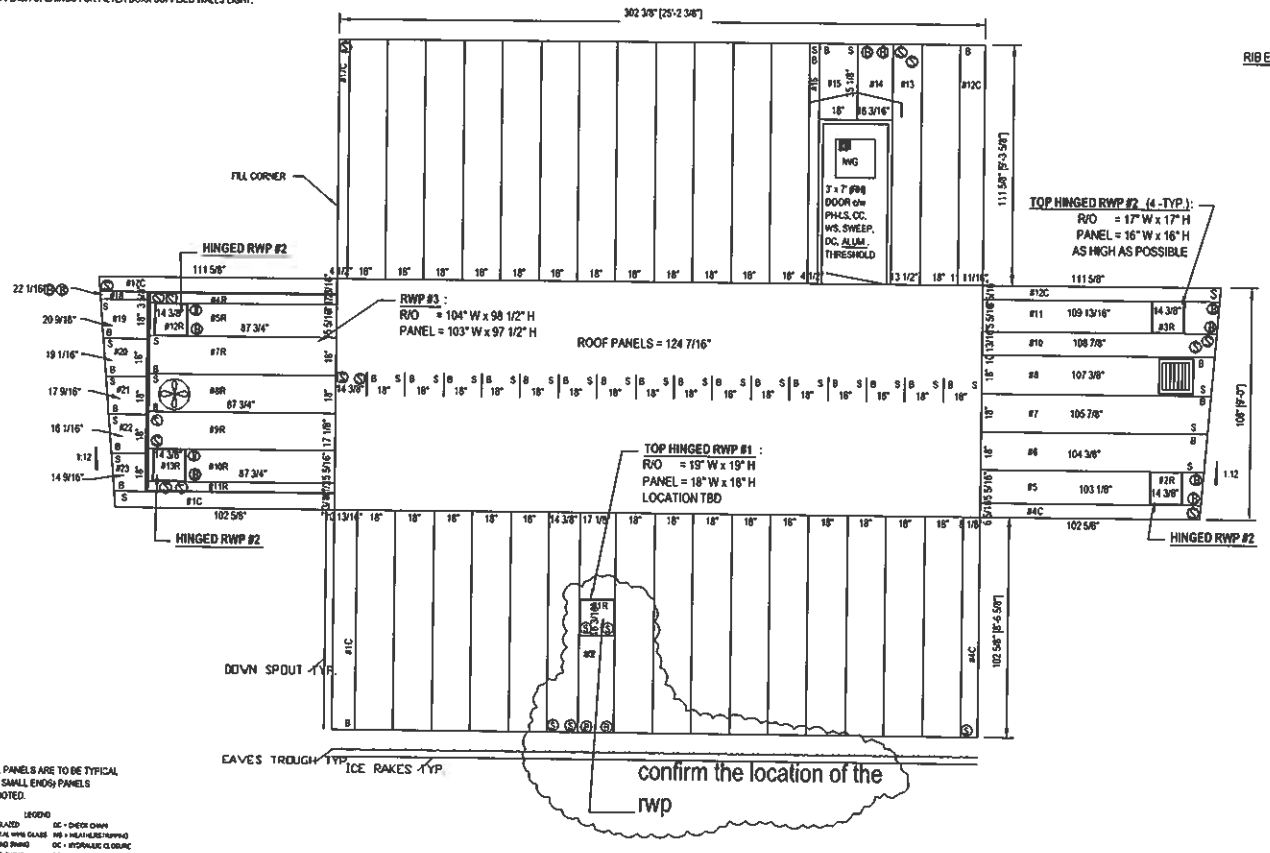
NO.	DATE	REVISION DESCRIPTION	BY	CHK'D

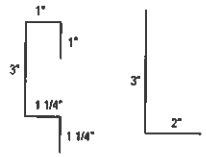
DRAWN BY: S.CATTANI
CHECKED BY: S.CATTANI
APPROVED BY: K.SLOUGH
JOB/QUOTE No.: N/A
PRINT SCALE: N/A
DRAWING No.: 070705-S-001
DATE: 12-JUN-07
SCALE: N/A
REV. 000
SHEET No. 1 OF 2

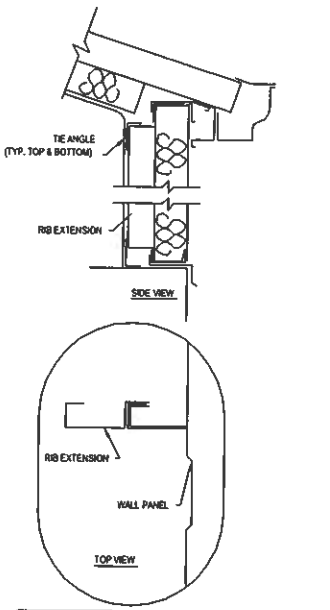
NOTES:
- EXTERIOR WALLS TO BE: 22 GA SLATE BLUE (QC260)
- EXTERIOR ROOF TO BE: 22 GA SLATE BLUE (QC260)
- EXTERIOR TRIM TO BE: 22 GA SLATE BLUE (QC260)
- DOORS TO BE PAINTED: SLATE BLUE (QC260)
- INTERIOR LINER TO BE: 24GA WHITE ALUMINUM
- INSULATION IN WALLS: R-20
- INSULATION IN ROOF: R-20
- VAPOUR BARRIER TO BE: 6 MIL

SURFACE AREA = 1,104 SQFT
APROX. TOTAL SHIPPING WEIGHT = 11,000 (BUILDING AND SKID)

- 2 - 12" x 18" STAMPED LOUVERS c/w INTERIOR SLIDERS
- 1 - 12" CANARM GP WALL EXHAUST FAN c/w 120V,1Ph, ¼Hp, 60Hz AND STORM HOOD
- ALL JOINTS TO BE CAULKED AND SEALED
- CUT AND FLASH OPENINGS FOR FILTER BOXX SUPPLIED WALLS LIGHT.







WALLS ARE 6 1/2" DEEP

NOTE:
ALL WALL PANELS ARE TO BE TYPICAL B/S (BIG / SMALL ENDS) PANELS UNLESS NOTED.

LEGEND
DB = DOUBLE GLAZED
IWG = INSULATED WIRE GLASS
RH = RIGHT HAND SWING
LH = LEFT HAND SWING
PH = PANIC HARDWARE
LC = LOCK CYLINDER
R-12 = CORE INSULATION (R-12)
DC = DECK DRAIN
HS = HEAT HOSE TRAPPING
DC = HYDRAULIC CLOSURE
SG = INTERIOR SLIDE GATE
GH = GASOL
INS = INSULATED

PRELIMINARY

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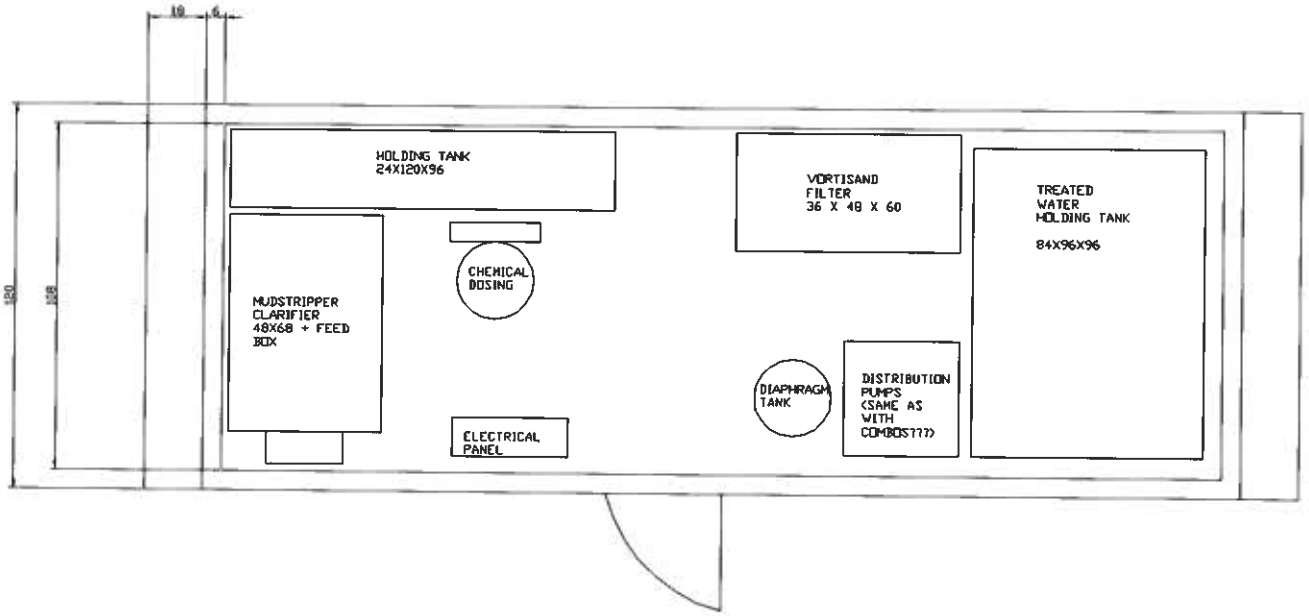
CLIENT: DOWLAND CONTRACTING LTD.

TITLE: DOWLAND CONTRACTING LTD. DRINKING WATER TREATMENT PLANT BUILDING DESIGN

NO.	DATE	REVISION DESCRIPTION	BY	CHK'D	DRAWN BY: D.CATTANI	DRAWING No.: 090705-S-002
					CHECKED BY: C.CATTANI	DATE: 12-JUN-07
					APPROVED BY: K.SLOUGH	SCALE: N/A
					JOB / QUOTE No.: N/A	
					PLOT SCALE: N/A	REV.: 000
						SHEET No.: 2 OF 2



PRELIMINARY

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CLIENT: DOWLAND CONTRACTING

TITLE: DOWLAND CONTRACTING
DRINKING AND PROCESS WTP
SYSTEM LAYOUT

NO.	DATE	REVISION DESCRIPTION	BY	CHK'D

DRAWN BY: S.CATTANI
CHECKED BY: S.CATTANI
APPROVED BY: K.SLOUGH
JOB/INVOICE No.: N/A
PLOT SCALE: N/A

DRAWING No.: 010705-D-001
DATE: 31-MAY-07
SCALE: N/A
REV.: 000
SHEET No.: 1 OF 1