SUNSHINE COAST REGIONAL DISTRICT

GARDEN BAY UV BUILDING

CONTRACT No. 12-175

RECORD DRAWINGS

OPUS DAYTONKNIGHT

North Vancouver Office
604-990-4800

210-889 Harbourside Drive
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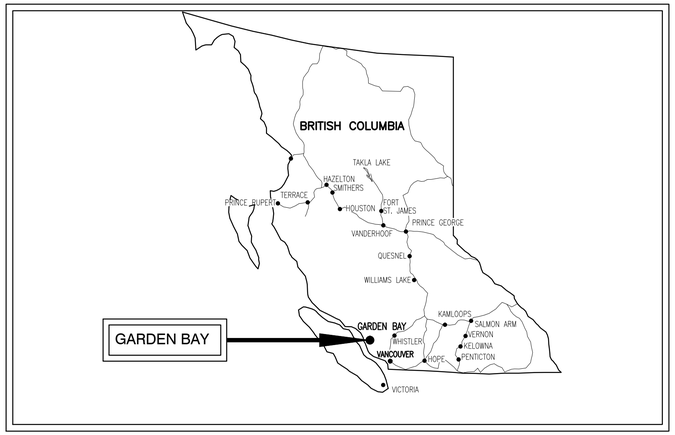
AREA PLAN
(N.T.S.)



KEY PLAN

INDEX TO DRAWINGS (TOTAL DRAWINGS = 19)

SUNSHINE COAST REGIONAL DISTRICT
GARDEN BAY UV BUILDING
CONTRACT No. 12-175

THIS DISTANCE = 100 ON ORIGINAL ANSI D SIZE SHEET
OTHERWISE ADJUST SCALES ACCORDINGLY
1:1 @ ANSI D
0 10 20 30 40 50 60 70 80 90 100 mm
PLOT: FULL 1:25 HALF 1:50

REVISIONS	ISSUE	DATE	DRAWN	CHK'D	APP'D	DESCRIPTION	ISSUE	DATE	DRAWN	CHK'D	APP'D	DESCRIPTION
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	B	APR25/12	AIS	WB	WB	ISSUED FOR CONSTRUCTION						
	C	MAY08/13	RB	WB	WB	RECORD DRAWING						

AutoCAD DRAWING

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SUNSHINE COAST REGIONAL DISTRICT
GARDEN BAY UV BUILDING
KEY PLAN, AREA PLAN & INDEX TO DRAWINGS

SCALE: AS SHOWN
DRAWING No. 028.206
SHEET No. G1 ISSUE C

FILE: G:\D&K CAD Drawings\DKSERVER P Share\Recdwgs\SUNSHINE COAST\28-206\GENERAL\28-206 G1.dwg Tab G1 13-06-07 vcgj20

INSTRUMENT SYMBOLS

	CONTROL ROOM LOCATION ACCESSIBLE TO OPERATOR	CONTROL ROOM LOCATION INACCESSIBLE TO OPERATOR	LOCAL LOCATION ACCESSIBLE TO OPERATOR	LOCAL LOCATION INACCESSIBLE TO OPERATOR	FIELD LOCATED
DISCRETE INSTRUMENTS					
HMI FROM DISTRIBUTED CONTROL SYSTEM					
SCADA DISPLAY/ COMPUTER FUNCTION					
PROGRAMMABLE LOGIC CONTROLLER					

INSTRUMENT FUNCTIONAL IDENTIFICATION LETTERS

	FIRST LETTERS (4)		SUCCEEDING LETTERS (3)		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION		UNCLASSIFIED	CLOSE–STOP DECREASE	UNCLASSIFIED
C	CONDUCTIVITY, pH (ACIDITY)		CLOSE	CONTROL OR CONTROLLER	
D	DENSITY, SPECIFIC GRAVITY	DIFFERENTIAL		OPEN–START–INCREASE	
E	VOLTAGE (EMF)		SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO (FRACTION)			FAIL
G	GAS, GAUGING (DIMENSIONAL)		GLASS, VIEWING DEVICE		
H	HAND, MANUAL				H–HIGH–(ALARM) HH–HIGH– (SHUTDOWN)
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		L–LOW–(ALARM) LL–LOW– (SHUTDOWN)
M	MOTOR	MOMENTARY	MONITOR, ON OR OPERATE		MIDDLE, INTERMEDIATE
N	MOISTURE, HUMIDITY		UNCLASSIFIED	START	USER'S CHOICE
O	UNCLASSIFIED		OPEN ORIFICE, RESTRICTION POINT (TEST) CONNECTION	STOP	OVERLOAD
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION	PNEUMATIC	
Q	QUANTITY	INTEGRATE, TOTALIZE	INTEGRATE, TOTALIZE	INTEGRATE OR TOTALIZE	
R	RADIATION, RADIOACTIVITY	RATIO	RECORD		
S	SPEED, FREQUENCY, SOLENOID	SAFETY		SWITCH OR SAFETY	
T	TEMPERATURE			TRANSMIT	
TQ	TORQUE				
TV	TELEVISION				
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECHANICAL ANALYSIS			VALVE, DAMPER, LOUVRE	
VS	VISCOSITY				
W	WEIGHT, FORCE		WELL		
X	ON/OFF	X AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OR PRESENCE	Y AXIS		RELAY, COMPUTE, CONVERT	
Z	POSITION, DIMENSION PRESENCE	Z AXIS		DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

ALARMS:

PC 069 H / L

HH = HIGH HIGH ALARM
H = HIGH ALARM
L = LOW ALARM
R = RATE ALARM

EXAMPLES:

PI 22 — FIELD LOCATED DISCRETE PRESSURE INDICATOR

YS 327 (% Q)

% AI = ANALOG INPUT
% AQ = ANALOG OUTPUT
PLC, % Q = DISCRETE OUTPUT
% I = DISCRETE INPUT
YS = STATUS OF SWITCH (EVENT SWITCH)

LAH 07 — CONTROL ROOM PC COMPUTER DISPLAY HIGH LEVEL ALARM

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0 10 20 30 40 50 60 70 80 90 100 mm

PLOT: FULL 1:25 HALF 1:50

GENERAL NOTES

1. FADED SYMBOLS AND LINES REPRESENT EXISTING EQUIPMENT.
2. HATCHED EQUIPMENT AND LINES TO BE REMOVED.
3. FOR DETAILS OF INSTRUMENTATION LINES 1" OR LESS REFER TO INSTALLATION OR LOOP DIAGRAMS.
4. INSTRUMENTATION FOLLOWS ISA STANDARDS & PRACTICES 5.1, S5.2, S5.3, S5.4, S5.5.

FLOW UNITS

AIR:	m^3/HR
CHEMICALS:	kg PER DAY/ GRAMS PER LITRE/ LITRES PER SECOND
SEWERS:	LITRES PER SECOND
SOLIDS:	DRY METRIC TONNES PER DAY/ OR kg/D
WATER:	LITRES PER SECOND

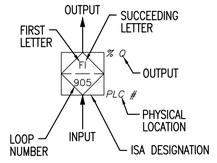
*NOTE: NUMBERS INDICATE MAXIMUM FLOW FOR PIPE AND EQUIPMENT SIZING. CONTROL VALVES MAY BE SIZED FOR LESS.

AREA CODES

100	HEADWORKS	–
200	PRIMARY	–
300	ATAD, SEPTAGE, RBS	–
400	TRICKLING FILTER, SOLIDS CONTACT	–
500	SOLIDS DEWATERING	–
600	FGR REMOVAL	–
700	CLARIFIER	–
800	FILTRATION/DISINFECTION	–
900	CONTROL BUILDING, ADMINISTRATION	–

ATTRIBUTE LEGEND

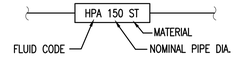
TYPICAL FORMAT



EQUIPMENT GENERAL

AP	– ACID METER PUMP	OMI	– OPERATOR MACHINE INTERFACE
B	– BLOWER	P	– PUMP
BP	– CAUSTIC METER PUMP	PG	– PRESSURE GAUGE
CRN	– O/H CRANE	PLC	– PROGRAMMABLE LOGIC CONTROLLER
CPS	– COMPUTER	PRV	– PRESSURE REDUCING VALVE
CON	– CONVEYOR	SCB	– SCRUBBER
CV	– CHECK VALVE	SCC	– SECONDARY CLARIFIER
CP	– COMPRESSOR	SCRN	– ROTATING SCREEN
EF	– EXHAUST FAN	SF	– SUPPLY FAN
FC	– FLUSHING CONNECTION	SG	– SLIDE GATE
HE	– HEAT EXCHANGER	SLG	– SLUICE GATE
M	– MOTOR	SL	– STOP LOG
MXR	– MIXER	SP	– SLUDGE PUMP
MCB	– MASTER CONTROL BOARD	SV	– SOLENOID VALVE
MCC	– MOTOR CONTROL CENTRE	TK	– TANK
ME	– MECHANICAL EQUIPMENT	VA	– VALVE
MV	– MOTORIZED VALVE	UP	– UTILITY PUMP
		VT	– VENTURA–NOZZLE
		WG	– WEIR

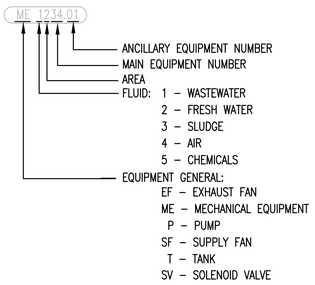
LINE NUMBERING SYSTEM



FLUID CODE	FLUID	FLUID CODE	FLUID
CLS	CHLORINE SOLUTION	PLW	PLANT WATER
CS	CRUDE SLUDGE	POL	POLYELECTROLYTE SOLUTION
D	DRAIN	PW	POTABLE WATER
DS	DIGESTED SLUDGE	PS	PRIMARY SLUDGE
FE	FINAL EFFLUENT	RBS	RETURN BIOLOGICAL SLUDGE
FOA	FOUL AIR	RC	RECIRCULATED FLOW
FOM	FOAM	RW	RECLAIMED WATER
H_2SO_4	SULPHURIC ACID LINE	SC	SCUM
HDSL	HOT DIGESTED SLUDGE LINE	SE	SECONDARY EFFLUENT
HPA	HIGH PRESSURE AIR	SS	SUSPENDED SOLIDS/SETTLED SEWAGE
HWR	HOT WATER RETURN	TD	TANK DRAIN
HWS	HOT WATER SUPPLY	TFE	TRICKLING FILTER EFFLUENT
LA	LIQUID ALUM	TFR	TRICKLING FILTER RECYCLE
LPA	LOW PRESSURE AIR	TSL	THICKENED SLUDGE
NaOH	CAUSTIC LINE	VT	VENT
NPW	NON POTABLE WATER	WR	WEIR
OF	OVERFLOW	WAS	WASTE ACTIVATED SLUDGE
OZ	OZONE	WBS	WASTE BIOLOGICAL SLUDGE
PE	POLYELECTROLYTE SOLUTION	WCS	WASTE CHEMICAL SLUDGE

NOTE: ALSO SEE MECHANICAL AND ELECTRICAL ABBREV.

EQUIPMENT NUMBER



PROCESS LINE TYPES

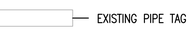
- MAIN (OR NEW) PROCESS LINE
- SECONDARY (OR EXISTING) PROCESS LINE
- EXISTING PIPING AND EQUIPMENT
- FUTURE PROCESS LINE
- EXISTING PIPING AND EQUIPMENT TO BE REMOVED
- OPEN CHANNEL (EXIST./NEW)

INSTRUMENT SIGNAL LINE TYPES

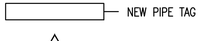
- CAPILLARY TUBE OR FILLED SYSTEM SIGNAL LINE
- ELECTRIC INSTRUMENT LINE – ANALOG
- ELECTRIC INSTRUMENT LINE – DIGITAL (ASD DRIVE)
- ELECTRIC INSTRUMENT SIGNAL (EXIST./NEW)
- ELECTRIC OR ELECTRONIC INSTRUMENT SIGNAL WITH DIRECTION AS SHOWN, PROCESS TAPS
- INTERNAL SYSTEM LINK (CPS, HMI)
- INTERNAL SYSTEM LINK (ISL – SOFTWARE OR DATA)
- PNEUMATIC INSTRUMENT SIGNAL
- SPARE

GENERAL SYMBOLS AND TAGS

1. ON DRAWING (IE. P101) CONTINUATION IS SHOWN AS:



2. ON DRAWING (IE. P102) CONTINUATION IS SHOWN AS:



- EXISTING EQUIPMENT TAG
- NEW EQUIPMENT TAG
- EXISTING PIPE TAG
- NEW PIPE TAG
- 1 — REVISION TAG

LINE DESIGNATIONS

- ES — ELECTRIC POWER SUPPLY 120 VAC 60 HZ (UNLESS OTHERWISE NOTED)
- LINE CONTINUATION TO/FROM
- SPECIFICATION AND/OR LINE NUMBER CHANGE
- * SUPPLIED BY EQUIPMENT VENDOR

FILE: G:\D&K CAD Drawings\ONSERVER P Shares\Recdwgs\SUNSHINE COAST\28-206\PROCESS AND INSTRUMENTATION\28-206 P1.dwg Tab P1 13-06-07 vcg20

AutoCAD DRAWING

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SUNSHINE COAST REGIONAL DISTRICT
GARDEN BAY UV BUILDING
STANDARD TAGS AND ABBRIVIATIONS

SCALE: NTS
DRAWING No. 028.206
SHEET No. P1 ISSUE C

EQUIPMENT

- BAR SCREEN, MECHANICAL
- BLOWER OR CENTRIFUGAL FAN
- CALIBRATION COLUMN CONTROL DAMPER
- CENTRIFUGE
- COMPRESSOR, ROTARY SCREW
- DIFFUSER HEADER
- FILTER OR FILTER–SILENCER INLET AIR
- MIXER
- MIXER, HORIZONTAL SURFACE
- MIXER, INLINE STATIC
- MOTOR (MAYBE ELECTRIC, HYDRAULIC OR PNEUMATIC
- MOTORIZED CONTROL DAMPER
- MICROTURBINE
- OUTFALL DIFFUSER
- PULSATION DAMPER
- TELESCOPIC GATE VALVE
- WEIR
- PUMP (GRINDER)
- PUMP (DIGESTED SLUDGE)
- PUMP (PERISTALIC/HOSE)
- PUMP (DUAL DIAPHRAGM)
- PUMP (PROGRESSIVE CAVITY)
- PUMP (ROTARY LOBE) OR BLOWER
- PUMP (SUBMERSIBLE)
- PUMP (VERTICAL)
- PUMP (CENTRIFUGAL)
- PUMP (METERING)
- CHEMICAL INJECTION PUMP
- RECEIVER OR PRESSURE VESSEL
- RESERVOIR
- SLIDE GATE (NORMALLY CLOSED)
- SLIDE GATE (NORMALLY OPEN)
- SLUICE GATE (NORMALLY CLOSED)
- SLUICE GATE (NORMALLY OPEN)
- STOP LOG (NORMALLY OPEN)
- STOP LOG (NORMALLY CLOSED)
- TANK

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EQUIPMENT REQUIRING DRIVES:

EQUIPMENT TYPES:

- BLOWER OR FAN
- CENTRIFUGAL PUMP
- MOTOR

DRIVES

DRIVE TYPES:

- DRIVE–HYDRAULIC, PNEUMATIC, TURBINE OR INTERNAL COMBUSTION ENGINE
- ELECTRIC DRIVE

MODIFICATIONS:

- BACKSTOP, BRAKE OR CLUTCH
- DRIVE INTERLOCK
- DRIVE INTERLOCK SEQUENCE TERMINATION
- DRIVE PERSONAL SAFETY INTERLOCK
- EXISTING DRIVE
- NEW DRIVE
- REVERSIBLE
- VS VARIABLE SPEED

- B BUBBLER SYSTEM
- I INTERLOCK – SEE CONTROL STRATEGY DESC.
- P PURGE OR FLUSHING DEVICE

PIPING SYMBOLS

- AIR INTAKE
- AIR VENT
- A ANNULAR TYPE INLINE PRESSURE SENSOR
- BLIND FLANGE
- CAMLOCK (UTILITY STATION)
- CAP OR PLUG
- CIRCULAR BLANK OR SPECTACLE BLIND
  - OPTIONS: NORMALLY OPEN / NORMALLY CLOSED
- QUICK CONNECTION (HOSE)
- FIXED CONNECTION (HOSE)
- DAMPER
- DESUPERHEATER INLINE
- DRAIN
- D DRAIN/FUNNEL
- DRAIN TO FLOOR
- DRAIN TO TRENCH
- EJECTOR
- EQUIPMENT INSULATION
- EXPANSION JOINT
- FLAME ARRESTOR
- FLANGE
- FLEXIBLE CONNECTOR
- GOOSE NECK VENT
- GROUND (ELECTRICAL)
- IN–LINE INSTRUMENT
- INSTRUMENT CHEMICAL DIAPHRAGM SEAL
- LINE SLOPE
- LIQUID LEVEL
- MIXER
- ORIFICE PLATE
- PIPE INSULATION
- E PIPE HEAT TRACING E=ELECTRIC S=STEAM
- PIPE MATERIAL OR SIZE OR NEW / OLD JUNCTION
- PIPE PLUG
- PRESSURE GUAGE
- REDUCER
- FIC ROTAMETER
- RUPTURE DISC
- SENSOR
- SIGHT GLASS
- STEAM TRAP WITHOUT BYPASS
- STEAM TRAP WITH BYPASS
- TYPICAL 3 OUTPUT SIGNAL TO CONTROL
- UNION
- UTILITY STATION (NUMBER, IF ANY, DESIGNATES TYPE)
- WELDED CAP
- Y–TYPE STRAINER

CO	CLEAN OUT
DC	DRAIN CONNECTION
FC	FLUSHING CONNECTION
SB	STEAM BLOW
SC	SAMPLE CONNECTION
TC	TEST CONNECTION

VALVE LABELLING SYSTEM

- AAV AUTOMATIC AIR VALVE
- BALL CHECK VALVE
- BALL VALVE
- BLAST GATE (BG)
- BUTTERFLY VALVE
- BUTTERFLY VALVE DAMPER VALVE
- CHECK VALVE
- CHEMICAL INJECTION DIFFUSER
- CONTROL VALVE
- DIAPHRAGM VALVE
- FLOAT VALVE
- FLOW BALANCING VALVE
- FOOT VALVE
- FOUR–WAY VALVE
- GATE/MANUAL VALVE
- GLOBE VALVE
- KNIFE GATE VALVE
- MUD VALVE
- NEEDLE VALVE
- PINCH VALVE
- PLUG VALVE
- S SOLENOID VALVE
- THREE–WAY VALVE
- DOUBLE CHECK VALVE BACKFLOW PREVENTER
- REDUCED PRESSURE BACKFLOW PREVENTER
- BACK PRESSURE REGULATING VALVE
- PRESSURE REDUCING
- PRESSURE REGULATING MODULATING VALVE,
- PRESSURE REGULATING VALVE (EXTERNAL SENSING)
- PRESSURE REGULATING VALVE (INTERNAL SENSING)
- ON/OFF VALVE
- PRESSURE RELIEF VALVE
- PRESSURE AND VACUUM RELIEF VALVE
- SAFETY RELIEF VALVE
- VACUUM RELIEF VALVE

OPTIONS: NORMALLY CLOSED / NORMALLY OPEN

FAIL OPTIONS: LOSS OF AIR (OR POWER)

FO	FAIL OPEN
FC	FAIL CLOSE
FI	FAIL INDETERMINATE
FL	FAIL LAST POSITION

EXAMPLE: PNEUMATIC CONTROL LINE / ON–OFF VALVE / NORMALLY CLOSED / FC FAIL CLOSED

VALVE OPERATORS

- M MOTOR ACTUATOR
- PNEUMATIC CYLINDER
- M BLEED VALVE
- DIAPHRAGM (PRESSURE BALANCE)
- S SOLENOID
- DIAPHRAGM (SPRING OPPOSED)

PRIMARY ELEMENT SYMBOLS

- ANNUBAR
- ANNULAR TYPE DIAPHRAGM PRESSURE SEAL
- DIAPHRAGM SEAL
- DISPLACEMENT LEVEL ELEMENT
- FT FLOW ELEMENT INTEGRAL WITH TRANSMITTER (MASS FLOW, ETC)
- FLOAT LEVEL ELEMENT
- FLUME (PARSHALL OR TRAPEZOIDAL)
- VENTURI OR FLOW TUBE ANEMOMETER
- WEIR FLOWMETER
- IN–LINE PRESSURE SENSOR
- M MAGNETIC FLOWMETER
- N NUCLEAR DENSITY METER
- PITOT TUBE
- R ROTAMETER
- R 1–10 GPM ROTAMETER W/ NEEDLE VALVE
- TURBINE OR PROPELLER TYPE METER
- ULTRASONIC FLOWMETER
- LE ULTRASONIC/MICROWAVE LEVEL ELEMENT
- ULTRASONIC LEVEL METER
- ULTRASONIC METER (STRAP ON)

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SUNSHINE COAST REGIONAL DISTRICT
GARDEN BAY UV BUILDING
P&ID STANDARD SYMBOLS, EQUIPMENTS, VALVES AND INSTRUMENTATION

SCALE: NTS
DRAWING No. 028.206
SHEET No. P2 ISSUE C

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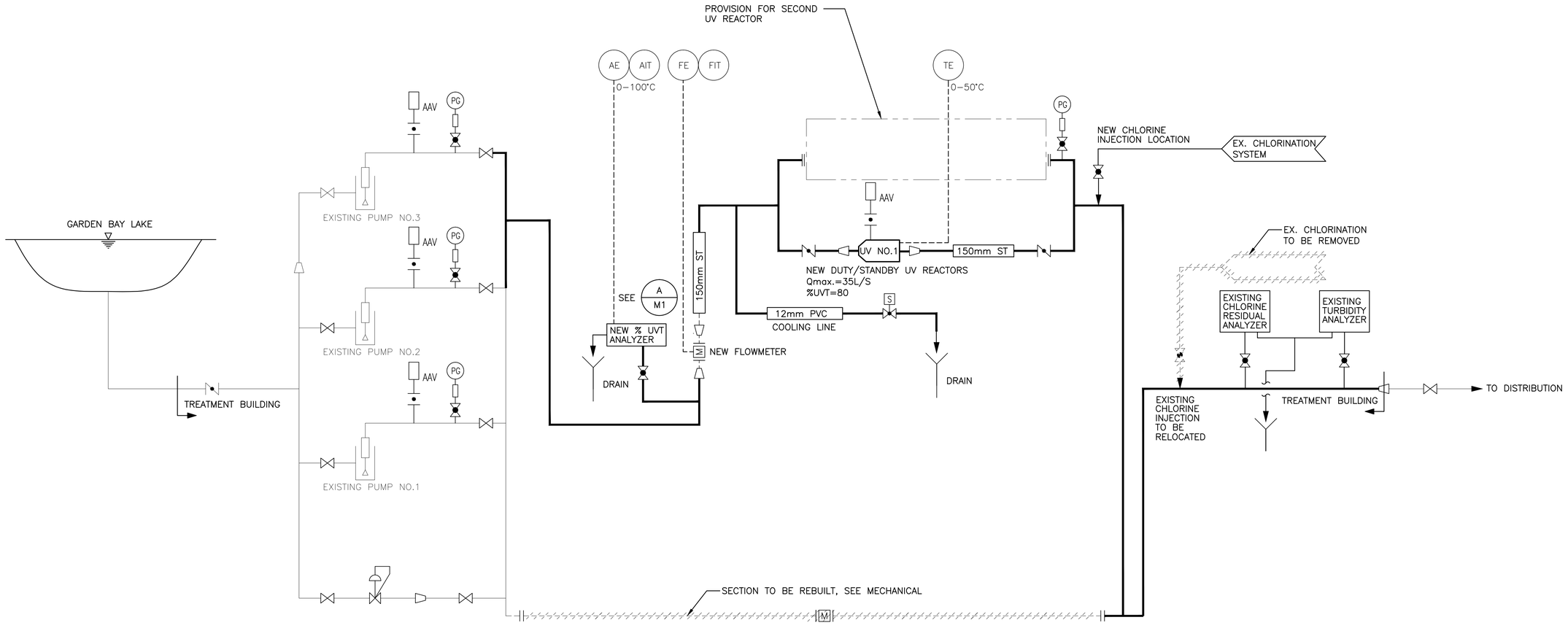

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GARDEN BAY UV BUILDING
PROCESS AND INSTRUMENTATION DIAGRAM

SCALE: NTS
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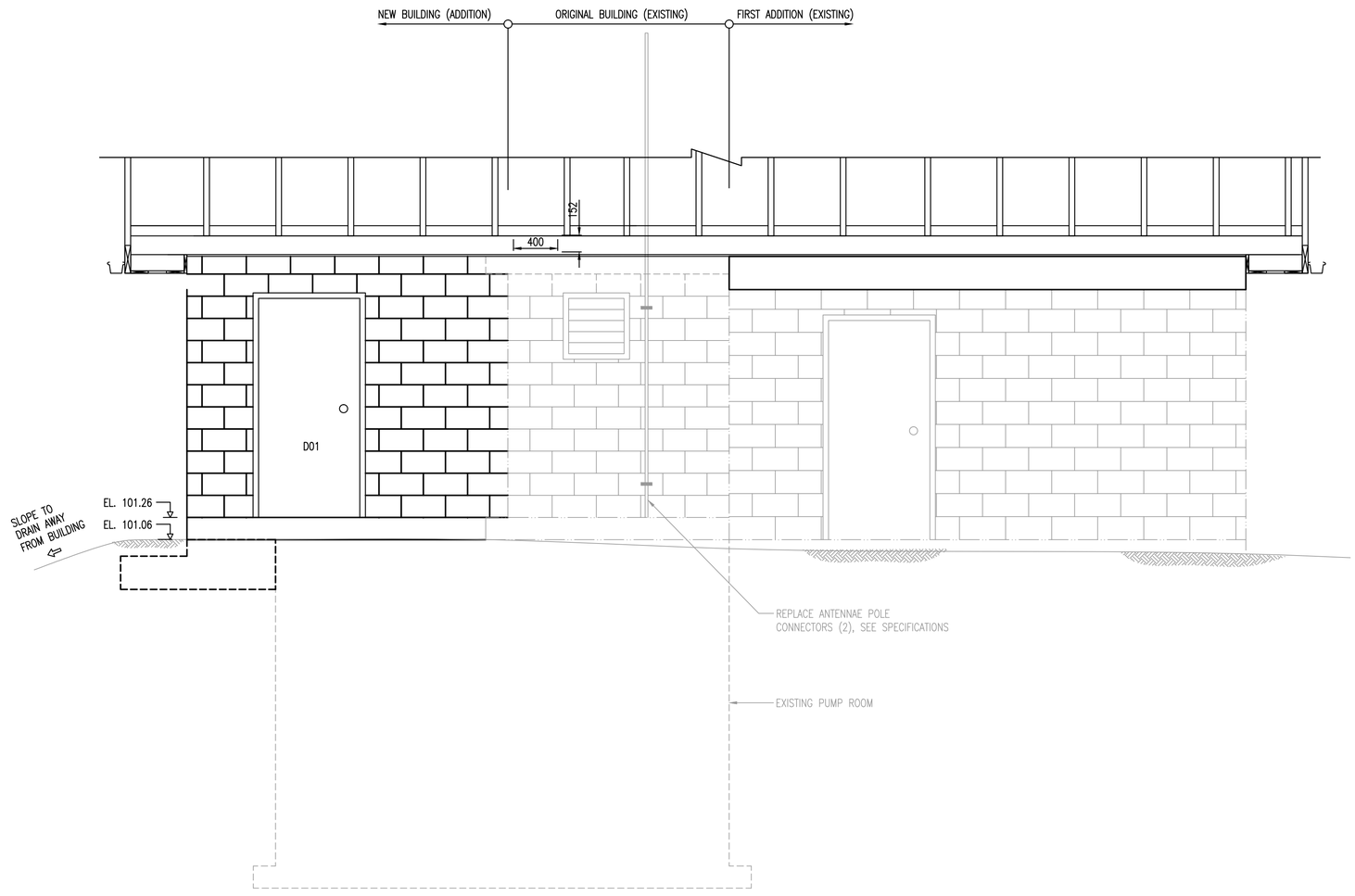

WEST ELEVATION
1:25

DOOR SCHEDULE				
DOOR NO.	WIDTH	HEIGHT	THICK	FRAME
D01	915	2032	45	50 x 146

1. SEE SPECIFICATION FOR MATERIALS AND HARDWARE.

NOTE:
THE BOTTOM OF THE PARAPET WALL SHALL BE ALIGNED AT AN ELEVATION THAT WILL MEET THE FOLLOWING CLEARANCES:
– MIN. 25mm ABOVE NEW DOOR FRAME

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GARDEN BAY UV BUILDING
ARCHITECTURAL – WEST ELEVATION

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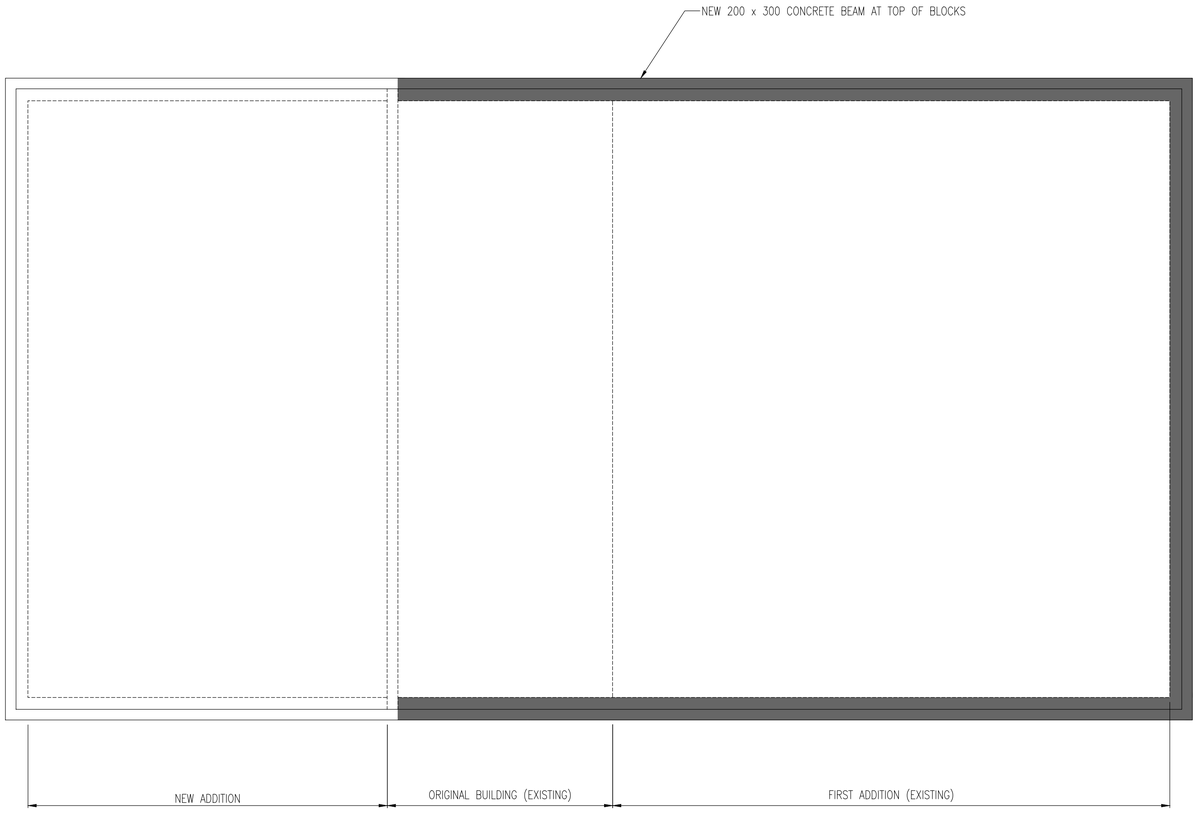

ROOF PLAN
1:25

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0 10 20 30 40 50 60 70 80 90 100 mm

PLOT: FULL 1:25 HALF 1:50

FILE: G:\O&K CAD Drawings\DKSERVER P Share\Recdwgs\SUNSHINE COAST\28-206\Architectural\28-206-A2.dwg Tab A2 13-06-07 vcgjz0

AutoCAD DRAWING

REVISIONS

ISSUE	DATE	DRAWN	CHK'D	APP'D	DESCRIPTION
A	JAN27/12	AIS	MR	MR	ISSUED FOR TENDER
B	APR25/12	AIS	MR	MR	ISSUED FOR CONSTRUCTION
C	MAY14/13	MMc	WB	WB	RECORD DRAWING

DESIGNED MR
DRAWN AIS
CHECKED MR

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210-889 Harbourside Drive
North Vancouver BC
V7P 3S1, Canada

SUNSHINE COAST REGIONAL DISTRICT
GARDEN BAY UV BUILDING
ARCHITECTURAL – ROOF PLAN

SCALE: AS SHOWN
DRAWING No. 028.206
SHEET No. A2 ISSUE C

GENERAL CONSTRUCTION NOTES

GENERAL NOTES

1. ***SCOPE :*** THE NOTES AND DETAILS ON THIS SHEET ARE GENERAL AND APPLY TO THE ENTIRE PROJECT EXCEPT WHERE THERE ARE SPECIFIC INDICATIONS TO THE CONTRARY.
2. ***APPLICABLE SPECIFICATIONS AND CODES :*** CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL BUILDING CODE EXCEPT WHERE OTHER APPLICABLE CODES OR THE FOLLOWING NOTES ARE MORE RESTRICTIVE.
3. ***DIMENSIONS :*** STRUCTURAL DIMENSIONS CONTROLLED BY OR RELATED TO MECHANICAL OR ELECTRICAL EQUIPMENT SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
4. ***PROVISIONS FOR EQUIPMENT :*** MECHANICAL AND ELECTRICAL EQUIPMENT SUPPORTS, ANCHORAGES, OPENINGS, RECESSES AND REVEALS NOT SHOWN ON THE STRUCTURAL DRAWINGS BUT REQUIRED BY OTHER CONTRACT DRAWINGS SHALL BE PROVIDED FOR PRIOR TO CASTING CONCRETE.
5. ***CONSTRUCTION LOADS :*** STRUCTURES HAVE BEEN DESIGNED FOR OPERATION LOADS ON THE COMPLETED STRUCTURES. DURING CONSTRUCTION, THE STRUCTURES SHALL BE PROTECTED BY BRACING AND BALANCING WHEREVER EXCESSIVE CONSTRUCTION LOADS MAY OCCUR. ALL TEMPORARY AND PERMANENT SURCHARGE LOADS SHALL BE CONSIDERED.
6. THE CONTRACTOR IS RESPONSIBLE FOR SHORING AND UNDERPINNING. DOCUMENTS RELATING TO THIS WORK SHALL BE SEALED AND SIGNED BY A BRITISH COLUMBIA PROFESSIONAL ENGINEER.
7. ***DRAINAGE SURFACES :*** FLOOR ELEVATIONS SHOWN ON CONCRETE OUTLINE DRAWINGS ARE PERIMETER ELEVATIONS FOR STRUCTURAL SLABS AND MAY NOT INDICATE FLOOR SLOPES, TOPPING OR FLOOR ELEVATIONS. FOR AREAS REQUIRING FLOOR SLOPES, TOPPING AND FLOOR DRAIN (ELEVATIONS AND LOCATIONS), SEE ARCHITECTURAL AND MECHANICAL DRAWINGS.

f_c = 30 MPa, f_y = 400 MPa	BAR SIZE	MINIMUM STRAIGHT EMBEDMENT DEVELOPMENT LENGTHS (mm)		MINIMUM TENSION EMBEDMENT WITH STANDARD END HOOKS
		COMPRESSION	TENSION	E
	10M	200	300	200
	15M	280	450	200
	20M	340	600	220
	25M	440	1000	450
	30M	530	1200	630

f_c = 30 MPa, f_y = 400 MPa	BAR SIZE	LAP SPLICE LENGTHS (mm)	
		TENSION	COMPRESSION
	10M	400	300
	15M	600	450
	20M	800	600
	25M	1200	750
	30M	1600	900

NOTES :

1. FOR LOCATION OF PIPING, FLOOR DRAINS, ELECTRICAL / INSTRUMENTATION CONDUIT, VENTILATION DUCTS WHICH PASS THROUGH CONCRETE SLABS, WALLS AND/OR ROOFS, REFER TO THE MECHANICAL, VENTILATION, ELECTRICAL AND INSTRUMENTATION DRAWINGS TO COORDINATE THIS PART OF THE WORK.
2. FOR DETAILS OF NEW FOUNDATION DRAINS, WHICH PASS UNDERNEATH NEW CONCRETE SLABS REFER TO GENERAL DRAWINGS, UNLESS NOTED OTHERWISE IN SPECIFICATIONS.

STEEL

1. ***APPLICABLE SPECIFICATIONS AND CODES :*** STEEL CONSTRUCTION SHALL CONFORM TO CSA S16 "STEEL STRUCTURES FOR BUILDINGS" AS CONTAINED IN THE NATIONAL BUILDING CODE.
2. ***BOLTED JOINTS*** EXCEPT FOR BOLTS ANCHORED IN CONCRETE, BOLTED JOINTS SHALL CONFORM TO THE SPECIFICATIONS OF THE CANADIAN INSTITUTE OF STEEL CONSTRUCTION. BOLTS SHALL BE AS SPECIFIED ON THE DRAWINGS, OR, AT LEAST 13mm DIAMETER IF NOT SPECIFIED ON THE DRAWINGS.
3. ***ANCHOR BOLTS :*** BOLTS ANCHORED IN CONCRETE, IF NOT SPECIFIED ON THE DRAWINGS, SHALL BE 13mm DIAMETER WITH 225mm EMBEDDED AND SHALL CONFORM TO ASTM A-36.
4. ***ENCASED STEEL :*** STEEL COMPLETELY ENCASED IN CONCRETE SHALL NOT BE PAINTED AND SHALL HAVE A CLEAN SURFACE FOR BONDING TO CONCRETE.

ALUMINUM

1. ***APPLICABLE SPECIFICATIONS AND CODES :*** ALUMINUM CONSTRUCTION SHALL CONFORM TO CAN3-S157 ''STRENGTH DESIGN IN ALUMINUM'' AS SPECIFIED IN THE NATIONAL BUILDING CODE.
2. ALUMINUM PLACED IN CONTACT WITH CONCRETE, MORTAR, PLASTER OR DISSIMILAR METALS SHALL BE GIVEN A PROTECTIVE SEALING COAT OF ZINC CHROMATE EPOXY OR ALKALI-RESISTANT BITUMINOUS PAINT.

MASONRY

1. ***APPLICABLE SPECIFICATIONS AND CODES :*** MASONRY CONSTRUCTION SHALL CONFORM TO CAN3-S157 AS SPECIFIED IN THE NATIONAL BUILDING CODE.
2. VERTICAL REINFORCING SHALL BE 1 - 15M BARS FOR FULL HEIGHT OF WALL IN A CAVITY AT MAXIMUM 0.60 METRE SPACING C/C AND AT ALL CORNERS, AND 1-15M ADJACENT TO OPENINGS LARGER THAN 600mm.
3. HORIZONTAL REINFORCING SHALL BE "DURWALL" OR "WAL-LOK" STANDARD WT BRIGHT FINISH AT 400mm SPACING AND 2-15M HORIZONTAL REINFORCING CONTINUOUS IN BOND BEAMS SPACED 1200 C/C AND IN LINTELS FOR OPENINGS OF LESS THAN 1200 WITH 400 BEARINGS ON BOTH SIDES OF OPENINGS.
4. FOR MORE INFORMATION SEE S3 DRAWING.

STRUCTURAL LEGEND

NEW CONCRETE

EXISTING CONCRETE

TOP REINFORCING (PLAN VIEW)

BOTTOM REINFORCING (PLAN VIEW)

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CONCRETE

1. ***APPLICABLE SPECIFICATIONS AND CODES :*** CONCRETE CONSTRUCTION SHALL CONFORM TO CSA 23.3-04 "DESIGN OF CONCRETE STRUCTURES FOR BUILDING" AS SPECIFIED IN THE NATIONAL BUILDING CODE OF CANADA 2005.
2. ***REINFORCING STEEL DETAILS*** : ALL DETAILING, FABRICATING AND ERECTION OF STEEL REINFORCING BARS, UNLESS OTHERWISE NOTED, SHALL BE IN ACCORDANCE WITH THE "METRIC SUPPLEMENT" IN CONJUNCTION WITH THE "REINFORCING STEEL MANUAL OF STANDARD PRACTICE", AS AVAILABLE FROM THE WESTERN REINFORCING CONTRACTORS ASSOCIATION.
3. ***MINIMUM REINFORCING :*** CONCRETE CONSTRUCTION SHALL BE REINFORCED CONCRETE EXCEPT WHERE PLAIN CONCRETE (P/C) IS SPECIFIED ON THE DRAWINGS, IN WHICH CASE NO REINFORCEMENT SHALL BE USED. CONCRETE THAT IS NOT DESIGNATED P/C AND HAS NO REINFORCEMENT INDICATED SHALL BE REINFORCED ACCORDING TO THE FOLLOWING SCHEDULES :

A) STEEL FOR WALLS AND SLABS REINFORCEMENT EACH WAY

THICKNESS	SIZE	SPACING	POSITION
150	10M	300 C/C	ON ℄
200	15M	300 C/C	ON ℄
250	15M	300 C/C	EF
300	15M	300 C/C	EF
350	15M	250 C/C	EF
400	20M	300 C/C	EF
450	20M	250 C/C	EF

MASS CONCRETE SHALL BE REINFORCED WITH 15M BARS AT 300 MINIMUM IN ALL FACES.

B) 10M @ 450 SHALL BE USED AS TRANSVERSE TIES IF NO OTHER REINFORCING IS NOTED.

4. ***CONCRETE COVER :*** CONCRETE COVER OF REINFORCING BARS, IF NOT SPECIFIED ON THE DRAWINGS, SHALL BE AS FOLLOWS OR SHALL BE EQUAL TO THE DIAMETER OF THE MAIN REINFORCING BAR IT COVERS, WHICHEVER IS LARGER :

	CONDITION	SPECIFIED COVER (mm)
A)	CONCRETE CAST AGAINST GROUND	75
B)	CONCRETE EXPOSED TO EARTH, LIQUIDS OR WEATHER	
	i) 20M BARS OR LARGER	50
	ii) 10M AND 15M BARS	40
C)	CONCRETE SLABS OR WALLS NOT EXPOSED TO EARTH, LIQUIDS OR WEATHER	20
D)	CONCRETE BEAMS OR COLUMNS	50

5. REINFORCING BAR DEVELOPMENT AND LAP LENGTHS REINFORCING BAR DEVELOPMENT LENGTH AND LAP SPLICE LENGTHS SHALL BE AS SPECIFIED ON THE DRAWINGS OR IN ACCORDANCE WITH THE FOLLOWING SCHEDULES, WHICHEVER IS THE LONGER LENGTH :

   i) DOWELS SHALL BE THE SAME SIZE AND SPACING AS BARS WITH WHICH THEY ARE LAPPED, UNLESS OTHERWISE NOTED.

   ii) THE LENGTH OF LAP SPLICE OF BARS OF DIFFERENT DIAMETERS SHALL BE BASED ON THE BAR WITH THE SMALLER DIAMETER.

6. ***STANDARD HOOK :*** BARS ENDING IN RIGHT ANGLE BENDS OR HOOKS SHALL CONFORM TO THE REQUIREMENTS OF CSA CAN3-A23.1
7. ***ANCHORAGE :*** IF THE EMBEDMENT LENGTH IS LIMITED DUE TO THE LIMITED EXTENT OF THE CONCRETE STRUCTURE, THE BARS SHALL EXTEND AS FAR AS POSSIBLE AND END IN STANDARD HOOKS.

WOOD

1. ALL LUMBER AND WOOD PRODUCTS SHALL CONFORM TO B.C.B.C. 2006 PART 9 SECTION 9.3.2 "GRADES", 9.4.1 ''GENERAL DESIGN", 9.4.2 "SNOWLOADS" AND 9.4.3 "DEFLECTIONS".
2. BUILDINGS AND THEIR STRUCTURAL MEMBERS MADE OF WOOD SHALL CONFORM TO CAN3-086 "ENGINEERING DESIGN IN WOOD, (WORKING STRESS DESIGN)", OR CAN/CSA 086.1 "ENGINEERING DESIGN IN WOOD, (LIMIT STATE DESIGN)".
3. WOOD FRAME CONSTRUCTION SHALL CONFORM TO B.C.B.C. 2006 PART 9 SECTION 9.23
4. WOOD TRUSSES SHALL BE DESIGNED, BUILT AND INSTALLED IN CONFORMANCE WITH B.C.B.C. 2006 PART 9 SECTION 9.23.13.11 ''ROOF TRUSSES".

NOTE :
WHERE DETAIL(S) SHOWN ON THE DRAWINGS DIFFER FROM THE DETAILS SHOWN ON THIS SHEET (S1), THEN THE DRAWING HAS PRIORITY.

THIS DISTANCE = 100 ON ORIGINAL ANSI D SIZE SHEET
OTHERWISE ADJUST SCALES ACCORDINGLY
1:1 @ ANSI D 0 10 20 30 40 50 60 70 80 90 100 mm

PLOT: FULL 1:25 HALF 1:50

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AutoCAD DRAWING

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DRAWN AIS
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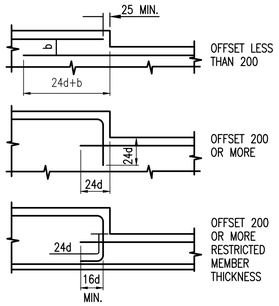
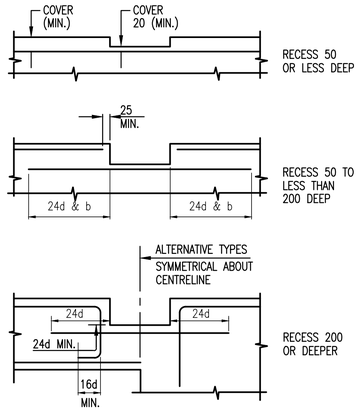
SUNSHINE COAST REGIONAL DISTRICT
GARDEN BAY UV BUILDING
GENERAL CONSTRUCTION NOTES

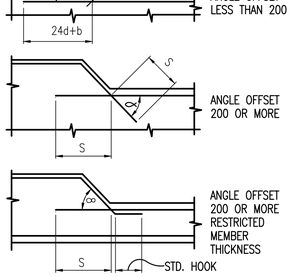
SCALE: AS SHOWN
DRAWING No. 028.206
SHEET No. S1 ISSUE C

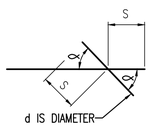




TYPICAL RIGHT ANGLE OFFSET DETAILS

TYPICAL RECESS DETAILS

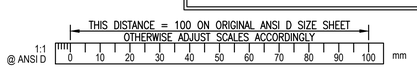


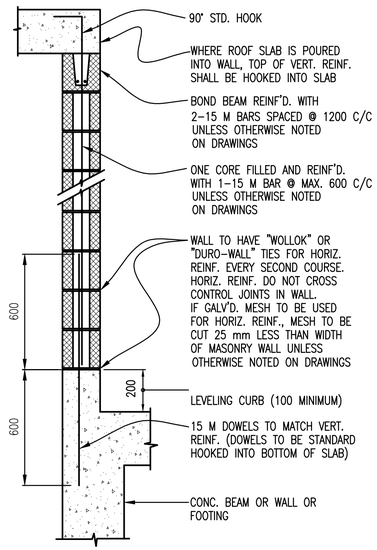


ANGLE ∝	LENGTH S
0° – 15°	12d
15° – 30°	15d
30° – 60°	19d
60° – 75°	21d
75° – 90°	24d

TYPICAL ANGLE OFFSET DETAILS

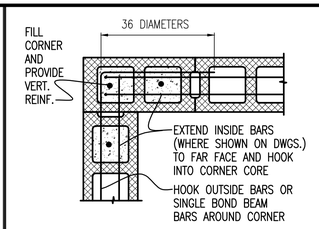
NOTE :
WHERE DETAIL(S) SHOWN ON THE DRAWINGS DIFFER FROM THE DETAILS SHOWN ON THIS SHEET , THEN THE DRAWING HAS PRIORITY.



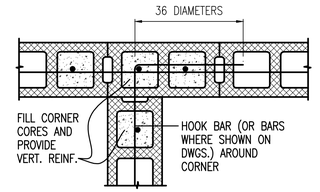


TYPICAL MASONRY WALL ANCHORING TO CONCRETE AT BASE STANDARD MASONRY BLOCKS

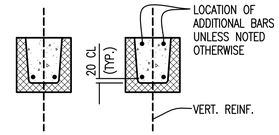
NOTES :
1. LINTEL IS REQUIRED FOR TOP OF OPENING. SEE LINTEL DETAILS.
2. PROVIDE VERTICAL REINFORCING FOR BOTH SIDES OF OPENING IN WALL AND EACH CORNER OF WALLS.
3. PROVIDE BOND BEAM ABOVE AND BELOW OPENINGS IN WALL AND EXTEND BOND BEAM 800 mm BEYOND EDGES.
4. FILL FOR BLOCKS AND BOND BEAMS TO BE 30 MPa CONCRETE.
5. TYPE S MORTAR TO BE USED FOR ALL JOINTS.



EXTERIOR BOND BEAM

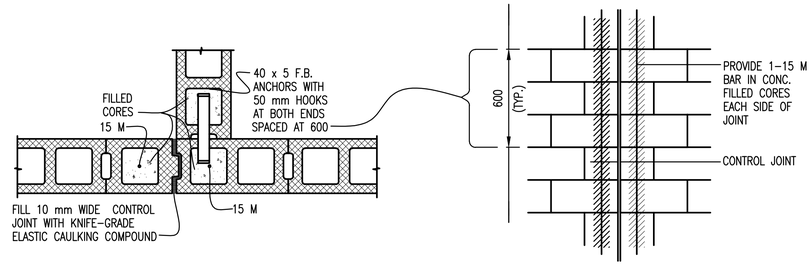


INTERIOR BOND BEAM



NOTE :
HORIZ. AND VERT. REINF. LAPS SHALL BE 36 BAR DIAMETERS

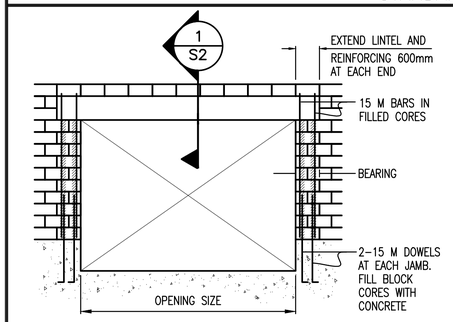
TYPICAL HORIZONTAL BOND BEAMS

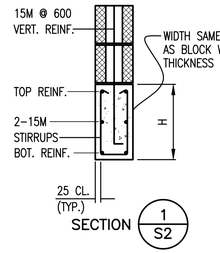


CONTROL JOINT BLOCKS AND ANCHORS

ELEVATION

CONNECTION AND CONTROL JOINTS STANDARD MASONRY BLOCKS

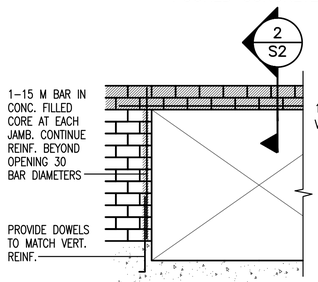


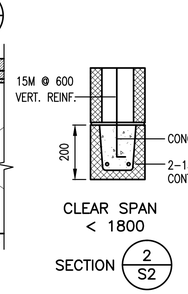


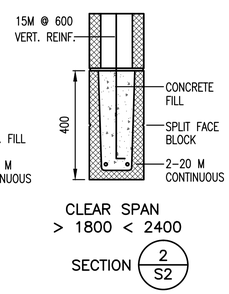
NOTES :
1. EXTEND LINTEL AND REINFORCING 400mm AT EACH END.
2. COMPRESSIVE STRENGTH OF CONCRETE TO BE 30 MPa.
3. FOR BOTTOM REINFORCING USE BAR SPACER WHEN 3 OR 4 BARS REQUIRED.

OPENING SIZE	H	BOTTOM REINF.	TOP REINF.	STIRRUPS	BEARING
2400 TO 3000	400	3–20 M	2–15 M	10 M @ 300 C/C	400
3000 TO 3600	400	2–25 M	2–15 M	10 M @ 300 C/C	400
3600 TO 4200	600	2–25 M + 1–20 M	2–15 M	10 M @ 250 C/C	400
4200 TO 4800	600	2–25 M + 2–20 M	2–20 M	10 M @ 200 C/C	400

POURED CONCRETE LINTEL IN BLOCK WALL







NOTES :
1. PROVIDE MIN. 400 mm BEARING EACH END OF LINTELS. FILL CORES WITH CONCRETE AND 1–15 M BAR VERTICAL TO EACH END.
2. ALL CONCRETE FILL TO BE 30 MPa.

LINTEL DETAILS – STANDARD MASONRY BLOCKS

NOTE : FOR GIANT BRICK, USE SAME MASONRY DETAILS

PLOT: FULL 1:25 HALF 1:50

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AutoCAD DRAWING

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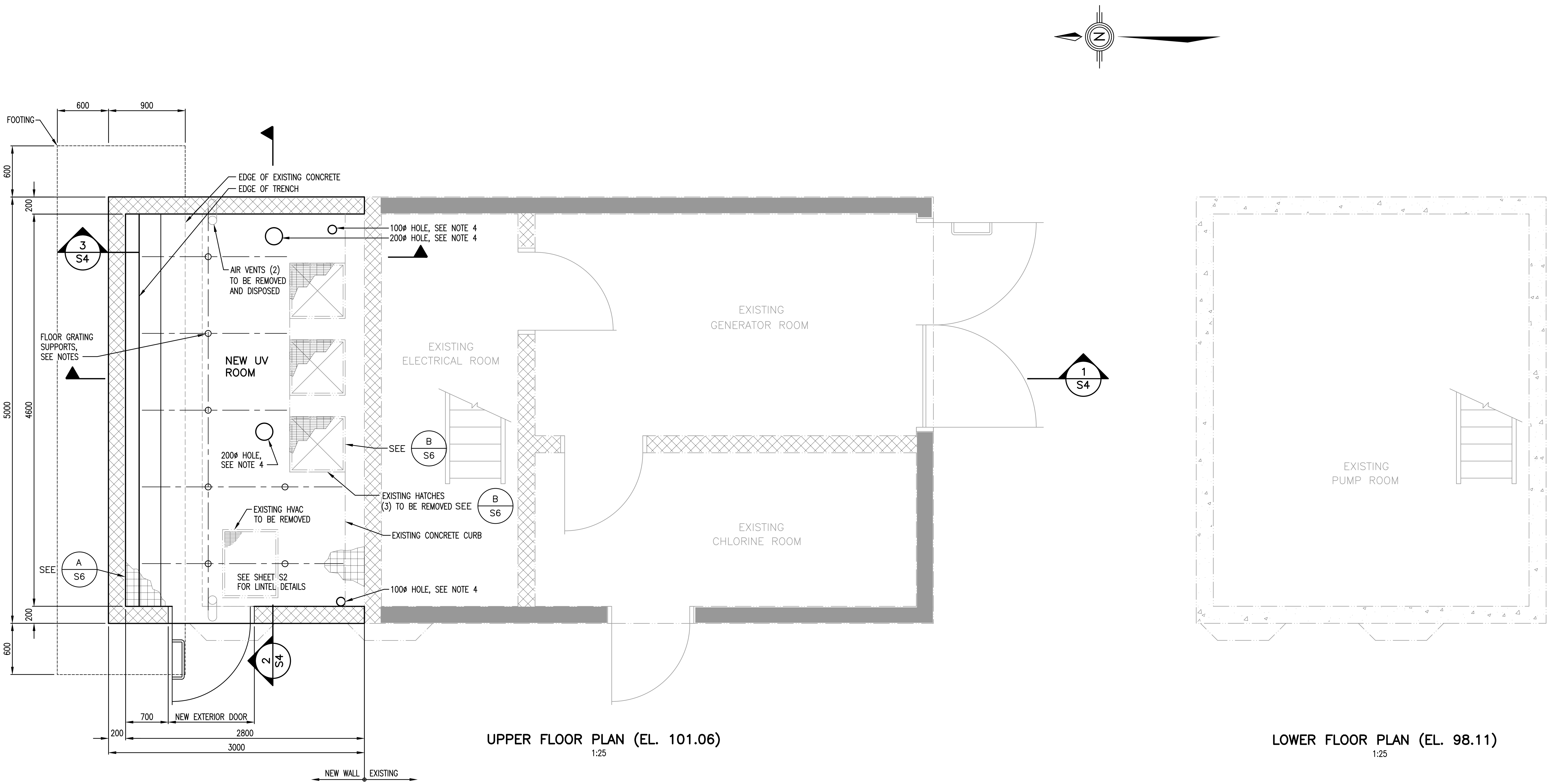
SUNSHINE COAST REGIONAL DISTRICT
GARDEN BAY UV BUILDING
GENERAL STRUCTURAL & MASONRY DETAILS

SCALE: AS SHOWN
DRAWING No. 028.206
SHEET No. S2 ISSUE C



UPPER FLOOR PLAN (EL. 101.06)
1:25

LOWER FLOOR PLAN (EL. 98.11)
1:25

NOTES :

1. GROUND ELEVATION ASSUMED FROM AS-BUILT DRAWINGS.
2. MAXIMUM SPAN OF FLOOR GRATING BETWEEN SUPPORTS NOT TO EXCEED 900mm.
3. FLOOR GRATING TO BE ALUMINUM OR FRP.
4. CONTRACTOR TO CORE HOLES THROUGH SLAB. APPROXIMATE LOCATION TO BE FINALIZED IN THE FIELD.

THIS DISTANCE = 100 ON ORIGINAL ANSI D SIZE SHEET
OTHERWISE ADJUST SCALES ACCORDINGLY
1:1 @ ANSI D 0 10 20 30 40 50 60 70 80 90 100 mm

PLOT: FULL 1:25 HALF 1:50

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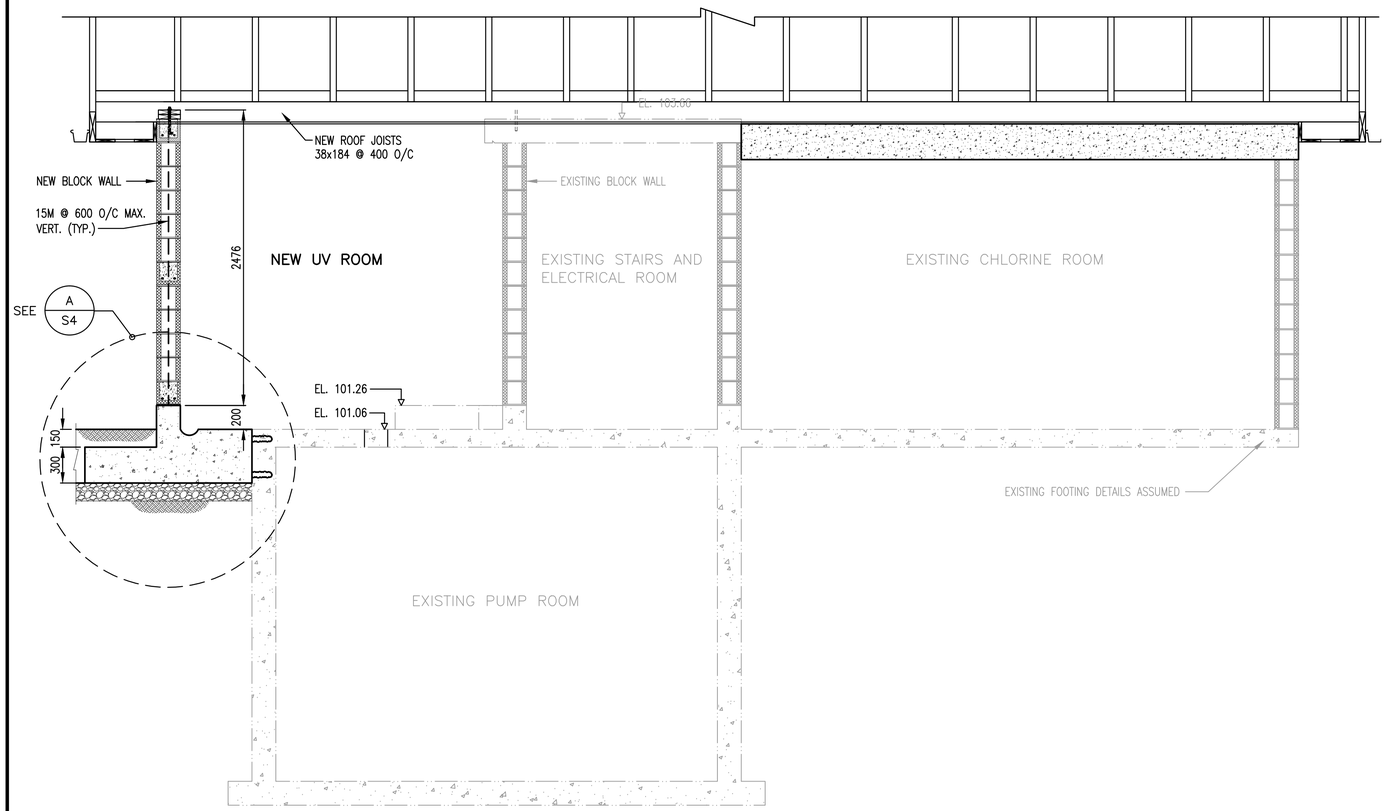
SUNSHINE COAST REGIONAL DISTRICT
GARDEN BAY UV BUILDING
STRUCTURAL – PLANS

SCALE: AS SHOWN
DRAWING No. 028.206
SHEET No. S3 ISSUE C

FILE: G:\0&K CAD Drawings\DKSERVER P Shore\Recdwgs\SUNSHINE COAST\28-206\STRUCTURAL\28-206-S3.dwg Tab: S3 13-06-07 vcgjz0



SECTION 1 / S3
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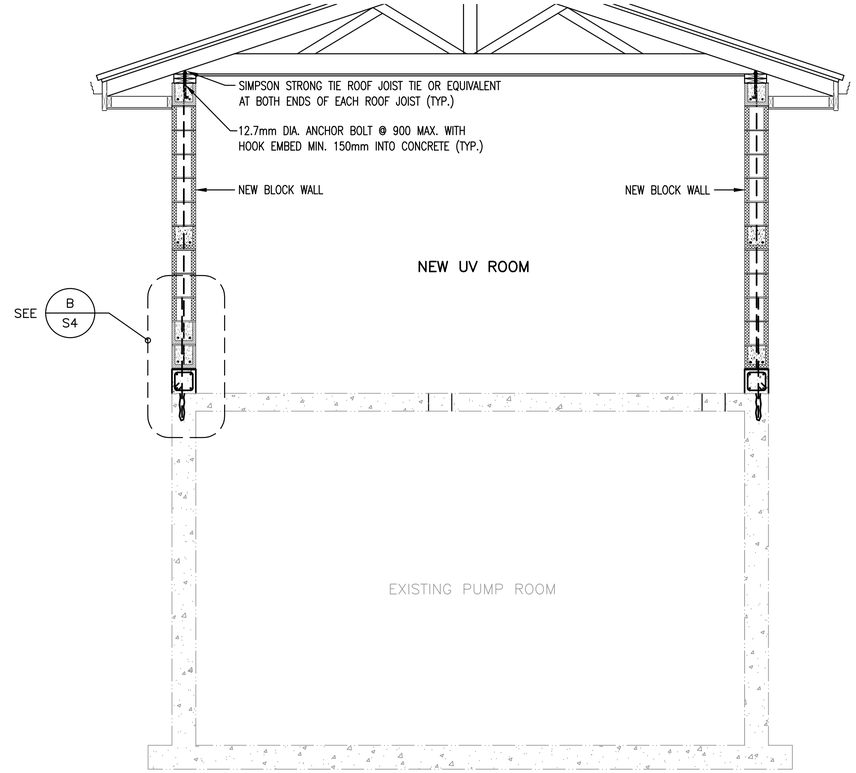

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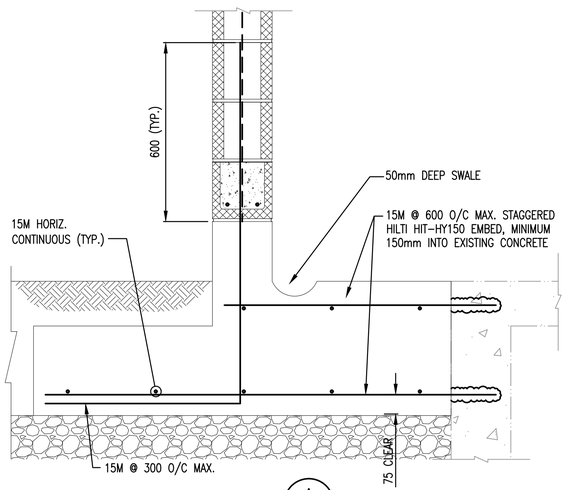
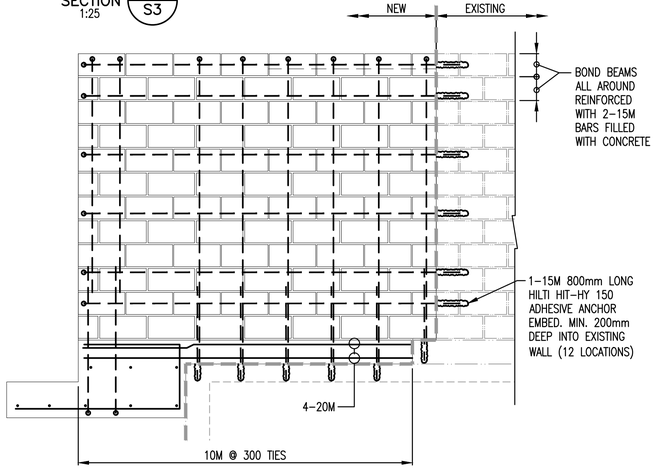


REINFORCING DETAIL A / S4
1:10



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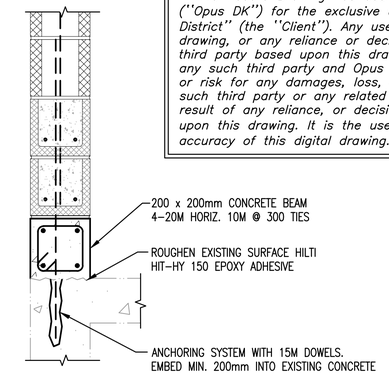

DETAIL B / S4
1:10

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NOTES:
1. CONCRETE COMPOSITION AND CLASS:
   - CONCRETE STRENGTH AT 28 DAYS = 30MPa
   - SLUMP = 60mm
   - WATER / CEMENT RATIO = 0.45
   - TOTAL AIR CONTENT = 5%
   - MAXIMUM AGGREGATE SIZE: 40mm
2. THE CONCRETE SUPPLIER SHALL SUBMIT A LETTER OF ASSURANCE THAT THE CONCRETE SUPPLIED SHALL CONFORM TO THE COMPOSITION AND CLASS SPECIFIED.
3. IN GENERAL, ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH CSA A23.1, AND ALL TESTING IN ACCORDANCE WITH CSA A23.2.
4. REINFORCING STEEL SHALL BE PLACED, SECURED AND SUPPORTED IN A SATISFACTORY MANNER BEFORE THE PLACING OF CONCRETE COMMENCES.
5. ALL CONCRETE SHALL BE PLACED WITHIN 60 MINUTES AFTER THE TIME THAT WATER WAS FIRST ADDED TO THE MIX. THE METHOD AND MANNER OF PLACING ALL CONCRETE SHALL BE SUCH AS TO AVOID THE POSSIBILITY OF SEGREGATION OR SEPARATION OF THE AGGREGATES OR DISPLACEMENT OF THE REINFORCEMENT.
6. ALL CONCRETE SHALL BE THOROUGHLY COMPACTED BY MEANS OF INTERNAL MECHANICAL VIBRATION. CONCRETE SHALL NOT BE PERMITTED TO FALL THROUGH A HEIGHT IN EXCESS OF 1½ METRES EXCEPT THROUGH AN ENCLOSING PIPE.
7. ALL EXPOSED SURFACES SHALL BE FINISHED WITH A WOODEN FLOAT TO A SMOOTH AND EVEN SURFACE.
8. CONCRETE SHALL ARRIVE AT THE FORMS HAVING A TEMPERATURE NOT LOWER THAN 10°C NOR HIGHER THAN 22°C UNLESS OTHERWISE DIRECTED BY THE CORPORATION. SUITABLE MEANS SHALL BE PROVIDED FOR MAINTAINING ALL PARTS OF CONCRETE AT TEMPERATURE OF AT LEAST 7°C FOR NOT LESS THAN NINETY-SIX HOURS. THE METHOD OF PROTECTING THE CONCRETE SHALL BE APPROVED BY THE CORPORATION AND SHALL BE SUCH THAT LOCAL DRYING WILL BE PREVENTED.
9. ALL EXPOSED CONCRETE SURFACES SHALL BE MOIST CURED BY BEING KEPT CONTINUOUSLY WET FOR AT LEAST 7 DAYS FOLLOWING PLACEMENT AT CONCRETE.

THIS DISTANCE = 100 ON ORIGINAL ANSI D SIZE SHEET
OTHERWISE ADJUST SCALES ACCORDINGLY
1:1 @ ANSI D
0 10 20 30 40 50 60 70 80 90 100 mm

PLOT: FULL 1:25 HALF 1:50

FILE: G:\D&K CAD Drawings\DKSERVER P. Share\Redraws\SUNSHINE COAST\V28-206\STRUCTURAL\28-206-S4.dwg Tab: S4 13-06-07 vcaj20

AutoCAD DRAWING

REVISIONS

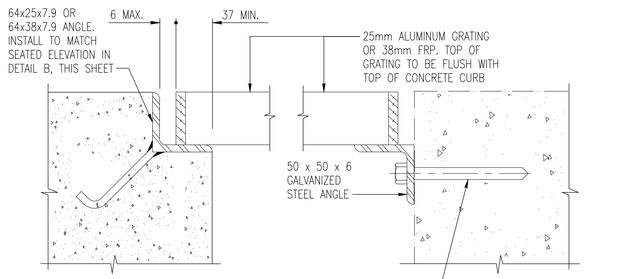
ISSUE	DATE	DRAWN	CHK'D	APP'D	DESCRIPTION
A	JAN27/12	AIS	MR	MR	ISSUED FOR TENDER
B	APR25/12	AIS	MR	MR	ISSUED FOR CONSTRUCTION
C	MAY15/13	MMc	WB	WB	RECORD DRAWING

DESIGNED MR
DRAWN DC/KS/AIS/RB
CHECKED MR

OPUS DAYTONKNIGHT
North Vancouver Office
604-990-4800
210-889 Harbourside Drive
North Vancouver BC
V7P 3S1, Canada

SUNSHINE COAST REGIONAL DISTRICT
GARDEN BAY UV BUILDING
STRUCTURAL – SECTIONS

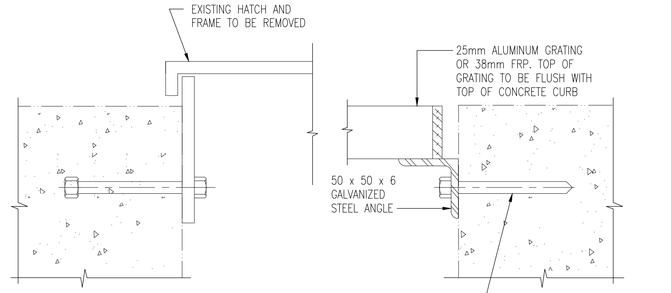
SCALE: AS SHOWN
DRAWING No. 028.206
SHEET No. S4 ISSUE C



FLUSH MOUNTED

ALUMINUM/FRP GRATING FRAME

DETAIL A / S3
NTS



ALUMINUM/FRP GRATING FRAME
AT FLOOR HATCHES

DETAIL B / S3
NTS

THIS DISTANCE = 100 ON ORIGINAL ANSI D SIZE SHEET
OTHERWISE ADJUST SCALES ACCORDINGLY

1:1 @ ANSI D: 0 10 20 30 40 50 60 70 80 90 100 mm

PLOT: FULL 1:25 HALF 1:50

FILE: G:\D&K CAD Drawings\DKSERVER P Share\Recdwgs\SUNSHINE COAST\28-206\STRUCTURAL\28-206-S5.dwg Tab S5 13-06-07 vcgj20

AutoCAD DRAWING

REVISIONS

ISSUE	DATE	DRAWN	CHK'D	APP'D	DESCRIPTION
A	JAN27/12	AIS	MR	MR	ISSUED FOR TENDER
B	APR25/12	AIS	MR	MR	ISSUED FOR CONSTRUCTION
C	MAY15/13	MMc	WB	WB	RECORD DRAWING

DESIGNED MR
DRAWN AIS
CHECKED MR

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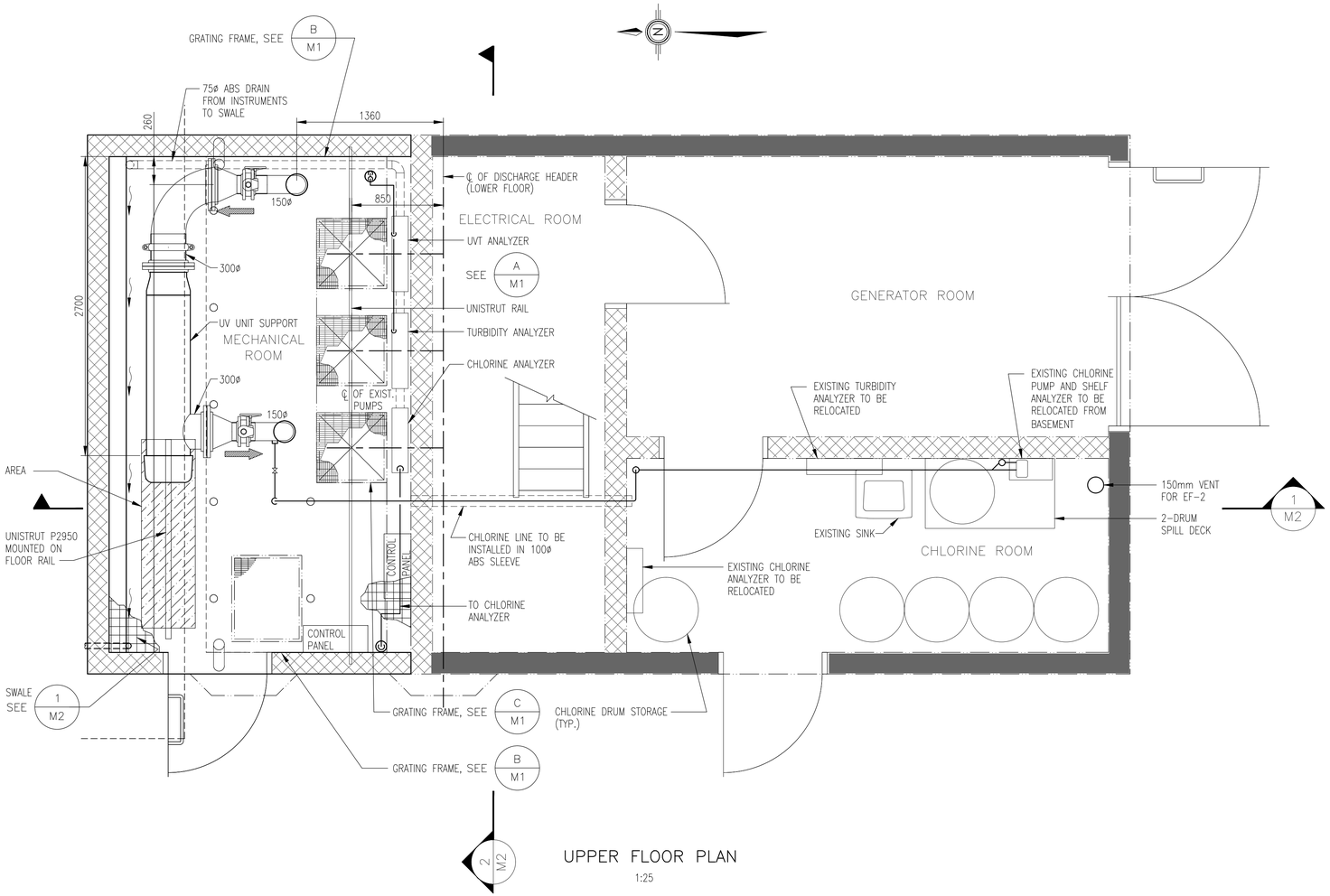
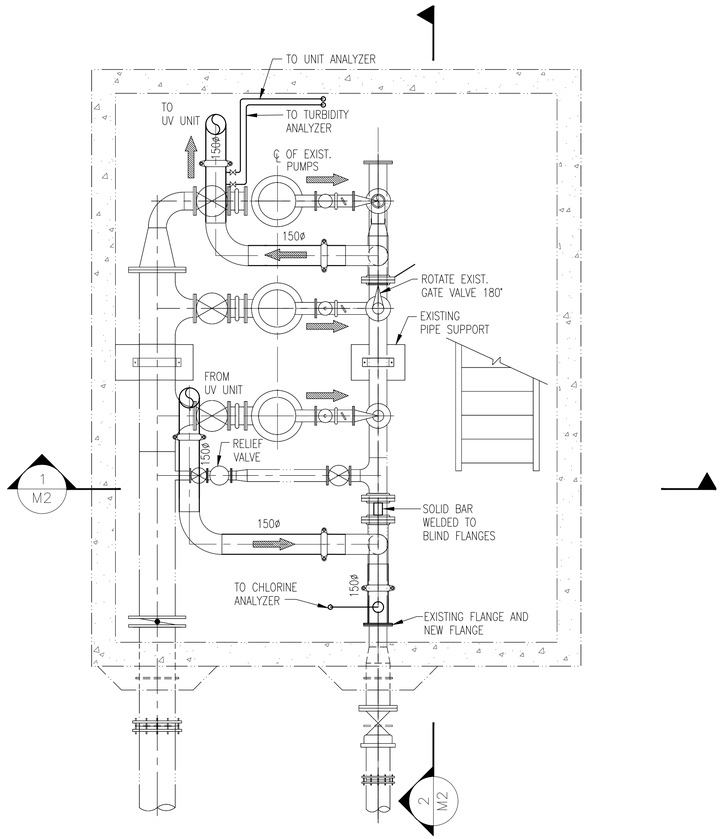
210-889 Harbourside Drive
North Vancouver BC
V7P 3S1, Canada

SUNSHINE COAST REGIONAL DISTRICT
GARDEN BAY UV BUILDING
STRUCTURAL – SECTIONS

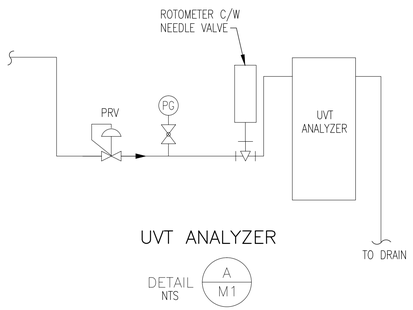
SCALE: AS SHOWN
DRAWING No. 028.206
SHEET No. S5 ISSUE C



UPPER FLOOR PLAN
1:25



LOWER FLOOR PLAN
1:25



UVT ANALYZER

DETAIL A M1
NTS

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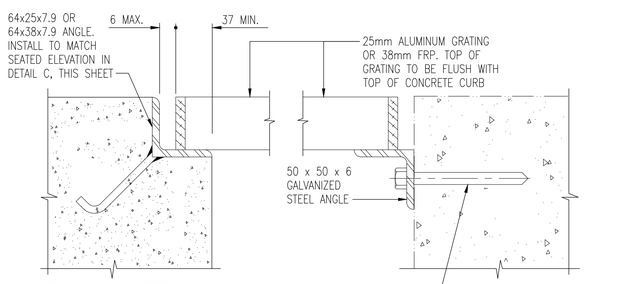
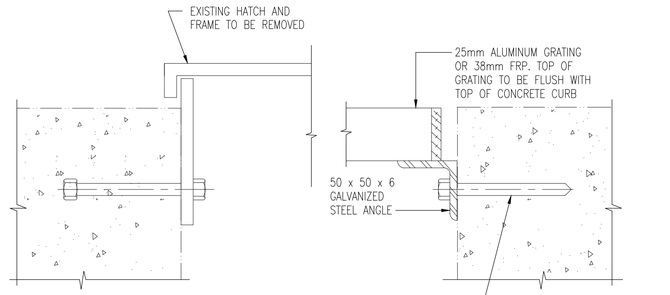


ALUMINUM GRATING FRAME

DETAIL B M1
NTS



ALUMINUM GRATING FRAME AT FLOOR HATCHES

DETAIL C M1
NTS

THIS DISTANCE = 100 ON ORIGINAL ANSI D SIZE SHEET
OTHERWISE ADJUST SCALES ACCORDINGLY
1:1 @ ANSI D
0 10 20 30 40 50 60 70 80 90 100 mm

PLOT: FULL 1:25 HALF 1:50

FILE: G:\D&K CAD Drawings\DKSERVER P Share\Recdwgs\SUNSHINE COAST\28-206\MECHANICAL\28-206-M1.DWG Tab M1 13-06-07 vsgjz0

AutoCAD DRAWING

REVISIONS	ISSUE	DATE	DRAWN	CHK'D	APP'D	DESCRIPTION	ISSUE	DATE	DRAWN	CHK'D	APP'D	DESCRIPTION
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	B	FEB16/12	RB	ZA	WB	ADDENDUM NO. 2 – AS SHOWN						
	C	APR25/12	RB	ZA	WB	ISSUED FOR CONSTRUCTION						

DESIGNED EP
DRAWN DC/KS/RB
CHECKED EP

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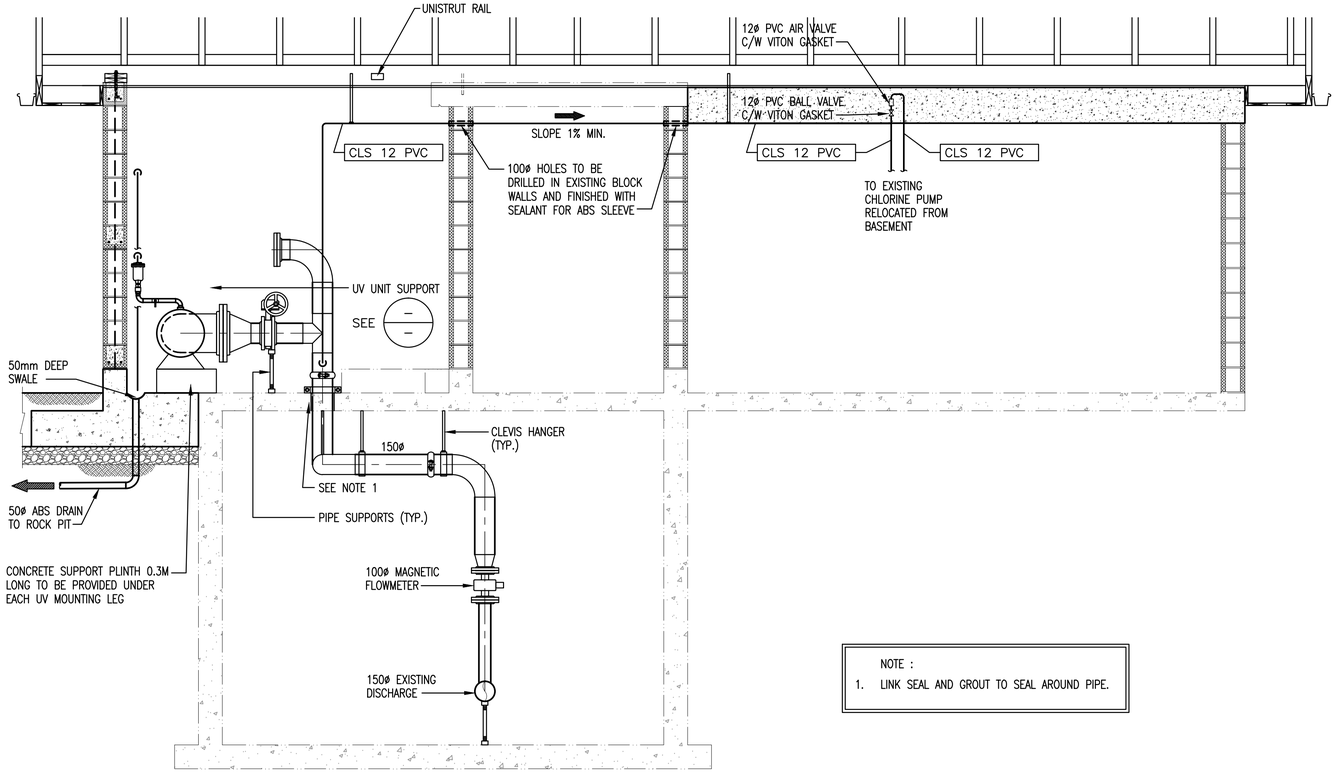
North Vancouver Office
604-990-4800
210-889 Harbourside Drive
North Vancouver BC
V7P 3S1, Canada

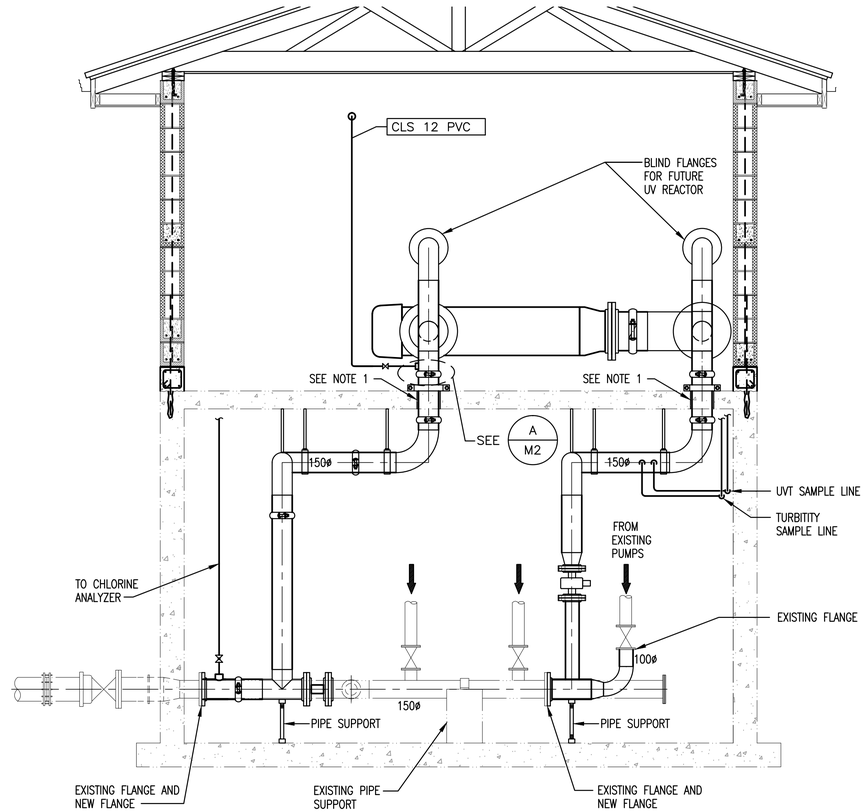
SUNSHINE COAST REGIONAL DISTRICT
GARDEN BAY UV BUILDING
MECHANICAL – PLANS

SCALE: AS SHOWN
DRAWING No. 028.206
SHEET No. M1 ISSUE D

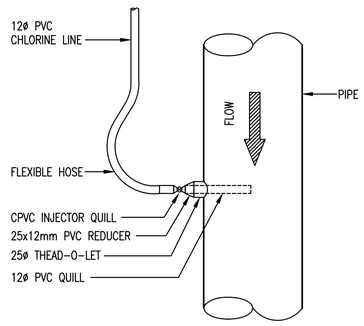


NOTE :
1. LINK SEAL AND GROUT TO SEAL AROUND PIPE.

SECTION 1 / M1
1:25



SECTION 2 / M1
1:25



CHLORINE INJECTOR

DETAIL A / M2
NTS

THIS DISTANCE = 100 ON ORIGINAL ANSI D SIZE SHEET
OTHERWISE ADJUST SCALES ACCORDINGLY
1:1 @ ANSI D
0 10 20 30 40 50 60 70 80 90 100 mm

PLOT: FULL 1:25 HALF 1:50

REVISIONS	ISSUE	DATE	DRAWN	CHK'D	APP'D	DESCRIPTION	ISSUE	DATE	DRAWN	CHK'D	APP'D	DESCRIPTION
	A	JAN27/12	AIS	EP	EP	ISSUED FOR TENDER	D	MAY15/13	MMc	WB	WB	RECORD DRAWING
	B	FEB16/12	RB	ZA	WB	ADDENDUM NO. 2 – AS SHOWN						
	C	APR25/12	RB	ZA	WB	ISSUED FOR CONSTRUCTION						

AutoCAD DRAWING

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DRAWN KS/RB
CHECKED EP

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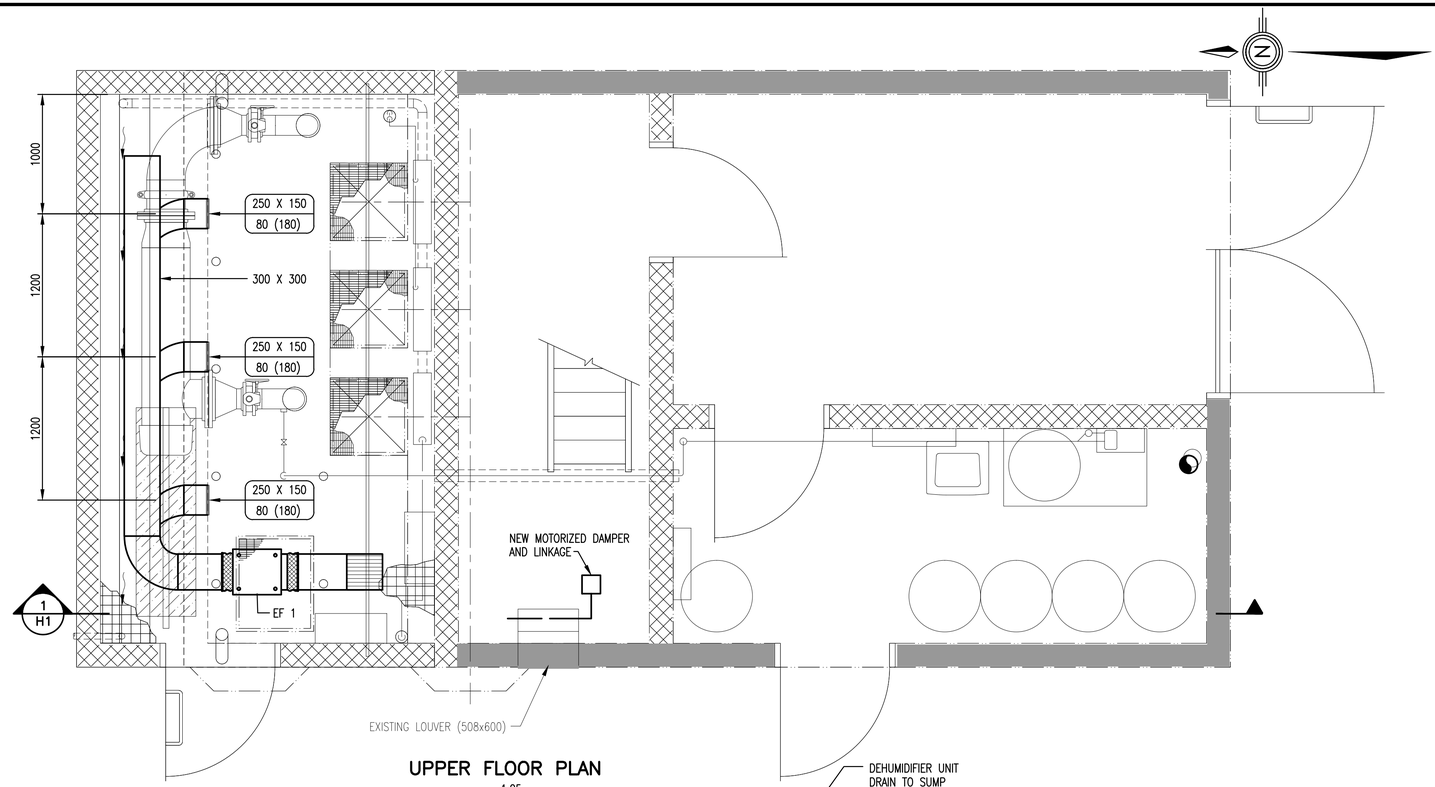
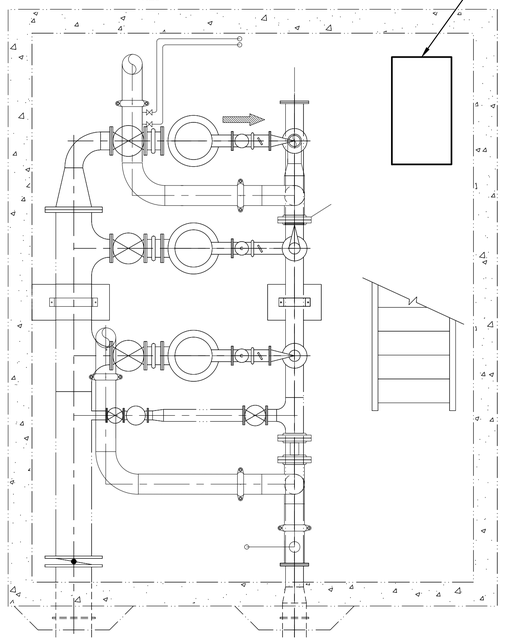
SUNSHINE COAST REGIONAL DISTRICT
GARDEN BAY UV BUILDING
MECHANICAL – SECTIONS

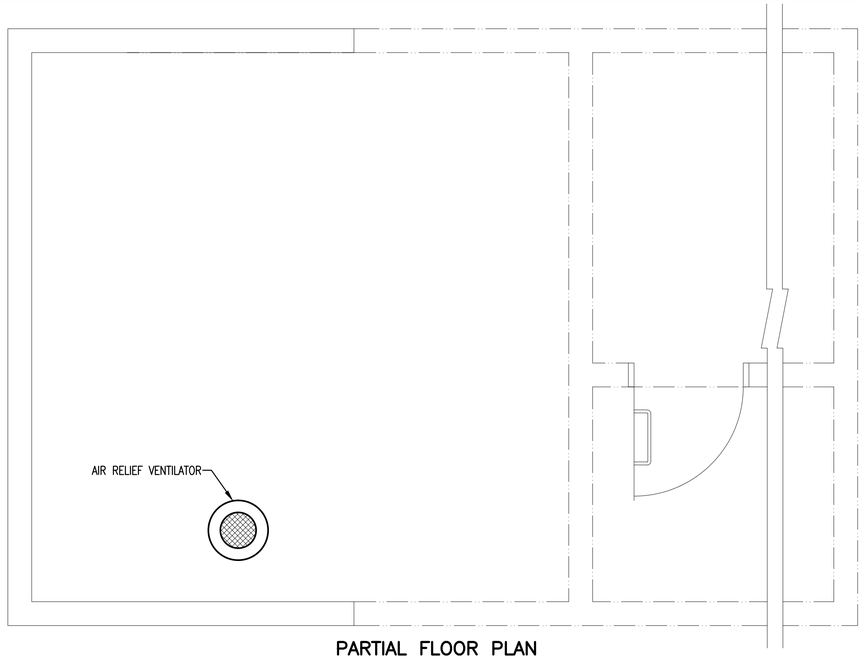
SCALE: AS SHOWN
DRAWING No. 028.206
SHEET No. M2 ISSUE D



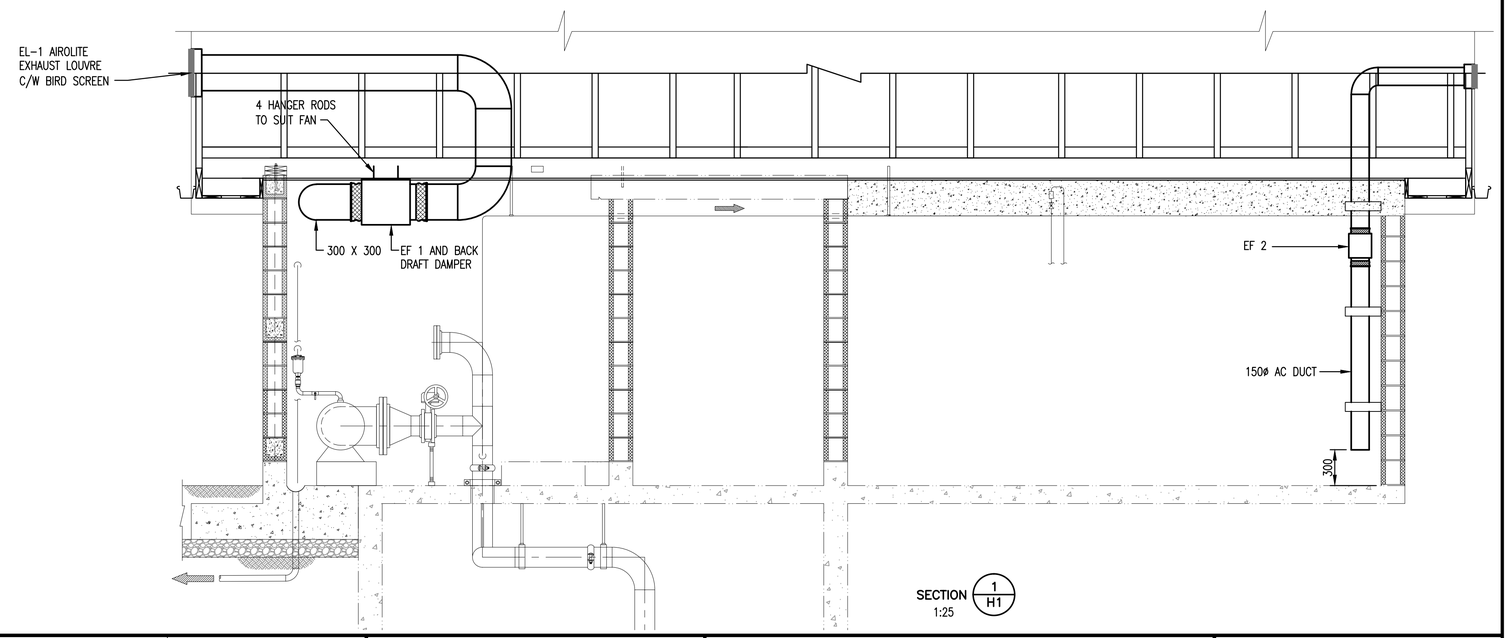
UPPER FLOOR PLAN
1:25



LOWER FLOOR PLAN
1:25



PARTIAL FLOOR PLAN
1:25



SECTION 1 / H1
1:25

THIS DISTANCE = 100 ON ORIGINAL ANSI D SIZE SHEET
OTHERWISE ADJUST SCALES ACCORDINGLY
1:1 @ ANSI D
0 10 20 30 40 50 60 70 80 90 100 mm

PLOT: FULL 1:1 HALF 1:2

FILE: G:\D&K CAD Drawings\DKSERVER P Shore\Redwgs\SUNSHINE COAST\28-206\HVAC\28-206 H1.dwg Tab H1 13-06-07 vcgj20

AutoCAD DRAWING

REVISIONS

ISSUE	DATE	DRAWN	CHK'D	APP'D	DESCRIPTION
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B	FEB09/12	RB	EP	EP	ADDENDUM NO. 1 – AS SHOWN
C	FEB16/12	RB	ZA	WB	ADDENDUM NO. 2 – AS SHOWN
D	APR25/12	RB	ZA	WB	ISSUED FOR CONSTRUCTION
E	MAY15/13	MMc	WB	WB	RECORD DRAWING

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DRAWN AIS/RB
CHECKED EP

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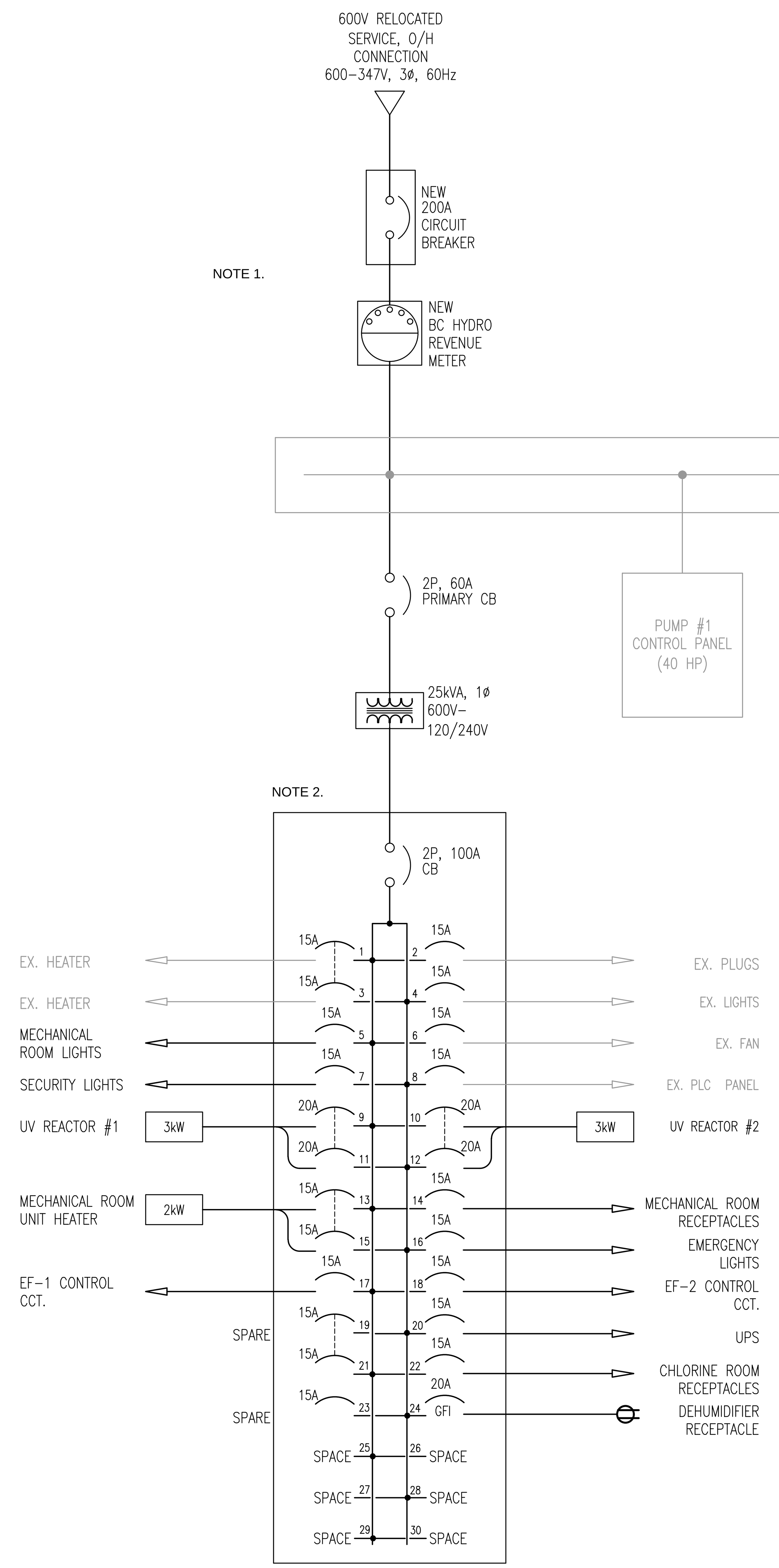
SUNSHINE COAST REGIONAL DISTRICT
GARDEN BAY UV BUILDING
HVAC – PLANS & SECTION

SCALE: AS SHOWN
DRAWING No. 28.206
SHEET No. H1 ISSUE E



SINGLE LINE DIAGRAM

NOTES:

1. INSTALL A NEW SERVICE MAST IN PLACE OF THE EXISTING AS REQUIRED BY BC HYDRO. CO-ORDINATE THE WORK WITH BC HYDRO AND INSTALL A NEW 200A MAINSWITCH AT THE MOST CONVENIENT TIME TO MINIMIZE SERVICE INTERRUPTION. DECOMMISSION THE EXISTING UTILITY METERING EQUIPMENT AND PROVIDE NEW 600V METERBASE ON THE OUTSIDE ENVELOPE OF THE BUILDING. (BY OTHERS)

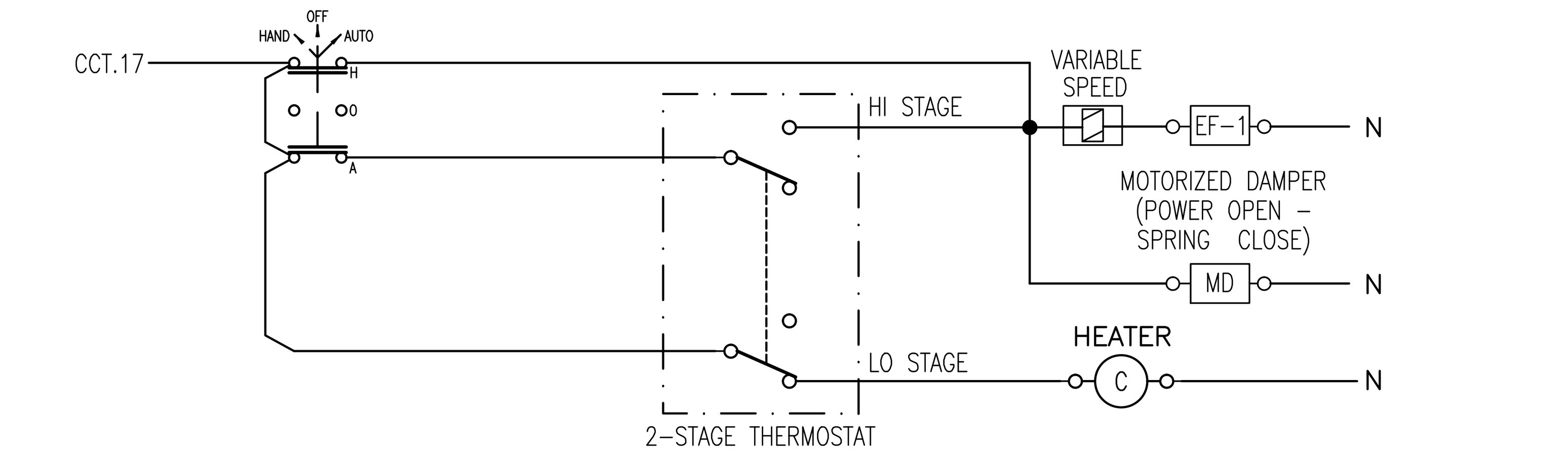
2. REPLACE THE EXISTING LIGHTING PANEL WITH A NEW DISTRIBUTION PANELBOARD, REWIRE THE EXISTING CIRCUITS AND ADD NEW CIRCUITS AS REQUIRED. PROVIDE A NEW DISTRIBUTION TRANSFORMER AND TRANSFORMER PRIMARY CIRCUIT BREAKER.

THIS DISTANCE = 100 ON ORIGINAL ANSI D SIZE SHEET
OTHERWISE ADJUST SCALES ACCORDINGLY
1:1 @ ANSI D 0 10 20 30 40 50 60 70 80 90 100 mm

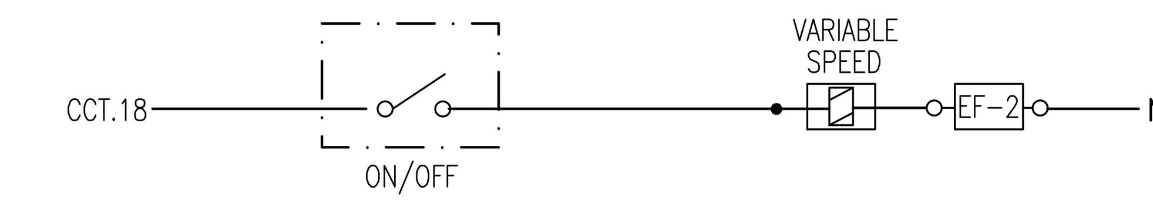
PLOT: FULL 1:25 HALF 1:50

PANELBOARD LOAD

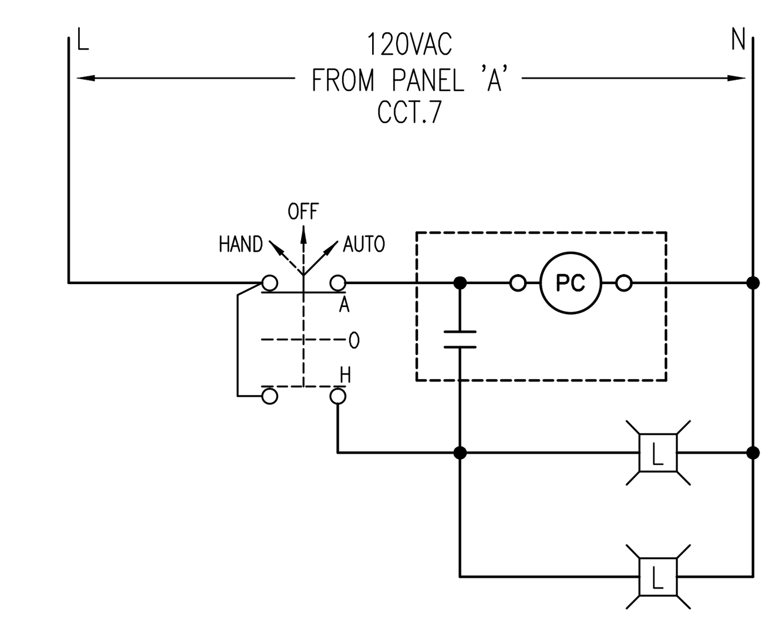
ITEM	LOAD [kVA]
EXISTING BASEBOARD HEATER	3.0
EXISTING PLUGS	0.5
EXISTING LIGHTS	0.4
EXISTING FAN	0.1
EXISTING PLC PANEL	0.5
MECHANICAL ROOM LIGHTS	0.2
UV REACTOR #1	3.3
UV REACTOR #2	3.3
MECHANICAL ROOM UH	2.0
MECHANICAL ROOM RECEPTACLES	0.5
EMERGENCY LIGHTS	0.1
FAN EF-1	0.1
FAN EF-2	0.1
UPS INSTRUMENTATION POWER	1.0
CHLORINE ROOM RECEPTACLES	0.5
DEHUMIDIFIER	1.5
TOTAL	17.10



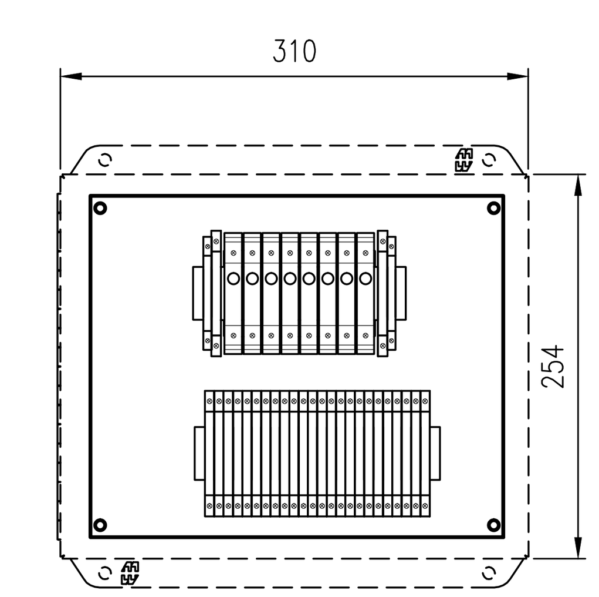
PUMP ROOM & ELECTRICAL ROOM FAN/HEATER CONTROL



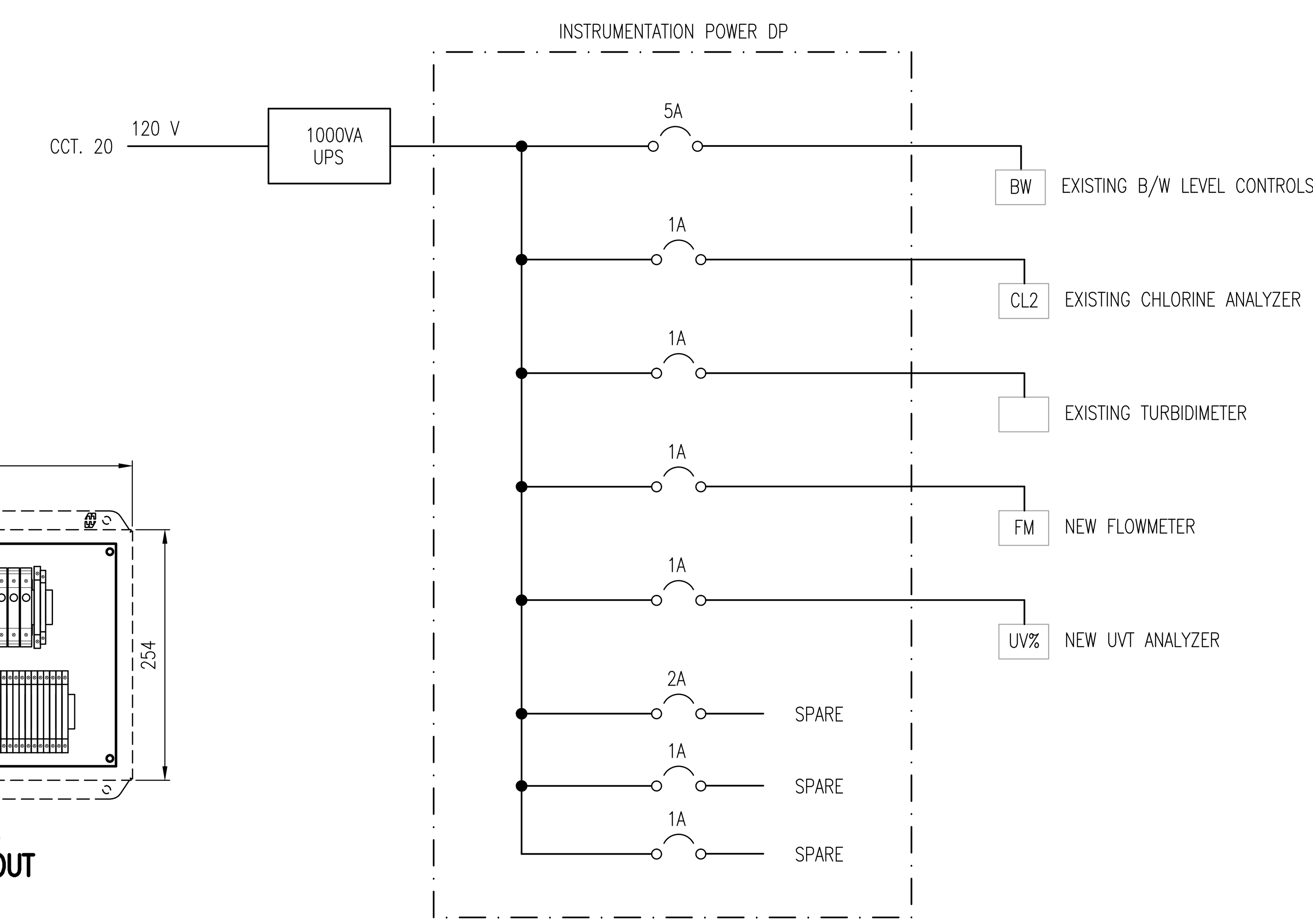
EF-2 FAN CONTROL



OUTSIDE LIGHTS CONTROL



1:5
LAYOUT



SCHEMATIC

INSTRUMENTATION POWER DP

ISSUE	DATE	DRAWN	CHK'D	APP'D	DESCRIPTION	ISSUE	DATE	DRAWN	CHK'D	APP'D	DESCRIPTION
A	JAN27/12	GV	TT	TT	ISSUED FOR TENDER	D	APR25/12	GV	ZA	GV	ISSUED FOR CONSTRUCTION
B	FEB16/12		ZA	GV	ADDENDUM NO.2-AS SHOWN	E	MAY08/13	RB	GV	WB	RECORD DRAWING
C					MODIFIED - AS SHOWN						

AutoCAD DRAWING — REVISIONS

DESIGNED GV
DRAWN GV
CHECKED TT

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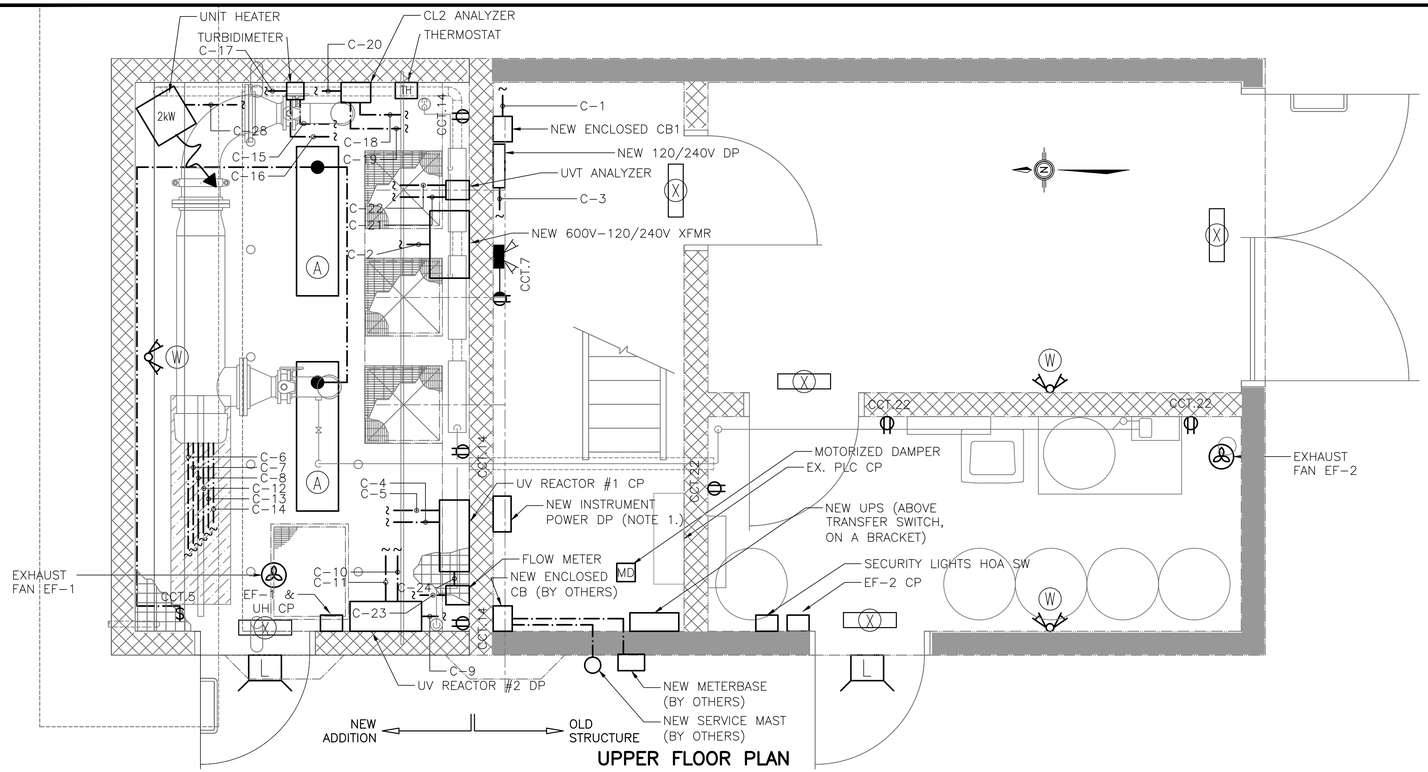
SUNSHINE COAST REGIONAL DISTRICT
GARDEN BAY UV BUILDING
ELECTRICAL - SINGLE LINE DIAGRAM & MISCELLANIOUS DETAILS

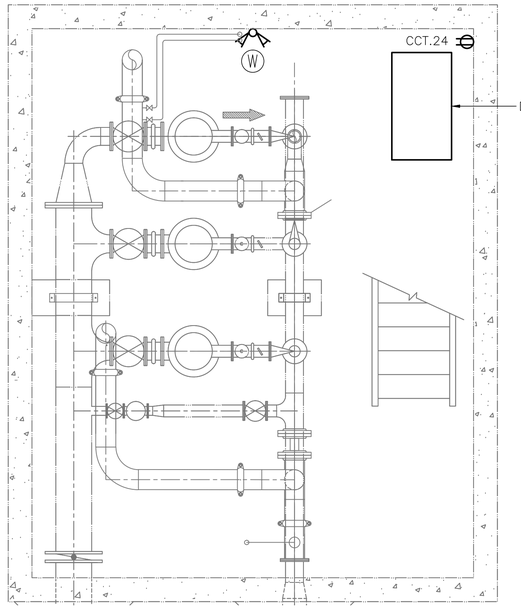
SCALE: AS SHOWN
DRAWING No. 028.206
SHEET No. E1 ISSUE E

FILE: G:\D&K CAD Drawings\DKSERVER P Shore\Recdwgs\SUNSHINE COAST\28-206\ELECTRICAL\28-206-E1.dwg Tab: E1 13-06-07 vcgiz0



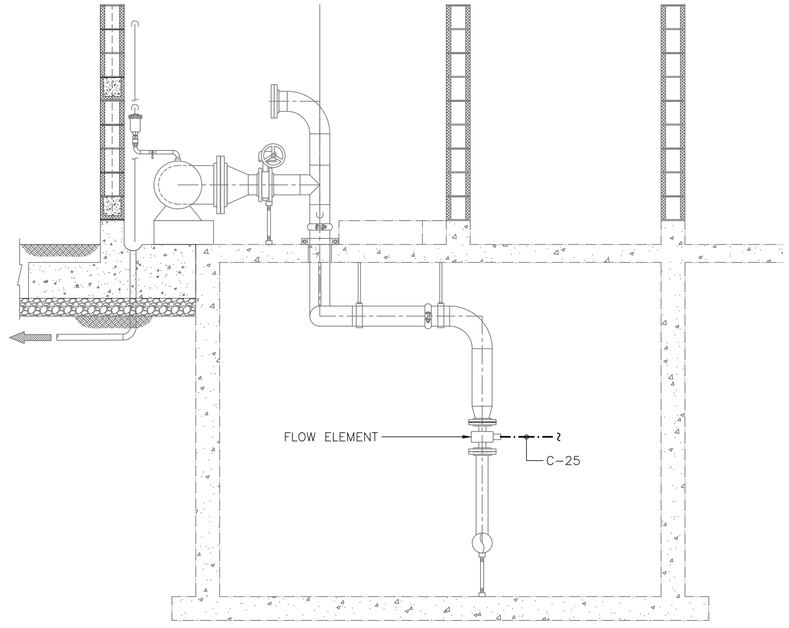
UPPER FLOOR PLAN

1:25



LOWER FLOOR PLAN

1:25



LOWER LEVEL SECTION – DETAIL

1:25

NOTES:

1. INSTALL A NEW SERVICE MAST IN PLACE OF THE EXISTING AS REQUIRED BY BC HYDRO. CO-ORDINATE THE WORK WITH BC HYDRO AND INSTALL A NEW 200A MAINSWITCH AT THE MOST CONVENIENT TIME TO MINIMIZE SERVICE INTERRUPTION. DECOMMISSION THE EXISTING UTILITY METERING EQUIPMENT AND PROVIDE NEW 600V METERBASE ON THE OUTSIDE ENVELOPE OF THE BUILDING. (BY OTHERS)

CABLE SCHEDULE			
NUMBER	RACEWAY & CONDUCTORS	FROM	TO
C-1	53C-2#4+BOND	600V SPLITTER	ENCLOSED CIRCUIT BREAKER CB1
C-2	53C-2#4+BOND	ENCLOSED CIRCUIT BREAKER CB1	DISTRIBUTION TRANSFORMER PRIMARY
C-3	53C-3#0+BOND	DISTRIBUTION TRANSFORMER SECONDARY	DISTRIBUTION PANEL
C-4	27C-3#10+BOND	DISTRIBUTION PANEL	UV REACTOR #1 CP
C-5	53C-5BELDEN#8760+BELDEN#9136A	MAIN PLC CP	UV REACTOR #1 CP
C-6	35C-MFR.CABLE	UV REACTOR #1 CP	UV REACTOR #1 LAMPS ASSEMBLY (LAMPS 1-6)
C-7	35C-MFR.CABLE	UV REACTOR #1 CP	UV REACTOR #1 LAMPS ASSEMBLY (LAMPS 7-12)
C-8	21C-MFR.CABLE	UV REACTOR #1 CP	UV REACTOR #1 LAMPS ASSEMBLY (SENSORS)
C-9	27C-PULLCORD (FOR FUTURE BELDEN#9136A)	UV REACTOR #1 CP	UV REACTOR #2 CP
C-10	27C-PULLCORD (FUTURE 3#10+BOND)	DISTRIBUTION PANEL	UV REACTOR #2 CP
C-11	27C-PULLCORD (FUTURE 10#14)	MAIN PLC CP	UV REACTOR #2 CP
C-12	35C-PULLCORD (FUTURE MFR.CABLE)	UV REACTOR #2 CP	UV REACTOR #2 LAMPS ASSEMBLY (LAMPS 1-6)
C-13	35C-PULLCORD (FUTURE MFR.CABLE)	UV REACTOR #2 CP	UV REACTOR #2 LAMPS ASSEMBLY (LAMPS 7-12)
C-14	21C-PULLCORD (FUTURE MFR.CABLE)	UV REACTOR #2 CP	UV REACTOR #2 LAMPS ASSEMBLY (SENSORS)
C-15	27C-2#14+BOND	INSTRUMENTATION POWER DP	TURBIDIMETER CONTROLLER HACH SC100
C-16	27C-BELDEN#8760	MAIN PLC CP	TURBIDIMETER CONTROLLER HACH SC100
C-17	27C-MFR.CABLE	HACH SC100 CONTROLLER	1720E TURBIDIMETER
C-18	27C-2#14+BOND	INSTRUMENTATION POWER DP	CHLORINE ANALYZER MICROCHEM 2
C-19	27C-BELDEN#8760	MAIN PLC CP	CHLORINE ANALYZER MICROCHEM 2
C-20	27C-MFR.CABLE	CHLORINE ANALYZER MICROCHEM 2	CL_2 PROBE
C-21	27C-2#14+BOND	INSTRUMENTATION POWER DP	UVT ANALYZER
C-22	27C-BELDEN#8760	MAIN PLC CP	UVT ANALYZER
C-23	27C-2#14+BOND	INSTRUMENTATION POWER DP	FLOW METER (TRANSMITTER)
C-24	27C-BELDEN#8760	MAIN PLC CP	FLOW METER (TRANSMITTER)
C-25	27C-MFR. CABLE	FLOW METER (TRANSMITTER)	FLOW ELEMENT
C-26	27C-BELDEN#9369	MAIN PLC CP	UV REACTOR #1 CP (UVT, FLOW, SPARE)
C-27	27C-BELDEN#9369	MAIN PLC CP	UV REACTOR #2 CP (UVT, FLOW, SPARE)
C-28	27C-2#12+BOND	DISTRIBUTION PANEL	UNIT HEATER IN UV ROOM

THIS DISTANCE = 100 ON ORIGINAL ANSI D SIZE SHEET
OTHERWISE ADJUST SCALES ACCORDINGLY
1:1 @ ANSI D
0 10 20 30 40 50 60 70 80 90 100 mm

PLOT: FULL 1:25 HALF 1:50

FILE: G:\D&K CAD Drawings\DKSERVER P Share\Recdwgs\SUNSHINE COAST\28-206\ELECTRICAL\28-206-E2.dwg Tab E2 13-06-07 vcsjz0

AutoCAD DRAWING

REVISIONS	ISSUE	DATE	DRAWN	CHK'D	APP'D	DESCRIPTION	ISSUE	DATE	DRAWN	CHK'D	APP'D	DESCRIPTION
	A	JAN27/12	GV	TT	TT	ISSUED FOR TENDER	D	MAY08/13	RB	GV	WB	RECORD DRAWING
	B	FEB16/12	RB	ZA	GV	ADDENDUM NO. 2 – AS SHOWN						
	C	APR25/12	RB	ZA	GV	ISSUED FOR CONSTRUCTION						

DESIGNED GV
DRAWN GV/RB
CHECKED TT

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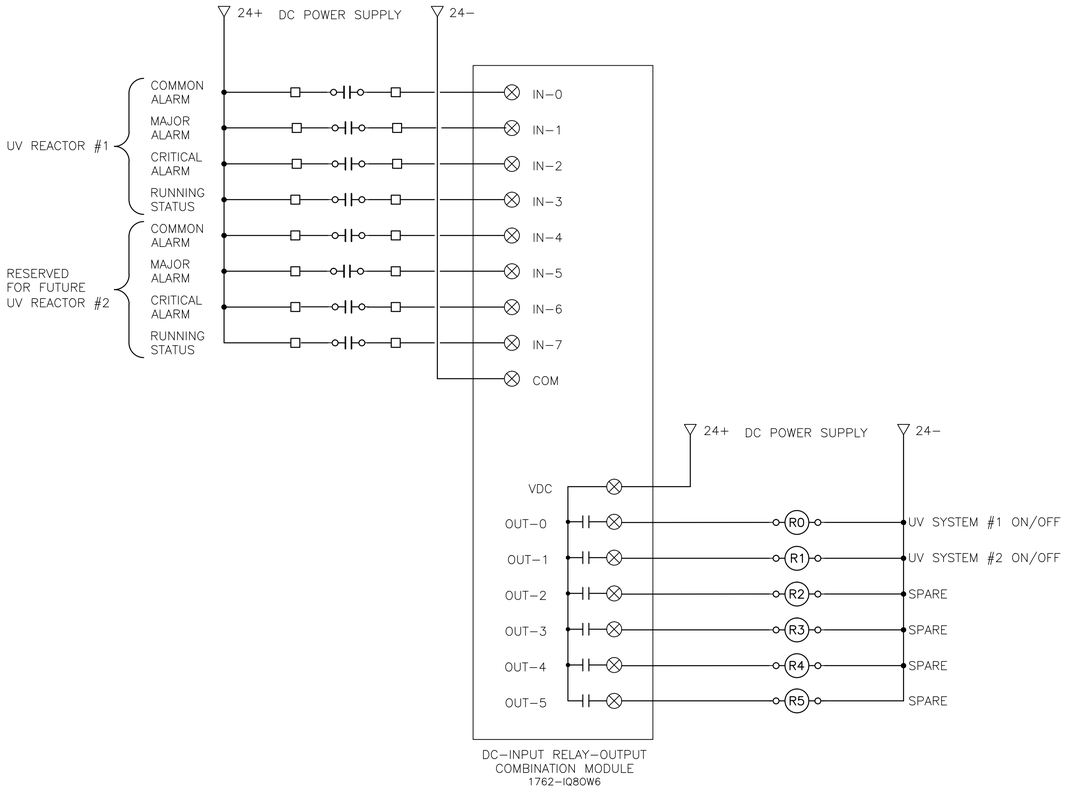
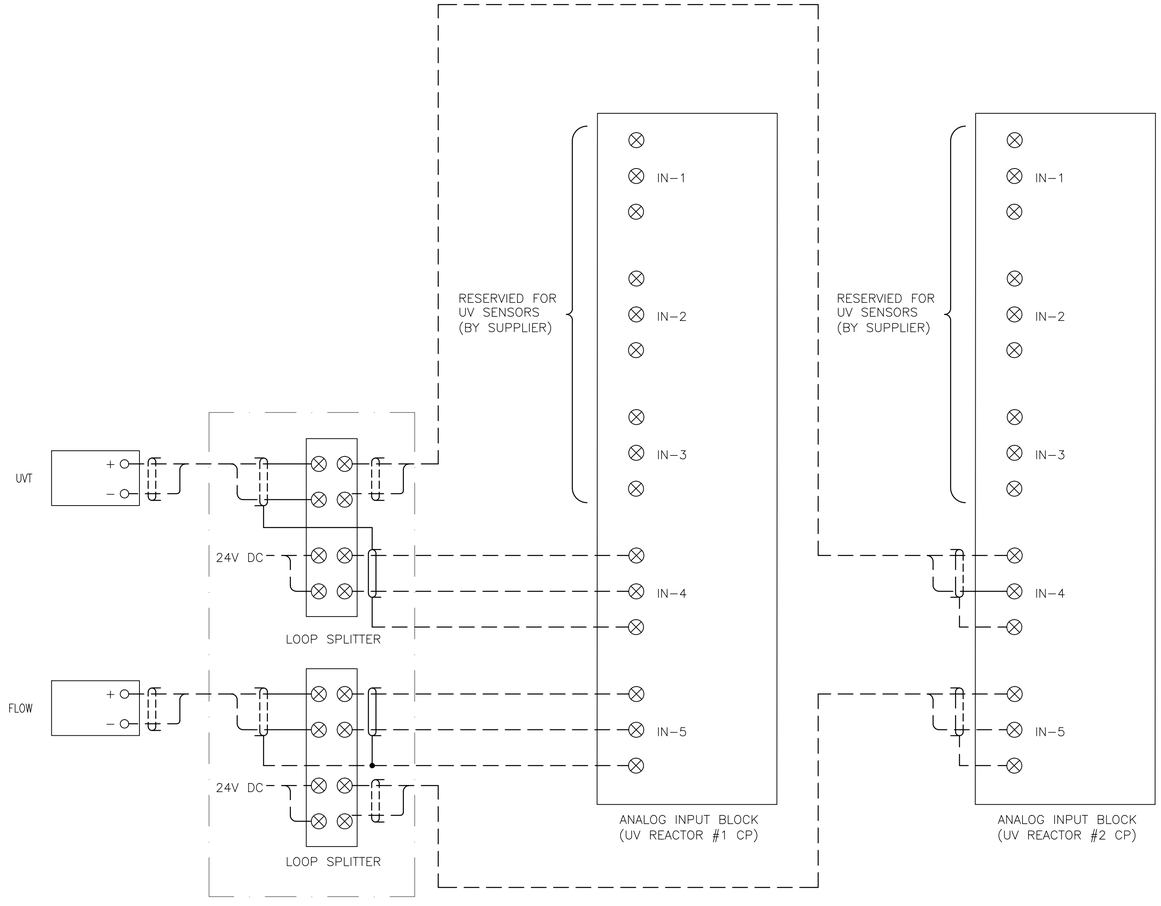
604-990-4800
210-889 Harbourside Drive
North Vancouver BC
V7P 3S1, Canada

SUNSHINE COAST REGIONAL DISTRICT
GARDEN BAY UV BUILDING
ELECTRICAL – LIGHTING, UTILITY, POWER AND CONTROL LAYOUT

SCALE: 1:25
DRAWING No. 028.206
SHEET No. E2 ISSUE D



EXISTING PLC PANEL NEW I/O



EXISTING PLC CP

NOTES:
1. CONTRACTOR TO PROVIDE, IF REQUIRED, EXTERNAL POWER FOR THE UV REMOTE ON/OFF SIGNALS TO SUIT THE UV SYSTEM THAT IS SELECTED.

THIS DISTANCE = 100 ON ORIGINAL ANSI D SIZE SHEET
OTHERWISE ADJUST SCALES ACCORDINGLY
1:1 @ ANSI D
0 10 20 30 40 50 60 70 80 90 100 mm

PLOT: FULL 1:25 HALF 1:50

FILE: G:\D&K CAD Drawings\DKSERVER P: Shore\Recdwgs\SUNSHINE COAST\28-206\ELECTRICAL\28-206-E3.dwg Tab: PLC LAYOUT 13-06-07 vcpj20

AutoCAD DRAWING

REVISIONS

ISSUE	DATE	DRAWN	CHK'D	APP'D	DESCRIPTION
A	JAN27/12	GV	TT	TT	ISSUED FOR TENDER
B	APR25/12	GV	TT	TT	ISSUED FOR CONSTRUCTION
C	MAY08/13	RB	GV	WB	RECORD DRAWING

ISSUE	DATE	DRAWN	CHK'D	APP'D	DESCRIPTION

DESIGNED GV
DRAWN GV
CHECKED TT

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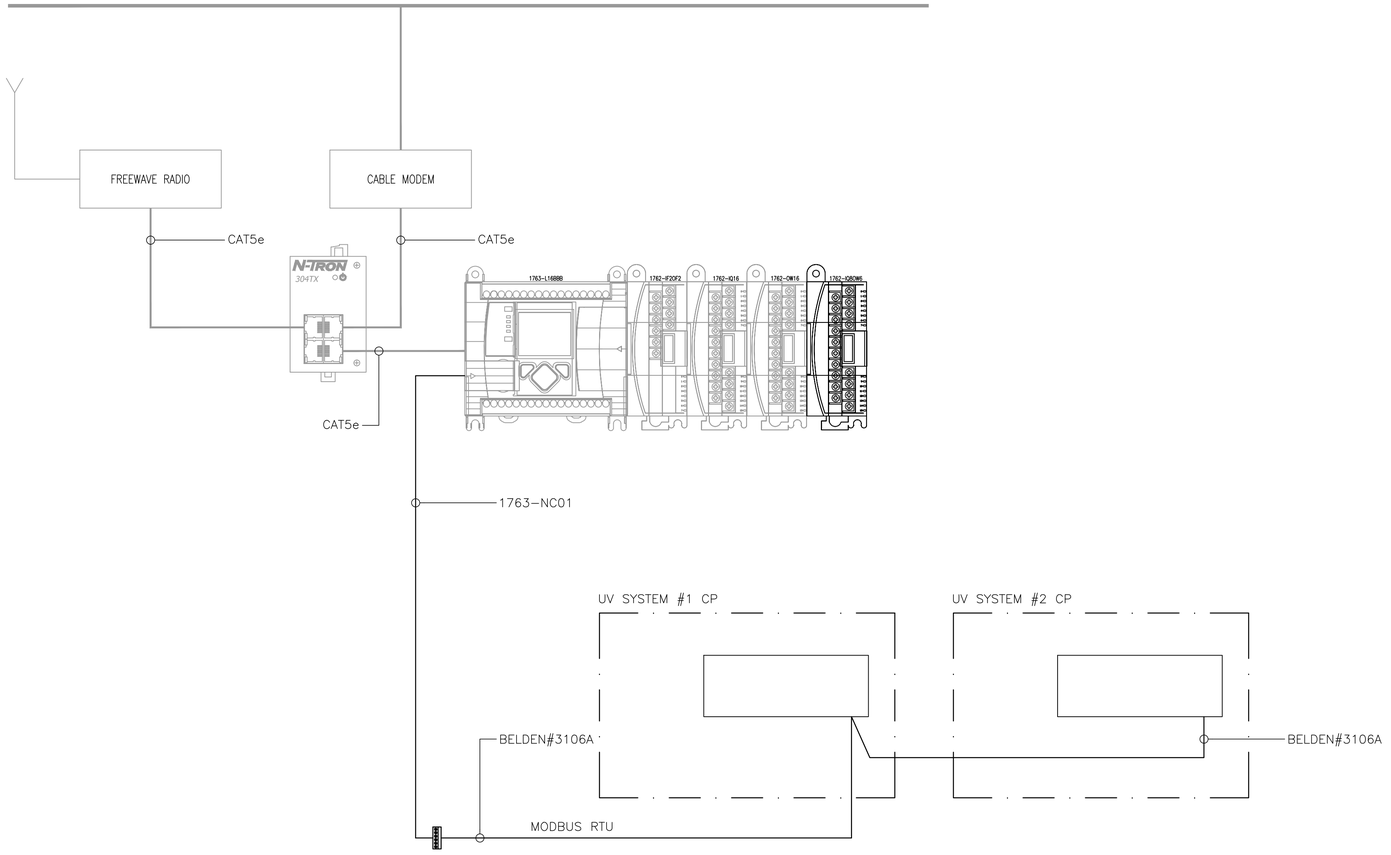
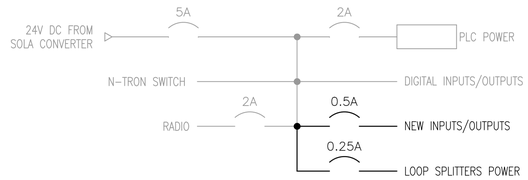
GARDEN BAY UV BUILDING
ELECTRICAL – NEW I/O

SCALE: AS SHOWN
DRAWING No. 028.206
SHEET No. E3 ISSUE C

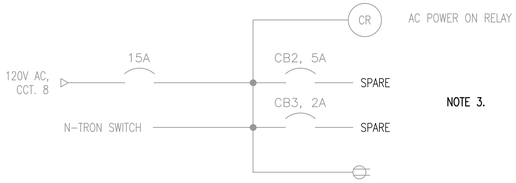


PLC LAYOUT AND COMMUNICATION BLOCK DIAGRAM



NOTE 2.

DC CONTROL POWER MODIFICATIONS



NOTE 3.

PLC CP AC POWER MODIFICATIONS

NOTES:
1. PROVIDE NEW EQUIPMENT AND WIRING INSIDE THE MAIN PLC PANEL, AND WIRE WITH OUTSIDE EQUPMENT.
2. PROVIDE NEW CIRCUIT BREAKERS AND WIRING.
3. POWER THE INSTRUMENTATION FROM THE NEW INSTRUMENTATION POWER DP, LEAVE THE EXISTING CIRCUIT BREAKERS INSIDE THE MAIN PLC CP AS SPARE.

THIS DISTANCE = 100 ON ORIGINAL ANSI D SIZE SHEET
OTHERWISE ADJUST SCALES ACCORDINGLY
1:1 @ ANSI D
0 10 20 30 40 50 60 70 80 90 100 mm

PLOT: FULL 1:25 HALF 1:50

REVISIONS	ISSUE	DATE	DRAWN	CHK'D	APP'D	DESCRIPTION	ISSUE	DATE	DRAWN	CHK'D	APP'D	DESCRIPTION
	A	JAN27/12	GV	TT	TT	ISSUED FOR TENDER						
	B	APR25/12	GV	TT	YY	ISSUED FOR CONSTRUTION						
	C	MAY08/13	RB	GV	WB	RECORD DRAWING						

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GARDEN BAY UV BUILDING
ELECTRICAL – PLC LAYOUT / COMMUNICATION BLOCK DIAGRAM

SCALE: AS SHOWN
DRAWING No. 028.206
SHEET No. E4 ISSUE C

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AutoCAD DRAWING