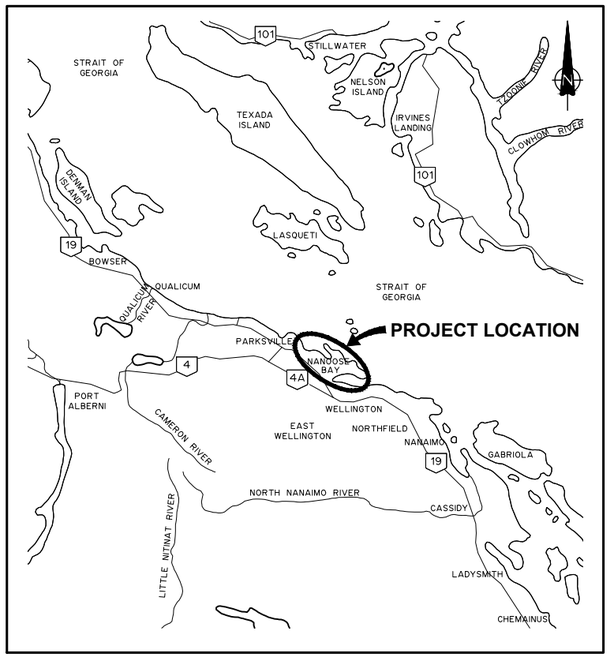
SET _____



LOCATION PLAN

REGIONAL DISTRICT OF NANAIMO

NANOOSE BAY WSA SCADA IMPLEMENTATION
FOR TENDER
CONTRACT NO.: 20-056
9794-002-00

MPE Engineering Ltd.

LIST OF DRAWINGS

GENERAL

G0.1 TITLE PAGE
G0.2 LIST OF DRAWINGS
G0.3 LOCATION OVERVIEW
ELECTRICAL: GENERAL
E0.1 LEGEND
E1.1 COMMUNICATION ARCHITECTURE
E1.2 TYPICAL TERMINAL LAYOUTS
E1.3 ANTENNA DETAILS
ELECTRICAL: ARBUTUS PUMP STATION
E2.1.1 CONTROL PANEL LAYOUT
E2.1.2 PLC IO
ELECTRICAL: BEACHCOMBER PRV
E2.2.1 PANEL DETAILS
E2.2.2 PLC IO
ELECTRICAL: DOLPHIN RESERVOIR
E2.3.1 PANEL DETAILS
E2.3.2 PLC IO
ELECTRICAL: EAGLE HEIGHTS RESERVOIR
E2.4.1 SITE PLAN
E2.4.2 PANEL DETAILS
ELECTRICAL: STEWART ROAD PUMP STATION
E2.5.1 PANEL DETAILS
E2.5.2 PLC IO
ELECTRICAL: FAIRWINDS RESERVOIRS
E2.6.1 PANEL DETAILS
E2.6.2 PLC IO
ELECTRICAL: TIPPETT ROAD WELL 1
E2.7.1 PANEL DETAILS
E2.7.2 PLC IO
ELECTRICAL: FAIRWINDS WELL 2
E2.8.1 PANEL DETAILS
E2.8.2 PLC IO
ELECTRICAL: FAIRWINDS WELL 3
E2.9.1 PANEL DETAILS
E2.9.2 PLC IO
ELECTRICAL: LIBRARY FLOW CONTROL AND PRV
E2.10.1 PANEL DETAILS
E2.10.2 PLC IO
ELECTRICAL: MADRONA PUMP STATION
E2.11.1 PANEL DETAILS
E2.11.2 PLC IO
ELECTRICAL: MADRONA WELL 8
E2.12.1 PANEL DETAILS
E2.12.2 PLC IO
ELECTRICAL: SHERBROOKE PRV
E2.13.1 PANEL DETAILS
E2.13.2 PLC IO
ELECTRICAL: WALL BROOK WELL 1
E2.14.1 PANEL DETAILS
E2.14.2 PLC IO
ELECTRICAL: WEST BAY WELL 4 AND PUMP STATION
E2.15.1 PANEL DETAILS
E2.15.2 PLC IO 1 OF 2
E2.15.3 PLC IO 2 OF 2
ELECTRICAL: NANOOSE WTP
E2.16.1 PANEL DETAILS

THIS DRAWING MAY HAVE BEEN MODIFIED FROM ITS ORIGINAL SIZE. ALL SCALE NOTATIONS INDICATED ARE BASED ON 11"x17" FORMAT DRAWINGS

1	20-09-23	FOR TENDER
ISSUE	YY-MM-DD	REVISION

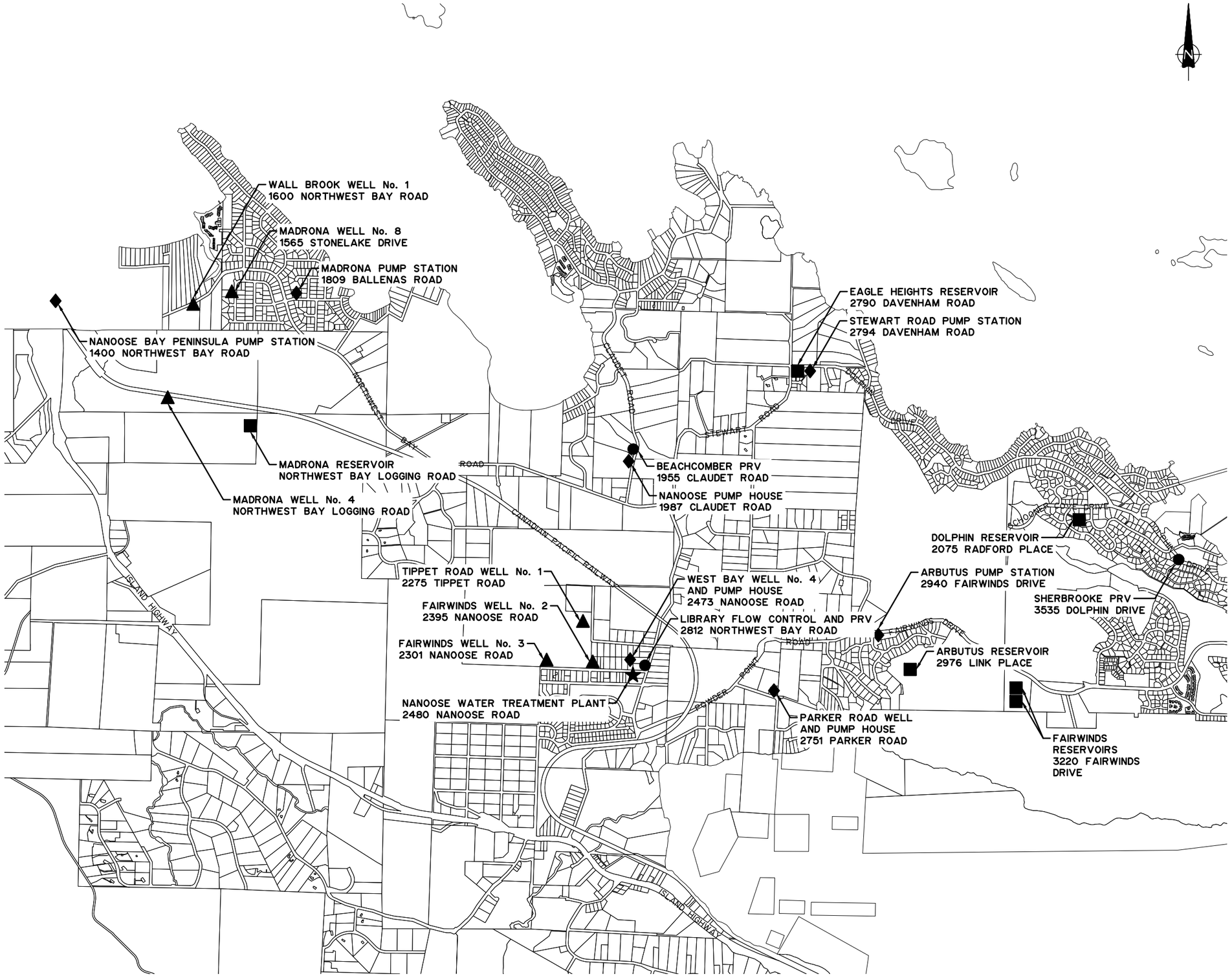
Association of Professional Engineers and Geoscientists of the Province of British Columbia
Z.T. SPENCER
ENGINEERING LICENSEE
Limited Licence 199981
2020-09-23

MPE Engineering Ltd.

REGIONAL DISTRICT OF NANAIMO

NANOOSE BAY WSA SCADA IMPLEMENTATION
ELECTRICAL
GENERAL
LIST OF DRAWINGS

DESIGNED	N.D.S., Z.T.S.	JOB	9794-002-00
DRAWN	N.O.W., D.J.H.	SCALE	
DATE	SEPTEMBER 2020	DRAWING	G0.2



NOTES:

1. THE SITE LOCATION OVERVIEW IS TO BE USED FOR PROJECT LOCATION INFORMATION ONLY AND DOES NOT DEFINE PROJECT SCOPE. REFER TO RESPECTIVE DRAWINGS AND SPECIFICATIONS

LEGEND:

- ★ WATER TREATMENT PLANT
- ◆ PUMP STATION
- ■ RESERVOIR
- ▲ WELL
- ● PRV

THIS DRAWING MAY HAVE BEEN MODIFIED FROM ITS ORIGINAL SIZE. ALL SCALE NOTATIONS INDICATED ARE BASED ON 11"x17" FORMAT DRAWINGS

1	20-09-23	FOR TENDER
ISSUE	YY-MM-DD	REVISION

Association of Professional Engineers and Geoscientists of the Province of British Columbia
Z.T.S. SPENCER
ENGINEERING LICENSEE
Limited Licence 100981
2020-09-23

MPE Engineering Ltd.

REGIONAL DISTRICT OF NANAIMO

NANOOSE BAY WSA SCADA
IMPLEMENTATION
ELECTRICAL
GENERAL
LOCATION OVERVIEW

DESIGNED	N.D.S., Z.T.S.	JOB	9794-002-00
DRAWN	N.O.W., D.J.H.	SCALE	1:30 000
DATE	SEPTEMBER 2020	DRAWING	G0.3

DISTRIBUTION

- CONDUIT IDENTIFICATION TAG
- LIGHTING/POWER PANEL
- DATA PANEL
- INTERCOM PANEL
- FIRE ANNUNCIATOR PANEL
- GROUND BAR
- PLYWOOD BACKBOARD
- EXTERIOR TRANSFORMER
- DRY TYPE TRANSFORMER
- METERING CABINET GREATER THAN 200A
- UTILITY METER PLAN
- POWER METER
- ELECTRIC UTILITY METER 200A AND LESS
- WATER METER
- GAS METER
- SPLITTER
- ELECTRICAL CENTRAL DISTRIBUTION PANEL (CDP)
- ELECTRICAL MOTOR CONTROL CENTRE (MCC)
- ELECTRICAL MAIN DISTRIBUTION BOARD
- TRANSFER SWITCH WITH BY-PASS
- TRANSFER SWITCH
- LVT 120/24V LOW VOLTAGE TRANSFORMER
- WEATHER HEAD

LIGHTING

- SURFACE MOUNTED LIGHT FIXTURE
- RECESSED LIGHT FIXTURE
- RECESSED LIGHT FIXTURE WITH END PLATES
- SURFACE MOUNTED STRIP LIGHT FIXTURE
- UNDER CABINET/VALENCE STRIP LIGHT FIXTURE
- WALL MOUNTED CUBED LIGHT FIXTURE
- SURFACE MOUNTED LIGHT FIXTURE
- RECESSED LIGHT FIXTURE
- WALL MOUNTED LIGHT FIXTURE
- HEM WALL MOUNTED LIGHT FIXTURE ON EMERGENCY
- TRACK LIGHT C/W PENDANT HEADS
- TRACK LIGHT C/W ADJUSTABLE HEADS
- BOLLARD LIGHT FIXTURE
- POLE MOUNTED LIGHT FIXTURE (ONE HEAD SHOWN)
- WALL MOUNTED HID LIGHT FIXTURE

POWER

- DUPLEX RECEPTACLE
- SPLIT FEED RECEPTACLE
- FOURPLEX RECEPTACLE
- SWITCHED DUPLEX RECEPTACLE
- 20A T-SLOT RECEPTACLE (KITCHEN)
- TWISTLOCK RECEPTACLE
- 208 VOLT 1PH RECEPTACLE
- 208 VOLT 3PH RECEPTACLE
- WALL MOUNTED USB PORT
- PEDESTAL DUPLEX RECEPTACLE
- SB - WALL MOUNTED MULTI-GANG BOX
- WALL MOUNTED PUSH BUTTON
- SPD WALL MOUNTED SURGE PROTECTIVE DEVICE (SPD OR TVSS)
- VFD WALL MOUNTED VARIABLE FREQUENCY DRIVE (VFD)
- CEILING MOUNTED DUPLEX RECEPTACLE
- CEILING MOUNTED FOURPLEX RECEPTACLE
- CEILING MOUNTED 208 VOLT 1PH RECEPTACLE
- CEILING MOUNTED 208 VOLT 3PH RECEPTACLE
- R AUXILIARY RELAY
- P CEILING MOUNTED POWER ZONE BOX
- REEL DOWN RECEPTACLE
- PACK POLE
- No. FLOOR MOUNTED DUPLEX RECEPTACLE (No. of OUTLETS)
- No. FLOOR MOUNTED FOURPLEX RECEPTACLE (No. of OUTLETS)
- No. FLOOR MOUNTED 208 VOLT 1PH RECEPTACLE
- No. FLOOR MOUNTED 208 VOLT 3PH RECEPTACLE
- SB - FLOOR MOUNTED MULTI-GANG BOX
- MOTOR
- MOTOR WITH DISCONNECT SWITCH
- MOTOR WITH FUSIBLE DISCONNECT SWITCH
- MOTOR WITH COMBINATION DISCONNECT SWITCH

POWER CONTINUED

- MSM MAGNETIC MOTOR STARTER
- HOME RUN WITH WIRE COUNT
- WAP WIRELESS ACCESS POINT
- ELECTRICAL HEATING
- HEAT TRACING
- PIN AND SLEEVE CONNECTOR (FEMALE)
- PIN AND SLEEVE CONNECTOR (MALE)

SWITCHES AND JUNCTIONS BOXES

- LINE VOLTAGE SWITCH
- P SWITCH C/W PILOT LIGHT
- 2 TWO POLE SWITCH
- 3 THREE WAY SWITCH
- 4 FOUR WAY SWITCH
- M MANUAL MOTOR PROTECTION SWITCH C/W PILOT LIGHT
- K KEY OPERATED SWITCH - CYLINDER TYPE
- T TIMER SWITCH
- D DIMMER SWITCH - SLIDER TYPE
- L INTERNALLY ILLUMINATED LIGHT SWITCH
- R LOW VOLTAGE SWITCH
- 2 GANG SWITCH
- 3 GANG SWITCH
- 4 GANG SWITCH
- 5 GANG SWITCH
- WALL MOUNTED PHOTOCELL
- WALL MOUNTED JUNCTION BOX
- FLOOR MOUNTED JUNCTION BOX
- J SQUARE CEILING MOUNTED JUNCTION BOX
- T THERMOSTAT
- NON-FUSEABLE DISCONNECT SWITCH
- FUSEABLE DISCONNECT SWITCH
- COMBINATION MAGNETIC HOA STARTER
- O/H DOOR PUSH BUTTON
- PB PULL BOX

LIFE SAFETY

- CEILING MOUNTED EXIT LIGHT SINGLE FACE
- CEILING MOUNTED EXIT LIGHT DOUBLE FACE
- CEILING COMBINATION EXIT SIGN AND EMERGENCY LIGHT C/W BATTERY
- WALL MOUNTED EXIT LIGHT SINGLE FACE
- WALL MOUNTED EXIT LIGHT DOUBLE FACE
- WALL COMBINATION EXIT SIGN AND EMERGENCY LIGHT C/W BATTERY
- EXIT LIGHT DIRECTIONAL ARROW
- WALL MOUNTED EMERGENCY LIGHTING BATTERY PACK
- CEILING MOUNTED EMERGENCY LIGHTING DOUBLE REMOTE HEAD
- CEILING MOUNTED EMERGENCY LIGHTING RECESSED REMOTE HEAD
- WALL MOUNTED EMERGENCY LIGHTING DOUBLE REMOTE HEAD
- SMOKE DETECTOR
- A SMOKE ALARM - 120V

POWER EQUIPMENT

- DELTA WYE TRANSFORMER
- DISTRIBUTION TRANSFORMER
- POTENTIAL TRANSFORMER
- FUSE DRAW OUT TYPE
- CIRCUIT BREAKER DRAW OUT TYPE
- 3 PHASE GENERATOR (GROUNDED)
- THERMAL OVERLOAD PROTECTION
- INTERLOCK
- CAPACITOR
- A CURRENT METER
- CONTACTOR
- FUSE
- DISCONNECT SWITCH
- FUSED DISCONNECT SWITCH
- XXX CIRCUIT BREAKER — XXX FRAME SIZE, XXX TRIP RATING, XXX POLE
- ETM ELAPSED TIME METER

POWER EQUIPMENT CONTINUED

- GROUND ROD
- GROUND ROD C/W WELL
- GROUND ROD WITHOUT WELL
- GH GATE HOIST
- x kw HEATER C/W KILOWATT RATING
- XXX MOTOR CONTROL IDENTIFICATION TAG
- TRANSFER SWITCH

COMMUNICATIONS

- WALL MOUNTED TELEPHONE OUTLET
- WALL MOUNTED DATA OUTLET
- WALL MOUNTED COMBINATION TELEPHONE/DATA OUTLET
- WALL MOUNTED TELEVISION OUTLET
- WALL MOUNTED CHIME OR BUZZER
- CEILING MOUNTED TELEPHONE OUTLET
- CEILING MOUNTED COMBINATION TELEPHONE/DATA OUTLET
- CEILING MOUNTED TELEVISION OUTLET
- CEILING MOUNTED DATA OUTLET (No. OF OUTLETS)
- No. FLOOR MOUNTED DATA OUTLET (No. OF OUTLETS)
- No. FLOOR MOUNTED TELEPHONE OUTLET (No. OF OUTLETS)
- No. FLOOR MOUNTED TELEVISION OUTLET (No. OF OUTLETS)
- No. FLOOR MOUNTED COMBINATION TELEPHONE/DATA OUTLET (No. OF OUTLETS)
- RADIO LINK

CONTROL PANEL EQUIPMENT

- RESET PUSH BUTTON (NO)
- RESET PUSH BUTTON (NC)
- MUSHROOM HEAD STOP
- 3 POSITION SELECTOR SWITCH
- 2 POSITION SELECTOR SWITCH
- HAND-OFF-AUTO SELECTOR SWITCH
- UP-OFF-DOWN SELECTOR SWITCH
- RESET PUSH BUTTON
- AMBER PILOT LIGHT
- GREEN PILOT LIGHT
- RED PILOT LIGHT
- DUPLEX RECEPTACLE
- SINGLE PHASE PLUG
- MAIN CONTROL PANEL FUSED TERMINAL BLOCK
- AUXILIARY FUSED TERMINAL BLOCK
- CIRCUIT BREAKER
- MAIN CONTROL PANEL TERMINAL BLOCK
- PLC/RTU TERMINAL
- AUXILIARY TERMINAL BLOCK
- MCC/VFD TERMINAL BLOCK
- DEVICE TERMINAL BLOCK
- R 1000 DRY CONTACT RELAY
- TDR 1000 TIME DELAY RELAY
- M MAGNETIC CONTACTOR
- SOLENOID
- DRY CONTACT RELAY (NC)
- DRY CONTACT RELAY (NO)
- VARIABLE RESISTOR
- RESISTOR
- TH THERMISTOR
- DIODE
- MOV METAL OXIDE VARISTOR

INSTRUMENTATION EQUIPMENT

- LEVEL SWITCH (OPEN ON RISING LEVEL)
- LEVEL SWITCH (OPEN ON FALLING LEVEL)
- FLOW SWITCH (OPEN ON RISING FLOW)
- FLOW SWITCH (OPEN ON FALLING FLOW)
- PRESSURE SWITCH (OPEN ON RISING PRESSURE)
- PRESSURE SWITCH (OPEN ON FALLING PRESSURE)
- TEMPERATURE SWITCH (OPEN ON RISING TEMPERATURE)
- TEMPERATURE SWITCH (OPEN ON FALLING TEMPERATURE)
- LIMIT SWITCH (NC)
- LIMIT SWITCH (NO)
- TIME DELAY RELAY (NC)
- TIME DELAY RELAY (NO)
- XXX / XXX INSTRUMENTATION IDENTIFICATION TAG

PLC I/O

- PLC DI PLC/RTU DIGITAL INPUT
- PLC DO PLC/RTU DIGITAL OUTPUT
- PLC AI PLC/RTU ANALOG INPUT
- PLC AO PLC/RTU ANALOG OUTPUT

MISCELLANEOUS AND LABELS

- REVISION NUMBER
- FIXTURE TYPE
- MECHANICAL EQUIPMENT IDENTIFICATION TAG
- KITCHEN EQUIPMENT TAG
- KEY NOTES
- SINGLE LINE BREAK
- DOUBLE LINE BREAK
- CAPPED OFF LINE OR CONDUIT
- CONDUIT BREAK
- CABLE TRAY
- DW DISH WASHER
- F FRIDGE
- R RANGE
- M MICROWAVE
- G GARBURATOR
- D DRYER
- W WASHER
- NL NIGHT LIGHT
- TP TAMPER PROOF
- GFCI GROUND FAULT CIRCUIT INTERRUPTER
- IG ISOLATED GROUND
- EM EMERGENCY
- AF AMP FRAME
- AT AMP TRIP
- WP WEATHER PROOF
- XP EXPLOSION PROOF
- E EXISTING DEVICE TO REMAIN
- X EXISTING DEVICE TO BE REMOVED
- ER EXISTING DEVICE TO BE RELOCATED
- RD RELOCATED DEVICE
- WIRE COUNT
- CONDUIT RUN UP
- CONDUIT RUN DOWN
- OH OVERHEAD POWER
- UG UNDERGROUND POWER
- CONDUCTOR/CONDUIT
- UNDERGROUND CONDUCTOR/CONDUIT
- FLEXIBLE CONDUIT
- EXISTING EQUIPMENT
- NEW EQUIPMENT
- EQUIPMENT TO BE REMOVED

NOTES:

1. ALL BOLD ITEMS INDICATE WORK TO BE DONE AND ALL LIGHT ITEMS INDICATE EXISTING CONDITIONS.
2. ALL DIMENSIONS ARE SHOWN IN MILLIMETRES UNLESS OTHERWISE INDICATED.

THE EXISTENCE, LOCATION AND ELEVATION OF ALL UTILITIES AS SHOWN ON ANY PLANS MAY BE BASED ON INFORMATION RECEIVED FROM THE RESPECTIVE AUTHORITIES AND ARE NOT GUARANTEED BY THE ENGINEER. NO RESPONSIBILITY IS IMPLIED OR ASSUMED BY THE ENGINEER AS TO THE LOCATION AND ELEVATION OR ANY OMISSIONS. THE CONTRACTOR OR ANY THIRD-PARTY IS RESPONSIBLE FOR DETERMINING THE EXISTENCE, LOCATION AND ELEVATION OF ALL SUCH UTILITIES AND MUST CONTACT THE VARIOUS UTILITY COMPANIES FOR ON SITE INFORMATION PRIOR TO COMMENCEMENT OF ANY OPERATIONS.

THIS DRAWING MAY HAVE BEEN MODIFIED FROM ITS ORIGINAL SIZE. ALL SCALE NOTATIONS INDICATED ARE BASED ON 11"x17" FORMAT DRAWINGS

ISSUE	YY-MM-DD	REVISION
1	20-09-23	FOR TENDER

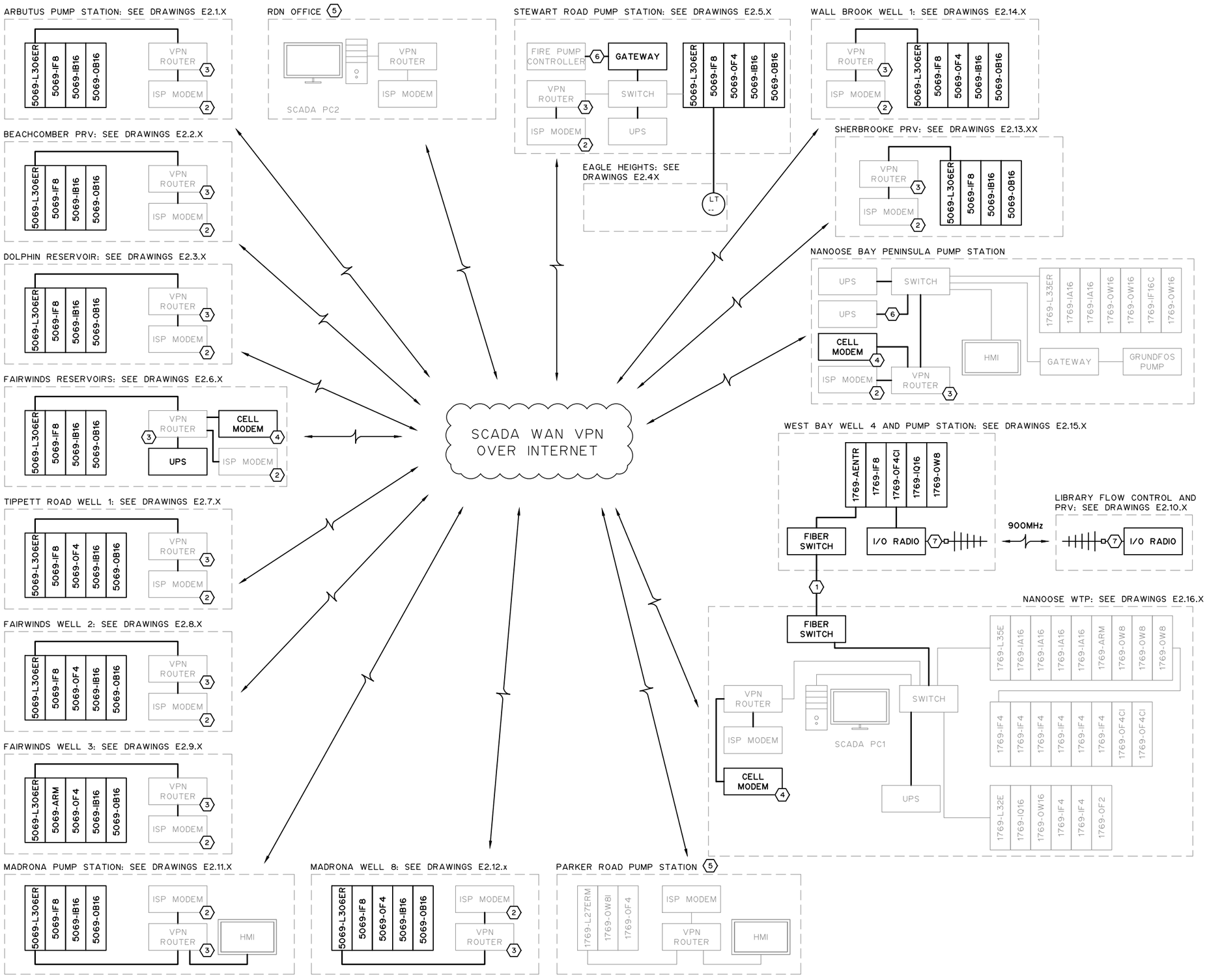
Association of Professional Engineers and Geoscientists of the Province of British Columbia
Z.T. SPENCER
ENGINEERING LICENSEE
Limited Licence 199088
2020-09-23

MPE Engineering Ltd.

REGIONAL DISTRICT OF NANAIMO

NANOOSE BAY WSA SCADA IMPLEMENTATION
GENERAL
ELECTRICAL
LEGEND

DESIGNED	N.D.S., Z.T.S.	JOB	9794-002-00
DRAWN	N.O.W., D.J.H.	SCALE	
DATE	SEPTEMBER 2020	DRAWING	E0.1



NOTES:

1. ALL INTERCONNECTION WIRING SHOWN IS TO BE CAT5e UNLESS OTHERWISE NOTED.

KEYNOTES:

1. 6 STRAND, 62.5/125 MICRON, OM1 FIBRE CABLE C/W WITH LC TYPE CONNECTORS.
2. ISP MODEM PROVIDED BY OTHERS, INSTALLED BY CONTRACTOR.
3. ROUTER PROVIDED BY OTHERS, INSTALLED BY CONTRACTOR.
4. CELL MODEM PROVIDED BY OTHERS, INSTALLED BY CONTRACTOR ON EXTERIOR OF BUILDING. CONFIRM EXACT LOCATION WITH OWNER.
5. NO WORK WITHIN CONTRACT AT THESE LOCATIONS.
6. PROVIDE AND INSTALL CAT5e CABLING IN EMT CONDUIT TO MATCH EXISTING. APPROXIMATE LENGTH 15M, CONTRACTOR TO CONFIRM ONSITE.
7. LMR400 COAXIAL CABLE.

THIS DRAWING MAY HAVE BEEN MODIFIED FROM ITS ORIGINAL SIZE. ALL SCALE NOTATIONS INDICATED ARE BASED ON 11"x17" FORMAT DRAWINGS

1	20-09-23	FOR TENDER
ISSUE	YY-MM-DD	REVISION

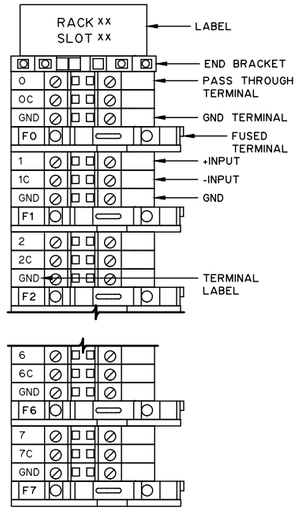
Association of Professional Engineers and Geoscientists of the Province of British Columbia
PERMIT TO PRACTICE
Z.T. SPENCER
ENGINEERING LICENSEE
Limited Licence 100981
2020-09-23

MPE Engineering Ltd.

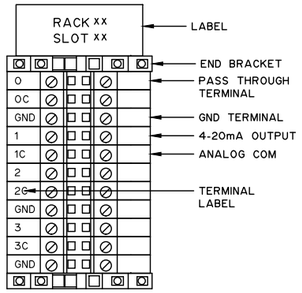
REGIONAL DISTRICT OF NANAIMO

NANOOSE BAY WSA SCADA IMPLEMENTATION ELECTRICAL GENERAL COMMUNICATION ARCHITECTURE

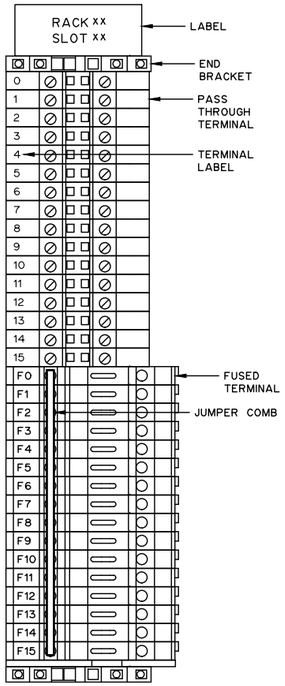
DESIGNED	N.D.S., Z.T.S.	JOB	9794-002-00
DRAWN	N.O.W., D.J.H.	SCALE	
DATE	SEPTEMBER 2020	DRAWING	E1.1



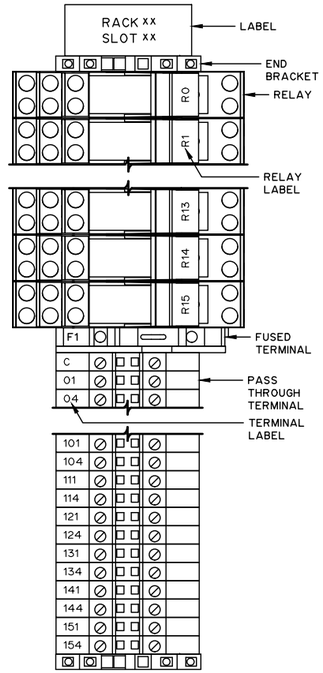
TYPICAL 5069-IF8 TERMINAL ANALOG INPUT LAYOUT



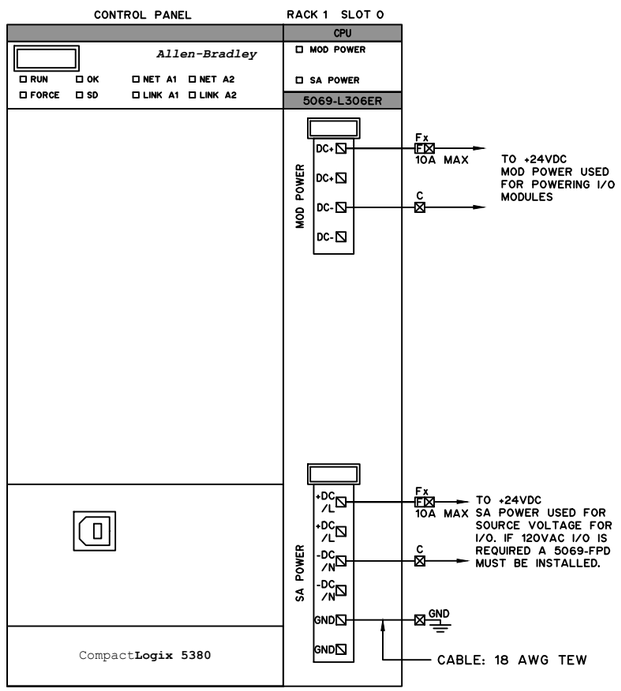
TYPICAL 5069-OF4 TERMINAL ANALOG OUTPUT LAYOUT



TYPICAL 5069-IB16 TERMINAL DISCRETE INPUT LAYOUT



TYPICAL 5069-OB16 TERMINAL DISCRETE OUTPUT LAYOUT



TYPICAL 5380 SERIES PLC PROCESSOR

NOTES:

1. TERMINAL LAYOUTS SHOWN ARE TYPICAL FOR ALL PLC I/O WIRING. REFER TO SPECIFICATIONS FOR ACCEPTABLE EQUIPMENT.
2. 5069-XXX TERMINAL LAYOUTS CLOSELY RESEMBLE CONFIGURATIONS FOR 1769-XXX PLC I/O AS WELL. COORDINATE REQUIRED TERMINALS WITH RELEVANT PLC I/O DRAWINGS.

THIS DRAWING MAY HAVE BEEN MODIFIED FROM ITS ORIGINAL SIZE. ALL SCALE NOTATIONS INDICATED ARE BASED ON 11"x17" FORMAT DRAWINGS

1	20-09-23	FOR TENDER
ISSUE	YY-MM-DD	REVISION

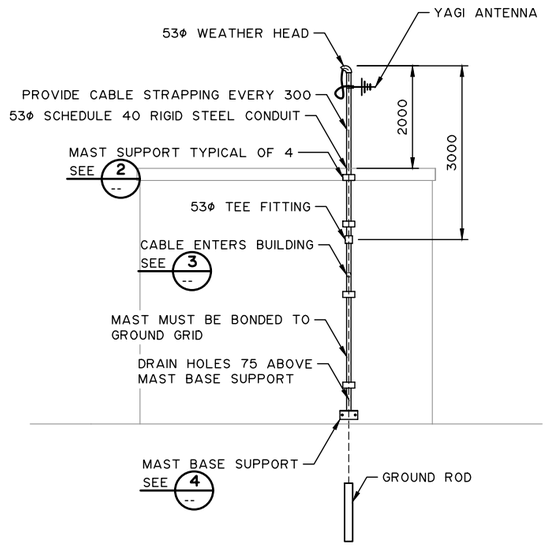
Association of Professional Engineers and Geoscientists of the Province of British Columbia
Z.T.S. SPENCER
ENGINEERING LICENSEE
Limited Licence 100981
2020-09-23

MPE Engineering Ltd.

REGIONAL DISTRICT OF NANAIMO

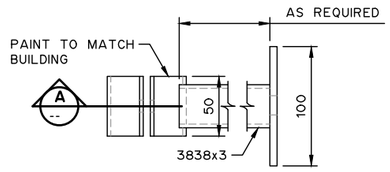
NANOOSE BAY WSA SCADA IMPLEMENTATION
ELECTRICAL
GENERAL
TYPICAL TERMINAL LAYOUTS

DESIGNED	N.D.S., Z.T.S.	JOB	9794-002-00
DRAWN	N.O.W., D.J.H.	SCALE	
DATE	SEPTEMBER 2020	DRAWING	E1.2

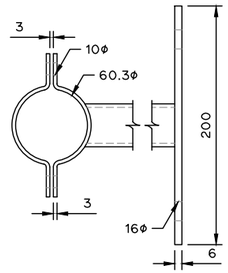


TYPICAL ANTENNA INSTALLATION

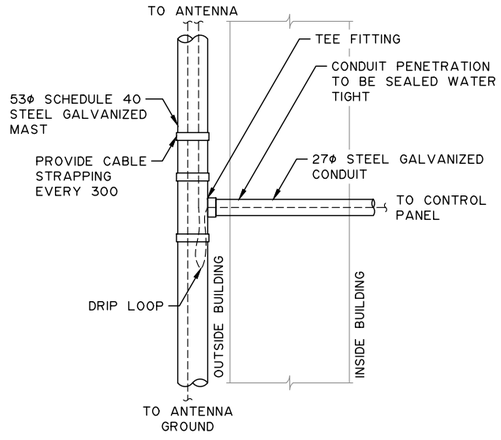
1 S2.10 | 1 S2.15



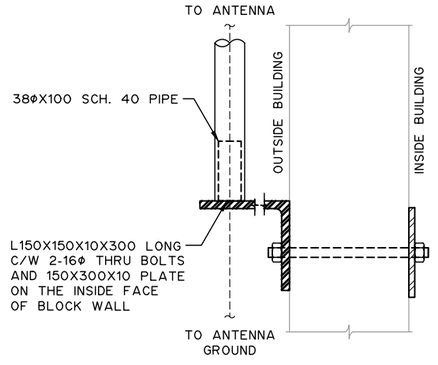
2 -- 1:5



A -- 1:5



3 -- 1:10



4 -- 1:10

THIS DRAWING MAY HAVE BEEN MODIFIED FROM ITS ORIGINAL SIZE. ALL SCALE NOTATIONS INDICATED ARE BASED ON 11"x17" FORMAT DRAWINGS

1	20-09-23	FOR TENDER
ISSUE	YY-MM-DD	REVISION

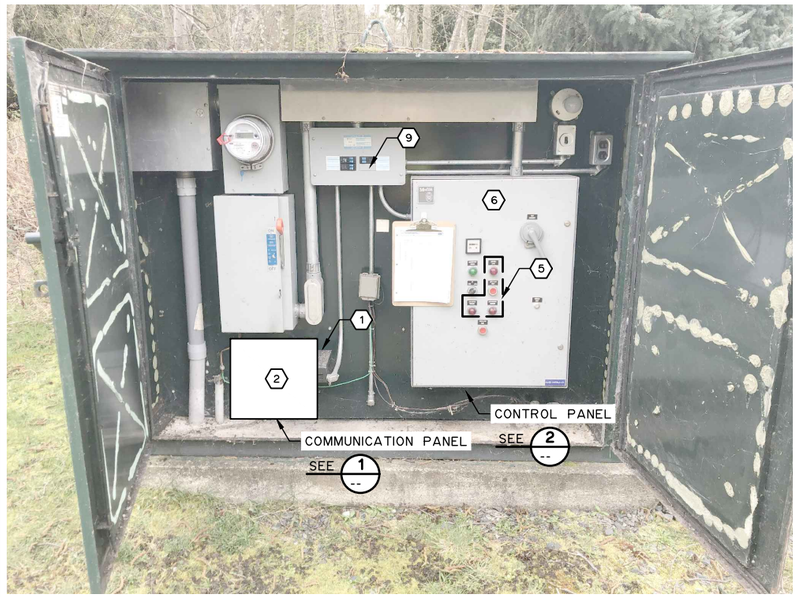
Association of Professional Engineers and Geoscientists of the Province of British Columbia
Z.T. SPENCER
ENGINEERING LICENSEE
Limited Licence 199981
2020-09-23

MPE Engineering Ltd.

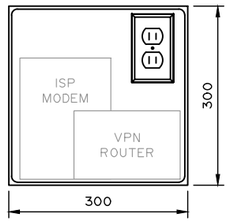
REGIONAL DISTRICT OF NANAIMO

NANOOSE BAY WSA SCADA IMPLEMENTATION
ELECTRICAL
GENERAL
ANTENNA DETAILS

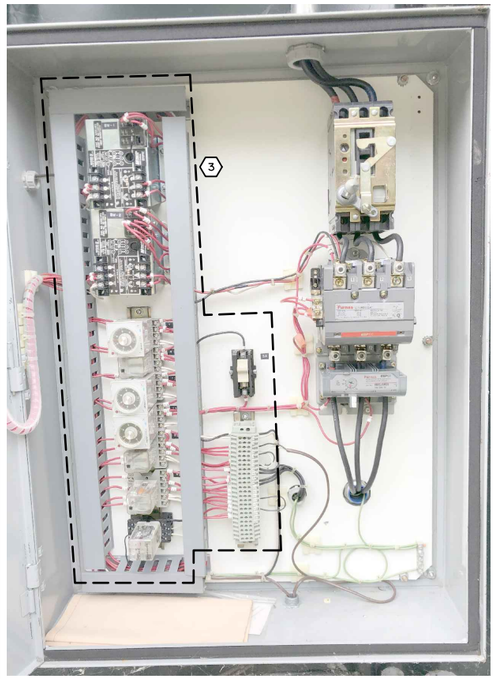
DESIGNED	N.D.S., Z.T.S.	JOB	9794-002-00
DRAWN	N.O.W., D.J.H.	SCALE	
DATE	SEPTEMBER 2020	DRAWING	E1.3



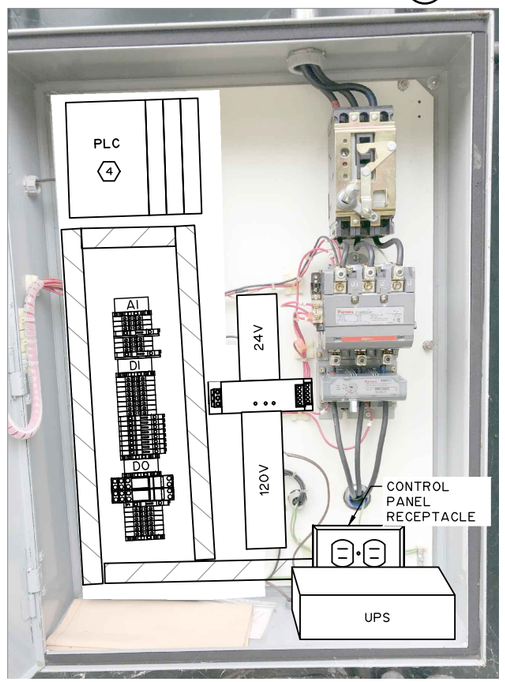
ELECTRICAL PEDESTAL INTERIOR
NTS



COMMUNICATIONS PANEL
1
NTS

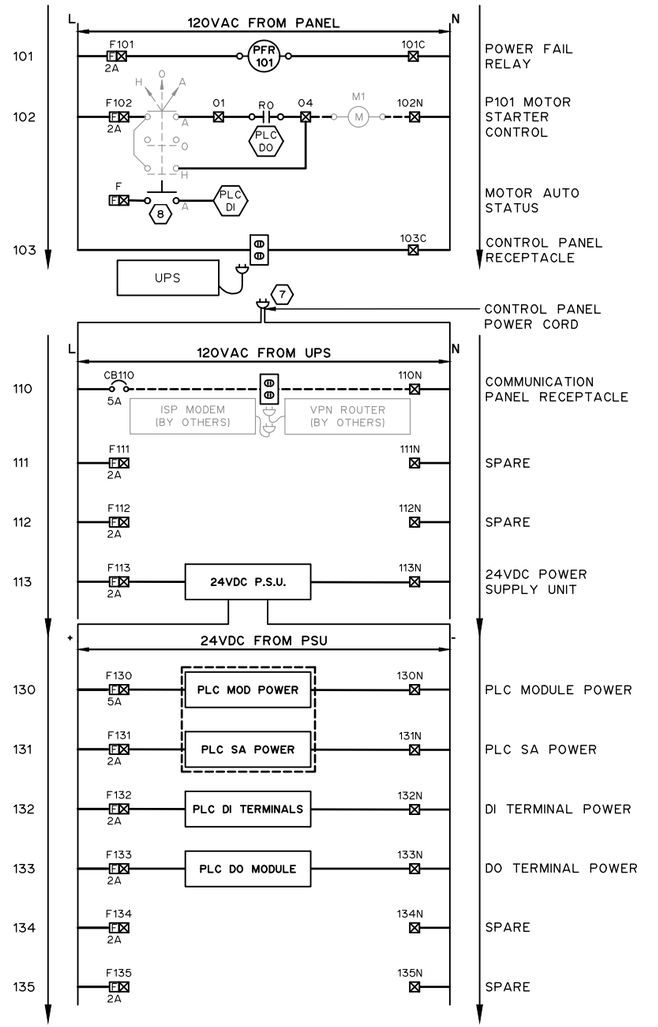


DEMOLITION
NTS



PROPOSED
NTS

CONTROL PANEL INTERIOR
2
NTS



CONTROL PANEL POWER DISTRIBUTION

KEYNOTES:
1. RELOCATE EXISTING ENCLOSURE HEATER, CONDUIT AND WIRING TO BELOW EXITING CONTROL PANEL.
2. PROVIDE AND INSTALL NEW COMMUNICATIONS PANEL. PROVIDE AND INSTALL TWO NEW 16Φ EMT CONDUIT AND WIRING BETWEEN CONTROL PANEL AND COMMUNICATIONS PANEL. INSTALL 2C-12AWG RW90 POWER CONDUCTORS IN ONE CONDUIT AND ETHERNET CABLING IN THE OTHER.
3. DEMOLISH EXISTING TERMINALS AND WIRE DUCT. EXISTING FIELD WIRING TO REMAIN.
4. PROVIDE AND INSTALL NEW PLC, TERMINALS AND RELAYS.
5. DEMOLISH FRONT PANEL PILOT DEVICES. PLUG WITH KO FILLER.
6. PROVIDE AND INSTALL LABEL ON FRONT PANEL COVER INDICATING "WARNING, MULTIPLE VOLTAGE SOURCES IN PANEL" AND IDENTIFY ALL CIRCUIT BREAKER NUMBERS FEEDING THE PANEL.
7. CONTROL PANEL POWER CORD TO BE LONG ENOUGH TO PLUG INTO UPS AND CONTROL PANEL RECEPTACLE.
8. ADD "AUTO" CONTACT AND WIRING TO EXISTING HOA SWITCH. SOURCE 24VDC SOURCE VOLTAGE FROM PLC DIGITAL INPUT FUSE.
9. PROVIDE AND INSTALL NEW 15AMP SINGLE POLE BREAKER IN LOCAL LIGHTING PANEL, CONDUIT AND WIRING TO POWER NEW CONTROL PANEL.

NOTES:
1. ——WIRING INTEGRAL TO PANEL.
   - 24VDC/120VAC POWER/SIGNALS = 18 AWG TEW
   - ANALOG SIGNALS = 18 AWG BELDEN SHIELDED TWISTED PAID.
2. – – – –FIELD WIRING.
   - 24VDC/120VAC POWER/SIGNALS = 14 AWG RW90
   - ANALOG SIGNALS = 18 AWG BELDEN SHIELDED TWISTED PAIR.
3. CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING ALL NECESSARY CONDUIT AND WIRING TO INTERCONNECT EQUIPMENT AS SHOWN. MINIMUM CONDUIT SIZE TO BE 21Φ RPVC UNLESS OTHERWISE NOTED.
4. CONTROL PANEL POWER CORD TO BE LONG ENOUGH TO PLUG INTO UPS AND CONTROL PANEL RECEPTACLE.
5. REFER TO DRAWING COMMUNICATION ARCHITECTURE FOR ADDITIONAL WIRING REQUIREMENTS.
6. REFER TO DRAWING E1.2 - TYPICAL TERMINAL LAYOUTS FOR ADDITIONAL REQUIREMENTS.
7. ADD LAMACOID TO EXISTING AND NEW PANELS WITH WHITE LETTERING AND BLACK FACE WITH 12mm HIGH LETTERS AND 25mm HIGH LAMACOID. CONTROL PANELS TO BE LABELLED CP-100 AND COMMUNICATION PANELS TO BE LABELLED CP-101.
8. ALL DEMOLISHED EQUIPMENT AND COMPONENTS TO BE RETURNED TO OWNER IN GOOD CONDITION.

THIS DRAWING MAY HAVE BEEN MODIFIED FROM ITS ORIGINAL SIZE. ALL SCALE NOTATIONS INDICATED ARE BASED ON 11"x17" FORMAT DRAWINGS

ISSUE	YY-MM-DD	REVISION
1	20-09-23	FOR TENDER

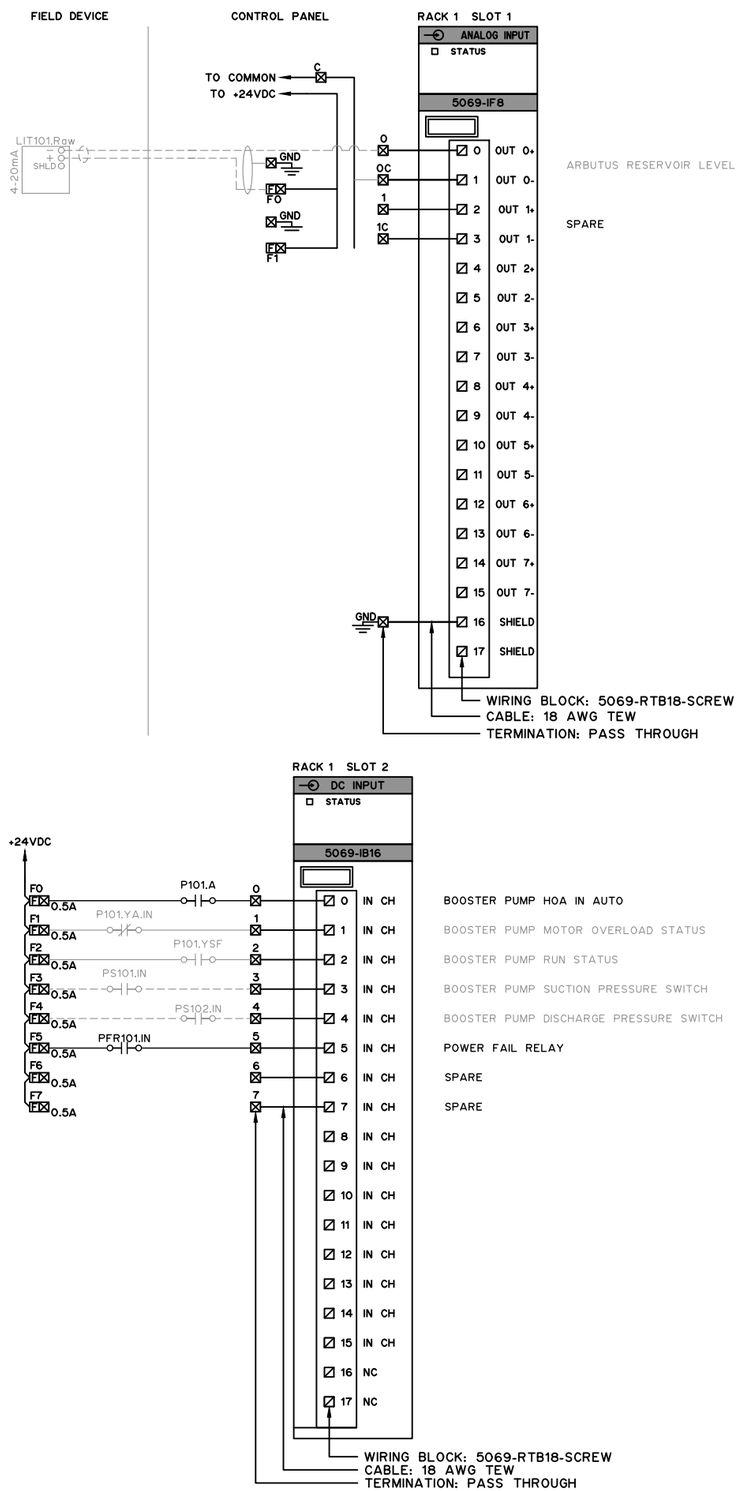
Association of Professional Engineers and Geoscientists of the Province of British Columbia
Z.T. SPENCER
ENGINEERING LICENSEE
Limited Licence 100981
2020-09-23

MPE Engineering Ltd.

REGIONAL DISTRICT OF NANAIMO

NANOOSE BAY WSA SCADA IMPLEMENTATION
ELECTRICAL
ARBUTUS PUMP STATION
CONTROL PANEL LAYOUT

DESIGNED	N.D.S., Z.T.S.	JOB	9794-002-00
DRAWN	N.O.W., D.J.H.	SCALE	
DATE	SEPTEMBER 2020	DRAWING	E2.1.1



NOTES:
1. REFER TO DRAWING E1.2 FOR TYPICAL TERMINAL LAYOUTS.

THIS DRAWING MAY HAVE BEEN MODIFIED FROM ITS ORIGINAL SIZE. ALL SCALE NOTATIONS INDICATED ARE BASED ON 11"x17" FORMAT DRAWINGS

1	20-09-23	FOR TENDER
ISSUE	YY-MM-DD	REVISION

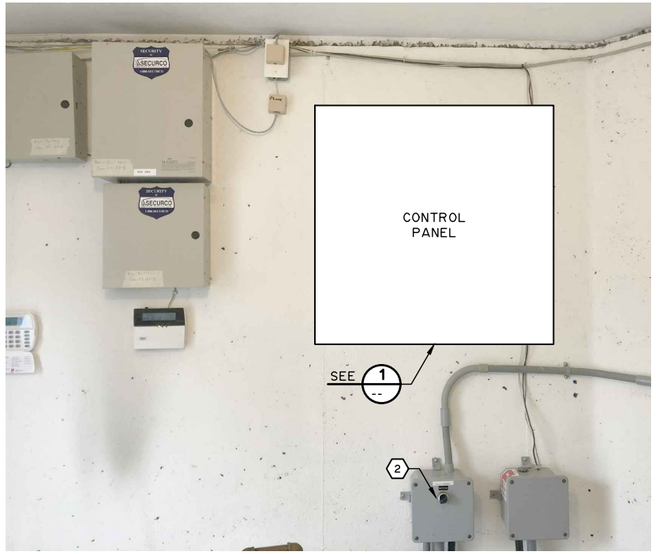
Association of Professional Engineers and Geoscientists of the Province of British Columbia
Z.T. SPENCER
ENGINEERING LICENSEE
Limited Licence 100981
2020-09-23

MPE Engineering Ltd.

REGIONAL DISTRICT OF NANAIMO

NANOOSE BAY WSA SCADA IMPLEMENTATION
ELECTRICAL
ARBUTUS PUMP STATION
PLC IO

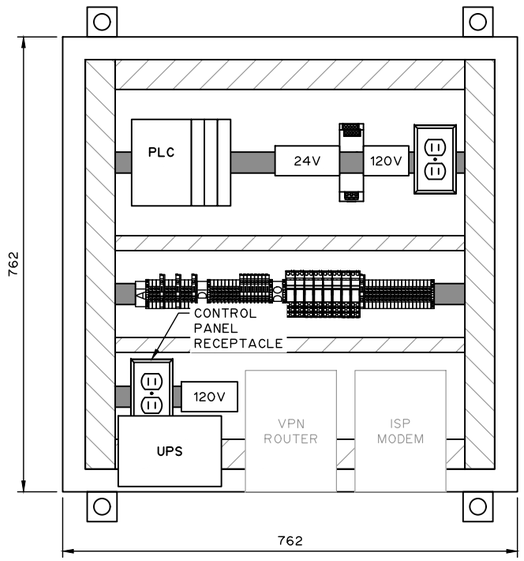
DESIGNED	N.D.S., Z.T.S.	JOB	9794-002-00
DRAWN	N.O.W., D.J.H.	SCALE	
DATE	SEPTEMBER 2020	DRAWING	E2.1.2



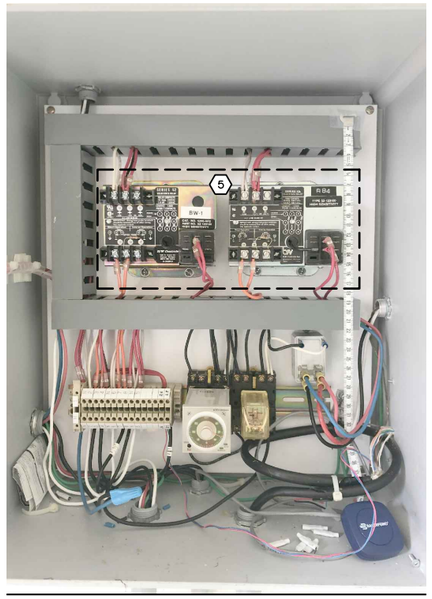
BUILDING ELEVATION
PRV ROOM
NTS



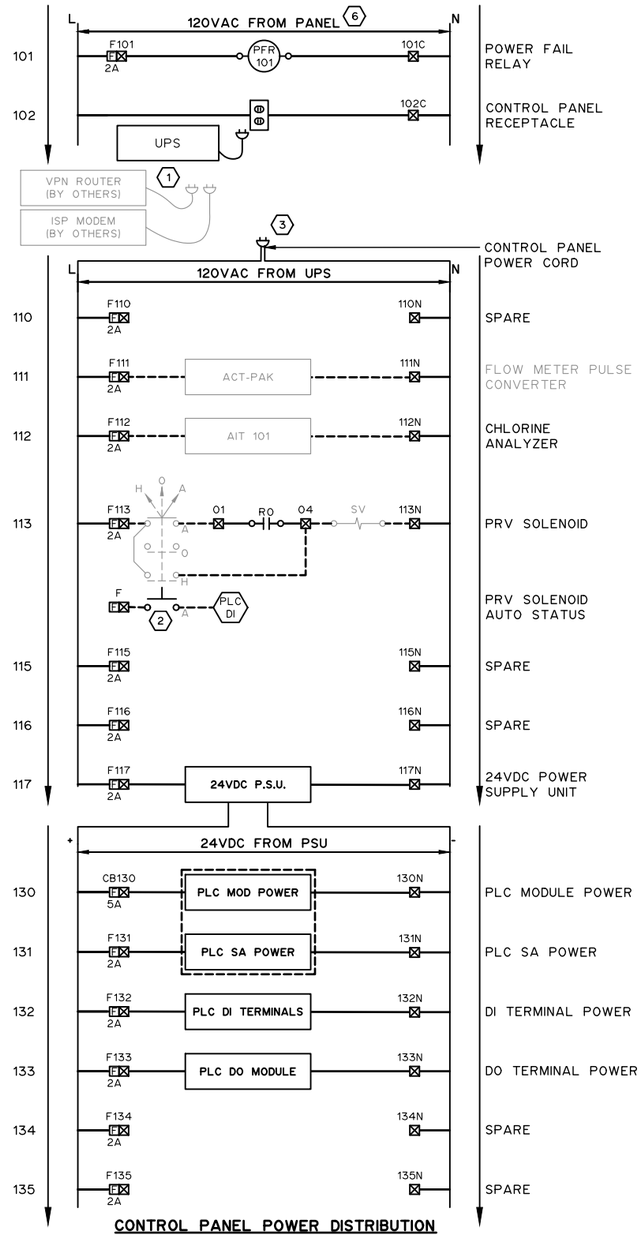
CHART RECORDER ELEVATION
PRV ROM
NTS



CONTROL PANEL INTERIOR
PRV ROOM
1
--
NTS



CHLORINE CONTROL PANEL
CHLORINE BUILDING
NTS



CONTROL PANEL POWER DISTRIBUTION

KEYNOTES:
1. ISP MODEM AND VPN ROUTER TO BE PLUGGED INTO UPS RECEPTACLES.
2. ADD "AUTO" CONTACT AND WIRING TO EXISTING HOA SWITCH. SOURCE 24VDC SOURCE VOLTAGE FROM PLC DIGITAL INPUT FUSE.
3. CONTROL PANEL POWER CORD TO BE LONG ENOUGH TO PLUG INTO UPS AND CONTROL PANEL RECEPTACLE.
4. DEMOLISH CHART RECORDER. PROVIDE CABLE AND CONDUIT TO CONNECT FLOW METER 4-20mA SIGNAL TO NEW CONTROL PANEL.
5. DEMOLISH EXISTING SOLID STATE RELAYS. EXISTING WIRING TO BE REVISED TO ENSURE WHEN CHLORINE PUMP START COMMAND (FROM PLC) IS ON THAT THE BOOSTER PUMP STARTS AND THEN THE CHLORINE PUMP STARTS AFTER EXISTING TIME DELAY RELAY HAS FINISHED TIMING.
6. PROVIDE AND INSTALL NEW 15AMP SINGLE POLE BREAKER IN LOCAL LIGHTING PANEL, CONDUIT AND WIRING TO POWER NEW CONTROL PANEL.

NOTES:
1. ——WIRING INTEGRAL TO PANEL.
   - 24VDC/120VAC POWER/SIGNALS = 18 AWG TEW
   - ANALOG SIGNALS = 18 AWG BELDEN SHIELDED TWISTED PAID.
2. – – – –FIELD WIRING.
   - 24VDC/120VAC POWER/SIGNALS = 14 AWG RW90
   - ANALOG SIGNALS = 18 AWG BELDEN SHIELDED TWISTED PAIR.
3. CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING ALL NECESSARY CONDUIT AND WIRING TO INTERCONNECT EQUIPMENT AS SHOWN. MINIMUM CONDUIT SIZE TO BE 21Φ RPVC UNLESS OTHERWISE NOTED.
4. CONTROL PANEL POWER CORD TO BE LONG ENOUGH TO PLUG INTO UPS AND CONTROL PANEL RECEPTACLE.
5. REFER TO DRAWING COMMUNICATION ARCHITECTURE FOR ADDITIONAL WIRING REQUIREMENTS.
6. REFER TO DRAWING E1.2 - TYPICAL TERMINAL LAYOUTS FOR ADDITIONAL REQUIREMENTS.
7. ADD LAMACOID TO EXISTING AND NEW PANELS WITH WHITE LETTERING AND BLACK FACE WITH 12mm HIGH LETTERS AND 25mm HIGH LAMACOID. CONTROL PANELS TO BE LABELLED CP-100 AND COMMUNICATION PANELS TO BE LABELLED CP-101.
8. ALL DEMOLISHED EQUIPMENT AND COMPONENTS TO BE RETURNED TO OWNER IN GOOD CONDITION.

THIS DRAWING MAY HAVE BEEN MODIFIED FROM ITS ORIGINAL SIZE. ALL SCALE NOTATIONS INDICATED ARE BASED ON 11"x17" FORMAT DRAWINGS

1	20-09-23	FOR TENDER
ISSUE	YY-MM-DD	REVISION

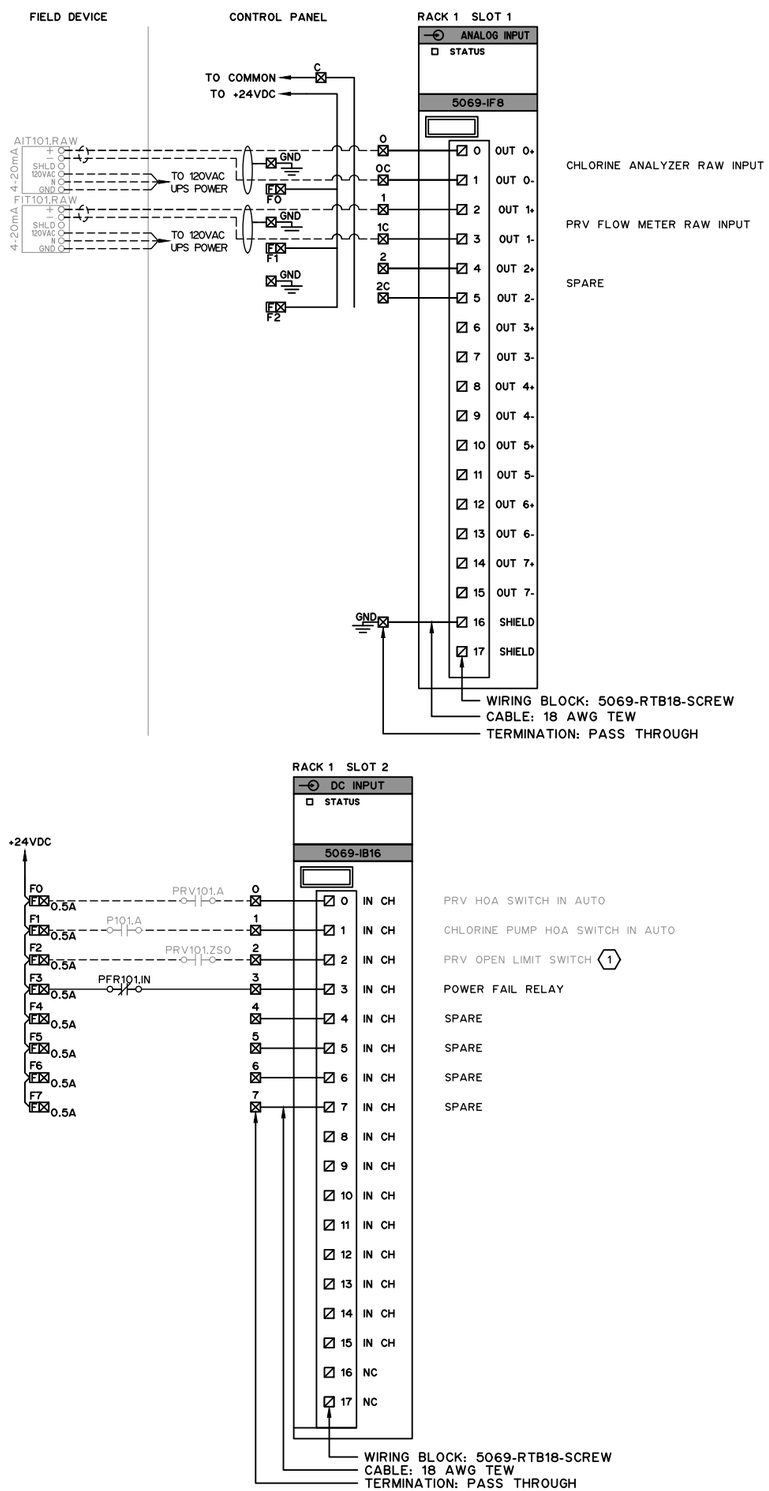
Association of Professional Engineers and Geoscientists of the Province of British Columbia
Z.T. SPENCER
ENGINEERING LICENSEE
Limited Licence 199981
2020-09-23

MPE Engineering Ltd.

REGIONAL DISTRICT OF NANAIMO

NANOOSE BAY WSA SCADA IMPLEMENTATION
ELECTRICAL
BEACHCOMBER PRV
PANEL DETAILS

DESIGNED	N.D.S., Z.T.S.	JOB	9794-002-00
DRAWN	N.O.W., D.J.H.	SCALE	
DATE	SEPTEMBER 2020	DRAWING	E2.2.1



NOTES:
1. REFER TO DRAWING E1.2 FOR TYPICAL TERMINAL LAYOUTS.

KEYNOTES:
1. EXISTING WIRING USES PRV OPEN LIMIT SWITCH TO TRIGGER CHLORINE PUMP RUN COMMAND. NEW WIRING TO INTERCEPT WIRING AND RE-WIRE TO PLC INPUT AND OUTPUT.
2. ELECTRICIAN TO RUN WIRE FROM CONTROL TO PRICES PANEL. WIRING IN PRICES PANEL TO BE TERMINATED BY OTHERS.

THIS DRAWING MAY HAVE BEEN MODIFIED FROM ITS ORIGINAL SIZE. ALL SCALE NOTATIONS INDICATED ARE BASED ON 11"x17" FORMAT DRAWINGS

ISSUE	YY-MM-DD	REVISION
1	20-09-23	FOR TENDER

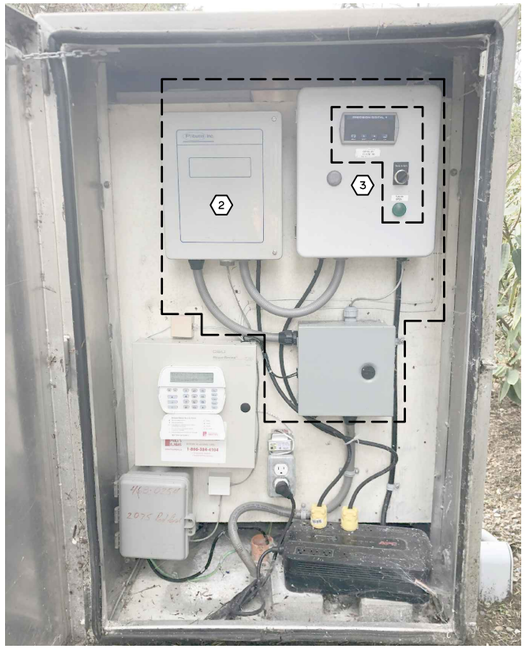
Association of Professional Engineers and Geoscientists of the Province of British Columbia
Z.T. SPENCER
ENGINEERING LICENSEE
Limited Licence 100981
2020-09-23

MPE Engineering Ltd.

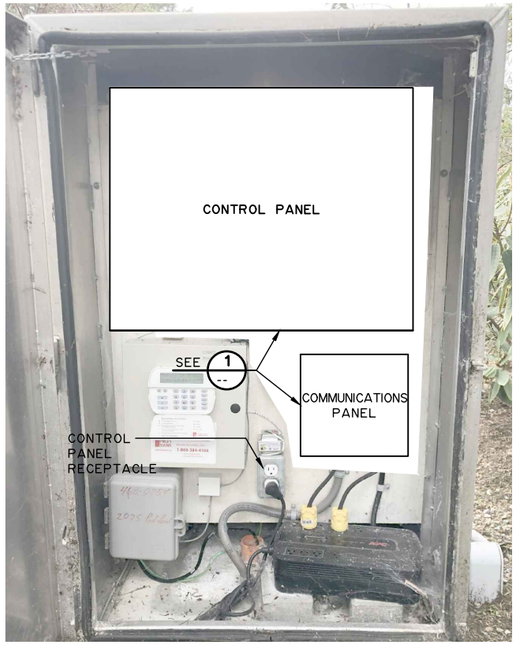
REGIONAL DISTRICT OF NANAIMO

NANOOSE BAY WSA SCADA IMPLEMENTATION
ELECTRICAL
BEACHCOMBER PRV
PLC IO

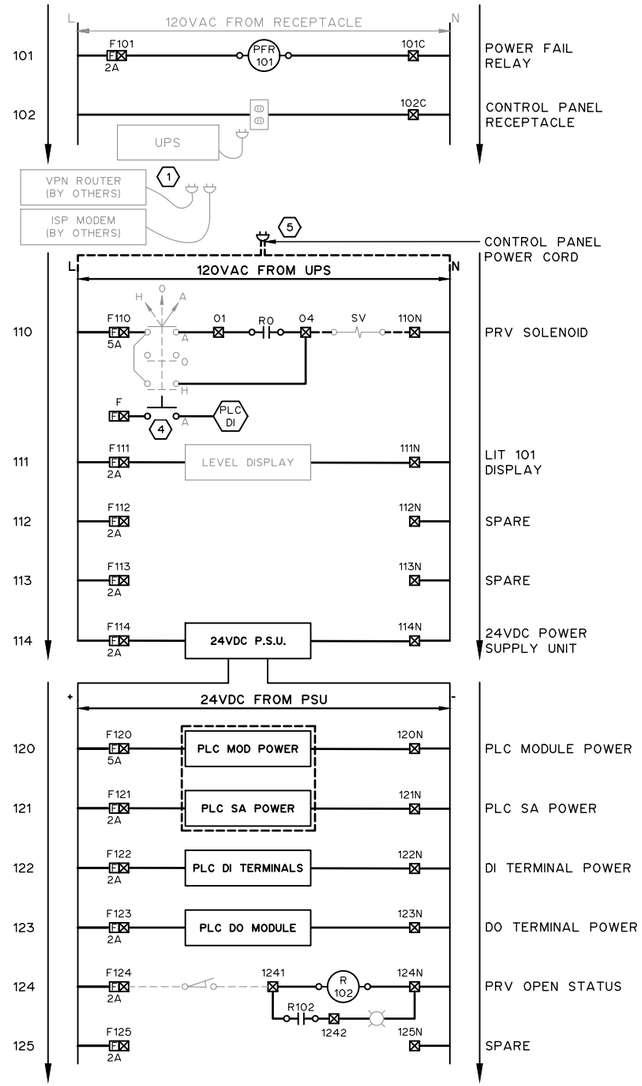
DESIGNED	N.D.S., Z.T.S.	JOB	9794-002-00
DRAWN	N.O.W., D.J.H.	SCALE	
DATE	SEPTEMBER 2020	DRAWING	E2.2.2



DEMOLITION
NTS

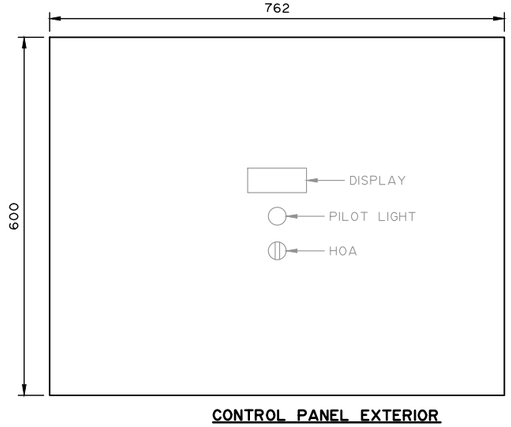


PROPOSED
NTS

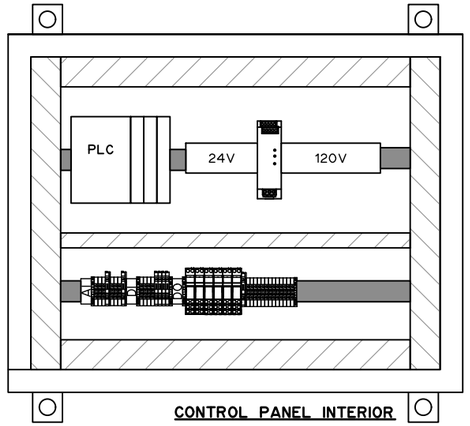


NOTES:
1. ——— WIRING INTEGRAL TO PANEL.
   - 24VDC/120VAC POWER/SIGNALS = 18 AWG TEW
   - ANALOG SIGNALS = 18 AWG BELDEN SHIELDED TWISTED PAID.
2. ———— FIELD WIRING.
   - 24VDC/120VAC POWER/SIGNALS = 14 AWG RW90
   - ANALOG SIGNALS = 18 AWG BELDEN SHIELDED TWISTED PAIR.
3. CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING ALL NECESSARY CONDUIT AND WIRING TO INTERCONNECT EQUIPMENT AS SHOWN. MINIMUM CONDUIT SIZE TO BE 21Φ RPVC UNLESS OTHERWISE NOTED.
4. CONTROL PANEL POWER CORD TO BE LONG ENOUGH TO PLUG INTO UPS AND CONTROL PANEL RECEPTACLE.
5. REFER TO DRAWING COMMUNICATION ARCHITECTURE FOR ADDITIONAL WIRING REQUIREMENTS.
6. REFER TO DRAWING E1.2 - TYPICAL TERMINAL LAYOUTS FOR ADDITIONAL REQUIREMENTS.
7. ADD LAMACOID TO EXISTING AND NEW PANELS WITH WHITE LETTERING AND BLACK FACE WITH 12mm HIGH LETTERS AND 25mm HIGH LAMACOID. CONTROL PANELS TO BE LABELLED CP-100 AND COMMUNICATION PANELS TO BE LABELLED CP-101.
8. ALL DEMOLISHED EQUIPMENT AND COMPONENTS TO BE RETURNED TO OWNER IN GOOD CONDITION.

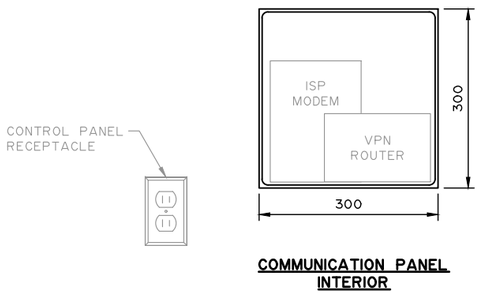
⟨-⟩ KEYNOTES:
1. ISP MODEM AND VPN ROUTER TO BE PLUGGED INTO UPS RECEPTACLES.
2. DEMOLISH EXISTING PANELS, EXISTING FIELD WIRING TO REMAIN AND BE EXTENDED TO NEW CONTROL PANEL.
3. DISPLAY, HOA, AND PILOT LIGHT TO BE RELOCATED TO NEW CONTROL PANEL DOOR.
4. ADD "AUTO" CONTACT AND WIRING TO EXISTING HOA SWITCH. SOURCE 24VDC SOURCE VOLTAGE FROM PLC DIGITAL INPUT FUSE.
5. CONTROL PANEL POWER CORD TO BE LONG ENOUGH TO PLUG INTO UPS AND CONTROL PANEL RECEPTACLE.



CONTROL PANEL EXTERIOR



CONTROL PANEL INTERIOR



COMMUNICATION PANEL INTERIOR

1
--

THIS DRAWING MAY HAVE BEEN MODIFIED FROM ITS ORIGINAL SIZE. ALL SCALE NOTATIONS INDICATED ARE BASED ON 11"x17" FORMAT DRAWINGS

1	20-09-23	FOR TENDER
ISSUE	YY-MM-DD	REVISION

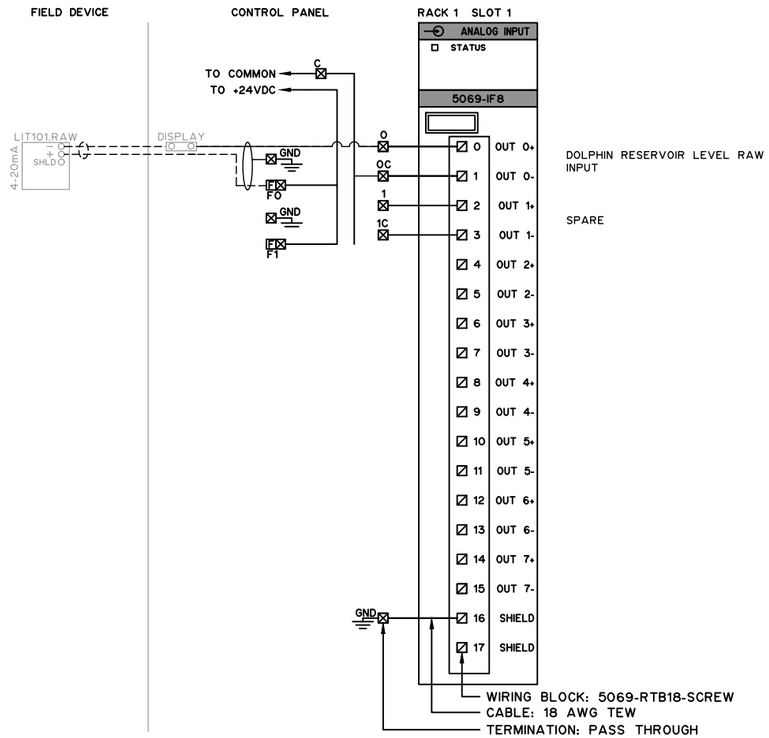
Association of Professional Engineers and Geoscientists of the Province of British Columbia
PERMIT TO PRACTICE
Z.T. SPENCER
ENGINEERING LICENSEE
Limited Licence 199981
2020-09-23

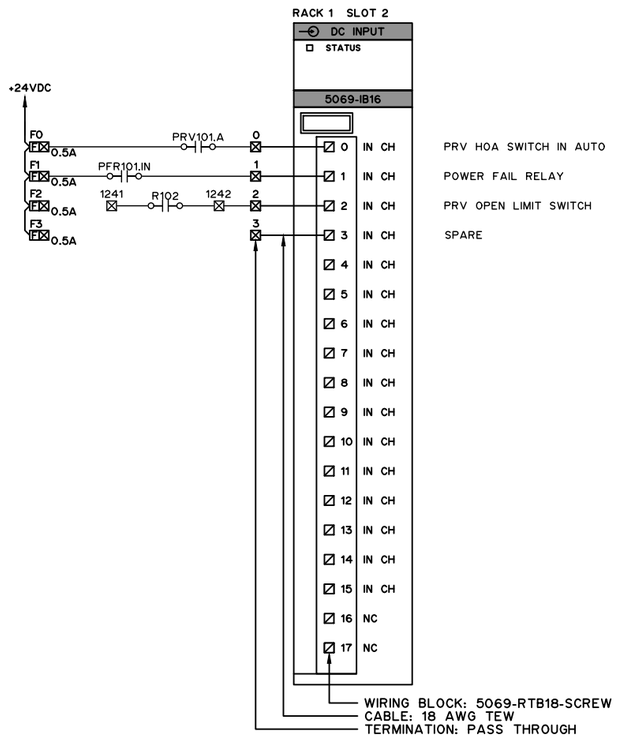
MPE Engineering Ltd.

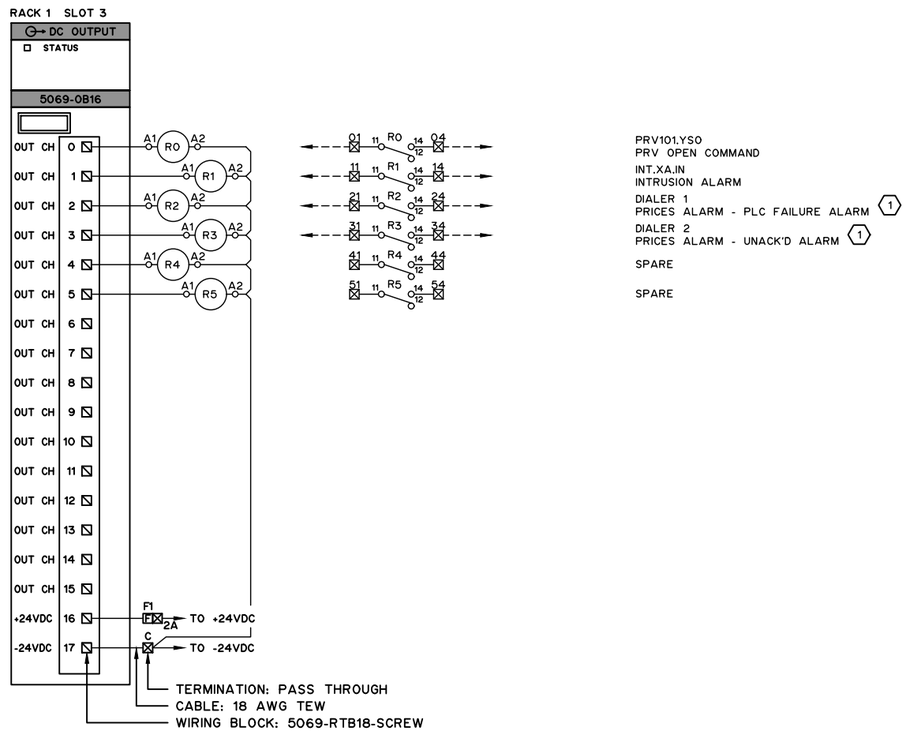
REGIONAL DISTRICT OF NANAIMO

NANOOSE BAY WSA SCADA IMPLEMENTATION
ELECTRICAL
DOLPHIN RESERVOIR
PANEL DETAILS

DESIGNED	N.D.S., Z.T.S.	JOB	9794-002-00
DRAWN	N.O.W., D.J.H.	SCALE	
DATE	SEPTEMBER 2020	DRAWING	E2.3.1







NOTES:
1. REFER TO DRAWING E1.2 FOR TYPICAL TERMINAL LAYOUTS.

KEYNOTES:
1. ELECTRICIAN TO RUN WIRE FROM CONTROL TO PRICES PANEL. WIRING IN PRICES PANEL TO BE TERMINATED BY OTHERS.

THIS DRAWING MAY HAVE BEEN MODIFIED FROM ITS ORIGINAL SIZE. ALL SCALE NOTATIONS INDICATED ARE BASED ON 11"x17" FORMAT DRAWINGS

1	20-09-23	FOR TENDER
ISSUE	YY-MM-DD	REVISION

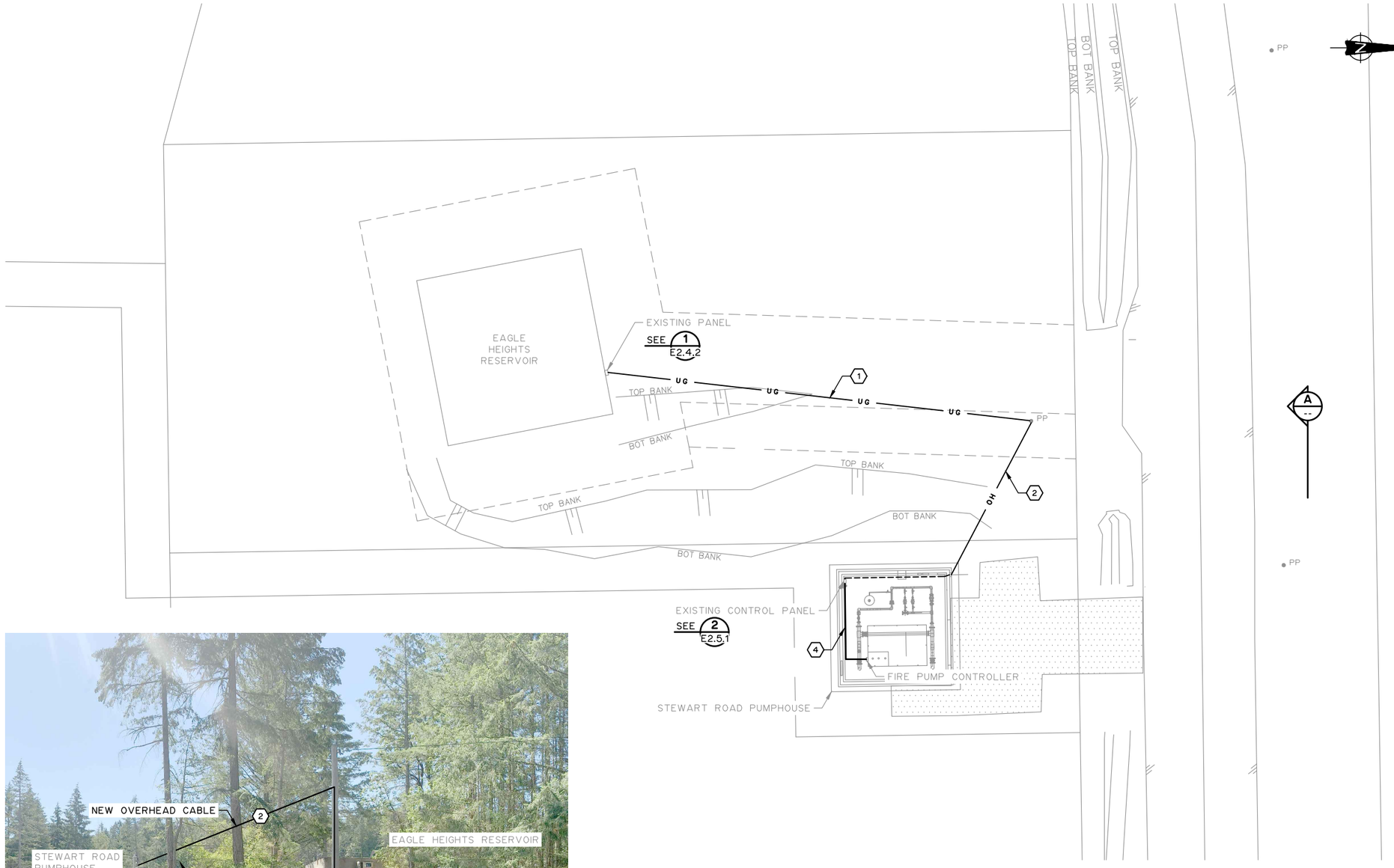
Association of Professional Engineers and Geoscientists of the Province of British Columbia
Z.T.S. SPENCER
ENGINEERING LICENSEE
Limited Licence 100981
2020-09-23

MPE Engineering Ltd.

REGIONAL DISTRICT OF NANAIMO

NANOOSE BAY WSA SCADA
IMPLEMENTATION
ELECTRICAL
DOLPHIN RESERVOIR
PLC IO

DESIGNED	N.D.S., Z.T.S.	JOB	9794-002-00
DRAWN	N.O.W., D.J.H.	SCALE	
DATE	SEPTEMBER 2020	DRAWING	E2.3.2



A
--

KEY NOTES:

1. PULL NEW CONDUCTOR THROUGH EXISTING CONDUIT TO TELUS JUNCTION BOX AFTER COMMISSIONING IS COMPLETE.
2. OVERHEAD CABLE FROM STEWART ROAD PUMPHOUSE TO POWER POLE TO TELUS JUNCTION BOX.
3. USE EXISTING OVERHEAD CABLE MAST FOR NEW AERIAL CABLE. PROVIDE AND INSTALL NEW COUNTER ANCHOR AIRCRAFT CABLE ON OPPOSING SIDE OF NEW AERIAL INSTALLATION.
4. PROVIDE AND INSTALL NEW CONDUIT AND CABLING FOR FIRE PUMP CONTROLLER COMMUNICATIONS. REFER TO E1.1 - COMMUNICATION ARCHITECTURE AND E2.5.1 FOR FURTHER DETAILS.
5. TRIM TREE BRANCHES ARE REQUIRED FOR CABLE INSTALLATION.

THIS DRAWING MAY HAVE BEEN MODIFIED FROM ITS ORIGINAL SIZE. ALL SCALE NOTATIONS INDICATED ARE BASED ON 11"x17" FORMAT DRAWINGS

1	20-09-23	FOR TENDER
ISSUE	YY-MM-DD	REVISION

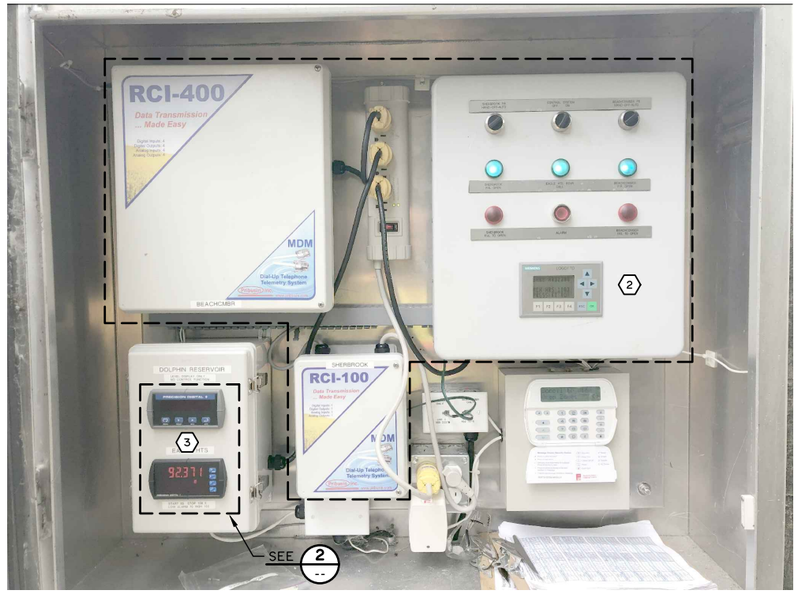
Association of Professional Engineers and Geoscientists of the Province of British Columbia
Z.T. SPENCER
ENGINEERING LICENSEE
Limited Licence 199981
2020-09-23

MPE Engineering Ltd.

REGIONAL DISTRICT OF NANAIMO

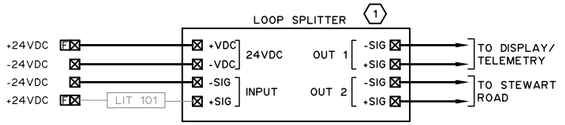
NANOOSE BAY WSA SCADA IMPLEMENTATION
ELECTRICAL
EAGLE HEIGHTS RESERVOIR
SITE PLAN

DESIGNED	N.D.S., Z.T.S.	JOB	9794-002-00
DRAWN	N.O.W., D.J.H.	SCALE	1:300
DATE	SEPTEMBER 2020	DRAWING	E2.4.1



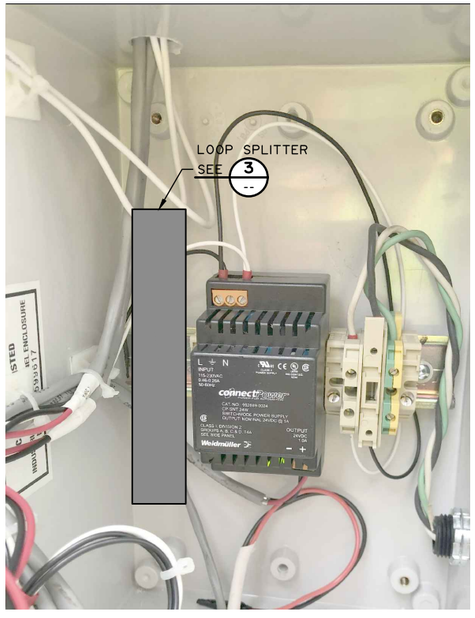
ELECTRICAL PEDESTAL INTERIOR

1 / E2.4.1 NTS



LOOP SPLITTER WIRING DIAGRAM

3 / --



LOOP SPLITTER ENCLOSURE

2 / -- NTS

NOTES:

1. ——— WIRING INTEGRAL TO PANEL.
   - 24VDC/120VAC POWER/SIGNALS = 18 AWG TEW
   - ANALOG SIGNALS = 18 AWG BELDEN SHIELDED TWISTED PAID.
2. ———— FIELD WIRING.
   - 24VDC/120VAC POWER/SIGNALS = 14 AWG RW90
   - ANALOG SIGNALS = 18 AWG BELDEN SHIELDED TWISTED PAIR.
3. CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING ALL NECESSARY CONDUIT AND WIRING TO INTERCONNECT EQUIPMENT AS SHOWN. MINIMUM CONDUIT SIZE TO BE 21Φ RPVC UNLESS OTHERWISE NOTED.
4. CONTROL PANEL POWER CORD TO BE LONG ENOUGH TO PLUG INTO UPS AND CONTROL PANEL RECEPTACLE.
5. REFER TO DRAWING COMMUNICATION ARCHITECTURE FOR ADDITIONAL WIRING REQUIREMENTS.
6. REFER TO DRAWING E1.2 - TYPICAL TERMINAL LAYOUTS FOR ADDITIONAL REQUIREMENTS.
7. ADD LAMACOID TO EXISTING AND NEW PANELS WITH WHITE LETTERING AND BLACK FACE WITH 12mm HIGH LETTERS AND 25mm HIGH LAMACOID. CONTROL PANELS TO BE LABELLED CP-100 AND COMMUNICATION PANELS TO BE LABELLED CP-101.
8. ALL DEMOLISHED EQUIPMENT AND COMPONENTS TO BE RETURNED TO OWNER IN GOOD CONDITION.

KEYNOTES:

1. LOOP SPLITTER TO BE INSTALLED TEMPORARILY FOR DURATION OF CONSTRUCTION AND PLC CHANGE OVER'S. UNTIL COMMISSIONING AT DEPENDANT SITES IS COMPLETE.
2. UPON COMPLETION OF COMMISSIONING, EXISTING TELEMETRY AND CONTROL PANELS TO BE DEMOLISHED. ONLY LEVEL INDICATOR/LOOP SPLITTER PANEL TO REMAIN.
3. DEMOLISH TRANSMITTER DISPLAYS. INSTALL BRUSHED ALUMINUM COVER PLATE TO COVER ALL VOIDS. REMOVE LOOP SPLITTER. REFER TO DRAWING E2.5.2 FOR FINAL WIRING OF LIT 101.

THIS DRAWING MAY HAVE BEEN MODIFIED FROM ITS ORIGINAL SIZE. ALL SCALE NOTATIONS INDICATED ARE BASED ON 11"x17" FORMAT DRAWINGS

1	20-09-23	FOR TENDER
ISSUE	YY-MM-DD	REVISION

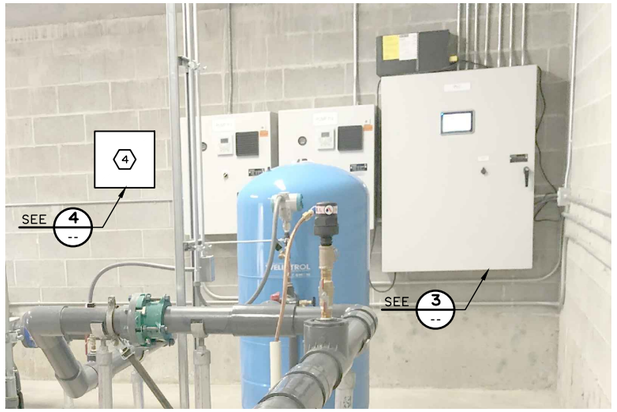
Association of Professional Engineers and Geoscientists of the Province of British Columbia
Z.T. SPENCER
ENGINEERING LICENSEE
Limited Licence 199981
2020-09-23

MPE Engineering Ltd.

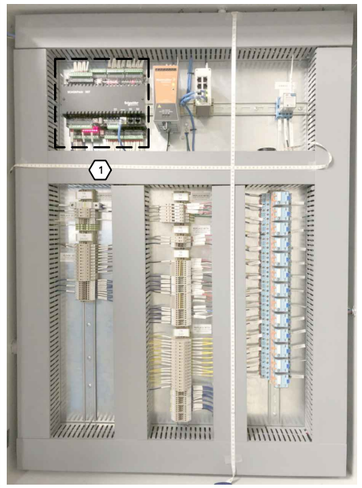
REGIONAL DISTRICT OF NANAIMO

NANOOSE BAY WSA SCADA
IMPLEMENTATION
ELECTRICAL
EAGLE HEIGHTS RESERVOIR
PANEL DETAILS

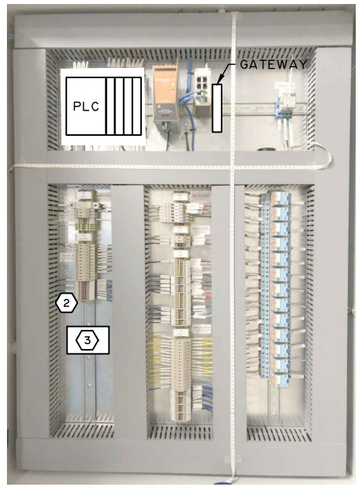
DESIGNED	N.D.S., Z.T.S.	JOB	9794-002-00
DRAWN	N.O.W., D.J.H.	SCALE	
DATE	SEPTEMBER 2020	DRAWING	E2.4.2



EXISTING PANEL
2
E2.4.1 NTS

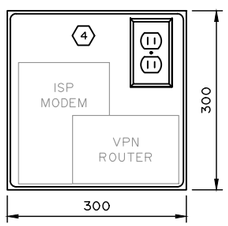


DEMOLITION

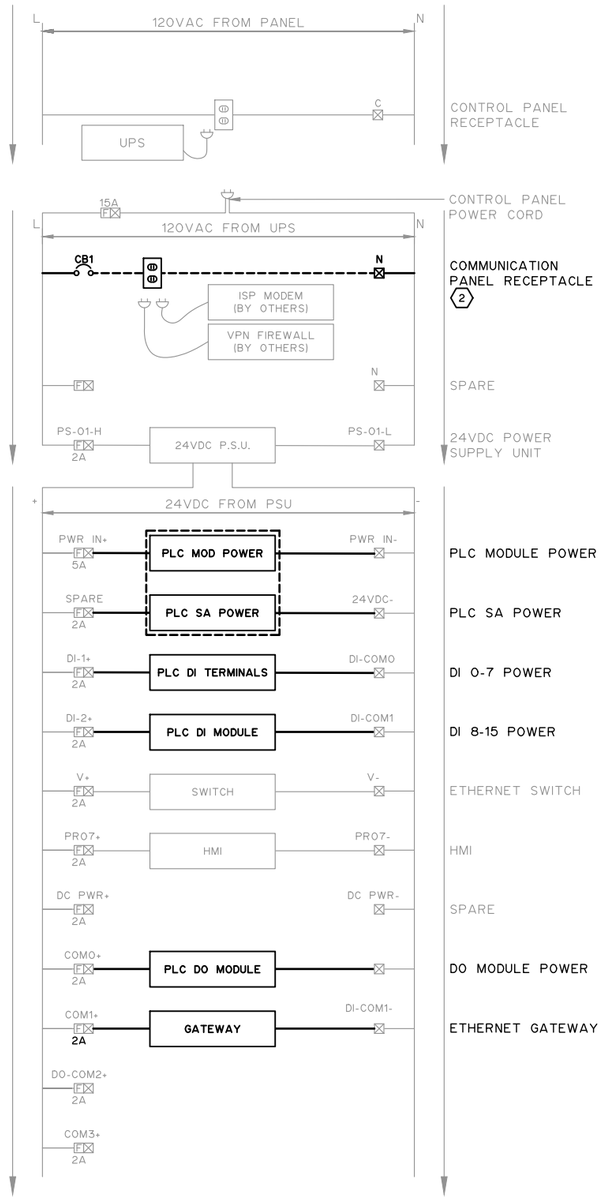


PROPOSED

CONTROL PANEL INTERIOR
3
-- NTS



COMMUNICATIONS PANEL
4
-- 1:10



CONTROL PANEL POWER DISTRIBUTION

NOTES:
1. ——— WIRING INTEGRAL TO PANEL.
   - 24VDC/120VAC POWER/SIGNALS = 18 AWG TEW
   - ANALOG SIGNALS = 18 AWG BELDEN SHIELDED TWISTED PAID.
2. – – – – FIELD WIRING.
   - 24VDC/120VAC POWER/SIGNALS = 14 AWG RW90
   - ANALOG SIGNALS = 18 AWG BELDEN SHIELDED TWISTED PAIR.
3. CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING ALL NECESSARY CONDUIT AND WIRING TO INTERCONNECT EQUIPMENT AS SHOWN. MINIMUM CONDUIT SIZE TO BE 21Φ RPVC UNLESS OTHERWISE NOTED.
4. CONTROL PANEL POWER CORD TO BE LONG ENOUGH TO PLUG INTO UPS AND CONTROL PANEL RECEPTACLE.
5. REFER TO DRAWING COMMUNICATION ARCHITECTURE FOR ADDITIONAL WIRING REQUIREMENTS.
6. REFER TO DRAWING E1.2 - TYPICAL TERMINAL LAYOUTS FOR ADDITIONAL REQUIREMENTS.
7. ADD LAMACOID TO EXISTING AND NEW PANELS WITH WHITE LETTERING AND BLACK FACE WITH 12mm HIGH LETTERS AND 25mm HIGH LAMACOID. CONTROL PANELS TO BE LABELLED CP-100 AND COMMUNICATION PANELS TO BE LABELLED CP-101.
8. ALL DEMOLISHED EQUIPMENT AND COMPONENTS TO BE RETURNED TO OWNER IN GOOD CONDITION.

(-) KEYNOTES:
1. REMOVE EXISTING SCADAPACK AND SALVAGE TO OWNER. EXISTING WIRING TO REMAIN. REPLACE WITH NEW PLC.
2. MOVE EXISTING TERMINALS DOWN ON THE DIN RAIL AND PROVIDE AND INSTALL FUSED 120VAC UPS POWER TERMINAL FOR POWERING COMMUNICATIONS PANEL.
3. PROVIDE AND INSTALL LPU FOR EAGLE HEIGHTS RESERVOIR LEVEL TRANSDUCER.
4. PROVIDE AND INSTALL NEW COMMUNICATIONS PANEL. PROVIDE AND INSTALL TWO NEW 16Φ EMT CONDUIT AND WIRING BETWEEN CONTROL PANEL AND COMMUNICATIONS PANEL. INSTALL 2C-12AWG RW90 POWER CONDUCTORS IN ONE CONDUIT AND ETHERNET CABLING IN THE OTHER.

THIS DRAWING MAY HAVE BEEN MODIFIED FROM ITS ORIGINAL SIZE. ALL SCALE NOTATIONS INDICATED ARE BASED ON 11"x17" FORMAT DRAWINGS

1	20-09-23	FOR TENDER
ISSUE	YY-MM-DD	REVISION

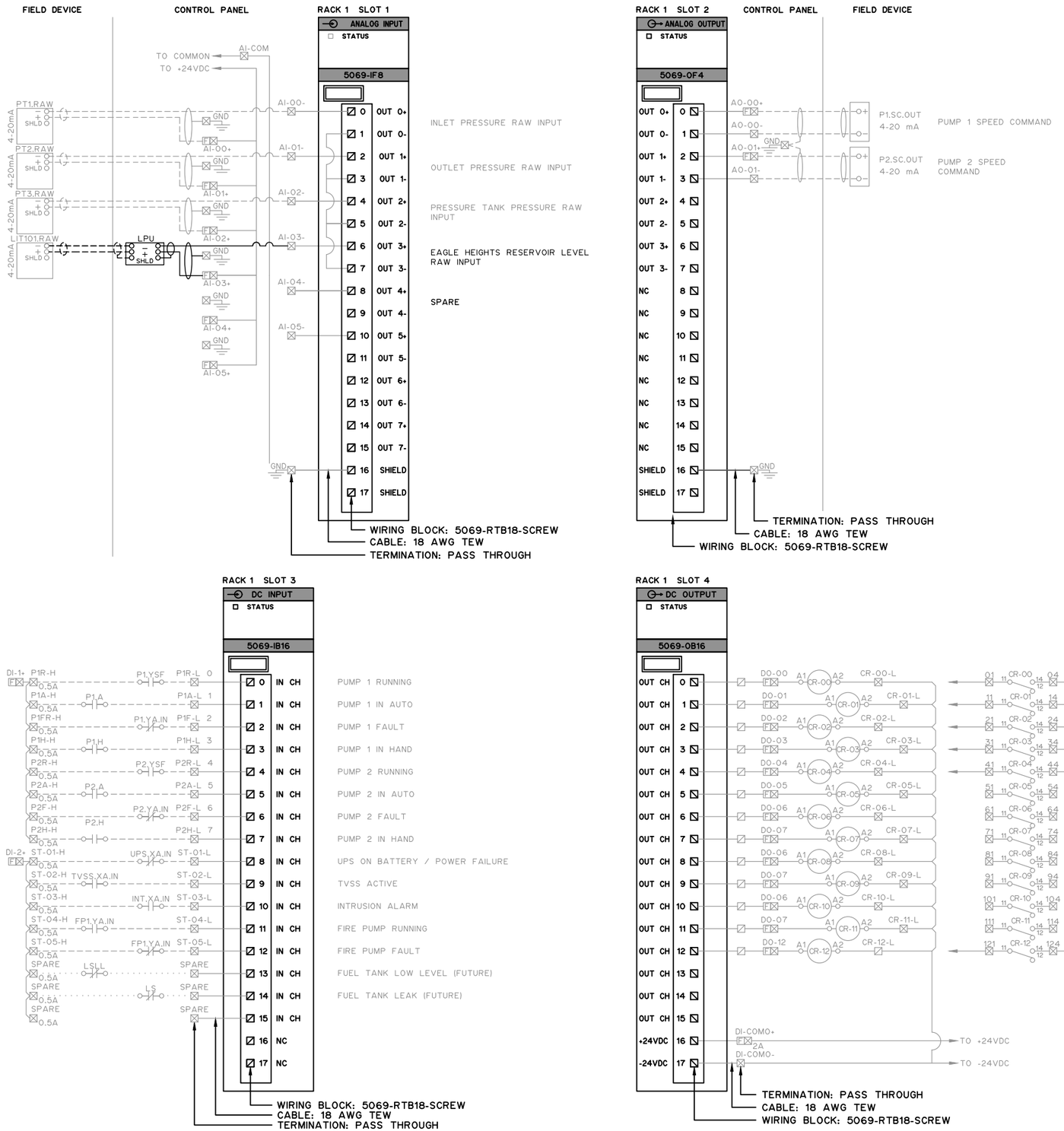
Association of Professional Engineers and Geoscientists of the Province of British Columbia
Z.T. SPENCER
ENGINEERING LICENSEE
Limited Licence 100981
2020-09-23

MPE Engineering Ltd.

REGIONAL DISTRICT OF NANAIMO

NANOOSE BAY WSA SCADA IMPLEMENTATION
ELECTRICAL
STEWART ROAD PUMP STATION
PANEL DETAILS

DESIGNED	N.D.S., Z.T.S.	JOB	9794-002-00
DRAWN	N.O.W., D.J.H.	SCALE	
DATE	SEPTEMBER 2020	DRAWING	E2.5.1



NOTES:
1. REFER TO DRAWING E1.2 FOR TYPICAL TERMINAL LAYOUTS.

THIS DRAWING MAY HAVE BEEN MODIFIED FROM ITS ORIGINAL SIZE. ALL SCALE NOTATIONS INDICATED ARE BASED ON 11"x17" FORMAT DRAWINGS

ISSUE	YY-MM-DD	REVISION
1	20-09-23	FOR TENDER

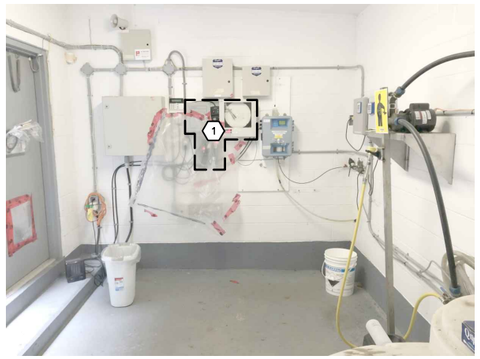
Association of Professional Engineers and Geoscientists of the Province of British Columbia
Z.T.S. SPENCER
ENGINEERING LICENSEE
Limited Licence 199981
2020-09-23

MPE Engineering Ltd.

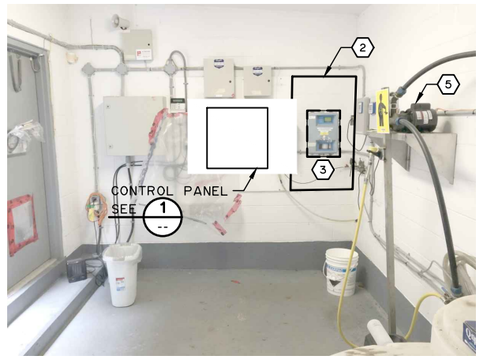
REGIONAL DISTRICT OF NANAIMO

NANOOSE BAY WSA SCADA IMPLEMENTATION
ELECTRICAL
STEWART ROAD PUMP STATION
PLC IO

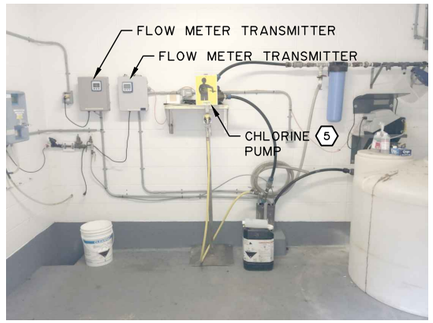
DESIGNED	N.D.S., Z.T.S.	JOB	9794-002-00
DRAWN	N.O.W., D.J.H.	SCALE	
DATE	SEPTEMBER 2020	DRAWING	E2.5.2



DEMOLITION



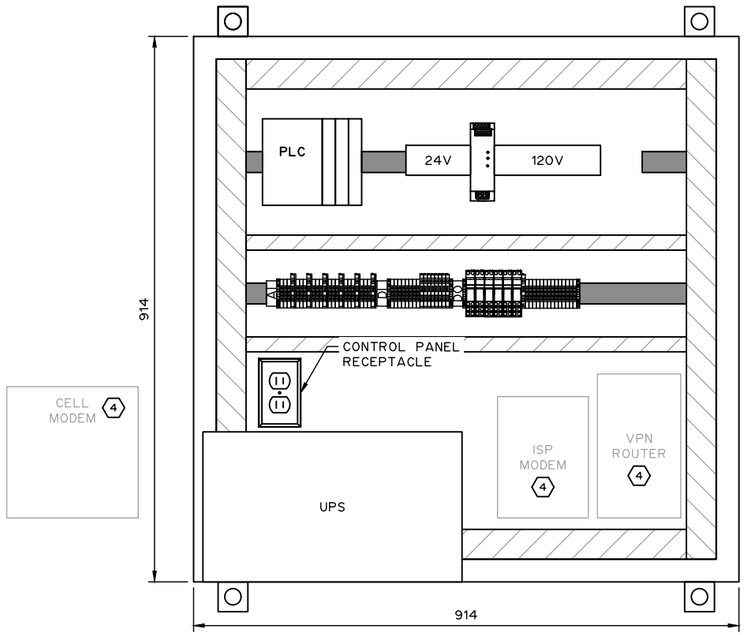
PROPOSED



PROPOSED

CHANGEOVER NOTES:

THE FOLLOWING WORK IS TO BE COMPLETED FOR BOTH FLOW METER TRANSMITTERS.
1. 120VAC POWER TO BE FED FROM NEW CONTROL PANEL
2. 24VDC POWER TO BE REMOVED.
3. 4-20mA SIGNAL (2 WIRE) TO BE WIRED TO NEW CONTROL PANEL
4. PULSE OUTPUT TO BE WIRED TO NEW CONTROL PANEL
5. SOLID STATE RELAY IN "RESERVOIR FILL" PANEL TO BE REMOVED. CHLORINE PUMP TO BE CONTROLLED BY DO IN NEW CONTROL PANEL.

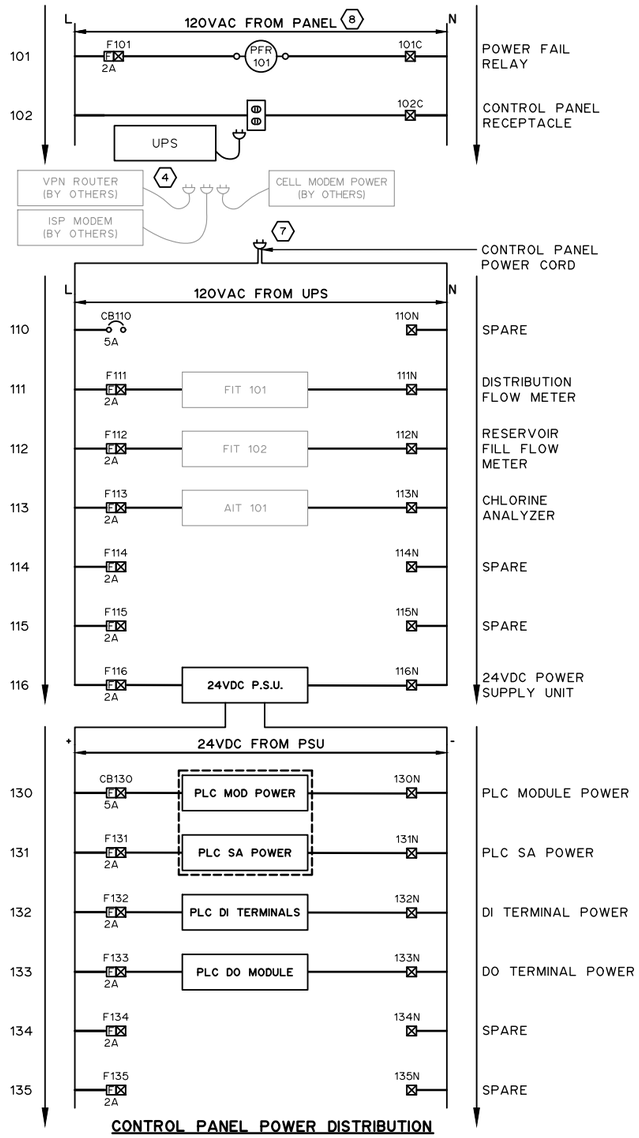


CONTROL PANEL INTERIOR

1 -- NTS



LEVEL TRANSMITTER LOCATION



CONTROL PANEL POWER DISTRIBUTION

KEYNOTES:
1. REMOVE EXISTING EQUIPMENT AND SALVAGE TO OWNER. DEMOLISH WIRING BACK TO POINT OF SOURCE.
2. PROVIDE AND INSTALL NEW PAINTED PLYWOOD BACKBOARD TO MATCH EXISTING.
3. RELOCATE EXISTING CL17 CHLORINE ANALYZER TO ACCOMMODATE ROOM FOR NEW CONTROL PANEL.
4. ISP MODEM, CELL MODEM POWER, AND VPN ROUTER TO BE PLUGGED INTO UPS RECEPTACLES.
5. RECONFIGURE CHLORINE PUMP POWER TO BE ENERGIZED BY A SWITCH FOR MANUAL OPERATION. LABEL SWITCH COVER TO SUIT.
6. INSTALL NEW PRESSURE TRANSMITTER (FOR LEVEL MEASUREMENT) ON DISTRICT PROVIDED PIPING. CONNECT WIRING TO SPARE CONDUCTORS IN LOCAL JUNCTION BOX.
7. CONTROL PANEL POWER CORD TO BE LONG ENOUGH TO PLUG INTO UPS AND CONTROL PANEL RECEPTACLE.
8. PROVIDE AND INSTALL NEW 15AMP SINGLE POLE BREAKER IN LOCAL LIGHTING PANEL, CONDUIT AND WIRING TO POWER NEW CONTROL PANEL.

NOTES:
1. ——WIRING INTEGRAL TO PANEL.
   - 24VDC/120VAC POWER/SIGNALS = 18 AWG TEW
   - ANALOG SIGNALS = 18 AWG BELDEN SHIELDED TWISTED PAID.
2. ----FIELD WIRING.
   - 24VDC/120VAC POWER/SIGNALS = 14 AWG RW90
   - ANALOG SIGNALS = 18 AWG BELDEN SHIELDED TWISTED PAIR.
3. CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING ALL NECESSARY CONDUIT AND WIRING TO INTERCONNECT EQUIPMENT AS SHOWN. MINIMUM CONDUIT SIZE TO BE 21Φ RPVC UNLESS OTHERWISE NOTED.
4. CONTROL PANEL POWER CORD TO BE LONG ENOUGH TO PLUG INTO UPS AND CONTROL PANEL RECEPTACLE.
5. REFER TO DRAWING COMMUNICATION ARCHITECTURE FOR ADDITIONAL WIRING REQUIREMENTS.
6. REFER TO DRAWING E1.2 - TYPICAL TERMINAL LAYOUTS FOR ADDITIONAL REQUIREMENTS.
7. ADD LAMACOID TO EXISTING AND NEW PANELS WITH WHITE LETTERING AND BLACK FACE WITH 12mm HIGH LETTERS AND 25mm HIGH LAMACOID. CONTROL PANELS TO BE LABELLED CP-100 AND COMMUNICATION PANELS TO BE LABELLED CP-101.
8. ALL DEMOLISHED EQUIPMENT AND COMPONENTS TO BE RETURNED TO OWNER IN GOOD CONDITION.

THIS DRAWING MAY HAVE BEEN MODIFIED FROM ITS ORIGINAL SIZE. ALL SCALE NOTATIONS INDICATED ARE BASED ON 11"x17" FORMAT DRAWINGS

ISSUE	YY-MM-DD	REVISION
1	20-09-23	FOR TENDER

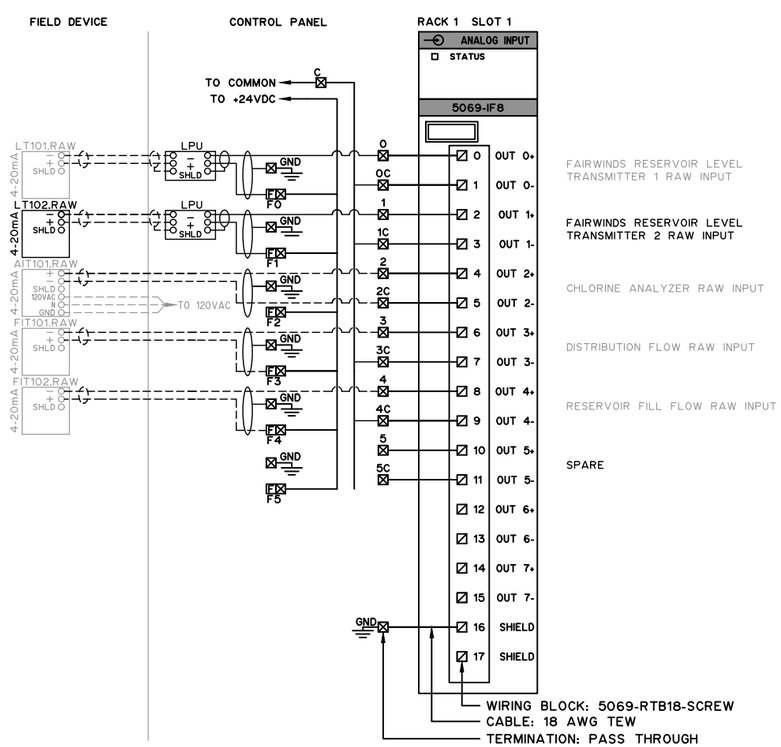
Association of Professional Engineers and Geoscientists of the Province of British Columbia
Z.T.S. SPENCER
ENGINEERING LICENSEE
Limited Licence 199981
2020-09-23

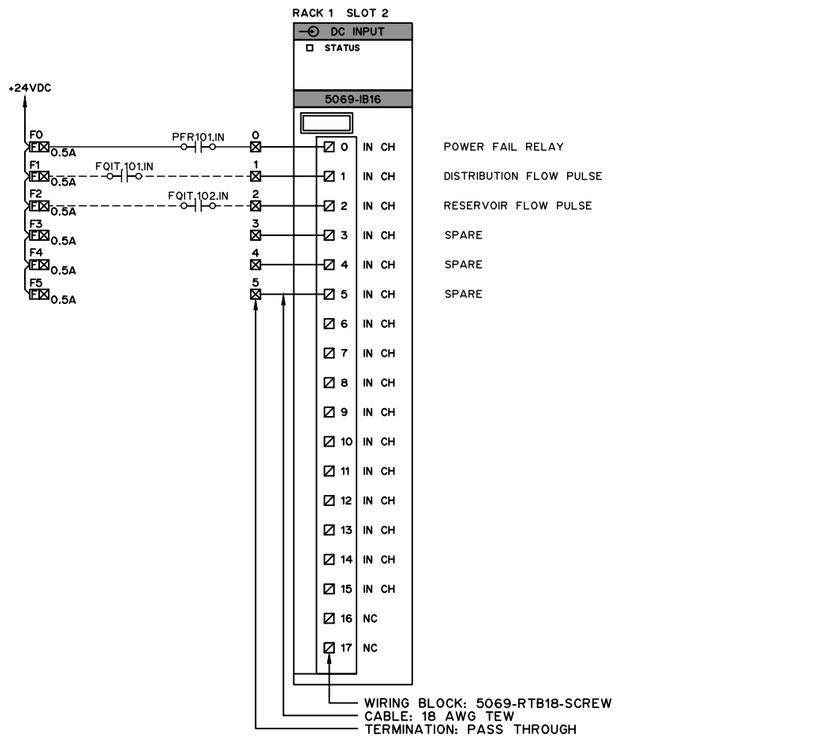
MPE Engineering Ltd.

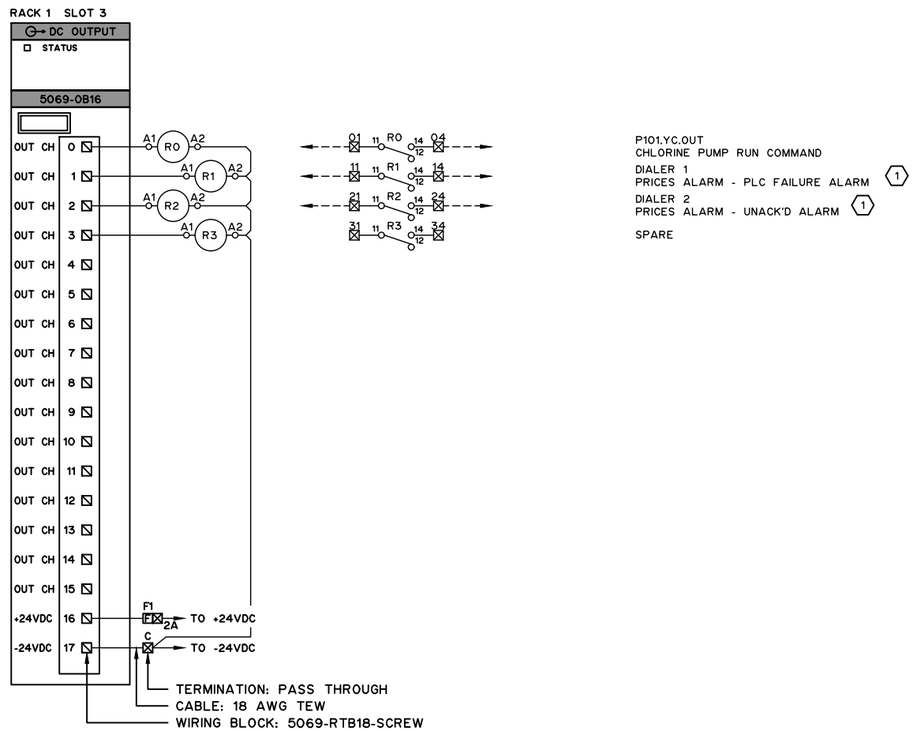
REGIONAL DISTRICT OF NANAIMO

NANOOSE BAY WSA SCADA IMPLEMENTATION
ELECTRICAL
FAIRWINDS RESERVOIRS
PANEL DETAILS

DESIGNED	N.D.S., Z.T.S.	JOB	9794-002-00
DRAWN	N.O.W., D.J.H.	SCALE	
DATE	SEPTEMBER 2020	DRAWING	E2.6.1







NOTES:
1. REFER TO DRAWING E1.2 FOR TYPICAL TERMINAL LAYOUTS.

KEYNOTES:
1. ELECTRICIAN TO RUN WIRE FROM CONTROL TO PRICES PANEL. WIRING IN PRICES PANEL TO BE TERMINATED BY OTHERS.

THIS DRAWING MAY HAVE BEEN MODIFIED FROM ITS ORIGINAL SIZE. ALL SCALE NOTATIONS INDICATED ARE BASED ON 11"x17" FORMAT DRAWINGS

1	20-09-23	FOR TENDER
ISSUE	YY-MM-DD	REVISION

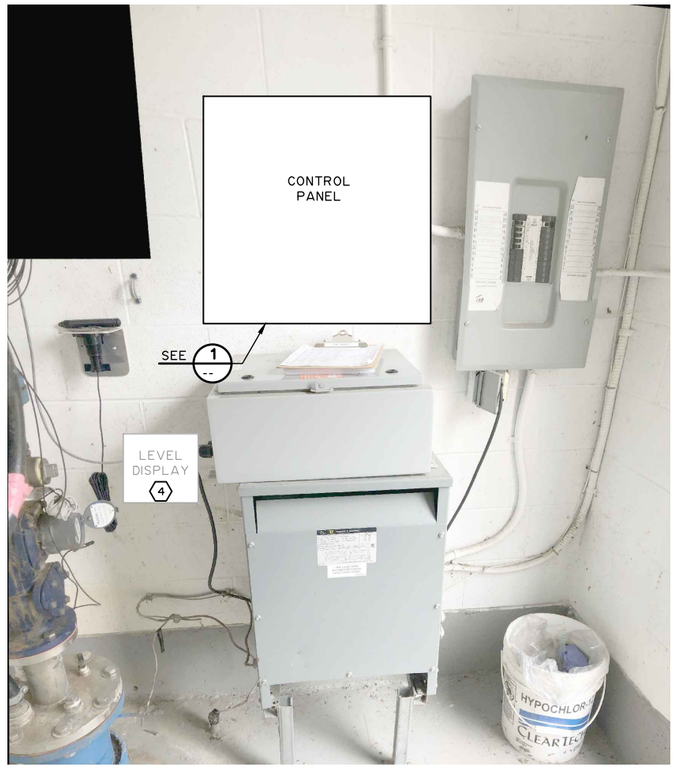
Association of Professional Engineers and Geoscientists of the Province of British Columbia
Z.T.S. SPENCER
ENGINEERING LICENSEE
Limited Licence 109981
2020-09-23

MPE Engineering Ltd.

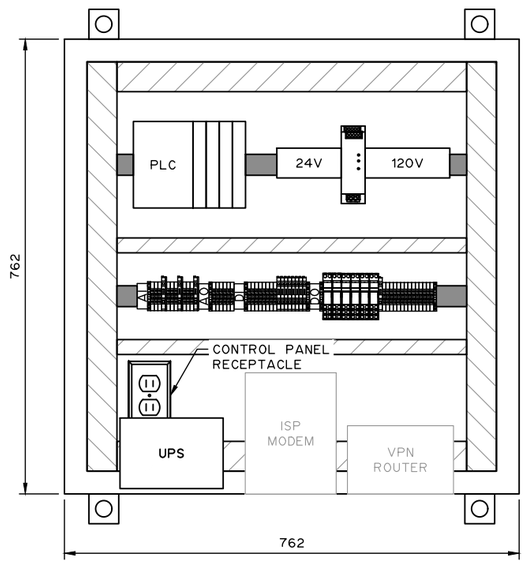
REGIONAL DISTRICT OF NANAIMO

NANOOSE BAY WSA SCADA
IMPLEMENTATION
ELECTRICAL
FAIRWINDS RESERVOIRS
PLC IO

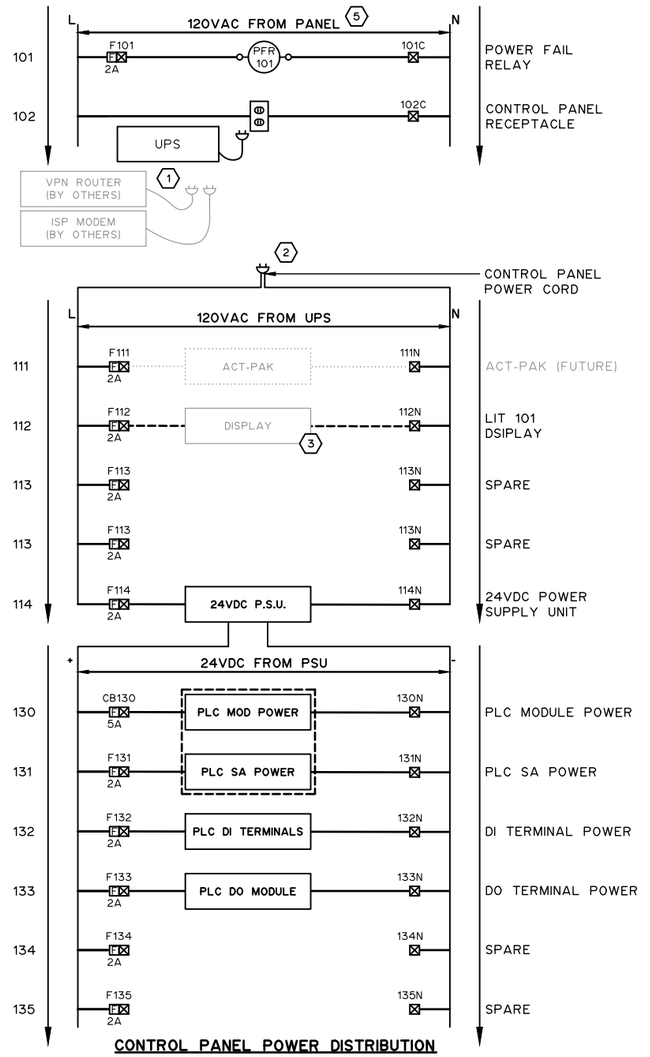
DESIGNED	N.D.S., Z.T.S.	JOB	9794-002-00
DRAWN	N.O.W., D.J.H.	SCALE	
DATE	SEPTEMBER 2020	DRAWING	E2.6.2



PANEL LOCATION
NTS



CONTROL PANEL LAYOUT
1
--
NTS



CONTROL PANEL POWER DISTRIBUTION

NOTES:
1. ——WIRING INTEGRAL TO PANEL.
   - 24VDC/120VAC POWER/SIGNALS = 18 AWG TEW
   - ANALOG SIGNALS = 18 AWG BELDEN SHIELDED TWISTED PAID.
2. ----FIELD WIRING.
   - 24VDC/120VAC POWER/SIGNALS = 14 AWG RW90
   - ANALOG SIGNALS = 18 AWG BELDEN SHIELDED TWISTED PAIR.
3. CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING ALL NECESSARY CONDUIT AND WIRING TO INTERCONNECT EQUIPMENT AS SHOWN. MINIMUM CONDUIT SIZE TO BE 21Φ RPVC UNLESS OTHERWISE NOTED.
4. CONTROL PANEL POWER CORD TO BE LONG ENOUGH TO PLUG INTO UPS AND CONTROL PANEL RECEPTACLE.
5. REFER TO DRAWING COMMUNICATION ARCHITECTURE FOR ADDITIONAL WIRING REQUIREMENTS.
6. REFER TO DRAWING E1.2 - TYPICAL TERMINAL LAYOUTS FOR ADDITIONAL REQUIREMENTS.
7. ADD LAMACOID TO EXISTING AND NEW PANELS WITH WHITE LETTERING AND BLACK FACE WITH 12mm HIGH LETTERS AND 25mm HIGH LAMACOID. CONTROL PANELS TO BE LABELLED CP-100 AND COMMUNICATION PANELS TO BE LABELLED CP-101.
8. ALL DEMOLISHED EQUIPMENT AND COMPONENTS TO BE RETURNED TO OWNER IN GOOD CONDITION.

KEYNOTES:
1. ISP MODEM AND VPN ROUTER TO BE PLUGGED INTO UPS RECEPTACLES.
2. CONTROL PANEL POWER CORD TO BE LONG ENOUGH TO PLUG INTO UPS AND CONTROL PANEL RECEPTACLE.
3. DISPLAY POWER TO BE RE-WIRED TO UPS FED POWER.
4. OWNER INSTALLED LEVEL DISPLAY.
5. PROVIDE AND INSTALL NEW 15AMP SINGLE POLE BREAKER IN LOCAL LIGHTING PANEL, CONDUIT AND WIRING TO POWER NEW CONTROL PANEL.

THIS DRAWING MAY HAVE BEEN MODIFIED FROM ITS ORIGINAL SIZE. ALL SCALE NOTATIONS INDICATED ARE BASED ON 11"x17" FORMAT DRAWINGS

1	20-09-23	FOR TENDER
ISSUE	YY-MM-DD	REVISION

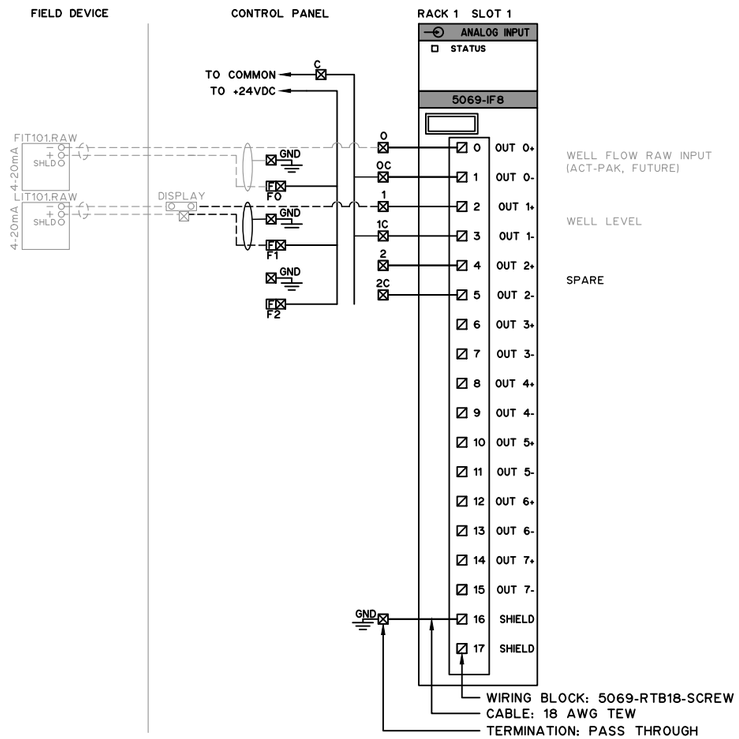
Association of Professional Engineers and Geoscientists of the Province of British Columbia
Z.T. SPENCER
ENGINEERING LICENSEE
Limited Licence 199981
2020-09-23

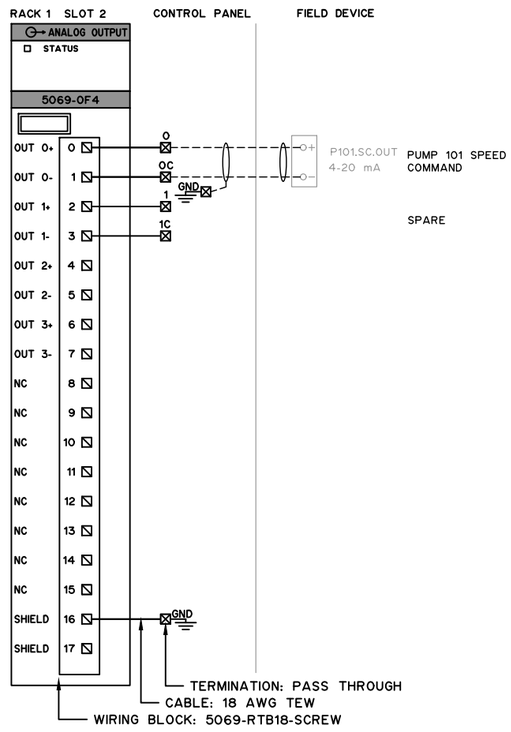
MPE Engineering Ltd.

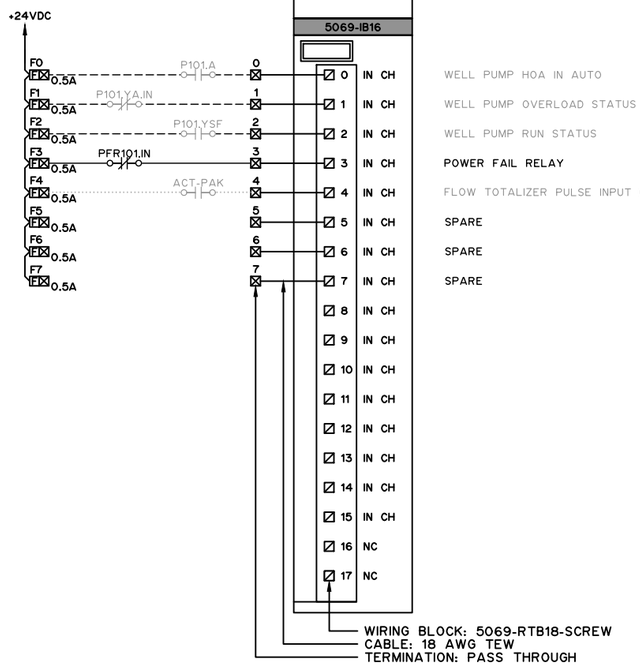
REGIONAL DISTRICT OF NANAIMO

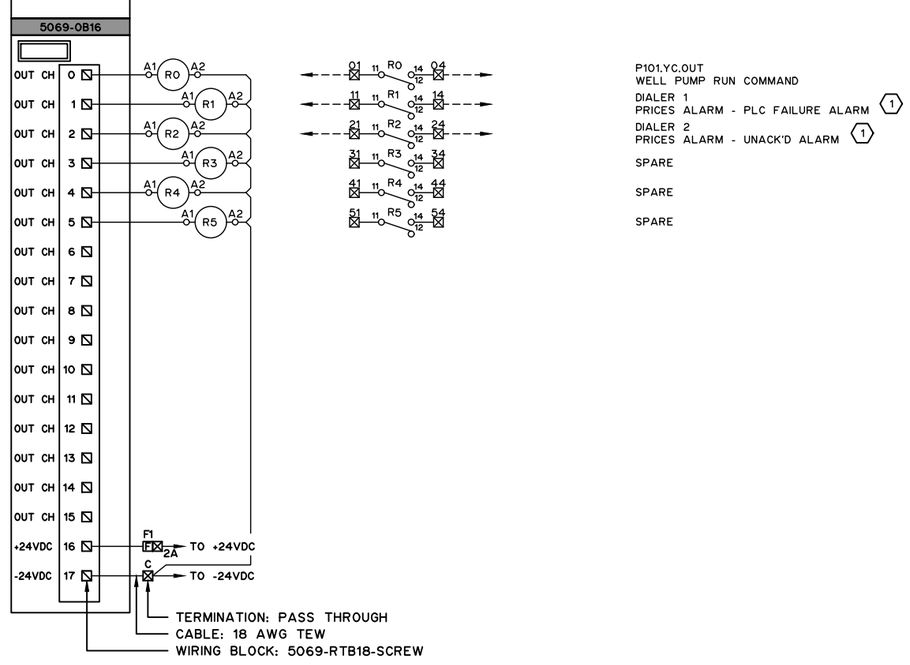
NANOOSE BAY WSA SCADA IMPLEMENTATION
ELECTRICAL
TIPPETT ROAD WELL 1
PANEL DETAILS

DESIGNED	N.D.S., Z.T.S.	JOB	9794-002-00
DRAWN	N.O.W., D.J.H.	SCALE	
DATE	SEPTEMBER 2020	DRAWING	E2.7.1









NOTES:
1. REFER TO DRAWING E1.2 FOR TYPICAL TERMINAL LAYOUTS.

KEYNOTES:
1. ELECTRICIAN TO RUN WIRE FROM CONTROL TO PRICES PANEL. WIRING IN PRICES PANEL TO BE TERMINATED BY OTHERS.

THIS DRAWING MAY HAVE BEEN MODIFIED FROM ITS ORIGINAL SIZE. ALL SCALE NOTATIONS INDICATED ARE BASED ON 11"x17" FORMAT DRAWINGS

1	20-09-23	FOR TENDER
ISSUE	YY-MM-DD	REVISION

Association of Professional Engineers and Geoscientists of the Province of British Columbia
T.T. SPENCER
ENGINEERING LICENSEE
Limited Licence 100981
2020-09-23

MPE Engineering Ltd.

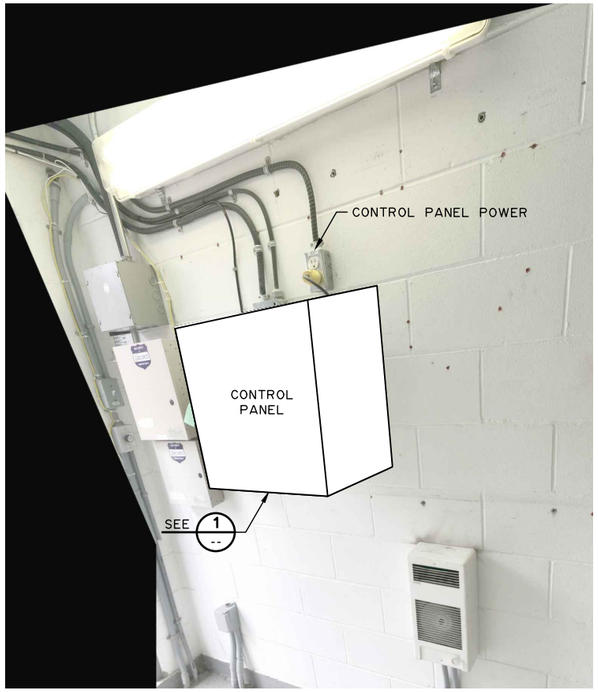
REGIONAL DISTRICT OF NANAIMO

NANOOSE BAY WSA SCADA
IMPLEMENTATION
ELECTRICAL
TIPPETT ROAD WELL 1
PLC IO

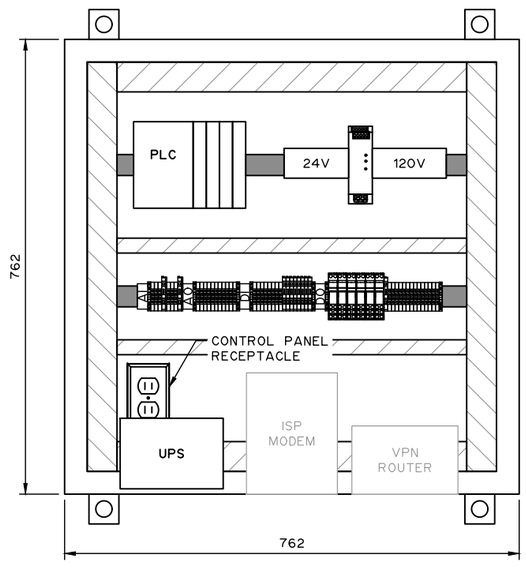
DESIGNED	N.D.S., Z.T.S.	JOB	9794-002-00
DRAWN	N.O.W., D.J.H.	SCALE	
DATE	SEPTEMBER 2020	DRAWING	E2.7.2



DEMOLITION

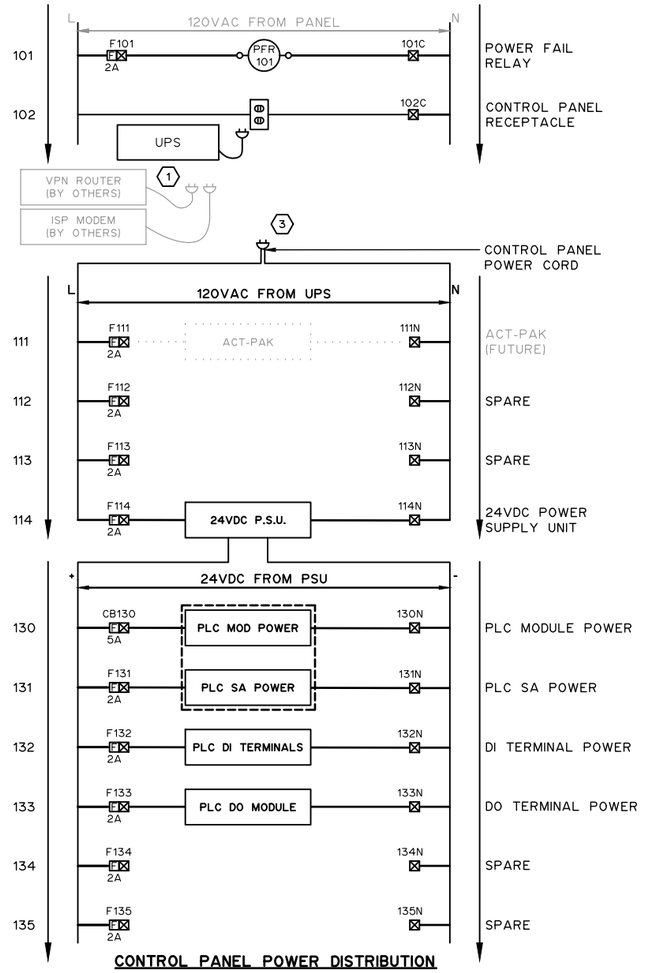


PROPOSED



CONTROL PANEL LAYOUT

1 -- NTS



CONTROL PANEL POWER DISTRIBUTION

NOTES:
1. ——— WIRING INTEGRAL TO PANEL.
   - 24VDC/120VAC POWER/SIGNALS = 18 AWG TEW
   - ANALOG SIGNALS = 18 AWG BELDEN SHIELDED TWISTED PAID.
2. ———— FIELD WIRING.
   - 24VDC/120VAC POWER/SIGNALS = 14 AWG RW90
   - ANALOG SIGNALS = 18 AWG BELDEN SHIELDED TWISTED PAIR.
3. CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING ALL NECESSARY CONDUIT AND WIRING TO INTERCONNECT EQUIPMENT AS SHOWN. MINIMUM CONDUIT SIZE TO BE 21Φ RPVC UNLESS OTHERWISE NOTED.
4. CONTROL PANEL POWER CORD TO BE LONG ENOUGH TO PLUG INTO UPS AND CONTROL PANEL RECEPTACLE.
5. REFER TO DRAWING COMMUNICATION ARCHITECTURE FOR ADDITIONAL WIRING REQUIREMENTS.
6. REFER TO DRAWING E1.2 - TYPICAL TERMINAL LAYOUTS FOR ADDITIONAL REQUIREMENTS.
7. ADD LAMACOID TO EXISTING AND NEW PANELS WITH WHITE LETTERING AND BLACK FACE WITH 12mm HIGH LETTERS AND 25mm HIGH LAMACOID. CONTROL PANELS TO BE LABELLED CP-100 AND COMMUNICATION PANELS TO BE LABELLED CP-101.
8. ALL DEMOLISHED EQUIPMENT AND COMPONENTS TO BE RETURNED TO OWNER IN GOOD CONDITION.

(-) KEYNOTES:
1. ISP MODEM AND VPN ROUTER TO BE PLUGGED INTO UPS RECEPTACLES.
2. DEMOLISH WIRING BACK TO POINT OF SOURCE. REMOVE EQUIPMENT AND SALVAGE TO OWNER.
3. CONTROL PANEL POWER CORD TO BE LONG ENOUGH TO PLUG INTO UPS AND CONTROL PANEL RECEPTACLE.

THIS DRAWING MAY HAVE BEEN MODIFIED FROM ITS ORIGINAL SIZE. ALL SCALE NOTATIONS INDICATED ARE BASED ON 11"x17" FORMAT DRAWINGS

1	20-09-23	FOR TENDER
ISSUE	YY-MM-DD	REVISION

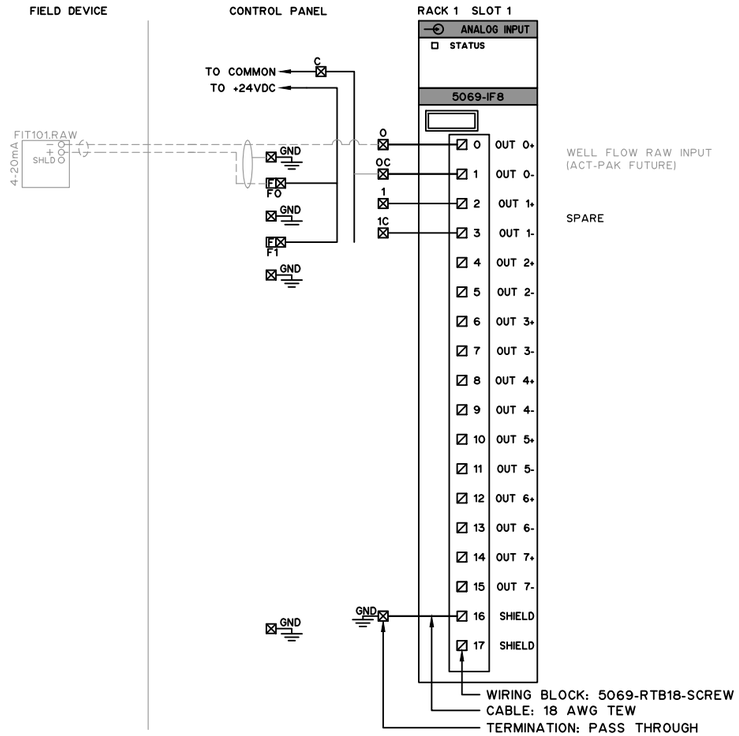
Association of Professional Engineers and Geoscientists of the Province of British Columbia
Z.T.SPENCER
ENGINEERING LICENSEE
Limited Licence 199981
2020-09-23

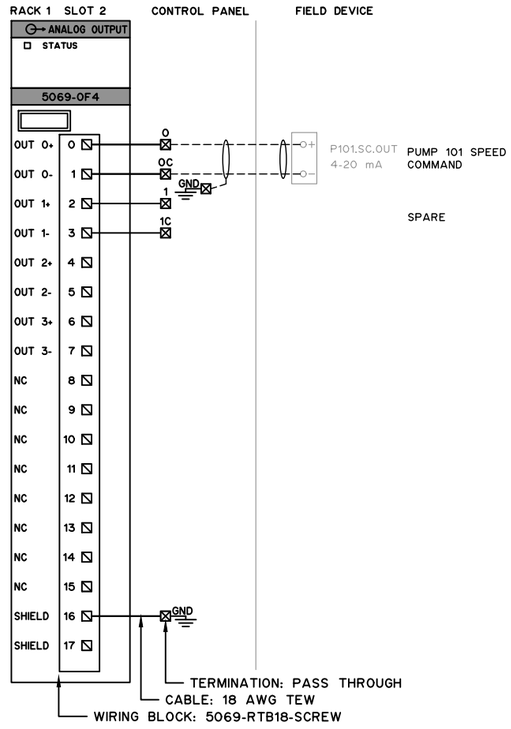
MPE Engineering Ltd.

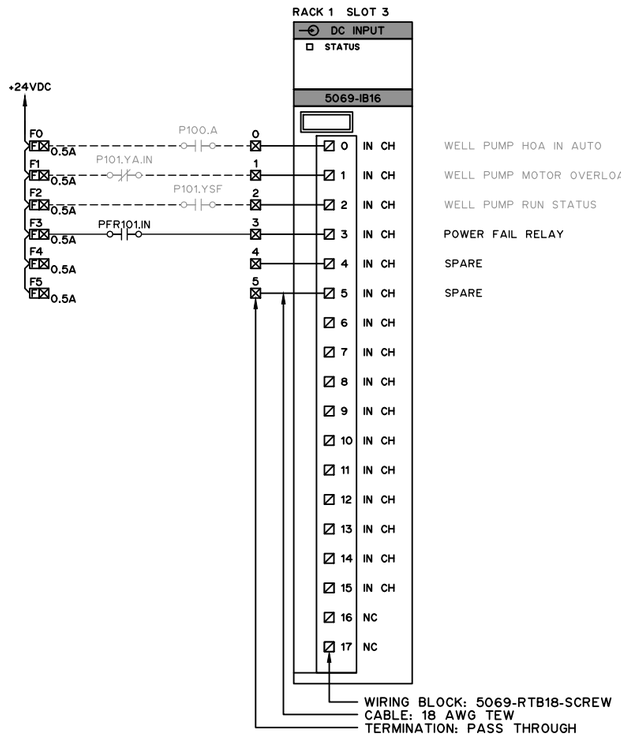
REGIONAL DISTRICT OF NANAIMO

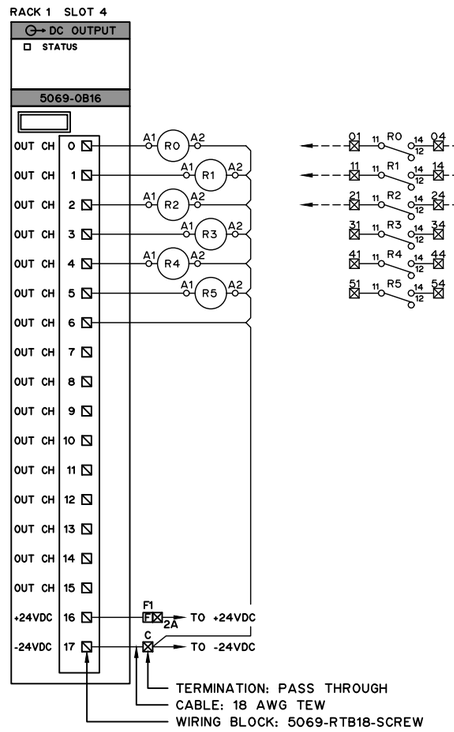
NANOOSE BAY WSA SCADA IMPLEMENTATION
ELECTRICAL
FAIRWINDS WELL 2
PANEL DETAILS

DESIGNED	N.D.S., Z.T.S.	JOB	9794-002-00
DRAWN	N.O.W., D.J.H.	SCALE	
DATE	SEPTEMBER 2020	DRAWING	E2.8.1









NOTES:
1. REFER TO DRAWING E1.2 FOR TYPICAL TERMINAL LAYOUTS.

KEYNOTES:
1. ELECTRICIAN TO RUN WIRE FROM CONTROL TO PRICES PANEL. WIRING IN PRICES PANEL TO BE TERMINATED BY OTHERS.

THIS DRAWING MAY HAVE BEEN MODIFIED FROM ITS ORIGINAL SIZE. ALL SCALE NOTATIONS INDICATED ARE BASED ON 11"x17" FORMAT DRAWINGS

ISSUE	YY-MM-DD	REVISION
1	20-09-22	FOR TENDER

Association of Professional Engineers and Geoscientists of the Province of British Columbia
Z.T.S. SPENCER
ENGINEERING LICENSEE
Limited Licence 100981
2020-09-23

MPE Engineering Ltd.

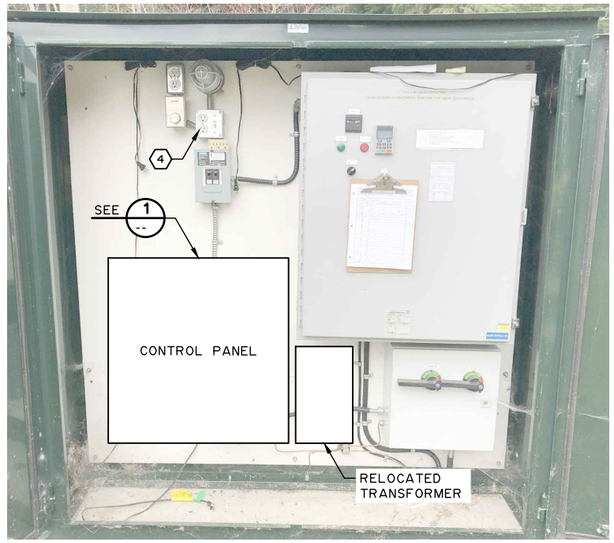
REGIONAL DISTRICT OF NANAIMO

NANOOSE BAY WSA SCADA
IMPLEMENTATION
ELECTRICAL
FAIRWINDS WELL 2
PLC IO

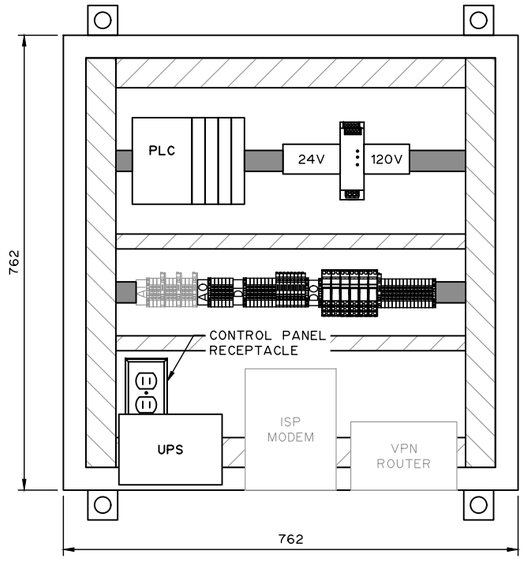
DESIGNED	N.D.S., Z.T.S.	JOB	9794-002-00
DRAWN	N.O.W., D.J.H.	SCALE	
DATE	SEPTEMBER 2020	DRAWING	E2.8.2



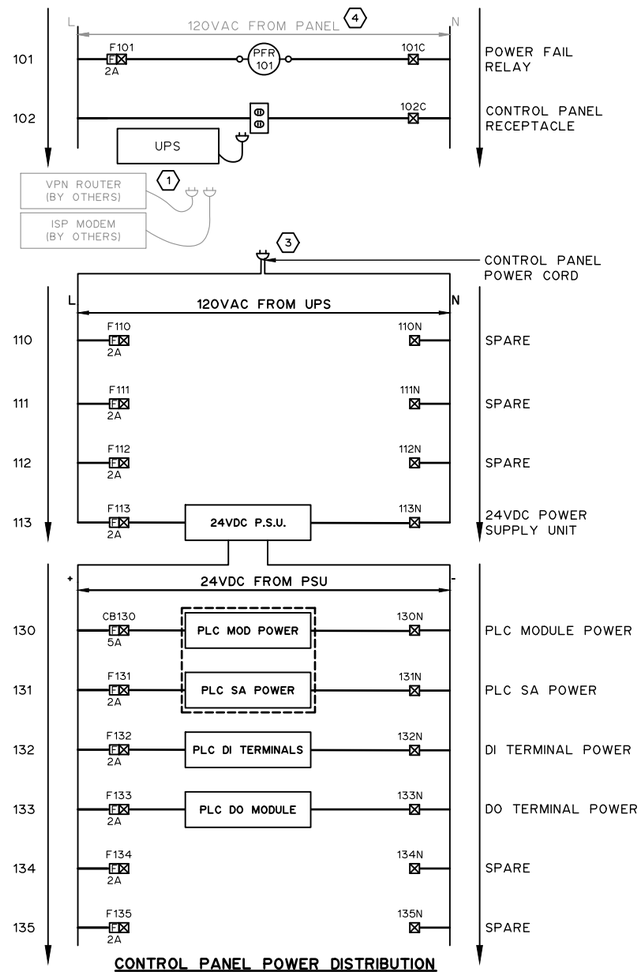
PEDESTAL DEMOLITION PLAN
NTS



PEDESTAL PROPOSED PLAN
NTS



CONTROL PANEL INTERIOR
1
--
NTS



CONTROL PANEL POWER DISTRIBUTION

NOTES:
1. ——— WIRING INTEGRAL TO PANEL.
   - 24VDC/120VAC POWER/SIGNALS = 18 AWG TEW
   - ANALOG SIGNALS = 18 AWG BELDEN SHIELDED TWISTED PAID.
2. ———— FIELD WIRING.
   - 24VDC/120VAC POWER/SIGNALS = 14 AWG RW90
   - ANALOG SIGNALS = 18 AWG BELDEN SHIELDED TWISTED PAIR.
3. CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING ALL NECESSARY CONDUIT AND WIRING TO INTERCONNECT EQUIPMENT AS SHOWN. MINIMUM CONDUIT SIZE TO BE 21Φ RPVC UNLESS OTHERWISE NOTED.
4. CONTROL PANEL POWER CORD TO BE LONG ENOUGH TO PLUG INTO UPS AND CONTROL PANEL RECEPTACLE.
5. REFER TO DRAWING COMMUNICATION ARCHITECTURE FOR ADDITIONAL WIRING REQUIREMENTS.
6. REFER TO DRAWING E1.2 - TYPICAL TERMINAL LAYOUTS FOR ADDITIONAL REQUIREMENTS.
7. ADD LAMACOID TO EXISTING AND NEW PANELS WITH WHITE LETTERING AND BLACK FACE WITH 12mm HIGH LETTERS AND 25mm HIGH LAMACOID. CONTROL PANELS TO BE LABELLED CP-100 AND COMMUNICATION PANELS TO BE LABELLED CP-101.
8. ALL DEMOLISHED EQUIPMENT AND COMPONENTS TO BE RETURNED TO OWNER IN GOOD CONDITION.

(-) KEYNOTES:
1. ISP MODEM AND VPN ROUTER TO BE PLUGGED INTO UPS RECEPTACLES.
2. RELOCATE TRANSFORMER TO UNDER VFD CABINET TO MAKE ROOM FOR NEW CONTROL PANEL.
3. CONTROL PANEL POWER CORD TO BE LONG ENOUGH TO PLUG INTO UPS AND CONTROL PANEL RECEPTACLE.
4. SOURCE CONTROL PANEL POWER FROM EXISTING CIRCUIT.

THIS DRAWING MAY HAVE BEEN MODIFIED FROM ITS ORIGINAL SIZE. ALL SCALE NOTATIONS INDICATED ARE BASED ON 11"x17" FORMAT DRAWINGS

ISSUE	YY-MM-DD	REVISION
1	20-09-23	FOR TENDER

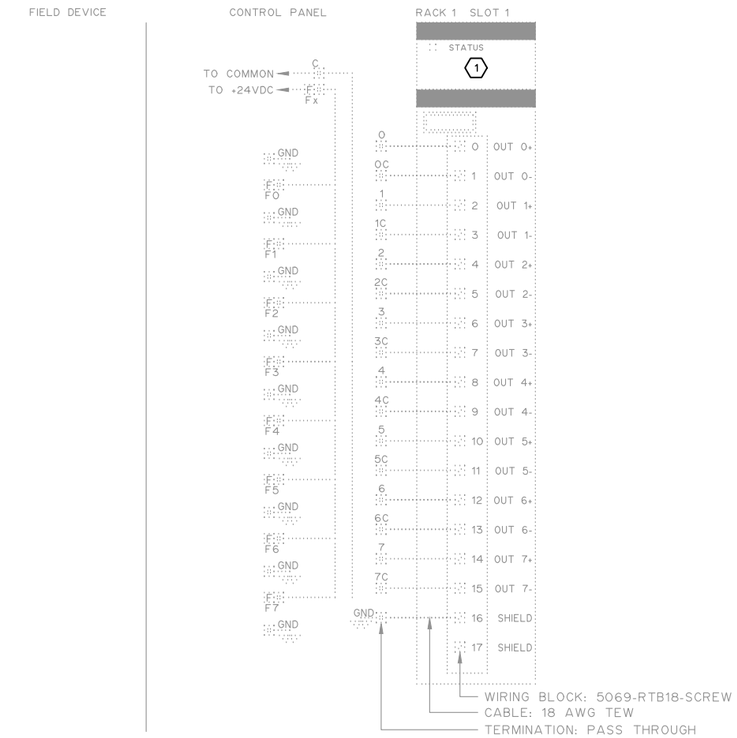
Association of Professional Engineers and Geoscientists of the Province of British Columbia
Z.T. SPENCER
ENGINEERING LICENSEE
Limited Licence 199961
2020-09-23

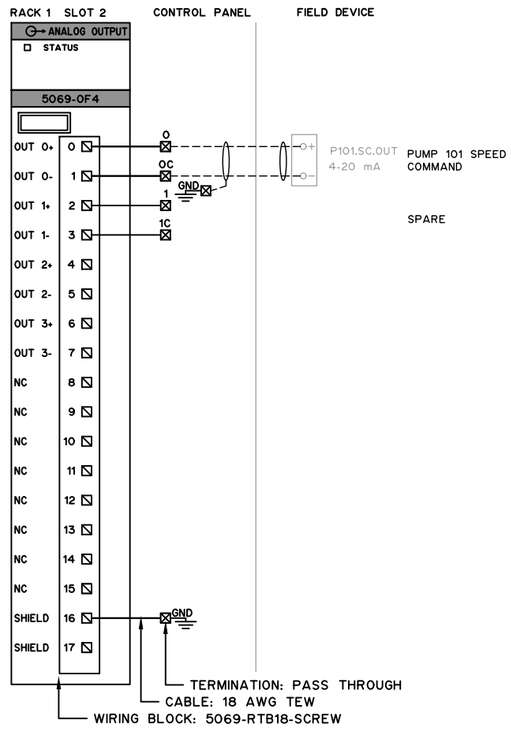
MPE Engineering Ltd.

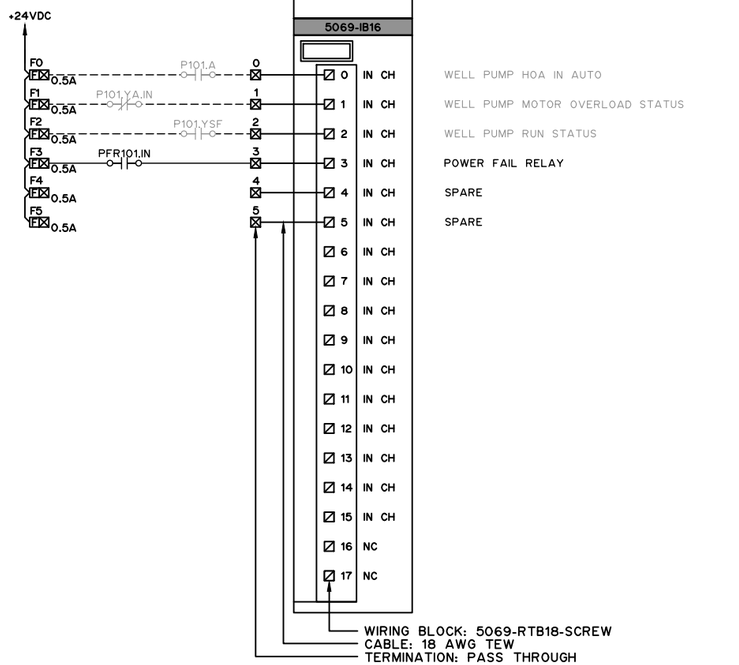
REGIONAL DISTRICT OF NANAIMO

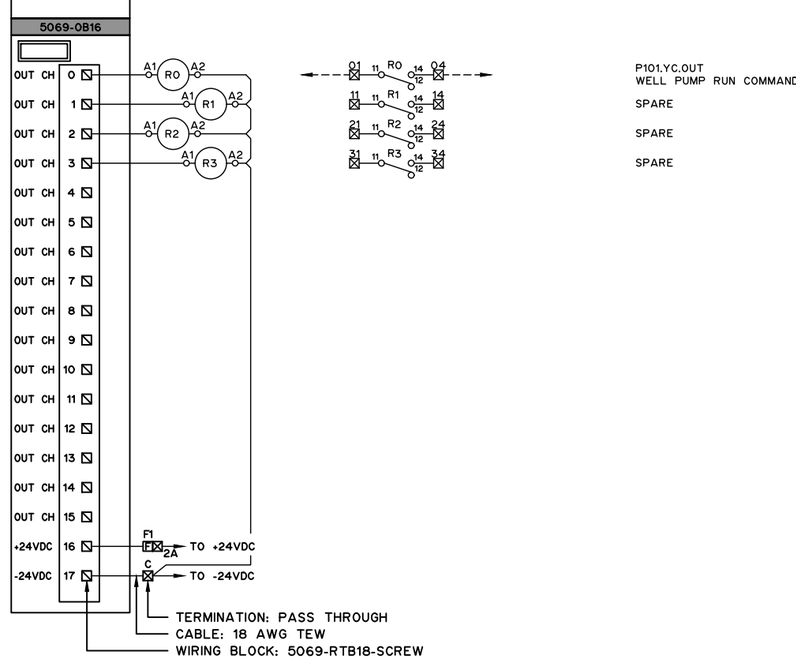
NANOOSE BAY WSA SCADA IMPLEMENTATION
ELECTRICAL
FAIRWINDS WELL 3
PANEL DETAILS

DESIGNED	N.D.S., Z.T.S.	JOB	9794-002-00
DRAWN	N.O.W., D.J.H.	SCALE	
DATE	SEPTEMBER 2020	DRAWING	E2.9.1









NOTES:
1. REFER TO DRAWING E1.2 FOR TYPICAL TERMINAL LAYOUTS.

KEYNOTES:
1. 5069-ARM TO BE INSTALLED IN SPARE SLOT. AI CARD TO BE INSTALLED IN THE FUTURE.

THIS DRAWING MAY HAVE BEEN MODIFIED FROM ITS ORIGINAL SIZE. ALL SCALE NOTATIONS INDICATED ARE BASED ON 11"x17" FORMAT DRAWINGS

ISSUE	YY-MM-DD	REVISION
1	20-09-23	FOR TENDER

Association of Professional Engineers and Geoscientists of the Province of British Columbia
Z.T.S. SPENCER
ENGINEERING LICENSEE
Limited Licence 100981
2020-09-23

MPE Engineering Ltd.

REGIONAL DISTRICT OF NANAIMO

NANOOSE BAY WSA SCADA IMPLEMENTATION
ELECTRICAL
FAIRWINDS WELL 3
PLC IO

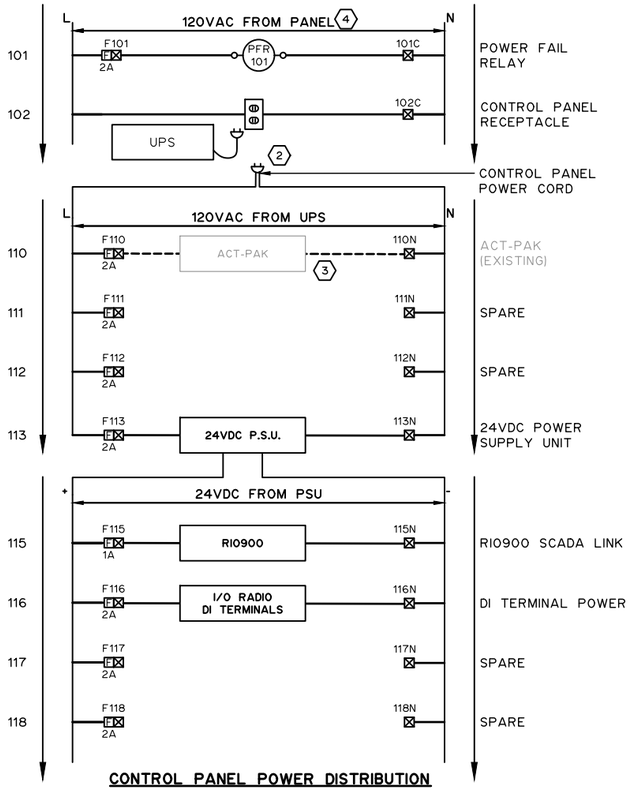
DESIGNED	N.D.S., Z.T.S.	JOB	9794-002-00
DRAWN	N.O.W., D.J.H.	SCALE	
DATE	SEPTEMBER 2020	DRAWING	E2.9.2



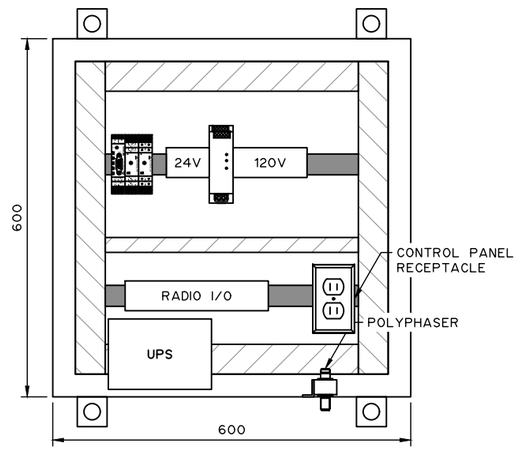
PANEL LOCATION
NTS



BUILDING EXTERIOR ANTENNA MOUNTING
NTS



CONTROL PANEL POWER DISTRIBUTION



CONTROL PANEL INTERIOR
2 --
NTS

NOTES:
1. ——WIRING INTEGRAL TO PANEL.
   - 24VDC/120VAC POWER/SIGNALS = 18 AWG TEW
   - ANALOG SIGNALS = 18 AWG BELDEN SHIELDED TWISTED PAID.
2. – – – –FIELD WIRING.
   - 24VDC/120VAC POWER/SIGNALS = 14 AWG RW90
   - ANALOG SIGNALS = 18 AWG BELDEN SHIELDED TWISTED PAIR.
3. CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING ALL NECESSARY CONDUIT AND WIRING TO INTERCONNECT EQUIPMENT AS SHOWN. MINIMUM CONDUIT SIZE TO BE 21Φ RPVC UNLESS OTHERWISE NOTED.
4. CONTROL PANEL POWER CORD TO BE LONG ENOUGH TO PLUG INTO UPS AND CONTROL PANEL RECEPTACLE.
5. REFER TO DRAWING COMMUNICATION ARCHITECTURE FOR ADDITIONAL WIRING REQUIREMENTS.
6. REFER TO DRAWING E1.2 - TYPICAL TERMINAL LAYOUTS FOR ADDITIONAL REQUIREMENTS.
7. ADD LAMACOID TO EXISTING AND NEW PANELS WITH WHITE LETTERING AND BLACK FACE WITH 12mm HIGH LETTERS AND 25mm HIGH LAMACOID. CONTROL PANELS TO BE LABELLED CP-100 AND COMMUNICATION PANELS TO BE LABELLED CP-101.
8. ALL DEMOLISHED EQUIPMENT AND COMPONENTS TO BE RETURNED TO OWNER IN GOOD CONDITION.

⬡ KEYNOTES:
1. CONTRACTOR TO MOUNT ANTENNA ON BUILDING EXTERIOR AND TERMINATE CABLE TO I/O RADIO. ALL PENETRATIONS SHALL BE PROPERLY SEALED.
2. CONTROL PANEL POWER CORD TO BE LONG ENOUGH TO PLUG INTO UPS AND CONTROL PANEL RECEPTACLE.
3. ACT-PAK POWER TO BE RE-WIRED TO UPS FED POWER.
4. PROVIDE AND INSTALL NEW 15AMP SINGLE POLE BREAKER IN LOCAL LIGHTING PANEL, CONDUIT AND WIRING TO POWER NEW CONTROL PANEL.

THIS DRAWING MAY HAVE BEEN MODIFIED FROM ITS ORIGINAL SIZE. ALL SCALE NOTATIONS INDICATED ARE BASED ON 11"x17" FORMAT DRAWINGS

1	20-09-23	FOR TENDER
ISSUE	YY-MM-DD	REVISION

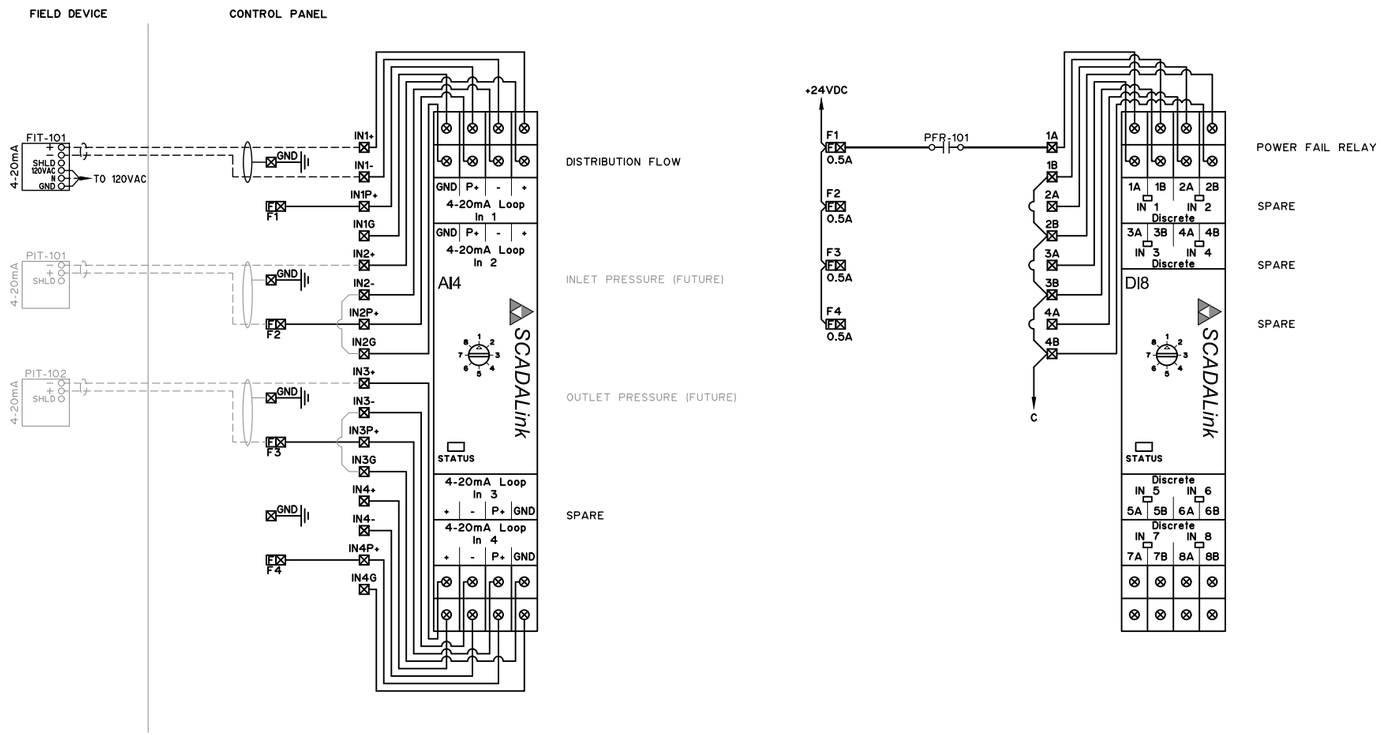
Association of Professional Engineers and Geoscientists of the Province of British Columbia
Z.T.S. SPENCER
ENGINEERING LICENSEE
Limited Licence 199986
2020-09-23

MPE Engineering Ltd.

REGIONAL DISTRICT OF NANAIMO

NANOOSE BAY WSA SCADA IMPLEMENTATION
ELECTRICAL
LIBRARY FLOW CONTROL AND PRV PANEL DETAILS

DESIGNED	N.D.S., Z.T.S.	JOB	9794-002-00
DRAWN	N.O.W., D.J.H.	SCALE	
DATE	SEPTEMBER 2020	DRAWING	E2.10.1



NOTES:
1. REFER TO DRAWING E1.2 FOR TYPICAL TERMINAL LAYOUTS.

THIS DRAWING MAY HAVE BEEN MODIFIED FROM ITS ORIGINAL SIZE. ALL SCALE NOTATIONS INDICATED ARE BASED ON 11"x17" FORMAT DRAWINGS

1	20-09-23	FOR TENDER
ISSUE	YY-MM-DD	REVISION

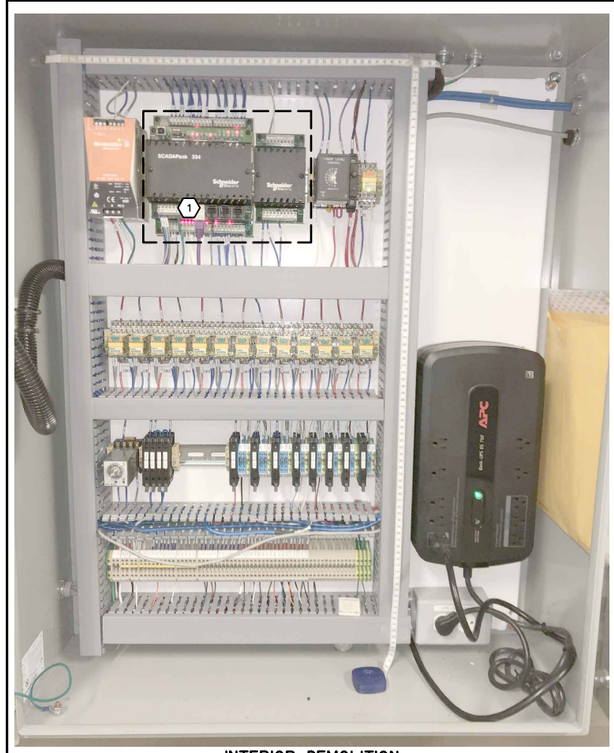
Association of Professional Engineers and Geoscientists of the Province of British Columbia
Z.T.S. SPENCER
ENGINEERING LICENSEE
Limited Licence 190981
2020-09-23

MPE Engineering Ltd.

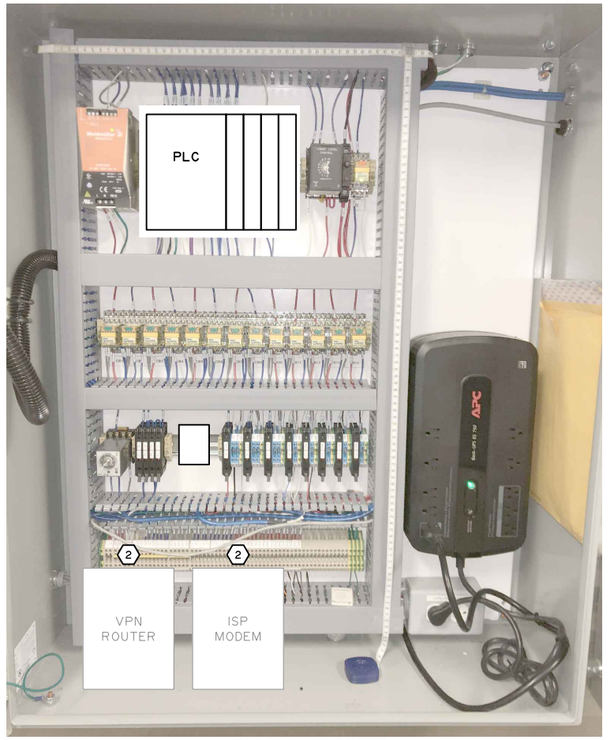
REGIONAL DISTRICT OF NANAIMO

NANOOSE BAY WSA SCADA IMPLEMENTATION
ELECTRICAL
LIBRARY FLOW CONTROL AND PRV
PLC IO

DESIGNED	N.D.S., Z.T.S.	JOB	9794-002-00
DRAWN	N.O.W., D.J.H.	SCALE	
DATE	SEPTEMBER 2020	DRAWING	E2.10.2



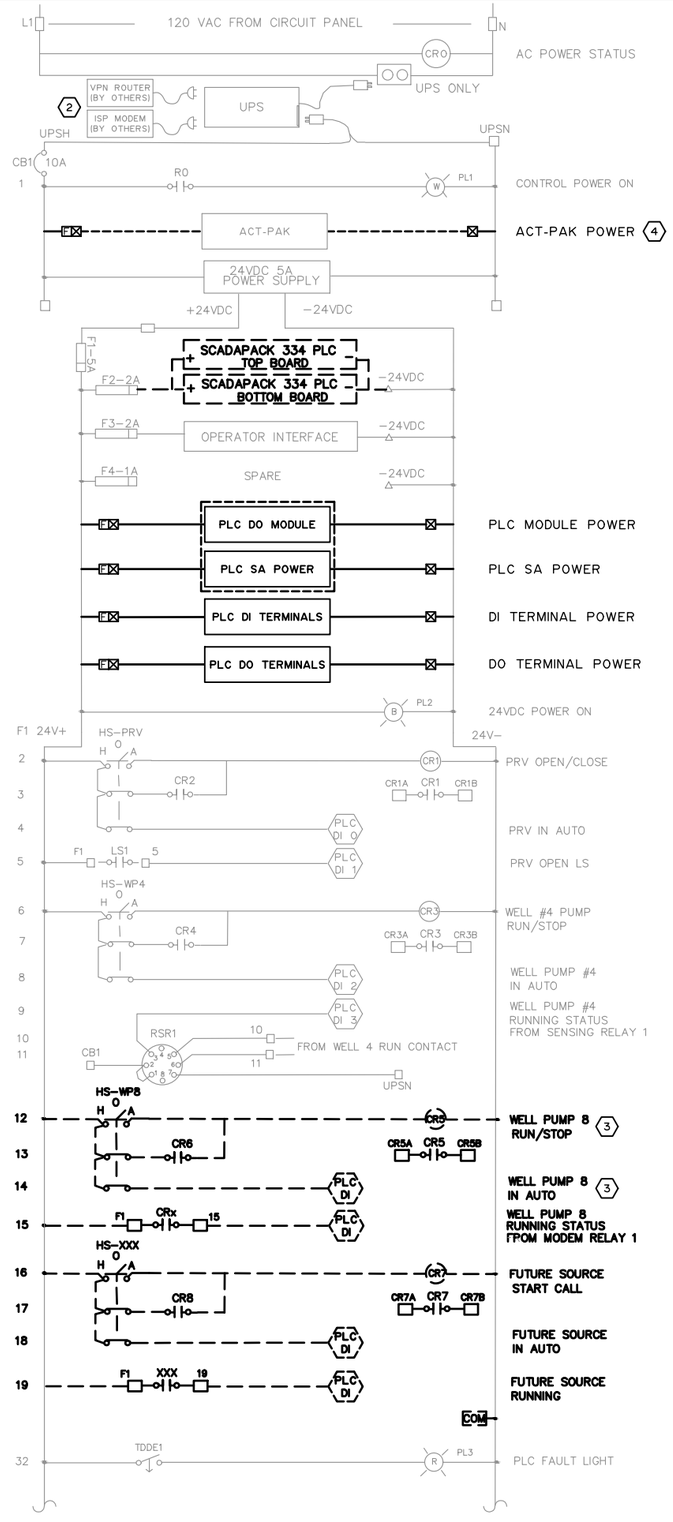
INTERIOR DEMOLITION
NTS



INTERIOR PROPOSED
NTS



EXTERIOR DEMOLITION
NTS



NOTES:
1. ——WIRING INTEGRAL TO PANEL.
   - 24VDC/120VAC POWER/SIGNALS = 18 AWG TEW
   - ANALOG SIGNALS = 18 AWG BELDEN SHIELDED TWISTED PAID.
2. ----FIELD WIRING.
   - 24VDC/120VAC POWER/SIGNALS = 14 AWG RW90
   - ANALOG SIGNALS = 18 AWG BELDEN SHIELDED TWISTED PAIR.
3. CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING ALL NECESSARY CONDUIT AND WIRING TO INTERCONNECT EQUIPMENT AS SHOWN. MINIMUM CONDUIT SIZE TO BE 21Φ RPVC UNLESS OTHERWISE NOTED.
4. CONTROL PANEL POWER CORD TO BE LONG ENOUGH TO PLUG INTO UPS AND CONTROL PANEL RECEPTACLE.
5. REFER TO DRAWING COMMUNICATION ARCHITECTURE FOR ADDITIONAL WIRING REQUIREMENTS.
6. REFER TO DRAWING E1.2 - TYPICAL TERMINAL LAYOUTS FOR ADDITIONAL REQUIREMENTS.
7. ADD LAMACOID TO EXISTING AND NEW PANELS WITH WHITE LETTERING AND BLACK FACE WITH 12mm HIGH LETTERS AND 25mm HIGH LAMACOID. CONTROL PANELS TO BE LABELLED CP-100 AND COMMUNICATION PANELS TO BE LABELLED CP-101.
8. ALL DEMOLISHED EQUIPMENT AND COMPONENTS TO BE RETURNED TO OWNER IN GOOD CONDITION.

⟨-⟩ KEYNOTES:
1. REMOVE EXISTING SCADAPAK AND SALVAGE TO OWNER. EXISTING WIRING TO BE RE-TERMINATED ON NEW PLC.
2. ISP MODEM AND VPN ROUTER TO BE PLUGGED INTO UPS RECEPTACLES.
3. "WELL 8" AND "FUTURE" HOA SWITCHES TO BE REMOVED AND PLUGGED WITH KO FILLER. ALL WIRES TO BE REMOVED.
4. ACT-PAK POWER TO BE RE-WIRED TO UPS FED POWER.

THIS DRAWING MAY HAVE BEEN MODIFIED FROM ITS ORIGINAL SIZE. ALL SCALE NOTATIONS INDICATED ARE BASED ON 11"x17" FORMAT DRAWINGS

1	20-09-23	FOR TENDER
ISSUE	YY-MM-DD	REVISION

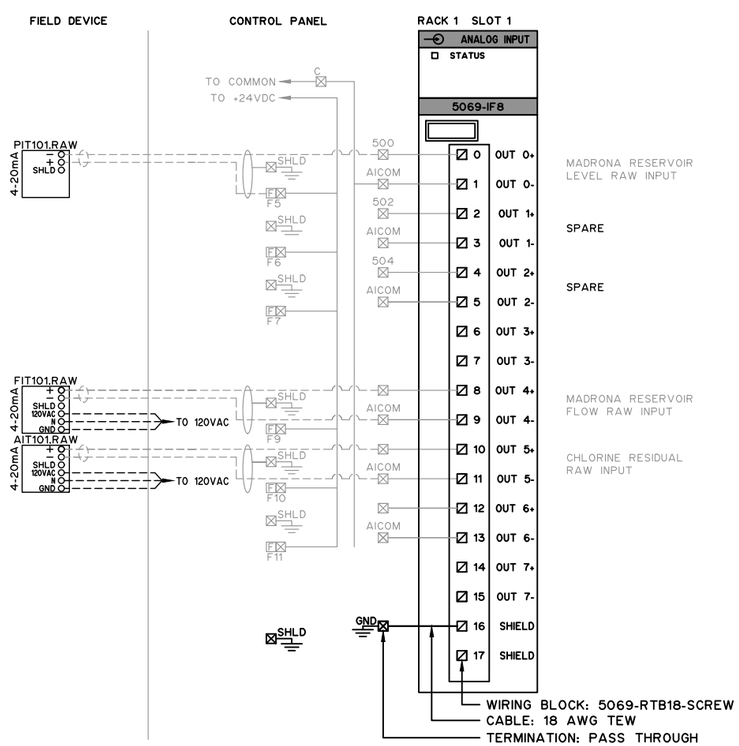
Association of Professional Engineers and Geoscientists of the Province of British Columbia
C. T. SPENCER
ENGINEERING LICENSEE
Limited Licence 199998
2020-09-23

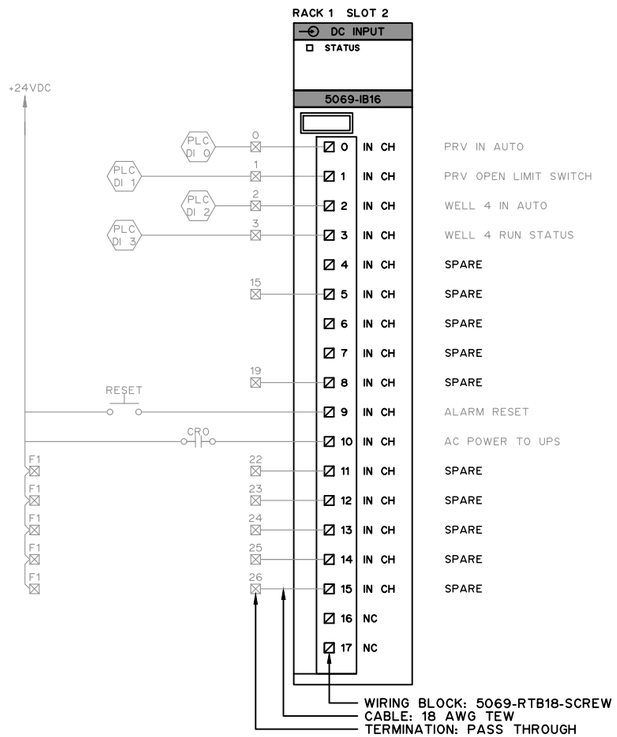
MPE Engineering Ltd.

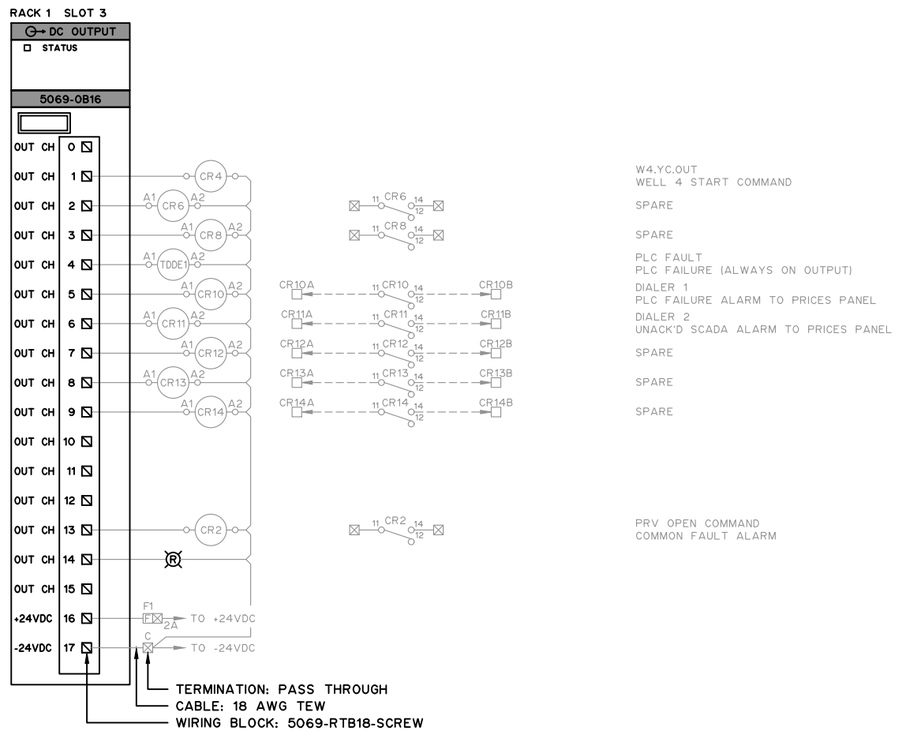
REGIONAL DISTRICT OF NANAIMO

NANOOSE BAY WSA SCADA IMPLEMENTATION
ELECTRICAL
MADRONA PUMP STATION
PANEL DETAILS

DESIGNED	N.D.S., Z.T.S.	JOB	9794-002-00
DRAWN	N.O.W., D.J.H.	SCALE	
DATE	SEPTEMBER 2020	DRAWING	E2.11.1







NOTES:
1. REFER TO DRAWING E1.2 FOR TYPICAL TERMINAL LAYOUTS.
2. EXISTING ANALOG OUTPUT WIRING TO BE REMOVED.

THIS DRAWING MAY HAVE BEEN MODIFIED FROM ITS ORIGINAL SIZE. ALL SCALE NOTATIONS INDICATED ARE BASED ON 11"x17" FORMAT DRAWINGS

ISSUE	YY-MM-DD	REVISION
1	20-09-23	FOR TENDER

Association of Professional Engineers and Geoscientists of the Province of British Columbia
Z.T.S. SPENCER
ENGINEERING LICENSEE
Limited Licence 100981
2020-09-23

MPE Engineering Ltd.

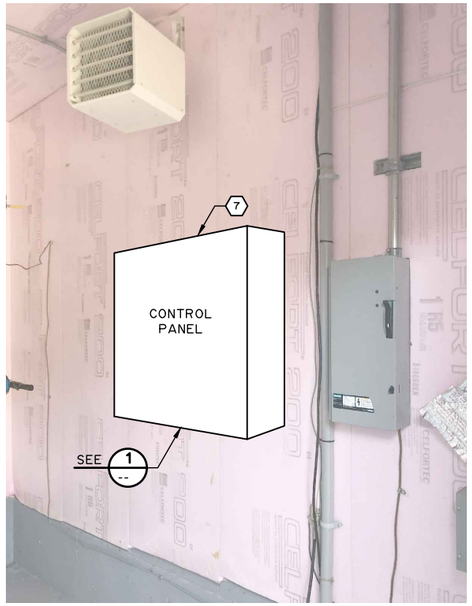
REGIONAL DISTRICT OF NANAIMO

NANOOSE BAY WSA SCADA IMPLEMENTATION
ELECTRICAL
MADRONA PUMP STATION
PLC IO

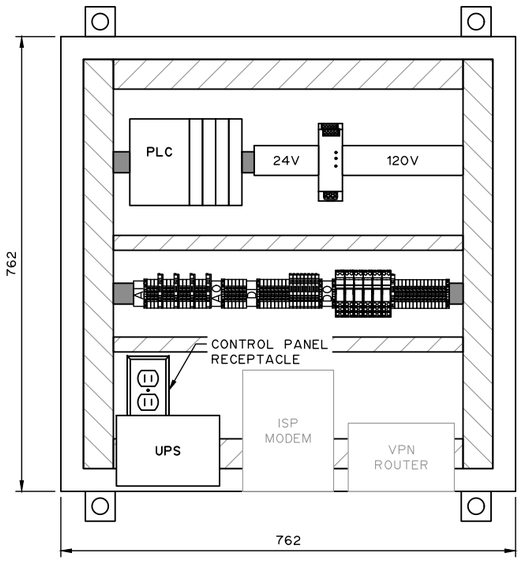
DESIGNED	N.D.S., Z.T.S.	JOB	9794-002-00
DRAWN	N.O.W., D.J.H.	SCALE	
DATE	SEPTEMBER 2020	DRAWING	E2.11.2



CHLORINE ROOM DEMOLITION

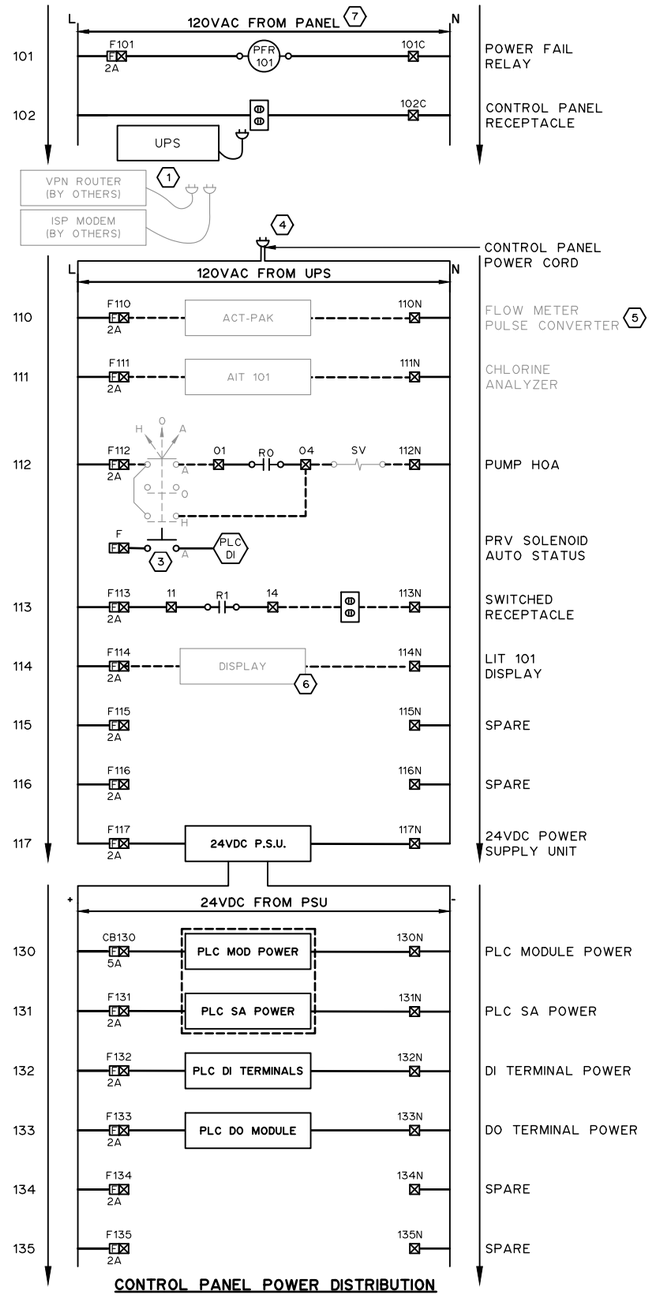


CHLORINE ROOM PROPOSED



CONTROL PANEL INTERIOR

1 -- NTS



CONTROL PANEL POWER DISTRIBUTION

NOTES:
1. ——WIRING INTEGRAL TO PANEL.
   - 24VDC/120VAC POWER/SIGNALS = 18 AWG TEW
   - ANALOG SIGNALS = 18 AWG BELDEN SHIELDED TWISTED PAID.
2. ----FIELD WIRING.
   - 24VDC/120VAC POWER/SIGNALS = 14 AWG RW90
   - ANALOG SIGNALS = 18 AWG BELDEN SHIELDED TWISTED PAIR.
3. CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING ALL NECESSARY CONDUIT AND WIRING TO INTERCONNECT EQUIPMENT AS SHOWN. MINIMUM CONDUIT SIZE TO BE 21Φ RPVC UNLESS OTHERWISE NOTED.
4. CONTROL PANEL POWER CORD TO BE LONG ENOUGH TO PLUG INTO UPS AND CONTROL PANEL RECEPTACLE.
5. REFER TO DRAWING COMMUNICATION ARCHITECTURE FOR ADDITIONAL WIRING REQUIREMENTS.
6. REFER TO DRAWING E1.2 - TYPICAL TERMINAL LAYOUTS FOR ADDITIONAL REQUIREMENTS.
7. ADD LAMACOID TO EXISTING AND NEW PANELS WITH WHITE LETTERING AND BLACK FACE WITH 12mm HIGH LETTERS AND 25mm HIGH LAMACOID. CONTROL PANELS TO BE LABELLED CP-100 AND COMMUNICATION PANELS TO BE LABELLED CP-101.
8. ALL DEMOLISHED EQUIPMENT AND COMPONENTS TO BE RETURNED TO OWNER IN GOOD CONDITION.

(-) KEYNOTES:
1. ISP MODEM AND VPN ROUTER TO BE PLUGGED INTO UPS RECEPTACLES.
2. DEMOLISH CHART RECORDER. PROVIDE CABLE AND CONDUIT TO CONNECT FLOW METER 4-20mA SIGNAL TO NEW CONTROL PANEL.
3. ADD "AUTO" CONTACT AND WIRING TO EXISTING HOA SWITCH. SOURCE 24VDC SOURCE VOLTAGE FROM PLC DIGITAL INPUT FUSE.
4. CONTROL PANEL POWER CORD TO BE LONG ENOUGH TO PLUG INTO UPS AND CONTROL PANEL RECEPTACLE.
5. ACT-PAK POWER TO BE RE-WIRED TO UPS FED POWER.
6. DISPLAY POWER TO BE RE-WIRED TO UPS FED POWER.
7. PROVIDE AND INSTALL NEW 15AMP SINGLE POLE BREAKER IN LOCAL LIGHTING PANEL, CONDUIT AND WIRING TO POWER NEW CONTROL PANEL.

THIS DRAWING MAY HAVE BEEN MODIFIED FROM ITS ORIGINAL SIZE. ALL SCALE NOTATIONS INDICATED ARE BASED ON 11"x17" FORMAT DRAWINGS

1	20-09-23	FOR TENDER
ISSUE	YY-MM-DD	REVISION

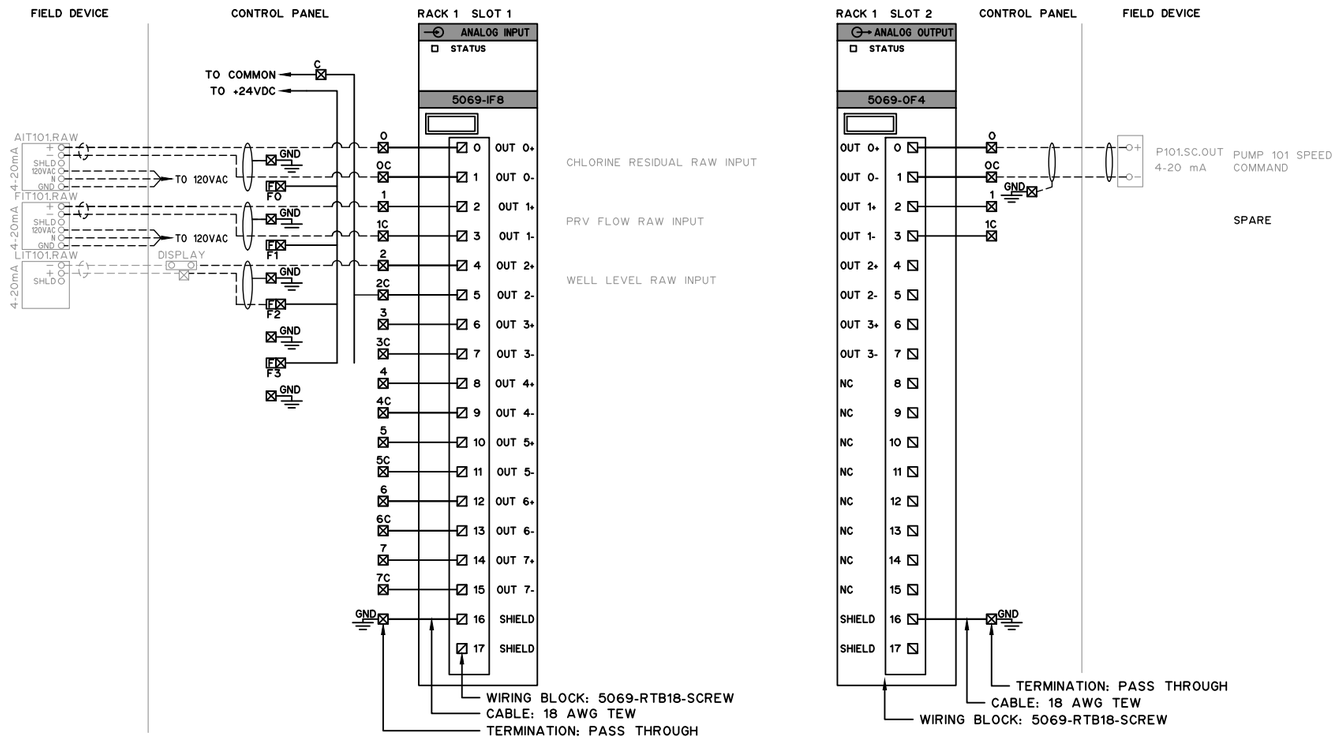
Association of Professional Engineers and Geoscientists of the Province of British Columbia
Z.T. SPENCER
ENGINEERING LICENSEE
Limited Licence 199981
2020-09-23

MPE Engineering Ltd.

REGIONAL DISTRICT OF NANAIMO

NANOOSE BAY WSA SCADA IMPLEMENTATION
ELECTRICAL
MADRONA WELL 8
PANEL DETAILS

DESIGNED	N.D.S., Z.T.S.	JOB	9794-002-00
DRAWN	N.O.W., D.J.H.	SCALE	
DATE	SEPTEMBER 2020	DRAWING	E2.12.1



NOTES:
1. REFER TO DRAWING E1.2 FOR TYPICAL TERMINAL LAYOUTS.

KEYNOTES:
1. ELECTRICIAN TO RUN WIRE FROM CONTROL TO PRICES PANEL. WIRING IN PRICES PANEL TO BE TERMINATED BY OTHERS.

THIS DRAWING MAY HAVE BEEN MODIFIED FROM ITS ORIGINAL SIZE. ALL SCALE NOTATIONS INDICATED ARE BASED ON 11"x17" FORMAT DRAWINGS

ISSUE	YY-MM-DD	REVISION
1	20-09-23	FOR TENDER

Association of Professional Engineers and Geoscientists of the Province of British Columbia
Z.T.S. SPENCER
ENGINEERING LICENSEE
Limited Licence 199981
2020-09-23

MPE Engineering Ltd.

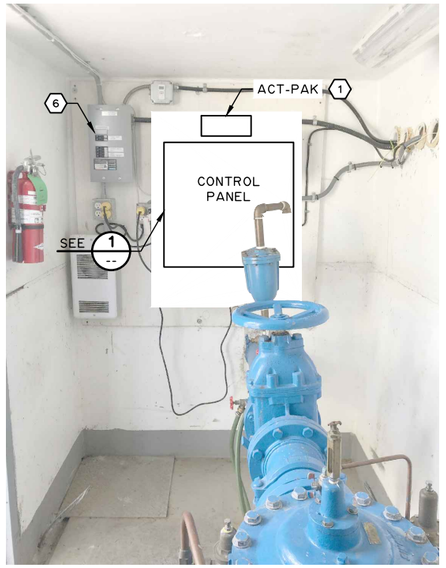
REGIONAL DISTRICT OF NANAIMO

NANOOSE BAY WSA SCADA IMPLEMENTATION
ELECTRICAL
MADRONA WELL 8
PLC IO

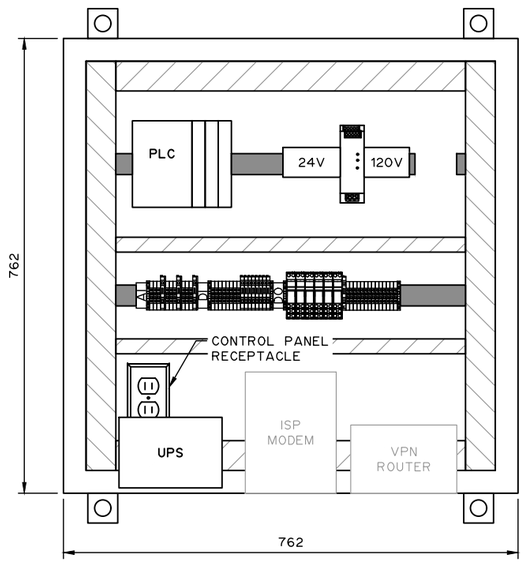
DESIGNED	N.D.S., Z.T.S.	JOB	9794-002-00
DRAWN	N.O.W., D.J.H.	SCALE	
DATE	SEPTEMBER 2020	DRAWING	E2.12.2



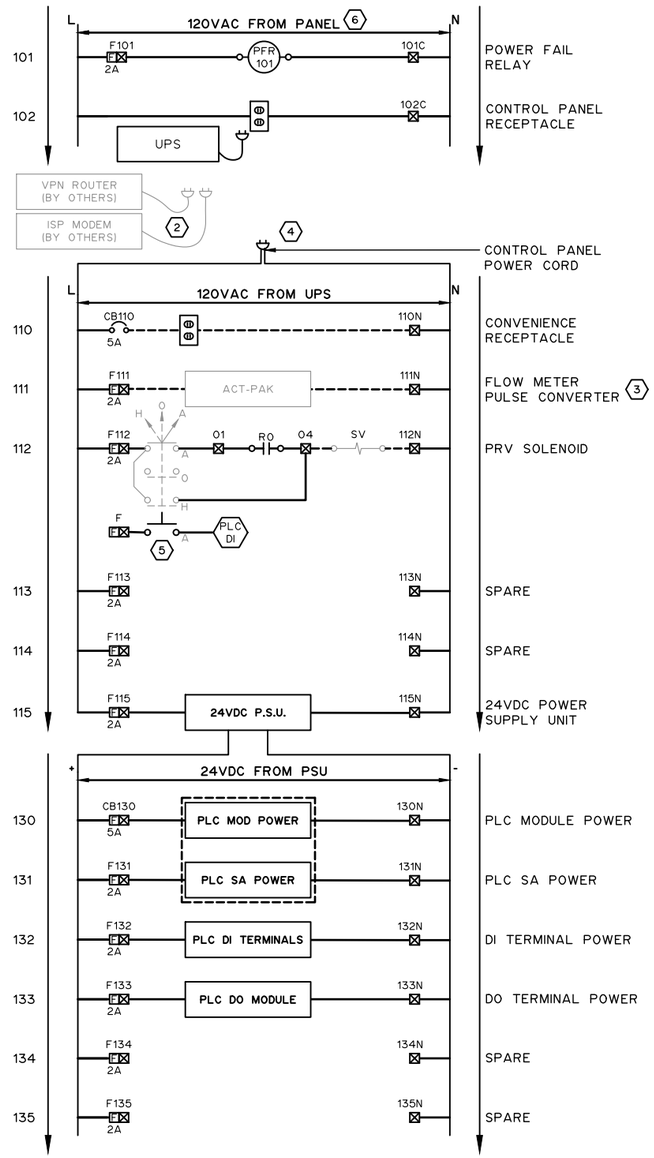
DEMOLITION
NTS



PROPOSED
NTS



CONTROL PANEL INTERIOR
1 --
NTS



CONTROL PANEL POWER DISTRIBUTION

NOTES:
1. ——WIRING INTEGRAL TO PANEL.
   - 24VDC/120VAC POWER/SIGNALS = 18 AWG TEW
   - ANALOG SIGNALS = 18 AWG BELDEN SHIELDED TWISTED PAID.
2. ----FIELD WIRING.
   - 24VDC/120VAC POWER/SIGNALS = 14 AWG RW90
   - ANALOG SIGNALS = 18 AWG BELDEN SHIELDED TWISTED PAIR.
3. CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING ALL NECESSARY CONDUIT AND WIRING TO INTERCONNECT EQUIPMENT AS SHOWN. MINIMUM CONDUIT SIZE TO BE 21Φ RPVC UNLESS OTHERWISE NOTED.
4. CONTROL PANEL POWER CORD TO BE LONG ENOUGH TO PLUG INTO UPS AND CONTROL PANEL RECEPTACLE.
5. REFER TO DRAWING COMMUNICATION ARCHITECTURE FOR ADDITIONAL WIRING REQUIREMENTS.
6. REFER TO DRAWING E1.2 - TYPICAL TERMINAL LAYOUTS FOR ADDITIONAL REQUIREMENTS.
7. ADD LAMACOID TO EXISTING AND NEW PANELS WITH WHITE LETTERING AND BLACK FACE WITH 12mm HIGH LETTERS AND 25mm HIGH LAMACOID. CONTROL PANELS TO BE LABELLED CP-100 AND COMMUNICATION PANELS TO BE LABELLED CP-101.
8. ALL DEMOLISHED EQUIPMENT AND COMPONENTS TO BE RETURNED TO OWNER IN GOOD CONDITION.

⟨-⟩ KEYNOTES:
1. RELOCATE ACT-PAK TO ABOVE NEW CONTROL PANEL.
2. ISP MODEM AND VPN ROUTER TO BE PLUGGED INTO UPS RECEPTACLES.
3. ACT-PAK POWER TO BE RE-WIRED TO UPS FED POWER.
4. CONTROL PANEL POWER CORD TO BE LONG ENOUGH TO PLUG INTO UPS AND CONTROL PANEL RECEPTACLE.
5. HOA SWITCH TO BE INSTALLED ON NEW CONTROL PANEL DOOR. ADD "AUTO" CONTACT AND WIRING TO EXISTING HOA SWITCH. SOURCE 24VDC SOURCE VOLTAGE FROM PLC DIGITAL INPUT FUSE.
6. PROVIDE AND INSTALL NEW 15AMP SINGLE POLE BREAKER IN LOCAL LIGHTING PANEL, CONDUIT AND WIRING TO POWER NEW CONTROL PANEL.

THIS DRAWING MAY HAVE BEEN MODIFIED FROM ITS ORIGINAL SIZE. ALL SCALE NOTATIONS INDICATED ARE BASED ON 11"x17" FORMAT DRAWINGS

1	20-09-23	FOR TENDER
ISSUE	YY-MM-DD	REVISION

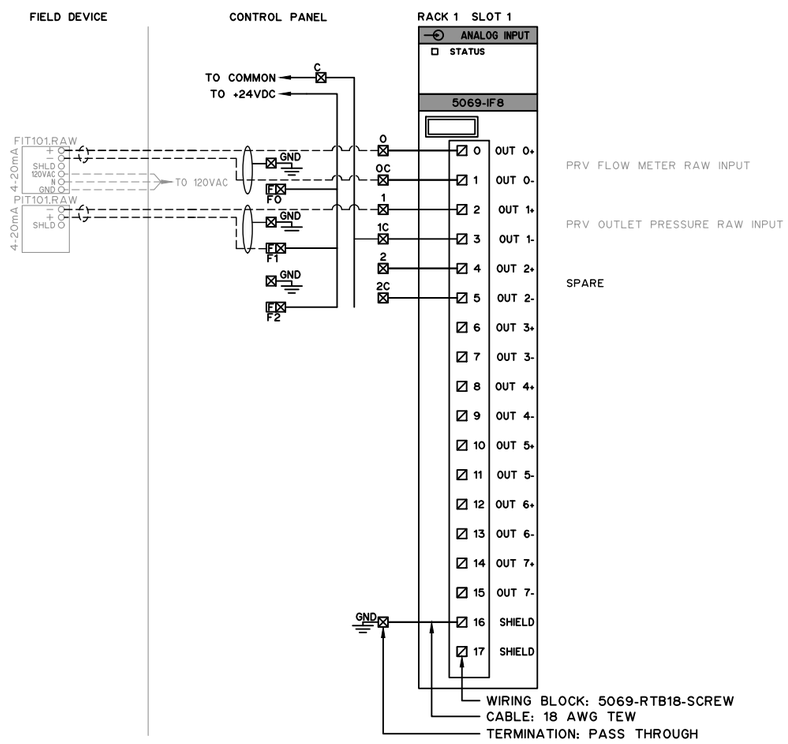
Association of Professional Engineers and Geoscientists of the Province of British Columbia
Z.T. SPENCER
ENGINEERING LICENSEE
Limited Licence 100981
2020-09-23

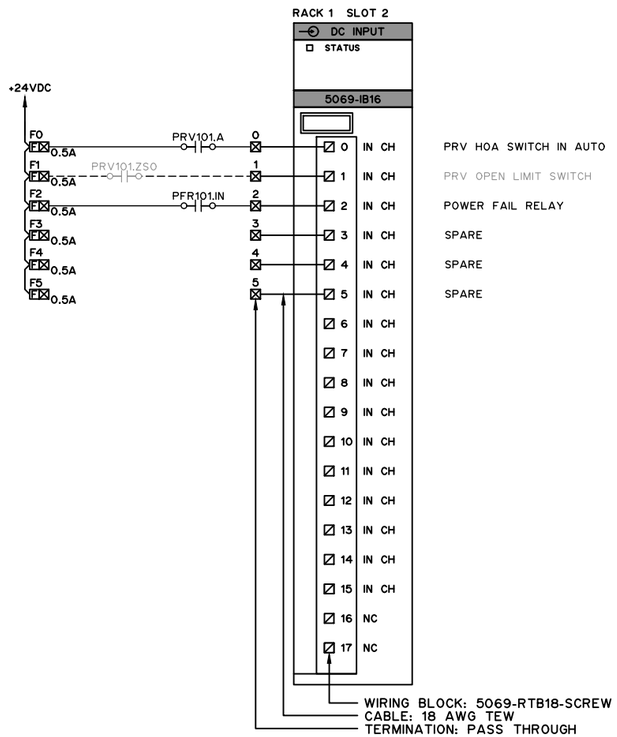
MPE Engineering Ltd.

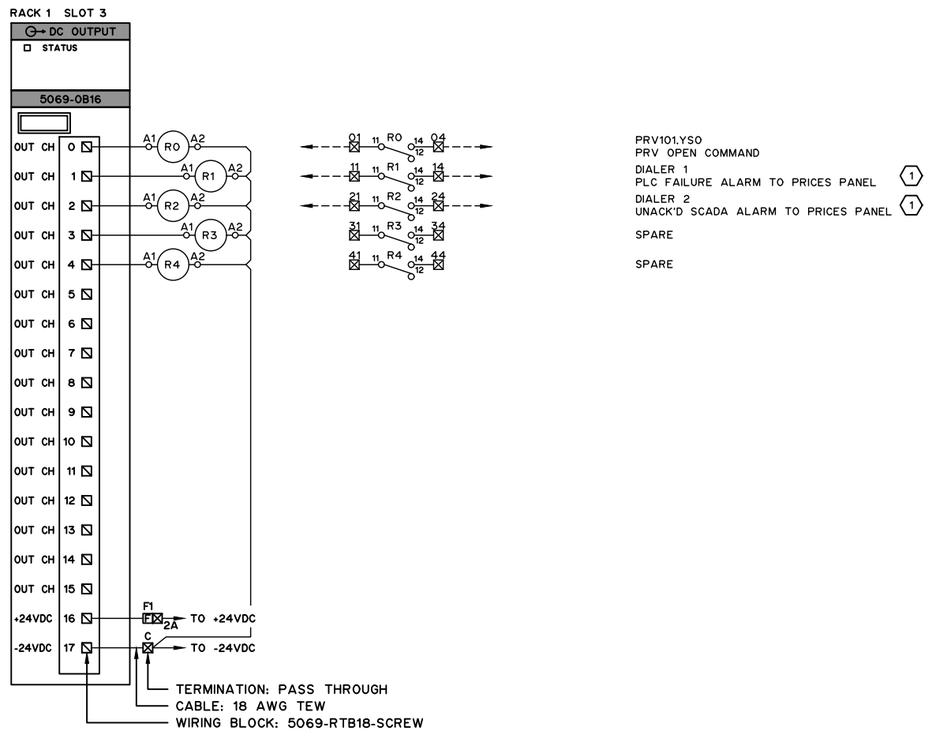
REGIONAL DISTRICT OF NANAIMO

NANOOSE BAY WSA SCADA IMPLEMENTATION
ELECTRICAL
SHERBROOKE PRV
PANEL DETAILS

DESIGNED	N.D.S., Z.T.S.	JOB	9794-002-00
DRAWN	N.O.W., D.J.H.	SCALE	
DATE	SEPTEMBER 2020	DRAWING	E2.13.1







NOTES:
1. REFER TO DRAWING E1.2 FOR TYPICAL TERMINAL LAYOUTS.

KEYNOTES:
1. ELECTRICIAN TO RUN WIRE FROM CONTROL TO PRICES PANEL. WIRING IN PRICES PANEL TO BE TERMINATED BY OTHERS.

THIS DRAWING MAY HAVE BEEN MODIFIED FROM ITS ORIGINAL SIZE. ALL SCALE NOTATIONS INDICATED ARE BASED ON 11"x17" FORMAT DRAWINGS

1	20-09-23	FOR TENDER
ISSUE	YY-MM-DD	REVISION

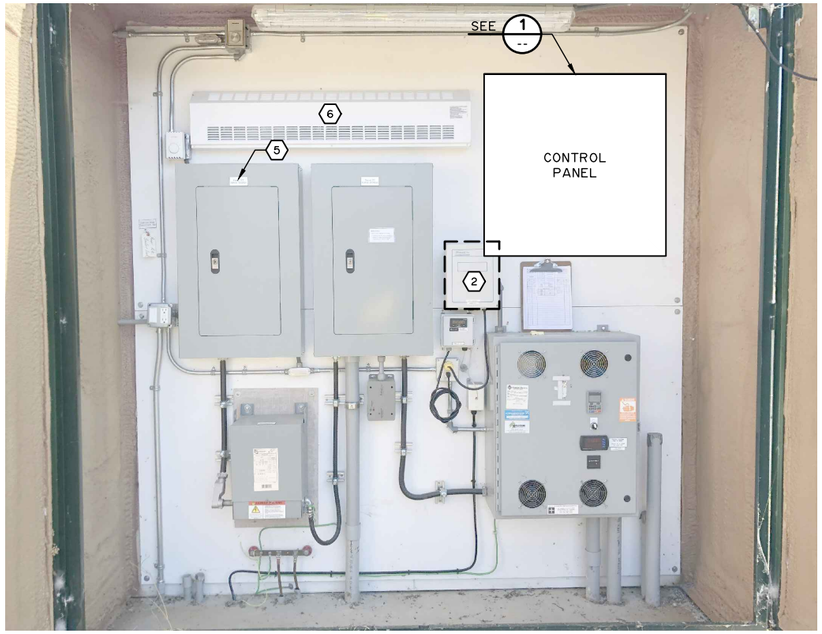
Association of Professional Engineers and Geoscientists of the Province of British Columbia
Z.T.S. SPENCER
ENGINEERING LICENSEE
Limited Licence 100981
2020-09-23

MPE Engineering Ltd.

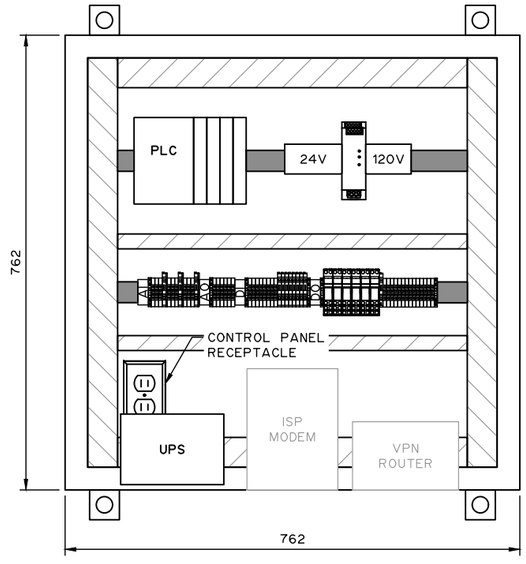
REGIONAL DISTRICT OF NANAIMO

NANOOSE BAY WSA SCADA
IMPLEMENTATION
ELECTRICAL
SHERBROOKE PRV
PLC IO

DESIGNED	N.D.S., Z.T.S.	JOB	9794-002-00
DRAWN	N.O.W., D.J.H.	SCALE	
DATE	SEPTEMBER 2020	DRAWING	E2.13.2

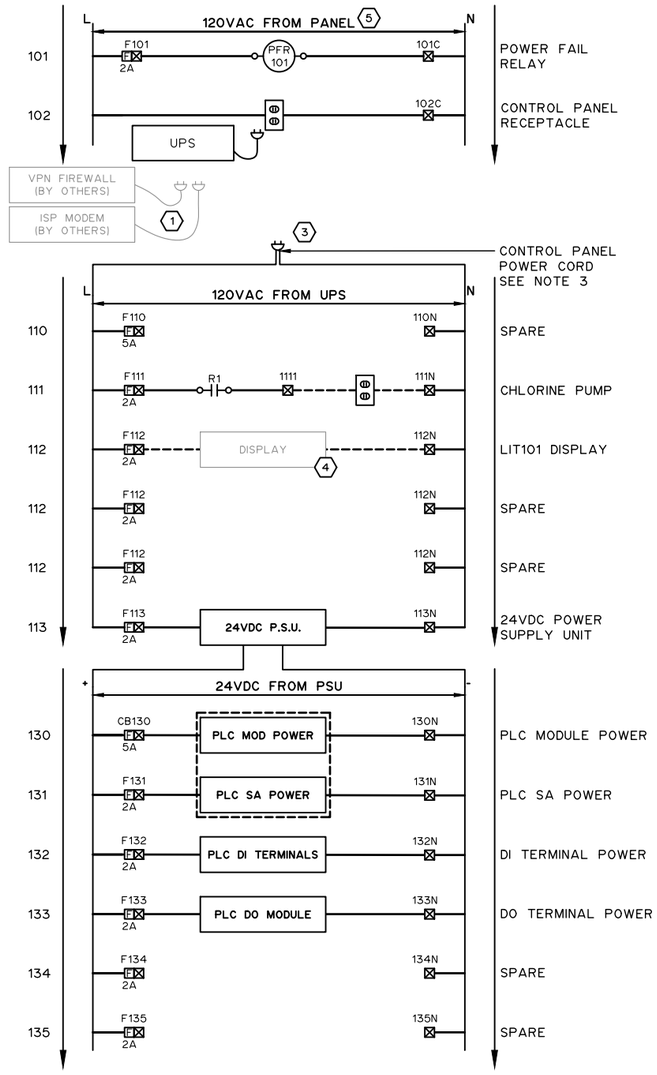


KIOSK/PEDESTAL INTERIOR



CONTROL PANEL INTERIOR

1 -- NTS



CONTROL PANEL POWER DISTRIBUTION

NOTES:
1. ——— WIRING INTEGRAL TO PANEL.
   - 24VDC/120VAC POWER/SIGNALS = 18 AWG TEW
   - ANALOG SIGNALS = 18 AWG BELDEN SHIELDED TWISTED PAID.
2. ———— FIELD WIRING.
   - 24VDC/120VAC POWER/SIGNALS = 14 AWG RW90
   - ANALOG SIGNALS = 18 AWG BELDEN SHIELDED TWISTED PAIR.
3. CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING ALL NECESSARY CONDUIT AND WIRING TO INTERCONNECT EQUIPMENT AS SHOWN. MINIMUM CONDUIT SIZE TO BE 21Φ RPVC UNLESS OTHERWISE NOTED.
4. CONTROL PANEL POWER CORD TO BE LONG ENOUGH TO PLUG INTO UPS AND CONTROL PANEL RECEPTACLE.
5. REFER TO DRAWING COMMUNICATION ARCHITECTURE FOR ADDITIONAL WIRING REQUIREMENTS.
6. REFER TO DRAWING E1.2 - TYPICAL TERMINAL LAYOUTS FOR ADDITIONAL REQUIREMENTS.
7. ADD LAMACOID TO EXISTING AND NEW PANELS WITH WHITE LETTERING AND BLACK FACE WITH 12mm HIGH LETTERS AND 25mm HIGH LAMACOID. CONTROL PANELS TO BE LABELLED CP-100 AND COMMUNICATION PANELS TO BE LABELLED CP-101.
8. ALL DEMOLISHED EQUIPMENT AND COMPONENTS TO BE RETURNED TO OWNER IN GOOD CONDITION.

(-) KEYNOTES:
1. ISP MODEM AND VPN ROUTER TO BE PLUGGED INTO UPS RECEPTACLES.
2. DEMOLISH EXISTING PANEL, EXISTING FIELD WIRING TO REMAIN AND BE EXTENDED TO NEW CONTROL PANEL.
3. CONTROL PANEL POWER CORD TO BE LONG ENOUGH TO PLUG INTO UPS AND CONTROL PANEL RECEPTACLE.
4. DISPLAY TO BE RE-WIRED TO UPS FEED POWER.
5. PROVIDE AND INSTALL NEW 15AMP SINGLE POLE BREAKER IN LOCAL LIGHTING PANEL, CONDUIT AND WIRING TO POWER NEW CONTROL PANEL.
6. RELOCATE EQUIPMENT AS REQUIRED TO ACCOMIDATE INSTALLATION OF NEW CONTROL PANEL.

THIS DRAWING MAY HAVE BEEN MODIFIED FROM ITS ORIGINAL SIZE. ALL SCALE NOTATIONS INDICATED ARE BASED ON 11"x17" FORMAT DRAWINGS

1	20-09-23	FOR TENDER
ISSUE	YY-MM-DD	REVISION

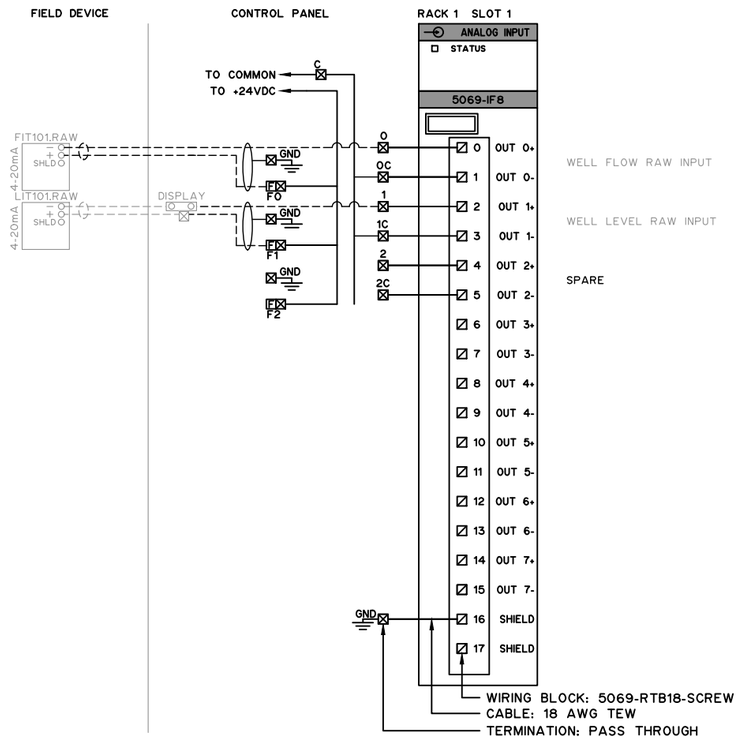
Association of Professional Engineers and Geoscientists of the Province of British Columbia
Z.T. SPENCER
ENGINEERING LICENSEE
Limited Licence 199981
2020-09-23

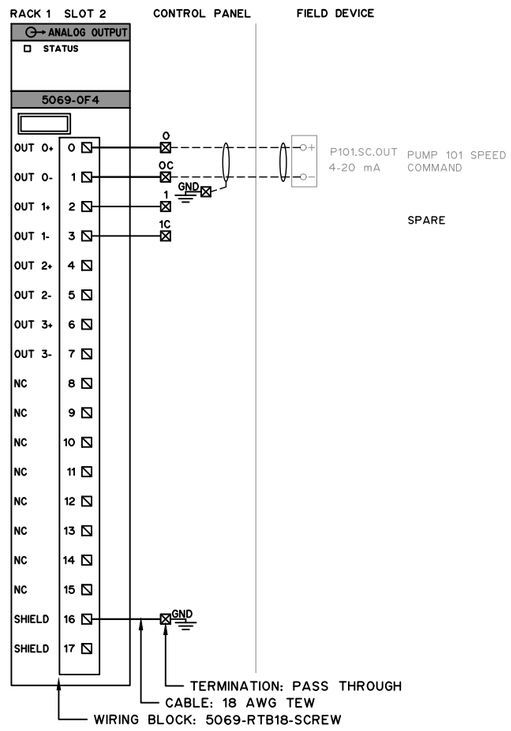
MPE Engineering Ltd.

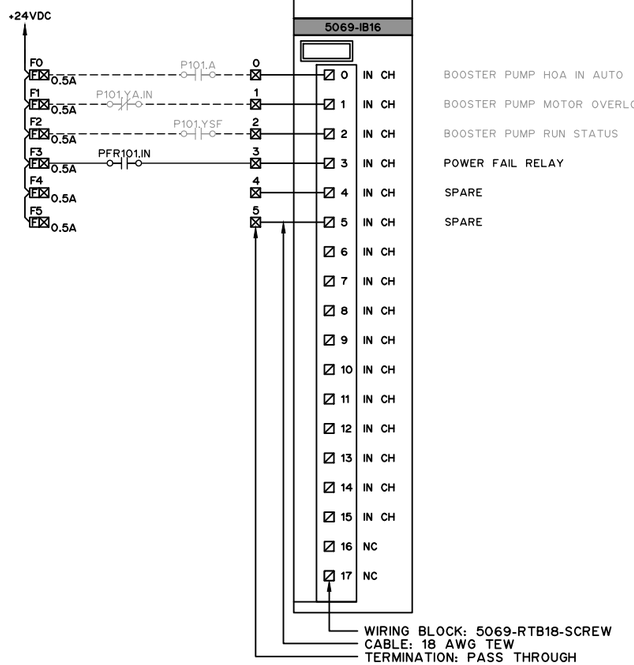
REGIONAL DISTRICT OF NANAIMO

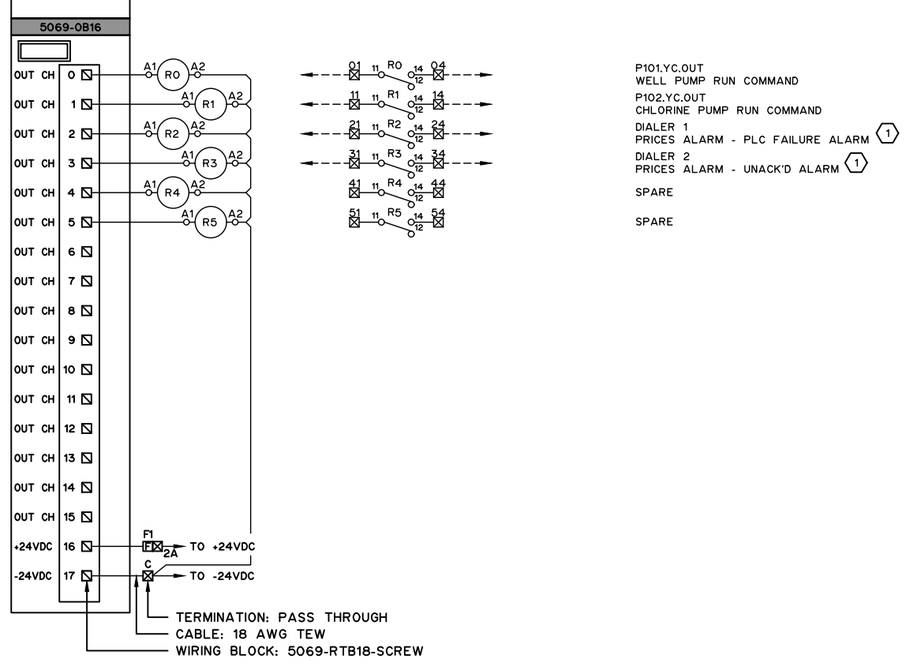
NANOOSE BAY WSA SCADA IMPLEMENTATION
ELECTRICAL
WALL BROOK WELL 1
PANEL DETAILS

DESIGNED	N.D.S., Z.T.S.	JOB	9794-002-00
DRAWN	N.O.W., D.J.H.	SCALE	
DATE	SEPTEMBER 2020	DRAWING	E2.14.1









NOTES:
1. REFER TO DRAWING E1.2 FOR TYPICAL TERMINAL LAYOUTS.

KEYNOTES:
1. ELECTRICIAN TO RUN WIRE FROM CONTROL TO PRICES PANEL. WIRING IN PRICES PANEL TO BE TERMINATED BY OTHERS.

THIS DRAWING MAY HAVE BEEN MODIFIED FROM ITS ORIGINAL SIZE. ALL SCALE NOTATIONS INDICATED ARE BASED ON 11"x17" FORMAT DRAWINGS

ISSUE	YY-MM-DD	REVISION
1	20-09-23	FOR TENDER

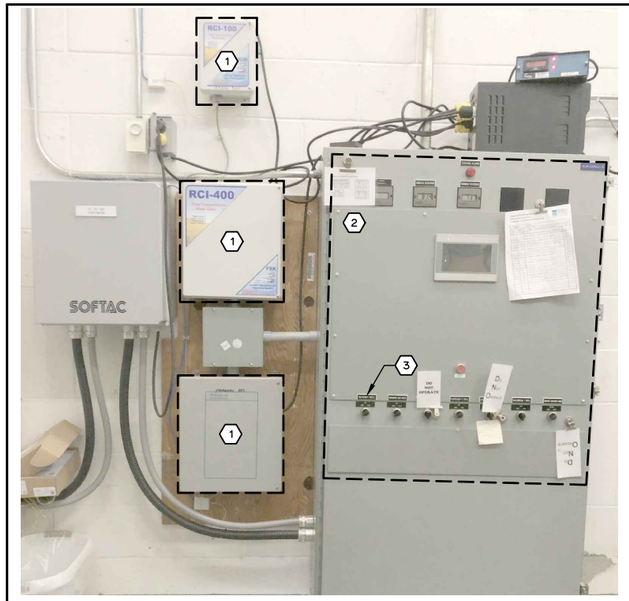
Association of Professional Engineers and Geoscientists of the Province of British Columbia
Z.T.S. SPENCER
ENGINEERING LICENSEE
Limited Licence 199981
2020-09-23

MPE Engineering Ltd.

REGIONAL DISTRICT OF NANAIMO

NANOOSE BAY WSA SCADA
IMPLEMENTATION
ELECTRICAL
WALL BROOK WELL 1
PLC IO

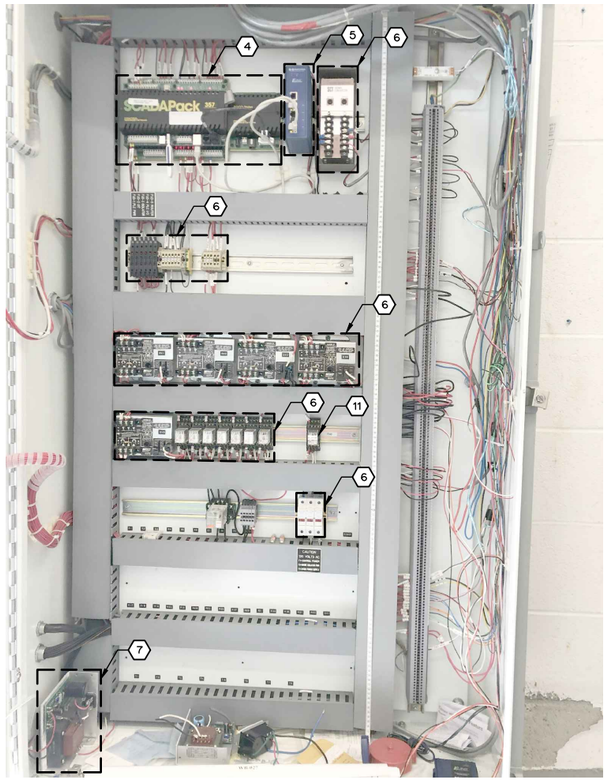
DESIGNED	N.D.S., Z.T.S.	JOB	9794-002-00
DRAWN	N.O.W., D.J.H.	SCALE	
DATE	SEPTEMBER 2020	DRAWING	E2.14.2



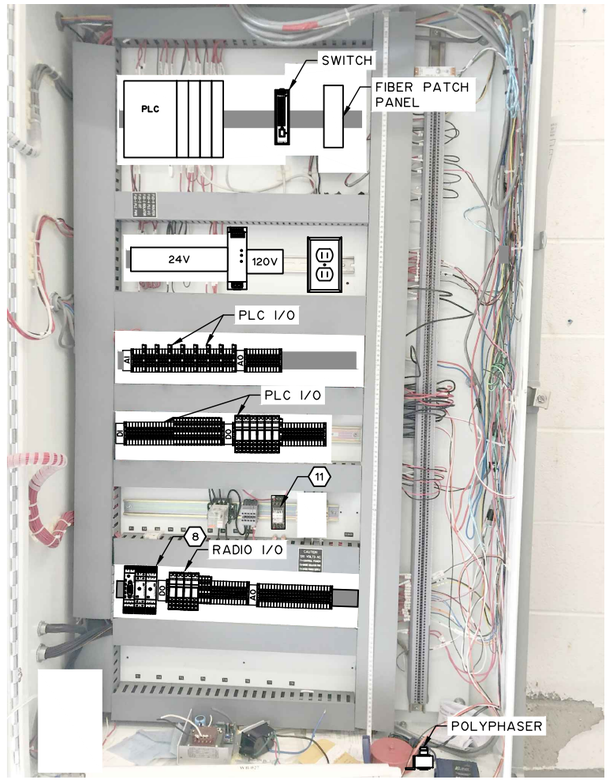
CONTROL PANEL EXTERIOR
NTS



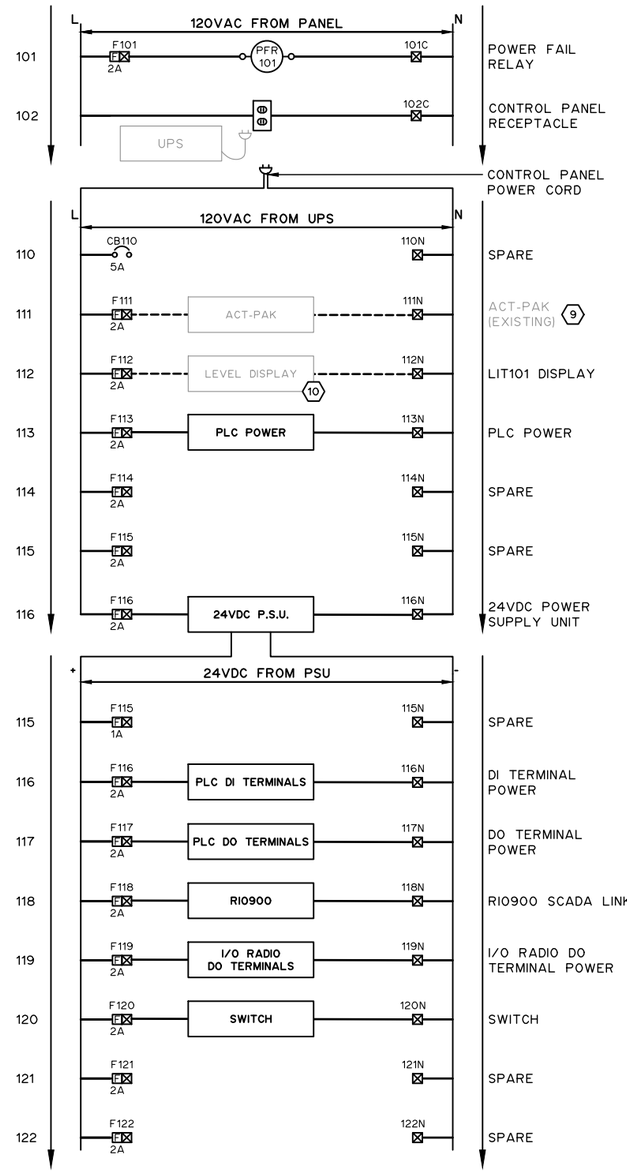
BUILDING EXTERIOR ANTENNA MOUNTING
NTS



CONTROL PANEL INTERIOR DEMOLITION
NTS



CONTROL PANEL INTERIOR PROPOSED
NTS



CONTROL PANEL POWER DISTRIBUTION

KEYNOTES:
1. REMOVE EXISTING EQUIPMENT AND SALVAGE TO OWNER.
2. REMOVE ALL EXTERIOR MOUNTED COMPONENTS AND PLATES AND INSTALL A SINGLE BLANKING PLATE TO COVER ALL EXISTING HOLES.
3. MOVE WESTBAY WELL HOA SWITCH TO VFD PANEL. ADD ALL REQUIRED TERMINALS AND BLOCKS TO ENSURE PROPER WIRING AND WIRE 24VDC AUTO STATUS TO PLC I/O CARD.
4. REMOVE EXISTING SCADAPACK AND SALVAGE TO OWNER. EXISTING WIRING TO REMAIN. REPLACE WITH NEW I/O CARDS, TO BE REMOTE I/O TO WTP.
5. REPLACE SWITCH WITH NEW AB STRATIX SWITCH (REFER TO SPECIFICATIONS).
6. REMOVE EXISTING EQUIPMENT AND SALVAGE TO OWNER. DEMOLISH WIRING BACK TO POINT OF SOURCE.
7. REPLACE 24VDC POWER SUPPLY WITH NEW AS PER SPECIFICATIONS.
8. INSTALL REQUIRED RADIO I/O MODULES AS PER SPECIFICATIONS.
9. ACT-PAK POWER TO BE RE-WIRED TO UPS FED POWER.
10. DISPLAY POWER TO BE RE-WIRED TO UPS FED POWER.
11. RELOCATE EXISTING RELAY.

NOTES:
1. ——— WIRING INTEGRAL TO PANEL.
   - 24VDC/120VAC POWER/SIGNALS = 18 AWG TEW
   - ANALOG SIGNALS = 18 AWG BELDEN SHIELDED TWISTED PAID.
2. – – – – FIELD WIRING.
   - 24VDC/120VAC POWER/SIGNALS = 14 AWG RW90
   - ANALOG SIGNALS = 18 AWG BELDEN SHIELDED TWISTED PAIR.
3. CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING ALL NECESSARY CONDUIT AND WIRING TO INTERCONNECT EQUIPMENT AS SHOWN. MINIMUM CONDUIT SIZE TO BE 21Φ RPVC UNLESS OTHERWISE NOTED.
4. CONTROL PANEL POWER CORD TO BE LONG ENOUGH TO PLUG INTO UPS AND CONTROL PANEL RECEPTACLE.
5. REFER TO DRAWING COMMUNICATION ARCHITECTURE FOR ADDITIONAL WIRING REQUIREMENTS.
6. REFER TO DRAWING E1.2 - TYPICAL TERMINAL LAYOUTS FOR ADDITIONAL REQUIREMENTS.
7. ADD LAMACOID TO EXISTING AND NEW PANELS WITH WHITE LETTERING AND BLACK FACE WITH 12mm HIGH LETTERS AND 25mm HIGH LAMACOID. CONTROL PANELS TO BE LABELLED CP-100 AND COMMUNICATION PANELS TO BE LABELLED CP-101.
8. ALL DEMOLISHED EQUIPMENT AND COMPONENTS TO BE RETURNED TO OWNER IN GOOD CONDITION.

THIS DRAWING MAY HAVE BEEN MODIFIED FROM ITS ORIGINAL SIZE. ALL SCALE NOTATIONS INDICATED ARE BASED ON 11"x17" FORMAT DRAWINGS

ISSUE	YY-MM-DD	REVISION
1	20-09-23	FOR TENDER

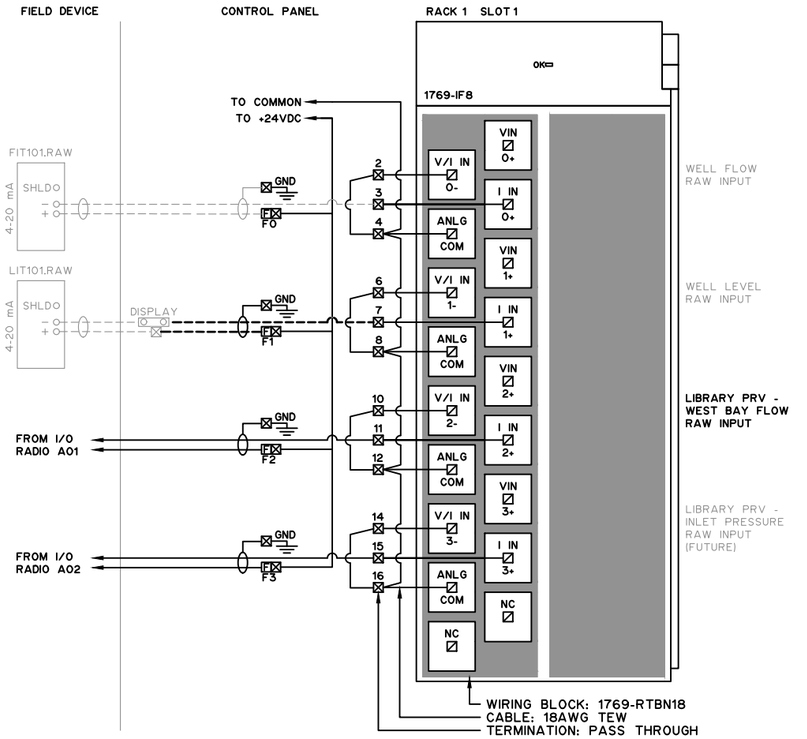
Association of Professional Engineers and Geoscientists of the Province of British Columbia
Z.T. SPENCER
ENGINEERING LICENSEE
Limited Licence 100981
2020-09-23

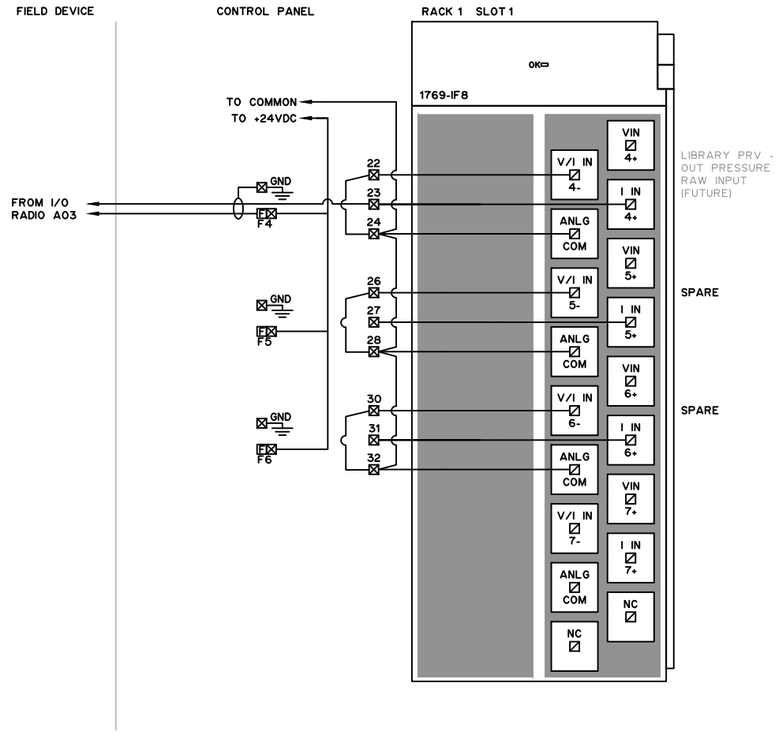
MPE Engineering Ltd.

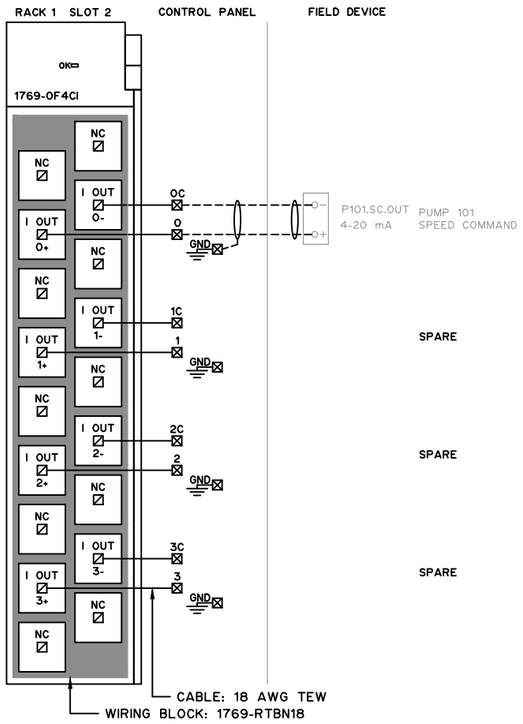
REGIONAL DISTRICT OF NANAIMO

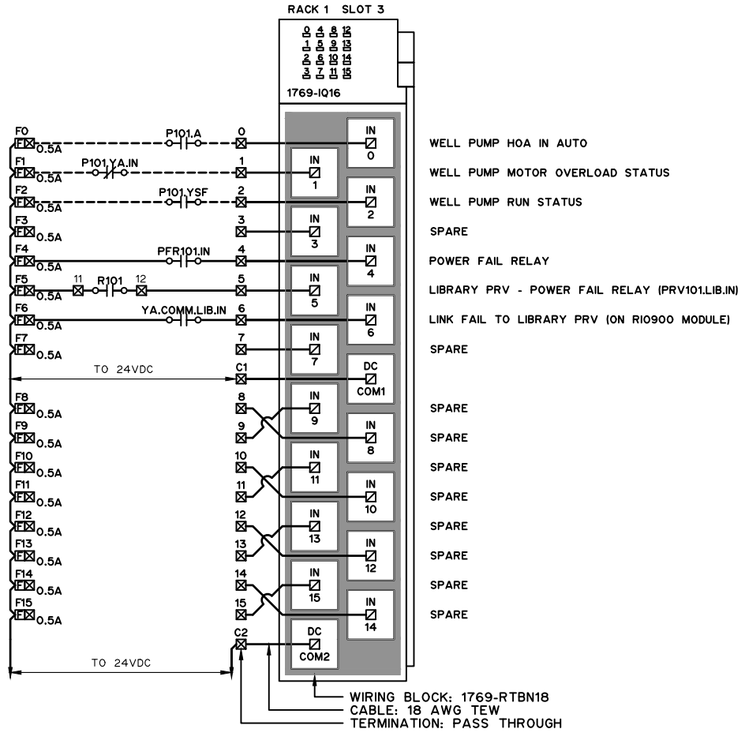
NANOOSE BAY WSA SCADA IMPLEMENTATION
ELECTRICAL
WEST BAY WELL 4 AND PUMP STATION
PANEL DETAILS

DESIGNED	N.D.S., Z.T.S.	JOB	9794-002-00
DRAWN	N.O.W., D.J.H.	SCALE	
DATE	SEPTEMBER 2020	DRAWING	E2.15.1









NOTES:
1. REFER TO DRAWING E1.2 FOR TYPICAL TERMINAL LAYOUTS.

THIS DRAWING MAY HAVE BEEN MODIFIED FROM ITS ORIGINAL SIZE. ALL SCALE NOTATIONS INDICATED ARE BASED ON 11"x17" FORMAT DRAWINGS

1	20-09-23	FOR TENDER
ISSUE	YY-MM-DD	REVISION

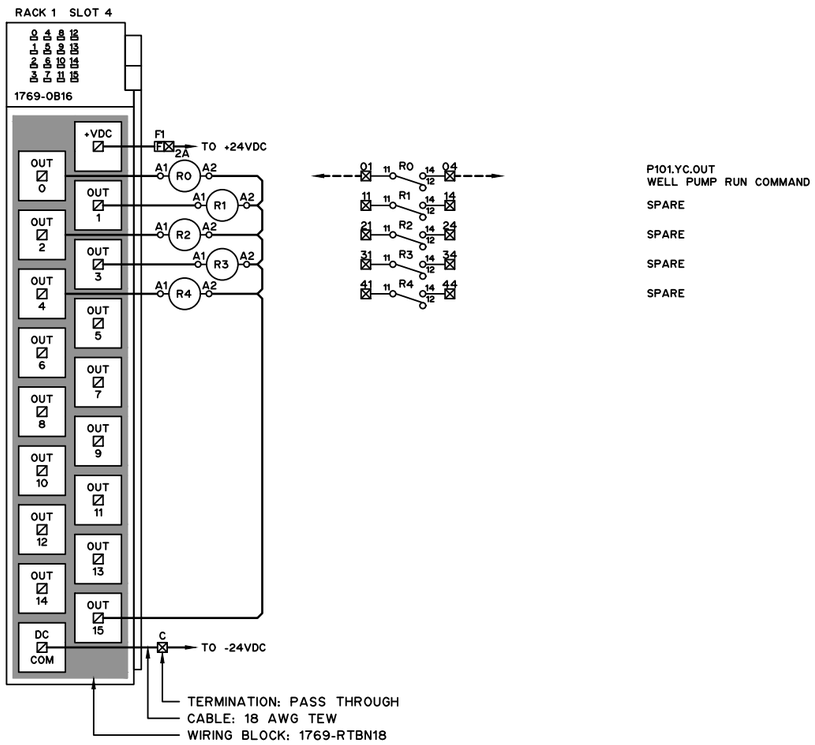
Association of Professional Engineers and Geoscientists of the Province of British Columbia
Z.T. SPENCER
ENGINEERING LICENSEE
Limited Licence 109861
2020-09-23

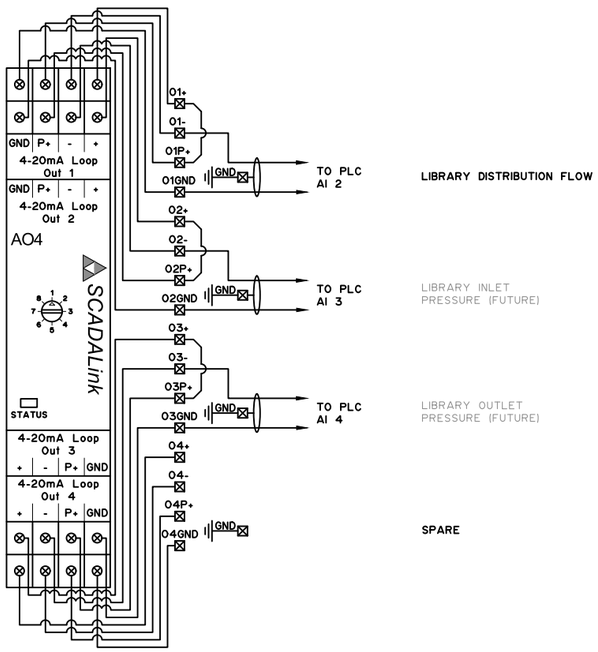
MPE Engineering Ltd.

REGIONAL DISTRICT OF NANAIMO

NANOOSE BAY WSA SCADA IMPLEMENTATION
ELECTRICAL
WEST BAY WELL 4 AND PUMP STATION
PLC IO 1 OF 2

DESIGNED	N.D.S., Z.T.S.	JOB	9794-002-00
DRAWN	N.O.W., D.J.H.	SCALE	
DATE	SEPTEMBER 2020	DRAWING	E2.15.2

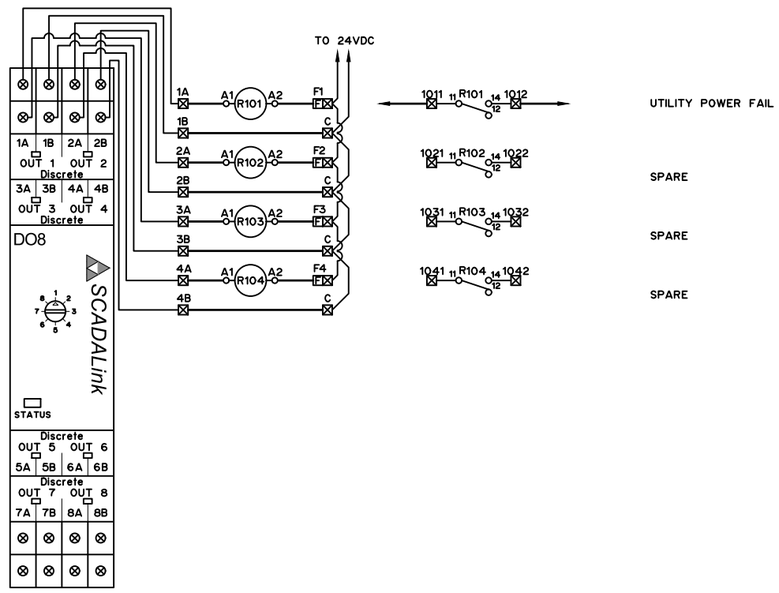




LIBRARY DISTRIBUTION FLOW

LIBRARY INLET PRESSURE (FUTURE)

LIBRARY OUTLET PRESSURE (FUTURE)



NOTES:
1. REFER TO DRAWING E1.2 FOR TYPICAL TERMINAL LAYOUTS.

THIS DRAWING MAY HAVE BEEN MODIFIED FROM ITS ORIGINAL SIZE. ALL SCALE NOTATIONS INDICATED ARE BASED ON 11"x17" FORMAT DRAWINGS

1	20-09-23	FOR TENDER
ISSUE	YY-MM-DD	REVISION

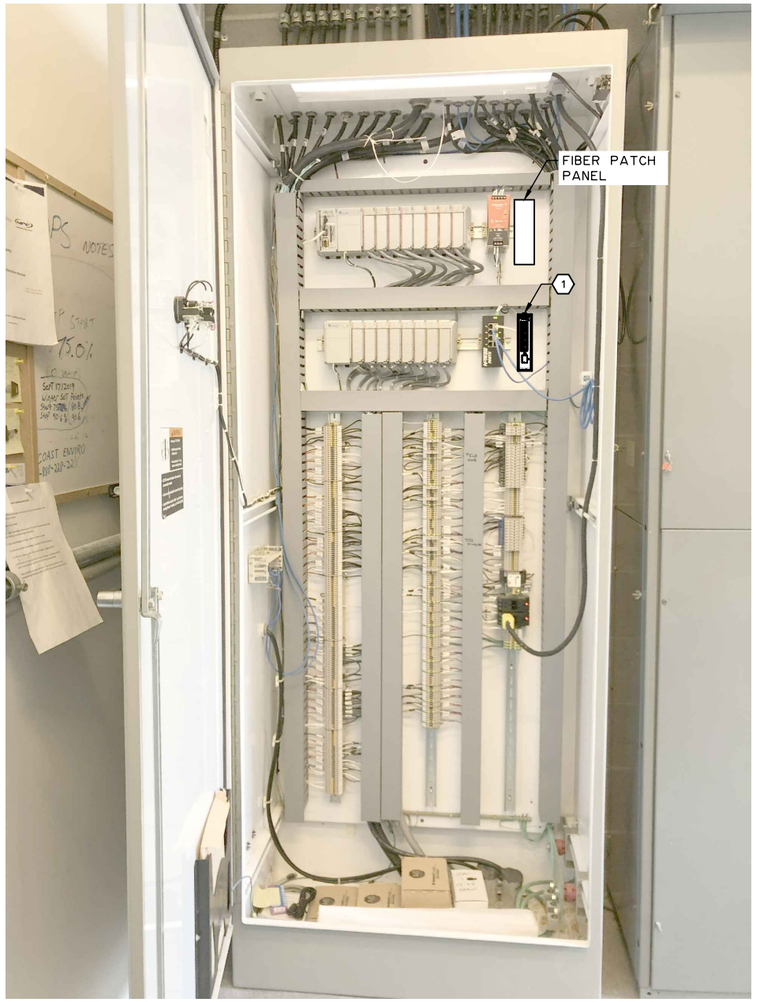
Association of Professional Engineers and Geoscientists of the Province of British Columbia
Z.T.S. SPENCER
ENGINEERING LICENSEE
Limited Licence 100981
2020-09-23

MPE Engineering Ltd.

REGIONAL DISTRICT OF NANAIMO

NANOOSE BAY WSA SCADA IMPLEMENTATION
ELECTRICAL
WEST BAY WELL 4 AND PUMP STATION
PLC IO 2 OF 2

DESIGNED	N.D.S., Z.T.S.	JOB	9794-002-00
DRAWN	N.O.W., D.J.H.	SCALE	
DATE	SEPTEMBER 2020	DRAWING	E2.15.3



NANOOSE WTP PANEL INTERIOR

KEYNOTES:
1. INSTALL STRATIX SWITCH AS PER SPECIFICATIONS.

THIS DRAWING MAY HAVE BEEN MODIFIED FROM ITS ORIGINAL SIZE. ALL SCALE NOTATIONS INDICATED ARE BASED ON 11"x17" FORMAT DRAWINGS

1	20-09-23	FOR TENDER
ISSUE	YY-MM-DD	REVISION

Association of Professional Engineers and Geoscientists of the Province of British Columbia
Z.T. SPENCER
ENGINEERING LICENSEE
Limited Licence 109861
2020-09-23

MPE Engineering Ltd.

REGIONAL DISTRICT OF NANAIMO

NANOOSE BAY WSA SCADA IMPLEMENTATION
ELECTRICAL
NANOOSE WTP
PANEL DETAILS

DESIGNED	N.D.S., Z.T.S.	JOB	9794-002-00
DRAWN	N.O.W., D.J.H.	SCALE	
DATE	SEPTEMBER 2020	DRAWING	E2.16.1