PBX ENGINEERING LTD.
PERMIT TO PRACTICE NUMBER:
1000208

GENERAL NOTES:

1. RESTORE ALL SURFACES TO MATCH EXISTING.
2. MMCD STANDARDS APPLY TO ALL ASPECTS OF THE WORK.
3. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE. ALL CONCRETE BASES AND JB SYMBOLS ARE NOT TO SCALE.
4. ALL WORK SHALL COMPLY WITH THE CANADIAN ELECTRICAL CODE, PROJECT SPECIFICATIONS, LOCAL BY-LAWS AND THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.
5. LOCATE EXISTING UNDERGROUND UTILITIES PRIOR TO EXCAVATING.
6. ALL INSTALLATIONS SHALL CONFORM TO CSA C22.1-15 (CURRENT EDITION) INCLUDING BC ELECTRICAL SAFETY BRANCH AMENDMENTS. ALL UNDERGROUND CONDUITS SHALL BE RIGID PVC CONDUIT: COMPLYING CSA C22.2 No. 211.2-06 (NOTED AS "RPVC") ON THE DRAWINGS OR OTHERWISE NOTED. ALL OUTDOOR MOUNTED CONDUIT SHALL BE RGS OR OTHERWISE NOTED.
7. ALL MANUFACTURER AND CSA LABELS SHALL BE VISIBLE AND LEGIBLE AFTER THE EQUIPMENT IS INSTALLED.
8. ALL EQUIPMENT AND MATERIAL SHALL BE CSA CERTIFIED FOR INSTALLATION IN BC.
9. NO WORK SHALL INTERFERE WITH CURRENT CONSTRUCTION ACTIVITIES IN THE AREA BY OTHERS.
10. ALL WORK INCLUDING SHUTDOWNS AND POWER OUTAGES SHALL BE COORDINATED AND SCHEDULED WITH THE CONSTRUCTION MANAGER.
11. LOCK-OUT PROCEDURES SHALL APPLY FOR ALL HOT EQUIPMENT/WIRING THAT REQUIRES DISCONNECTION. CONTRACTOR TO COORDINATE ALL LOCK-OUTS WITH THE CONSTRUCTION MANAGER.
12. TRAFFIC CONTROL ON PORTION OF ROADS AFFECTED BY WORK SHALL BE COORDINATED WITH THE CONSTRUCTION MANAGER.
13. NOTIFY CONSULTANT OF CHANGES REQUIRED BY ELECTRICAL INSPECTION DEPARTMENT PRIOR TO MAKING CHANGES.
14. SUPPLY COPIES OF ALL INSPECTION REPORTS TO ENGINEER WITHIN 24 HOURS OF INSPECTION.
15. FURNISH CERTIFICATES OF ACCEPTANCE FROM ELECTRICAL INSPECTION DEPARTMENT ON COMPLETION OF WORK TO ENGINEER.
16. UNUSED MATERIAL AND ABANDONED EQUIPMENT SHALL BE DISPOSED OF AT THE CONTRACTORS EXPENSE.
17. INSTALLATION FOR ALL EQUIPMENT SHALL INCLUDE ALL NECESSARY CONNECTORS, TERMINATIONS, FASTENERS AND BONDING REQUIRED TO CREATE A FULLY FUNCTIONAL SYSTEM.
18. ALL CONDUCTORS SHALL BE STRANDED COPPER, RW90 XLPE INSULATED OR AS OTHERWISE NOTED.
19. ALL GROUNDING AND BONDING SHALL COMPLY WITH THE CANADIAN ELECTRICAL CODE.
20. MAINTAIN PHASE SEQUENCE AND COLOUR CODING THROUGHOUT. USE COLOUR CODED WIRES IN COMMUNICATION CABLES, MATCHED THROUGHOUT SYSTEM.
21. ALL EMPTY CONDUITS SHALL BE CAPPED.
22. ALL CONDUITS SHALL DRAIN TO JUNCTION BOXES. SPACING BETWEEN POWER AND COMMUNICATIONS CONDUITS FOR LONGITUDINAL RUNS SHALL BE 300mm (UNLESS CONCRETE ENCASED). THE SPACING MAY BE REDUCED TO 50mm AT CROSSOVER POINTS WHERE THE CONDUITS ENTER AND EXIT JUNCTION BOXES AND PULL PITS.
23. THE CONTRACTOR SHALL NOT USE ANY FACTORY BENDS IN THE CONDUIT RUNS EXCEPT WHERE SHOWN ON THE DRAWINGS OR APPROVED BY THE PROJECT ENGINEER IN THE FIELD. WHERE FACTORY 90 DEGREE BENDS ARE APPROVED, THE RADIUS SHALL BE GREATER THAN 900mm.
24. ALL CONDUITS SHALL BE VERIFIED AND CLEANED USING THE FOLLOWING PROCEDURE:
    - TO VERIFY INTEGRITY OF CONDUIT, PULL THROUGH EACH CONDUIT DUCT A HARD RUBBER MANDREL, NOT LESS THAN 300mm LONG AND OF A DIAMETER 6mm LESS THAN THE INTERNAL DIAMETER OF THE DUCT, PRECEDED BY A SWAB OF SUITABLE DIAMETER TO REMOVE SAND, EARTH AND OTHER FOREIGN MATERIALS.
    - NOTIFY PROJECT ENGINEER IN THE EVENT OF CONDUIT FAILURE.
    - CLEAN DUCTS BEFORE LAYING. CAP BOTH ENDS DURING CONSTRUCTION AND AFTER INSTALLATION TO PREVENT ENTRY OF ANY FOREIGN MATERIALS.
    - INSTALL PULL LINE.
    - TERMINATE CONDUIT ENDS IN THE JUNCTION BOX.
    - CLEAN AND VACUUM JUNCTION BOXES. LOCATIONS SHALL BE LAID OUT BY THE CONTRACTOR AND FIELD REVIEWED BY THE ENGINEER PRIOR TO INSTALLATION.
25. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL NECESSARY BENDS, COUPLINGS, REDUCERS, BELL END FITTINGS, PLUGS, CAPS AND ADAPTORS OF THE SAME PRODUCT MATERIAL AS THE CONDUIT TO ENSURE A COMPLETE INSTALLATION.
26. FOR CABLE INSTALLATION IN DUCTS, CONTRACTOR SHALL USE THE FOLLOWING PROCEDURE:
    - INSTALL CABLES AS INDICATED IN DUCTS.
    - DO NOT PULL SPLICED CABLES INSIDE DUCTS.
    - INSTALL MULTIPLE CABLES IN DUCT SIMULTANEOUSLY.
    - USE CSA APPROVED LUBRICANTS OF TYPE COMPATIBLE WITH CABLE JACKET TO REDUCE PULLING TENSION.
    - AFTER INSTALLATION OF CABLES, SEAL DUCT ENDS WITH DUCT SEALING COMPOUND.
27. FOR CABLE SPLICING:
    - REMOVE INSULATION CAREFULLY FROM ENDS OF CONDUCTORS.
    - CONNECTOR SPLICES SHALL BE SECURED WITH SOLDERLESS TWIST-ON (MARRETTE) TYPE CONNECTORS.
    - WHERE THE NUMBER AND/OR SIZE OF CONDUCTORS EXCEEDS THE CAPACITY OF THE TWIST-ON CONNECTOR, BURNDY BIT MULTI TAP CONNECTIONS SHALL BE USED.
    - ALL WIRING SHALL BE NEATLY BUNDLED AND LABELLED IN ALL JUNCTION BOXES, VAULTS, CHAMBERS, HAND HOLES, CONTROL BOXES, DEVICE BOXES AND PANELS.
28. SEALING OF OUTDOOR TWIST-ON CONNECTIONS SHALL BE PERFORMED USING DOUBLE DIPPING METHOD SUCH AS 3M "SCOTCHKOTE" OR APPROVED ALTERNATIVE.
29. TESTING:
    - PERFORM TESTS USING QUALIFIED PERSONNEL. PROVIDE NECESSARY INSTRUMENTS AND EQUIPMENT.
    - FOR FEEDERS SUPPLYING MOTORS, CHECK PHASE ROTATION AND IDENTIFY EACH PHASE CONDUCTOR OF EACH FEEDER.
    - AFTER INSTALLING CABLE BUT BEFORE SPLICING AND TERMINATING, PERFORM INSULATION RESISTANCE TEST WITH 1000V MEGGER ON EACH PHASE CONDUCTOR.
30. TOP OF VAULT/JB COVERS TO BE FLUSH WITH THE FINAL GRADE OR CONCRETE PAD, UNLESS NOTED OTHERWISE.
31. HARD WIRED COMMUNICATIONS AND CONTROL EQUIPMENT SHALL BE CONNECTED TO POWER THROUGH DIN RAIL MOUNTED TERMINAL BLOCKS. CIRCUIT PROTECTION FUSED BLOCKS AND APPROPRIATE FUSES SHALL BE USED TO POWER TRANSFORMERS 1500VA OR SMALLER.
32. ALL THE UNDERGROUND BOXES SHALL BE EQUIPPED WITH GALVANIZED STEEL COVERS. THE COVERS SHALL BE BONDED TO GROUND, AND SHALL BE LABELLED "ELEC" OR "COMM" AS SHOWN IN THE DRAWINGS.

NOMENCLATURE:

A	- AMBER	MSM	- MULTISMART
AS	- AUTOSTART	MM	- MILLIMETER
BCH	- BC HYDRO	N	- NEUTRAL
C	- COIL	NC	- NORMALLY CLOSED
C/W	- COMPLETE WITH	NO	- NORMALLY OPEN
CBX	- CIRCUIT BREAKER ("X" DENOTES NUMBER)	OL	- OVERLOAD
CCT	- CIRCUIT	OT	- OVERTEMPERATURE
CEC	- CANADIAN ELECTRICAL CODE, PART 1, LATEST EDITION	PEC	- PHOTOELECTRIC CELL
CMD	- COMMAND	PFC	- POWER FACTOR CORRECTION
COMM	- COMMUNICATION	PLC	- PROGRAMMABLE LOGIC CONTROLLER
CT	- CURRENT TRANSFORMER	PMR	- PHASE LOSS MONITOR RELAY
CTRL	- CONTROL	POTS	- PLAIN OLD TELEPHONE SERVICE
DDC	- DIRECT DIGITAL CONTROL	PWR	- POWER
DPDT	- DOUBLE POLE DOUBLE THROW	Px	- PUMP ("x" DENOTES NUMBER)
DS	- KIOSK DOOR SWITCH	R	- RED
EMR	- EMERGENCY RUN	RLY	- RELAY
ERR	- EMERGENCY RUN RELAY	RPVC	- RIGID POLYVINYL CHLORIDE
ETM	- ELAPSED TIME METER	RR	- REMOTE RUN
F	- FUSE	RS	- REMOTE START
FLS	- FLYGT LEAKAGE SENSOR	RTU	- REMOTE TELEMETRY UNIT
FRUN	- FAN RUN	SLF	- SECONDARY LOW FLOAT
FS	- FLOAT SWITCH	SPD	- SURGE PROTECTION DEVICE
G	- GREEN	SPDT	- SINGLE POLE DOUBLE THROW
GEN	- GENERATOR	SS	- SOFT STARTER
GFCI	- GROUND FAULT CIRCUIT INTERRUPTER	SST	- ELECTRONIC SOLID STATE TRIP DEVICE
GFLT	- GROUND FAULT RELAY	TD	- TIME DELAY
GND	- GROUND	TEMP	- TEMPERATURE
HLOA	- HIGH-LOW-OFF-AUTO	TRSW	- TRANSFER SWITCH
HMI	- HUMAN MACHINE INTERFACE	UPS	- UNINTERRUPTIBLE POWER SUPPLY
HOA	- HAND-OFF-AUTO CONTROL	US	- ULTRASONIC SENSOR
HP	- HORSE POWER	UTS	- UP TO SPEED
HSW	- HATCH SWITCH	UV	- ULTRAVIOLET
HTR	- HEATER	VFD	- VARIABLE FREQUENCY DRIVE
IS	- IN SERVICE	VFR	- VENTILATION FAN RELAY
LTG	- LIGHTING	XFMR	- TRANSFORMER
LVL	- LEVEL	W	- WHITE
MGB	- MASTER GROUND BUS	ZS	- POSITION SWITCH

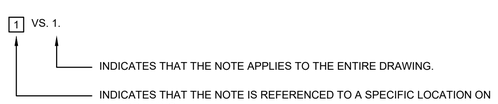
GENERAL NOTES:

32. THE CONTRACTOR SHALL NOT DISTURB OR DESTROY EXISTING PLANTS, BUSHES, TREES, OR ROOTS WHILE INSTALLING THE EQUIPMENT. MANUALLY DIG THROUGH HEDGES.
33. THE CONTRACTOR SHALL DISPOSE OF ALL THE REMOVED CONCRETE AND EXCESS NATIVE FILL.
34. ON-SITE DOCUMENTS SHALL BE STORED IN A SECURE LOCATION AND SHALL NOT BE LEFT IN VEHICLES OVERNIGHT.
35. THERE SHALL BE NO ENERGIZED EXPOSED PARTS INSIDE KIOSKS, CABINETS, CHAMBERS OR EQUIPMENT BOXES.
36. CABLE INSTALLATION INCLUDES CABLE TERMINATION, LABELLING, TESTING AND COMMISSIONING. ALL TESTING REPORTS SHALL BE SENT TO THE ENGINEER FOR REVIEW AND APPROVAL.
37. ALL THE POWER CABLES INSIDE OF CHAMBERS SHALL BE WITHIN RPVC CONDUIT AND ALL THE CONNECTORS SHALL BE WATER TIGHT.
38. WORK SHALL CONFORM TO ALL APPLICABLE REGULATIONS OF WORKSAFE BC.
39. IDENTIFY ELECTRICAL EQUIPMENT WITH LABELS. FOR EACH DEVICE, INSTALL LABEL ON EQUIPMENT, PANEL, AND BACKSIDE OF PANEL, WHERE APPLICABLE.

LABELLING CONVENTION NOTES:

1. ALL CABLES AND CONDUCTORS SHALL BE LABELLED AS SHOWN ON THESE DRAWINGS. CONDUCTORS SHALL BE LABELLED IN ALL JUNCTION BOXES, HANDHOLES, VAULTS, CONTROL CABINETS AND ALL OTHER ACCESSIBLE POINTS.
2. "LOCAL" SPECIFIES THE TERMINATION INSIDE THE CONTROL CABINET AND "REMOTE" INDICATES TERMINATION OUTSIDE.
3. IF THERE IS MORE THAN ONE CONDUCTOR OF THE SAME TYPE WITHIN A BUNDLE OR CABLE, THE CONDUCTORS SHALL BE LABELLED SEQUENTIALLY STARTING FROM ONE.
4. HOT AND NEUTRAL CIRCUITS ARE LABELLED HX OR NX, WHERE X IS THE CIRCUIT NUMBER IN THE PANEL.
5. ALL CONDUCTORS SHALL BE IDENTIFIED IN ALL JUNCTION BOXES, CABINETS OR OTHER ACCESS POINTS. IDENTIFY WIRING WITH PERMANENT INDELIBLE IDENTIFYING MARKINGS, EITHER NUMBERED AND/OR COLOUR CODED PLASTIC TAPE ON BOTH ENDS OF PHASE CONDUCTORS OF FEEDERS AND BRANCH CIRCUIT WIRING, PRINTED USING A THERMAL HEAT TRANSFER SYSTEM.
6. IDENTIFY GROUPS OF CONDUCTORS OR CABLES IN ENCLOSURES AND PANELS USING BRADY #B-342 (HEAT SHRINK SLEEVES) OR APPROVED ALTERNATE. IDENTIFY CABLES OR GROUPS OF CONDUCTORS IN JUNCTION BOXES USING BRADY #B-109 (TY-WRAP STYLE MULTIPURPOSE IDENTIFICATION TAG) OR APPROVED ALTERNATE.

NOTES LEGEND:



LEGEND

	LUMINAIRE (REFER TO SITE PLAN FOR TYPE AND WATTAGE)		ANTENNA
	POWER/COMMUNICATIONS UTILITY POLE		VENTILATION FAN
	CIRCUIT BREAKER	FS	FLOAT SWITCH
	FUSE		HYDROSTATIC LEVEL TRANSDUCER
	OVERLOAD PROTECTION	M	MAGNETIC FLOW METER SENSOR
	TRANSFORMER	HS	HATCH SWITCH
	LINE REACTOR		DISCONNECT
X.X kVAR	POWER FACTOR CORRECTION CIRCUIT	G	ILLUMINATED PUSH BUTTON (INDICATOR LIGHT)
M	BC HYDRO METER AND METER BASE	PMR	PHASE LOSS MONITOR RELAY
	CURRENT TRANSFORMER	SPD	SURGE PROTECTION DEVICE
M Px	PUMP MOTOR	ETM	ELAPSED TIME METER
	GENERATOR	X	CONTACTOR/RELAY COIL
	HEATING/COOLING THERMOSTAT		NORMALLY OPEN CONTACT
	DUAL RECEPTACLE 120V (GFCI)		NORMALLY CLOSED CONTACT
T	WALL MOUNTED THERMOSTAT (DUAL STAGE HEATING AND COOLING)		FLOAT SWITCH
$	SINGLE POLE LIGHT SWITCH		
	EXPLOSION PROOF EYS FITTING		PUSH BUTTON (NORMALLY OPEN)
	GROUND ELECTRODE/ROD		PUSH BUTTON (NORMALLY CLOSED)
	TERMINAL BLOCK LOCATED IN PUMP CONTROL PANEL		GROUND
	TERMINAL BLOCK LOCATED IN MOTOR CONTROL ENCLOSURE	EXP	EXPLOSION PROOF LIGHT FIXTURE
ISR	INTRINSICALLY SAFE RELAY	ISB	INTRINSICALLY SAFE BARRIER
	TERMINAL BLOCK LOCATED IN KIOSK VENTILATED COMPARTMENT		QUADRUPLE RECEPTACLE 120V (GFCI)

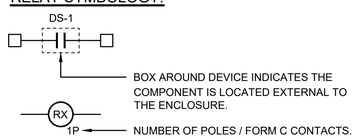
CABLE LABELLING NOMENCLATURE:

POWER

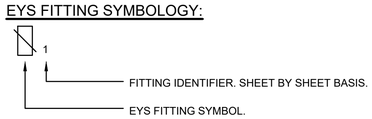
EXAMPLE: P1-CCT10/12/14-600V

- P1 — PANEL
- CCT10/12/14 — CIRCUIT
- 600V — VOLTAGE

RELAY SYMBOLOGY:



EYS FITTING SYMBOLOGY:



LINE TYPE LEGEND

LINE	DESCRIPTION
———	120/240V CONDUIT/CABLE
— — —	COMMUNICATIONS OR LOW VOLTAGE CONDUIT/CABLE
——·——	347/600V CONDUIT/CABLE
----------	GROUNDING
———⌐	CAPPED CONDUIT

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KOERS & ASSOCIATES ENGINEERING LTD.
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RECORD OF REVISIONS

REV	DATE	BY	ENG	DESCRIPTION

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ISS	DATE	BY	ENG	DESCRIPTION
–	23JUN23	PBX	MS	ISSUED FOR TENDER

RECORD OF ISSUE

SEAL

PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — 2023-07-26

PROJECT NO.	220363
DRAWN	PBX
DESIGNED	MS
CHECKED	AT
APPROVED	AT
DATE	JUNE 2023
SCALE	AS SHOWN

CLIENT

REGIONAL DISTRICT OF NANAIMO

PROJECT

NANOOSE BAY SANITARY PUMPSTATION NO. 6

TITLE

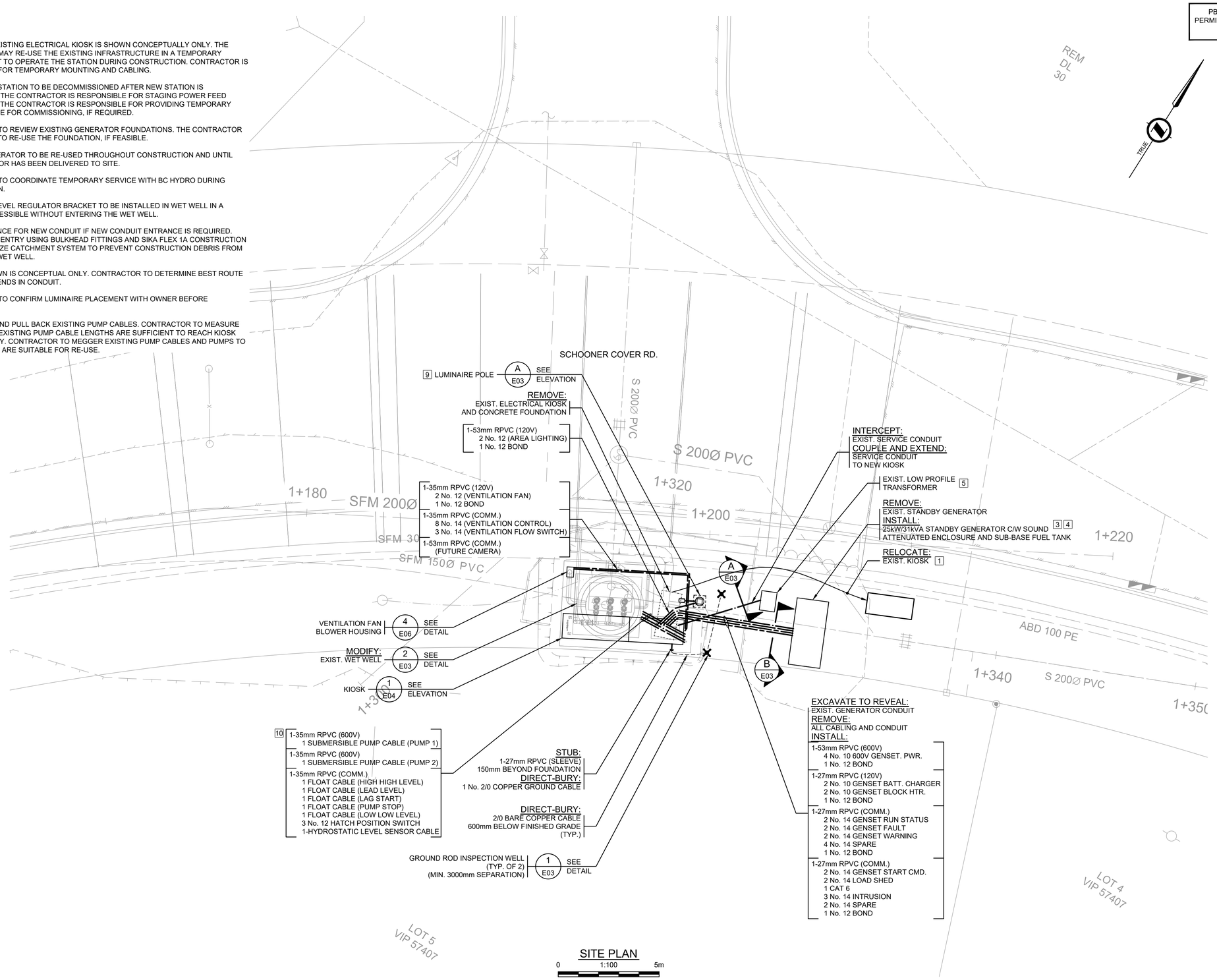
LEGEND AND GENERAL NOTES

Pump Station No. 6

DRAWING No.	REV.	SHEET
NBPS6–E–001	–	11/28

NOTES:

1. RELOCATED EXISTING ELECTRICAL KIOSK IS SHOWN CONCEPTUALLY ONLY. THE CONTRACTOR MAY RE-USE THE EXISTING INFRASTRUCTURE IN A TEMPORARY ARRANGEMENT TO OPERATE THE STATION DURING CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR TEMPORARY MOUNTING AND CABLING.
2. EXISTING LIFT STATION TO BE DECOMMISSIONED AFTER NEW STATION IS OPERATIONAL. THE CONTRACTOR IS RESPONSIBLE FOR STAGING POWER FEED INSTALLATION. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING TEMPORARY POWER SOURCE FOR COMMISSIONING, IF REQUIRED.
3. CONTRACTOR TO REVIEW EXISTING GENERATOR FOUNDATIONS. THE CONTRACTOR IS PERMITTED TO RE-USE THE FOUNDATION, IF FEASIBLE.
4. EXISTING GENERATOR TO BE RE-USED THROUGHOUT CONSTRUCTION AND UNTIL NEW GENERATOR HAS BEEN DELIVERED TO SITE.
5. CONTRACTOR TO COORDINATE TEMPORARY SERVICE WITH BC HYDRO DURING CONSTRUCTION.
6. HORIZONTAL LEVEL REGULATOR BRACKET TO BE INSTALLED IN WET WELL IN A LOCATION ACCESSIBLE WITHOUT ENTERING THE WET WELL.
7. CORE CLEARANCE FOR NEW CONDUIT IF NEW CONDUIT ENTRANCE IS REQUIRED. SEAL CONDUIT ENTRY USING BULKHEAD FITTINGS AND SIKA FLEX 1A CONSTRUCTION SEALANT. UTILIZE CATCHMENT SYSTEM TO PREVENT CONSTRUCTION DEBRIS FROM FALLING INTO WET WELL.
8. CONDUIT SHOWN IS CONCEPTUAL ONLY. CONTRACTOR TO DETERMINE BEST ROUTE TO MINIMIZE BENDS IN CONDUIT.
9. CONTRACTOR TO CONFIRM LUMINAIRE PLACEMENT WITH OWNER BEFORE INSTALLATION.
10. DISCONNECT AND PULL BACK EXISTING PUMP CABLES. CONTRACTOR TO MEASURE AND CONFIRM EXISTING PUMP CABLE LENGTHS ARE SUFFICIENT TO REACH KIOSK CONDUIT ENTRY. CONTRACTOR TO MEGGER EXISTING PUMP CABLES AND PUMPS TO CONFIRM THEY ARE SUITABLE FOR RE-USE.



SITE PLAN
0 1:100 5m

ALL EQUIPMENT IS PROPOSED UNLESS NOTED OTHERWISE

BC 1C

CHECK BEFORE YOU DIG
CONTRACTOR SHALL CONFIRM THE LOCATIONS OF ALL UNDERGROUND UTILITIES.

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SEAL
PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — 54662 — 2023-07-26

PROJECT NO.	220363
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SCALE	AS SHOWN

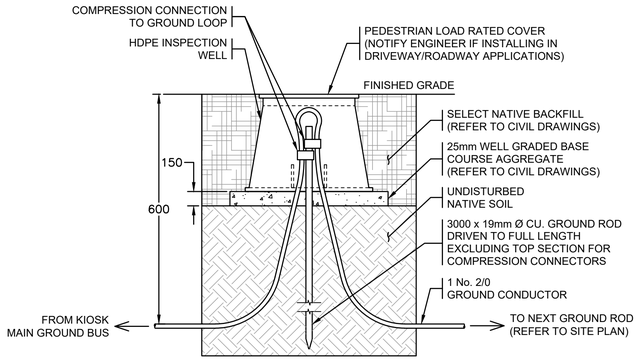
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REGIONAL DISTRICT OF NANAIMO

PROJECT
NANOOSE BAY SANITARY PUMPSTATION NO. 6

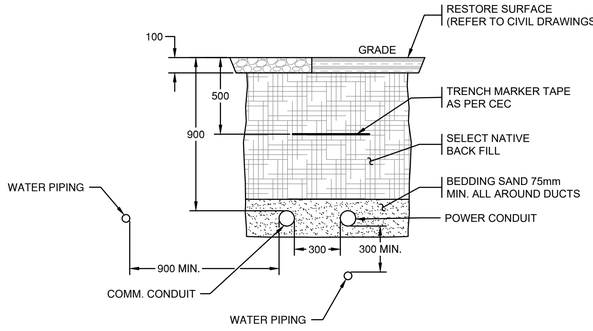
TITLE
SITE PLAN
Pump Station No. 6

DRAWING No.	REV.	SHEET
NBPS6–E–002	–	12/28

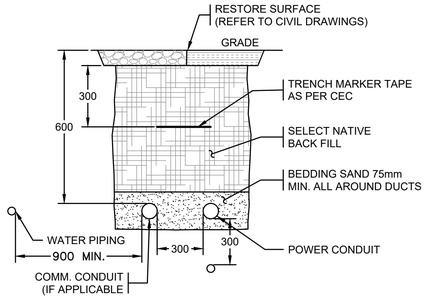
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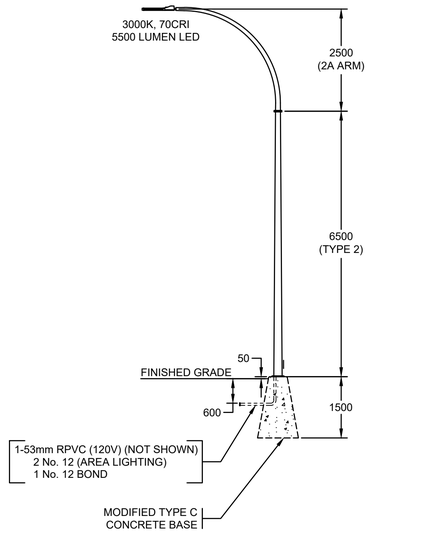
DETAIL 1 / E02
N.T.S.



SECTION A / E02 TYPICAL TRENCH SECTION
N.T.S.

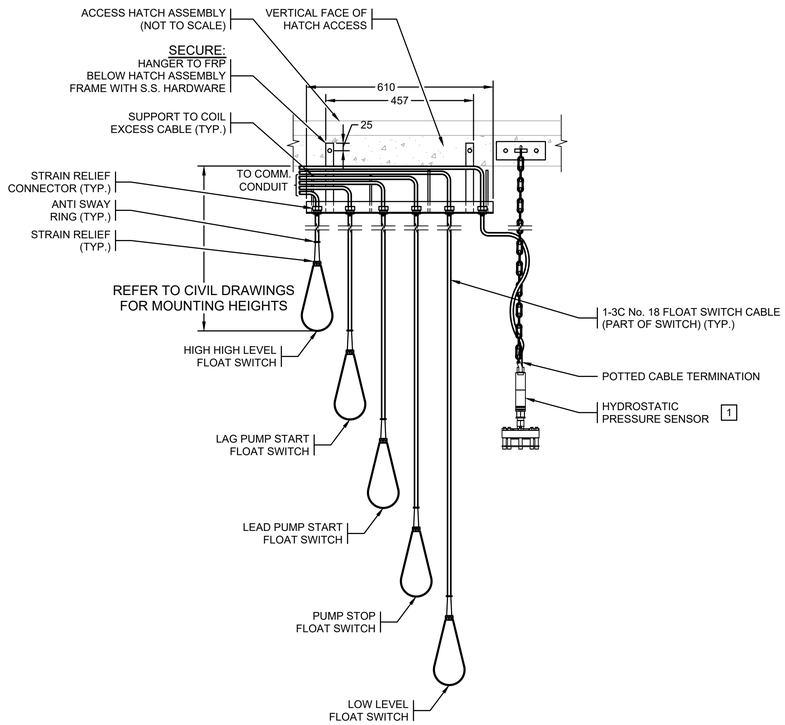


SECTION B / E02 TYPICAL TRENCH SECTION
N.T.S.



ELEVATION A / E02 LUMINAIRE POLE
1:75

0 1:75 5m



DETAIL 2 / E02 HORIZONTAL LEVEL REGULATOR HANGER
1:10

0 1:10 500mm

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NOTES:

1 INSTALL INSTRUMENTS/SENSORS PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.

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DRAWN	PBX
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SCALE	AS SHOWN

CLIENT

REGIONAL DISTRICT OF NANAIMO

PROJECT

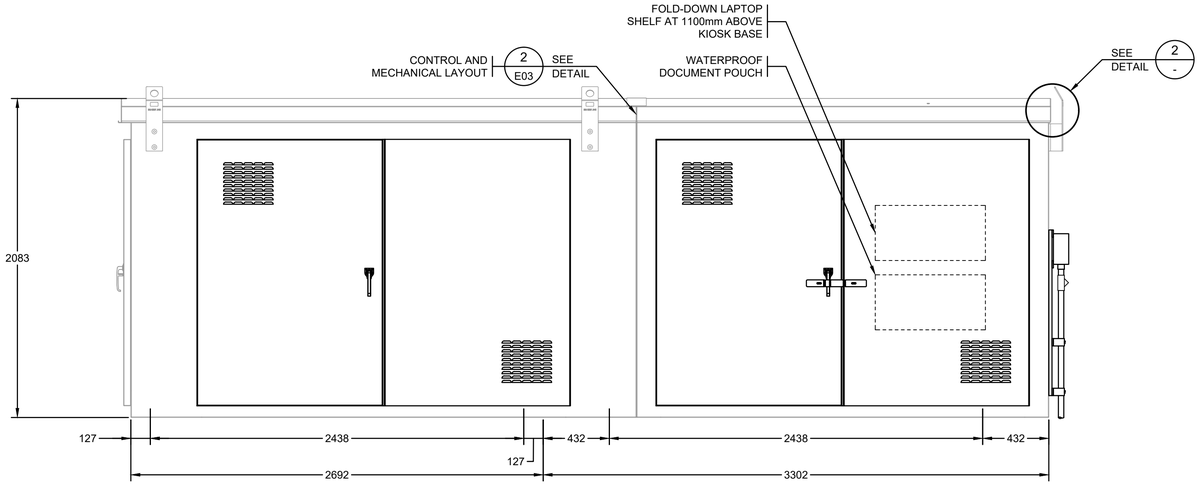
NANOOSE BAY SANITARY PUMPSTATION NO. 6

TITLE

DETAILS

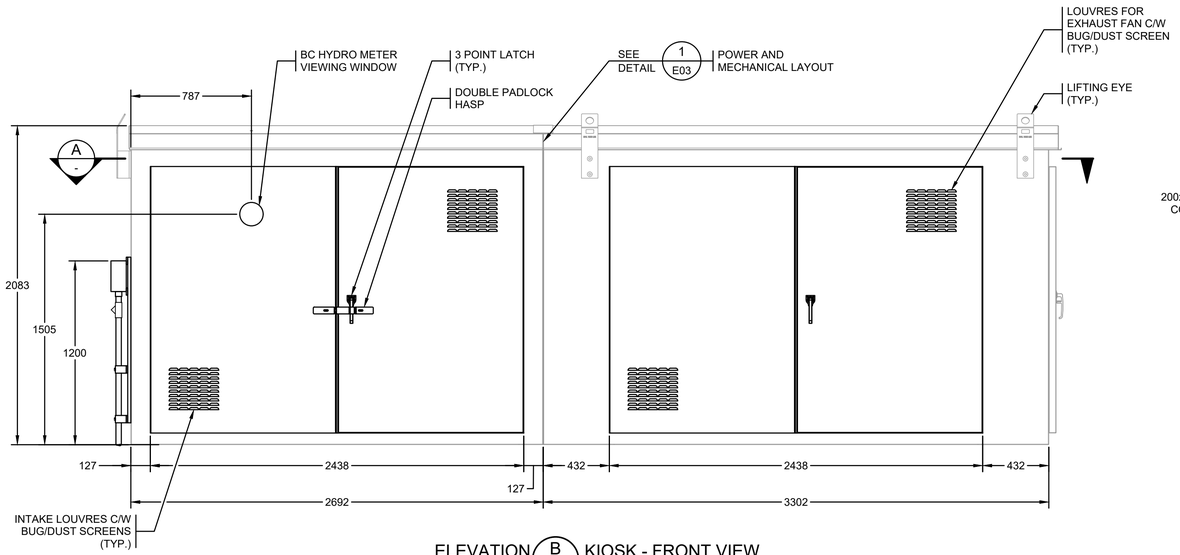
Pump Station No. 6

DRAWING No.	REV.	SHEET
NBPS6–E–003	—	13/28



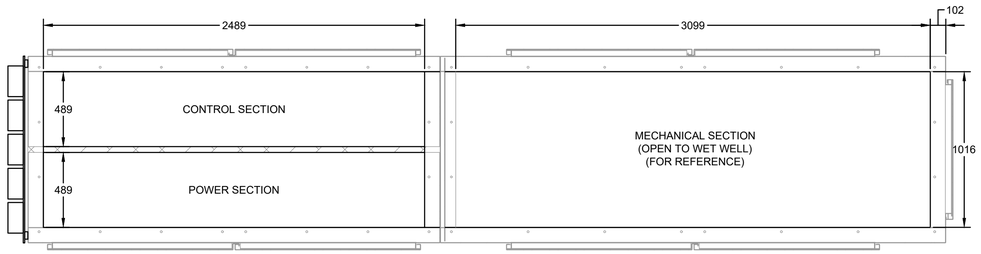
ELEVATION A KIOSK - REAR VIEW
1:20 (A, E02)

0 1:20 1



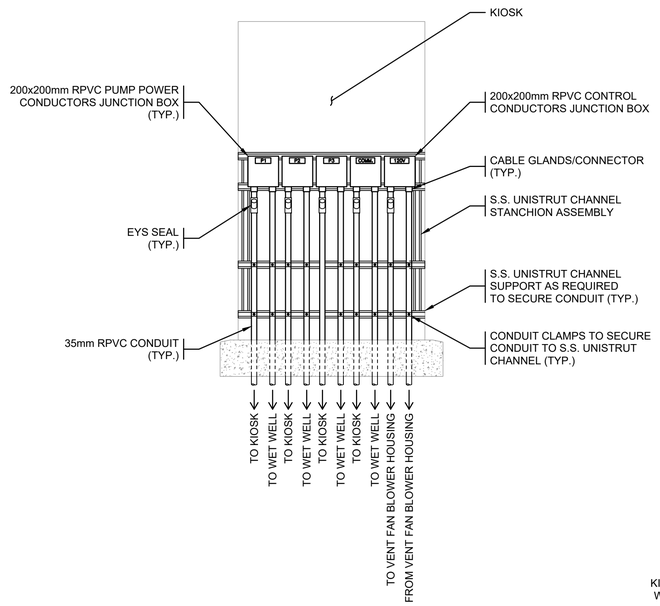
ELEVATION B KIOSK - FRONT VIEW
1:20 (B, -)

0 1:20 1



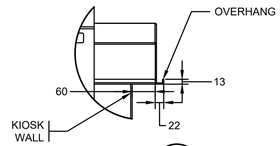
SECTION A KIOSK - TOP VIEW
1:20 (A, -)

0 1:20 1



ELEVATION C KIOSK EXTERIOR CONDUIT ENTRY
1:20 (C, E02)

0 1:20 1



DETAIL 2
N.T.S

NOTES:

1. KIOSK SHALL BE CSA TYPE 3R RATED. OUTER SHELL SHALL BE MARINE GRADE ALUMINIUM AND SHALL BE WELDED TO ROOF ASSEMBLY, EQUIPMENT MOUNTING PANEL MOUNTS AND BASE PLATES. KIOSK SHALL INCLUDE STRUCTURAL BRACING TO ACCOMMODATE TRANSPORTATION, WIND, SNOW AND ICE LOADING. KIOSK MANUFACTURER SHALL BE RESPONSIBLE FOR OBTAINING CERTIFICATION FROM APEGBC REGISTERED PROFESSIONAL ENGINEER. KIOSK MANUFACTURER SHALL INCLUDE ANCHOR REQUIREMENTS CONSIDERING WIND LOADING, SEISMIC LOADING, DEAD LOADS, AND SNOW LOADING.
2. KIOSK DIMENSIONS ARE APPROXIMATE ONLY. KIOSK MANUFACTURER SHALL PRODUCE DETAILED SHOP DRAWINGS WHICH SHALL INCLUDE INTERNAL EQUIPMENT LAYOUTS FOR REVIEW BY ENGINEER PRIOR TO PRODUCTION. THE MANUFACTURER SHALL ENSURE THE KIOSK IS SIZED APPROPRIATELY TO HOUSE THE INTENDED EQUIPMENT.
3. ALL LOUVERS SHALL HAVE BUG SCREENS. UPPER LOUVERS WITH FILTER AND 6" FAN MOUNTS. LOWER LOUVERS WITH FILTER AND VENT PLATE.
4. KIOSK DOORS SHALL INCLUDE A GAS SPRING. ALL LATCHES SHALL BE 3-POINT LATCHING SYSTEM WITH PAD LOCKABLE HANDLES. DOOR HANDLES ARE STAINLESS STEEL AND PADLOCK-ABLE. DOUBLE PADLOCK HASP ON ELECTRICAL SIDE ONLY.
5. KIOSK TO BE POWDER COATED. COLOUR CODE: MOSS GREEN PC114.
6. ALL COMPARTMENTS SHALL HAVE REMOVABLE MOUNTING PANELS. ALL INTERIOR PANELS SHALL BE 10 GA. GALVANIZED POWDER COATED WHITE.
7. ALL COUPLINGS BETWEEN THE COMPARTMENTS SHALL BE PLACED AND WELDED AT THE ENCLOSURE FABRICATION SHOP.
8. KIOSK SUPPLIER TO PROVIDE CONDUIT STUB-UP TEMPLATE FOR USE BY INSTALLATION CONTRACTOR.
9. PROVIDE 12mm THICK NEOPRENE CLOSED CELL GASKET BETWEEN KIOSK BASE AND CONCRETE PAD.
10. WET WELL CONFIGURATION TO BE CONFIRMED. CONDUIT MAY PASS DIRECTLY THROUGH WALL OF KIOSK TO ELECTRICAL SIDE WITHOUT GOING IN GROUND IF POSSIBLE.

FUNCTIONAL DESIGN ONLY
CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR ENGINEER'S APPROVAL PRIOR TO FABRICATION

FOR INFORMATION ONLY

PBX ENGINEERING LTD.
PERMIT TO PRACTICE NUMBER:
1000208

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SEAL

PROFESSIONAL ENGINEER · PROVINCE OF BRITISH COLUMBIA · 54462 · 2023-07-26

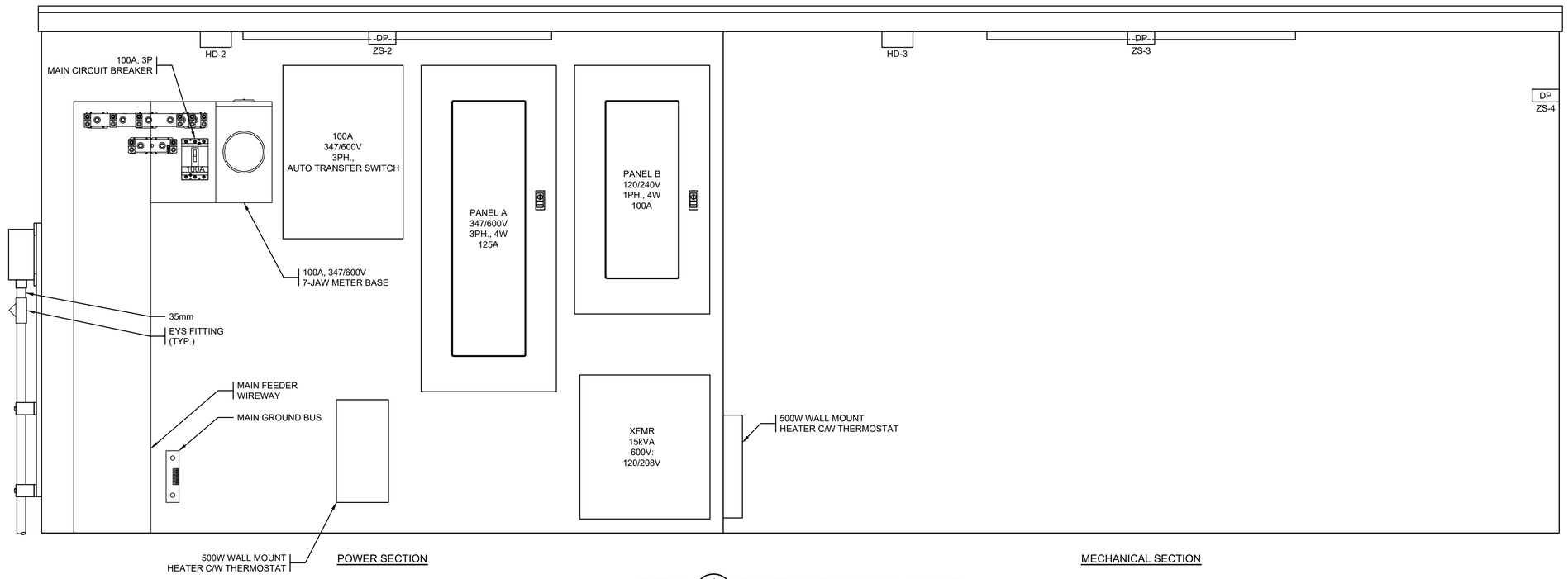
PROJECT NO.	220363
DRAWN	PBX
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APPROVED	AT
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SCALE	AS SHOWN

CLIENT
REGIONAL DISTRICT OF NANAIMO

PROJECT
NANOOSE BAY SANITARY PUMPSTATION NO. 6

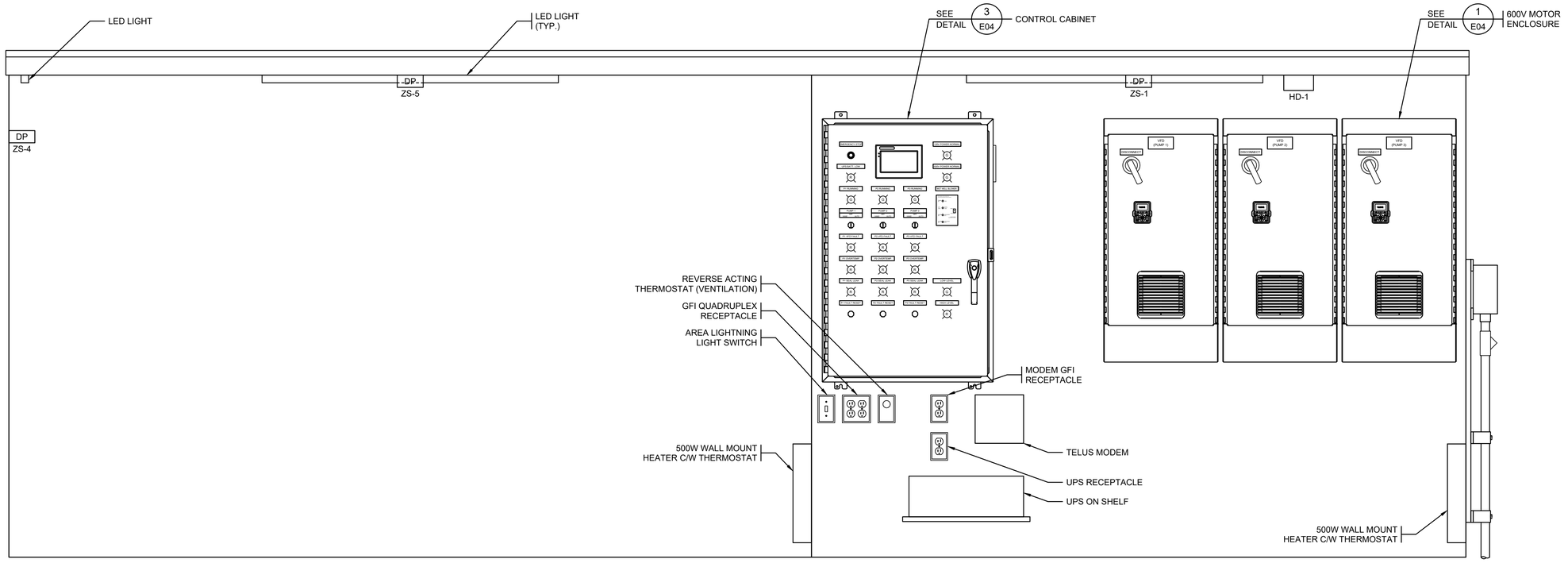
TITLE
KIOSK (1 OF 3)
Pump Station No. 6

DRAWING No.	REV.	SHEET
NBPS6–E–004	—	14/28



DETAIL 1 POWER & MECHANICAL LAYOUT
1:10 (E02)

0 1:10 500mm



DETAIL 2 CONTROL & MECHANICAL LAYOUT
1:10 (E02)

0 1:10 500mm

NOTES:

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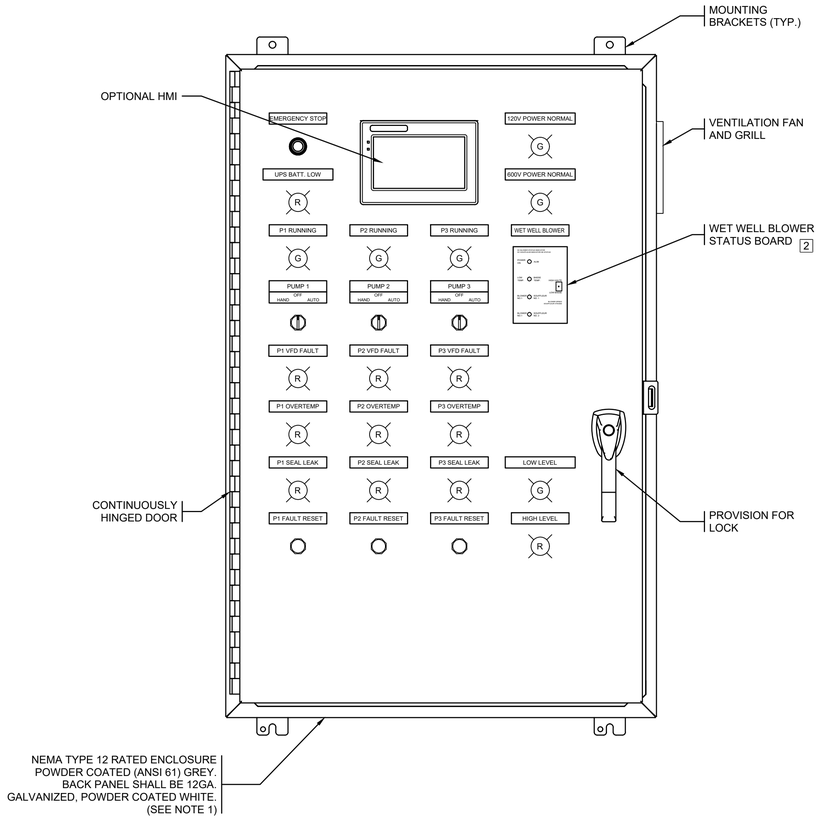
CLIENT
REGIONAL DISTRICT OF NANAIMO

PROJECT
NANOOSE BAY SANITARY PUMPSTATION NO. 6

TITLE
KIOSK (2 OF 3)

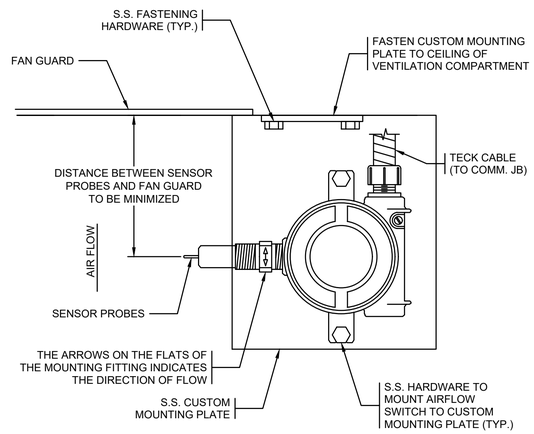
Pump Station No. 6

DRAWING No.	REV.	SHEET
NBPS6–E–005	–	15/28

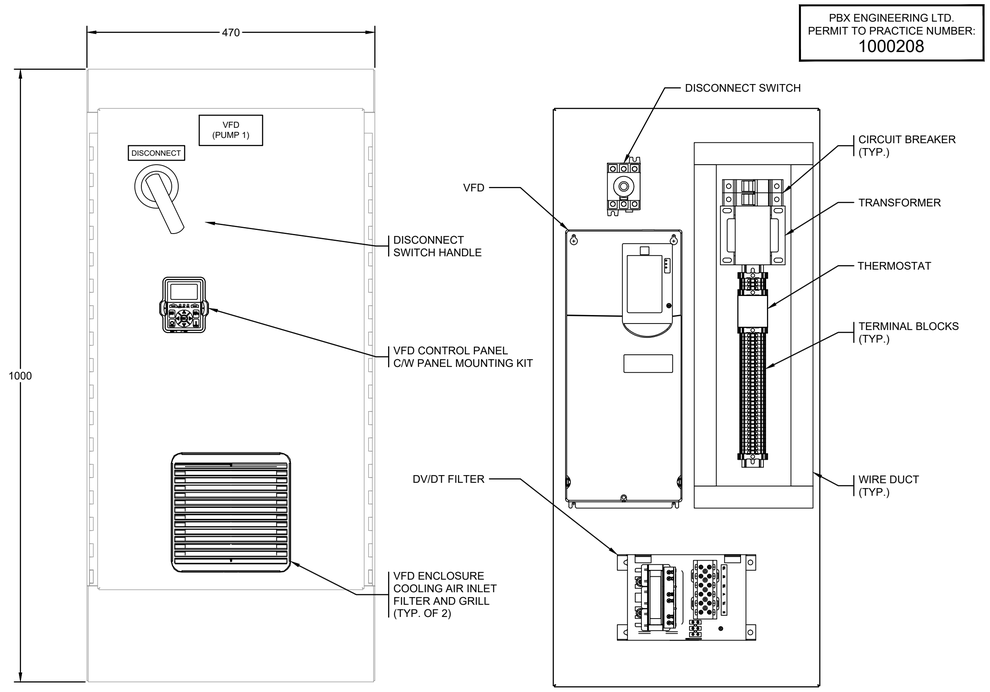


DETAIL 3 CONTROLS CABINET - FRONT PANEL
1:5 E03

0 1:5 250mm



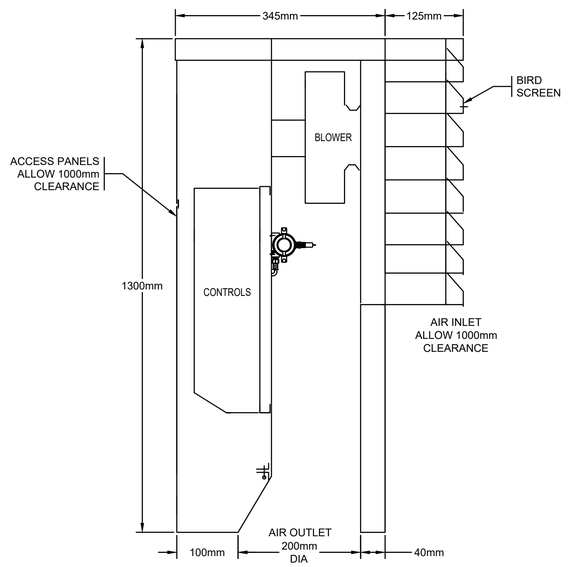
DETAIL 2 AIRFLOW SWITCH
N.T.S. -



FRONT LAYOUT INSIDE LAYOUT

DETAIL 1 600V MOTOR CONTROL ENCLOSURE
1:5 E03

0 1:5 250mm



DETAIL 4 VENT FAN BLOWER HOUSING
1:5 E02

0 1:5 250mm

NOTES:

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2. VENDOR PACKAGE BLOWER. SEE SHOP DRAWINGS FOR ADDITIONAL DETAILS. BASIS OF DESIGN IS DEXON CANADA VENT FAN SMVOD SERIES. VENT FAN AIR FLOW SWITCH TO BE ADDED TO BLOWER PACKAGE, BASIS OF DESIGN INNOVASWITCH 615 GAS AND LIQUID FLOW SWITCH.

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PROFESSIONAL ENGINEER 54062 PROVINCE OF BRITISH COLUMBIA
2023-07-26

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SCALE	AS SHOWN

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REGIONAL DISTRICT OF NANAIMO

PROJECT

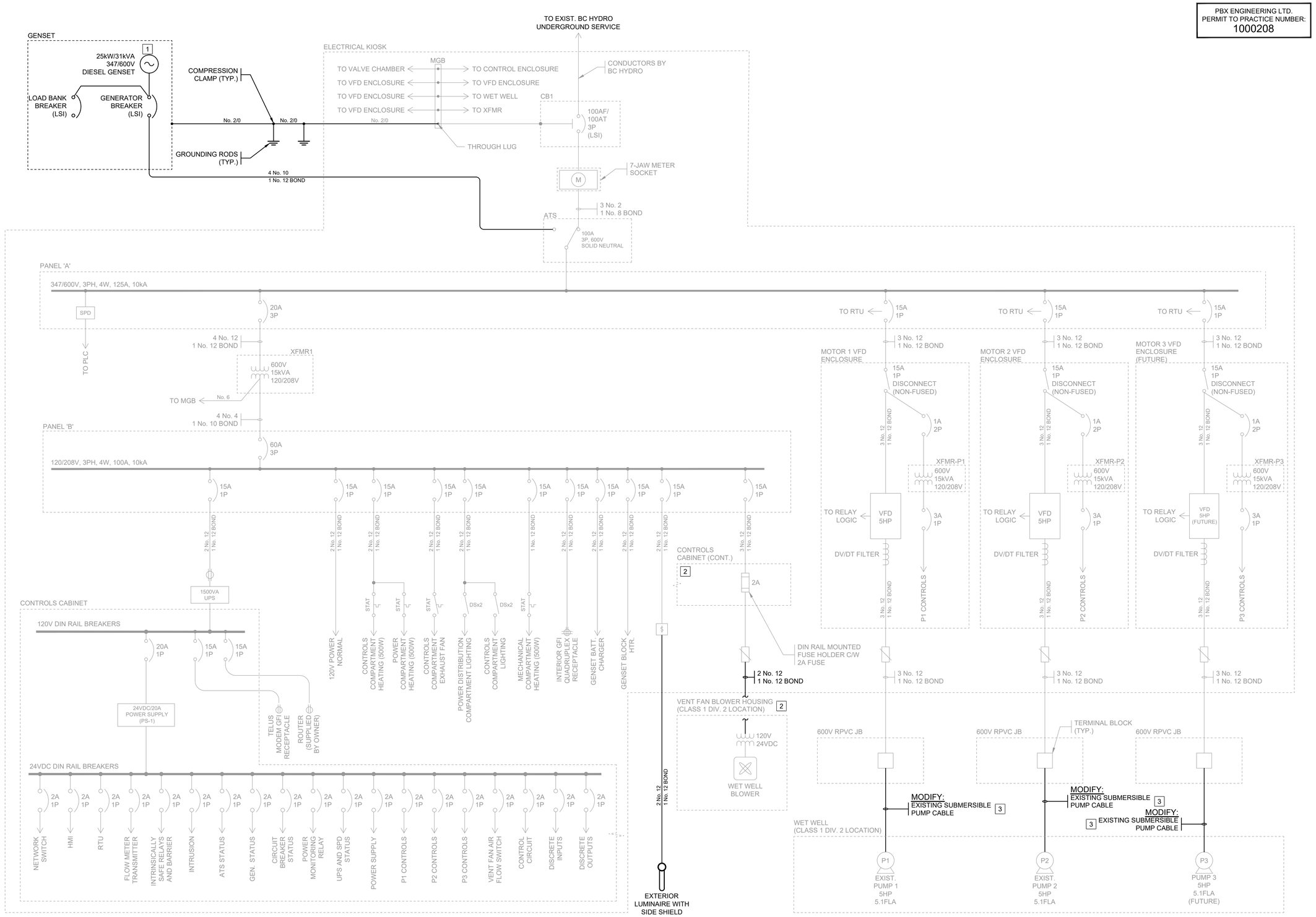
NANOOSE BAY SANITARY PUMPSTATION NO. 6

TITLE

KIOSK (3 OF 3)

Pump Station No. 6

DRAWING No.	REV.	SHEET
NBPS6–E–006	–	16/28



NOTES:

1. EXISTING GENERATOR TO BE RE-USED THROUGHOUT CONSTRUCTION AND UNTIL NEW GENERATOR HAS BEEN DELIVERED TO SITE.
2. VENDOR PACKAGE BLOWER. SEE SHOP DRAWINGS FOR ADDITIONAL DETAILS. BASIS OF DESIGN IS DEXON CANADA VENT FAN SMVOD SERIES.
3. DISCONNECT AND PULL BACK EXISTING PUMP CABLES. CONTRACTOR TO MEASURE AND CONFIRM EXISTING PUMP CABLE LENGTHS ARE SUFFICIENT TO REACH KIOSK CONDUIT ENTRY. CONTRACTOR TO MEGGER EXISTING PUMP CABLES AND PUMPS TO CONFIRM THEY ARE SUITABLE FOR RE-USE.

LEGEND	
	LIGHT GREY DENOTES EQUIPMENT SUPPLIED BY OWNER
	BOLD DENOTES EQUIPMENT TO BE SUPPLIED AND INSTALLED BY CONTRACTOR

ALL EQUIPMENT IS PROPOSED UNLESS NOTED OTHERWISE

ISSUED FOR TENDER NOT FOR CONSTRUCTION

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PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — 34602 — 2023-07-26

PROJECT NO.	220363
DRAWN	PBX
DESIGNED	MS
CHECKED	AT
APPROVED	AT
DATE	JUNE 2023
SCALE	AS SHOWN

CLIENT

REGIONAL DISTRICT OF NANAIMO

PROJECT

NANOOSE BAY SANITARY PUMPSTATION NO. 6

TITLE

POWER DISTRIBUTION SINGLE LINE DIAGRAM

Pump Station No. 6

DRAWING No.	REV.	SHEET
NBPS6–E–007	—	17/28

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PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — 31402 — MICHAEL SCOPATZ
2023-07-26

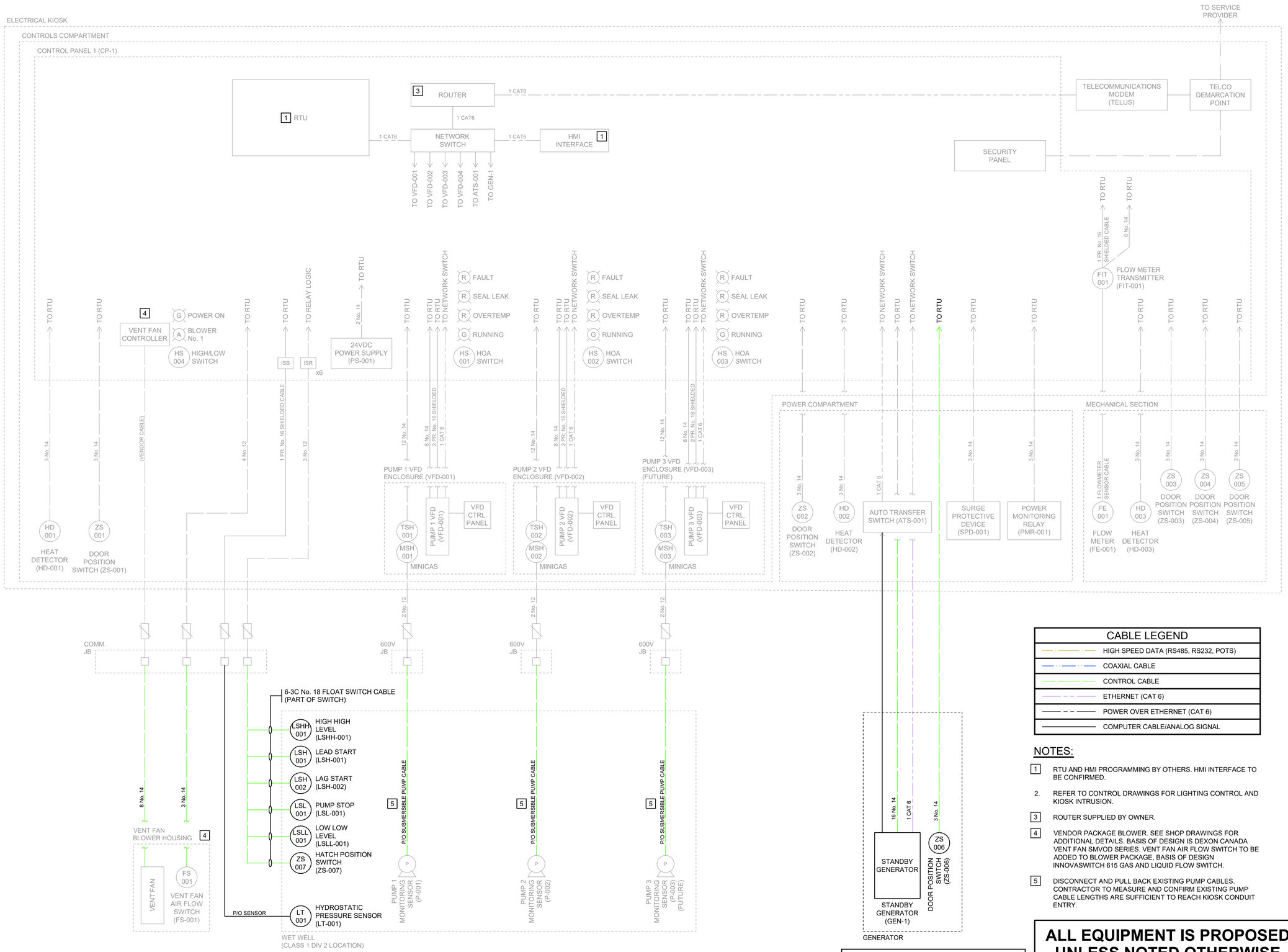
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DATE	JUNE 2023
SCALE	AS SHOWN

CLIENT
REGIONAL DISTRICT OF NANAIMO

PROJECT
NANOOSE BAY SANITARY PUMPSTATION NO. 6

TITLE
COMMUNICATION AND INSTRUMENTATION BLOCK DIAGRAM
Pump Station No. 6

DRAWING No.	REV.	SHEET
NBPS6–E–008	—	18/28



CABLE LEGEND
HIGH SPEED DATA (RS485, RS232, POTS)
COAXIAL CABLE
CONTROL CABLE
ETHERNET (CAT 6)
POWER OVER ETHERNET (CAT 6)
COMPUTER CABLE/ANALOG SIGNAL

NOTES:

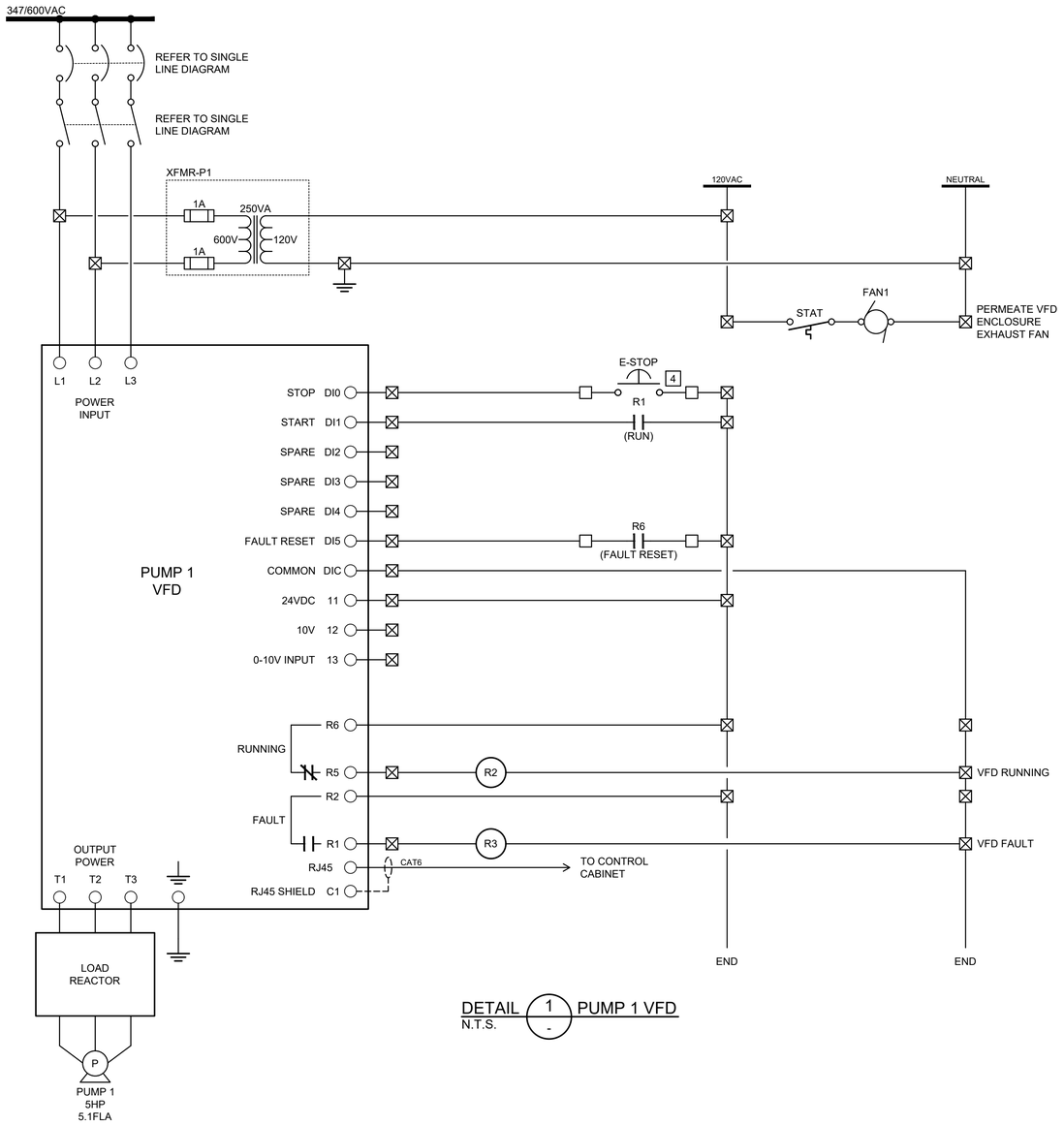
1. RTU AND HMI PROGRAMMING BY OTHERS. HMI INTERFACE TO BE CONFIRMED.
2. REFER TO CONTROL DRAWINGS FOR LIGHTING CONTROL AND KIOSK INTRUSION.
3. ROUTER SUPPLIED BY OWNER.
4. VENDOR PACKAGE BLOWER. SEE SHOP DRAWINGS FOR ADDITIONAL DETAILS. BASIS OF DESIGN IS DEXON CANADA VENT FAN SMVOD SERIES. VENT FAN AIR FLOW SWITCH TO BE ADDED TO BLOWER PACKAGE, BASIS OF DESIGN INNOVASWITCH 615 GAS AND LIQUID FLOW SWITCH.
5. DISCONNECT AND PULL BACK EXISTING PUMP CABLES. CONTRACTOR TO MEASURE AND CONFIRM EXISTING PUMP CABLE LENGTHS ARE SUFFICIENT TO REACH KIOSK CONDUIT ENTRY.

LEGEND	
	LIGHT GREY DENOTES EQUIPMENT SUPPLIED BY OWNER
	BOLD DENOTES EQUIPMENT TO BE SUPPLIED AND INSTALLED BY CONTRACTOR

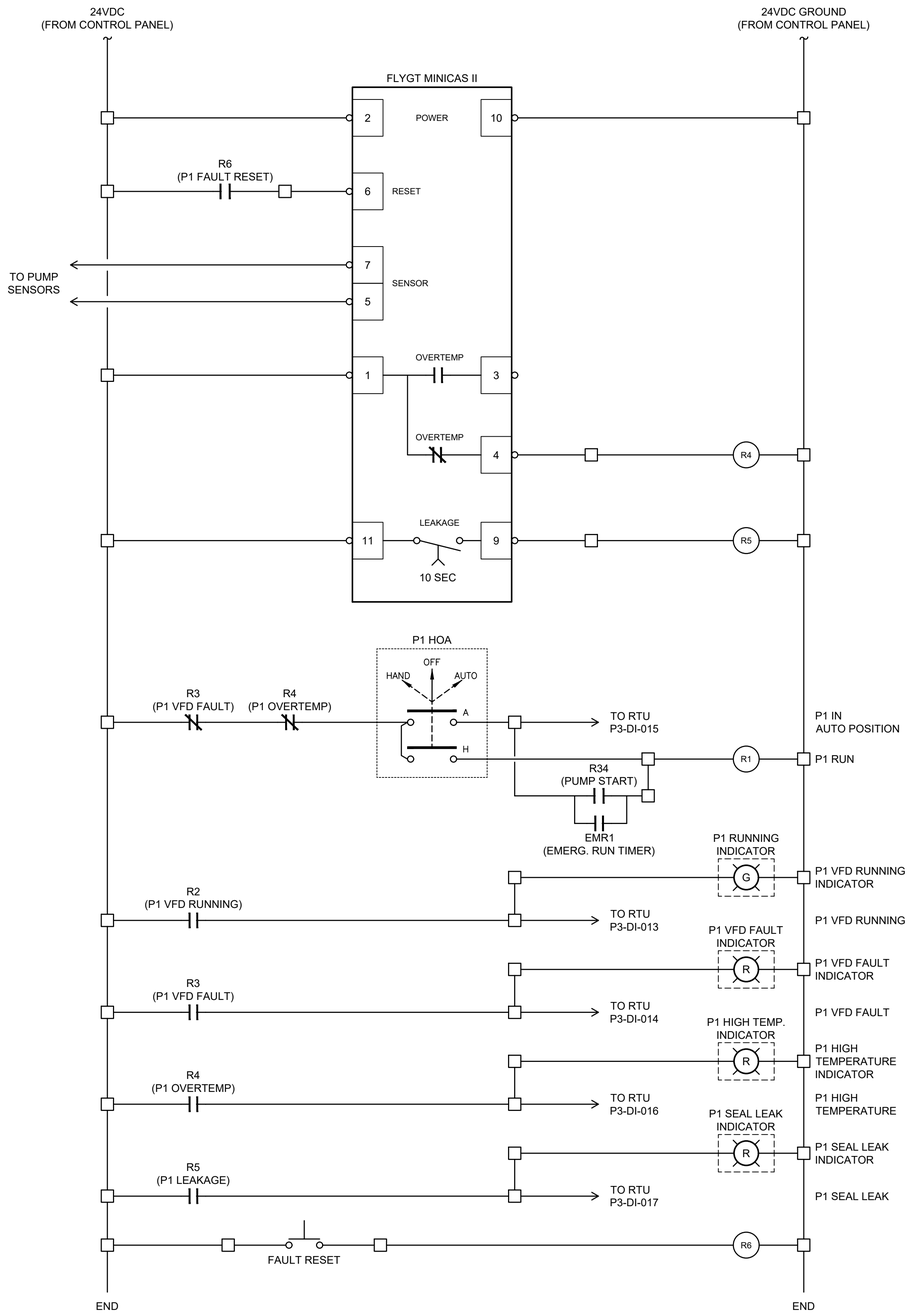
ALL EQUIPMENT IS PROPOSED UNLESS NOTED OTHERWISE

**ISSUED FOR TENDER
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DETAIL 1 PUMP 1 VFD
N.T.S.



NOTES:

1. INTERNAL CABINET WIRING SHALL BE TEW (TINNED), No. 14 FOR 120VAC CIRCUITS, AND No. 18 FOR 24VDC CIRCUITS. UNLESS NOTED OTHERWISE.
2. CONTRACTOR TO PROVIDE DETAILED SHOP DRAWINGS FOR REVIEW PRIOR TO FABRICATION. INTERIOR AND EXTERIOR PANEL LAYOUTS AND WIRING DIAGRAMS TO BE PROVIDED AS PART OF THE SUBMISSION. REFER TO SPECIFICATIONS FOR SPECIFIC LAYOUT DETAILS AND EQUIPMENT REQUIREMENTS.
3. FERRULES SHALL BE USED ON CONTROL CABLING TERMINATIONS.

[4] E-STOP IS PART OF 3-POLE SWITCH LOCATED ON CONTROL PANEL.

5. INCLUDE ALLEN BRADLEY POWERFLEX MODEL 20-750-2262C-2R (24 VOLT DC) I/O MODULE.

TERMINAL BLOCK LEGEND

- INTRINSICALLY SAFE BARRIER ENCLOSURE
- CONTROL CABINET
- JUNCTION BOX
- VFD ENCLOSURE

FUNCTIONAL DESIGN ONLY
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PROJECT NO.	220363
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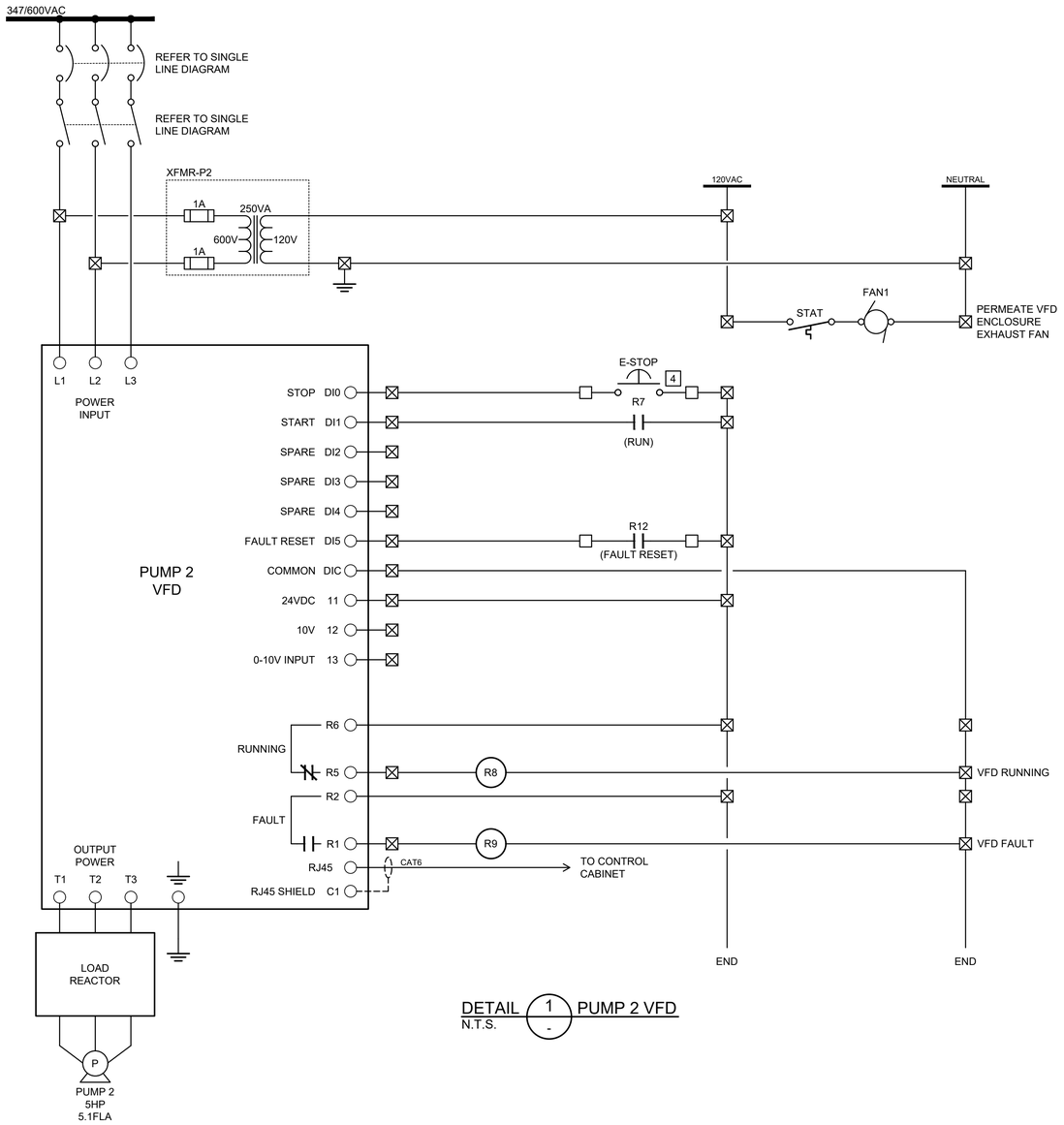
CLIENT
REGIONAL DISTRICT OF NANAIMO

PROJECT
NANOOSE BAY SANITARY PUMPSTATION NO. 6

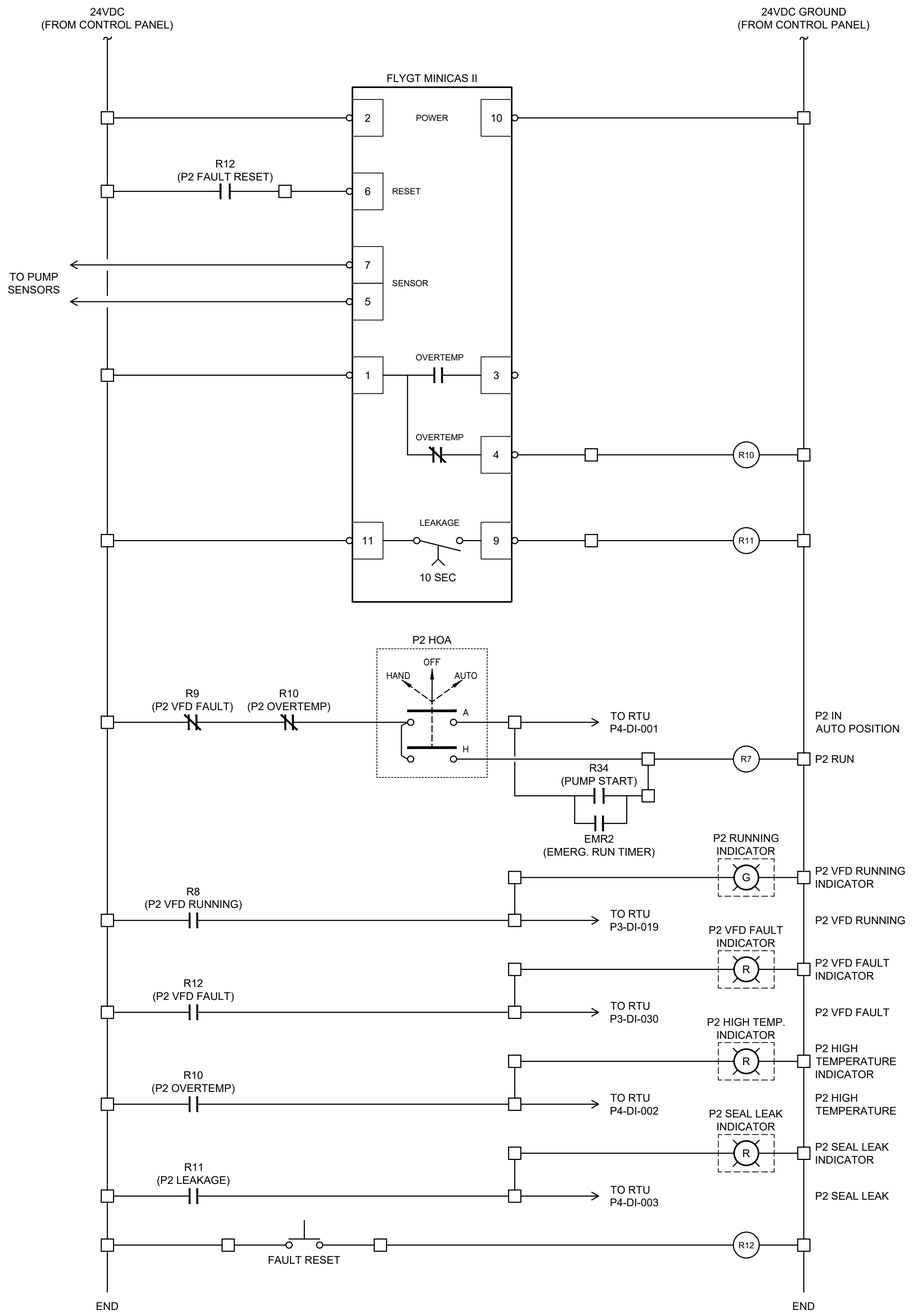
TITLE
CONTROLS (1 OF 7)
Pump Station No. 6

DRAWING No.	REV.	SHEET
NBPS6–E–009	—	19/28

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DETAIL 1 PUMP 2 VFD
N.T.S.



NOTES:

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3. FERRULES SHALL BE USED ON CONTROL CABLING TERMINATIONS.

[4] E-STOP IS PART OF 3-POLE SWITCH LOCATED ON CONTROL PANEL.

5. INCLUDE ALLEN BRADLEY POWERFLEX MODEL 20-750-2262C-2R (24 VOLT DC) I/O MODULE.

TERMINAL BLOCK LEGEND

- INTRINSICALLY SAFE BARRIER ENCLOSURE
- CONTROL CABINET
- JUNCTION BOX
- VFD ENCLOSURE

FUNCTIONAL DESIGN ONLY
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PROVINCE OF BRITISH COLUMBIA
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2023-07-26

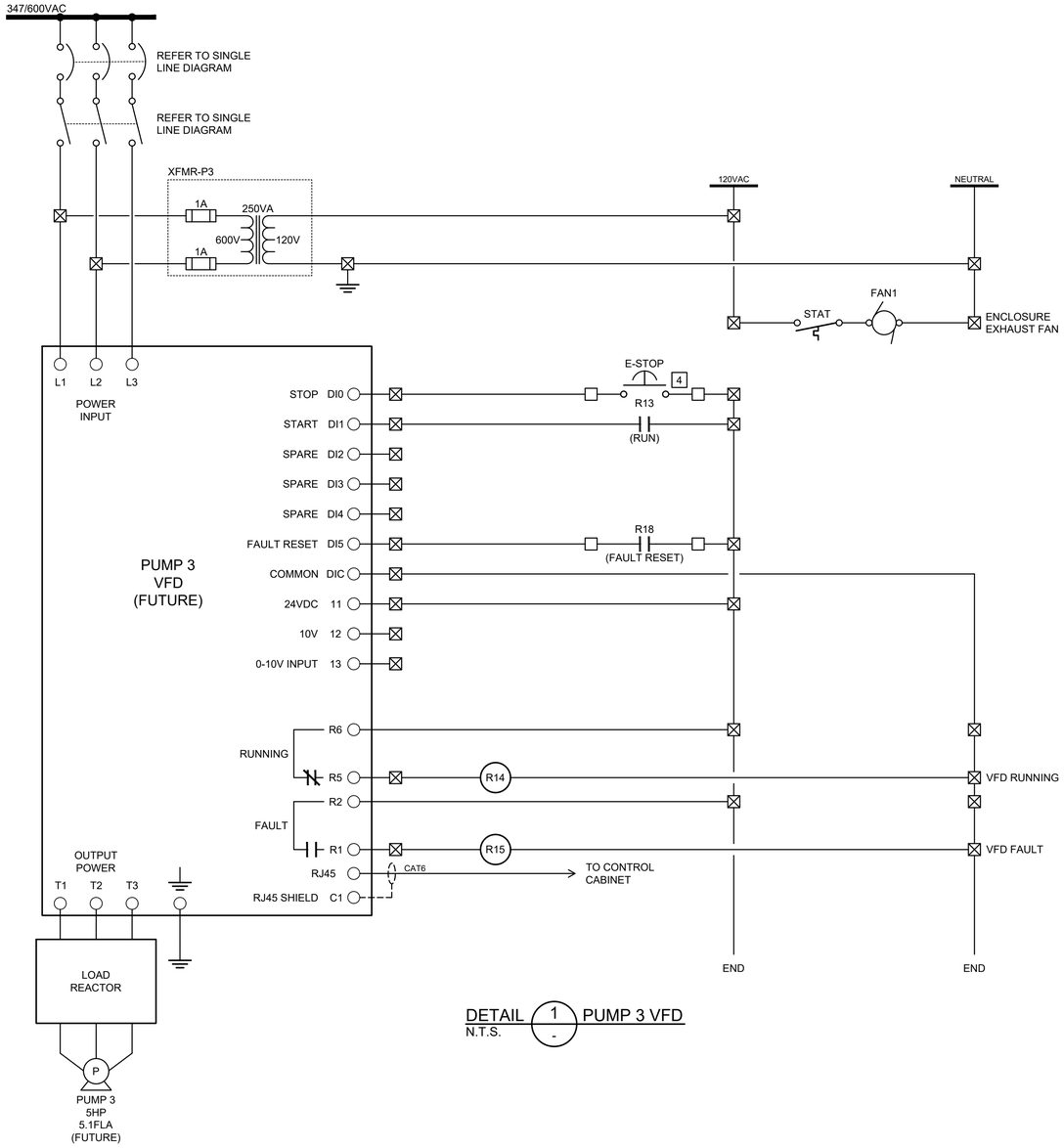
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REGIONAL DISTRICT OF NANAIMO

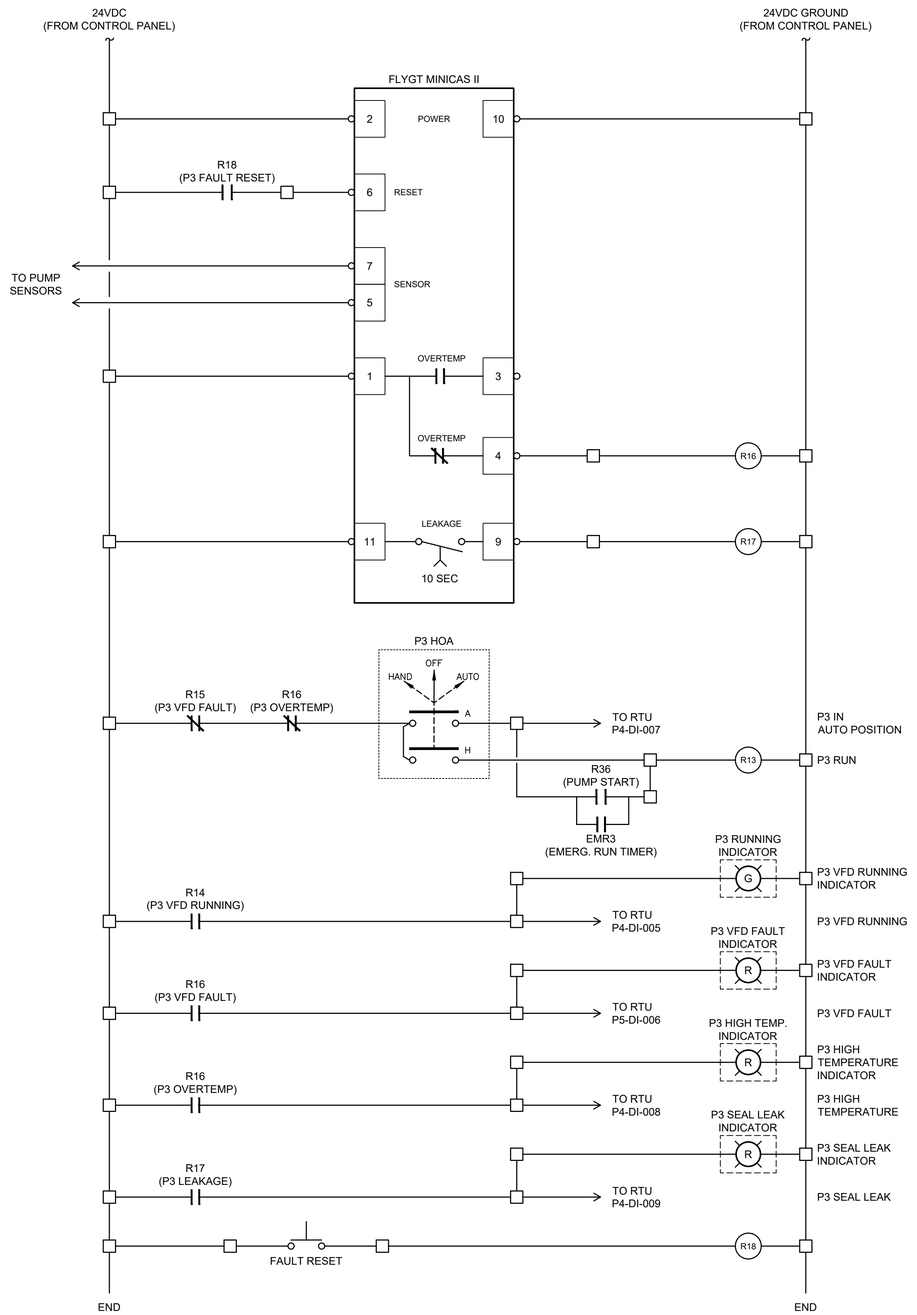
PROJECT
NANOOSE BAY SANITARY PUMPSTATION NO. 6

TITLE
CONTROLS (2 OF 7)
Pump Station No. 6

DRAWING No.	REV.	SHEET
NBPS6–E–010	—	20/28



DETAIL 1 PUMP 3 VFD
N.T.S.



NOTES:

1. INTERNAL CABINET WIRING SHALL BE TEW (TINNED), No. 14 FOR 120VAC CIRCUITS, AND No. 18 FOR 24VDC CIRCUITS. UNLESS NOTED OTHERWISE.
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3. FERRULES SHALL BE USED ON CONTROL CABLING TERMINATIONS.

[4] E-STOP IS PART OF 3-POLE SWITCH LOCATED ON CONTROL PANEL.

5. INCLUDE ALLEN BRADLEY POWERFLEX MODEL 20-750-2262C-2R (24 VOLT DC) I/O MODULE.

TERMINAL BLOCK LEGEND

- INTRINSICALLY SAFE BARRIER ENCLOSURE
- CONTROL CABINET
- JUNCTION BOX
- VFD ENCLOSURE

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A. J. THOMPSON
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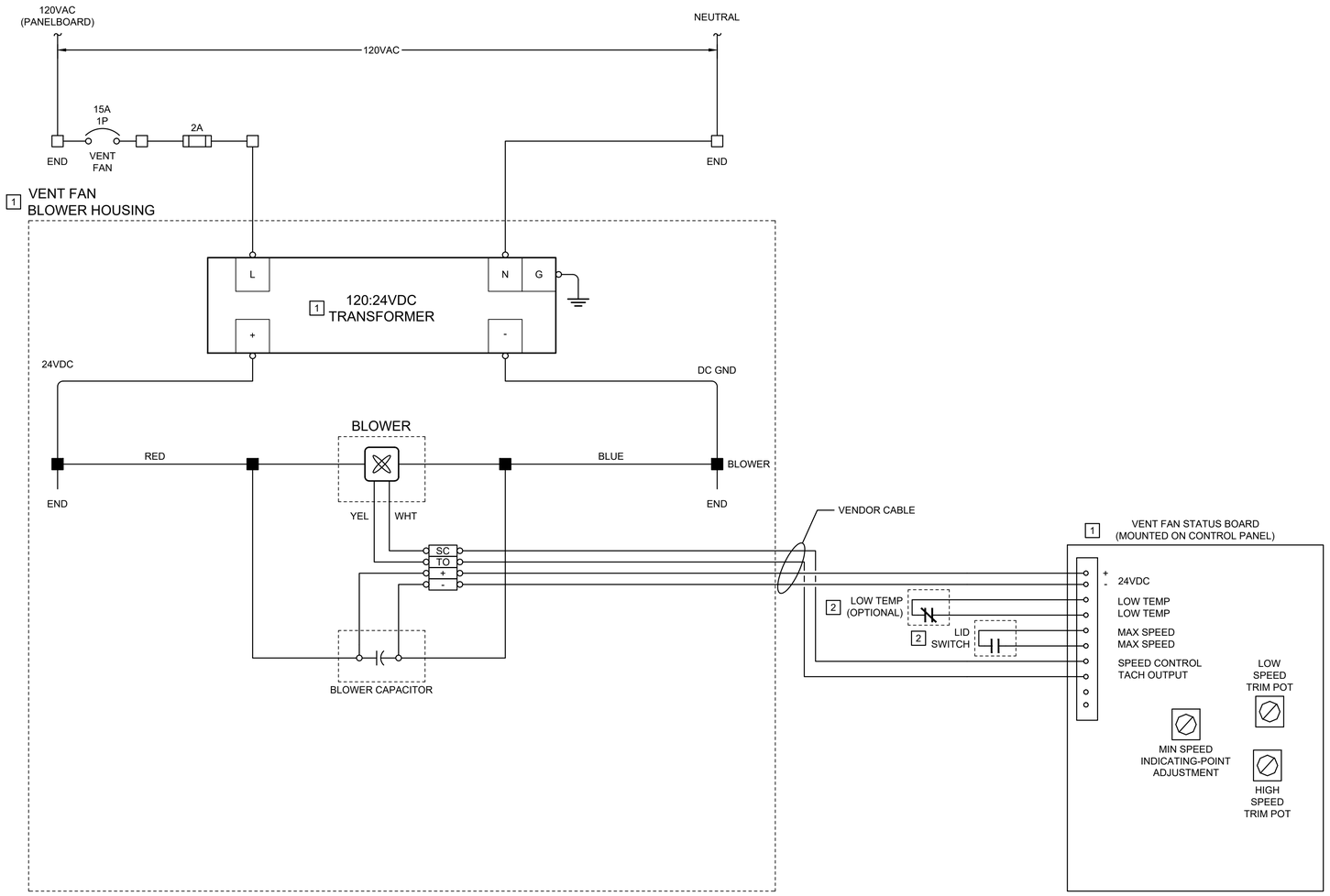
PROJECT
NANOOSE BAY SANITARY PUMPSTATION NO. 6

TITLE
CONTROLS (3 OF 7)

Pump Station No. 6

DRAWING No.	REV.	SHEET
NBPS6–E–011	—	21/28

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NOTES:

1. VENDOR PACKAGE BLOWER. SEE SHOP DRAWINGS FOR ADDITIONAL DETAILS. BASIS OF DESIGN IS DEXON CANADA VENT FAN SMVOD SERIES. VENT FAN AIR FLOW SWITCH TO BE ADDED TO BLOWER PACKAGE.
2. LOW TEMPERATURE SWITCH AND LIT SWITCH MUST BE DRY CONTACT.

TERMINAL BLOCK LEGEND

- INTRINSICALLY SAFE BARRIER ENCLOSURE
- CONTROL CABINET
- JUNCTION BOX
- VFD ENCLOSURE

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PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA 34602 — 2023-07-26

PROJECT NO.	220363
DRAWN	PBX
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CHECKED	AT
APPROVED	AT
DATE	JUNE 2023
SCALE	AS SHOWN

CLIENT

REGIONAL DISTRICT OF NANAIMO

PROJECT

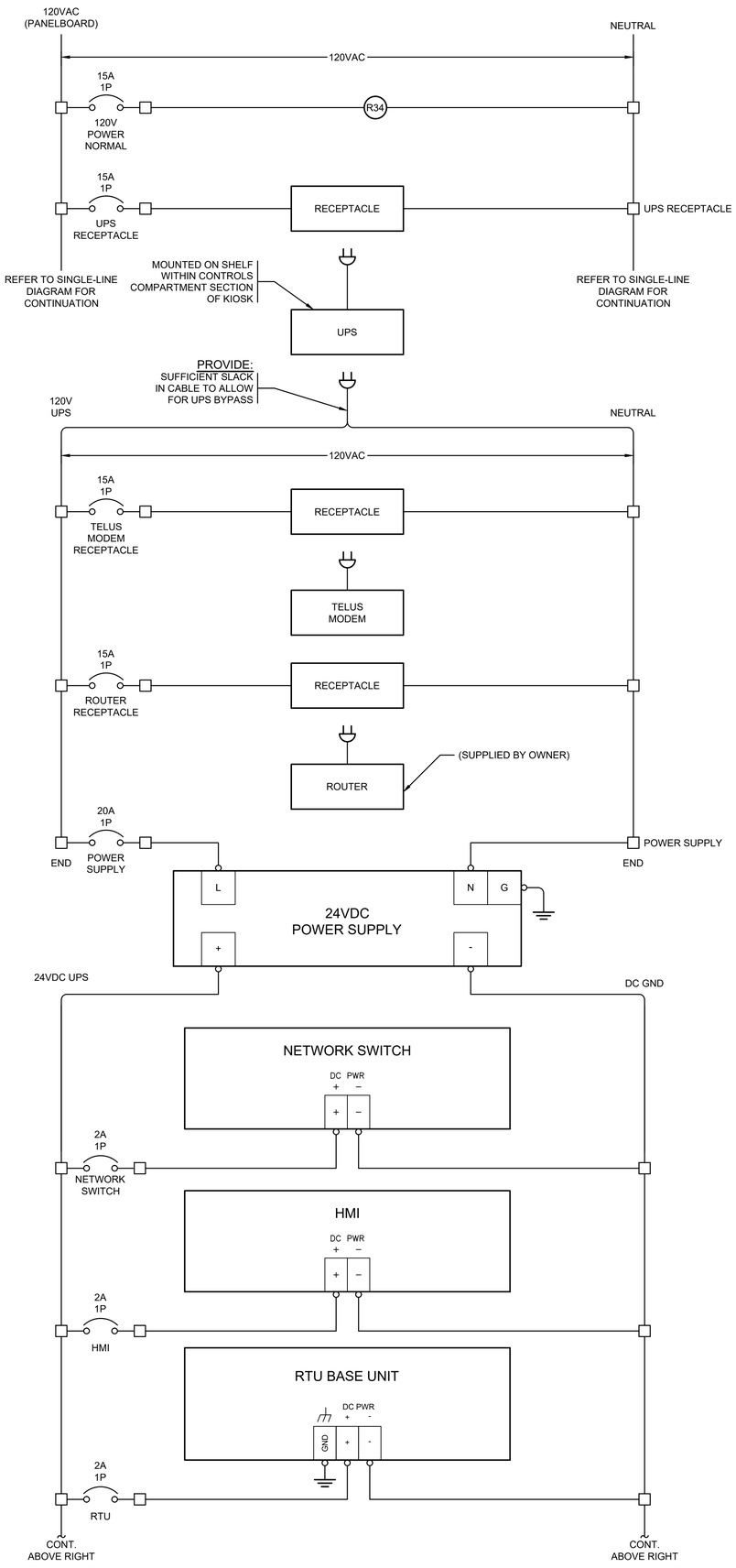
NANOOSE BAY
SANITARY
PUMPSTATION
NO. 6

TITLE

CONTROLS (4 OF 7)

Pump Station No. 6

DRAWING No.	REV.	SHEET
NBPS6–E–012	—	22/28



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SCALE	AS SHOWN

CLIENT

REGIONAL DISTRICT OF NANAIMO

PROJECT

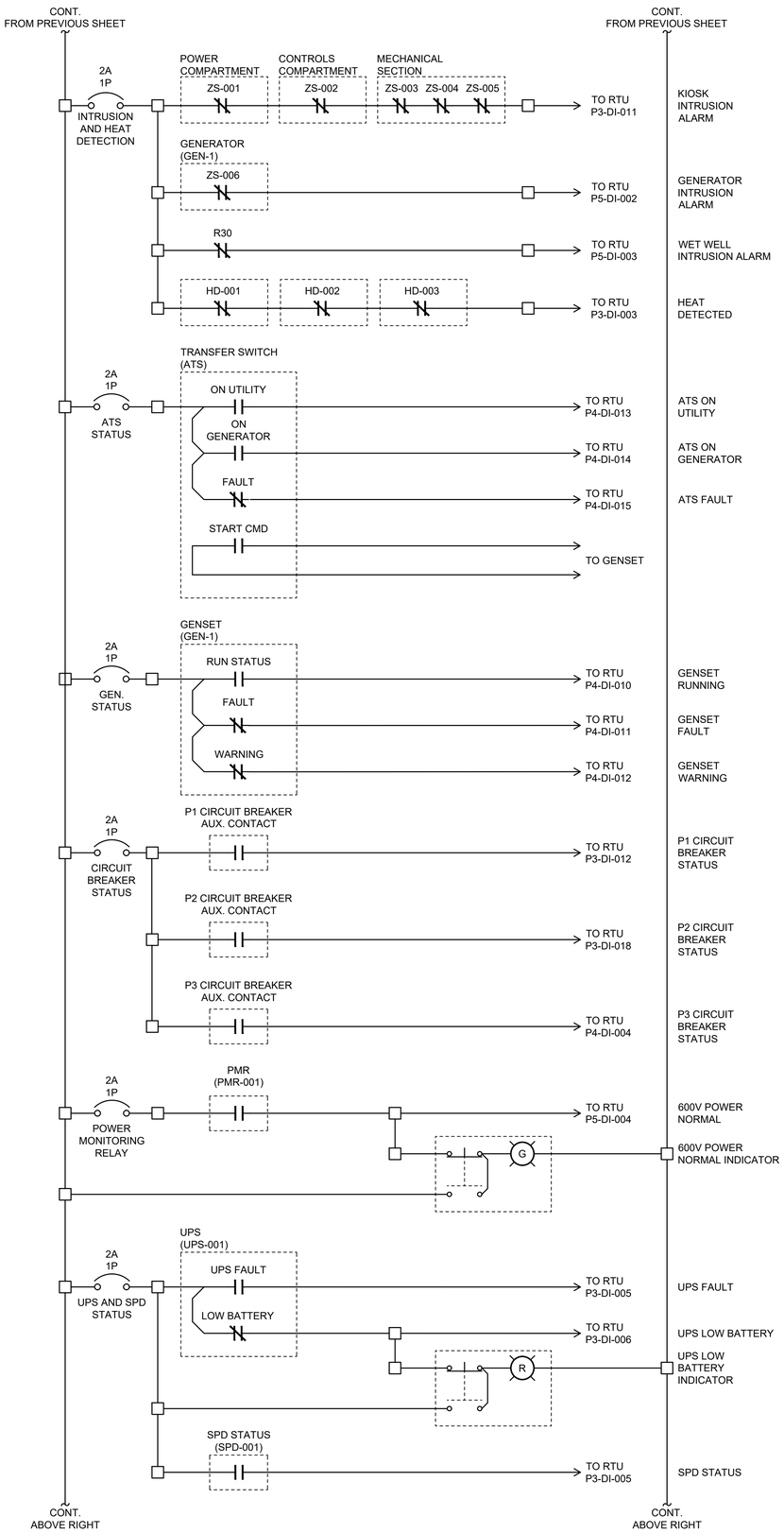
NANOOSE BAY
SANITARY
PUMPSTATION
NO. 6

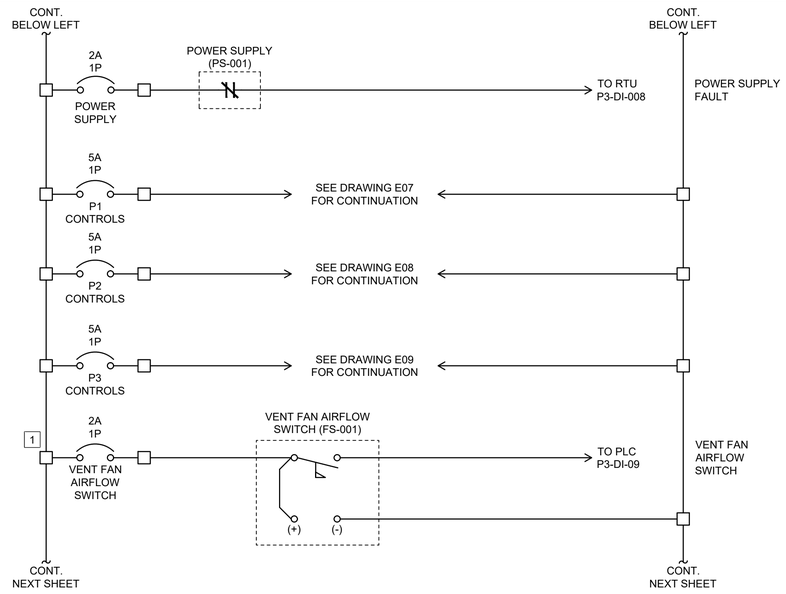
TITLE

CONTROLS (5 OF 7)

Pump Station No. 6

DRAWING No.	REV.	SHEET
NBPS6–E–013	—	23/28





NOTES:

1. VENT FAN AIR FLOW SWITCH TO BE INSTALLED IN WET WELL BLOWER ENCLOSURE, BASIS OF DESIGN INNOVASWITCH 615 GAS AND LIQUID FLOW SWITCH.

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PROFESSIONAL ENGINEER — PROVINCE OF BRITISH COLUMBIA — 34602 — MICHAEL SCHMIDT
2023-07-26

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CHECKED	AT
APPROVED	AT
DATE	JUNE 2023
SCALE	AS SHOWN

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REGIONAL DISTRICT OF NANAIMO

PROJECT

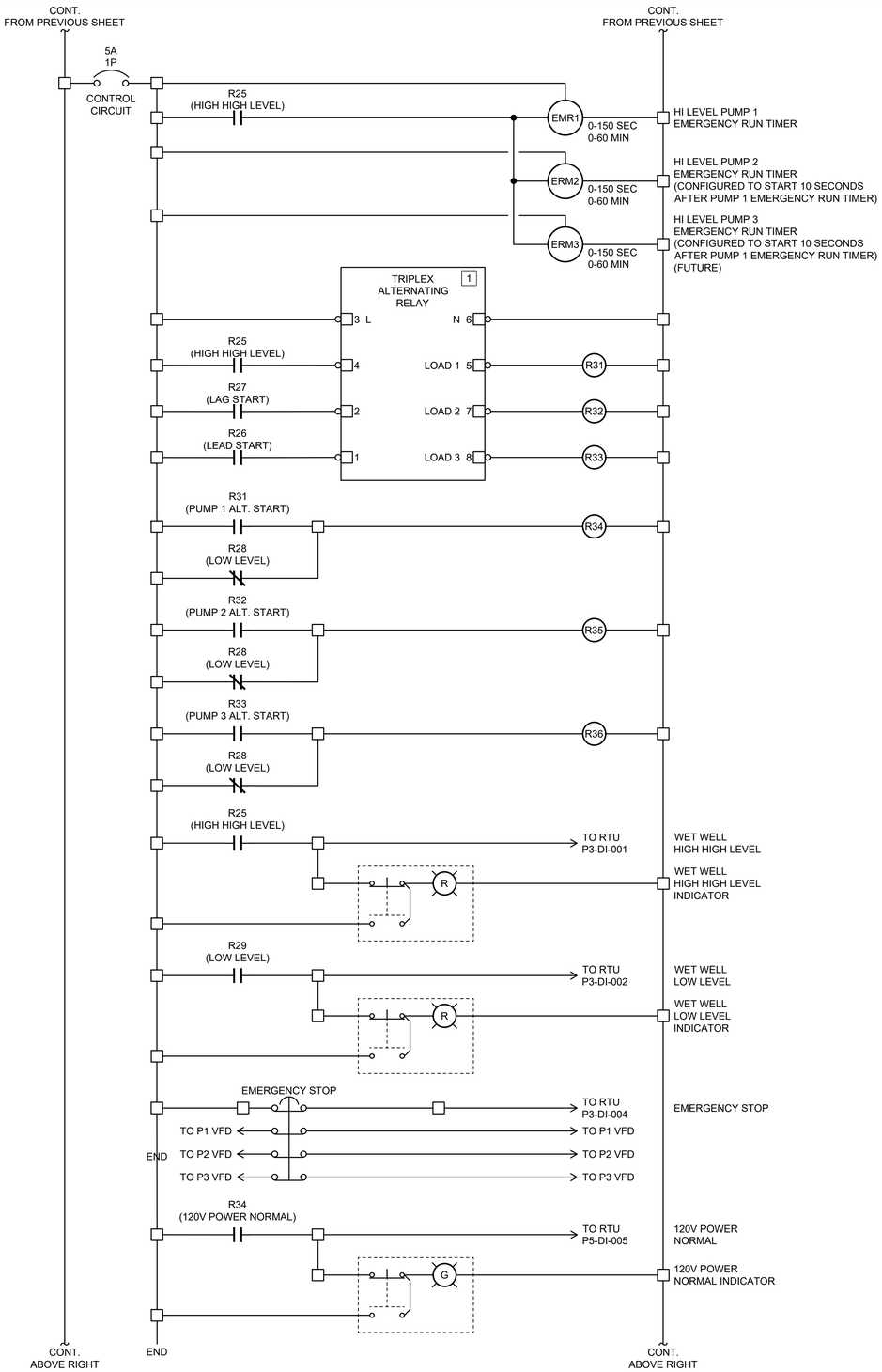
NANOOSE BAY SANITARY PUMPSTATION NO. 6

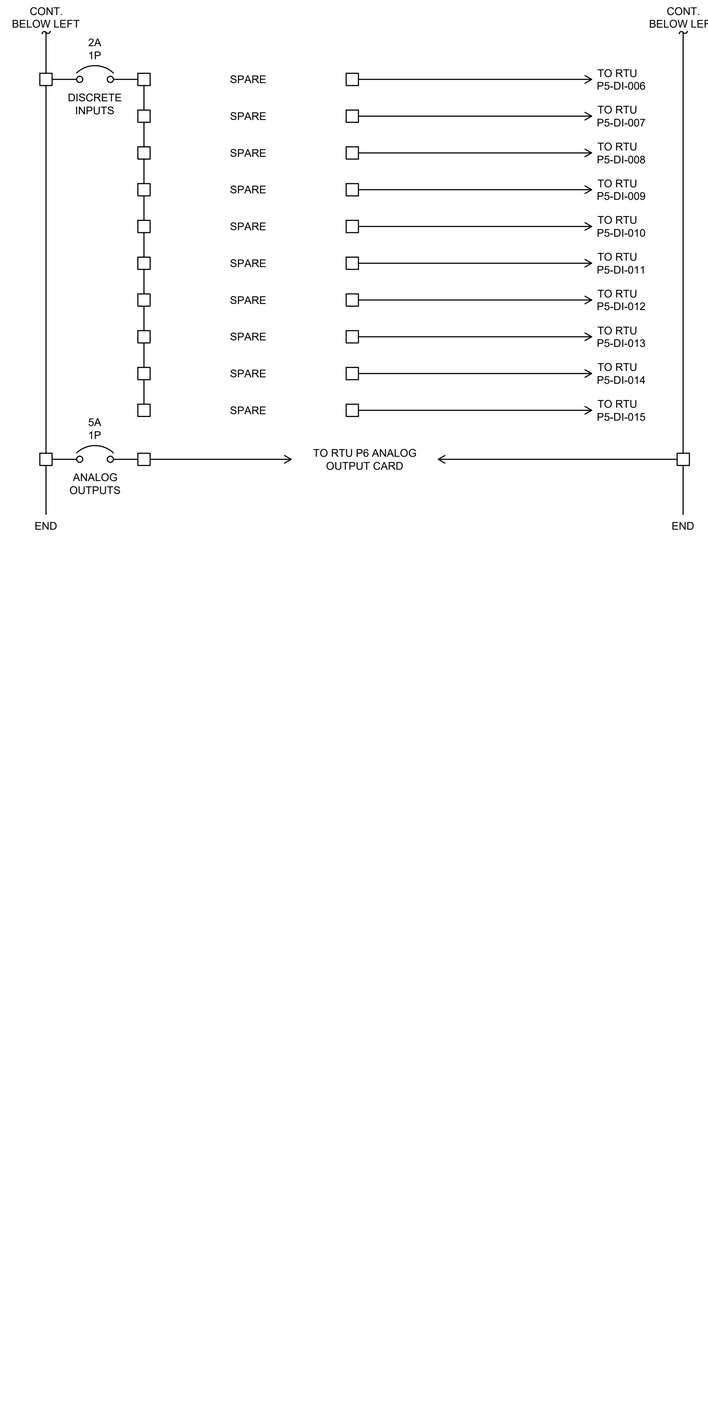
TITLE

CONTROLS (6 OF 7)

Pump Station No. 6

DRAWING No.	REV.	SHEET
NBPS6-E-014	—	24/28





NOTES:

1 TRIPLE ALTERNATING RELAY BASIS OF DESIGN: MACROMATIC ATP SERIES TRIPLEX (ATP024A1R) WITH OPTIONAL SWITCH TO OPERATE AS DUPLEXOR.

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PROJECT

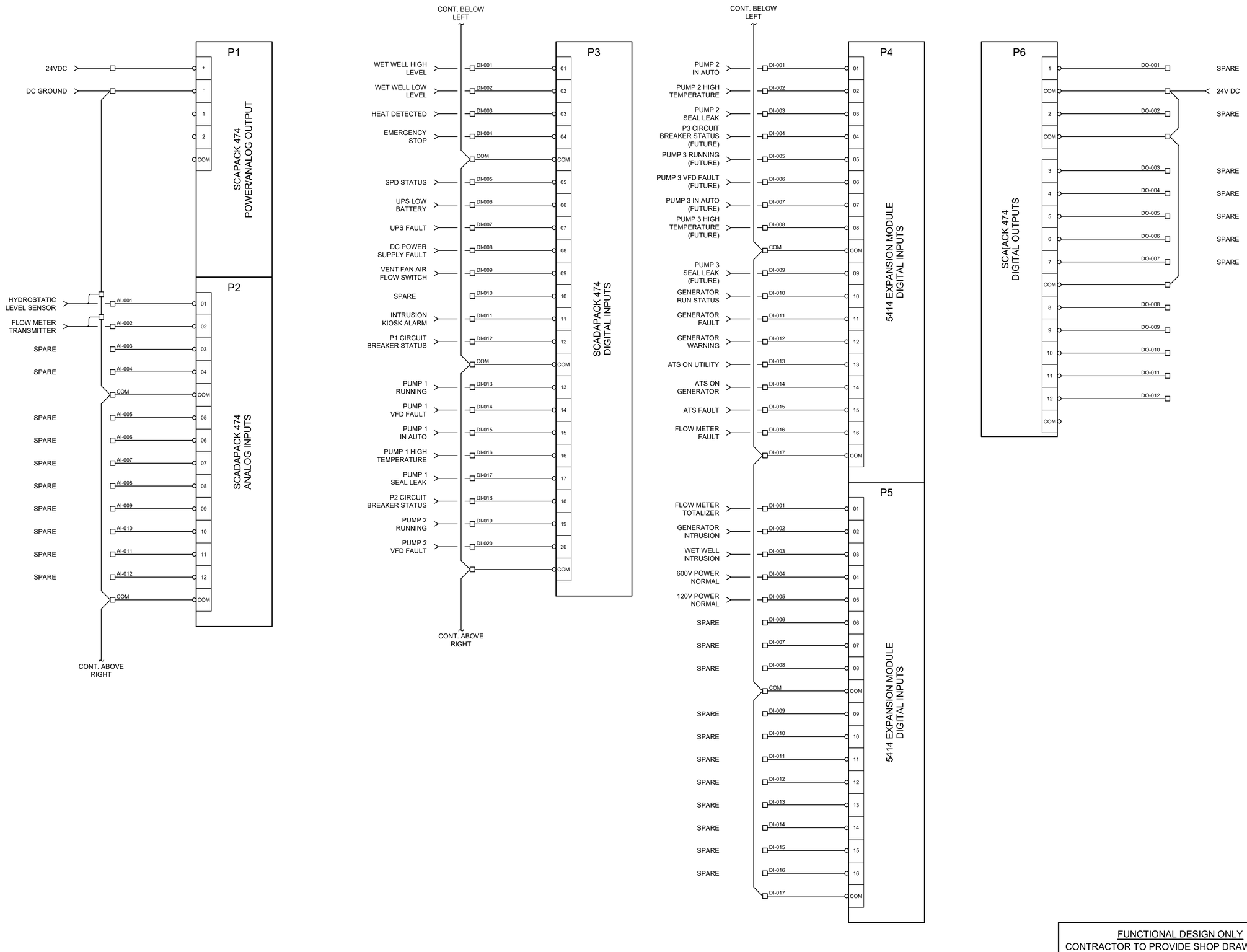
NANOOSE BAY
SANITARY
PUMPSTATION
NO. 6

TITLE

CONTROLS (7 OF 7)

Pump Station No. 6

DRAWING No.	REV.	SHEET
NBPS6–E–015	–	25/28



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PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA M. J. SCOPICK 31402
2023-07-26

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SCALE	AS SHOWN

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REGIONAL DISTRICT OF NANAIMO

PROJECT

NANOOSE BAY SANITARY PUMPSTATION NO. 6

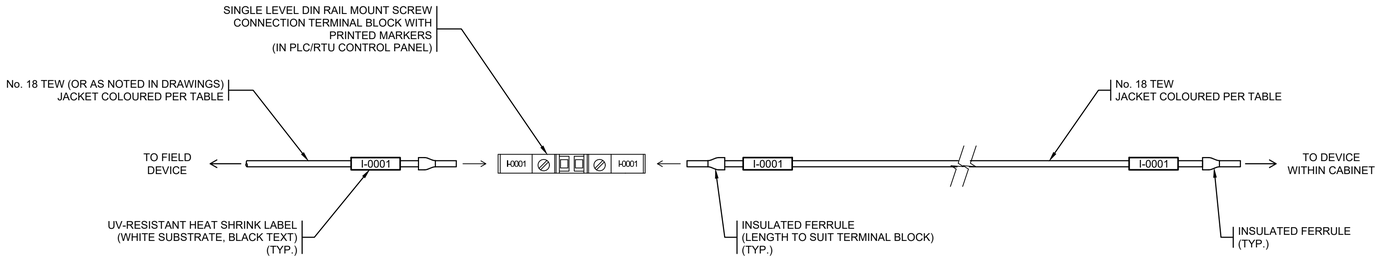
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Pump Station No. 6

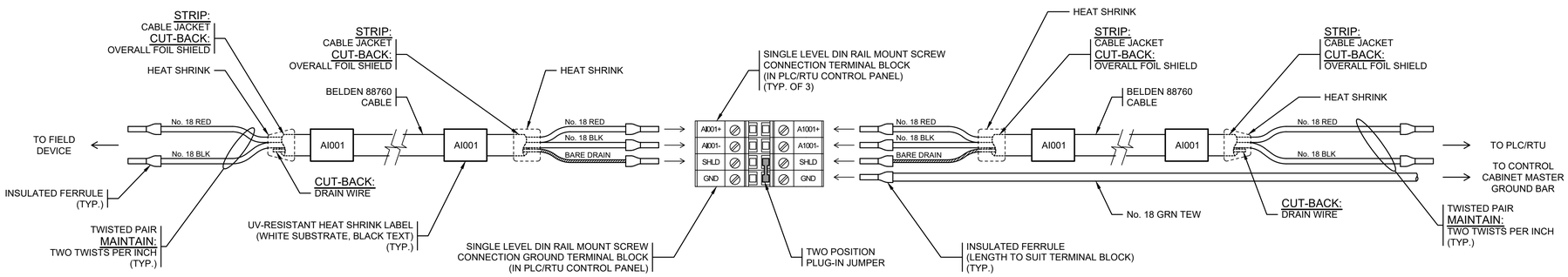
DRAWING No.	REV.	SHEET
NBPS6-E-016	—	26/28

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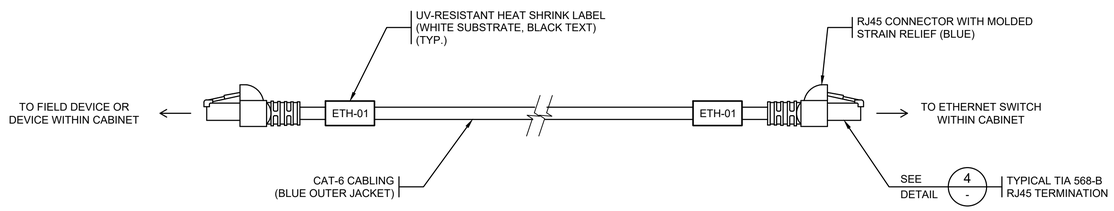


DETAIL 1 N.T.S. — TYPICAL DISCRETE CONTROL FIELD WIRING TERMINATION METHOD

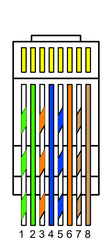
INSTRUMENTATION FIELD WIRING COLOUR CODE	
FUNCTION	COLOUR
AC HOT	BLACK
AC NEUTRAL	WHITE
DC POSITIVE	RED
DC NEGATIVE	BROWN
GROUND	GREEN



DETAIL 2 N.T.S. — TYPICAL ANALOG CONTROL FIELD WIRING TERMINATION METHOD

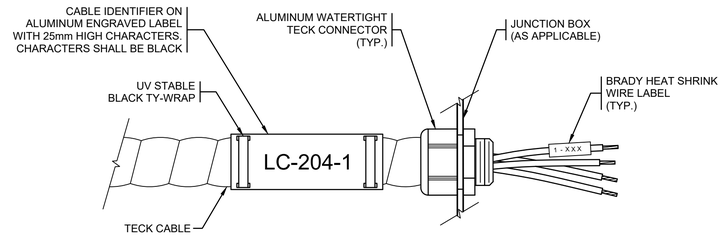


DETAIL 3 N.T.S. — TYPICAL ETHERNET CABLING TERMINATION METHOD



PIN	COLOUR
1	WHT/ORG
2	GRN
3	WHT/GRN
4	BLU
5	WHT/BLU
6	ORG
7	WHT/BRN
8	BRN

DETAIL 4 N.T.S. — TYPICAL TIA 568-A RJ45 TERMINATION (CLIP FACING AWAY)



DETAIL 5 N.T.S. — TECK CABLE TERMINATION

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NANOOSE BAY SANITARY PUMPSTATION NO. 6

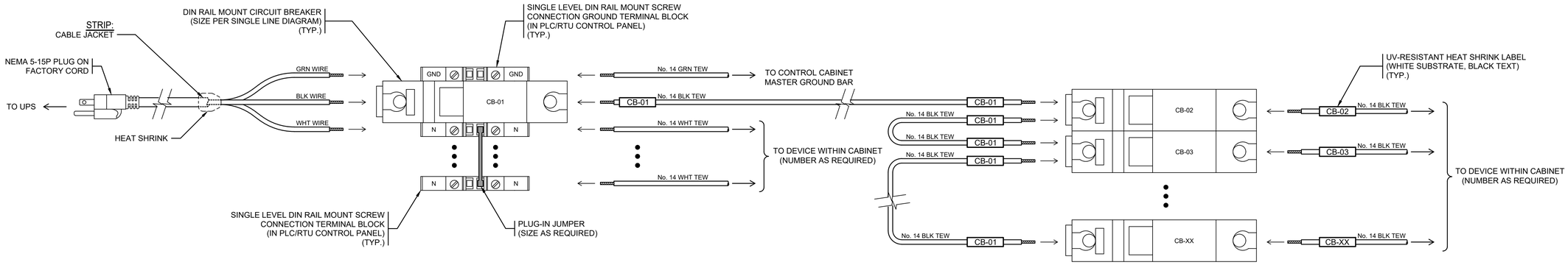
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TYPICAL PLC–RTU CABINET WIRING TERMINATIONS (1 OF 2)

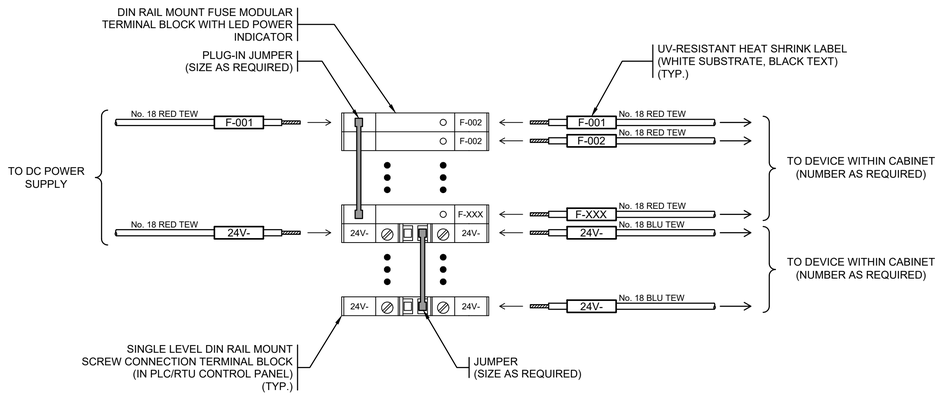
Pump Station No. 6

DRAWING No.	REV.	SHEET
NBPS6–E–017	–	27/28

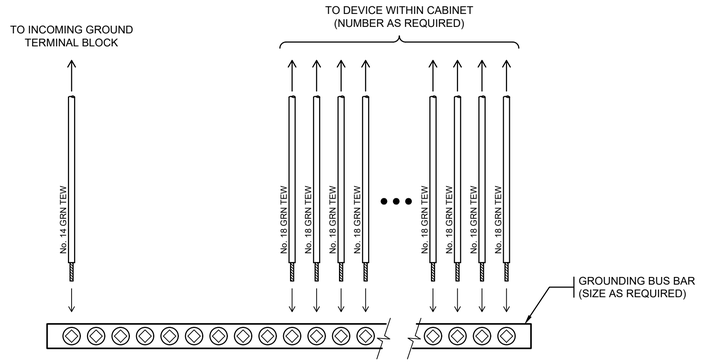
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DETAIL 1 - TYPICAL 120V AC DISTRIBUTION WIRING TERMINATION METHOD
N.T.S.



DETAIL 2 - TYPICAL DC DISTRIBUTION WIRING TERMINATION METHOD
N.T.S.



DETAIL 3 - TYPICAL MASTER GROUND BUS TERMINATION METHOD
N.T.S.

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NANOOSE BAY SANITARY PUMPSTATION NO. 6

TITLE

TYPICAL PLC–RTU CABINET WIRING TERMINATIONS (2 OF 2)

Pump Station No. 6

DRAWING No.	REV.	SHEET
NBPS6–E–018	—	28/28