FSPL TRANSPORTATION IMPROVEMENTS
ELECTRICAL PACKAGE

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PREPARED BY:

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DESIGN BY	E. MICKA
DRAWN BY	PBX
APPROVED	J. VASQUEZ
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GREATER VANCOUVER GATEWAY 2030
OPTIONS STUDY
FSPL TRANSPORTATION IMPROVEMENTS
TITLE SHEET

SIZE	DWG.	SHEET	REV.
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VANCOUVER FRASER PORT AUTHORITY
FSPL TRANSPORATION IMPROVEMENTS - ELECTRICAL PACKAGE

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TE–13000–1523	6	SFPR & ELEVATOR ROAD – FIBRE SPLICE DETAIL – V5–18

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SYMBOL LEGEND

SYMBOL	DESCRIPTION
ACU	AUTONOMOUS CONTROL UNIT
CB	CRASH BAR
DS	DOOR SWITCH
DST	DOOR STRIKE
EML	ELECTRO MECHANICAL LOCK
EPB	ELECTRIC PIEZO BUZZER
FCU	FLASHER CONTROL UNIT
HID	CARD READER
I	INTERCOM
IMS	INTERCOM MASTER STATION
IAMP	INTERCOM AMPLIFIER
I/O	INPUT/OUTPUT BOARD
LD	LOOP DETECTOR
LPR–P	LPR FIELD PROCESSOR
MD	MOTION DETECTOR
ML	MAGLOCK
MIC	MICROPHONE
NS	NETWORK SWITCH
NVR	NETWORK VIDEO RECORDER
PDU	POWER DISTRIBUTION UNIT
PSC	PROFINET SCANNER (PLC)
PLC	PROGRAMMABLE LOGIC CONTROLLER
RJ45	RJ45 RECEPTACLE
RLY	IP RELAY
RRE	REMOTE READER ELECTRONICS
RRE2	REMOTE READER ELECTRONICS (X2)
RX/TX	WIRELESS TRANSCEIVER
SBC	SIGN BOARD CONTROLLER (DMS)
SC5	SIGN CONTROLLER 5 (DMS)
TPC	TOUCH SCREEN PC
UPS	UNINTERRUPTIBLE POWER SUPPLY

SYMBOL	DESCRIPTION
	SECURITY CLIENT TERMINAL (REMOVABLE)
	LANE SIGNALS
	AUTOMATED LIFT GATE
	DYNAMIC MESSAGE SIGN (LARGE LED SIGN FOR ROADWAY TRAFFIC)
	DYNAMIC MESSAGE SIGN (SMALL LED SIGN FOR INSTRUCTIONS)
L	VEHICLE DETECTOR STATION (VDS)
P/D	PROCEED/DENIED SIGN
S/P/D	STOP/PROCEED/DENIED SIGN
S/P/P	STOP/PROCESS/PROCEED SIGN
S/P/P/D	STOP/PROCESS/PROCEED/DENIED SIGN
S/P/W/P/D	STOP/PROCESS/WAIT/PROCEED/DENIED SIGN
S/W/P/D	STOP/WAIT/PROCEED/DENIED SIGN
F	ISLAND FLASHER
PP 3 753	PATCH PANEL DESIGNATION DETAIL No. 3, SHEET No. 753
1 705	SPLICE CLOSURE DESIGNATION DETAIL No. 1, SHEET No. 705
S	STROBE
	SPEAKER
	CONTROL CABINET
	OPERATOR CONTROL BOOTH
	CONTROL KIOSK
	ULTRA SONIC SENSOR
	HUMAN – MACHINE INTERFACE (TOUCH SCREEN)

SYMBOL	DESCRIPTION
	PROPOSED LUMINAIRE POLE (SINGLE)
F	LUMINAIRE POLE (SINGLE) 'F' INDICATES FRANGIBLE BASE
	LUMINAIRE POLE (DOUBLE)
	SIGNAL POLE WITH SIGNAL HEAD MOUNTED ON SIDE
	COMBINATION LUMINAIRE/TRAFFIC SIGNAL POLE
	PEDESTRIAN LIGHTING
	PROPOSED POST TOP LUMINAIRE
	LUMINAIRE MOUNTED ON PARAPET/CORBEL
10	JUNCTION BOX – No. DENOTES TYPE
10	PROPOSED JUNCTION BOX – No. DENOTES TYPE
C	COMMUNICATIONS JUNCTION BOX
	CONCRETE JUNCTION BOX
V	CONCRETE VAULT
	POWER POLE
	POWER/TELEPHONE POLE
	TELEPHONE POLE
	LANE CONTROL SIGNAL HEAD
I	INTERCOM W/INTEGRATED CAMERA
	FIXED IP CCTV CAMERA
	PTZ IP CCTV CAMERA
LPR	LICENSE PLATE READER (LPR) CAMERA

LINE TYPE LEGEND

LINE	DESCRIPTION
	120V CONDUIT
	COMMUNICATIONS CONDUIT
	347/600V CONDUIT
	TECK CABLE
	CAPPED CONDUIT
	HIGH VOLTAGE (BCH)
S	SANITARY
D	STORM
T	TELEPHONE
	ELECTRICAL
W	WATER
G	GAS
FD	FENCE DETECTION

NOMENCLATURE:

COMM.	COMMUNICATIONS
FLEX	FLEXIBLE CONDUIT
JB	JUNCTION BOX
PVC	POLYVINYL CHLORIDE CONDUIT
PWR.	POWER
RAC	RIGID ALUMINUM CONDUIT
RGS	RIGID GALVANIZED STEEL
RMC	RIGID METAL CONDUIT
RPVC	RIGID POLYVINYL CHLORIDE CONDUIT

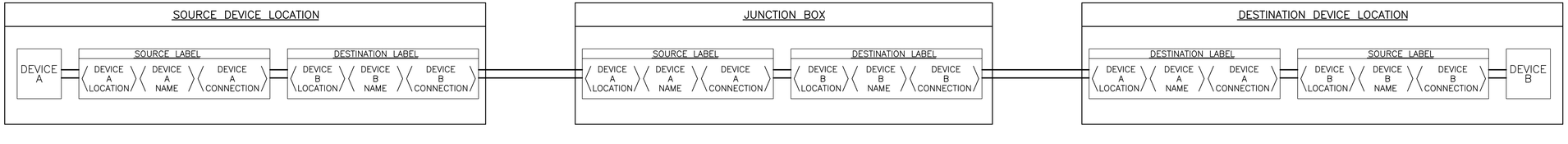
LABELLING CONVENTION NOTES:

1. ALL CABLES AND CONDUCTORS SHALL BE LABELLED AS SHOWN ON THESE DRAWINGS.
2. LOCAL SPECIFIES 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 ARE 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. TERMINAL BLOCKS ARE NUMBERED SEQUENTIALLY, FUSED TERMINALS ARE PRECEDED BY AN "F", GROUND TERMINALS ARE PRECEDED BY A "G" AND THREE LEVEL TERMINALS ARE PRECEDED BY A "T".

DEVICE NOMENCLATURE:

ACU	AUTONOMOUS CONTROL UNIT
AP	ACCESS POINT
CAM	CAMERA
CB	CRASH BAR
CC	CONTROL CABINET
CK	CONTROL KIOSK
CP	CANADA PLACE
CR	CARD READER
CRC	CARD READER CABINET
CAMWKS	CAMELEON WORKSTATION
DMS	DYNAMIC MESSAGE SIGN (LARGE)
DMSS	DYNAMIC MESSAGE SIGN (SMALL)
DS	DOOR SWITCH
DST	DOOR STRIKE
EML	ELECTROMECHANICAL LOCK
EMT	ELECTRO–METALLIC TUBING
EPB	ELECTRIC PIEZO BUZZER
F	FLASHER (ISLAND)
FCAM	FIXED CAMERA
FCU	FLASHER CONTROL UNIT
HMI	HUMAN – MACHINE INTERFACE
I/O	INPUT/OUTPUT
I	INTERCOM
IAMP	INTERCOM AMPLIFIER
ICAM	INTERCOM CAMERA
IMS	INTERCOM MASTER STATION
IS	ISLAND
L	VEHICLE DETECTION LOOP
LD	LOOP DETECTOR
LG	LIFT GATE
LPR	LICENSE PLATE RECOGNITION
LS	THREE SECTION SIGNAL HEAD
LTF	LIQUID TIGHT FLEXIBLE CONDUIT
MA	MANUAL/AUTOMATIC SWITCH
MB	MAKE BEFORE BREAK SWITCH
MD	MOTION DETECTOR
ML	ELECTROMAGNETIC LOCK
NM	NOTIFICATION MONITOR
NS	NETWORK SWITCH
O/H	OVERHEAD
OCB	OPERATOR CONTROL BOOTH
P/D	PROCEED/DENIED SIGN
PC	POWER CABINET
PCAM	PAN/TILT/ZOOM CAMERA
PDU	POWER DISTRIBUTION UNIT
PG	PEDESTRIAN GATE
PI	POWER INJECTION MODULE
PLC	PROGRAMMABLE LOGIC CONTROLLER
PSC	PROFINET SCANNER (PLC)
PS	POWER SUPPLY
QPNL	QUICKPANEL
RJ	RJ45 RECEPTACLE
RLY	IP RELAY
RRE	REMOTE READER ELECTRONICS
S/P/D	STOP/PROCEED/DENIED
S/P/P	STOP/PROCESS/PROCEED
S/P/P/D	STOP/PROCESS/PROCEED/DENIED
S/P/W/P/D	STOP/PROCESS/WAIT/PROCEED/DENIED
S/W/P/D	STOP/WAIT/PROCEED/DENIED
SBC	SIGN BOARD CONTROLLER (DMS)
SC5	SIGN CONTROLLER 5 (DMS)
SCT	SECURITY CLIENT TERMINAL
SH	LANE CONTROL SIGNAL HEAD
SP	POWER SURGE PROTECTOR
SPK	SPEAKER
S	STROBE
SM	STROBE MOUNTING BRACKET
TPC	TOUCH SCREEN PC
US	ULTRASONIC SENSOR
UPS	UNINTERRUPTIBLE POWER SUPPLY
XFMR	TRANSFORMER
Z7	ZONE 7 – DELTAPORT ACCESS CONTROL ZONE
Z8	ZONE 8 – FSPL

SAMPLE LABELLING DIAGRAM:



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ELECTRICAL GENERAL NOTES:

1. ALL FLEXIBLE CONDUIT SHALL BE TERMINATED WITH WATERTIGHT CONNECTORS.
2. PROVIDE FIBRE OPTIC CABLE AS SPECIFIED IN THE SPECIFICATIONS.
3. PROVIDE OTDR TEST RESULTS FOR EACH FIBRE AFTER INSTALLATION.
4. RESTORE ALL SURFACES TO MATCH EXISTING OR BETTER.
5. MMCD AND MoT STANDARDS APPLY TO ALL ASPECTS OF THE WORK.
6. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE. ALL CONCRETE BASES AND JB SYMBOLS ARE NOT TO SCALE.
7 ALL WORK SHALL COMPLY WITH THE CANADIAN ELECTRICAL CODE, LOCAL BYLAWS AND THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.
8. LOCATE EXISTING UNDERGROUND UTILITIES PRIOR TO EXCAVATING.
9. ALL INSTALLATIONS SHALL CONFORM TO CSA C22.1–02 INCLUDING BC ELECTRICAL SAFETY BRANCH AMENDMENTS. ALL UNDERGROUND CONDUITS SHALL BE RIGID PVC CONDUIT: COMPLYING CSA C22.2 No. 211.2 (NOTED AS "RPVC") ON THE DRAWINGS OR OTHERWISE NOTED. ALL OUTDOOR WALL MOUNTED CONDUIT SHALL BE RAC OR OTHERWISE NOTED.
10. ALL MANUFACTURER AND CSA LABELS SHALL BE VISIBLE AND LEGIBLE AFTER THE EQUIPMENT IS INSTALLED.
11. ALL EQUIPMENT AND MATERIAL SHALL BE CSA CERTIFIED FOR INSTALLATION IN BC.
12. NO WORK SHALL INTERFERE WITH CURRENT CONSTRUCTION ACTIVITIES IN THE AREA.
13. ALL WORK INCLUDING SHUTDOWNS AND POWER OUTAGES SHALL BE COORDINATED AND SCHEDULED WITH THE PMV OPERATIONS AND MAINTENANCE DEPARTMENT.
14. LOCK–OUT PROCEDURES SHALL APPLY FOR ALL HOT EQUIPMENT/WIRING THAT REQUIRES DISCONNECTION. THE CONTRACTOR WILL COORDINATE ALL LOCK–OUTS WITH THE PMV OPERATIONS AND MAINTENANCE DEPARTMENT.
15. TRAFFIC CONTROL ON PORTION OF ROADS AFFECTED BY WORK SHALL BE COORDINATED WITH THE PMV OPERATIONS AND MAINTENANCE DEPARTMENT.
16. NOTIFY CONSULTANT OF CHANGES REQUIRED BY ELECTRICAL INSPECTION DEPARTMENT PRIOR TO MAKING CHANGES.
17. SUPPLY COPIES OF ALL INSPECTION REPORTS TO ENGINEER WITHIN 24 HOURS OF INSPECTION.
18. FURNISH CERTIFICATES OF ACCEPTANCE FROM ELECTRICAL INSPECTION DEPARTMENT ON COMPLETION OF WORK TO ENGINEER.
19. THE EXISTING MATERIAL TO BE REMOVED SHALL BE DISCONNECTED AND RELOCATED WHERE REQUIRED OR RETURNED TO THE PMV OPERATIONS AND MAINTENANCE DEPARTMENT.
20. UNUSED EXCAVATED MATERIAL AND ABANDONED EQUIPMENT SHALL BE DISPOSED OF AT THE CONTRACTOR'S EXPENSE.
21. INSTALLATION FOR ALL EQUIPMENT SHALL INCLUDE ALL NECESSARY CONNECTORS, TERMINATIONS, FASTENERS AND BONDING REQUIRED TO CREATE A FULLY FUNCTIONAL SYSTEM.
22. ALL CONDUCTORS SHALL BE STRANDED COPPER, RW90 XLPE INSULATED OR OTHERWISE NOTED.
23. ALL GROUNDING AND BONDING SHALL COMPLY WITH THE CANADIAN ELECTRICAL CODE.
24. 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.
25. IDENTIFY GROUPS OF CONDUCTORS OR CABLES IN ENCLOSURES AND PANELS USING WEIDMULLER THM PLUS S (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.
26. MAINTAIN PHASE SEQUENCE AND COLOUR CODING THROUGHOUT. USE COLOUR CODED WIRES IN COMMUNICATION CABLES, MATCHED THROUGHOUT SYSTEM.
27. ALL EMPTY CONDUITS SHALL BE CAPPED.
28. ALL CONDUITS SHALL DRAIN TO JUNCTION BOX.
29. 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 PULLPITS.
30. 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.
31. ALL CONDUIT ROUTING IS SHOWN SCHEMATICALLY ON THE DRAWINGS. THE CONTRACTOR SHALL OPTIMIZE THE ROUTING BASED ON FIELD CONDITIONS TO MINIMIZE TRENCHING.
32. 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.
33. ALL CCTV CAMERA POLE, EQUIPMENT, LUMINAIRE, CONDUIT STUB–UP, AND U/G JB LOCATIONS SHALL BE LAID OUT BY THE CONTRACTOR AND FIELD REVIEWED BY THE ENGINEER PRIOR TO INSTALLATION.
34. 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.
35. 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.
36. FOR CABLE SPLICING:
    - REMOVE INSULATION CAREFULLY FROM ENDS OF CONDUCTORS AND:
    - 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.
37. SEALING OF OUTDOOR TWIST–ON CONNECTIONS SHALL BE PERFORMED USING DOUBLE DIPPING METHOD SUCH AS 3M "SCOTCHKOTE" OR APPROVED ALTERNATIVE.
38. 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.
39. THE MINIMUM INSTALLATION SPACING REQUIRED BETWEEN POWER DUCTS OR DUCTBANKS AND OTHER UTILITIES IS 300mm.
40. TOP OF VAULT/JB COVERS TO BE FLUSH WITH EXISTING GRADE, UNLESS NOTED OTHERWISE.
41. HARD WIRED COMMUNICATIONS AND CONTROL EQUIPMENT SHALL BE CONNECTED TO POWER THROUGH DIN RAIL MOUNTED WEIDMULLER TERMINAL BLOCKS. CIRCUIT PROTECTION FUSED BLOCKS AND APPROPRIATE FUSES SHALL BE USED TO POWER TRANSFORMERS 1500VA OR SMALLER.
42. ALL UNDERGROUND JUNCTION BOXES AND VAULTS SHALL BE EQUIPPED WITH GALVANIZED STEEL COVERS. THE COVERS SHALL BE BONDED TO GROUND, AND SHALL BE LABELLED "600V", "120/240V" OR "COMM" ACCORDINGLY. COVERS SHALL NOT INCLUDE ANY REFERENCE TO THIRD PARTIES, INCLUDING THE MINISTRY OF TRANSPORTATION.
43. THE CONTRACTOR SHALL NOT DISTURB OR DESTROY EXISTING PLANTS, BUSHES, TREES, OR ROOTS WHILE INSTALLING THE EQUIPMENT. MANUALLY DIG THROUGH HEDGES AND/OR PAVED SIDEWALKS.
44. ALL THE VISIBLE STRUCTURES, KIOSKS, CONDUIT, JB'S, CONNECTORS, CAMERA ENCLOSURES, AND BRACKETS SHALL BE PAINTED AS FOLLOWS:
    – COMM KIOSKS AND BUILDINGS SHALL BE POWDERCOATED WITH PMV COLOURS
45. COORDINATE COMMUNICATIONS EQUIPMENT REMOVAL WITH PMV.
46. THERE SHALL BE NO 600V OR 120/240V ENERGIZED EXPOSED PARTS INSIDE KIOSKS, SHEDS OR EQUIPMENT BOXES.
47. HYDROVAC OR HAND–DIGGING METHODS SHALL BE UTILIZED FOR ALL EXCAVATIONS OR TRENCHING WHERE THERE IS A RISK OF UTILITY STRIKE AND AT INTERVALS DEFINED IN THE SPECIFICATIONS.
48. ALL BC HYDRO RELATED WORK SHALL COMPLY WITH THE LATEST EDITION OF THE ES43, ES53, AND ES54 BC HYDRO STANDARDS.
49. REFER TO DWG. E564 FOR TYPICAL TRENCHING DETAILS FOR CONDUIT INSTALLATION IN SHOULDER OR ASPHALT.

LABELLING CONVENTION NOTES:

1. ALL CABLES AND CONDUCTORS SHALL BE LABELLED AS SHOWN ON THESE DRAWINGS. CONDUCTORS SHALL BE LABELLED IN ALL JB'S, HANDHOLES, VAULTS, CONTROL CABINETS AND ALL OTHER ACCESSIBLE POINTS.
2. LOCAL SPECIFIES 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 ARE 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. TERMINAL BLOCKS ARE NUMBERED SEQUENTIALLY, FUSED TERMINALS ARE PRECEDED BY AN "F", GROUND TERMINALS ARE PRECEDED BY A "G" AND THREE LEVEL TERMINALS ARE PRECEDED BY A "T".

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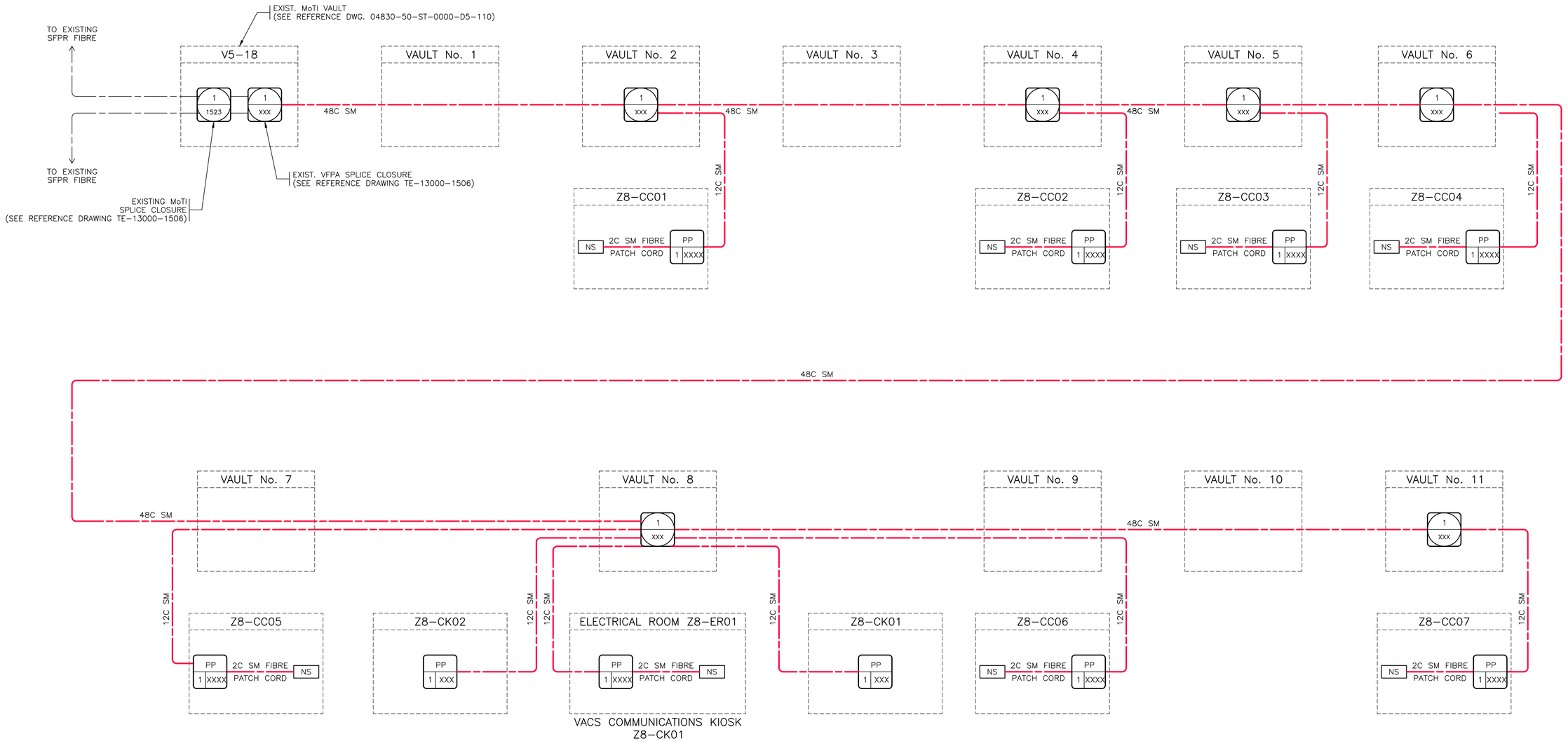

LEGEND	
	1-48C SM FIBRE
	XXXC SM FIBRE – EXISTING
	XXXC SM FIBRE – REMOVE
1 / XXXX	FIBRE OPTIC SPLICE DETAIL No. 1, SHEET No. XXXX
PP / 1 XXXX	FIBRE OPTIC PATCH PANEL DETAIL No. 1, SHEET No. XXXX

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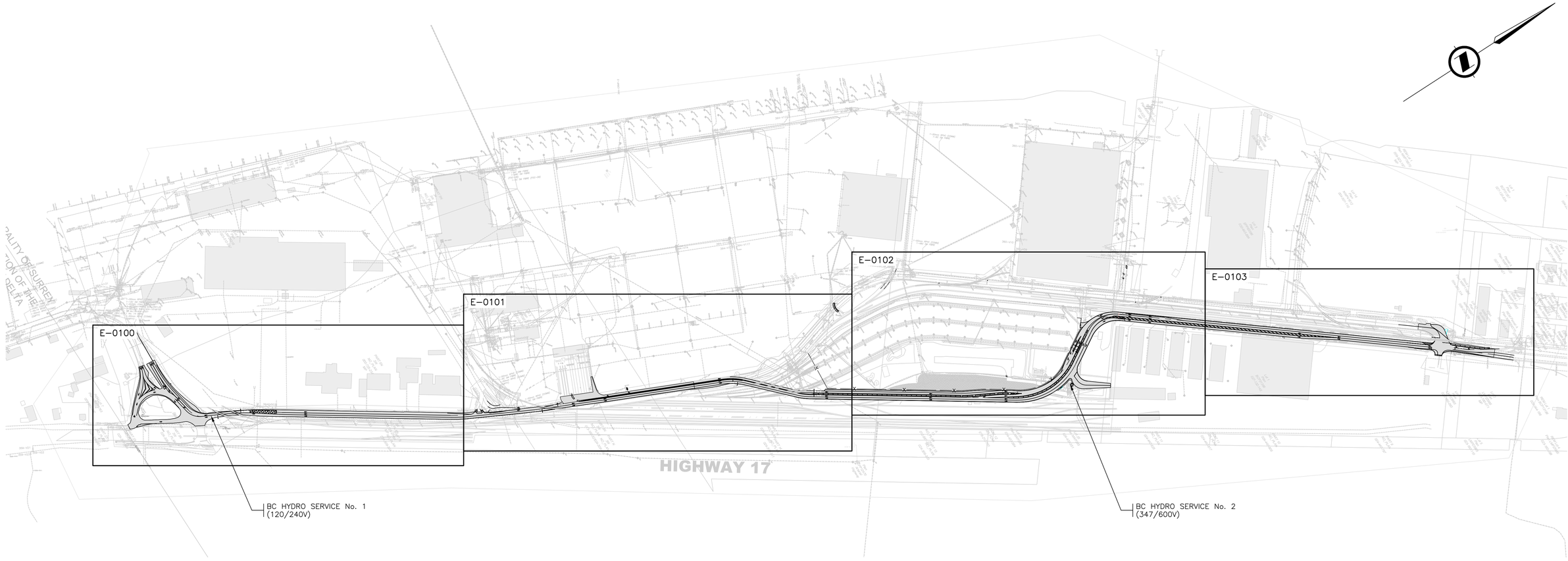
SIZE	DWG.	SHEET	REV.
D	FSPL-E-0030	–	A



KEY PLAN
N.T.S.

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DATE: 2020/12/15 – 7:43am
PATH: P:\20073_VFPA Fraser Surrey Port Lands\01 – Design Services\Drawings\ACAD\FSPL–E–0040.dwg

Ref.No.	REFERENCE

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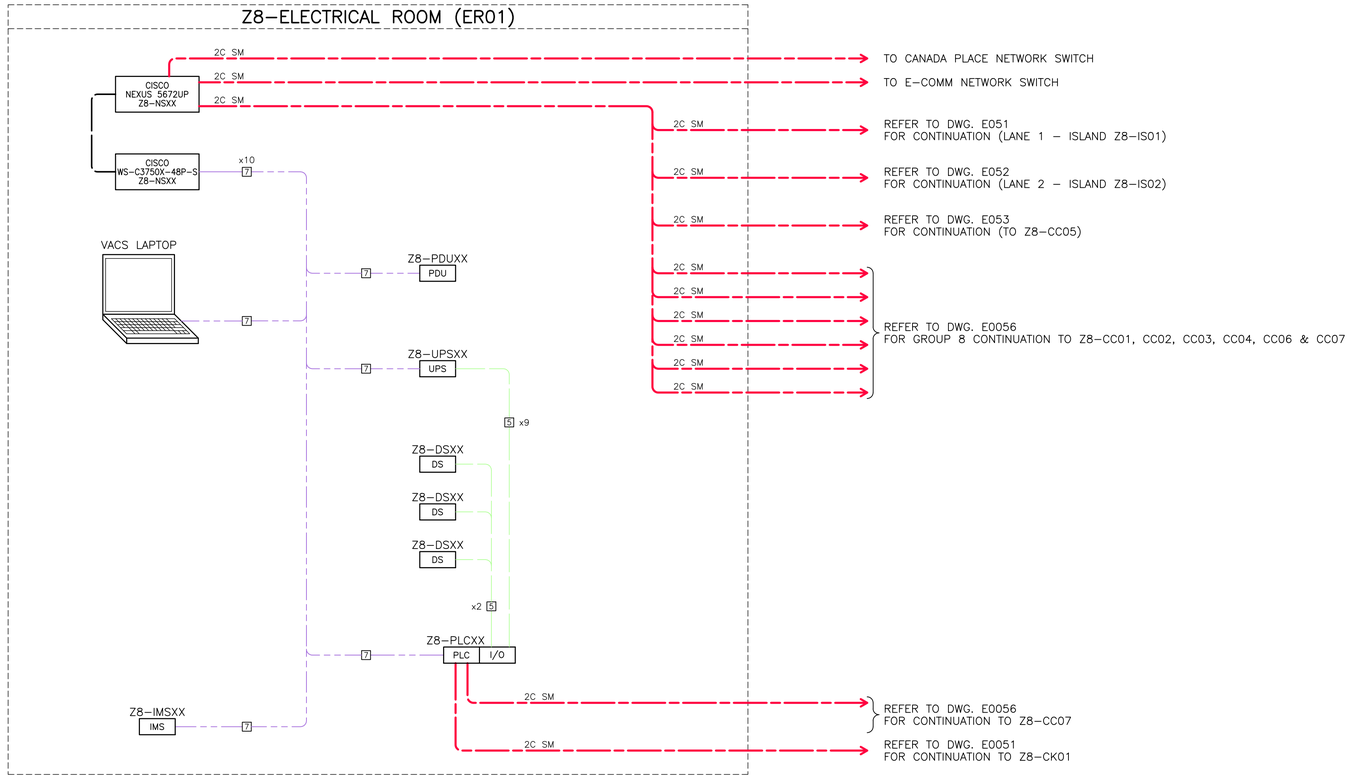
A	DEC15/20	ISSUED FOR CLIENT REVIEW	BC	JV

PORT of vancouver
VANCOUVER FRASER PORT AUTHORITY
ENGINEERING DEPARTMENT

DESIGN BY	E. MICKA
DRAWN BY	PBX
APPROVED	J. VASQUEZ
DATE	2020–12–15
SCALE	SHOWN
PMV SITE	

GREATER VANCOUVER GATEWAY 2030
OPTIONS STUDY
FSPL TRANSPORTATION IMPROVEMENTS
KEY PLAN

SIZE	DWG.	SHEET	REV.
D	FSPL–E–0040	–	A



CABLE COLOUR LEGEND

FIBRE LINE
DATA LINE (LOW SPEED)
COMPUTER CABLE
CONTROL CABLE
ETHERNET (CAT5E UTP)
TWINAX CONNECTOR

ISSUED FOR CLIENT REVIEW
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CONDUCTOR SUMMARY

CABLE I.D.	CONDUCTOR	DESCRIPTION	CABLE I.D.	CONDUCTOR	DESCRIPTION
1	BELDEN 9369 (3 PR. No. 18 INDIVIDUALLY SHIELDED)	RS–485 AND 24VDC	8	BELDEN 9729 (2 PR. No. 24 SHIELDED)	DMS SIGN COMMUNICATION (RS–422)
2	RG11U COAXIAL	VIDEO	9	BELDEN 8719 (1 PR. No. 16 SHIELDED)	LOOP LINES
3	BELDEN 9729 (2 PR. No. 24 SHIELDED)	RS–422 CAMERA CONTROL	10	BELDEN 9729 (2 PR. No. 24 SHIELDED)	DMS SIGN COMMUNICATION (RS–232)
4	No. 16 CSA MULTICONDUCTOR CONTROL CABLE	12/24DC DEVICE CONTROL/POWER SUPPLY	11	BELDEN 8442 (x2)	MONO AUDIO CABLE
5	No. 14 RW90	DEVICE CONTROL (FROM PLC)	12	BELDEN 9842 (2 PR. No. 24 SHIELDED)	O/C AND DMSS COMM (RS–485)
6	BELDEN 1529A (4 PR. No. 18 SHIELDED)	RRE TO CARD READER COMMUNICATION	13	RG59U COAXIAL	VIDEO
7	CATEGORY 5E/6 LAN CABLE	ETHERNET COMMUNICATION	14	BELDEN 9318 (1 PR. No. 18 SHIELDED)	ADDCO DMS SIGN COMMUNICATION

Ref.No.	REFERENCE

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A	DEC15/20	ISSUED FOR CLIENT REVIEW	BC	JV

PORT of vancouver

VANCOUVER FRASER PORT AUTHORITY
ENGINEERING DEPARTMENT

DESIGN BY	E. MICKA
DRAWN BY	PBX
APPROVED	J. VASQUEZ
DATE	2020–12–15
SCALE	SHOWN
PMV SITE	

GREATER VANCOUVER GATEWAY 2030
OPTIONS STUDY
FSPL TRANSPORTATION IMPROVEMENTS
BLOCK DIAGRAM – ZONE 8 ELECRICAL ROOM

SIZE	DWG.	SHEET	REV.
D	FSPL–E–0050	–	A

DATE: 2020/12/15 – 7:43am
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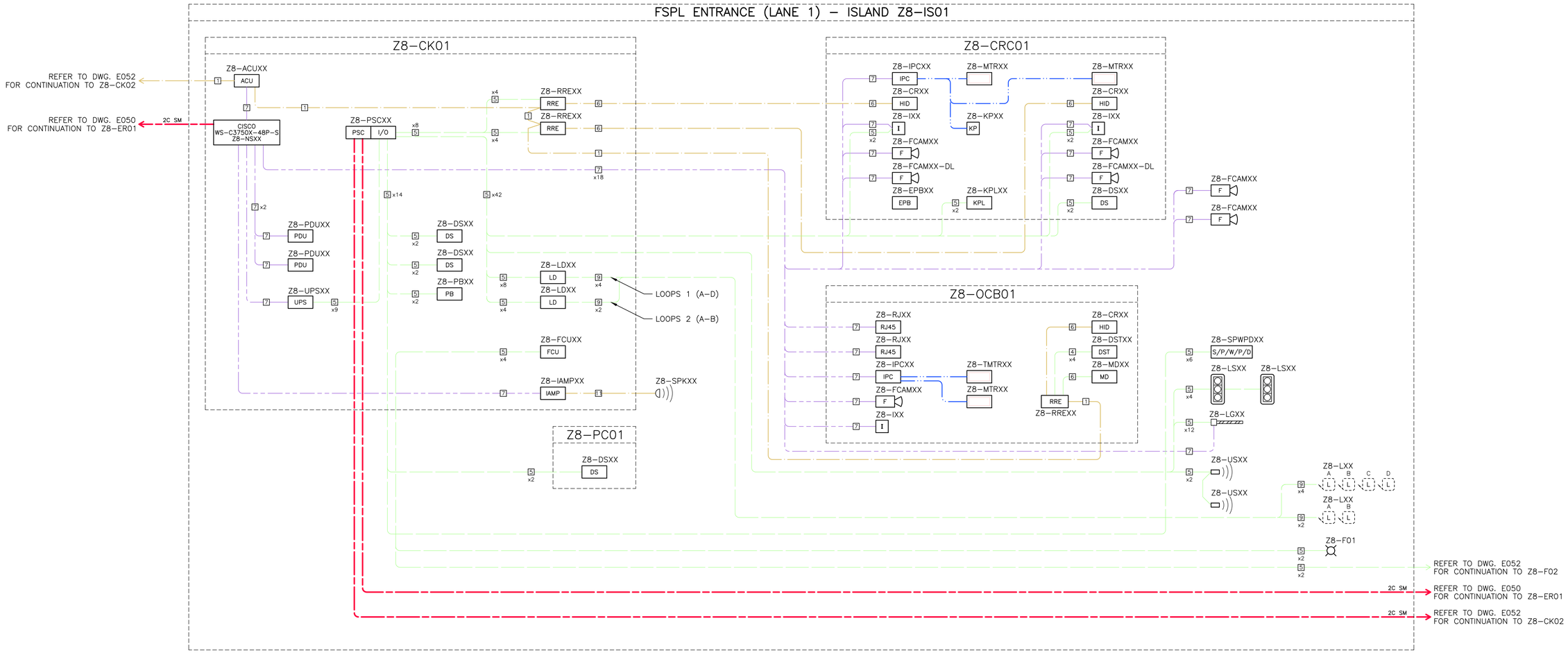

CABLE COLOUR LEGEND

FIBRE LINE	
DATA LINE (LOW SPEED)	
COMPUTER CABLE	
CONTROL CABLE	
ETHERNET (CAT5E UTP)	
TWINAX CONNECTOR	

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CONDUCTOR SUMMARY

CABLE I.D.	CONDUCTOR	DESCRIPTION	CABLE I.D.	CONDUCTOR	DESCRIPTION
1	BELDEN 9369 (3 PR. No. 18 INDIVIDUALLY SHIELDED)	RS–485 AND 24VDC	8	BELDEN 9729 (2 PR. No. 24 SHIELDED)	DMS SIGN COMMUNICATION (RS–422)
2	RG11U COAXIAL	VIDEO	9	BELDEN 8719 (1 PR. No. 16 SHIELDED)	LOOP LINES
3	BELDEN 9729 (2 PR. No. 24 SHIELDED)	RS–422 CAMERA CONTROL	10	BELDEN 9729 (2 PR. No. 24 SHIELDED)	DMS SIGN COMMUNICATION (RS–232)
4	No. 16 CSA MULTICONDUCTOR CONTROL CABLE	12/24DC DEVICE CONTROL/POWER SUPPLY	11	BELDEN 8442 (x2)	MONO AUDIO CABLE
5	No. 14 RW90	DEVICE CONTROL (FROM PLC)	12	BELDEN 9842 (2 PR. No. 24 SHIELDED)	O/C AND DMSS COMM (RS–485)
6	BELDEN 1529A (4 PR. No. 18 SHIELDED)	RRE TO CARD READER COMMUNICATION	13	RG59U COAXIAL	VIDEO
7	CATEGORY 5E/6 LAN CABLE	ETHERNET COMMUNICATION	14	BELDEN 9318 (1 PR. No. 18 SHIELDED)	ADDCO DMS SIGN COMMUNICATION

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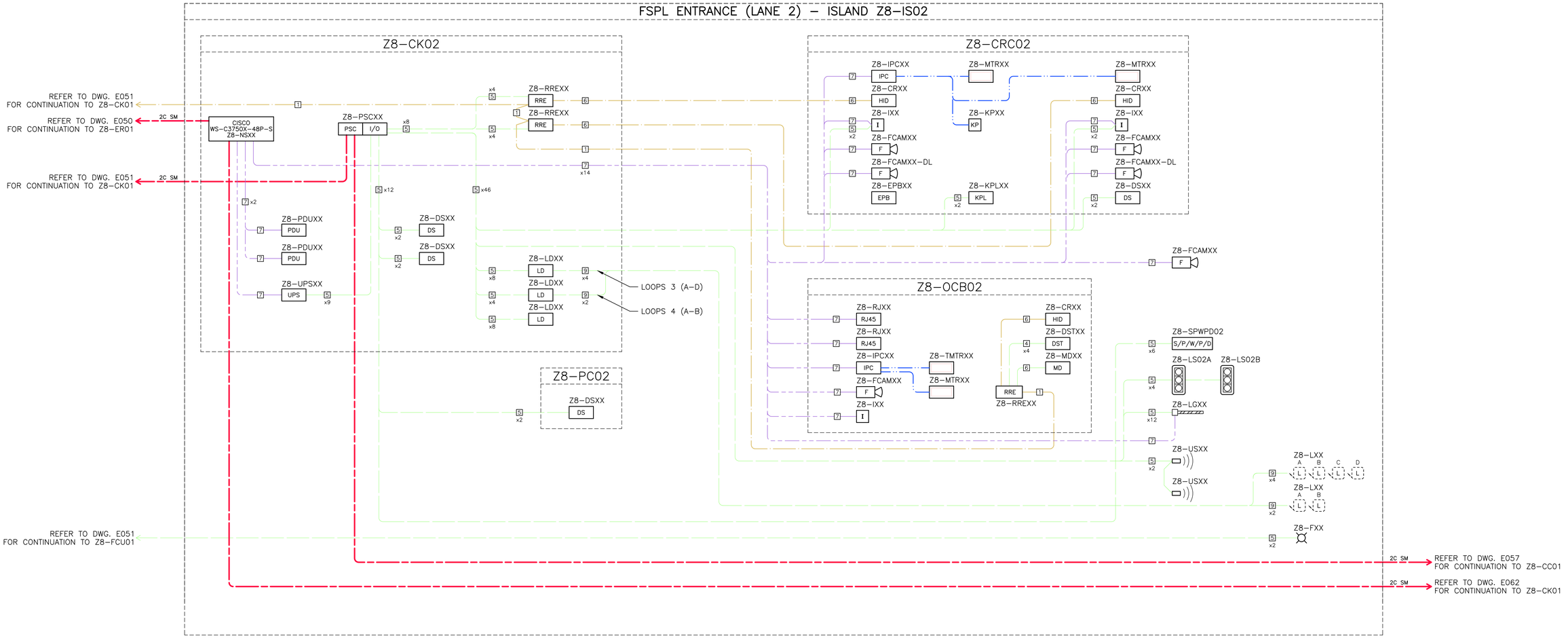
PORT of vancouver
VANCOUVER FRASER PORT AUTHORITY
ENGINEERING DEPARTMENT

DESIGN BY	E. MICKA
DRAWN BY	PBX
APPROVED	J. VASQUEZ
DATE	2020–12–15
SCALE	SHOWN
PMV SITE	

GREATER VANCOUVER GATEWAY 2030
OPTIONS STUDY
FSPL TRANSPORTATION IMPROVEMENTS
BLOCK DIAGRAM – ZONE 8 ENTRANCE LANE 1

SIZE	DWG.	SHEET	REV.
D	FSPL–E–0051	–	A



CABLE COLOUR LEGEND

- FIBRE LINE
- DATA LINE (LOW SPEED)
- COMPUTER CABLE
- CONTROL CABLE
- ETHERNET (CAT5E UTP)
- TWINAX CONNECTOR

ISSUED FOR CLIENT REVIEW
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CONDUCTOR SUMMARY

CABLE I.D.	CONDUCTOR	DESCRIPTION	CABLE I.D.	CONDUCTOR	DESCRIPTION
1	BELDEN 9369 (3 PR. No. 18 INDIVIDUALLY SHIELDED)	RS–485 AND 24VDC	8	BELDEN 9729 (2 PR. No. 24 SHIELDED)	DMS SIGN COMMUNICATION (RS–422)
2	RG11U COAXIAL	VIDEO	9	BELDEN 8719 (1 PR. No. 16 SHIELDED)	LOOP LINES
3	BELDEN 9729 (2 PR. No. 24 SHIELDED)	RS–422 CAMERA CONTROL	10	BELDEN 9729 (2 PR. No. 24 SHIELDED)	DMS SIGN COMMUNICATION (RS–232)
4	No. 16 CSA MULTICONDUCTOR CONTROL CABLE	12/24DC DEVICE CONTROL/POWER SUPPLY	11	BELDEN 8442 (x2)	MONO AUDIO CABLE
5	No. 14 RW90	DEVICE CONTROL (FROM PLC)	12	BELDEN 9842 (2 PR. No. 24 SHIELDED)	O/C AND DMSS COMM (RS–485)
6	BELDEN 1529A (4 PR. No. 18 SHIELDED)	RRE TO CARD READER COMMUNICATION	13	RG59U COAXIAL	VIDEO
7	CATEGORY 5E/6 LAN CABLE	ETHERNET COMMUNICATION	14	BELDEN 9318 (1 PR. No. 18 SHIELDED)	ADDCO DMS SIGN COMMUNICATION

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PORT of vancouver
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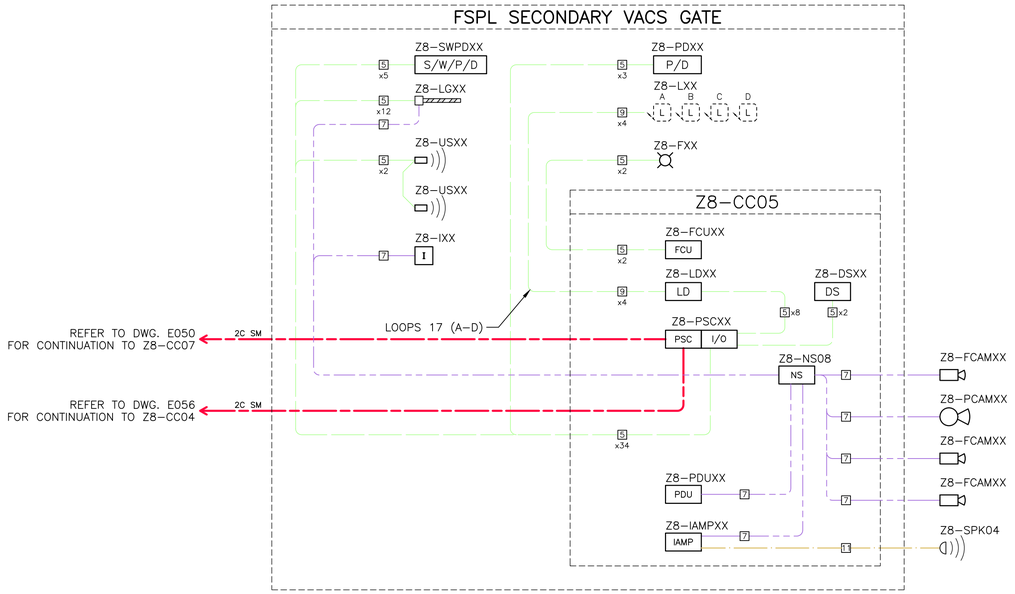
DESIGN BY	E. MICKA
DRAWN BY	PBX
APPROVED	J. VASQUEZ
DATE	2020–12–15
SCALE	SHOWN
PMV SITE	

GREATER VANCOUVER GATEWAY 2030
OPTIONS STUDY
FSPL TRANSPORTATION IMPROVEMENTS
BLOCK DIAGRAM – ZONE 8 ENTRANCE LANE 2

SIZE	DWG.	SHEET	REV.
D	FSPL–E–0052	–	A



CABLE COLOUR LEGEND

- FIBRE LINE
- DATA LINE (LOW SPEED)
- COMPUTER CABLE
- CONTROL CABLE
- ETHERNET (CAT5E UTP)
- TWINAX CONNECTOR

ISSUED FOR CLIENT REVIEW
NOT FOR CONSTRUCTION

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CONDUCTOR SUMMARY

CABLE I.D.	CONDUCTOR	DESCRIPTION	CABLE I.D.	CONDUCTOR	DESCRIPTION
1	BELDEN 9369 (3 PR. No. 18 INDIVIDUALLY SHIELDED)	RS–485 AND 24VDC	8	BELDEN 9729 (2 PR. No. 24 SHIELDED)	DMS SIGN COMMUNICATION (RS–422)
2	RG11U COAXIAL	VIDEO	9	BELDEN 8719 (1 PR. No. 16 SHIELDED)	LOOP LINES
3	BELDEN 9729 (2 PR. No. 24 SHIELDED)	RS–422 CAMERA CONTROL	10	BELDEN 9729 (2 PR. No. 24 SHIELDED)	DMS SIGN COMMUNICATION (RS–232)
4	No. 16 CSA MULTICONDUCTOR CONTROL CABLE	12/24DC DEVICE CONTROL/POWER SUPPLY	11	BELDEN 8442 (x2)	MONO AUDIO CABLE
5	No. 14 RW90	DEVICE CONTROL (FROM PLC)	12	BELDEN 9842 (2 PR. No. 24 SHIELDED)	O/C AND DMSS COMM (RS–485)
6	BELDEN 1529A (4 PR. No. 18 SHIELDED)	RRE TO CARD READER COMMUNICATION	13	RG59U COAXIAL	VIDEO
7	CATEGORY 5E/6 LAN CABLE	ETHERNET COMMUNICATION	14	BELDEN 9318 (1 PR. No. 18 SHIELDED)	ADDCO DMS SIGN COMMUNICATION

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DESIGN BY	E. MICKA
DRAWN BY	PBX
APPROVED	J. VASQUEZ
DATE	2020–12–15
SCALE	SHOWN
PMV SITE	

GREATER VANCOUVER GATEWAY 2030
OPTIONS STUDY
FSPL TRANSPORTATION IMPROVEMENTS
BLOCK DIAGRAM – ZONE 8 SECONDARY ENTRANCE

SIZE	DWG.	SHEET	REV.
D	FSPL–E–0053	–	A

DATE: 2020/12/15 – 7:43am
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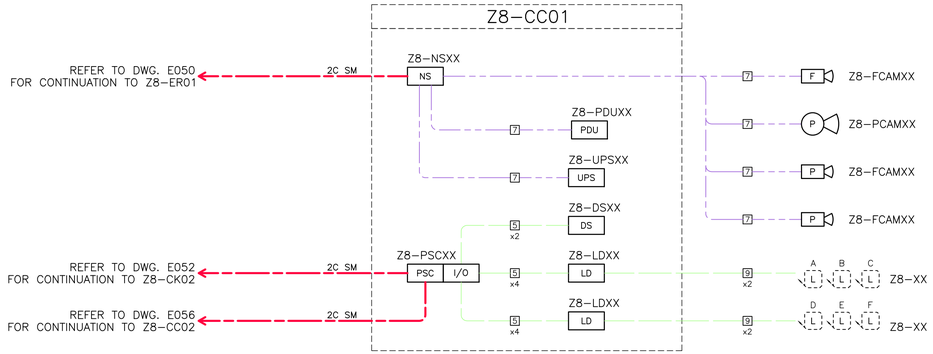

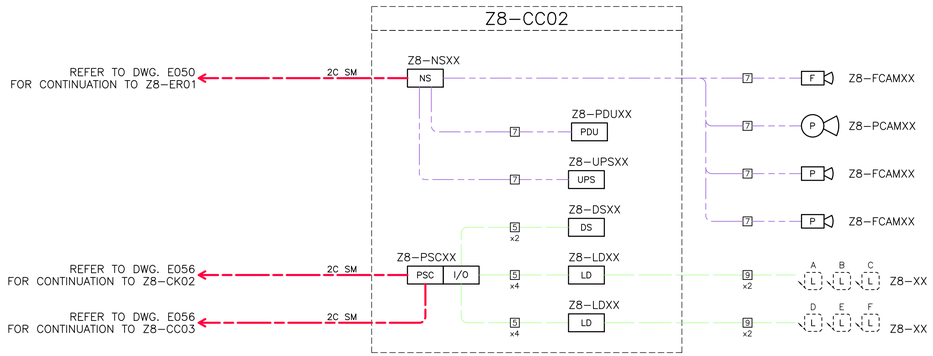

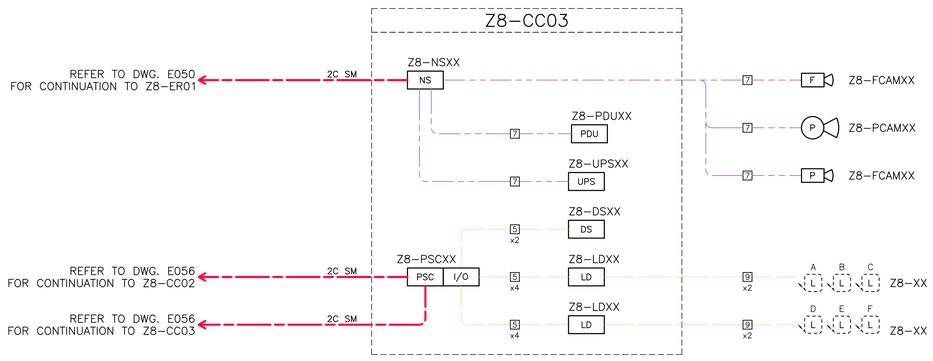

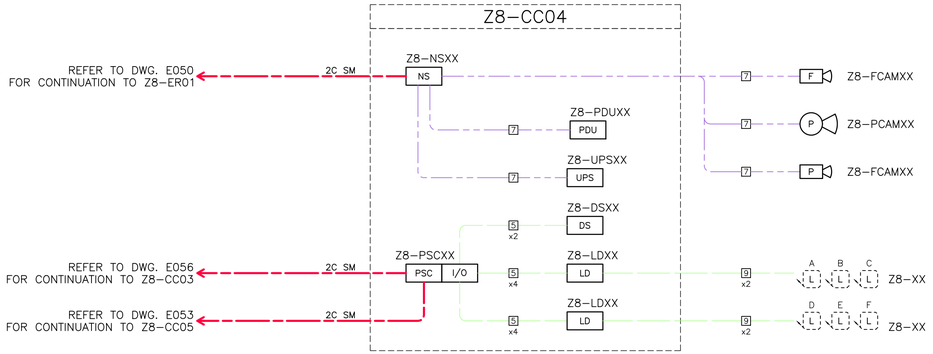

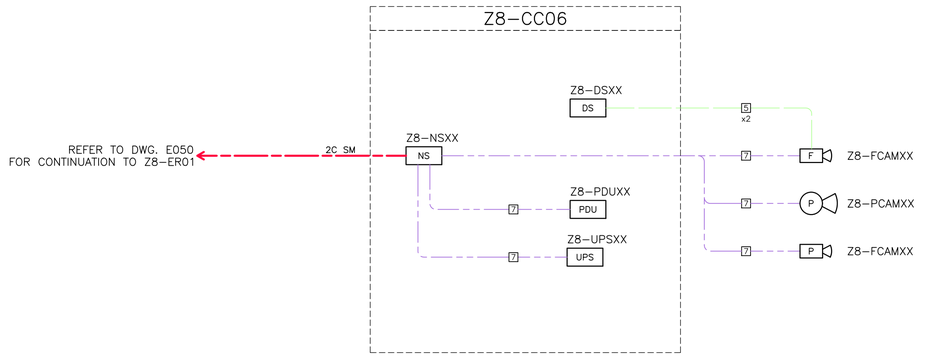

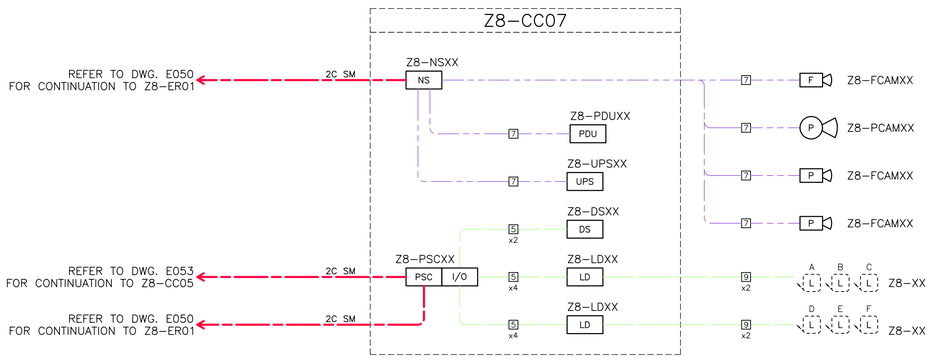

CABLE COLOUR LEGEND

FIBRE LINE
DATA LINE (LOW SPEED)
COMPUTER CABLE
CONTROL CABLE
ETHERNET (CAT5E UTP)

ISSUED FOR CLIENT REVIEW
NOT FOR CONSTRUCTION

ALL EQUIPMENT IS PROPOSED UNLESS NOTED OTHERWISE

CONDUCTOR SUMMARY

CABLE I.D.	CONDUCTOR	DESCRIPTION	CABLE I.D.	CONDUCTOR	DESCRIPTION
1	BELDEN 9369 (3 PR. No. 18 INDIVIDUALLY SHIELDED)	RS-485 AND 24VDC	8	BELDEN 9729 (2 PR. No. 24 SHIELDED)	DMS SIGN COMMUNICATION (RS-422)
2	RG11U COAXIAL	VIDEO	9	BELDEN 8719 (1 PR. No. 16 SHIELDED)	LOOP LINES
3	BELDEN 9729 (2 PR. No. 24 SHIELDED)	RS-422 CAMERA CONTROL	10	BELDEN 9729 (2 PR. No. 24 SHIELDED)	DMS SIGN COMMUNICATION (RS-232)
4	No. 16 CSA MULTICONDUCTOR CONTROL CABLE	12/24DC DEVICE CONTROL/POWER SUPPLY	11	BELDEN 8442 (x2)	MONO AUDIO CABLE
5	No. 14 RW90	DEVICE CONTROL (FROM PLC)	12	BELDEN 9842 (2 PR. No. 24 SHIELDED)	O/C AND DMSS COMM (RS-485)
6	BELDEN 1529A (4 PR. No. 18 SHIELDED)	RRE TO CARD READER COMMUNICATION	13	RG59U COAXIAL	VIDEO
7	CATEGORY 5E/6 LAN CABLE	ETHERNET COMMUNICATION	14	BELDEN 9318 (1 PR. No. 18 SHIELDED)	ADDCO DMS SIGN COMMUNICATION

Ref.No.	REFERENCE

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PORT of vancouver

VANCOUVER FRASER PORT AUTHORITY
ENGINEERING DEPARTMENT

DESIGN BY	E. MICKA
DRAWN BY	PBX
APPROVED	J. VASQUEZ
DATE	2020-12-15
SCALE	SHOWN
PMV SITE	

GREATER VANCOUVER GATEWAY 2030
OPTIONS STUDY
FSPL TRANSPORTATION IMPROVEMENTS
BLOCK DIAGRAM – CONTROL CABINETS

SIZE	DWG.	SHEET	REV.
D	FSPL-E-0056	–	A

DATE: 2020/12/15 – 7:43am
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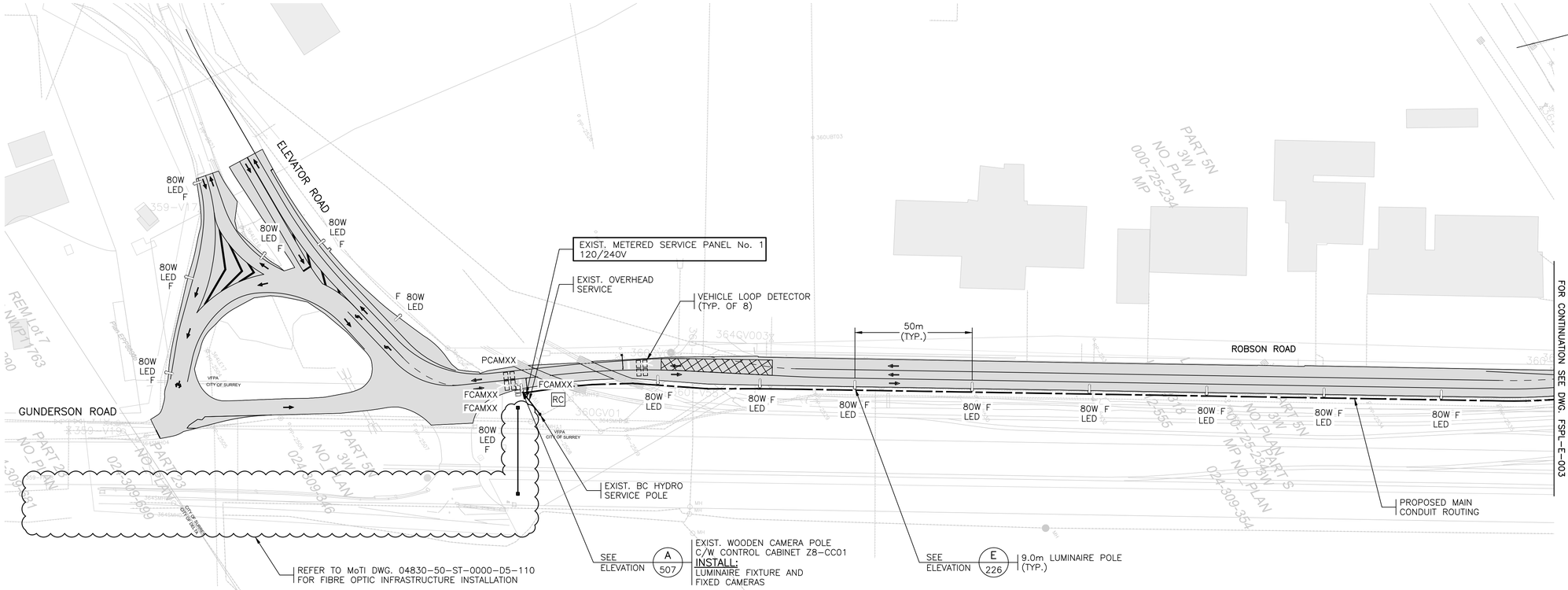

SITE PLAN
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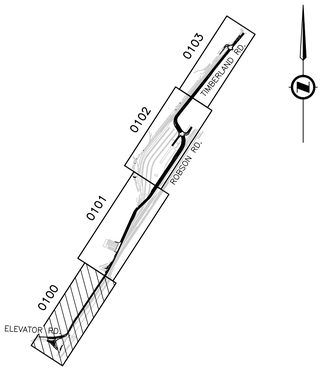

KEY PLAN
N.T.S.

LIGHTING DESIGN CRITERIA			
ROADWAY NAME	ROBSON ROAD		
CLASSIFICATION	COLLECTOR		
PEDESTRIAN CONFLICT	MEDIUM		
LUMINAIRE INFO	80W LED/LRL/NXT-525mA-2ES TWO LANES (ONE SIDE - 50m SPACING)		
	RECOMMENDED	DELIVERED	
		EASTBOUND	WESTBOUND
LUMINANCE (AV.)	0.6 cd/m²	1.03 cd/m²	0.71 cd/m²
VEILING LUMINANCE	L_{MAX}/L_{AV} = 0.3:1	L_{MAX}/L_{AV} = 0.18:1	L_{MAX}/L_{AV} = 0.25:1
UNIFORMITY	L_{AV}/L_{MIN} = 3.5:1 L_{MAX}/L_{MIN} = 6.0:1	L_{AV}/L_{MIN} = 1.54:1 L_{MAX}/L_{MIN} = 2.16:1	L_{AV}/L_{MIN} = 1.58:1 L_{MAX}/L_{MIN} = 2.47:1

NOTE: BASED ON THE IESNA RP-8-18 (TABLE 11-1)

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Ref.No.	REFERENCE

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PORT of vancouver
VANCOUVER FRASER PORT AUTHORITY
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DESIGN BY	E. MICKA
DRAWN BY	PBX
APPROVED	J. VASQUEZ
DATE	2020-12-15
SCALE	SHOWN
PMV SITE	

GREATER VANCOUVER GATEWAY 2030
OPTIONS STUDY
FSPL TRANSPORTATION IMPROVEMENTS
SITE PLAN (SHEET 1 OF 4)

SIZE	DWG.	SHEET	REV.
D	FSPL-E-0100	–	A

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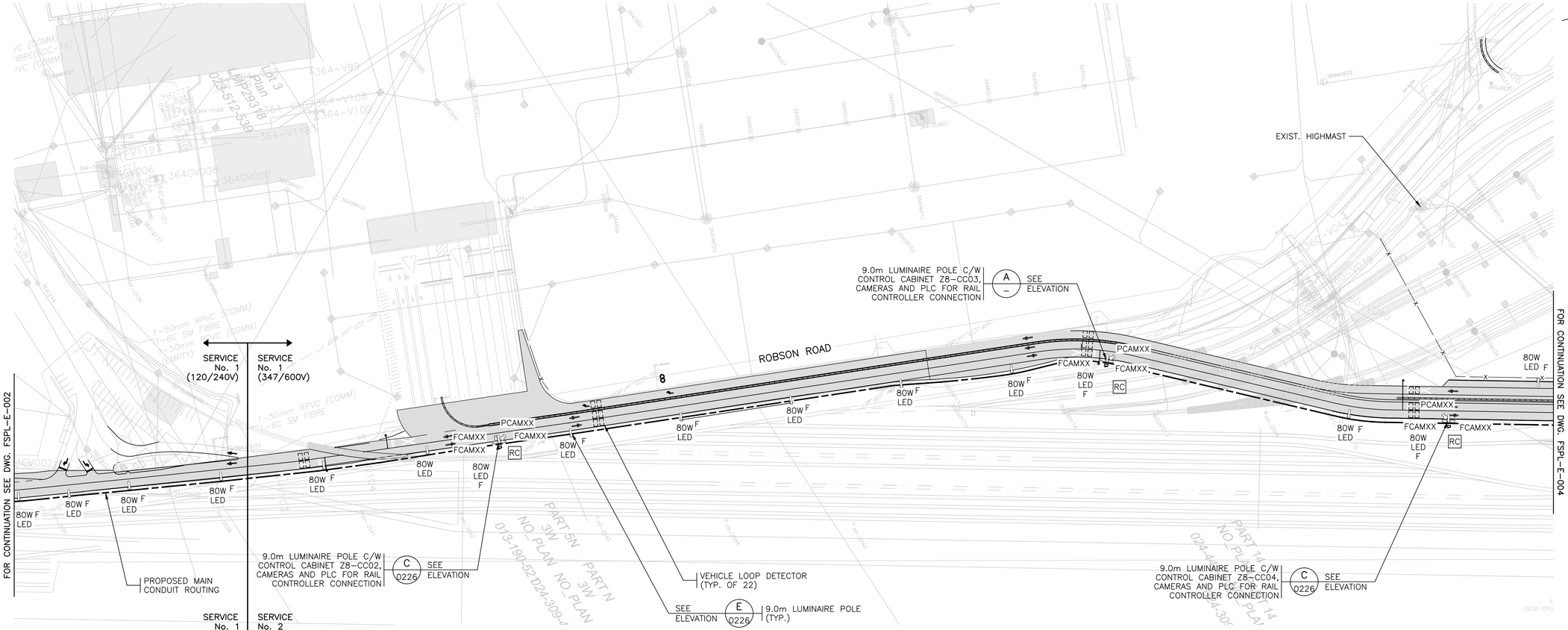

SITE PLAN
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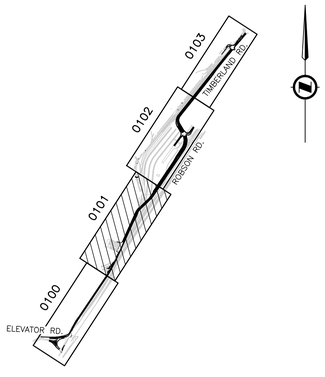

KEY PLAN
N.T.S.

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0 1:1000 50

Ref.No.	REFERENCE

PBX ENGINEERING

wsp

No.	Date	REVISION	Dr'n	Ch'd
A	DEC15/20	ISSUED FOR CLIENT REVIEW	BC	JV

PORT of vancouver
VANCOUVER FRASER PORT AUTHORITY
ENGINEERING DEPARTMENT

DESIGN BY	E. MICKA
DRAWN BY	PBX
APPROVED	J. VASQUEZ
DATE	2020–12–15
SCALE	SHOWN
PMV SITE	

GREATER VANCOUVER GATEWAY 2030
OPTIONS STUDY
FSPL TRANSPORTATION IMPROVEMENTS
SITE PLAN (SHEET 2 OF 4)

SIZE	DWG.	SHEET	REV.
D	FSPL–E–0101	–	A

DATE: 2020/12/15 – 7:45am
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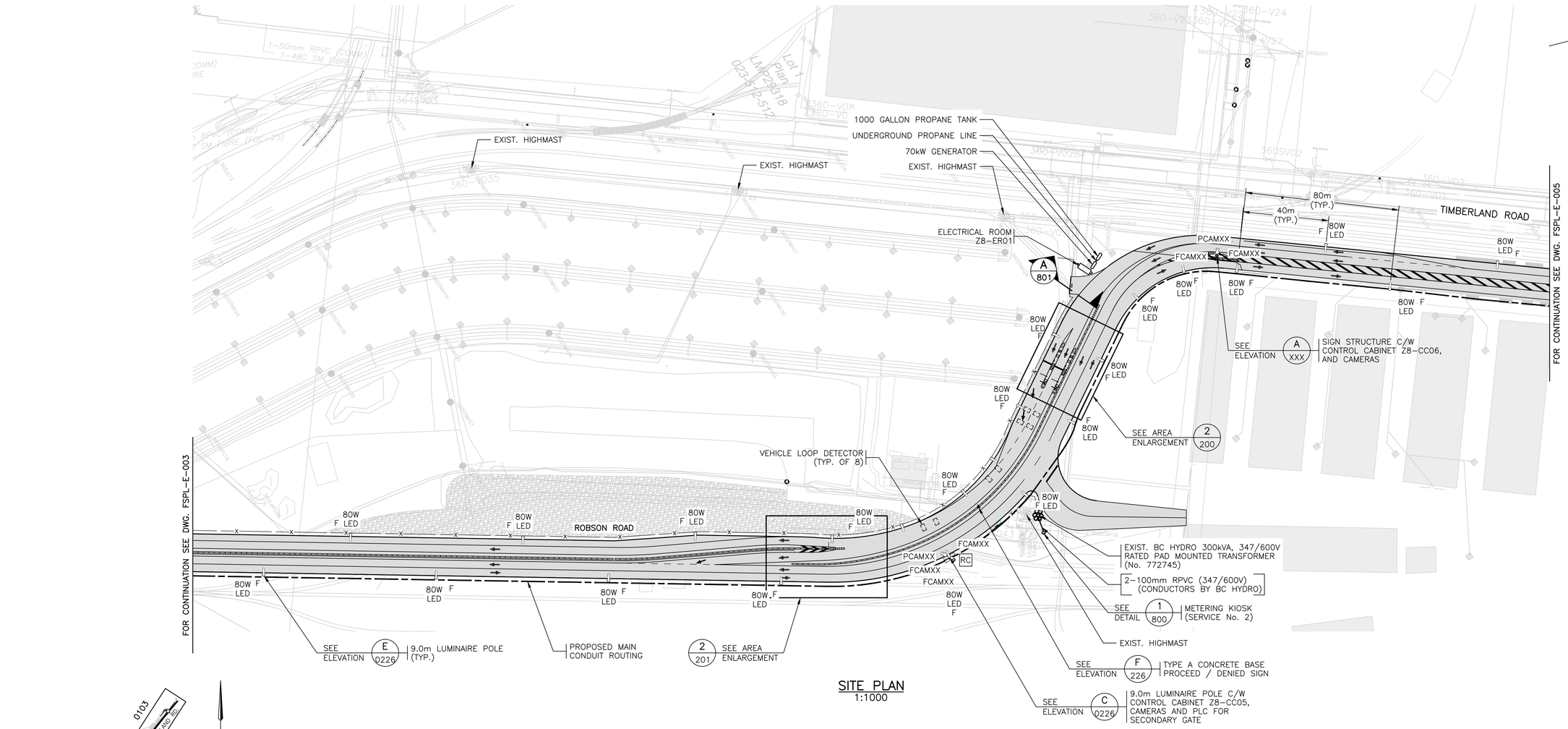
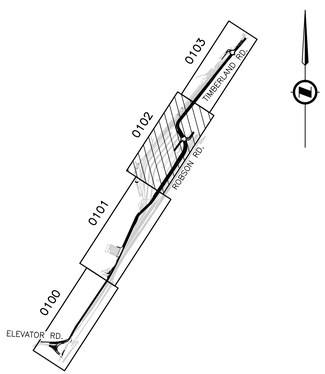


SITE PLAN
1:1000



KEY PLAN
N.T.S.

ISSUED FOR CLIENT REVIEW
NOT FOR CONSTRUCTION

ALL EQUIPMENT IS EXISTING UNLESS NOTED OTHERWISE

0 1:1000 50

Ref.No.	REFERENCE

PBX ENGINEERING

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No.	Date	REVISION	Dr'n	Ch'd
A	DEC15/20	ISSUED FOR CLIENT REVIEW	BC	JV

PORT of vancouver
VANCOUVER FRASER PORT AUTHORITY
ENGINEERING DEPARTMENT

DESIGN BY	E. MICKA
DRAWN BY	PBX
APPROVED	J. VASQUEZ
DATE	2020–12–15
SCALE	SHOWN
PMV SITE	

GREATER VANCOUVER GATEWAY 2030
OPTIONS STUDY
FSPL TRANSPORTATION IMPROVEMENTS
SITE PLAN (SHEET 3 OF 4)

SIZE	DWG.	SHEET	REV.
D	FSPL–E–0102	–	A

DATE: 2020/12/15 – 7:53am
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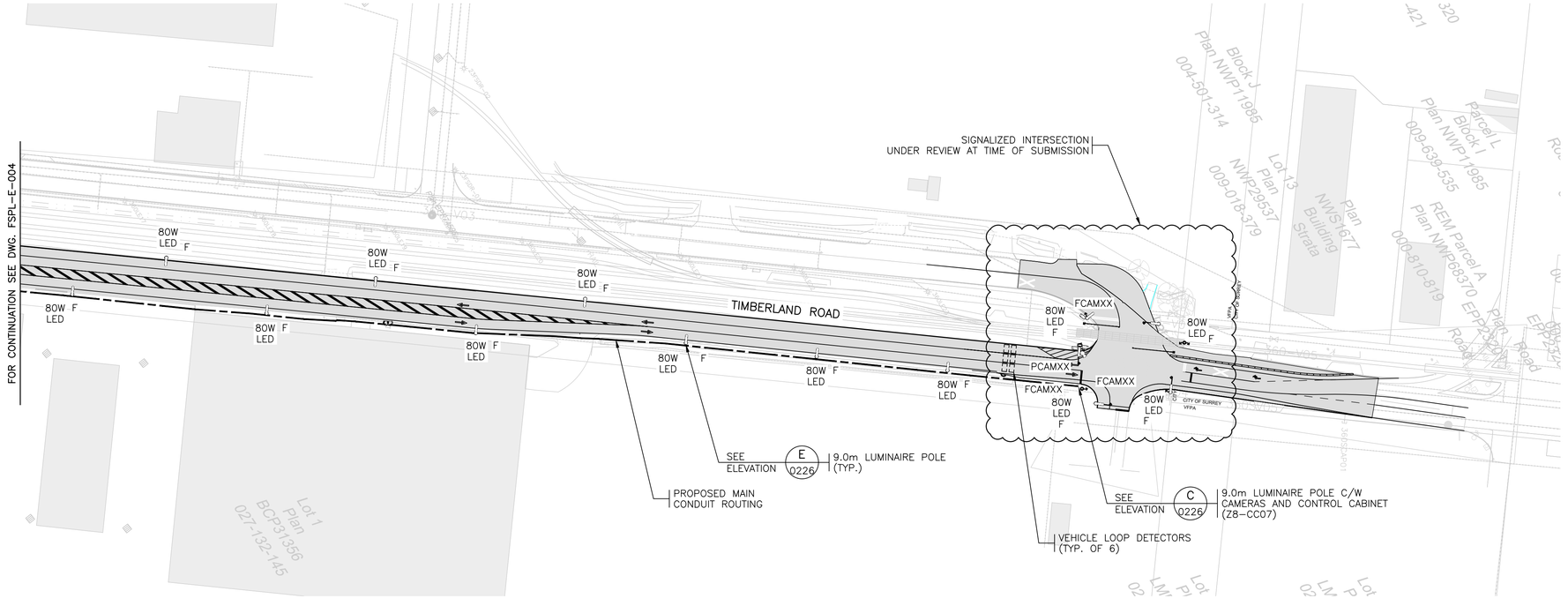
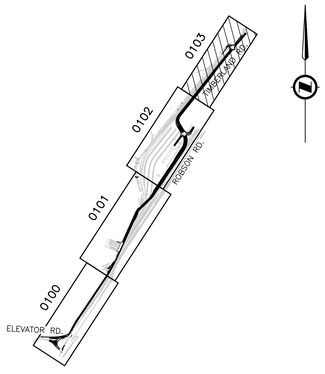


SITE PLAN
1:1000



KEY PLAN
N.T.S.

LIGHTING DESIGN CRITERIA			
ROADWAY NAME	TIMBERLAND ROAD		
CLASSIFICATION	COLLECTOR		
PEDESTRIAN CONFLICT	MEDIUM		
LUMINAIRE INFO	80W LED/LRL/NXT-525mA-2ES 4 LANES (STAGGERED - 80m SPACING)		
	RECOMMENDED	DELIVERED	
		EASTBOUND	WESTBOUND
LUMINANCE (AV.)	0.6 cd/m²	0.77 cd/m²	0.71 cd/m²
VEILING LUMINANCE	L_{MAX}/L_{AV} = 0.3:1	L_{MAX}/L_{AV} = 0.25:1	L_{MAX}/L_{AV} = 0.27:1
UNIFORMITY	L_{AV}/L_{MIN} = 3.5:1 L_{MAX}/L_{MIN} = 6.0:1	L_{AV}/L_{MIN} = 2.48:1 L_{MAX}/L_{MIN} = 4.84:1	L_{AV}/L_{MIN} = 2.29:1 L_{MAX}/L_{MIN} = 4.84.1

NOTE: BASED ON THE IESNA RP-8-18 (TABLE 11-1)

0 1:1000 50

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APPROVED	J. VASQUEZ
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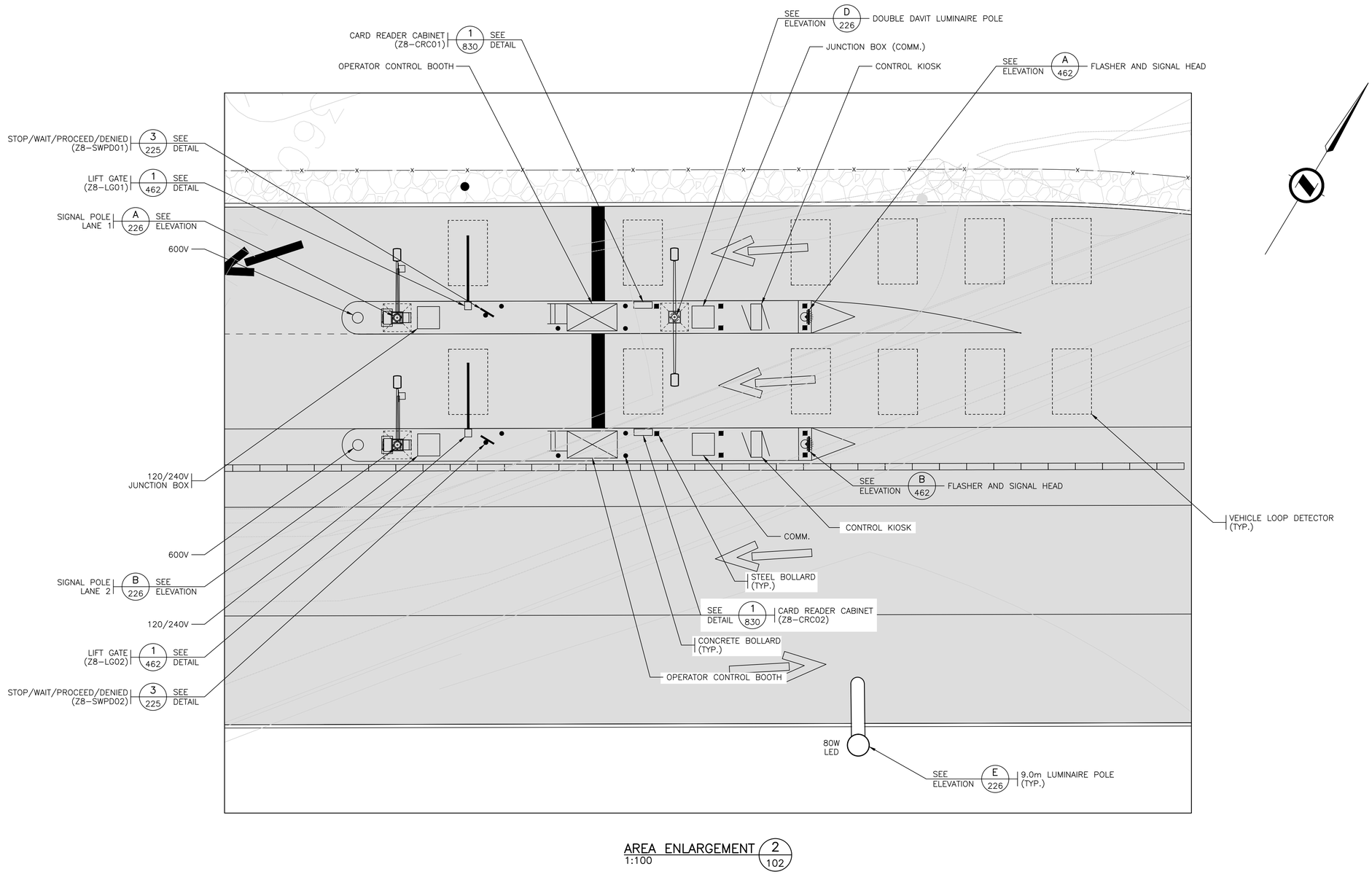
SCALE	SHOWN
PMV SITE	

GREATER VANCOUVER GATEWAY 2030
OPTIONS STUDY
FSPL TRANSPORTATION IMPROVEMENTS
SITE PLAN (SHEET 4 OF 4)

SIZE	DWG.	SHEET	REV.
D	FSPL-E-0103	–	A



AREA ENLARGEMENT 2/102
1:100

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0 1:100 5

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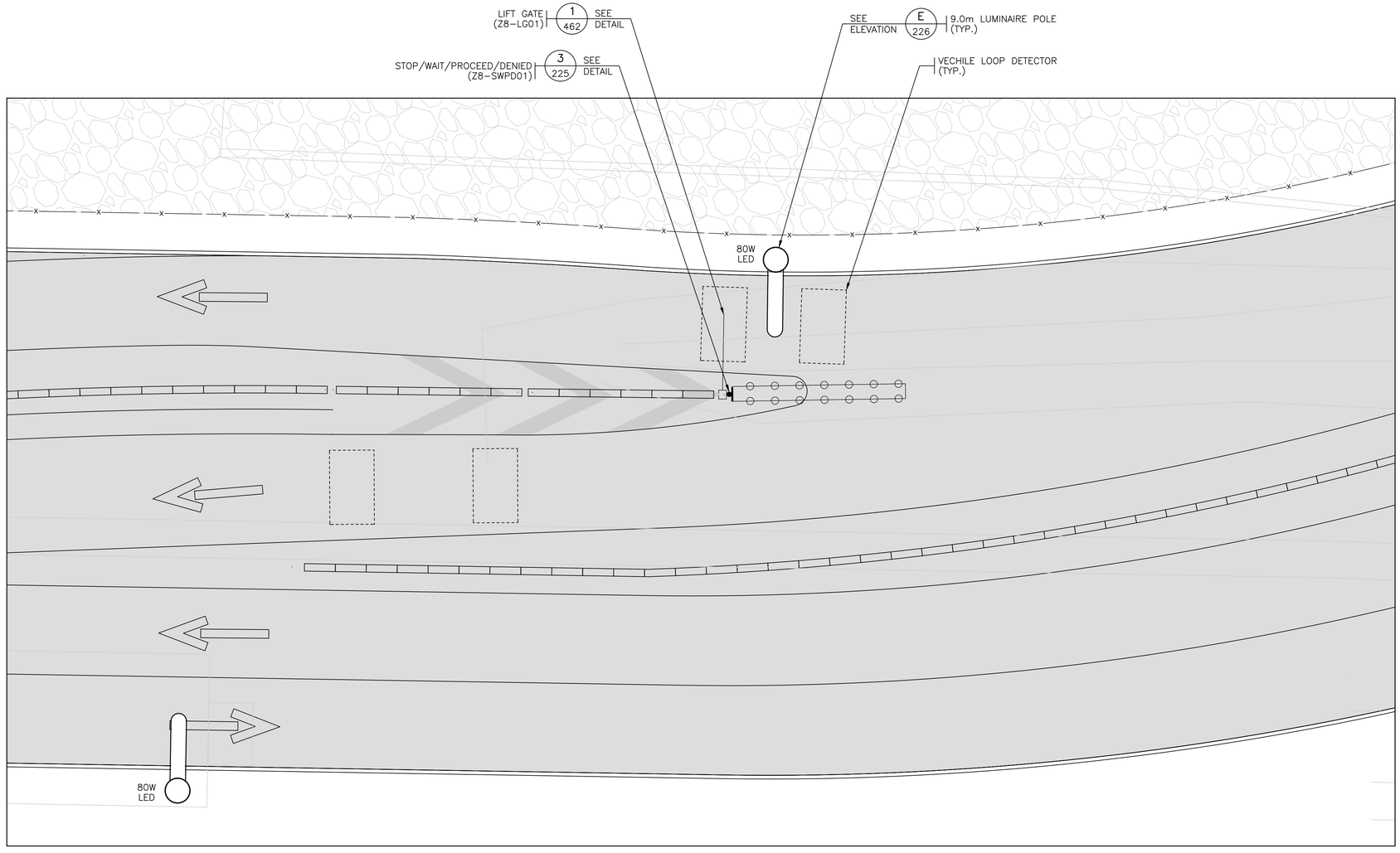
GREATER VANCOUVER GATEWAY 2030
OPTIONS STUDY
FSPL TRANSPORTATION IMPROVEMENTS
AREA ENLARGEMENT

SIZE	DWG.	SHEET	REV.
D	FSPL–E–0200	–	A



AREA ENLARGEMENT 1
1:100
102

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0 1:100 5

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PMV SITE	

GREATER VANCOUVER GATEWAY 2030
OPTIONS STUDY
FSPL TRANSPORTATION IMPROVEMENTS
AREA ENLARGEMENT

SIZE	DWG.	SHEET	REV.
D	FSPL-E-0201	–	A

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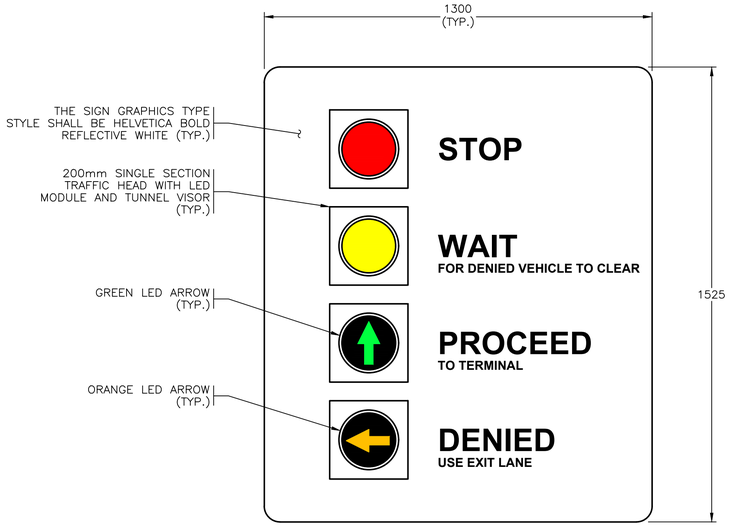
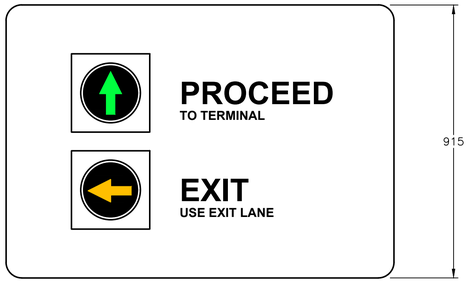
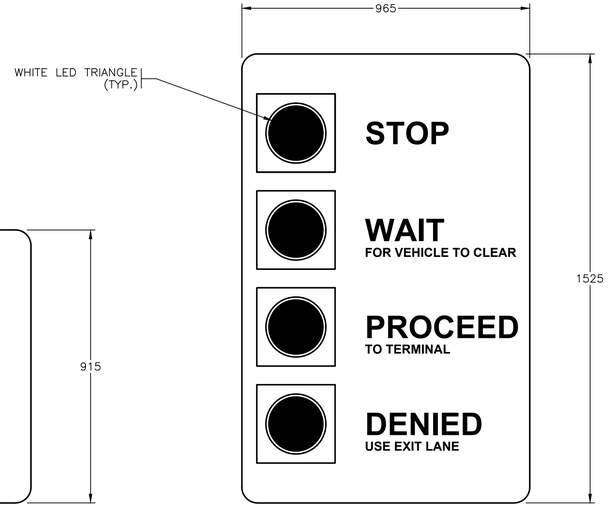


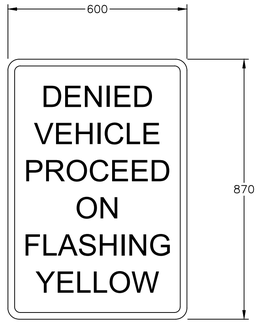
DETAIL 1 (260) FSPL SECONDARY GATE SIGNAGE
1:10



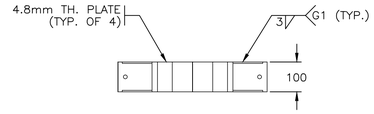
DETAIL 2 (226) FSPL CONFIRMATION SIGNAGE
1:10



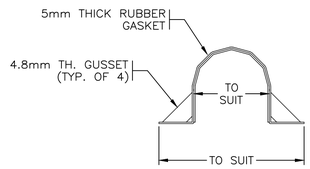
DETAIL 3 (262) (263) FSPL INBOUND SIGNAGE
1:10



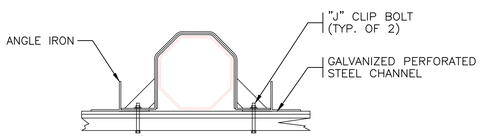
DETAIL 4 (226) CUSTOM SIGN
1:10



PLAN VIEW

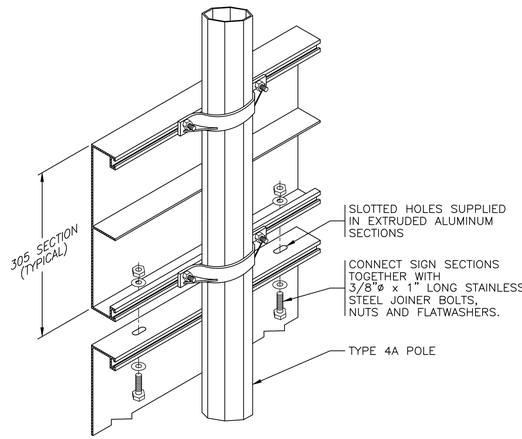


FRONT VIEW



ASSEMBLY VIEW

STOP/WAIT/PROCEED/TURN AROUND SIGN MOUNTING BRACKET ELEVATION
1:10



EXTRUDED ALUMINUM SIGN ASSEMBLY
N.T.S.

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0 1:10 500mm

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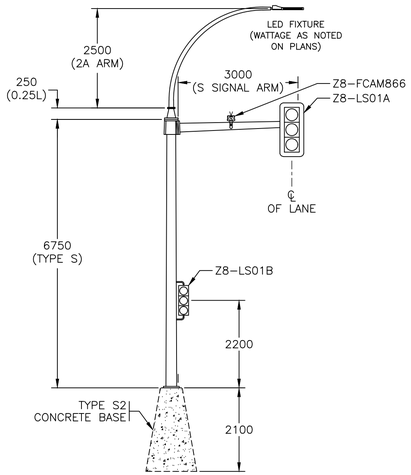
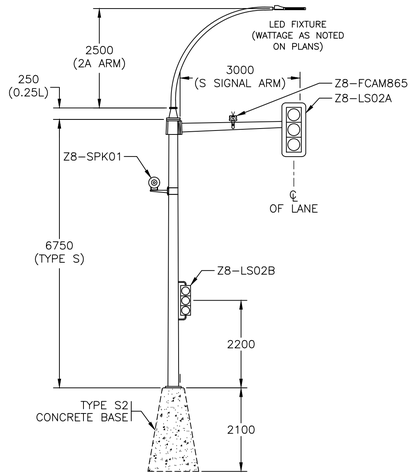
PMV SITE	

GREATER VANCOUVER GATEWAY 2030
OPTIONS STUDY
FSPL TRANSPORTATION IMPROVEMENTS
ZONE 8 – ELEVATIONS AND DETAILS FSPL SIGNAL POLES

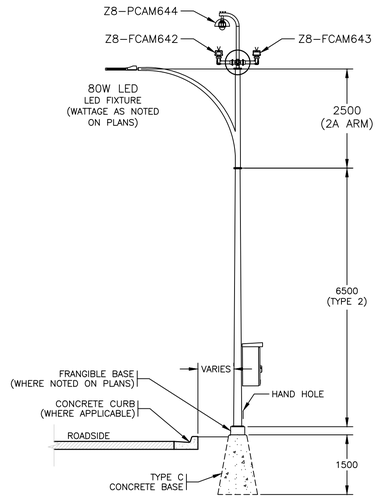
SIZE	DWG.	SHEET	REV.
D	FSPL-E-0225	–	A



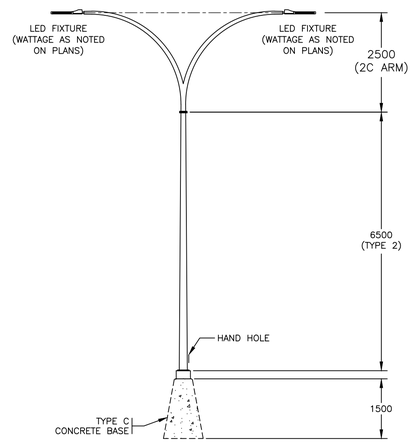
ELEVATION (A / 200) SIGNAL POLE LANE 1
1:75



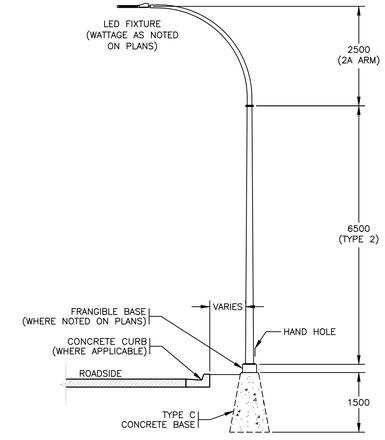
ELEVATION (B / 200) SIGNAL POLE LANE 2
1:75



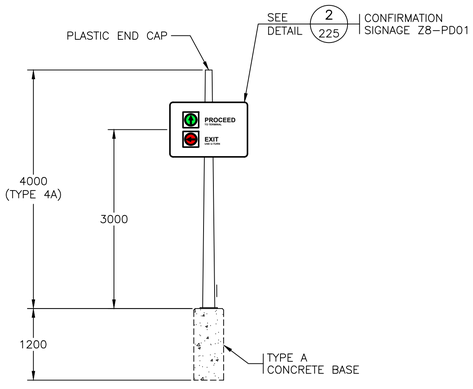
ELEVATION (C / 100) (C / 101) (C / 102) (C / 103) 9.0m LUMINAIRE POLE C/W CABINET AND CAMERAS
1:75



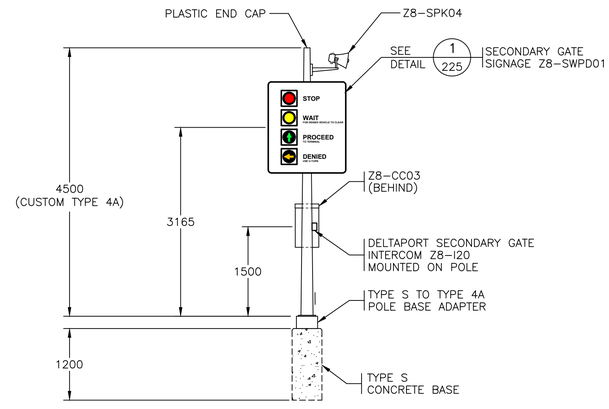
ELEVATION (D / –) DOUBLE DAVIT 9.0 LUMINAIRE POLE
1:75



ELEVATION (E / 100) (E / 101) (E / 102) (E / 103) (E / 200) (E / 201) 9.0m LUMINAIRE POLE
1:75



ELEVATION (F / 150) PROCEED / DENIED SIGN
1:50



ELEVATION (G / 260) STOP / WAIT / PROCEED / DENIED SIGN SECONDARY GATE
1:50

0 1:50 2.5

0 1:75 5

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DRAWN BY	PBX
APPROVED	J. VASQUEZ
DATE	2020-12-15
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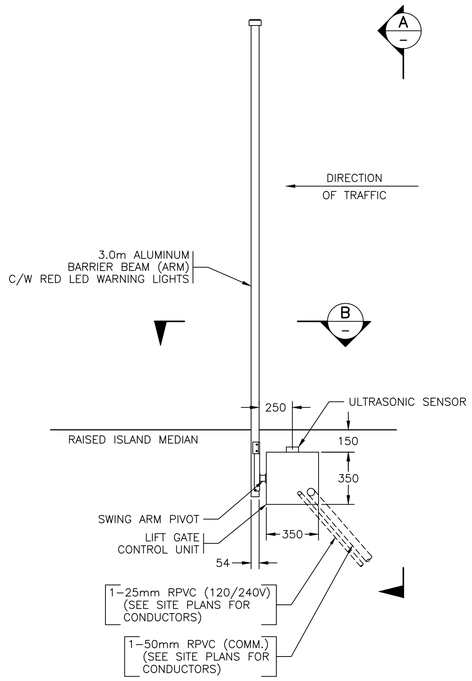
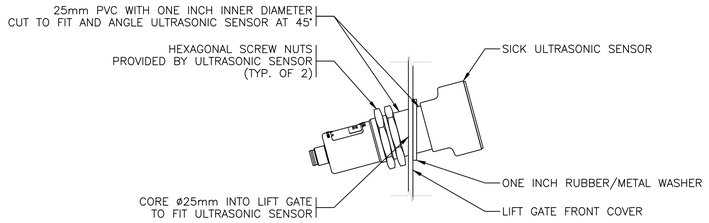
PMV SITE	

GREATER VANCOUVER GATEWAY 2030
OPTIONS STUDY
FSPL TRANSPORTATION IMPROVEMENTS
ZONE 8 – ELEVATIONS AND DETAILS FSPL SIGNAL POLES

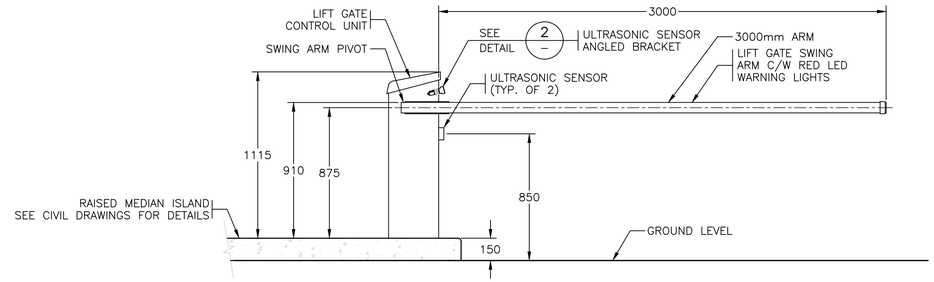
SIZE	DWG.	SHEET	REV.
D	FSPL-E-0226	–	A



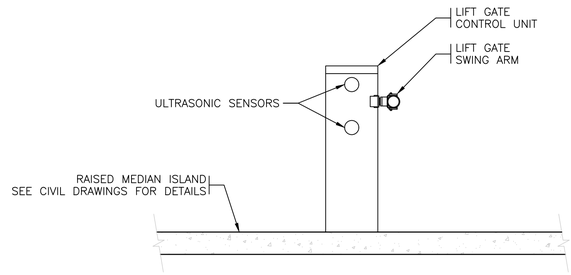
DETAIL 1/200 1/201 Z8 – LIFT GATE TYPICAL LAYOUT
1:20



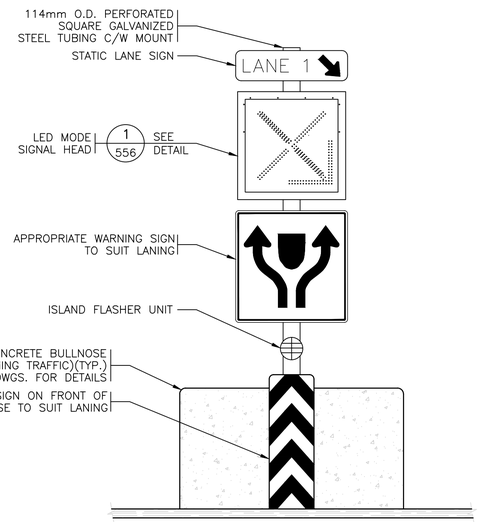
DETAIL 2/– 2/563 ULTRASONIC SENSOR ANGLED BRACKET
1:2



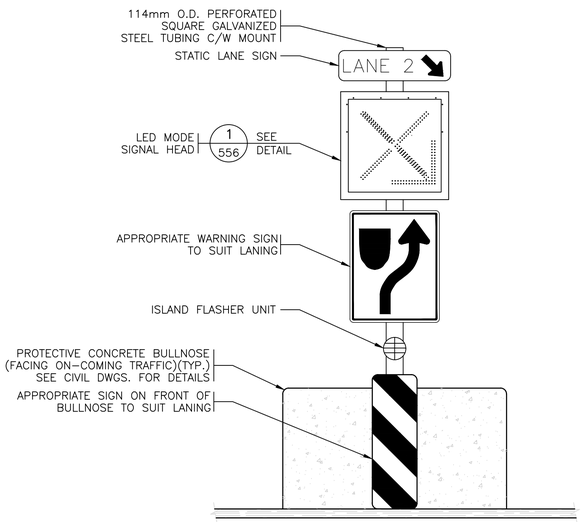
SECTION A/– Z8 – LIFT GATE CONFIGURATION
1:20



SECTION B/–
1:20



ELEVATION A/260 ISLAND FLASHER
1:20



ELEVATION B/261 ISLAND FLASHER
1:20

0 1:20 1

0 1:2 100mm

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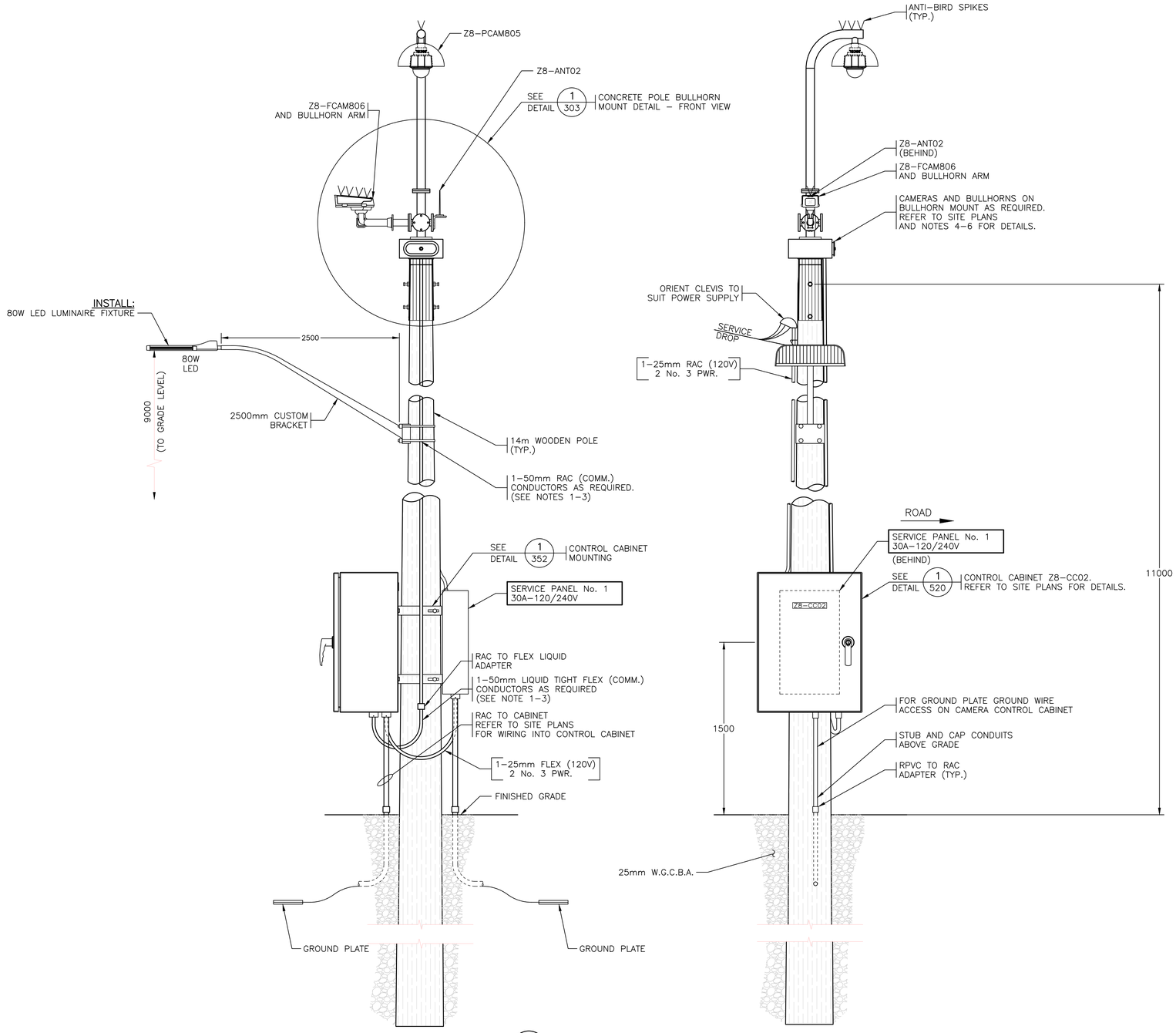
GREATER VANCOUVER GATEWAY 2030
OPTIONS STUDY
FSPL TRANSPORTATION IMPROVEMENTS
ZONE 8 – DETAILS – LIFT GATE LAYOUT

SIZE	DWG.	SHEET	REV.
D	FSPL–E–0462	–	A



ELEVATION A/100 WOODEN CAMERA POLE W/ CONTROL CABINET Z8–CC01
1:20

* NOT ALL INFORMATION SHOWN FOR CLARITY

0 1:20 1

NOTES:

1. PTZ CAMERA CONDUCTORS (TYP.)
   1–CAT5E LAN Z8–PCAM805
2. FIXED CAMERA CONDUCTORS (TYP.)
   1–CAT5E LAN Z8–FCAM806
3. ANTENNA CONDUCTORS (TYP.)
   1–ANTENNA CABLE Z8–ANT02
4. REFER TO SITE PLANS FOR NUMBER OF CAMERAS, BULLHORNS, AND CAMERA CONDUCTOR REQUIREMENTS.

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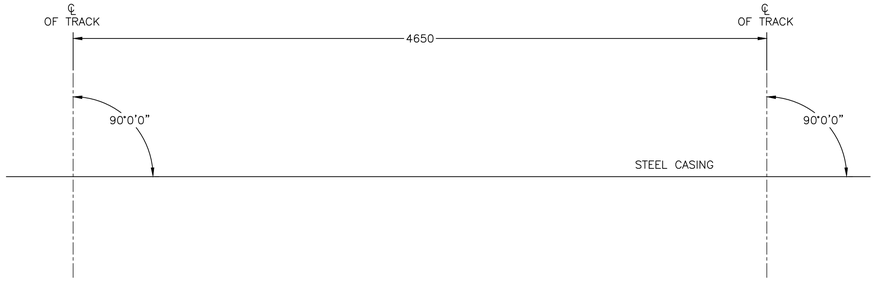
PMV SITE	

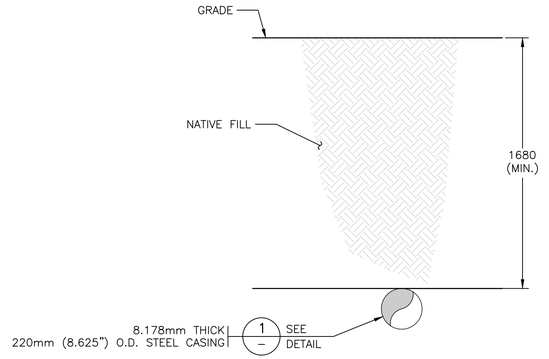
GREATER VANCOUVER GATEWAY 2030
OPTIONS STUDY
FSPL TRANSPORTATION IMPROVEMENTS
ELEVATION – SERVICE POLE AND CABINET

SIZE	DWG.	SHEET	REV.
D	FSPL–E–0507	24 of 57	A

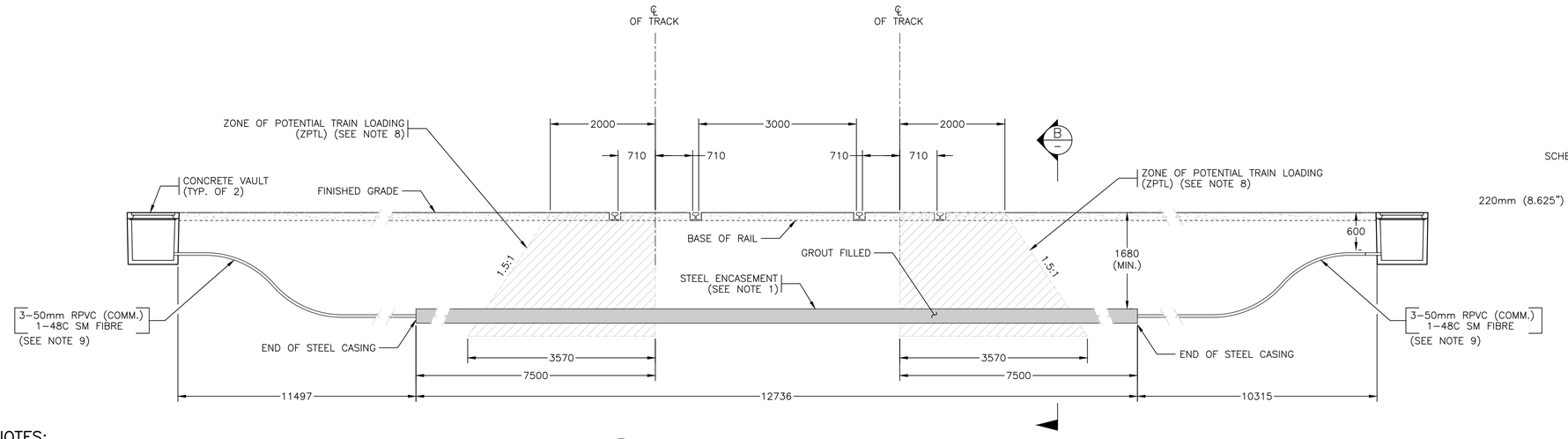
CROSSING SPECIFICATIONS	
CARRIER PIPE #1	I.D. = 50mm W.T. = 5.156mm (MINIMUM) SPEC. = RIGID PVC, SCHEDULE 40
CARRIER PIPE #2	I.D. = 50mm W.T. = 5.156mm (MINIMUM) SPEC. = RIGID PVC, SCHEDULE 40
CARRIER PIPE #3	I.D. = 50mm W.T. = 5.156mm (MINIMUM) SPEC. = RIGID PVC, SCHEDULE 40
CONVEYING #1	1–48C SM FIBRE
CONVEYING #2	(EMPTY)
CONVEYING #3	(EMPTY)
JOINT TYPE	FUSION WELD
ENDS SEALED	VOLCLAY GRANULAR BENTONITE GROUT (20% SOLIDS)
CASING PIPE	O.D. = 220mm W.T. = 8.178mm
SPEC	STEEL, SCHEDULE 40
MIN. YIELD STRENGTH	241 MPa
EXTERNAL COATING	YES
CATHODIC PROTECTION	NO
INSTALLATION METHOD	DIRECTIONAL BORING (SEE NOTE 1)



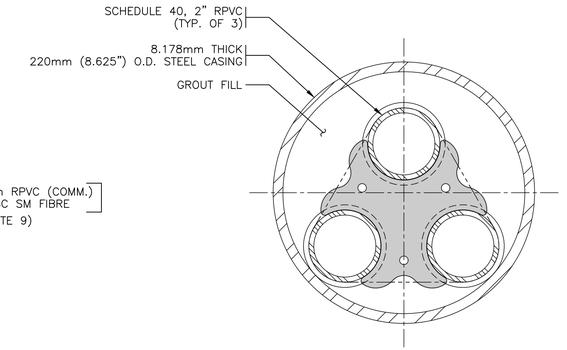
PLAN 1:20 (1/–) STEEL ENCASED CROSSING



SECTION 1:20 (B/–) UNDERGROUND DUCT



DETAIL 1:50 (1/04830–510–ST–0000–D5–110) DIRECTIONAL DRILL UNDERGROUND CROSSING



DETAIL 1:2 (1/113) 220mm (8.625") STEEL CASING w/ 3–50mm RPVC DUCTS

NOTES:

1. STEEL CASE PIPE TO BE INSTALLED BY DIRECTIONAL BORING.
2. CONSTRUCTION, MAINTENANCE AND OPERATION OF THE LINE SHALL BE IN ACCORDANCE WITH TRANSPORT CANADA GENERAL ORDERS E–11 AND E–12 AND CANADIAN STANDARDS ASSOCIATION STANDARDS CAN/CSA – C22.1 No. 1–10 AND CAN3 – C22.3 No. 7–10 AS APPLICABLE.
3. RAILROAD TRACKS LOCATED @ GPS COORDINATES 49°10'41.79"N, 122°54'45.56"W.
4. CROSSING TO BE DESIGNED, CONSTRUCTED, MAINTAINED, AND OPERATED IN ACCORDANCE WITH CANADIAN TRANSPORTATION COMMISSION GENERAL ORDER E11 AND TRANSPORT CANADA STANDARD (TCE–10) STANDARDS RESPECTING PIPELINE CROSSINGS UNDER RAILWAYS.
5. NO GROUND DISTURBANCE WITHIN RAIL RIGHT OF WAY.
6. METHOD OF CONSTRUCTION FOR STEEL CASING IS JACKING ONLY – NO AUGER.
7. WARNING MARKERS SHALL BE INSTALLED AT THE PROPERTY LINE.
8. PIT EXCAVATION WORK SHALL BE OUTSIDE ZONE OF POTENTIAL TRAIN LOADING (ZPTL).
9. POWER CONDUITS TO BE ROUTED INTO RESPECTIVE JUNCTION BOXES.

0 1:2 100mm
0 1:20 1
0 1:50 2.5

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APPROVED	J. VASQUEZ
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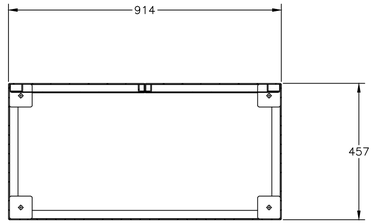
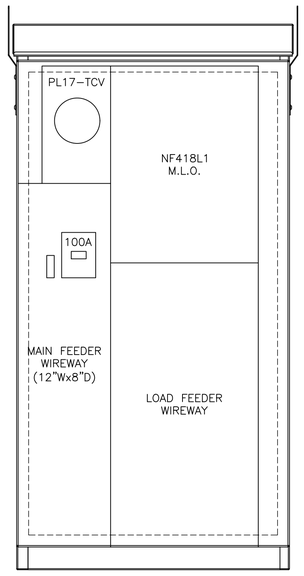
GREATER VANCOUVER GATEWAY 2030
OPTIONS STUDY
FSPL TRANSPORTATION IMPROVEMENTS
DETAILS – DIRECTIONAL DRILL INSTALLATION UNDER RAILROAD TRACKS

SIZE	DWG.	SHEET	REV.
D	FSPL–E–0561	–	A

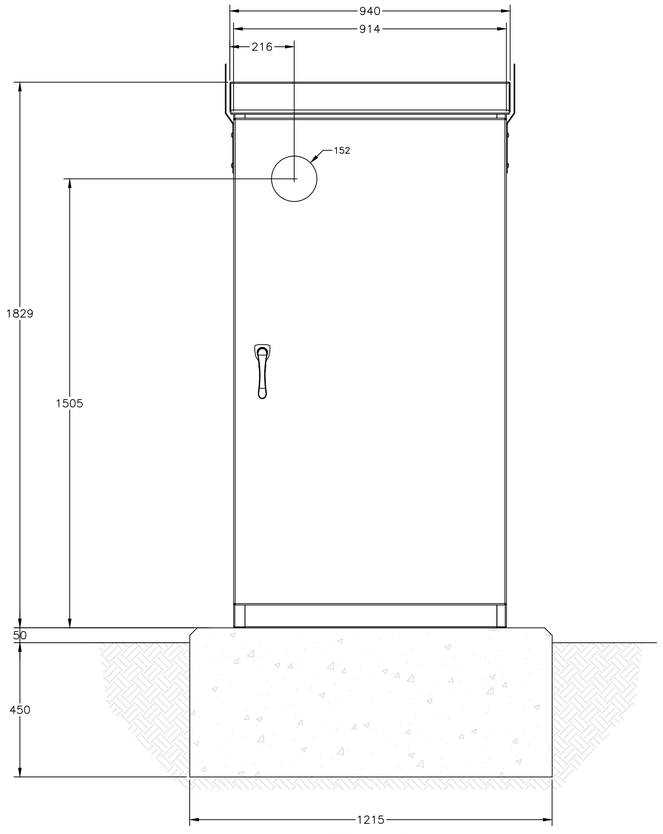


TOP VIEW

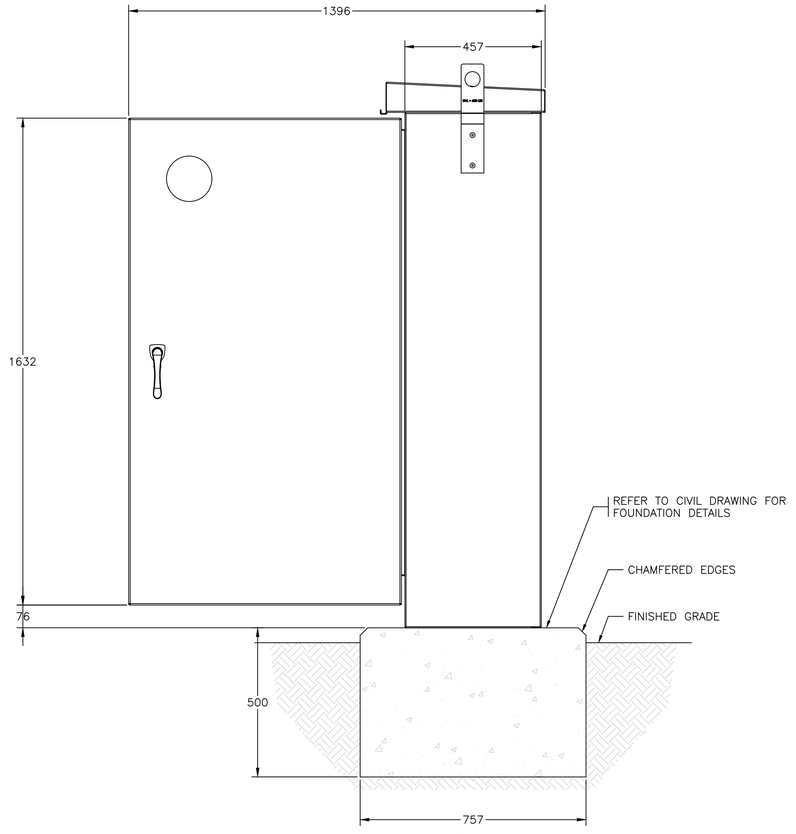


FRONT VIEW

(DOOR NOT SHOWN FOR CLARITY)



FRONT VIEW



SIDE VIEW

DETAIL 1/102 METERING KIOSK

1:10

METERING KIOSK NOTES:

1. CONDUIT NOT SHOWN FOR CLARITY.
2. STANDARD OF ACCEPTANCE FOR METERING KIOSK: VALID MANUFACTURING BCH–600–1–240, OR APPROVED ALTERNATE.
3. POWDER COAT KIOSK TO MATCH SURROUNDING LANDSCAPING. COORDINATE COLOR WITH LANDSCAPE ARCHITECT.

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0 1:10 500mm

DATE: 2020/12/15 – 7:49am
PATH: P:\20073_VFPA Fraser Surrey Port Lands\01 – Design Services\Drawings\ACAD\FSPL–E–0800.dwg

Ref.No.	REFERENCE

PBX ENGINEERING

wsp

No.	Date	REVISION	Dr'n	Ch'd
A	DEC15/20	ISSUED FOR CLIENT REVIEW	BC	JV

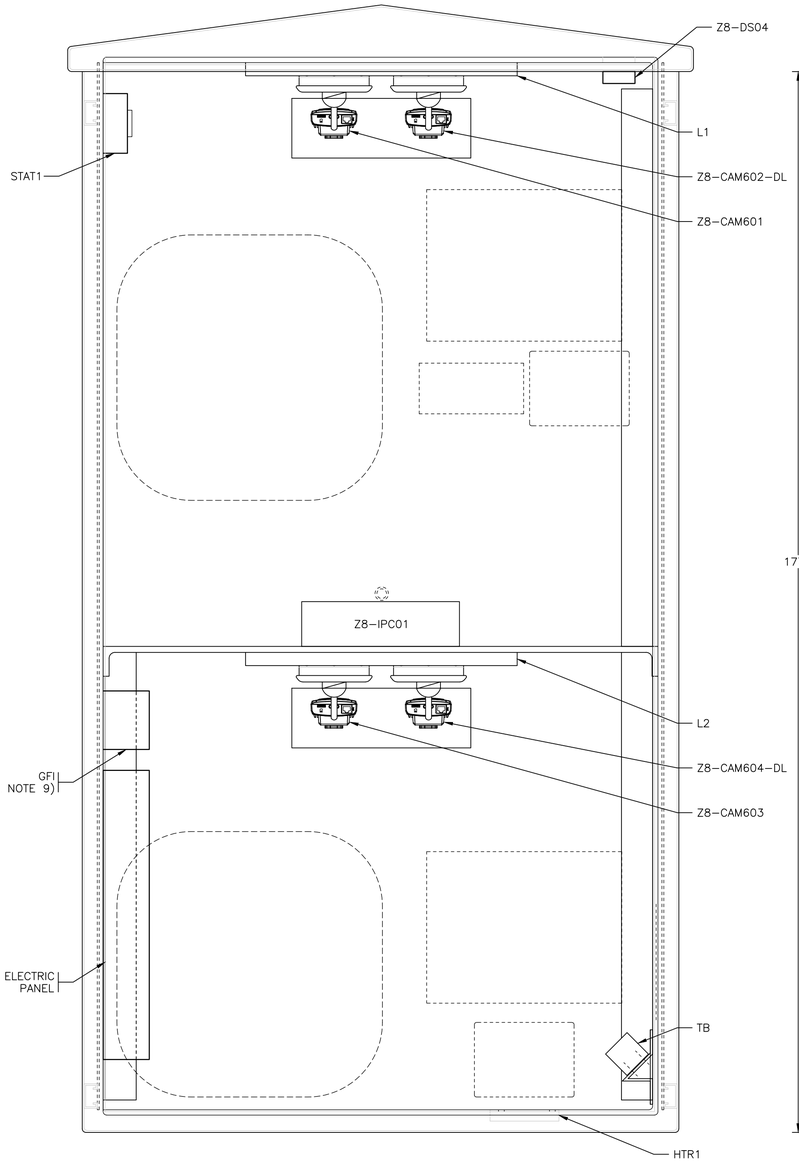
PORT of vancouver

VANCOUVER FRASER PORT AUTHORITY
ENGINEERING DEPARTMENT

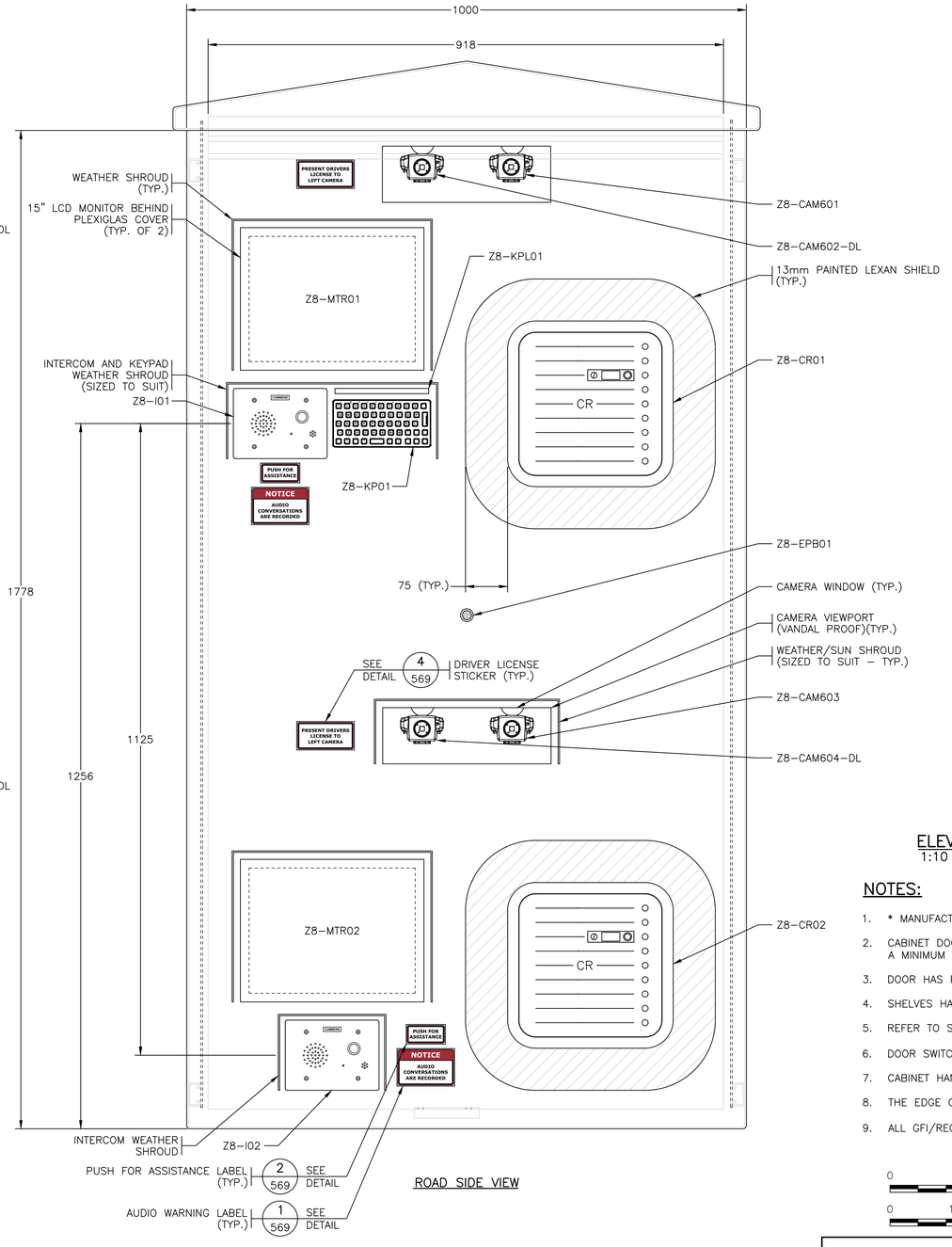
DESIGN BY	E. MICKA
DRAWN BY	PBX
APPROVED	J. VASQUEZ
DATE	2020–12–15
SCALE	SHOWN
PMV SITE	

GREATER VANCOUVER GATEWAY 2030
OPTIONS STUDY
FSPL TRANSPORTATION IMPROVEMENTS
DETAIL – METERING KIOSK

SIZE	DWG.	SHEET	REV.
D	FSPL–E–0800	–	A

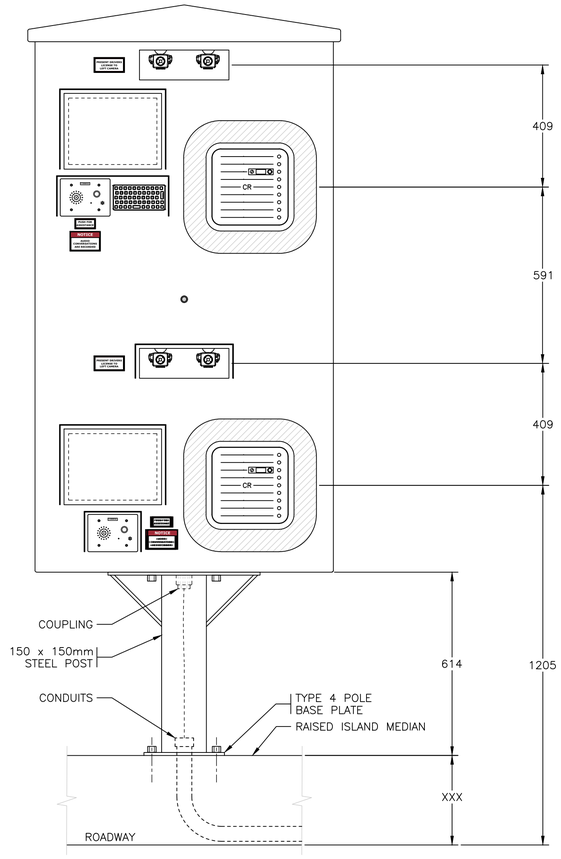


DOOR SIDE VIEW (DOOR REMOVED)



ROAD SIDE VIEW

DETAIL 1/1:5 (263/Z8-CRC01) CAR/TRUCK CARD READER CABINET
Z8-CRC01



ELEVATION A/- 1:10 CAR/TRUCK CARD READER CABINET

NOTES:

1. * MANUFACTURER MAY ADJUST DIMENSIONS TO SUIT EQUIPMENT.
2. CABINET DOORS, WALLS AND ROOF INSTALLED WITH 25mm EXTRUDED POLYSTYRENE INSULATION HAVING A MINIMUM RATING OF 4.5.
3. DOOR HAS FOLD DOWN EQUIPMENT SHELF.
4. SHELVES HAVE TWO 50mm x 100mm SLOTS FOR WIRING ON EACH SIDE.
5. REFER TO SINGLE LINE DIAGRAMS FOR CIRCUIT BREAKER REQUIREMENTS.
6. DOOR SWITCHES ARE TWO POLE (1NO FOR LIGHTING CONTROL AND 1NC FOR PLC MONITORING).
7. CABINET HANDLES INCLUDE PAD LOCKS.
8. THE EDGE OF ALL EXPOSED EQUIPMENT IS SILICONED.
9. ALL GFI/RECEPTACLES ARE FUSED TO 4 AMPS.

0 1:5 250mm

0 1:10 500mm

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SEE SHEET E831 FOR EQUIPMENT LIST

ALL EQUIPMENT IS PROPOSED UNLESS NOTED OTHERWISE

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Ref.No.	REFERENCE

PBX ENGINEERING

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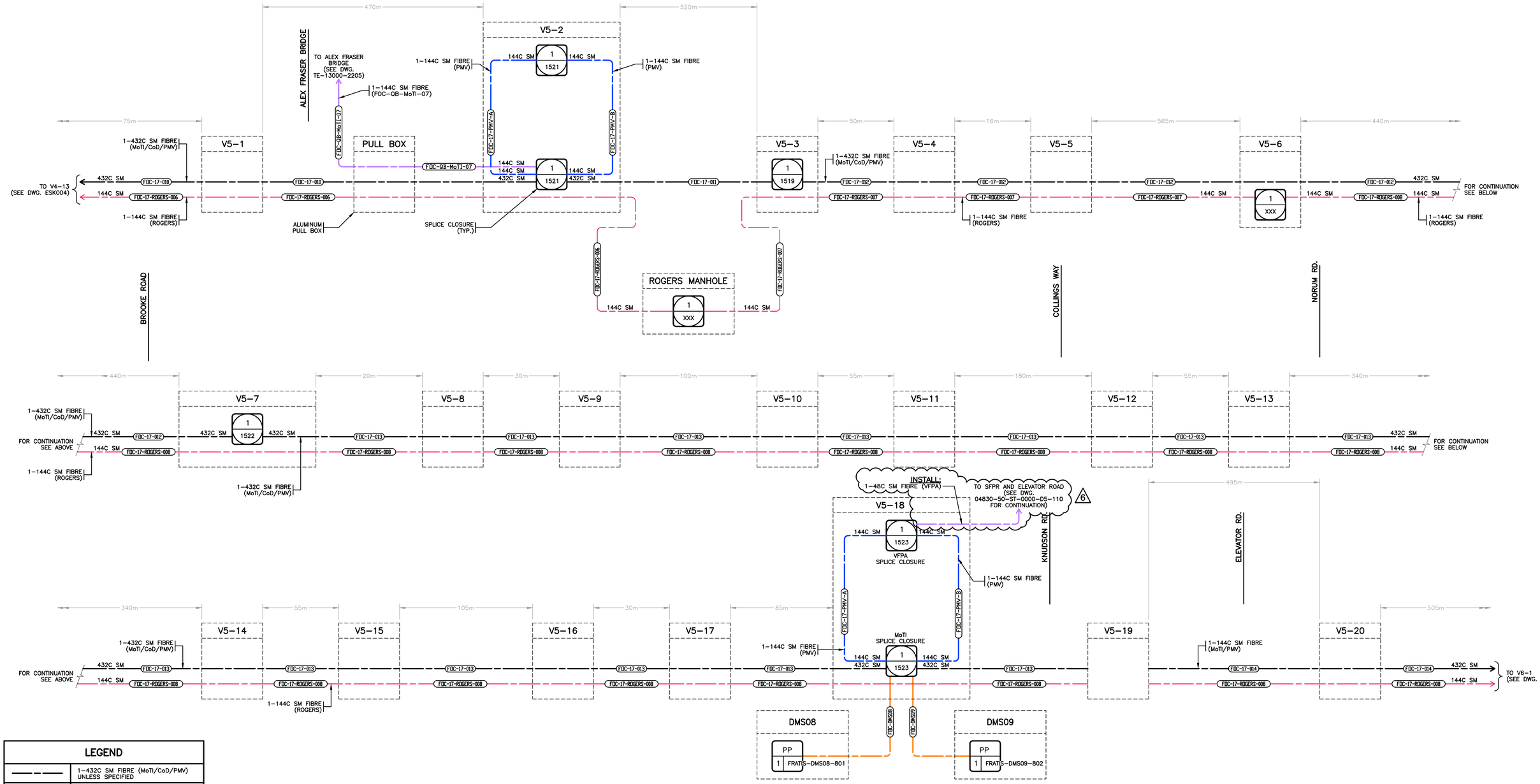
A	DEC15/20	ISSUED FOR CLIENT REVIEW	BC	JV

PORT of vancouver
VANCOUVER FRASER PORT AUTHORITY
ENGINEERING DEPARTMENT

DESIGN BY	E. MICKA
DRAWN BY	PBX
APPROVED	J. VASQUEZ
DATE	2020-12-15
SCALE	SHOWN
PMV SITE	

GREATER VANCOUVER GATEWAY 2030
OPTIONS STUDY
FSPL TRANSPORTATION IMPROVEMENTS
CABINET ELEVATION - Z8-CRC01 (SHEET 1 OF 2)

SIZE	DWG.	SHEET	REV.
D	FSPL-E-0830	-	A



LEGEND

———	1-432C SM FIBRE (MoTI/CoD/PMV) UNLESS SPECIFIED
———	1-144C SM FIBRE (CoD)
———	1-144C SM FIBRE (PMV)
———	1-144C SM FIBRE (MoTI)
———	1-144C SM FIBRE (ROGERS)
———	1-6C SM FIBRE (MoTI)
———	1-48C SM FIBRE (VFPA) 6
# / XXXX	FIBRE OPTIC SPLICE # DENOTES DETAIL NUMBER XXXX DENOTES SHEET NUMBER
PP / 1 / XXXX	FIBRE OPTIC PATCH PANEL DETAIL No. 1, SHEET No. XXXX

ALL VAULTS SHALL HAVE 30m OF FIBRE CABLE SLACK

NOTES:

1. DRAWINGS DO NOT DETAIL ADDITIONAL WORK PERFORMING ON ROGERS FIBRE CABLE.

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CAD FILENAME TE-13000-1506_6.dwg

REV	DATE	REVISIONS	DRAWN
–	13OCT17	ISSUED FOR PERMIT APPLICATION – MoTI FIBRE	FLIR
1	14APR17	SPLICE DETAIL UPDATED – MoTI FIBRE	PBX
2	14MAY28	CoD FOSC REMOVED – MoTI FIBRE	PBX
3	15AUG19	AS-BUILT – MoTI FIBRE	PBX
4	JUN/18	ISSUED FOR FRASER RIVER ATIS	PBX
5	JUN/20	FRASER RIVER ATIS – RECORD DRAWING	PBX
6	DEC/20	VFPA FSPL TRANSPORTATION IMPROVEMENTS – ISSUED FOR CLIENT REVIEW	PBX

ELECTRICAL
SFPR FIBRE RISER DIAGRAM (SEGMENT 5)

FIBRE RISER DIAGRAM

JULIAN VASQUEZ
ELECTRICAL ENGINEER OF RECORD (FOR CURRENT REVISION)
DATE

DESIGNED IL DATE 15AUG18
QUALITY CONTROL JV DATE 15AUG18
QUALITY ASSURANCE IS DATE 15AUG18
TRAN ELECTRICAL DESIGN REVIEW ____ DATE ____

SHEET NUMBER	SITE CODE	HWY DIST	REG	DRAWING NUMBER
SHEET 5 OF 7				TE-13000-1506 | 6

CANCEL PRINTS BEARING PREVIOUS LETTER

H-308

10.10.61.1\PBX drive P (Projects)\20073_VFPA Fraser Survey Port Lands\01 - Design Services\Drawings\ACAD\TE-13000-1506_6_3/12/2020 6:04 PM MICHAEL.TALAGUE

1. 1-53mm RPVC (ITS PWR.) 2 No. 6 (AL) DMS PWR. (DMS08) 2 No. 6 (AL) DMS PWR. (DMS09) 2 No. 6 XFMR. GND. 1 No. 6 (AL) BOND
2. INSTALL: 1-50mm RPVC (COMM.) 1-48C SM FIBRE (VFPA); 3-50mm RPVC (COMM.) (EMPTY); 2-75mm RPVC (COMM.) (EMPTY)
3. INSTALL: NEW VAULT (1.2m x 1.2m)
4. INSTALL: 1-50mm RPVC (COMM.) 1-48C SM FIBRE (VFPA)

ALL JUNCTION BOX HARDWARE SHALL BE ANTI-VANDALISM TYPE (PENTA-BOLT OR EQUIVALENT)

REFER TO SHEET 04830-50-ST-0000-D5-119 FOR SIGNING ELEVATIONS

REFER TO SHEET 04830-50-ST-0000-D5-123 FOR ITS JUNCTION VAULT DETAILS

SIGN STRUCTURE OFFSETS ARE SHOWN ON SHEET 04830-50-ST-0000-D5-119

STREET LIGHT OFFSET IS 0.5m BEHIND CRB, SIDEWALK OR EDGE OF PAVEMENT (UNLESS SHOWN OTHERWISE ON THE PLAN)

ILLUMINANCE DESIGN CRITERIA

ITEM	DESIGN REQUIREMENTS	DESIGN ACHIEVED
STREET NAME(S)	RIVER ROAD	
PEDESTRIAN CONFLICT AREA	MEDIUM	
ROAD CLASSIFICATION	COLLECTOR	
ILLUMINATION TYPE	9m 150W HPS TYPE 3 IES DISTRIBUTION	
SPACING (MAX)	48m	
ILLUMINATION LEVEL (AVG.)	9 LUX	10.08 LUX
UNIFORMITY RATIO (AVG.:MIN.)	4:1	3.48:1

IESNA RP-8 TABLE 2

ILLUMINANCE DESIGN CRITERIA

ITEM	DESIGN REQUIREMENTS	DESIGN ACHIEVED
STREET NAME(S)	SOUTH FRASER PERIMETER ROAD ACCEL LANE	
PEDESTRIAN CONFLICT AREA	MEDIUM	
ROAD CLASSIFICATION	MAJOR	
ILLUMINATION TYPE	11m 250W HPS TYPE 3 IES DISTRIBUTION	
SPACING (MAX)	60m	
ILLUMINATION LEVEL (AVG.)	13 LUX	13.29 LUX
UNIFORMITY RATIO (AVG.:MIN.)	3:1	2.66:1

IESNA RP-8 TABLE 2

DO NOT USE THIS DRAWING FOR PAVEMENT MARKING AND SIGNING STANDARDS

SEE DRAWING FRATIS-PW-002 FOR LEGEND AND NOTES

SEE "STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION" FOR APPLICABLE STANDARD DRAWINGS

TE-12022

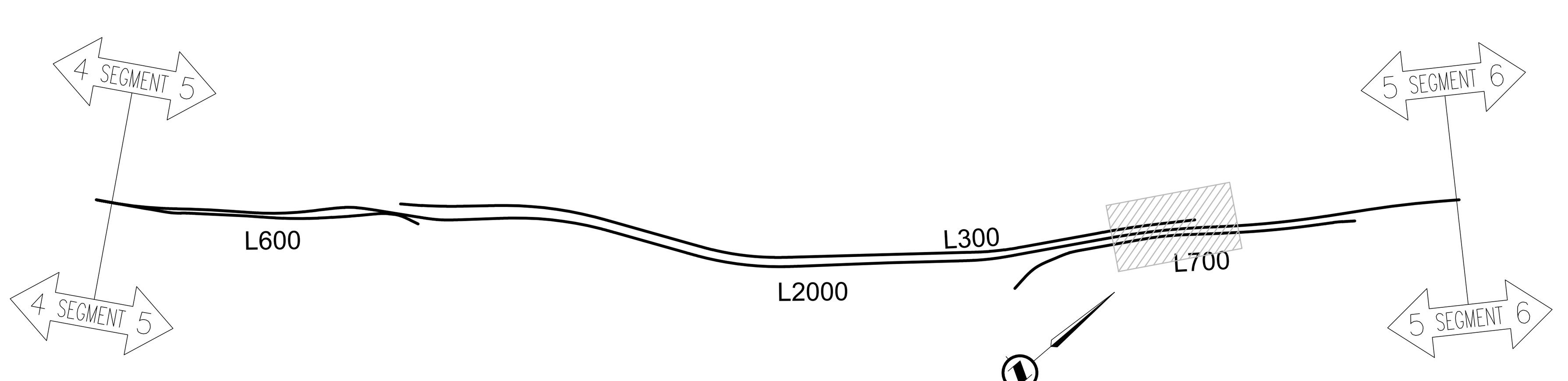
REFER TO SHEET 04830-50-ST-0000-D5-117 FOR POLE ELEVATIONS

MUNICIPAL ROAD POSTED SPEED LIMIT 50km/h

SOUTH FRASER PERIMETER ROAD POSTED SPEED LIMIT 80km/h

REFER TO SHEET 04830-50-ST-0000-D5-001 FOR NOTES, LEGENDS & SPECIFICATIONS

FRATIS DRAWING No. FRATIS-DMS08/09-101



DRAWING KEY

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SCALE 1:500 (0 5 25m)

CAD FILENAME: 073_04830-50-ST-0000-D5-110.DWG
DATE: November 19, 2014

REV	DATE	REVISIONS	SIGNATURE
3	2013.03.25	ISSUED FOR SI-50-ST-5-0291	THYS FOURIE
4	2013.07.03	ISSUED FOR SI-50-ST-5-0441	THYS FOURIE
5	2014.05.01	RECORD DRAWING	THYS FOURIE
6	2018.06.22	ISSUED FOR FRASER RIVER ATIS	PBX
7	2018.11.15	FRASER RIVER ATIS - TRANSFORMER DETAILS ADDED	PBX
8	2020.06.08	FRASER RIVER ATIS - RECORD DRAWING	PBX
9	2020.12.15	VFPA FSPL TRANSPORTATION IMPROVEMENTS - ISSUED FOR CLIENT REVIEW	PBX

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SOUTH FRASER PERIMETER ROAD
SEGMENT 5
PLAN - ELECTRICAL
L2000 STA 270+60 TO STA 274+20

CORY EDGAR
SENIOR DESIGNER
DATE JUNE 8, 2020

DESIGNED RVEY DATE 2020-06-02
QUALITY CONTROL JVASQUEZ DATE 2020-06-05
QUALITY ASSURANCE CEDGAR DATE 2020-06-08
DRAWN PBX DATE 2020-06-03

PROJECT No. CONSULTANT SEG DWG# REV
04830-50-ST-0000-D5-110 | 9

CANCEL PRINTS BEARING PREVIOUS LETTER OR NUMBER

PLOTTED: 2020/12/14 @ 4:37 PM BY: Michael Tobelkor
\\10.10.61.1\PBX_drive P (Projects)\20073_VFPA Fraser Surrey Port Lands\01 - Design Services\Drawings\ACAD\073_04830-50-ST-0000-D5-110.dwg

TO DMS08
(REFER TO PATCH PANEL DETAIL 1 ON DWG. FRATIS–DMS08–801)

6C SM FIBRE
(FOC–DMS08)

1
2
3
4
5
6

MoTI SPLICE CLOSURE

(RIBBON 1)	1–12	1–12	(RIBBON 1)
(RIBBON 2)	13–14	13–14	(RIBBON 2)
(RIBBON 2)	15–16	15–16	(RIBBON 2)
(RIBBON 2)	17–24	17–24	(RIBBON 2)
(RIBBON 3)	25–36	25–36	(RIBBON 3)
(RIBBON 4)	37–48	37–48	(RIBBON 4)
(RIBBON 5)	49–60	49–60	(RIBBON 5)
(RIBBON 6)	61–72	61–72	(RIBBON 6)
(RIBBON 7)	73–84	73–84	(RIBBON 7)
(RIBBON 8)	85–96	85–96	(RIBBON 8)
(RIBBON 9)	97–108	97–108	(RIBBON 9)
(RIBBON 10)	109–120	109–120	(RIBBON 10)
(RIBBON 11)	121–132	121–132	(RIBBON 11)
(RIBBON 12)	133–144	133–144	(RIBBON 12)
(RIBBON 13)	145–156	145–156	(RIBBON 13)
(RIBBON 14)	157–168	157–168	(RIBBON 14)
(RIBBON 15)	169–180	169–180	(RIBBON 15)
(RIBBON 16)	181–192	181–192	(RIBBON 16)
(RIBBON 17)	193–204	193–204	(RIBBON 17)
(RIBBON 18)	205–216	205–216	(RIBBON 18)
(RIBBON 19)	217–228	217–228	(RIBBON 19)
(RIBBON 20)	229–240	229–240	(RIBBON 20)
(RIBBON 21)	241–252	241–252	(RIBBON 21)
(RIBBON 22)	253–264	253–264	(RIBBON 22)
(RIBBON 23)	265–276	265–276	(RIBBON 23)
(RIBBON 24)	277–288	277–288	(RIBBON 24)
(RIBBON 25)	289–300	289–300	(RIBBON 25)
(RIBBON 26)	301–312	301–312	(RIBBON 26)
(RIBBON 27)	313–324	313–324	(RIBBON 27)
(RIBBON 28)	325–336	325–336	(RIBBON 28)
(RIBBON 29)	337–348	337–348	(RIBBON 29)
(RIBBON 30)	349–360	349–360	(RIBBON 30)
(RIBBON 31)	361–372	361–372	(RIBBON 31)
(RIBBON 32)	373–384	373–384	(RIBBON 32)
(RIBBON 33)	385–396	385–396	(RIBBON 33)
(RIBBON 34)	397–408	397–408	(RIBBON 34)
(RIBBON 35)	409–420	409–420	(RIBBON 35)
(RIBBON 36)	421–432	421–432	(RIBBON 36)

CoD

MoTI

SEE NOTE 1

1–96C (VFPA)

97–144C (VFPA)

FUSION SPLICE (TYP.)

FIBRE CAP (TYP.)

TO V5–18

432C SM FIBRE
(FOC–17–013)

432C SM FIBRE
(FOC–17–014)

TO V5–20

1
2
3
4
5
6

6C SM FIBRE
(FOC–DMS09)

TO DMS09
(REFER TO PATCH PANEL DETAIL 1 ON DWG. FRATIS–DMS09–801)

(FOC–17–VFPA–A)

(FOC–17–VFPA–B)

VFPA SPLICE CLOSURE

144C (VFPA)

144C (VFPA)

6

TO SFPR AND ELEVATOR ROAD (SEE DWG. 04830–50–ST–0000–D5–110 FOR CONTINUATION)

INSTALL:
1–48C SM FIBRE (VFPA)

DETAIL 1 V5–19 FIBER SPLICE
N.T.S. TE–13000–1506

FIBRE COLOUR CODE	
STRAND NUMBER	COLOUR
1	BLUE
2	ORANGE
3	GREEN
4	BROWN
5	GRAY
6	WHITE
7	RED
8	BLACK
9	YELLOW
10	VIOLET
11	ROSE
12	AQUA

CONSTRUCTION NOTES:

1. 96C TO BE SPLICED TO 144C PATCH CABLE. EXCESS FIBRE TO BE CAPPED.
2. MAIN 432C RIBBON FIBRE TRUNK (FoC–17–013) IS SHARED AMONGST THREE JURISDICTIONS:
   - RIBBONS 1 THROUGH 16 OWNED BY MoTI
   - RIBBONS 17 THROUGH 28 OWNED BY CoD
   - RIBBONS 29 THROUGH 36 OWNED BY PMV
2. MAIN FIBRE TRUNK (FoC–17–014) IS SHARED AMONGST TWO JURISDICTIONS:
   - RIBBONS 1 THROUGH 28 OWNED BY MoTI
   - RIBBONS 29 THROUGH 36 OWNED BY PMV
3. PROVIDE SUFFICIENT FIBRE SLACK IN SPLICE CLOSURE FOR FUTURE SPLICING.

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ALL EQUIPMENT IS EXISTING UNLESS NOTED OTHERWISE

SEE DRAWING FRATIS–002 FOR LEGEND AND NOTES

SEE "STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION" FOR APPLICABLE STANDARD DRAWINGS

FRATIS DRAWING No. FRATIS–DMS08/09–800

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REV	DATE	REVISIONS	DRAWN
–	13OCT17	ISSUED FOR PERMIT APPLICATION – MoTI FIBRE	FLIR
1	14APR17	FIBRE DETAIL UPDATED – MoTI FIBRE	PBX
2	14MAY28	CoD FOSC REMOVED – MoTI FIBRE	PBX
3	15SEP25	AS–BUILT – MoTI FIBRE	PBX
4	JUN/18	ISSUED FOR FRASER RIVER ATIS	PBX
5	JUN/20	FRASER RIVER ATIS – RECORD DRAWING	PBX
6	DEC/20	VFPA FSPL TRANSPORTATION IMPROVEMENTS – ISSUED FOR CLIENT REVIEW	PBX

MoTI FIBRE INSTALLATION – SFPR ELECTRICAL
SOUTH FRASER PERIMTER ROAD & ELEVATOR ROAD

FIBER SPLICE DETAIL – V5–19

CORY EDGAR
ELECTRICAL ENGINEER OF RECORD (FOR CURRENT REVISION)
DATE

DESIGNED RV DATE JUN/20
QUALITY CONTROL JV DATE JUN/20
QUALITY ASSURANCE CE DATE JUN/20
TRAN ELECTRICAL DESIGN REVIEW ____ DATE ____

SHEET NUMBER	SITE CODE	HWY DIST	REG	DRAWING NUMBER
SHEET OF				TE–13000–1523 | 6