

1 SITE KEY PLAN  
1:3000

DRAWING LIST	
E-000	KEY PLAN AND SYMBOL LEGEND
E-001	OUTDOOR ENCLOSURE TR6
E-002	NEIGHBOURHOODS 'A', 'B', 'C', 'E', 'F'
E-003	OUTDOOR ENCLOSURE TR12
E-004	WASTE WATER TREATMENT PLANT
E-100	MAIN POWER HOUSE (BLDG. 115) SINGLE LINE AND ELECTRICAL DETAILS
E-101	MAIN POWER HOUSE (BLDG. 115) DECONSTRUCTION PLAN
E-102	MAIN POWER HOUSE (BLDG. 115) FLOOR PLAN
E-103	BUILDING 103 - PARTIAL SITE AND FLOOR PLANS
E-104	BUILDING 103 - SINGLE LINE AND ELECTRICAL DETAILS
E-105	BUILDING 105 - PARTIAL SITE AND FLOOR PLANS
E-106	BUILDING 105 - SINGLE LINE AND ELECTRICAL DETAILS
E-200	ELECTRICAL DETAILS
E-201	ELECTRICAL DETAILS
E-202	UPDATED PARTIAL SITE PLAN: HIGH VOLTAGE FEEDER REPLACEMENT
E-203	MAIN POWER HOUSE (BLDG. 115) PHASING NOTES
E-204	BUILDING 103 PHASING NOTES
E-205	BUILDING 105 PHASING NOTES
E-206	WASTE WATER TREATMENT PLANT PHASING NOTES
E-400	EXISTING SITE SINGLE LINE DIAGRAM
E-401	SITE SINGLE LINE DIAGRAM - NEW (1 OF 2)
E-402	SITE SINGLE LINE DIAGRAM - NEW (2 OF 2)

GENERAL PROJECT NOTES:

- PROVIDE COORDINATED OVERCURRENT PROTECTIVE DEVICES THAT MITIGATE ARC FLASH INCIDENT ENERGY LEVELS BELOW 8 CAL/CM2.
- PROVIDE NON-DESTRUCTION CABLE TESTING USING VERY LOW FREQUENCY METHOD FOR ALL PRIMARY FEEDERS THAT ARE PART OF THIS SCOPE OF WORK. PROVIDE TEST RESULTS TO DEPARTMENTAL REPRESENTATIVE.
- PRIOR TO EXCAVATING, USE GROUND PENETRATING RADAR TO IDENTIFY ALL UNDERGROUND SERVICES THAT WILL BE AFFECTED BY THE WORK AND PROVIDE DIMENSIONED LAYOUT TO DEPARTMENTAL REPRESENTATIVE. CAREFULLY EXPOSE SERVICES BY HAND WHERE APPROPRIATE.
- WHERE UNDERGROUND SERVICES ARE ENCOUNTERED DURING EXCAVATION FOR DUCTS, PRECAUTIONS ARE TO BE TAKEN TO MAINTAIN THESE SERVICES - PIPES, CABLES, ETC. - AND IF BROKEN DURING THE PROCESS, ARE TO BE REPAIRED UNDER THIS CONTRACTOR'S SCOPE OF WORK, TO THE SATISFACTION OF THE DEPARTMENTAL REPRESENTATIVE.
- NO INSTALLED DUCTS IN TRENCHES TO BE LEFT OPEN OVERNIGHT. ALL OPEN TRENCHES IN ROADS SHALL BE COVERED WITH STEEL PLATES.
- RESTORE ALL LANDSCAPING IN AFFECTED AREAS TO MATCH ORIGINAL LANDSCAPE CONDITIONS.
- ALL NEW CIRCUIT BREAKERS, 200A OR GREATER, TO BE LSI ELECTRONIC TRIP CIRCUIT BREAKERS.
- THE TRANSFER SWITCH (WHETHER NOTED AS OPEN TRANSITION OR CLOSED TRANSITION) THAT IS TO BE PROVIDED WILL INITIALLY BE CONNECTED IN AN OPEN TRANSITION. HOWEVER, IT WILL ULTIMATELY BE CONFIGURED AS A CLOSED TRANSITION TRANSFER SWITCH. THE CONTRACTOR IS TO PROVIDE ADDITIONAL MOBILIZATION, MODIFICATION, AND COMMISSIONING SERVICES TO TRANSITION THE TRANSFER SWITCH FROM OPEN TO CLOSED TRANSITION.
- SHUTDOWNS TO OCCUR ON WEEKENDS OR AS DESIGNATED BY THE DEPARTMENTAL REPRESENTATIVE.
- PROVIDE TREE PROTECTION FENCES LARGE ENOUGH TO EXTEND TO THE DRIP LINE OF TREES IN CLOSE PROXIMITY TO SITE WORK.
- ALLOW FOR UP TO TWO VISITS PER DAY TO ENSURE GENERATORS WILL RUN CONTINUOUSLY FOR 26 HOUR PERIOD.

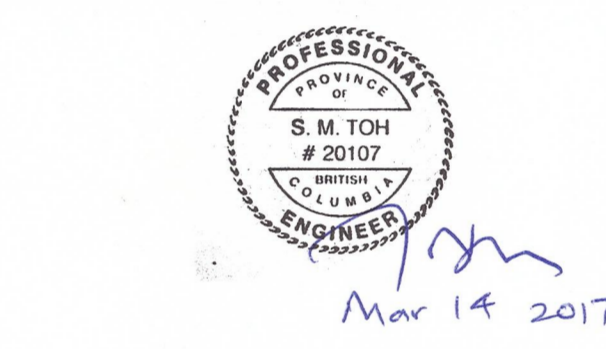
SCHEMATIC SYMBOLS	
	DRAW OUT LOW VOLTAGE CIRCUIT BREAKER
	LOW VOLTAGE CIRCUIT BREAKER
	HIGH VOLTAGE CIRCUIT BREAKER
	DRAW OUT HIGH VOLTAGE CIRCUIT BREAKER
	LOAD BREAK SWITCH
	DISCONNECT SWITCH
	FUSE
	TRANSFORMER
	AUTOTRANSFORMER
	CURRENT TRANSFORMERS (# INDICATES NUMBER OF CTs IN GROUP)
	ZERO SEQUENCE CURRENT TRANSFORMER
	POTENTIAL TRANSFORMERS (# INDICATES NUMBER OF PTs IN GROUP)
	TRANSFER SWITCH
	FOUR POSITION, T-BLADE SWITCH
	MOTOR OPERATOR FOR LOAD BREAK SWITCH
	SHUNT TRIP
	RELAY (TYPE AS NOTED)
	AUTOMATIC TRANSFER SWITCH C/W SINGLE ISOLATION/BYPASS
	AUTOMATIC TRANSFER SWITCH C/W DUAL ISOLATION/BYPASS
	NORMALLY OPEN CONTACT
	NORMALLY CLOSED CONTACT
	GENERATOR
	REVENUE METER
	DIGITAL INFORMATION METER
	DELTA CONNECTION
	WYE CONNECTION
	GROUND CONNECTION
	HIGH VOLTAGE STRESS RELIEF CONE
	POTHEAD
	CAPACITOR
	SURGE PROTECTIVE DEVICE
	LIGHTNING ARRESTOR
	PANELBOARD
	PUSH PULL SWITCH
	MANHOLE
	GROUND BUS
	OHMMETER
	KEY SWITCH/KEY INTERLOCK
	VOLTMETER
	CONNECTION
	MAGNETIC MOTOR STARTER
	MANUAL MOTOR STARTER
	MOTOR OVERLOAD
	BREAK LINE
	CONTINUATION BREAK
	CABLE FAULT INDICATOR (# INDICATES TYPE, REFER TO DRAWING NOTES)
	DEAD BREAK SEPARABLE INSULATED CONNECTORS

POWER PLAN SYMBOLS	
	COMBINATION DISCONNECT AND MAGNETIC MOTOR STARTER
	DISCONNECT SWITCH
	FUSED DISCONNECT SWITCH
	MAGNETIC MOTOR STARTER
	CONDUIT STUB
	CONDUIT UP
	CONDUIT DOWN

GENERAL SYMBOLS	
	NOTE REFERENCE
	EQUIPMENT REFERENCE
	REVISION NUMBER
	WIRING HOME RUN

ABBREVIATIONS	
EX	EXISTING DEVICE TO REMAIN
RE	REMOVE EXISTING DEVICE
RP	REPLACE EXISTING DEVICE WITH NEW DEVICE
RL	RELOCATE EXISTING DEVICE
ER	EXISTING DEVICE IN RELOCATED POSITION
TYP	TYPICAL
WP	WEATHERPROOF

LEGEND	
	PRIMARY UG LINE - NEW TO REMAIN
	PRIMARY UG LINE - EXISTING
	PRIMARY UG LINE - TO BE REMOVED
	SECONDARY UG LINE - NEW TO REMAIN
	SECONDARY UG LINE - EXISTING
	SECONDARY UG LINE - TO BE REMOVED
	COMMUNICATION UG LINE - EXISTING



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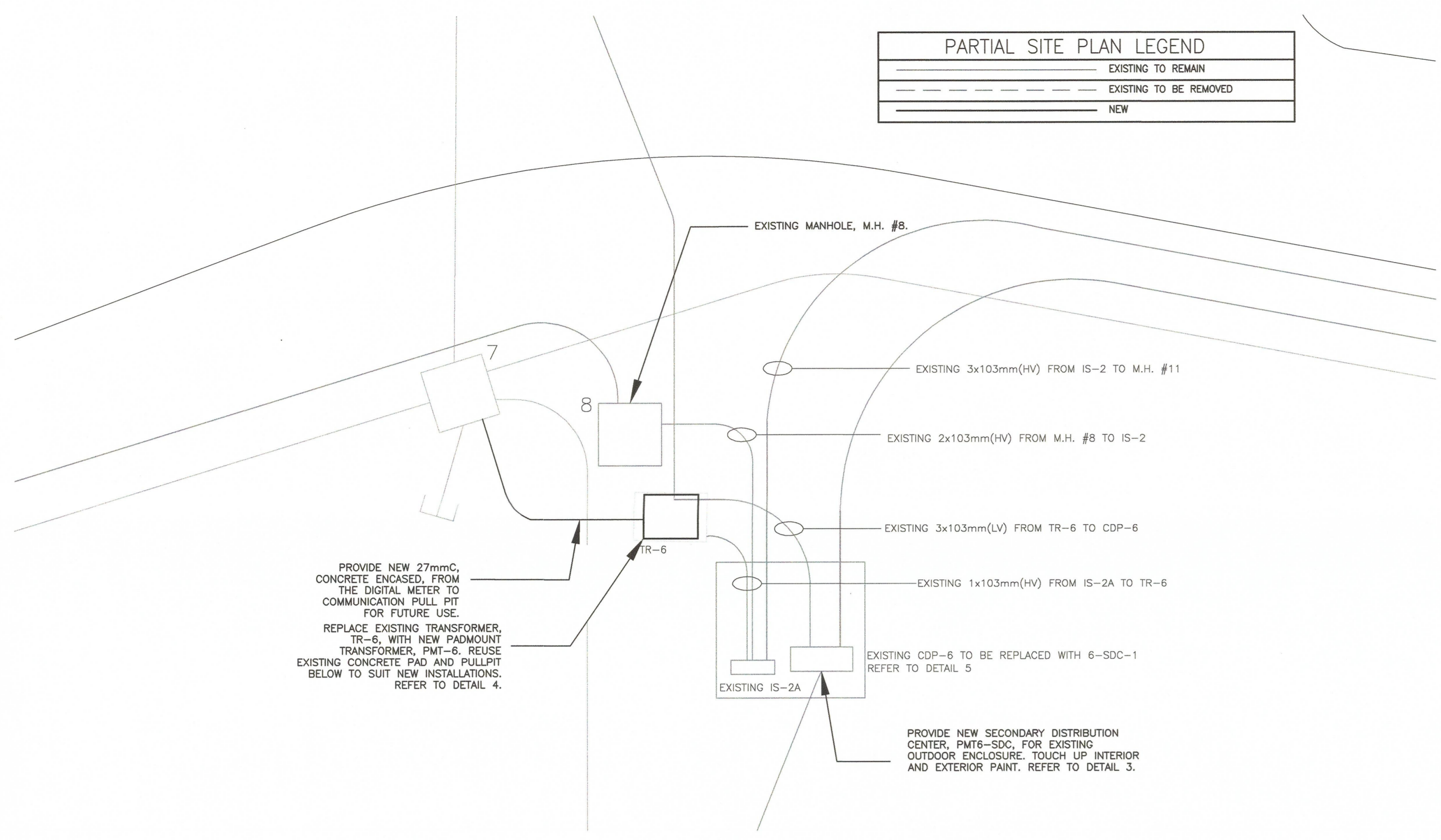
CORRECTIONAL SERVICE CANADA

ELECTRICAL HIGH VOLTAGE UPGRADE (PHASE 2 OF 2) WILLIAM HEAD INSTITUTION

Designed by/Concept par P.Necpal  
 Drawn by/Dessiné par P.Necpal  
 PWGSC Project Manager/Administrateur de Projets TP5GC P. Truong  
 PWGSC, Regional Manager, Architectural and Engineering Services / Gestionnaire régional, Services d'architectural et de génie, TP5GC P. Paul

KEY PLAN AND SYMBOL LEGEND





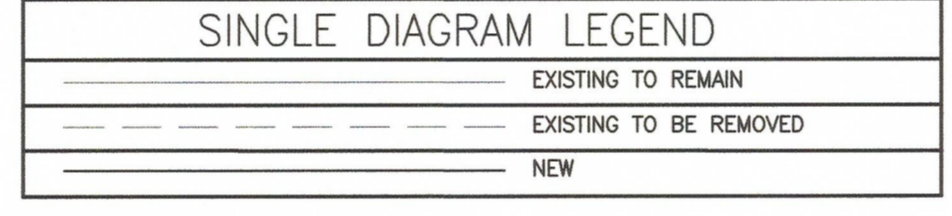
- SUGGESTED PHASING NOTES:**
- ARRANGE POWER SHUTDOWN TO CDP-6. PROVIDE TEMPORARY GENERATOR TO POWER HEALTH/SCU BUILDING 109. INTERRUPT POWER TO TRANSFORMER 6, TR6.
  - REMOVE EXISTING TRANSFORMER 6, TR 6, AND INSTALL A NEW PAD MOUNT TRANSFORMER, PMT-6, IN THE SAME LOCATION.
  - REMOVE CDP-6 AND REPLACE WITH NEW SECONDARY DISTRIBUTION CENTER, PMT6-SDC.
  - UTILIZING EXISTING CONDUITS REPLACE EXISTING SECONDARY CONDUCTORS WITH NEW SECONDARY CONDUCTORS FROM NEW PADMOUNT TRANSFORMER, PMT-6, TO NEW SECONDARY DISTRIBUTION CENTER, PMT6-SDC.
  - CUT OVER AND TIE ALL EXISTING LOADS ONE BY ONE FED BY THE TEMPORARY GENERATOR TO THE NEW SECONDARY DISTRIBUTION CENTER, PMT6-SDC. PROVIDE REPORT TO DEPARTMENTAL REPRESENTATIVE OF ANY EXISTING CONDUCTORS THAT DO NOT MEET THE REQUIREMENTS OF THE CURRENT VERSION OF THE CANADIAN ELECTRICAL CODE.
  - REMOVE EXISTING DISTRIBUTION EQUIPMENT NOT REQUIRED FOR LAYOUT.
  - REMOVE TEMPORARY GENERATORS AND COMPLETE ELECTRICAL INSTALLATION.

- TEMPORARY GENERATOR NOTES:**
- PROVIDE THE FOLLOWING WITH TEMPORARY PRIME POWER RATED GENERATORS FOR BACK-UPS:
    - 1.1 BUILDING 109, HEALTH/SCU - 40kW, 120/208V, 3Ø
 SUPPLY ALL DIESEL FUEL REQUIRED TO RUN GENERATORS AT FULL LOAD WHILE TRANSFORMER 6, TR6, AND CDP-6 IS BEING REPLACED. TIME PERIOD TO EXTEND UNTIL NEW PADMOUNT TRANSFORMER, PMT-6, AND SECONDARY DISTRIBUTION CENTER, 6-SDC-1, IS COMMISSIONED AND SUPPLYING POWER TO HEALTH/SCU CENTER BUILDING 109.
  - GENERATORS TO BE SKID-MOUNTED AND COMPLETE WITH SOUND ATTENUATING, WEATHERPROOF ENCLOSURE, TO 68-72 dB AT 7m AWAY FROM GENERATOR.
  - SAFETY MEANS, PROTECTION AND LOCKOUT TO BE PROVIDED TO PREVENT UNDESIRABLE REVERSE FEED. PROVIDE WARNING LABELS AT ALL CONNECTION POINTS, AS WELL AS, EMERGENCY PLAN & CONTACTS.



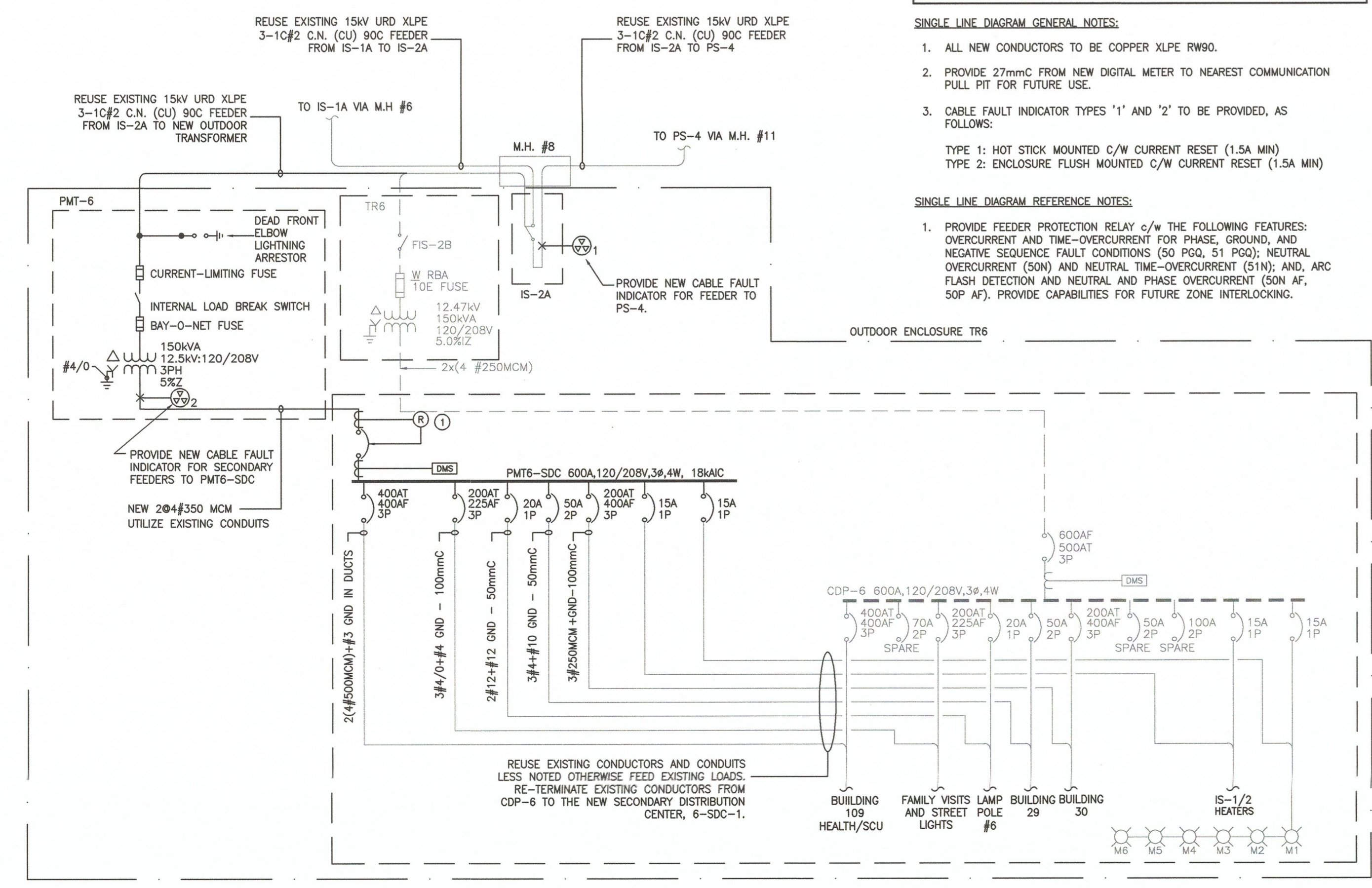
5 EXISTING CDP-6  
- N.T.S.

1 PARTIAL SITE PLAN  
- 1:100

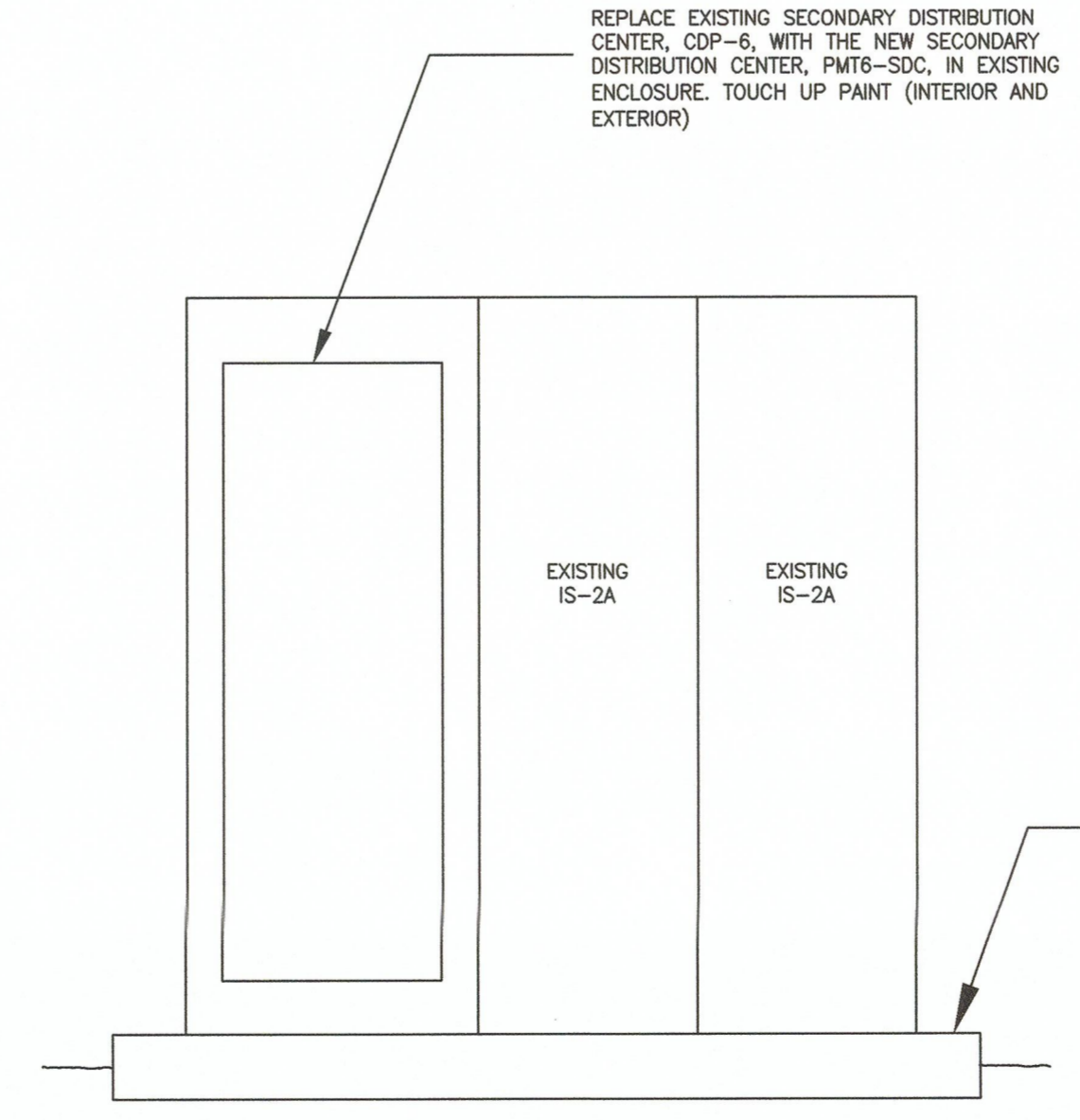


- SINGLE LINE DIAGRAM GENERAL NOTES:**
- ALL NEW CONDUCTORS TO BE COPPER XLPE RW90.
  - PROVIDE 27mmC FROM NEW DIGITAL METER TO NEAREST COMMUNICATION PULL PIT FOR FUTURE USE.
  - CABLE FAULT INDICATOR TYPES '1' AND '2' TO BE PROVIDED, AS FOLLOWS:  
TYPE 1: HOT STICK MOUNTED C/W CURRENT RESET (1.5A MIN)  
TYPE 2: ENCLOSURE FLUSH MOUNTED C/W CURRENT RESET (1.5A MIN)

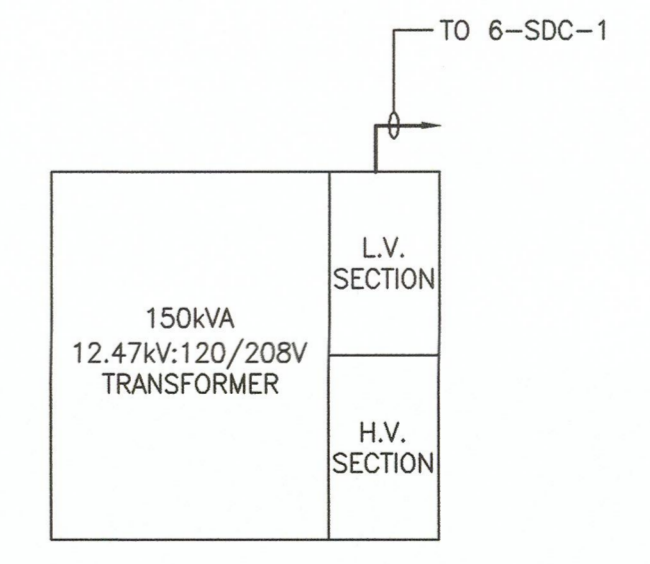
- SINGLE LINE DIAGRAM REFERENCE NOTES:**
- PROVIDE FEEDER PROTECTION RELAY c/w THE FOLLOWING FEATURES: OVERCURRENT AND TIME-OVERCURRENT FOR PHASE, GROUND, AND NEGATIVE SEQUENCE FAULT CONDITIONS (50 PGO, 51 PGO); NEUTRAL OVERCURRENT (50N) AND NEUTRAL TIME-OVERCURRENT (51N); AND, ARC FLASH DETECTION AND NEUTRAL AND PHASE OVERCURRENT (50N AF, 50P AF). PROVIDE CAPABILITIES FOR FUTURE ZONE INTERLOCKING.



2 PARTIAL SINGLE LINE DIAGRAM  
- N.T.S.



3 OUTDOOR ENCLOSURE IS-2A & PMT6-SDC ELEVATION DETAIL  
- N.T.S.



4 PMT-6 - PADMOUNT TRANSFORMER PLAN VIEW  
- N.T.S.



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Client/client  
**CORRECTIONAL SERVICE CANADA**

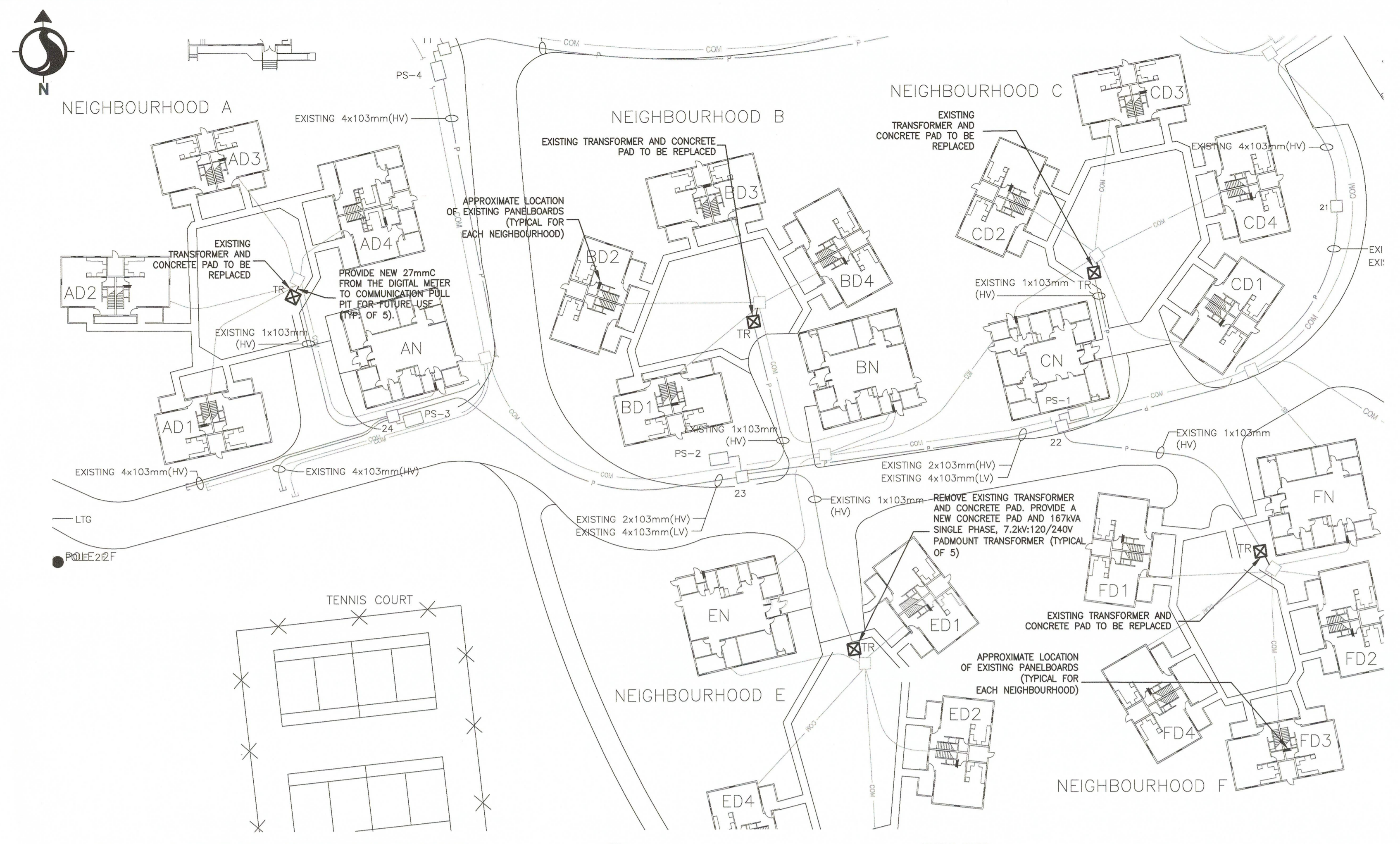
Project title/Titre du projet  
**METCHOSIN, BC**  
**ELECTRICAL HIGH VOLTAGE UPGRADE (PHASE 2 OF 2) WILLIAM HEAD INSTITUTION**

Consultant Signature Box Only  
Designed by/Concept par: **P.Necpal**  
Drawn by/Dessiné par: **P.Necpal**  
PWGSC Project Manager/Administrateur de Projets TPDC: **P. Truong**  
PWGSC Regional Manager, Architectural and Engineering Services / Gestionnaire régional, Services d'architecture et de génie, TPSC: **P. Paul**

Drawing title/Titre du dessin  
**OUTDOOR ENCLOSURE TR6**

Project No./No. du projet <b>R.069376.001</b>	Sheet/feuille <b>E-001</b>	Revision no./La Révision no. <b>2 OF 22</b>
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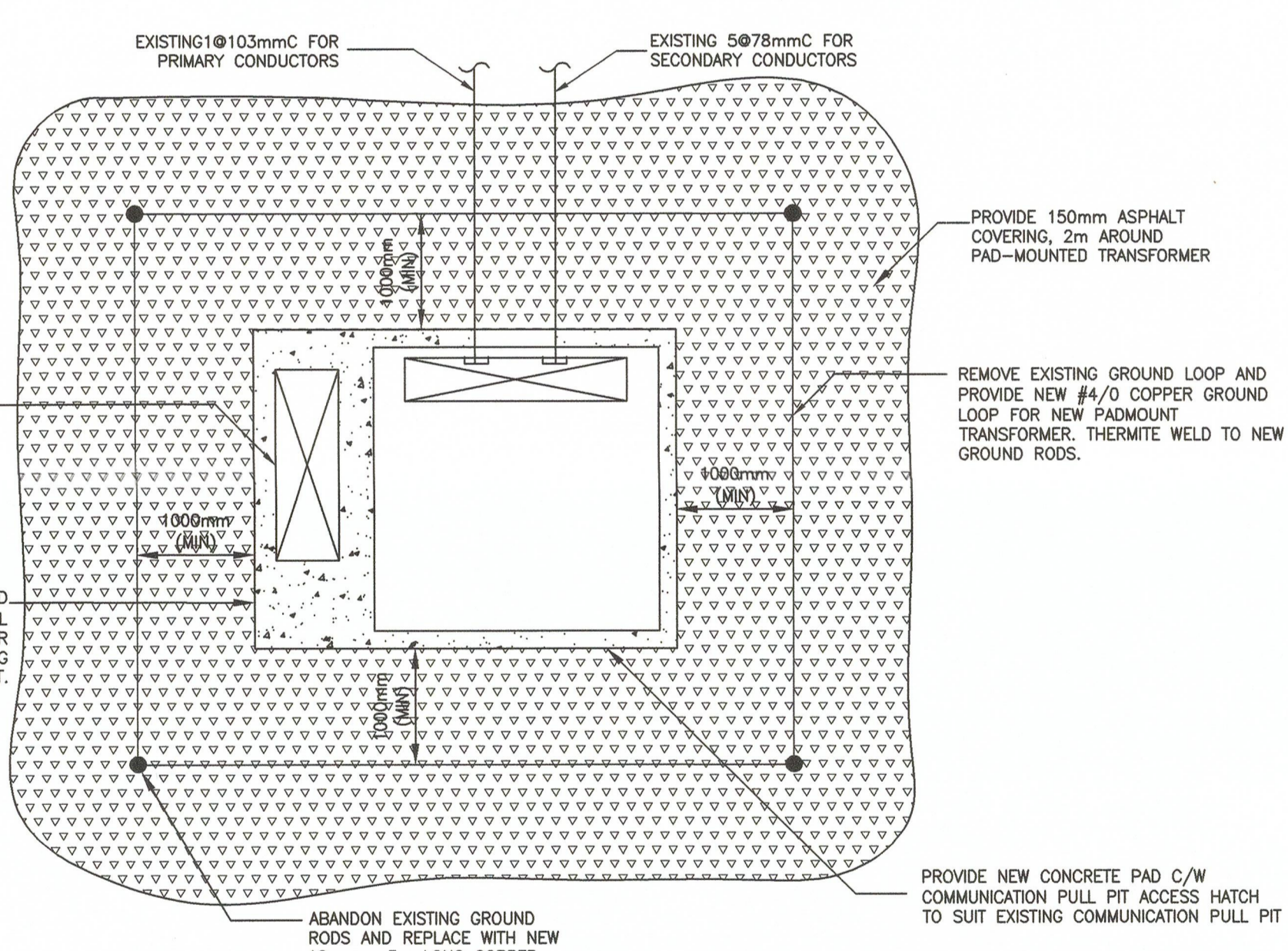
**PARTIAL SITE PLAN LEGEND**

P	PRIMARY U/G LINE - NEW
P	PRIMARY U/G LINE - EXISTING TO REMAIN
- - - P	PRIMARY U/G LINE - TO BE REMOVED
S	SECONDARY U/G LINE - NEW
S	SECONDARY U/G LINE - EXISTING TO REMAIN
- - - S	SECONDARY U/G LINE - TO BE REMOVED
---	COMMUNICATION U/G LINE - EXISTING

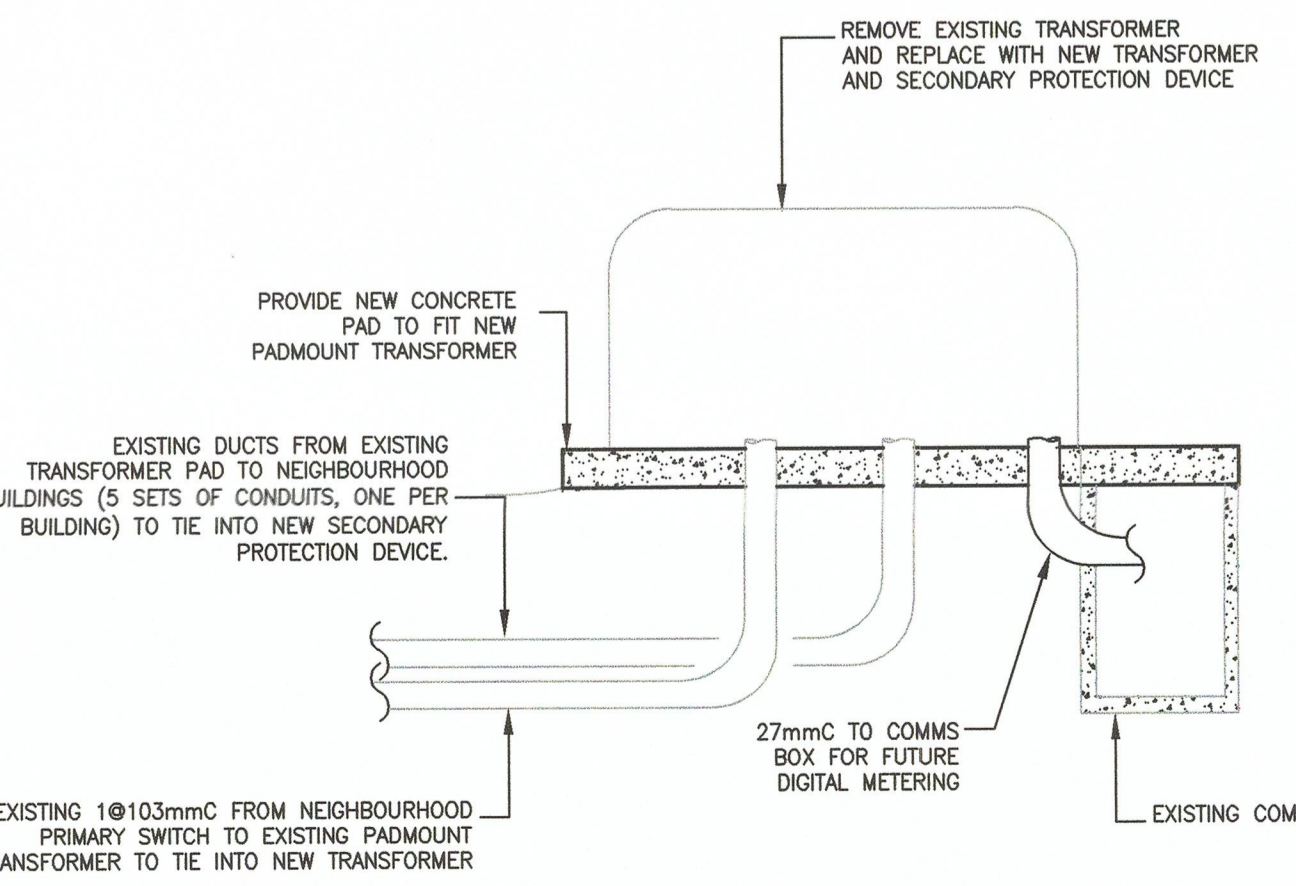
- SUGGESTED TYPICAL PHASING NOTES:**
- ARRANGE POWER SHUT DOWN TO THE NEIGHBOURHOOD TRANSFORMER. PROVIDE TEMPORARY GENERATOR TO POWER THE EXISTING NEIGHBOURHOOD. INTERRUPT POWER TO NEIGHBOURHOOD TRANSFORMER.
  - REMOVE EXISTING CONCRETE PAD AND NEIGHBOURHOOD TRANSFORMER.
  - INSTALL NEW CONCRETE PAD TO FIT THE NEW PADMOUNT TRANSFORMER C/W A STEEL PAD LOCKABLE ACCESS HATCH TO MATCH THE EXISTING COMMUNICATION PULL PIT.
  - INSTALL NEW PADMOUNT TRANSFORMER.
  - REPLACE EXISTING PRIMARY CONDUCTOR FROM THE PRIMARY SWITCH TO THE PADMOUNT TRANSFORMER.
  - ONE BY ONE PROVIDE NEW SECONDARY FEEDERS TO THE EXISTING LOADS TO THE NEW SECONDARY VOLTAGE SWITCHBOARD. UTILIZE EXISTING DUCTS.
  - REPEAT PROCESS 1 TO 6 FOR OTHER NEIGHBOURHOOD TRANSFORMERS (S IN TOTAL).
  - REPLACE EXISTING PRIMARY CONDUCTORS BETWEEN PS-4 TO PS-3, PS-3 TO PS-2 AND PS-2 TO PS-1. REFER TO DRAWING E-202 FOR LOCATIONS OF CONDUCTORS.

- TEMPORARY GENERATOR NOTES (TYP):**
- PROVIDE THE FOLLOWING WITH TEMPORARY PRIME POWER RATED GENERATORS FOR BACK-UP:
    - 1.1 NEIGHBOURHOOD A, B, C, E, AND F - 40kW, 120/240V, 1Ø
  - GENERATORS TO BE SKID-MOUNTED AND COMPLETE WITH GENERATORS TO BE SKID-MOUNTED AND COMPLETE WITH SOUND ATTENUATING, WEATHERPROOF ENCLOSURE, TO 68-72 dB AT 7m AWAY FROM GENERATOR.
  - SAFETY MEANS, PROTECTION AND LOCKOUT TO BE PROVIDED TO PREVENT UNDESIRABLE REVERSE FEED. PROVIDE WARNING LABELS AT ALL CONNECTION POINTS, AS WELL AS, EMERGENCY PLAN AND CONTACT.

**1 PARTIAL SITE PLAN**  
1:500



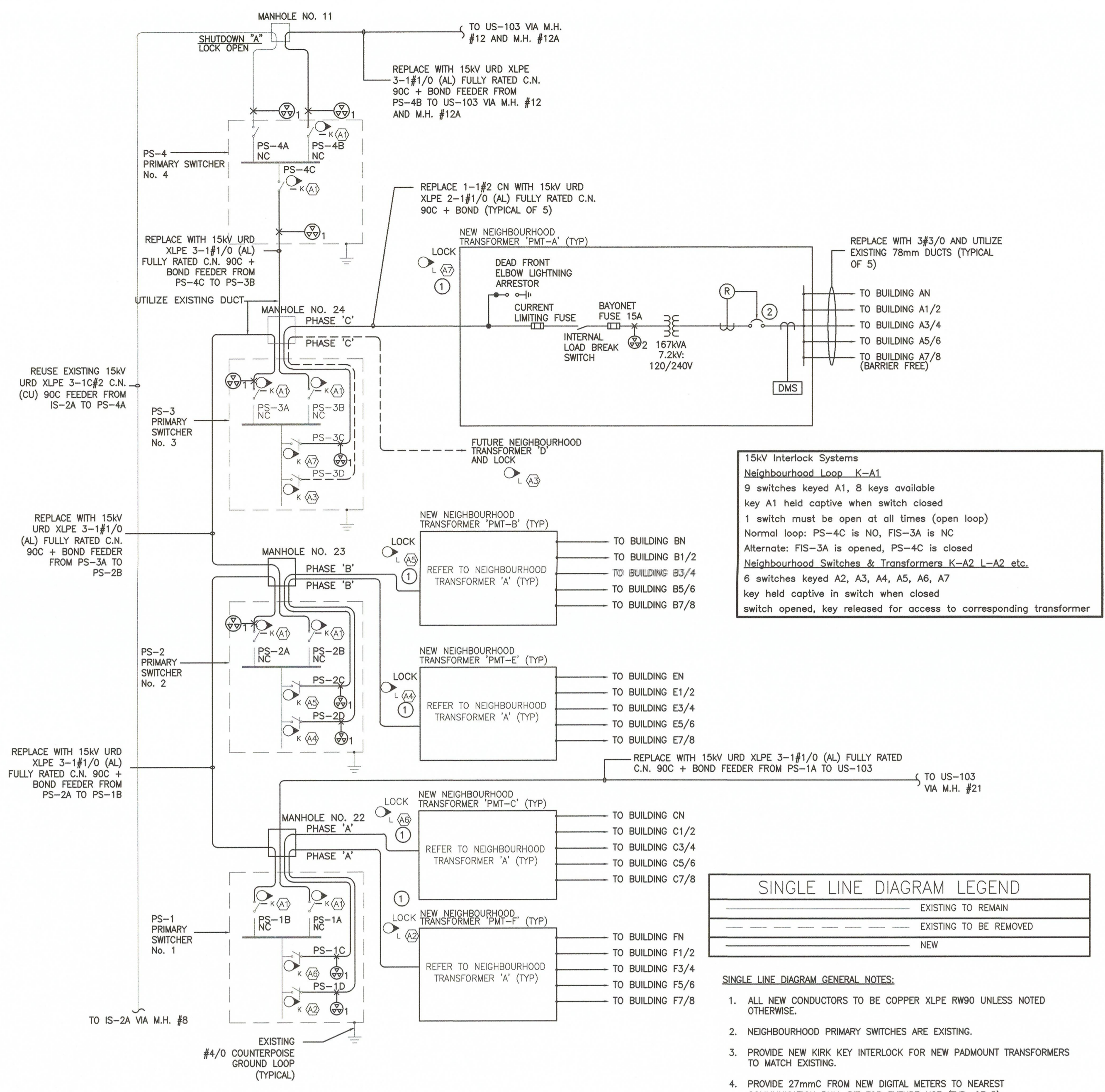
**4 TRANSFORMER CONCRETE PAD LAY-OUT PLAN (TYPICAL)**  
N.T.S.



**3 TRANSFORMER PROFILE DETAIL (TYPICAL)**  
N.T.S.

**5 OUTDOOR PADMOUNT TRANSFORMER PLAN VIEW**  
N.T.S.

- OUTDOOR PAD MOUNT TRANSFORMER CONCRETE PAD GENERAL NOTES:**
- COPPER TO ROD CONNECTION TO BE THERMITE WELDED.
  - RETAIN A STRUCTURAL ENGINEER (REGISTERED BY APEGBC) TO DESIGN A REINFORCED CONCRETE PAD. PROVIDE SEISMIC ENGINEER LETTERS OF ASSURANCE TO SIGN OFF ON SEISMIC RESTRAINT OF PAD AND PAD MOUNT TRANSFORMER.



**2 PARTIAL SINGLE LINE DIAGRAM**  
N.T.S.

**SINGLE LINE DIAGRAM LEGEND**

---	EXISTING TO REMAIN
- - -	EXISTING TO BE REMOVED
---	NEW

- SINGLE LINE DIAGRAM GENERAL NOTES:**
- ALL NEW CONDUCTORS TO BE COPPER XLPE RW90 UNLESS NOTED OTHERWISE.
  - NEIGHBOURHOOD PRIMARY SWITCHES ARE EXISTING.
  - PROVIDE NEW KIRK KEY INTERLOCK FOR NEW PADMOUNT TRANSFORMERS TO MATCH EXISTING.
  - PROVIDE 27mmC FROM NEW DIGITAL METERS TO NEAREST COMMUNICATION PULL PIT FOR FUTURE USE (TYP. OF 5).
  - CABLE FAULT INDICATOR TYPES '1' AND '2' TO BE PROVIDED, AS FOLLOWS:
    - TYPE 1: HOT STICK MOUNTED C/W CURRENT RESET (1.5A MIN)
    - TYPE 2: ENCLOSURE FLUSH MOUNTED C/W CURRENT RESET (1.5A MIN)
- SINGLE LINE DIAGRAM KEYNOTES:**
- PROVIDE KEY INTERLOCKS TO MATCH EXISTING PRIMARY SWITCH KEY INTERLOCKS.
  - PROVIDE FEEDER PROTECTION RELAY C/W THE FOLLOWING FEATURES: OVERCURRENT AND TIME-OVERCURRENT FOR PHASE, GROUND, AND NEGATIVE SEQUENCE FAULT CONDITIONS (50 PFD, 51 PFD); NEUTRAL OVERCURRENT (50N) AND NEUTRAL TIME-OVERCURRENT (51N); AND ARC FLASH DETECTION AND NEUTRAL AND PHASE OVERCURRENT (50N AF, 50P AF). PROVIDE CAPABILITIES FOR FUTURE ZONE INTERLOCKING.



**6 EXISTING PADMOUNT TRANSFORMER AND CONCRETE PAD**  
N.T.S.

PROFESSIONAL  
S.M.T.O.H.  
#20107  
ELECTRICAL ENGINEER  
Mar 14 2017

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Revision/Revision Description/Description Date/Date

Client/client

**CORRECTIONAL SERVICE CANADA**

Project title/Titre du projet  
**METCHOSIN, BC**

**ELECTRICAL HIGH VOLTAGE UPGRADE (PHASE 2 OF 2) WILLIAM HEAD INSTITUTION**

Consultant Signature Box Only

Designed by/Concept par  
**P.Necpal**

Drawn by/Dessiné par  
**P.Necpal**

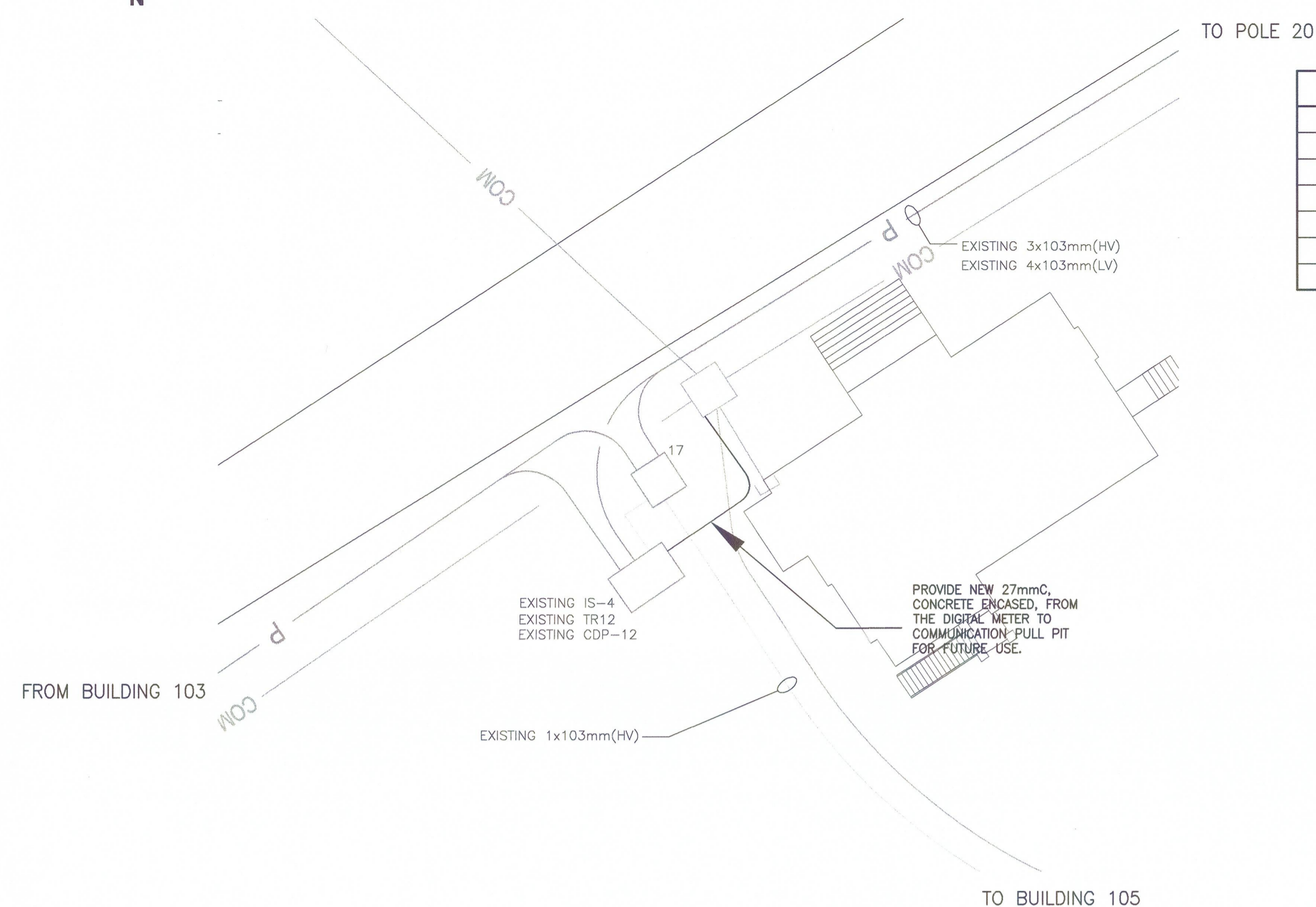
PWGSC Project Manager/Administrateur de Projets TP50C  
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Gestionnaire régionale, Services d'architecture et de génie, TP50C  
**P. Paul**

Drawing title/Titre du dessin  
**NEIGHBOURHOODS 'A', 'B', 'C', 'E', 'F'**

Project No./No. du projet <b>R.069376.001</b>	Sheet/ feuille <b>E-002</b>	Revision no./ la Révision no. <b>3 of 22</b>
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PARTIAL SITE PLAN LEGEND	
— P —	PRIMARY U/G LINE - NEW
— P —	PRIMARY U/G LINE - EXISTING TO REMAIN
— P —	PRIMARY U/G LINE - TO BE REMOVED
— S —	SECONDARY U/G LINE - NEW
— S —	SECONDARY U/G LINE - EXISTING TO REMAIN
— S —	SECONDARY U/G LINE - TO BE REMOVED
— COM —	COMMUNICATION U/G LINE - EXISTING

1 PARTIAL SITE PLAN  
000 1:200



Mar 14 2017

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**CORRECTIONAL SERVICE CANADA**

Project Title/Titre du projet  
**METCHOSIN, BC**

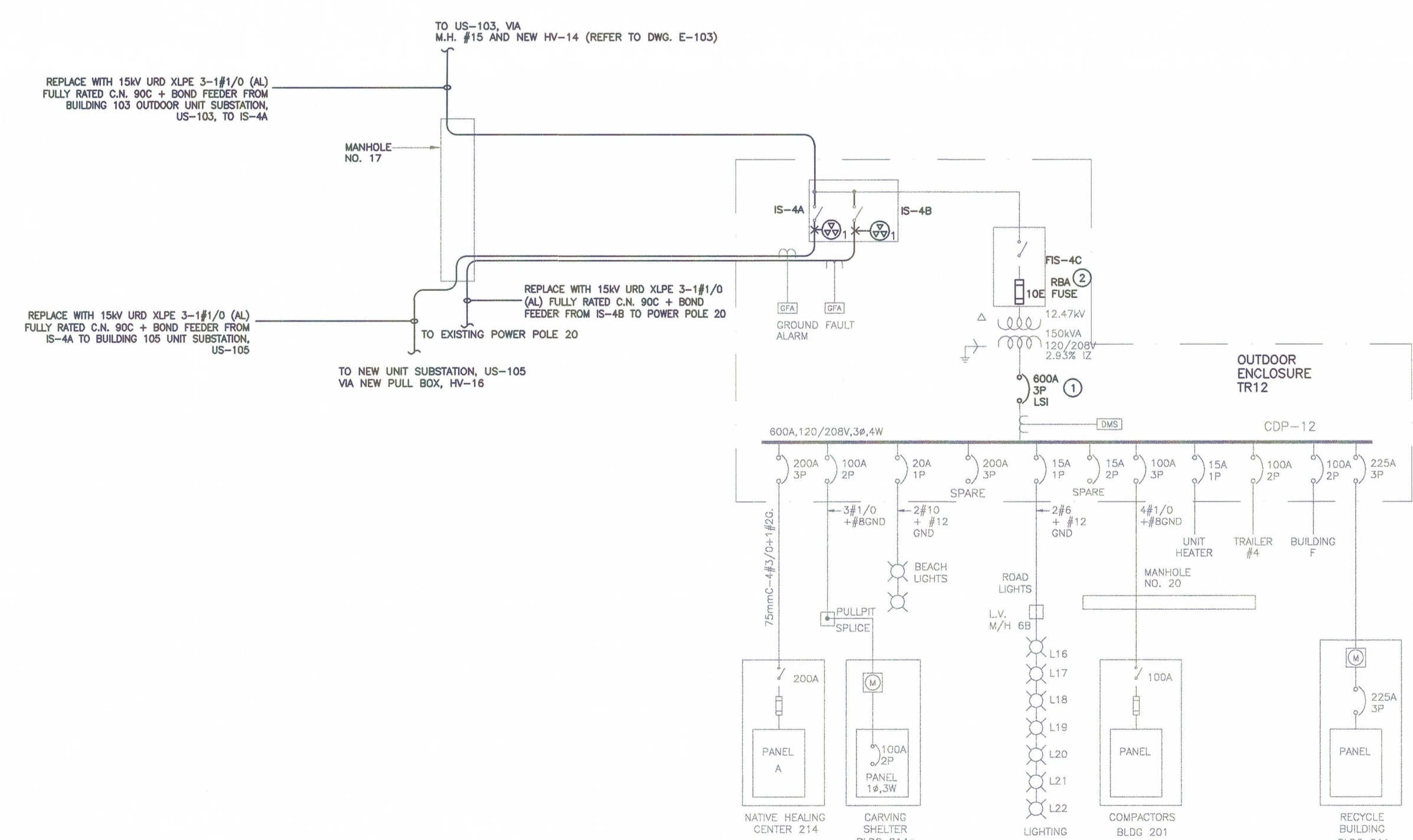
**ELECTRICAL HIGH VOLTAGE UPGRADE (PHASE 2 OF 2) WILLIAM HEAD INSTITUTION**

Consultant Signature Box Only

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Drawn by/Dessiné par  
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**P. Truong**  
PWGSC, Regional Manager, Architectural and Engineering Services / Gestionnaire régional, Services d'architectural et de génie, TP3DC  
**P. Paul**

Drawing Title/Titre du dessin  
**OUTDOOR ENCLOSURE TR12**

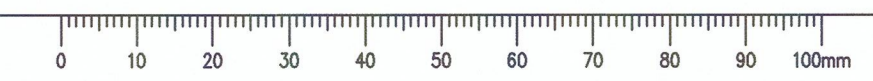
Project No./No. du projet <b>R.069376.001</b>	Sheet/Feuille <b>E-003</b>	Revision no./No. de Révision <b>4 of 22</b>
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SINGLE LINE DIAGRAM LEGEND	
—	EXISTING TO REMAIN
---	EXISTING TO BE REMOVED
—	NEW

- SINGLE LINE DIAGRAM KEYNOTES:**
- REPLACE EXISTING CIRCUIT BREAKER WITH NEW LSI ELECTRONIC TRIP BREAKER.
  - REPLACE EXISTING FUSE WITH NEW EXPULSION TYPE, STANDARD TIME FUSE AS NOTED.
- SINGLE LINE DIAGRAM GENERAL NOTES:**
- ALL NEW CONDUCTORS TO BE COPPER XLPE RW90 UNLESS NOTED OTHERWISE.
  - PROVIDE 27mmC FROM NEW DIGITAL METER TO NEAREST COMMUNICATION PULL PIT FOR FUTURE USE.
  - CABLE FAULT INDICATOR TYPES '1' AND '2' AS FOLLOWS:  
TYPE 1: HOT STICK MOUNTED C/W CURRENT RESET (1.5A MIN)  
TYPE 2: ENCLOSURE FLUSH MOUNTED C/W CURRENT RESET (1.5A MIN)

2 PARTIAL SINGLE LINE DIAGRAM  
N.T.S.







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Revision/	Description/Description	Date/Date
Client/client		

CORRECTIONAL SERVICE CANADA

Project title/Titre du projet: METCHOSIN, BC

ELECTRICAL HIGH VOLTAGE UPGRADE (PHASE 2 OF 2) WILLIAM HEAD INSTITUTION

Consultant Signature Box Only

Designed by/Concept par: P.Necpal

Drawn by/Dessiné par: P.Necpal

PWGSC Project Manager/Administrateur de Projets: P.Truong

PWGSC Regional Manager, Architectural and Engineering Services/ Gérant régional, Services d'architecture et de génie: P.Paul

Drawing title/Titre du dessin: WASTE WATER TREATMENT PLANT

Project No./No. du projet: R.069376.001

Sheet/feuille: E-004

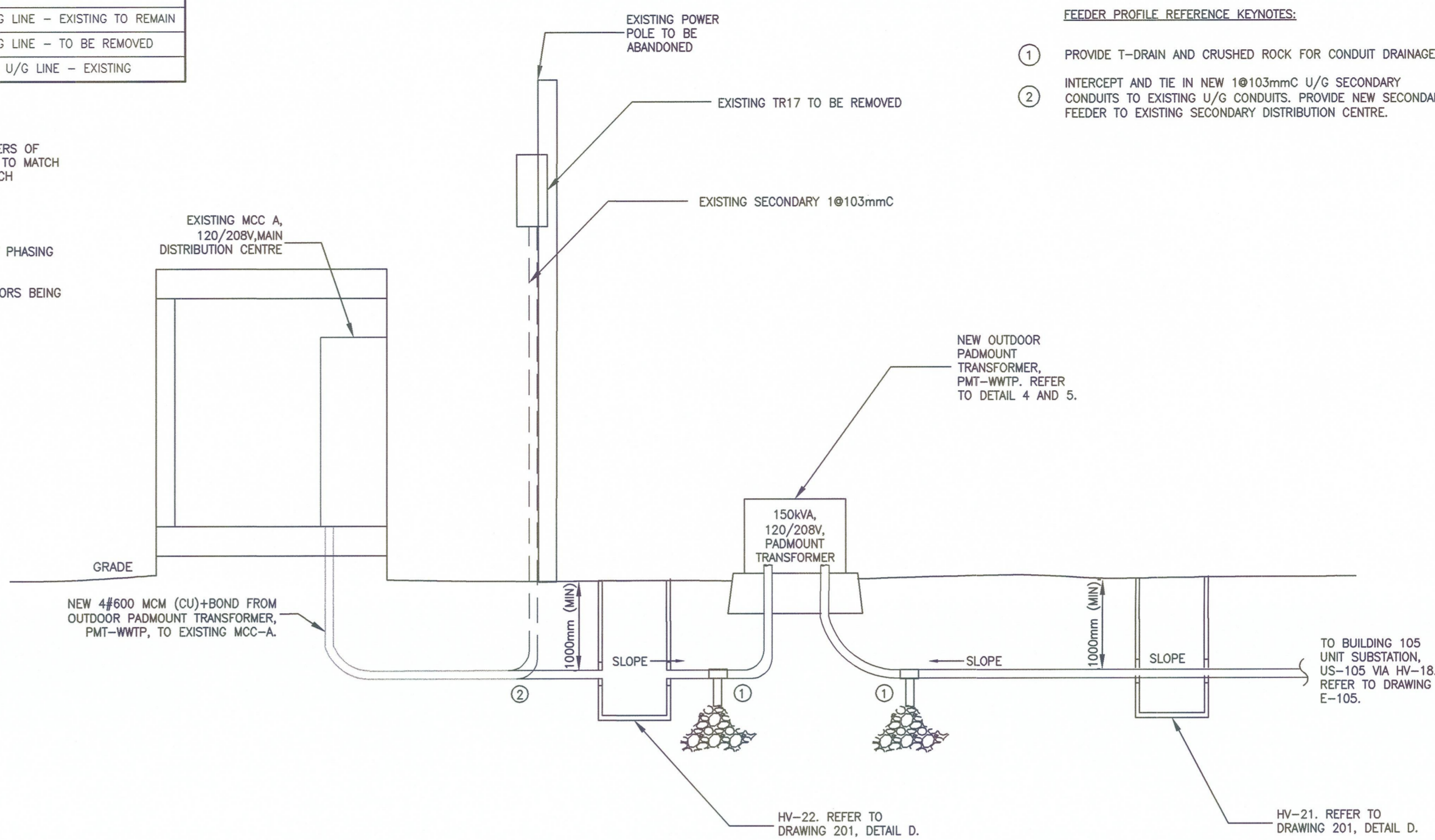
5 of 22

Revision no./La Révision no.:

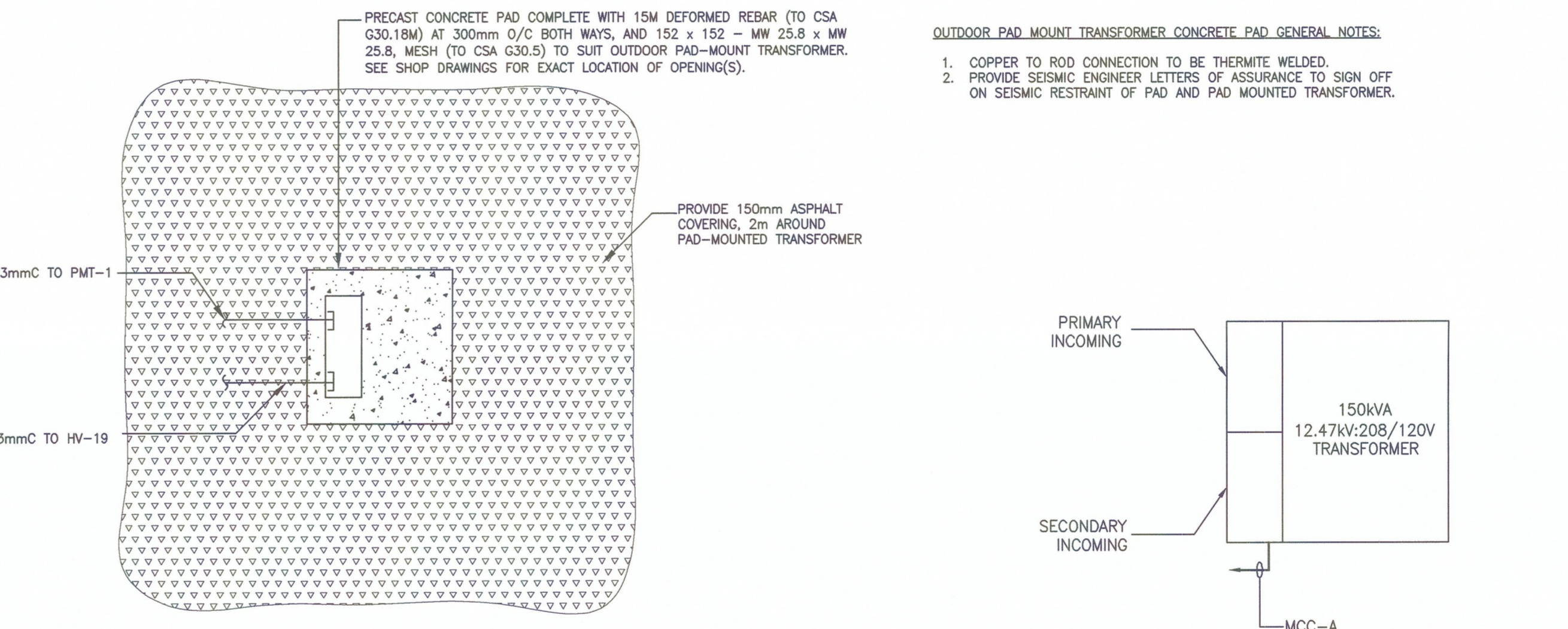
---	PRIMARY U/G LINE - NEW
---	PRIMARY U/G LINE - EXISTING TO REMAIN
---	PRIMARY U/G LINE - TO BE REMOVED
---	SECONDARY U/G LINE - NEW
---	SECONDARY U/G LINE - EXISTING TO REMAIN
---	SECONDARY U/G LINE - TO BE REMOVED
---	COMMUNICATION U/G LINE - EXISTING

**WASTE WATER TREATMENT KEYNOTES:**  
 1. REMOVE, REPAIR, MAKE GOOD, AND RESTORE 130 SQUARE METERS OF ASPHALT PAVEMENT, INCLUDING BASE AND SUB BASE GRAVELS, TO MATCH OR EXCEED THE EXISTING THICKNESS. FINAL CONDITION TO MATCH QUALITY OF EXISTING CONDITION IN AREA.

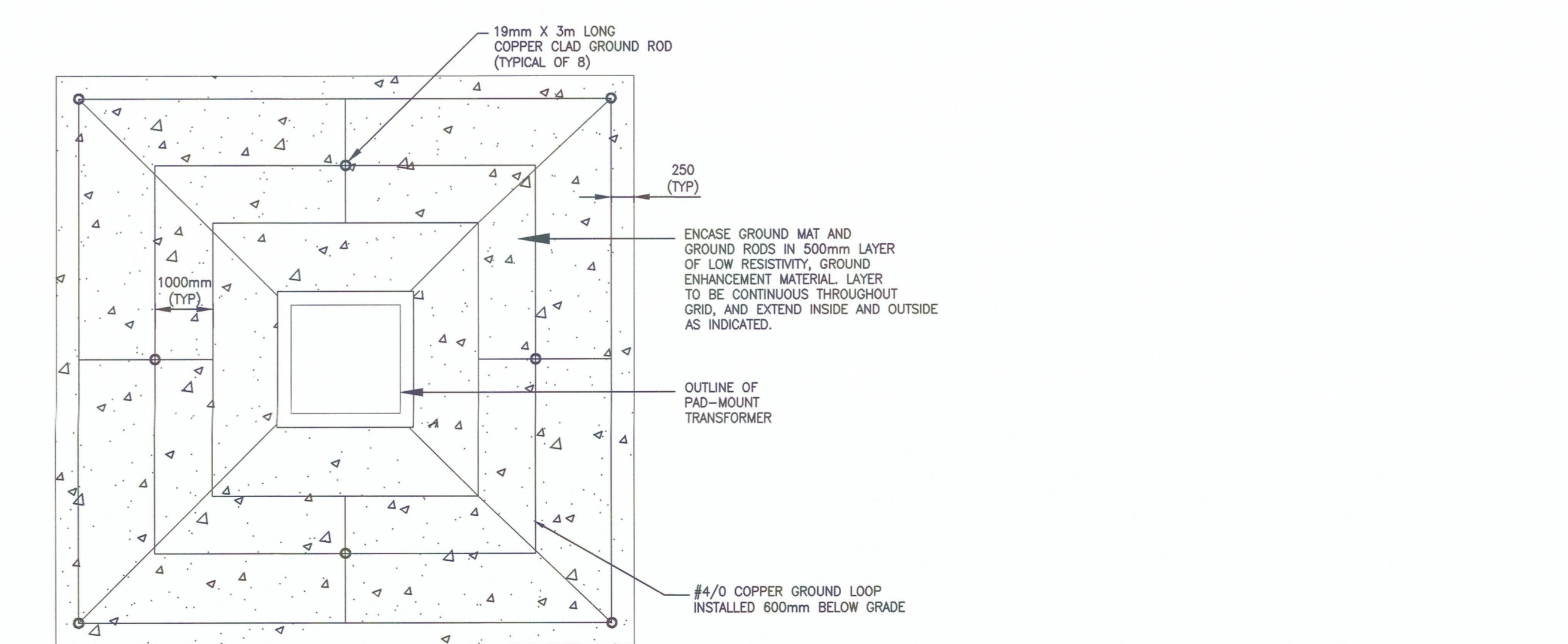
**GENERAL NOTES:**  
 1. REFER TO DRAWING E-206 FOR WASTE WATER TREATMENT PHASING NOTES.  
 2. REFER TO DRAWING E-202 TO LOCATE PRIMARY CONDUCTORS BEING REMOVED OR INSTALLED.



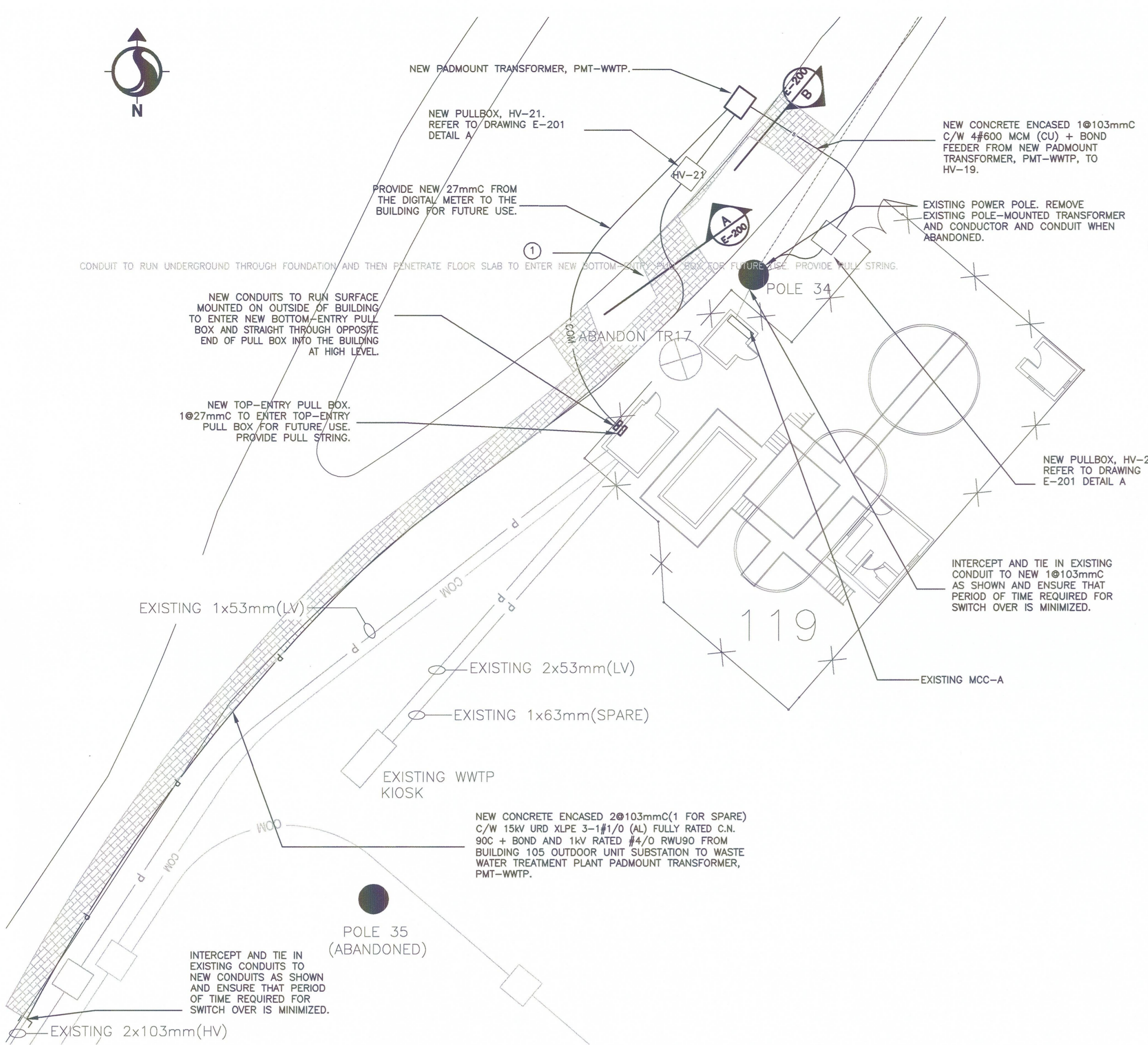
3 OUTDOOR PADMOUNT TRANSFORMER AND WASTE WATER TREATMENT PLANT FEEDER PROFILE N.T.S.



4 OUTDOOR PADMOUNT TRANSFORMER CONCRETE PAD LAY-OUT PLAN N.T.S.



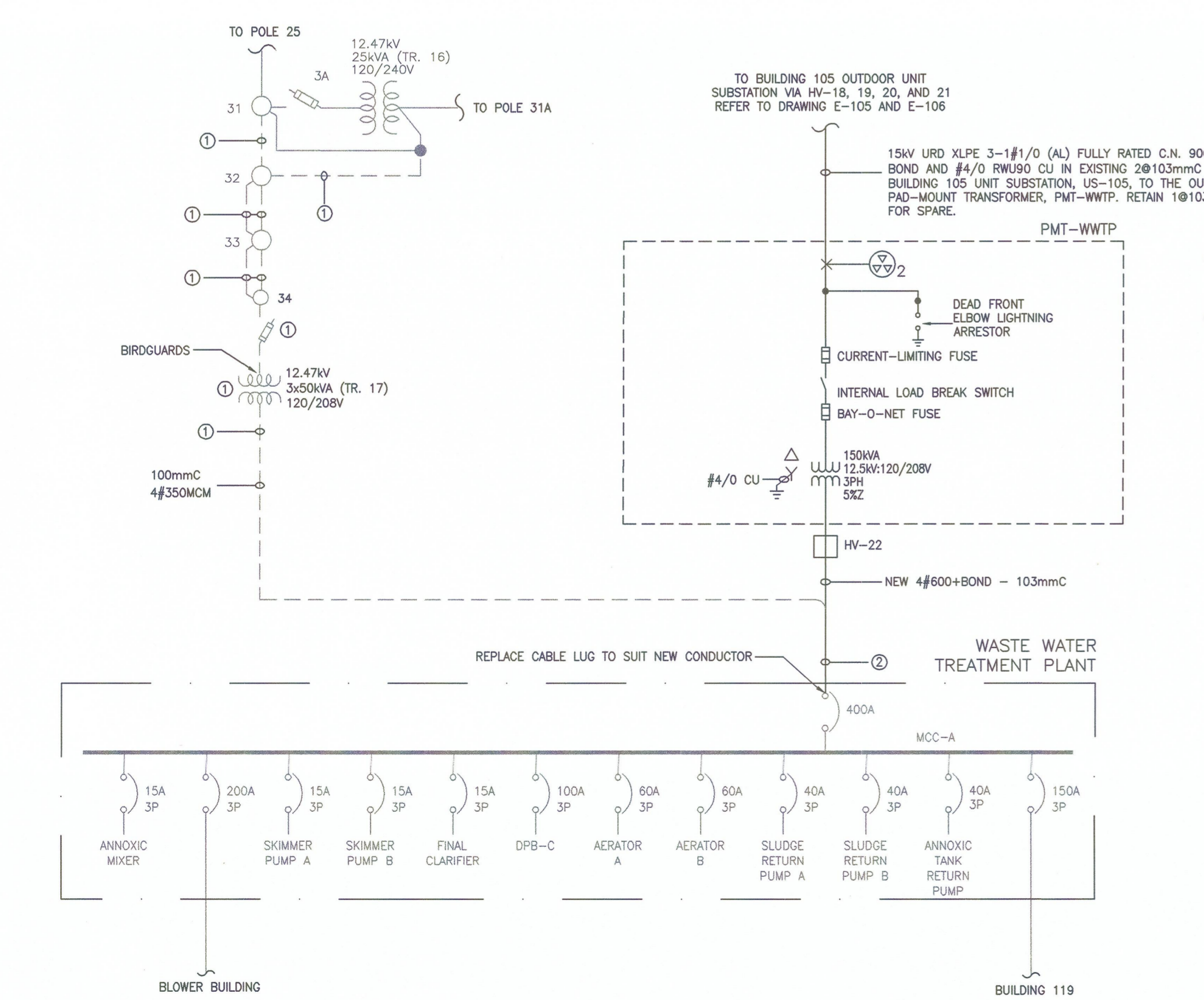
6 OUTDOOR PADMOUNT TRANSFORMER GROUNDING DETAILS N.T.S.



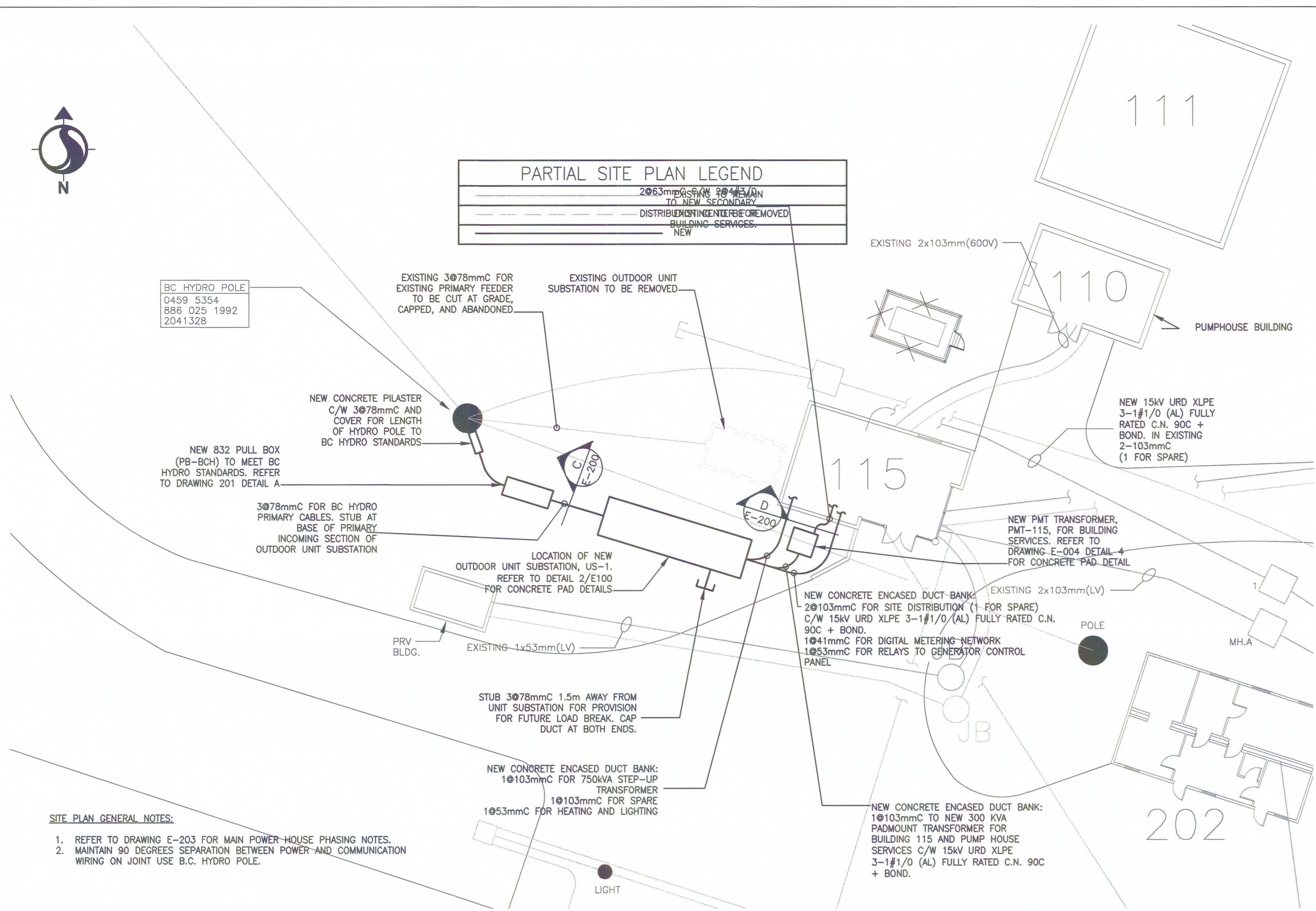
---	EXISTING TO REMAIN
---	EXISTING TO BE REMOVED
---	NEW

**SINGLE LINE DIAGRAM REFERENCE KEYNOTES:**  
 1. REMOVE EXISTING POLE-MOUNTED TRANSFORMER, EXISTING SECONDARY CONDUCTORS TO MCC-A, GANG OPERATED SWITCHES, INSULATORS AND HIGH VOLTAGE AERIAL CABLES.  
 2. PROVIDE NEW 10103mm<sup>2</sup> AND TIE INTO EXISTING 10103mm<sup>2</sup> U/G DUCT FED FROM POLE. PROVIDE NEW #600 MCM (CU)+BOND AND TERMINATE IN WASTE WATER TREATMENT PLANT MAIN BREAKER (400A).

**SINGLE LINE DIAGRAM GENERAL NOTES:**  
 1. ALL NEW CONDUCTORS TO BE COPPER XLPE UNLESS NOTED OTHERWISE.  
 2. PROVIDE 27mm<sup>2</sup> FROM NEW DIGITAL METER TO NEW BOTTOM-ENTRY PULL BOX AND ENTER INTO BUILDING AT HIGH LEVEL. PROVIDE NEW TOP-ENTRY PULL BOX FOR 27mm<sup>2</sup> TO ENTER. PROVIDE PULL STRING.  
 3. CABLE FAULT INDICATOR TYPES '1' AND '2' TO BE PROVIDED, AS FOLLOWS:  
 TYPE 1: HOT STICK MOUNTED C/W CURRENT RESET (1.5A MIN)  
 TYPE 2: ENCLOSURE FLUSH MOUNTED C/W CURRENT RESET (1.5A MIN)

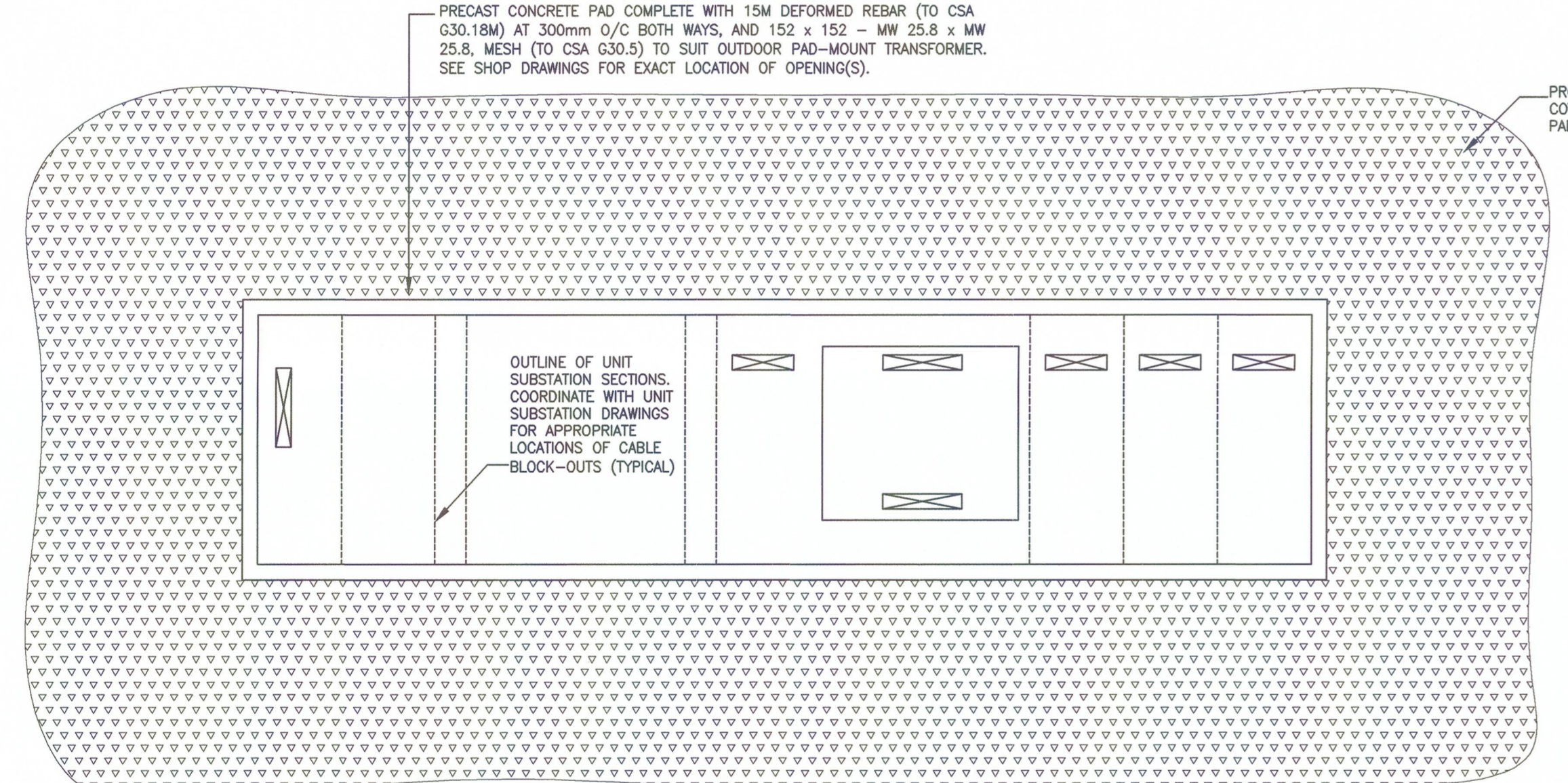




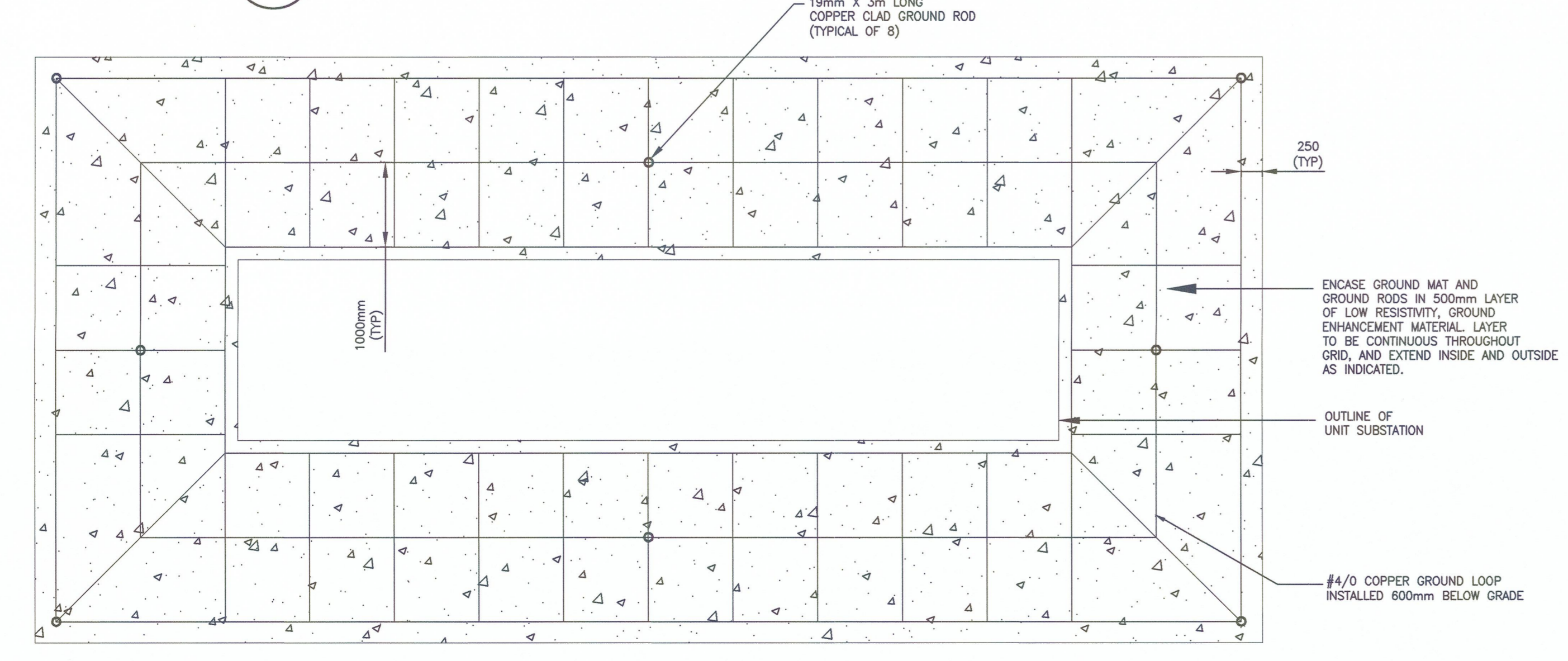


**SITE PLAN GENERAL NOTES:**  
 1. REFER TO DRAWING E-203 FOR MAIN POWER-HOUSE PHASING NOTES.  
 2. MAINTAIN 90 DEGREES SEPARATION BETWEEN POWER-AND COMMUNICATION WIRING ON JOINT USE B.C. HYDRO POLE.

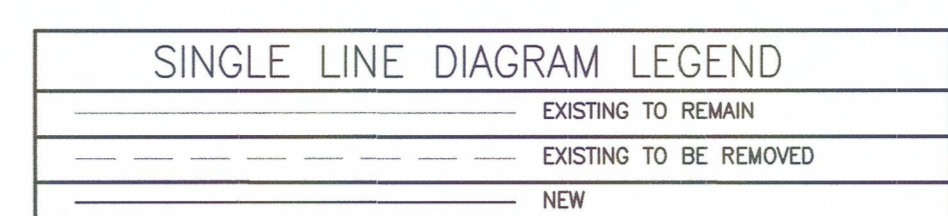
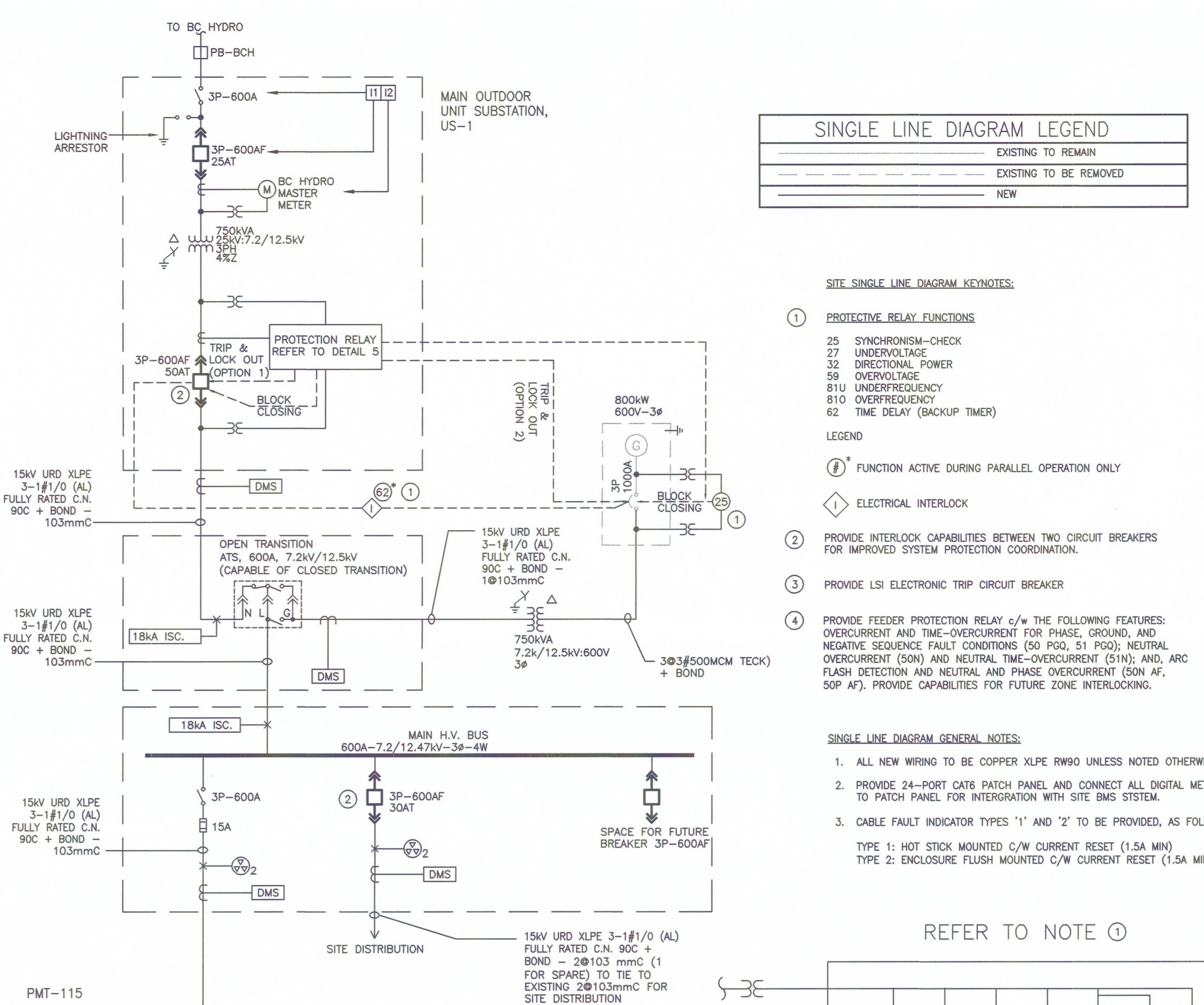
**1 MAIN POWER HOUSE (BLDG. 115) - PROPOSED SITE PLAN**  
 000 1:200



**2 OUTDOOR UNIT SUBSTATION (US-1) CONCRETE PAD LAYOUT-PLAN**  
 N.T.S.



**6 OUTDOOR UNIT SUBSTATION (US-1) GROUNDING DETAILS**  
 N.T.S.



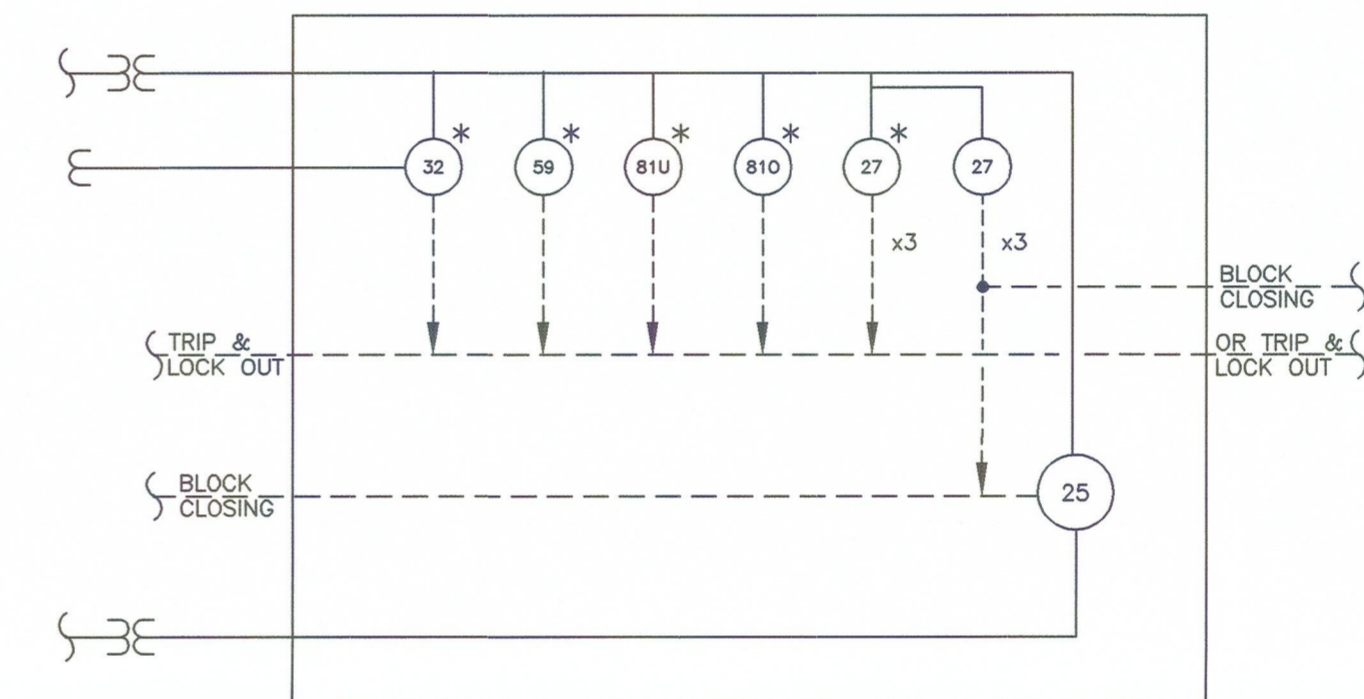
**SITE SINGLE LINE DIAGRAM KEYNOTES:**

- PROTECTIVE RELAY FUNCTIONS**
  - 25 SYNCHRONISM-CHECK
  - 27 UNDERVOLTAGE
  - 32 DIRECTIONAL POWER
  - 59 OVERVOLTAGE
  - 81U UNDERFREQUENCY
  - 81O OVERFREQUENCY
  - 62 TIME DELAY (BACKUP TIMER)
- LEGEND**
  - Ⓜ FUNCTION ACTIVE DURING PARALLEL OPERATION ONLY
  - ⚡ ELECTRICAL INTERLOCK
- PROVIDE INTERLOCK CAPABILITIES BETWEEN TWO CIRCUIT BREAKERS FOR IMPROVED SYSTEM PROTECTION COORDINATION.**
- PROVIDE LSI ELECTRONIC TRIP CIRCUIT BREAKER**
- PROVIDE FEEDER PROTECTION RELAY C/W THE FOLLOWING FEATURES: OVERCURRENT AND TIME-OVERCURRENT FOR PHASE, GROUND, AND NEGATIVE SEQUENCE FAULT CONDITIONS (50 PGO, 51 PGO); NEUTRAL OVERCURRENT (50N) AND NEUTRAL TIME-OVERCURRENT (51N); AND, ARC FLASH DETECTION AND NEUTRAL AND PHASE OVERCURRENT (50N AF, 50P AF). PROVIDE CAPABILITIES FOR FUTURE ZONE INTERLOCKING.**

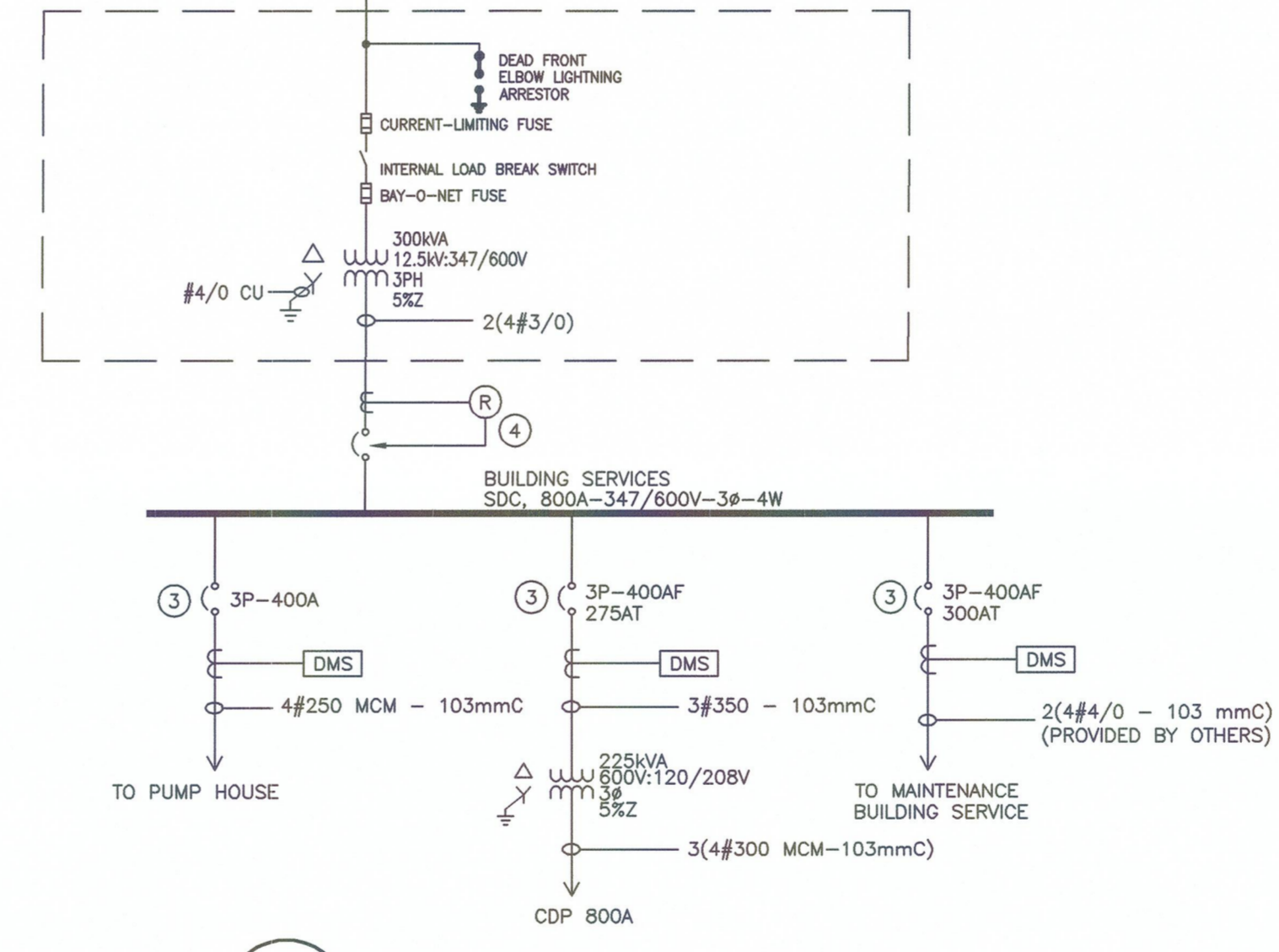
**SINGLE LINE DIAGRAM GENERAL NOTES:**

- ALL NEW WIRING TO BE COPPER XLPE RW90 UNLESS NOTED OTHERWISE.
- PROVIDE 24-PORT CAT6 PATCH PANEL AND CONNECT ALL DIGITAL METERS TO PATCH PANEL FOR INTERGRATION WITH SITE BMS SYSTEM.
- CABLE FAULT INDICATOR TYPES '1' AND '2' TO BE PROVIDED, AS FOLLOWS:  
 TYPE 1: HOT STICK MOUNTED C/W CURRENT RESET (1.5A MIN)  
 TYPE 2: ENCLOSURE FLUSH MOUNTED C/W CURRENT RESET (1.5A MIN)

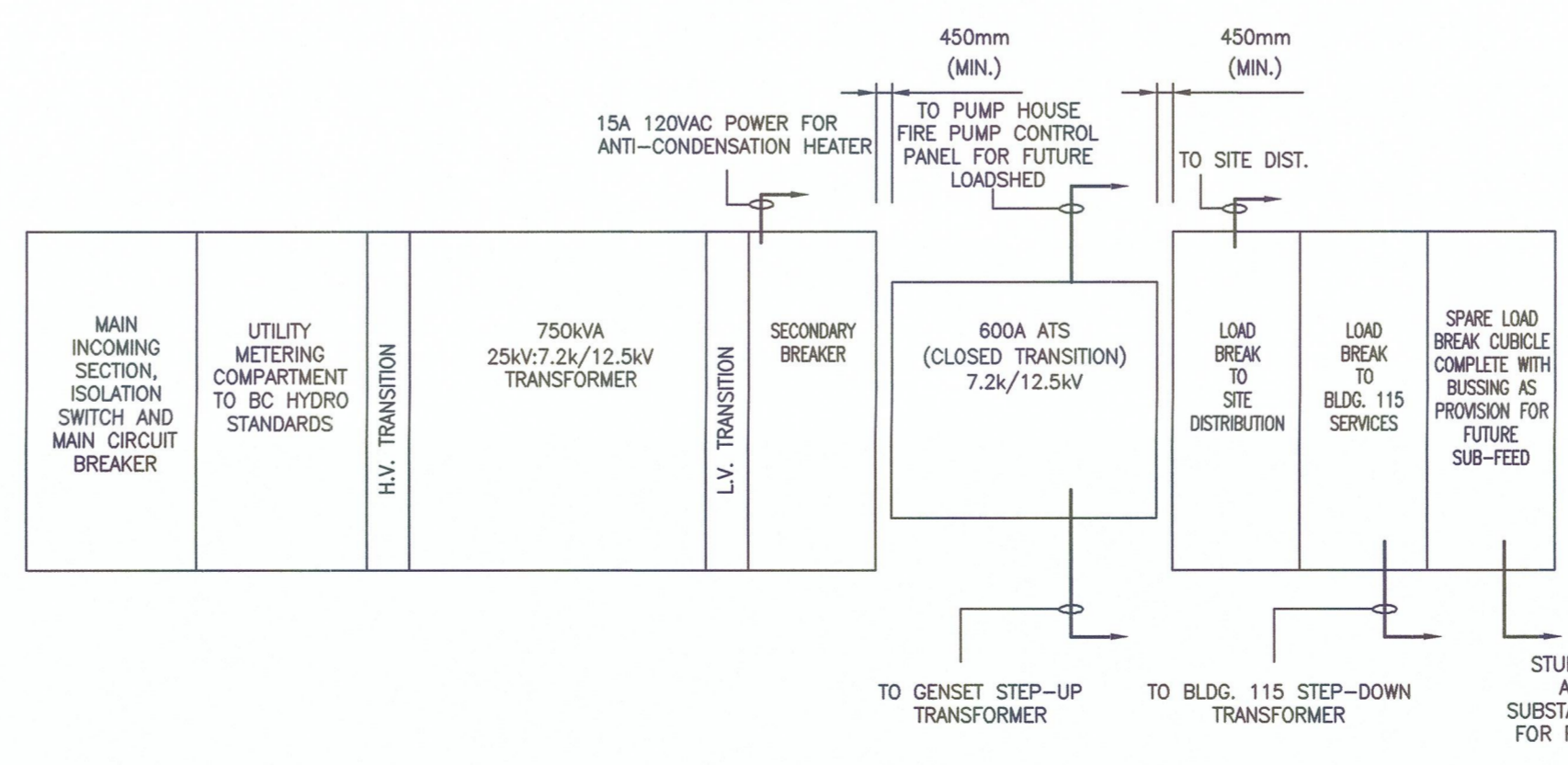
REFER TO NOTE 1



**5 PROTECTION RELAY DETAIL**  
 N.T.S.



**4 MAIN POWERHOUSE SINGLE LINE DIAGRAM**  
 N.T.S.



**3 OUTDOOR UNIT SUBSTATION (US-1) PLAN VIEW**  
 N.T.S.

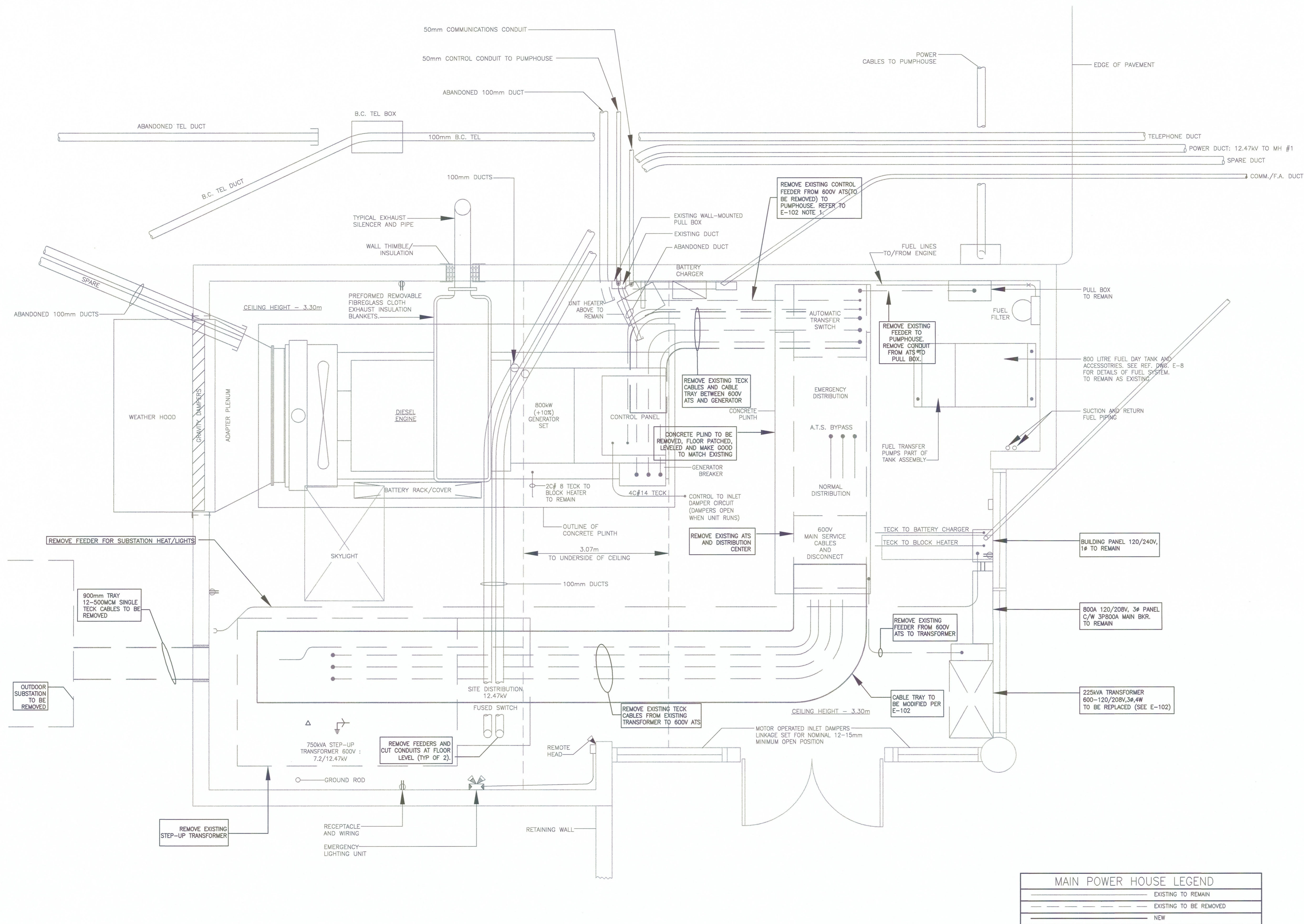
0	ISSUED FOR TENDER	MAR.14.17
Revision/	Description/Description	Date/Date
Client/client		
<b>CORRECTIONAL SERVICE CANADA</b>		
Project Title/Titre du projet <b>METCHOSIN, BC</b>		
<b>ELECTRICAL HIGH VOLTAGE UPGRADE (PHASE 2 OF 2) WILLIAM HEAD INSTITUTION</b>		
Consultant Signature Box Only		
Designed by/Concept par <b>P.Necpal</b>		
Drawn by/Dessiné par <b>P.Necpal</b>		
PW/GSC Project Manager/Administrateur de Projets TP/GSC <b>P. Truong</b>		
PW/GSC, Regional Manager, Architectural and Engineering Services/ Gérant régional, Services d'architectural et de génie, TP/GSC <b>P. Paul</b>		
Drawing Title/Titre du dessin <b>MAIN POWER HOUSE (BLDG.115) SINGLE LINE AND ELECTRICAL DETAILS</b>		
Project No./No. du projet <b>R.069376.001</b>	Sheet/Feuille <b>E-100</b>	Revision no./La Revision no. <b>6 OF 22</b>





**MAIN POWER HOUSE GENERAL NOTES:**

1. CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ROOM AND EQUIPMENT LOCATIONS, AS WELL AS CONDUIT ROUTING ON SITE. DO NOT USE DRAWING SCALE FOR MATERIALS TAKE-OFF OR EXACT CONDUIT ENTRY POINTS.
2. COORDINATE NEW ELECTRICAL INSTALLATION WITH EXISTING CEILING PIPING, BUS DUCT, FIRE ALARM, AND LUMINAIRES.
3. INFORMATION SHOWN ON THIS RECORD DRAWING SHALL BE VALIDATED ON SITE PRIOR TO COMMENCEMENT OF CONSTRUCTION.



**1** MAIN POWER HOUSE (BLDG. 115) – DECONSTRUCTION PLAN  
1:25



Mar 14 2017

0 ISSUED FOR TENDER MAR.14.17

Revision/Revision Description Date/Date

Client/client

**CORRECTIONAL SERVICE CANADA**

Project Title/Titre du projet  
**METCHOSIN, BC**

**ELECTRICAL HIGH VOLTAGE UPGRADE (PHASE 2 OF 2) WILLIAM HEAD INSTITUTION**

Consultant Signature Box Only

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Drawn by/Dessiné par  
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Gestionnaire régional, Services d'architectural et de génie, TPSGC

P. Paul

Drawing Title/Titre du dessin

**MAIN POWER HOUSE (BLDG. 115)**

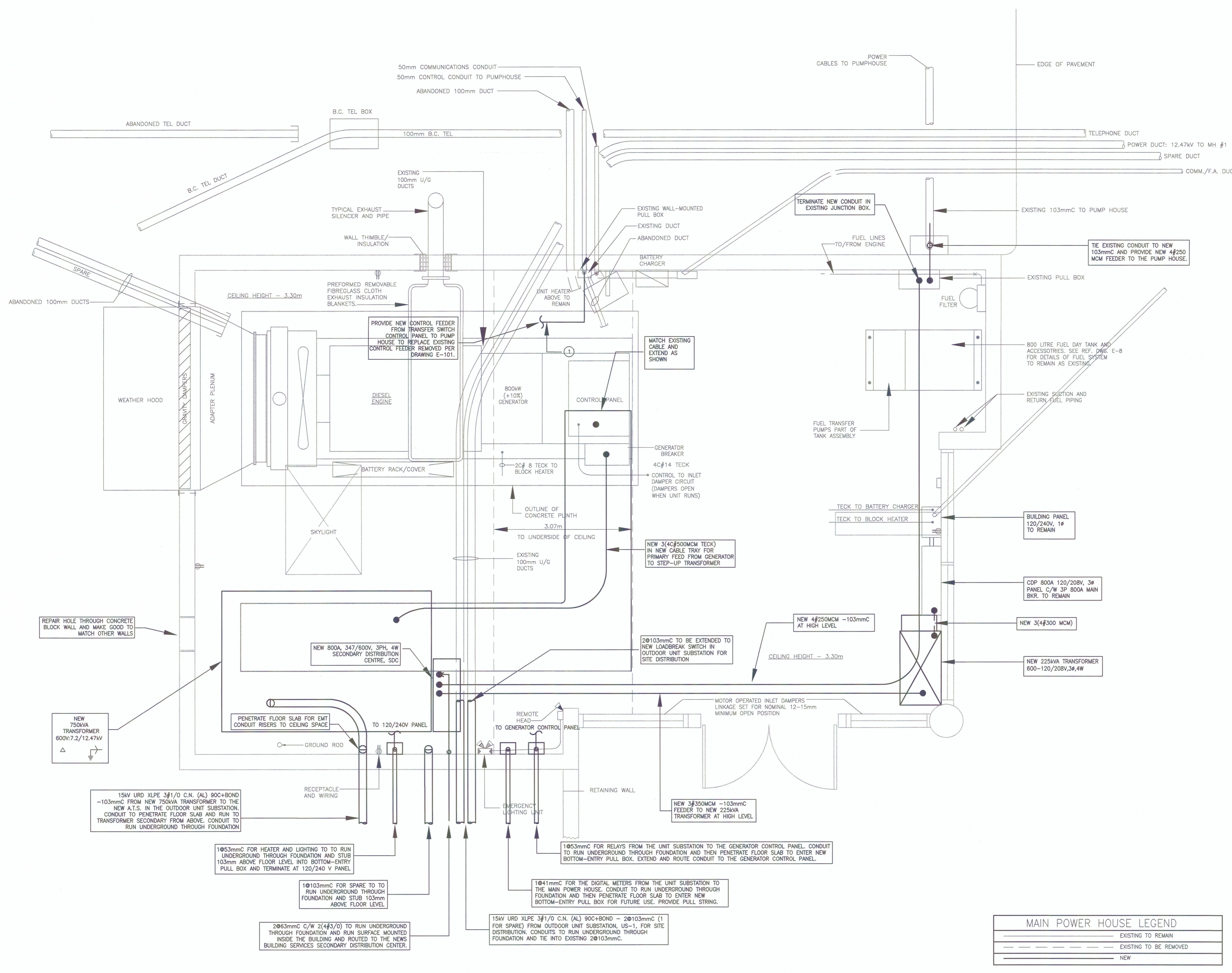
**DECONSTRUCTION PLAN**

Project No./No. du projet Sheet/Feuille Revision no./

**R.069376.001** E-101 La Revision

7 OF 22





1 MAIN POWER HOUSE (BLDG. 115) - FLOOR PLAN  
1:25

- MAIN POWERHOUSE GENERAL NOTES:**
- CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ROOM AND EQUIPMENT LOCATIONS, AS WELL AS CONDUIT ROUTING ON SITE. DO NOT USE DRAWING SCALE FOR MATERIALS TAKE-OFF OR EXACT CONDUIT ENTRY POINTS.
  - COORDINATE NEW ELECTRICAL INSTALLATION WITH EXISTING CEILING PIPING, BUSDUCT, FIRE ALARM, AND LUMINAIRES.
  - STRUCTURAL ENGINEER TO REVIEW NEW PENETRATIONS THROUGH FOUNDATIONS BEFORE WORK IS TO BE PERFORMED; PROVIDE SIGNED AND SEALED LETTERS OF ASSURANCE AFTER WORK IS COMPLETE.

MAIN POWER HOUSE LEGEND	
---	EXISTING TO REMAIN
---	EXISTING TO BE REMOVED
---	NEW

Revision/	Description/Description	Date/Date
0	ISSUED FOR TENDER	MAR.14.17

Client/client  
**CORRECTIONAL SERVICE CANADA**

Project title/Titre du projet  
**METCHOSIN, BC**

**ELECTRICAL HIGH VOLTAGE UPGRADE (PHASE 2 OF 2) WILLIAM HEAD INSTITUTION**

Consultant Signature Box Only

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**P. Paul**

Drawing title/Titre du dessin  
**MAIN POWER HOUSE (BLDG. 115) FLOOR PLAN**

Project No./No. du projet	Sheet/Feuille	Revision no./La Révision no.
<b>R.069376.001</b>	<b>E-102</b>	
	<b>8 OF 22</b>	





Revision/	Description/	Date/Date
0	ISSUED FOR TENDER	MAR.14.17

Client/client  
**CORRECTIONAL SERVICE CANADA**

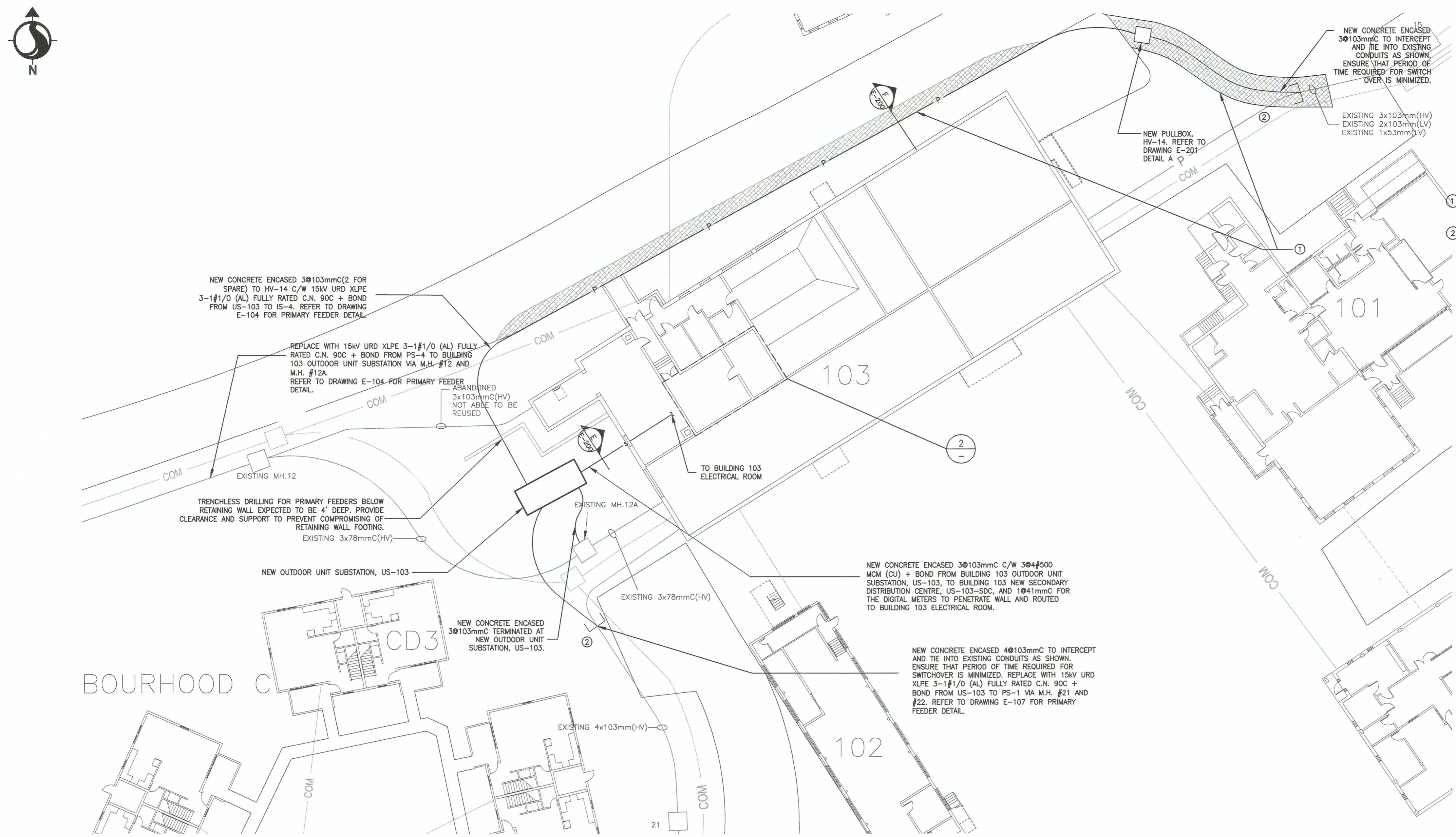
Project title/Titre du projet  
**METCHOSIN, BC**

**ELECTRICAL HIGH VOLTAGE UPGRADE (PHASE 2 OF 2) WILLIAM HEAD INSTITUTION**

Consultant Signature Box Only  
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gestionnaire régionale, Services d'architectural et de génie, TPSGC  
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Drawing title/Titre du dessin  
**BUILDING 103 PARTIAL SITE AND FLOOR PLANS**

Project No./No. du projet <b>R.069376.001</b>	Sheet/Feuille <b>E-103</b>	Revision no./ La Révision no. <b>9 of 22</b>
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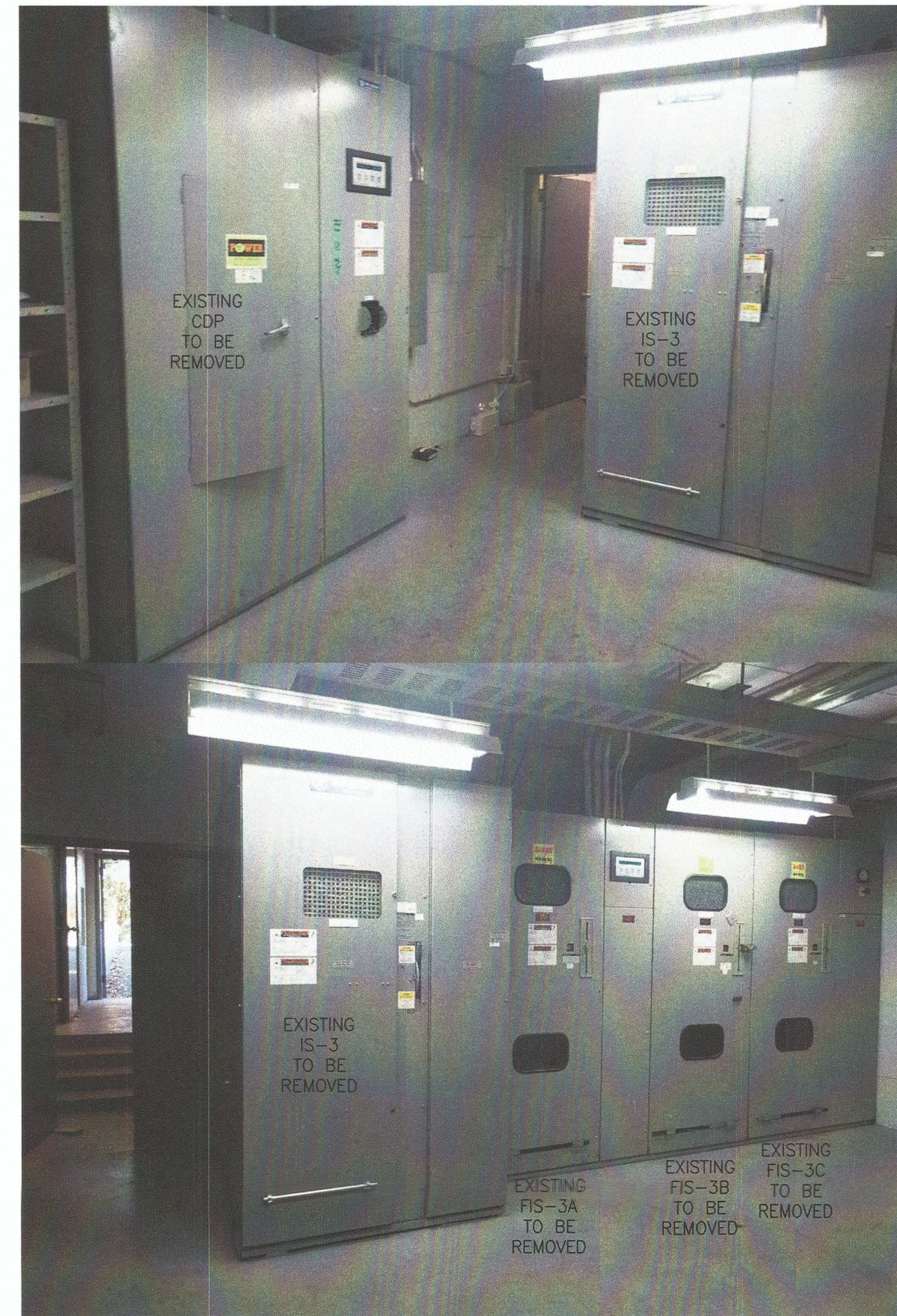
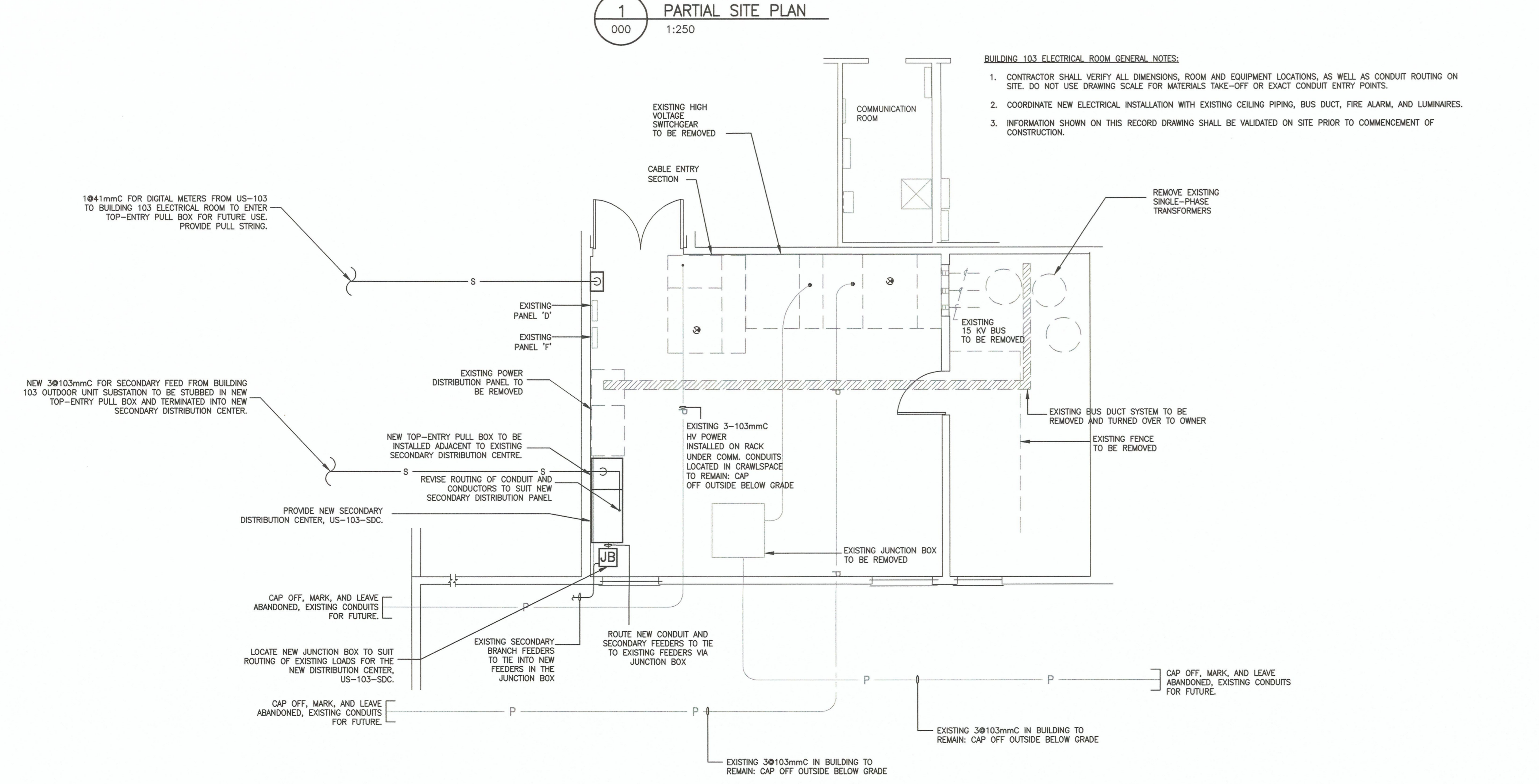


**PARTIAL SITE PLAN LEGEND**

— P —	PRIMARY U/G LINE - NEW
— P —	PRIMARY U/G LINE - EXISTING TO REMAIN
— P —	PRIMARY U/G LINE - TO BE REMOVED
— S —	SECONDARY U/G LINE - NEW
— S —	SECONDARY U/G LINE - EXISTING TO REMAIN
— S —	SECONDARY U/G LINE - TO BE REMOVED
— COM —	COMMUNICATION U/G LINE - EXISTING

- SITE PLAN KEYNOTES:**
- REMOVE, REPAIR, MAKE GOOD, AND RESTORE 165 SQUARE METERS OF ASPHALT PAVEMENT, INCLUDING BASE AND SUB BASE GRAVELS, TO MATCH OR EXCEED THE EXISTING THICKNESS. FINAL CONDITION TO MATCH QUALITY OF EXISTING CONDITION IN AREA.
  - CAP OFF AND MARK EXISTING CONDUITS BELOW GRADE.

- GENERAL NOTES:**
- REFER TO DRAWING E-204 FOR BUILDING 103 PHASING NOTES.
  - REFER TO DRAWING E-202 TO LOCATE PRIMARY CONDUCTORS BEING REMOVED OR INSTALLED.
  - STRUCTURAL ENGINEER TO REVIEW PENETRATIONS THROUGH FOUNDATIONS BEFORE WORK IS TO BE PERFORMED. PROVIDE SIGNED AND SEALED LETTERS OF ASSURANCE AFTER WORK IS COMPLETE.



**3 BUILDING 103 - EXISTING ELECTRICAL ROOM**  
1:50

- EXISTING ELECTRICAL ROOM NOTES:**
- REFER TO DRAWING E-104 FOR ADDITIONAL DETAILS

**2 EXISTING BUILDING 103 - ELECTRICAL AND COMMUNICATION ROOM DETAIL**  
1:50

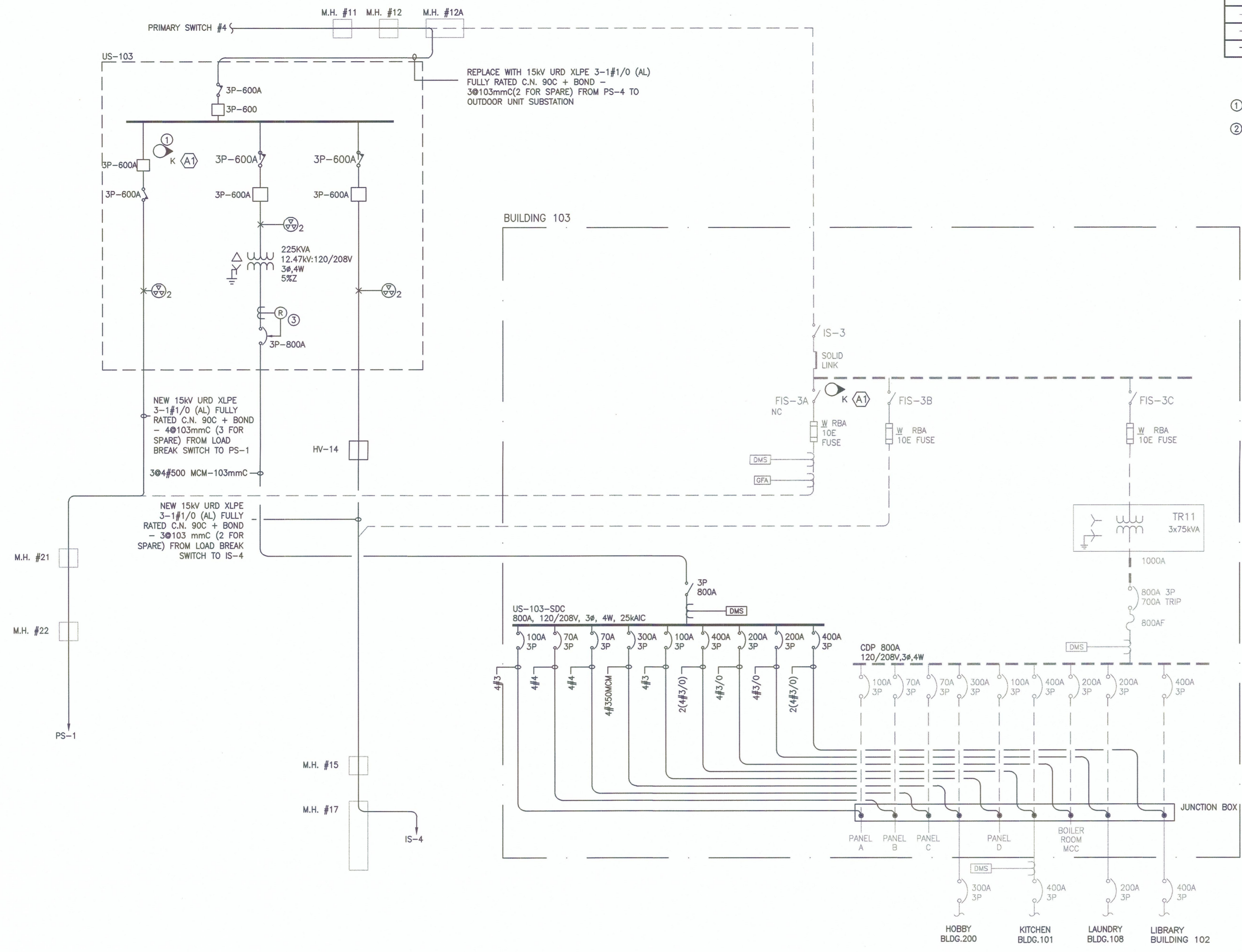




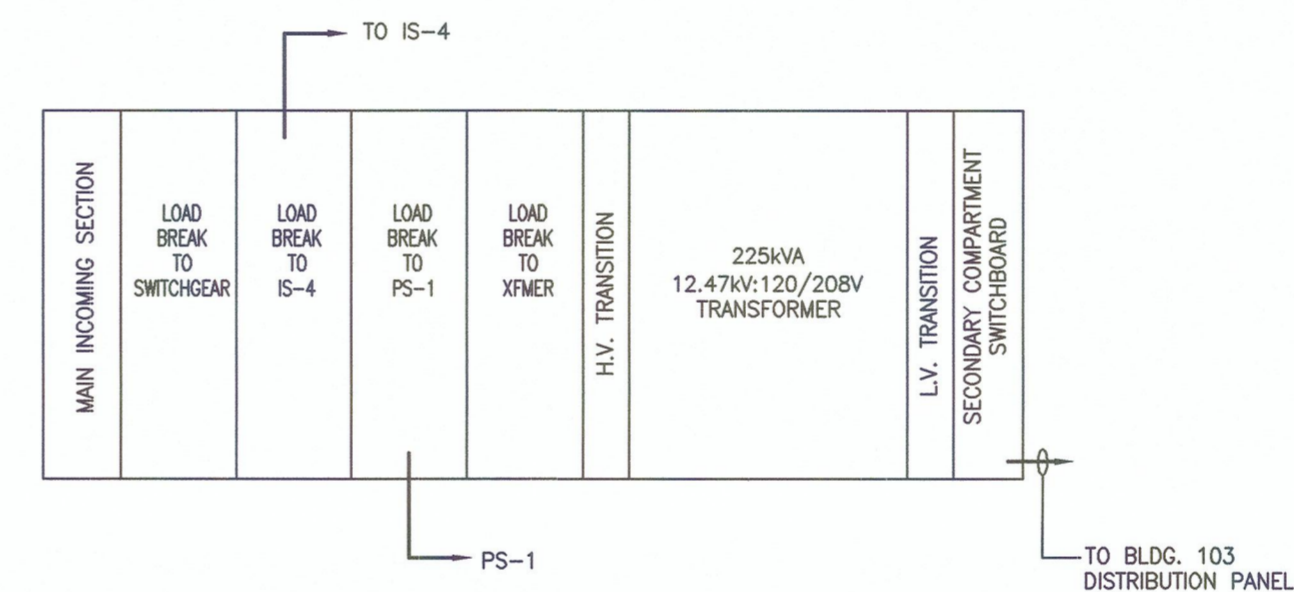
SINGLE LINE DIAGRAM LEGEND	
---	EXISTING TO REMAIN
- - - -	EXISTING TO BE REMOVED
---	NEW

- BUILDING 103 SINGLE LINE DIAGRAM KEYNOTES:**
- PROVIDE KIRK-KEY INTERLOCK TO MATCH EXISTING KEY INTERLOCK.
  - PROVIDE FEEDER PROTECTION RELAY C/W THE FOLLOWING FEATURES: OVERCURRENT AND TIME-OVERCURRENT FOR PHASE, GROUND, AND NEGATIVE SEQUENCE FAULT CONDITIONS (50 PQ0, 51 PQ2); NEUTRAL OVERCURRENT (50N) AND NEUTRAL TIME-OVERCURRENT (51N); AND, ARC FLASH DETECTION AND NEUTRAL AND PHASE OVERCURRENT (50N AF, 50P AF). PROVIDE CAPABILITIES FOR FUTURE ZONE INTERLOCKING.

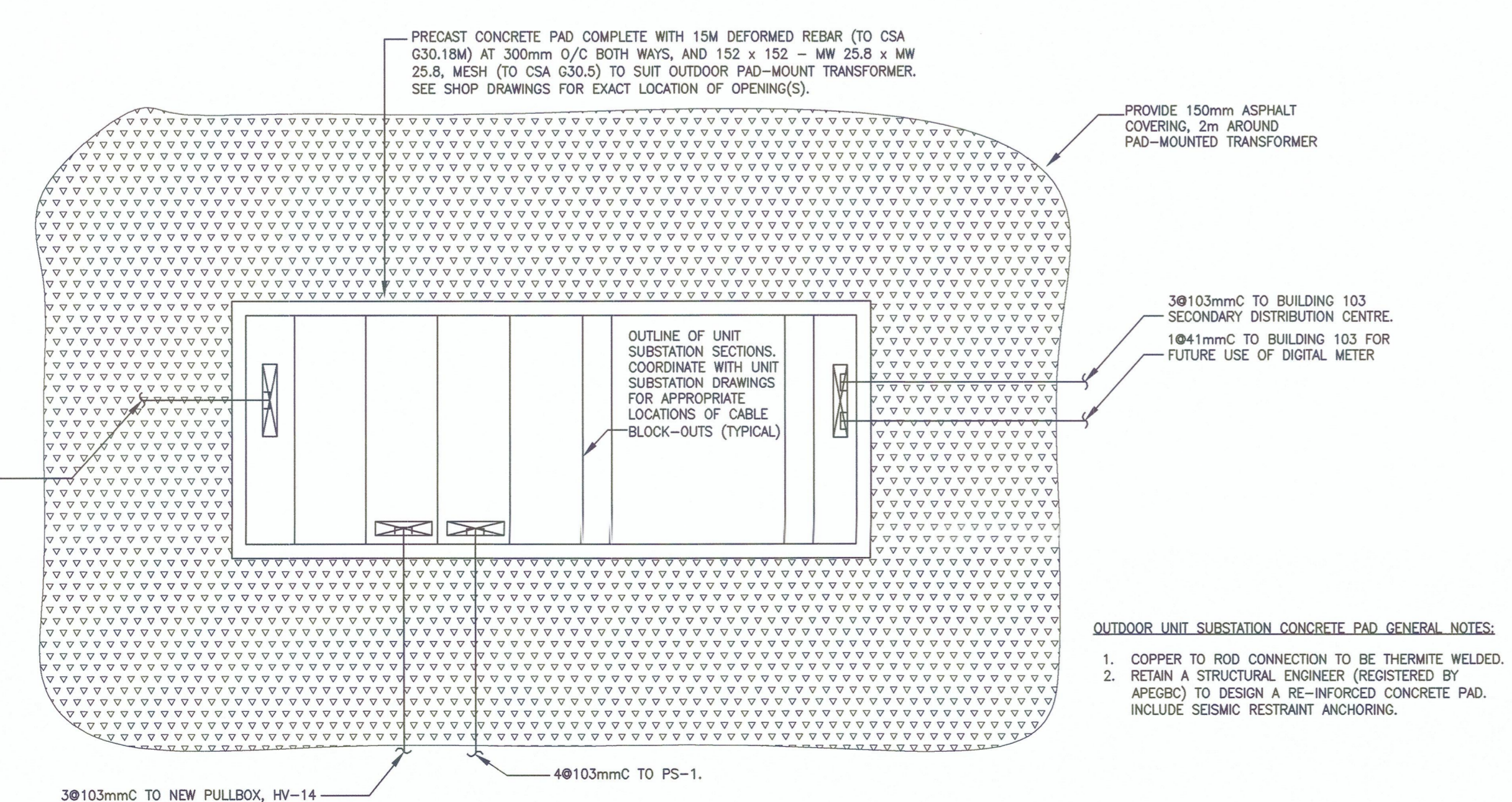
- SINGLE LINE DIAGRAM GENERAL NOTES:**
- ALL NEW CONDUCTORS TO BE COPPER XLPE RW90.
  - PROVIDE 1041mm<sup>2</sup> FROM US-103 TO BUILDING 103 ELECTRICAL ROOM FOR FUTURE USE OF THE DIGITAL METER, CONDUIT TO ENTER PULL BOX, PROVIDE FULL STRING.
  - CABLE FAULT INDICATOR TYPES '1' AND '2' TO BE PROVIDED AS FOLLOWS:  
TYPE 1: HOT STICK MOUNTED C/W CURRENT RESET (1.5A MIN)  
TYPE 2: ENCLOSURE FLUSH MOUNTED C/W CURRENT RESET (1.5A MIN)
  - REFER TO DRAWING E-002 FOR INFO ON KEY INTERLOCK A1.



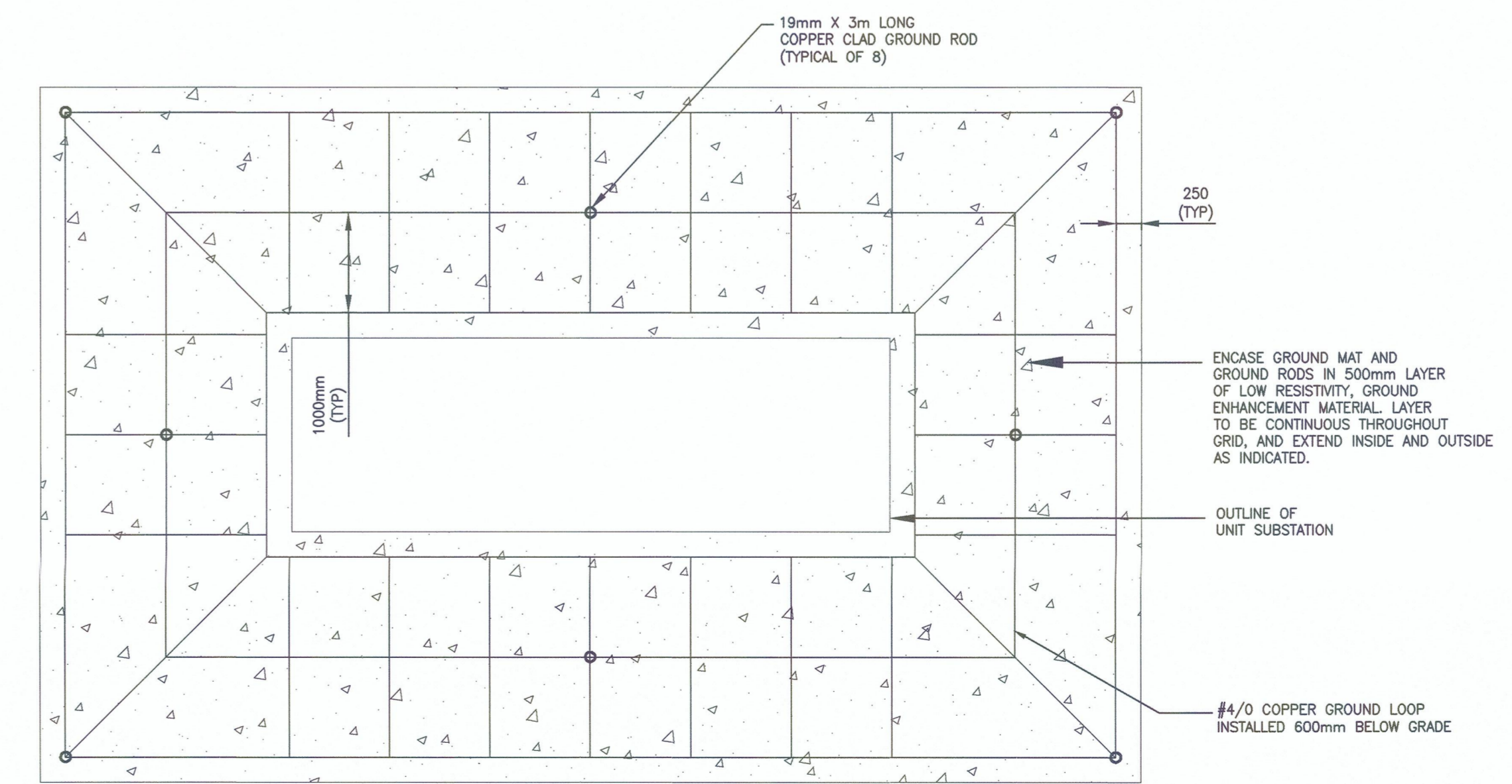
**1 PARTIAL SINGLE LINE DIAGRAM**  
N.T.S.



**3 OUTDOOR UNIT SUBSTATION (US-103) PLAN VIEW**  
N.T.S.



**2 OUTDOOR UNIT SUBSTATION (US-103) CONCRETE PAD LAY-OUT PLAN**  
N.T.S.



**2 OUTDOOR UNIT SUBSTATION (US-103) GROUNDING DETAILS**  
N.T.S.

Revision/Description	Date/Date
0 ISSUED FOR TENDER	MAR.14.17

Client/client  
**CORRECTIONAL SERVICE CANADA**

Project title/Titre du projet  
**METCHOSIN, BC**

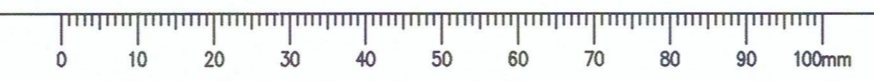
**ELECTRICAL HIGH VOLTAGE UPGRADE (PHASE 2 OF 2)  
WILLIAM HEAD INSTITUTION**

Consultant Signature Box Only  
Designed by/Concept par  
**P.Necpal**  
Drawn by/Dessiné par  
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**P. Paul**

Drawing title/Titre du dessin  
**BUILDING 103**

**SINGLE LINE AND ELECTRICAL DETAILS**

Project No./No. du projet	Sheet/Feuille	Revision no./La Revision no.
<b>R.069376.001</b>	<b>E-104</b>	
	<b>10</b>	<b>OF 22</b>



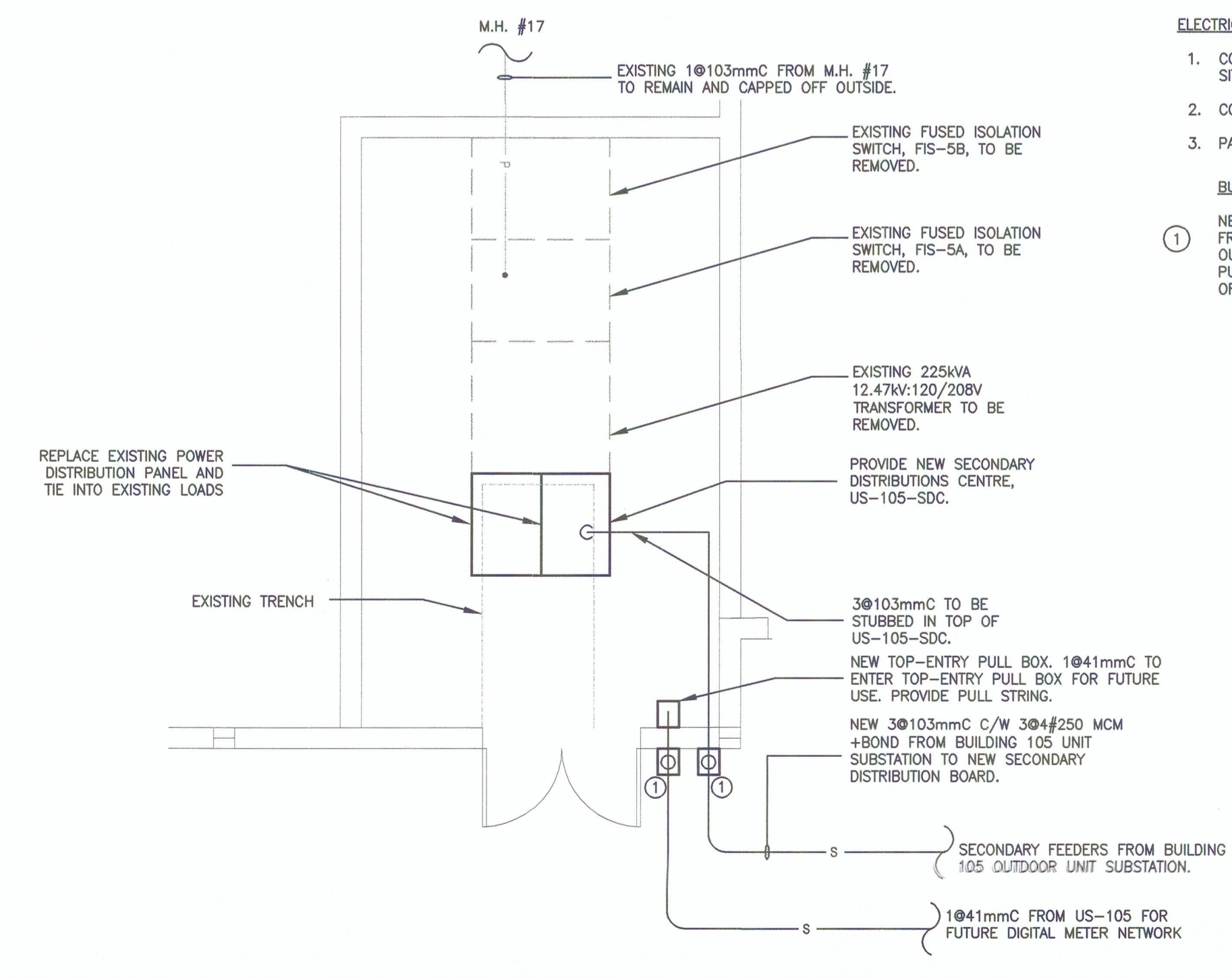




PARTIAL SITE PLAN LEGEND	
— P —	PRIMARY U/G LINE - NEW
— P —	PRIMARY U/G LINE - EXISTING TO REMAIN
- - - P - - -	PRIMARY U/G LINE - TO BE REMOVED
— S —	SECONDARY U/G LINE - NEW
— S —	SECONDARY U/G LINE - EXISTING TO REMAIN
- - - S - - -	SECONDARY U/G LINE - TO BE REMOVED
— COM —	COMMUNICATION U/G LINE - EXISTING

- SITE PLAN KEYNOTES:**
- REMOVE, REPAIR, MAKE GOOD, AND RESTORE 200 SQUARE METERS OF ASPHALT PAVEMENT, INCLUDING BASE AND SUB BASE GRAVELS, TO MATCH OR EXCEED THE EXISTING THICKNESS. FINAL CONDITION TO MATCH QUALITY OF EXISTING CONDITION IN AREA.
  - CAP OFF AND MARK EXISTING AND ABANDONED CONDUITS BELOW GRADE.
- GENERAL NOTES:**
- REFER TO DRAWING E-205 FOR BUILDING 105 PHASING NOTES.
  - REFER TO DRAWING E-202 TO LOCATE PRIMARY CONDUCTORS BEING REMOVED OR INSTALLED.

1 PARTIAL SITE PLAN  
000 1:300



- ELECTRICAL ROOM NOTES:**
- CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ROOM AND EQUIPMENT LOCATIONS, AS WELL AS CONDUIT ROUTING ON SITE. DO NOT USE DRAWING SCALE FOR MATERIALS TAKE-OFF AND EXACT CONDUIT ENTRY POINTS.
  - COORDINATE NEW ELECTRICAL INSTALLATION WITH EXISTING CEILING PIPING, BUSDUCT, FIRE ALARM, AND LUMINAIRES.
  - PATCH CONCRETE AND MAKE GOOD TO MATCH EXISTING IN AREA.

- BUILDING 105 ELECTRICAL ROOM KEYNOTES:**
- NEW CONDUITS FROM UNIT SUBSTATION TO STUB UP FROM GRADE AND RUN SURFACE MOUNTED ON OUTSIDE OF BUILDING INTO NEW BOTTOM-ENTRY PULL BOX AND STRAIGHT THROUGH OPPOSITE END OF PULL BOX INTO THE BUILDING AT HIGH LEVEL.

2 EXISTING BUILDING 105 - ELECTRICAL ROOM DETAIL  
1:50

PROFESSIONAL ENGINEER  
S. M. TOH  
#20107  
May 14 2017

0	ISSUED FOR TENDER	MAR.14.17
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Revision/	Description/Description	Date/Date

Client/client  
**CORRECTIONAL SERVICE CANADA**

Project title/Titre du projet  
**METCHOSIN, BC**

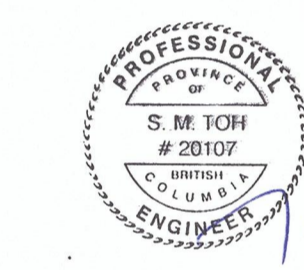
**ELECTRICAL HIGH VOLTAGE UPGRADE (PHASE 2 OF 2) WILLIAM HEAD INSTITUTION**

Consultant Signature Box Only  
Designed by/Concept par  
**P. Nepal**  
Drawn by/Dessiné par  
**P. Nepal**  
PWGSC Project Manager/Administrateur de Projets TPSSC  
**P. Truong**  
PWGSC Regional Manager, Architectural and Engineering Services/ Gestionnaire régional, Services d'architecture et de génie, TPSSC  
**P. Paul**

Drawing title/Titre du dessin  
**BUILDING 105 PARTIAL SITE AND FLOOR PLANS**

Project No./No. du projet <b>R.069376.001</b>	Sheet/Feuille <b>11</b> of <b>22</b>	Revision no./La Révision no. <b>E-105</b>
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Mar 14 2017

0	ISSUED FOR TENDER	MAR.14.17
Revision/	Description/Description	Date/Date
Client/client		

**CORRECTIONAL SERVICE CANADA**

Project title/Titre du projet  
**METCHOSIN, BC**

**ELECTRICAL HIGH VOLTAGE UPGRADE (PHASE 2 OF 2) WILLIAM HEAD INSTITUTION**

Consultant Signature Box Only

Designed by/Concept par  
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Drawn by/Dessiné par  
**P.Necpal**  
PWGSC Project Manager/Administrateur de Projets TP50C  
**P. Truong**  
PWGSC Regional Manager, Architectural and Engineering Services / Gestionnaire régional, Services d'architectural et de génie, TP50C  
**P. Paul**

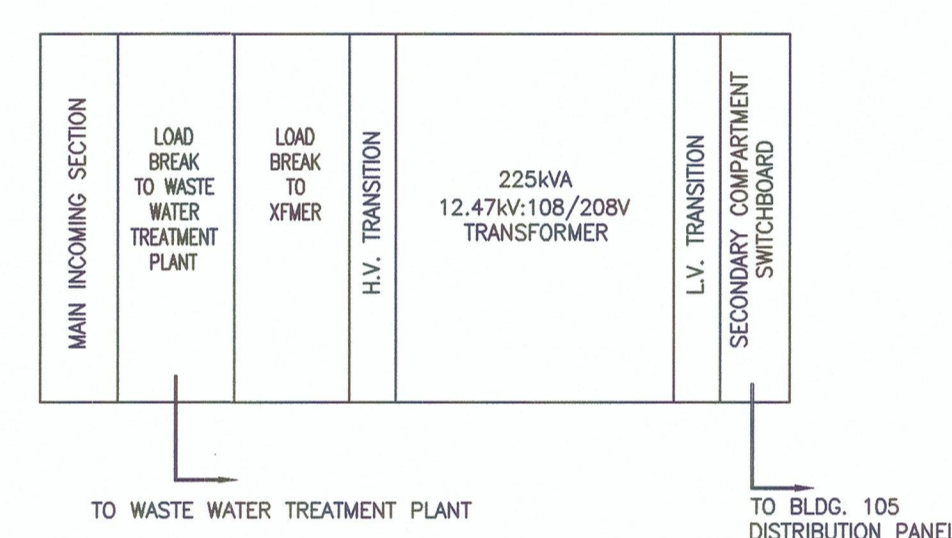
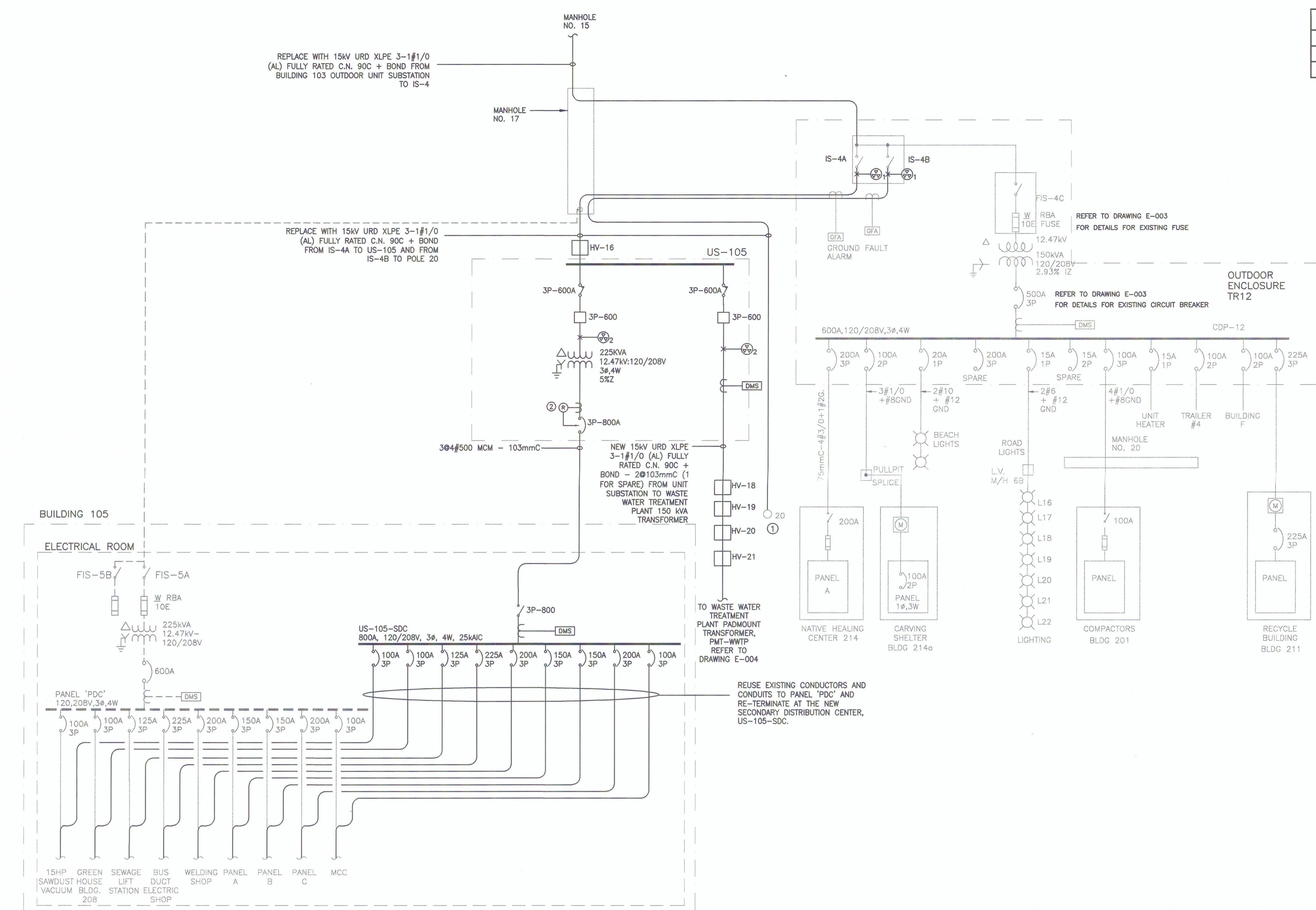
Drawing title/Titre du dessin  
**BUILDING 105 SINGLE LINE AND ELECTRICAL DETAILS**

Project No./No. du projet <b>R.069376.001</b>	Sheet/Feuille <b>E-106</b>	Revision no./La Revision no. <b>12 OF 22</b>
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SINGLE LINE DIAGRAM LEGEND	
---	EXISTING TO REMAIN
---	EXISTING TO BE REMOVED
---	NEW

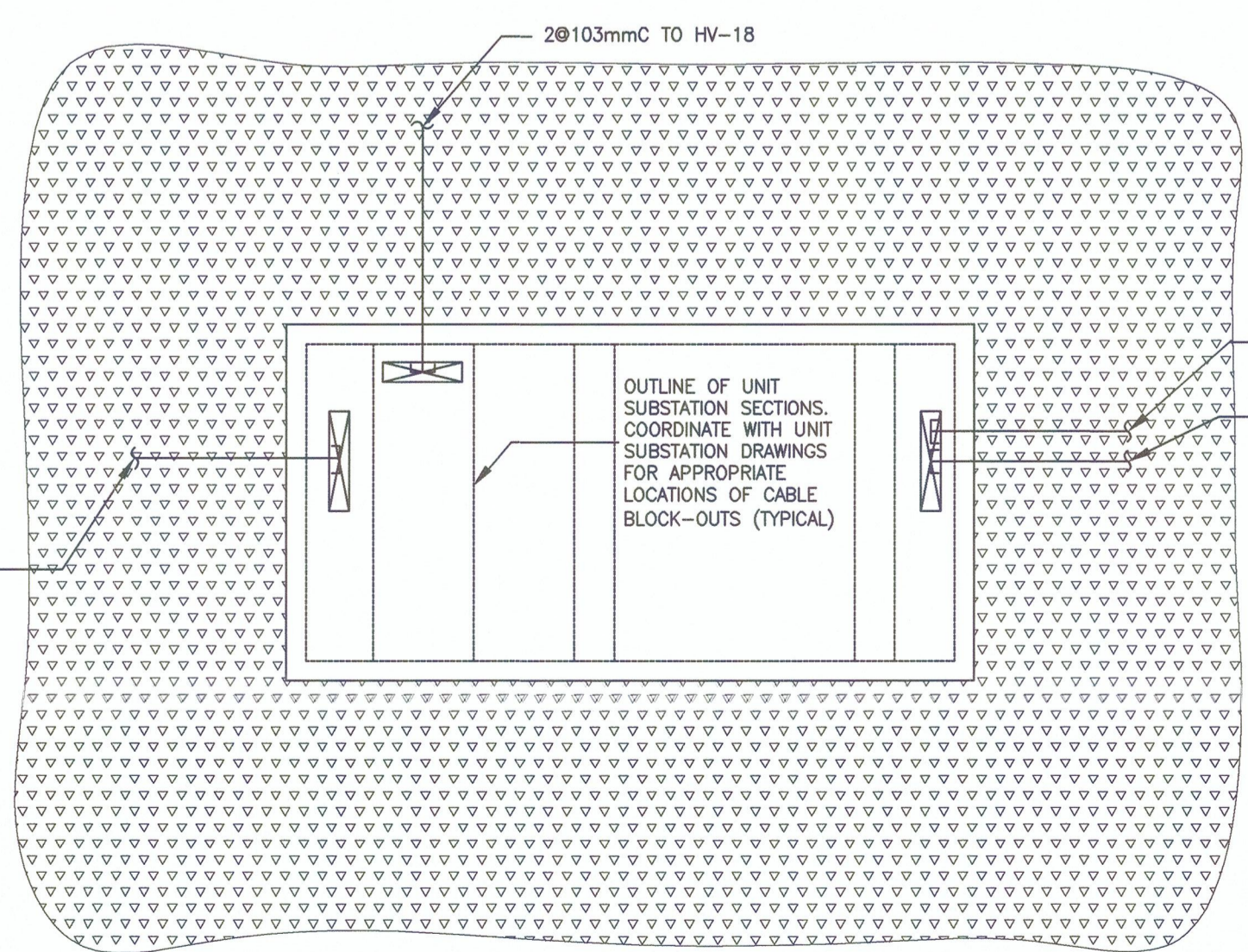
- BUILDING 105 SINGLE LINE DIAGRAM KEYNOTES:**
- EXISTING POWER POLE COMPLETE WITH POLE-OPERATED GANGED SWITCH. PROVIDE NEW FEEDER FROM IS-4B IN OUTDOOR ENCLOSURE TR12 TO EXISTING POLE. REUSE EXISTING RACEWAYS.
  - PROVIDE FEEDER PROTECTION RELAY c/w THE FOLLOWING FEATURES: OVERCURRENT AND TIME-OVERCURRENT FOR PHASE, GROUND, AND NEGATIVE SEQUENCE FAULT CONDITIONS (50 P50, 51 P50); NEUTRAL OVERCURRENT (50N) AND NEUTRAL TIME-OVERCURRENT (51N); AND, ARC FLASH DETECTION AND NEUTRAL AND PHASE OVERCURRENT (50N AF, 50P AF). PROVIDE CAPABILITIES FOR FUTURE ZONE INTERLOCKING.

- SINGLE LINE DIAGRAM GENERAL NOTES:**
- ALL NEW WIRING TO BE COPPER XLPE RW90.
  - PROVIDE 1047mm<sup>2</sup> C/W FROM US-105 TO BUILDING 105 ELECTRICAL ROOM FOR FUTURE USE OF DIGITAL METER. CONDUIT TO ENTER BUILDING AT HIGH LEVEL AND ENTER TOP-ENTRY PULL BOX. PROVIDE PULL STRING.
  - CABLE FAULT INDICATOR TYPES '1' AND '2' TO BE PROVIDED AS FOLLOWS:  
TYPE 1: HOT STICK MOUNTED C/W CURRENT RESET (1.5A MIN)  
TYPE 2: ENCLOSURE FLUSH MOUNTED C/W CURRENT RESET (1.5A MIN)

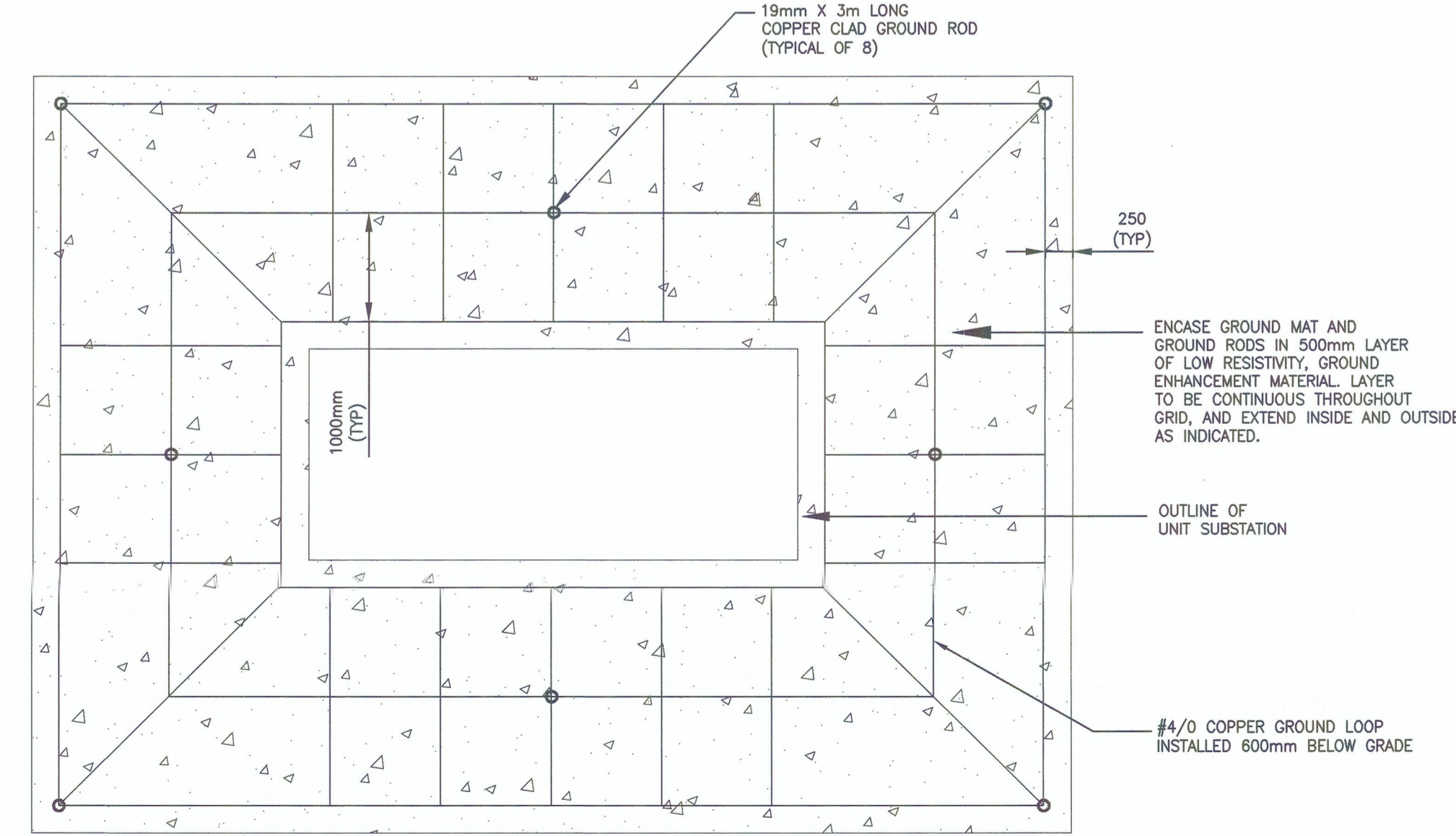


**3 PARTIAL SINGLE LINE DIAGRAM**  
N.T.S.

**2 OUTDOOR UNIT SUBSTATION PLAN VIEW**  
N.T.S.



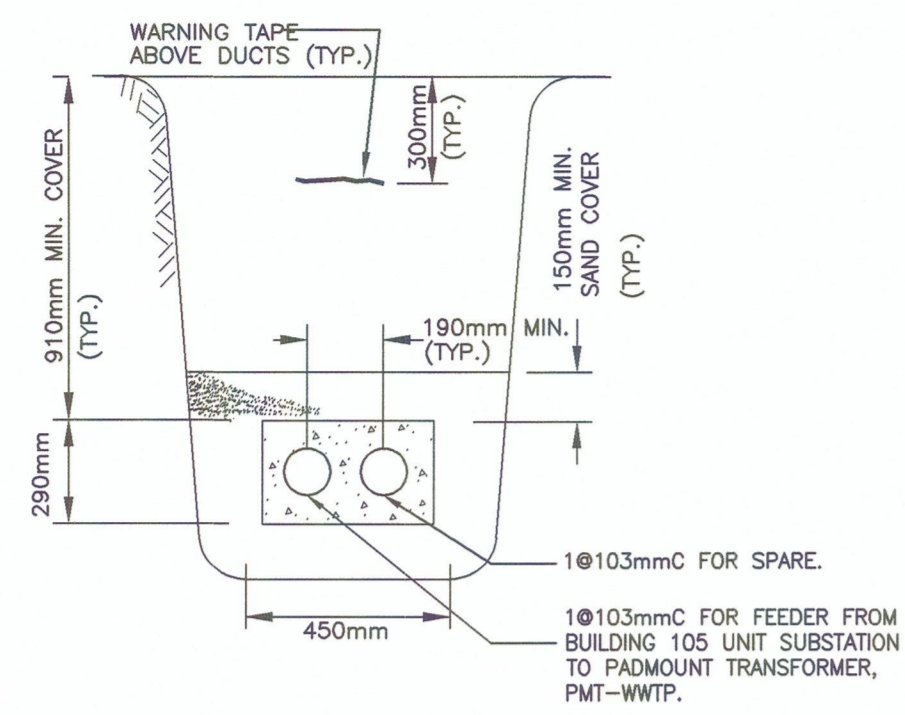
**1 OUTDOOR UNIT SUBSTATION CONCRETE PAD LAY-OUT PLAN**  
N.T.S.



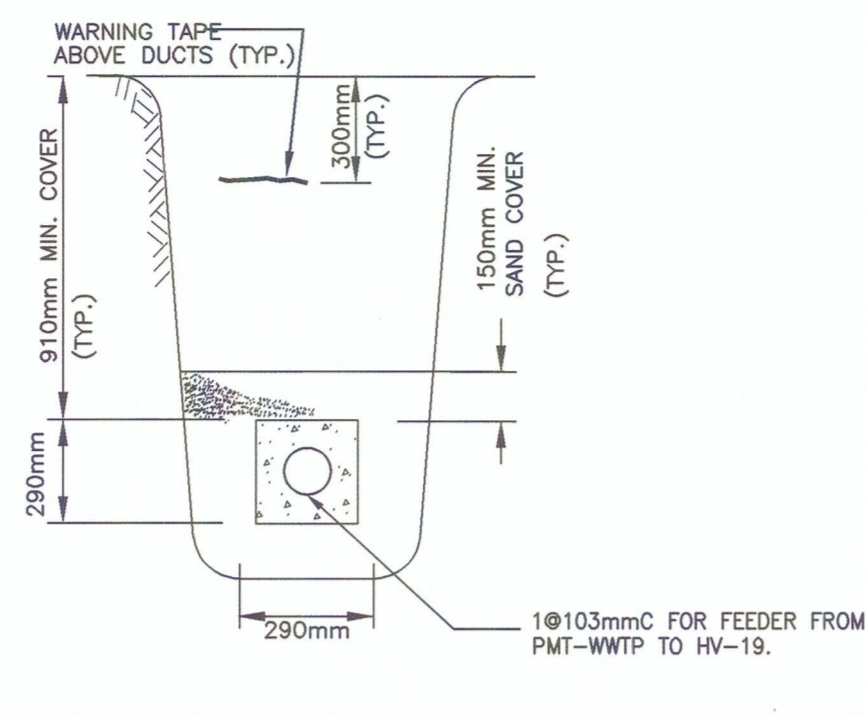
**1 OUTDOOR UNIT SUBSTATION GROUNDING DETAILS**  
N.T.S.

- OUTDOOR UNIT SUBSTATION CONCRETE PAD GENERAL NOTES:**
- COPPER TO ROD CONNECTION TO BE THERMITE WELDED.
  - RETAIN A STRUCTURAL ENGINEER (REGISTERED BY AREGCO) TO DESIGN A RE-REINFORCED CONCRETE PAD. PROVIDE SEISMIC ENGINEER'S LETTER OF ASSURANCE TO SIGN OFF ON SEISMIC RESTRAINT OF PAD AND EQUIPMENT SITUATED ON PAD.

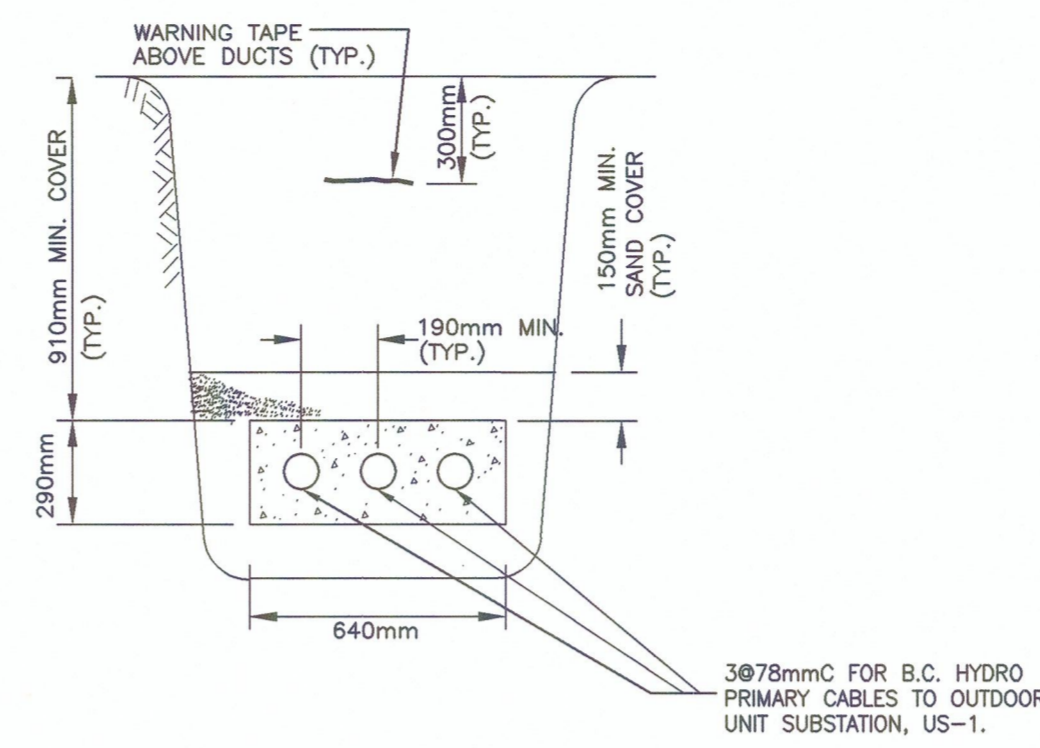




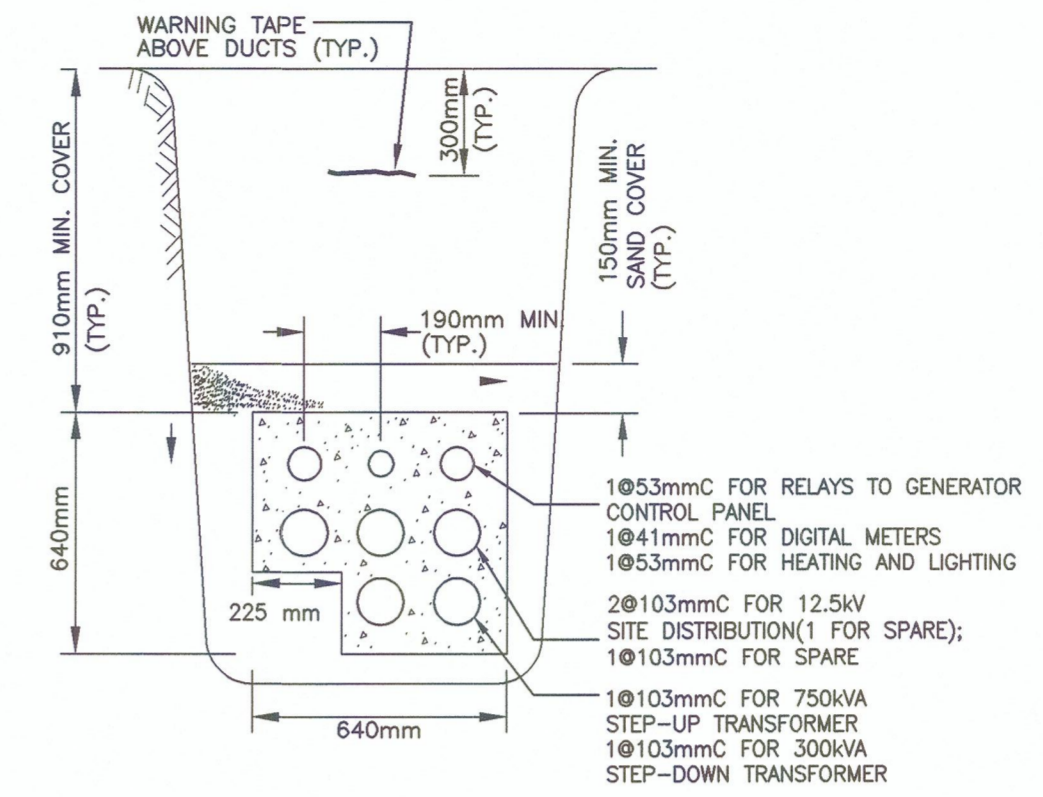
**A** TRENCH SECTION DETAIL – 105 UNIT SUBSTATION TO PMT-WWTP  
E-004 N.T.S.



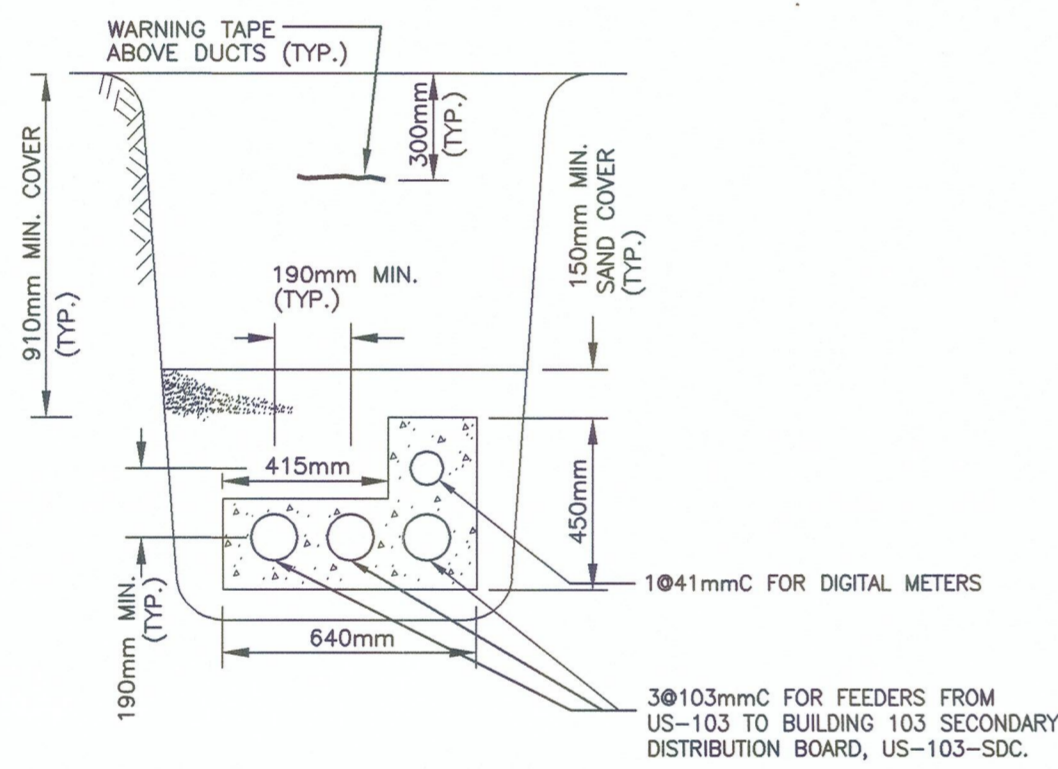
**B** TRENCH SECTION DETAIL – PMT-WWTP TO HV-19  
E-004 N.T.S.



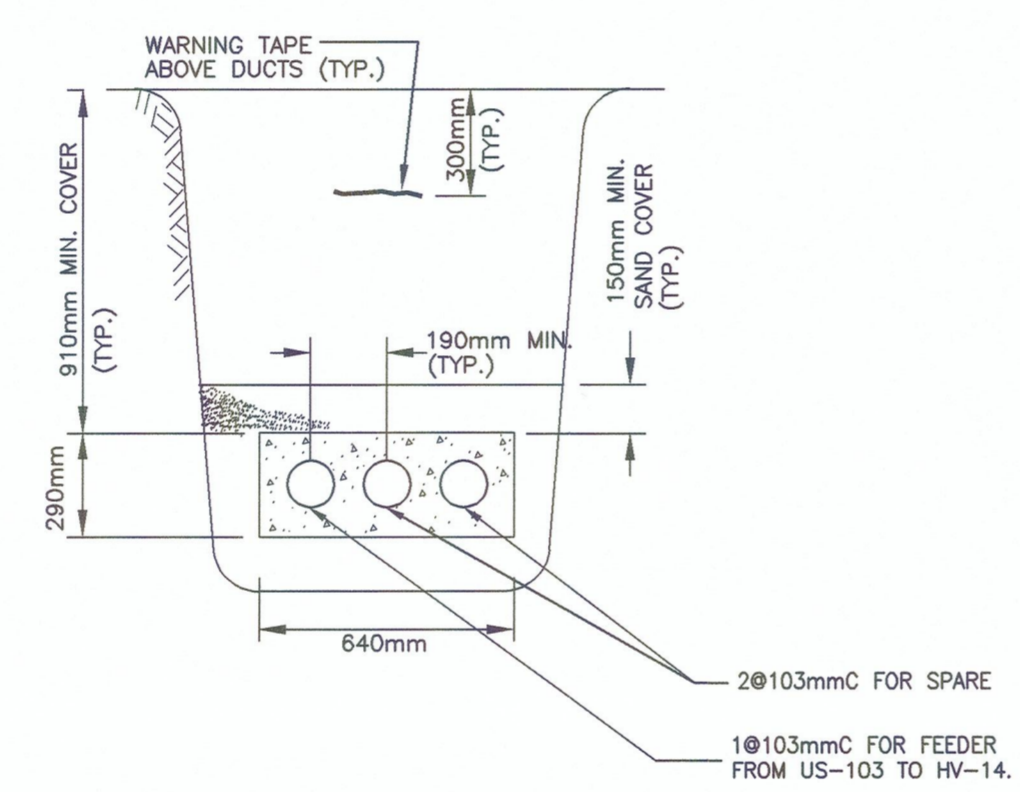
**C** TRENCH SECTION DETAIL – B.C. HYDRO SERVICE TO US-1  
E-100 N.T.S.



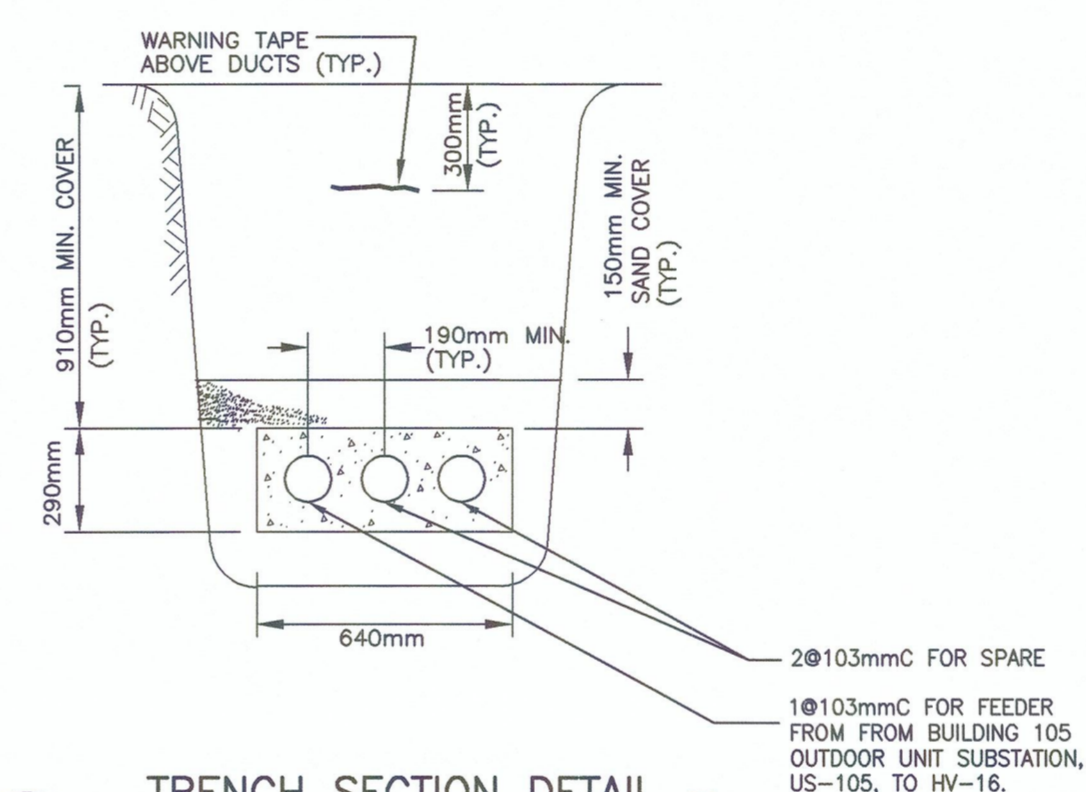
**D** TRENCH SECTION DETAIL – US-1 TO BUILDING 115  
E-100 N.T.S.



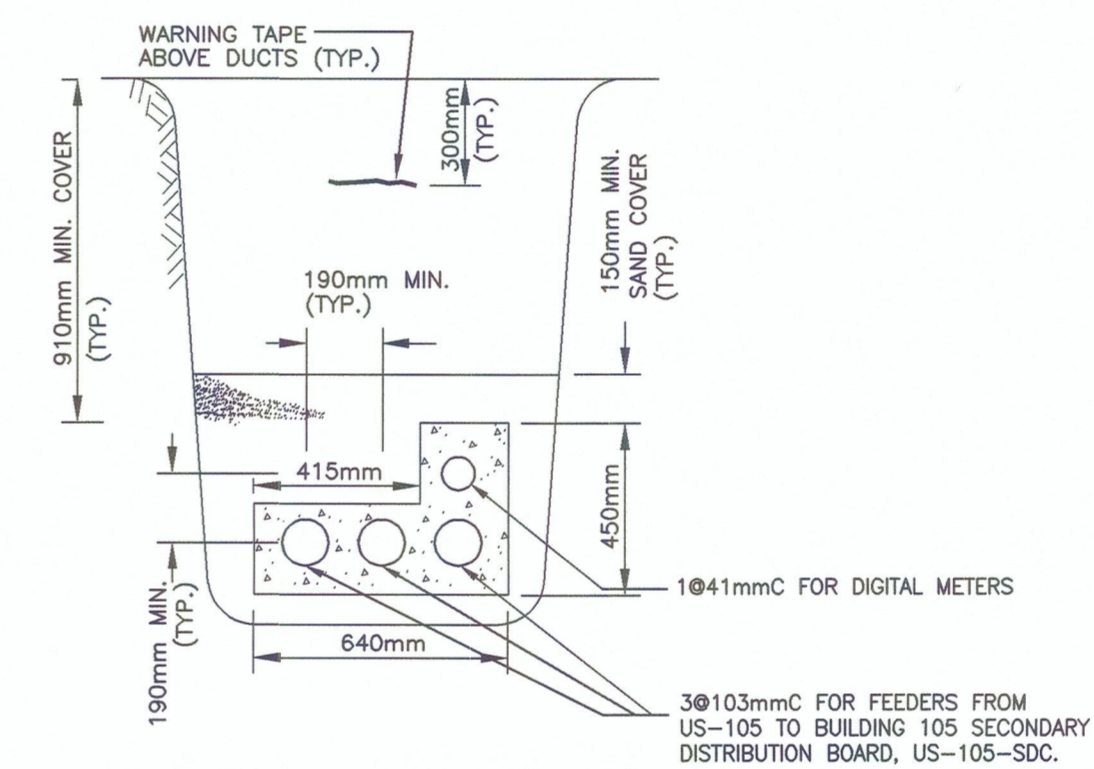
**E** TRENCH SECTION DETAIL – US-103 TO BUILDING 103  
E-103 N.T.S.



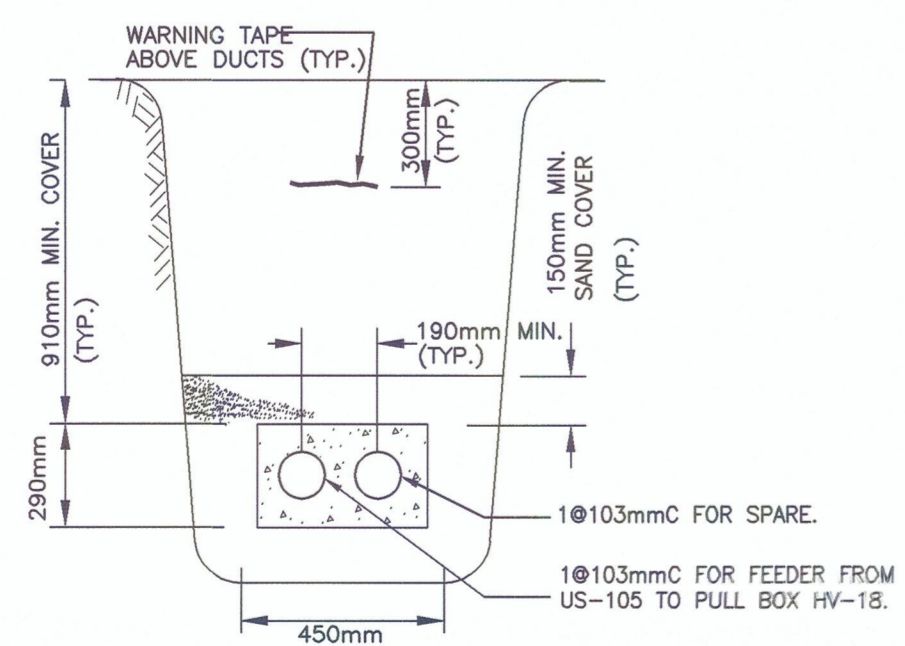
**F** TRENCH SECTION DETAIL – US-103 TO HV-14  
E-103 N.T.S.



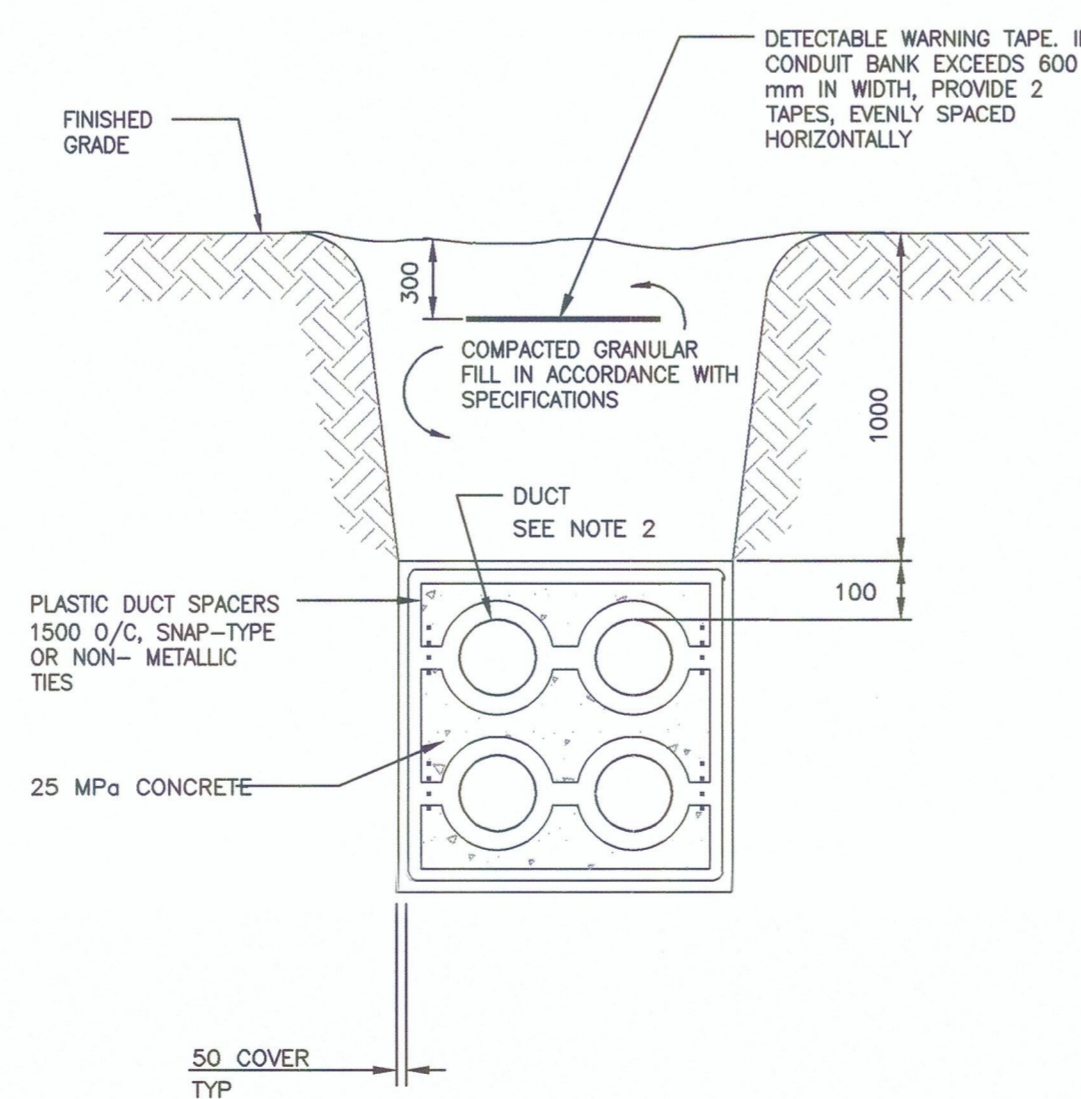
**G** TRENCH SECTION DETAIL – US-105 TO HV-16  
E-105 N.T.S.



**H** TRENCH SECTION DETAIL – US-105 TO BUILDING 105  
E-105 N.T.S.

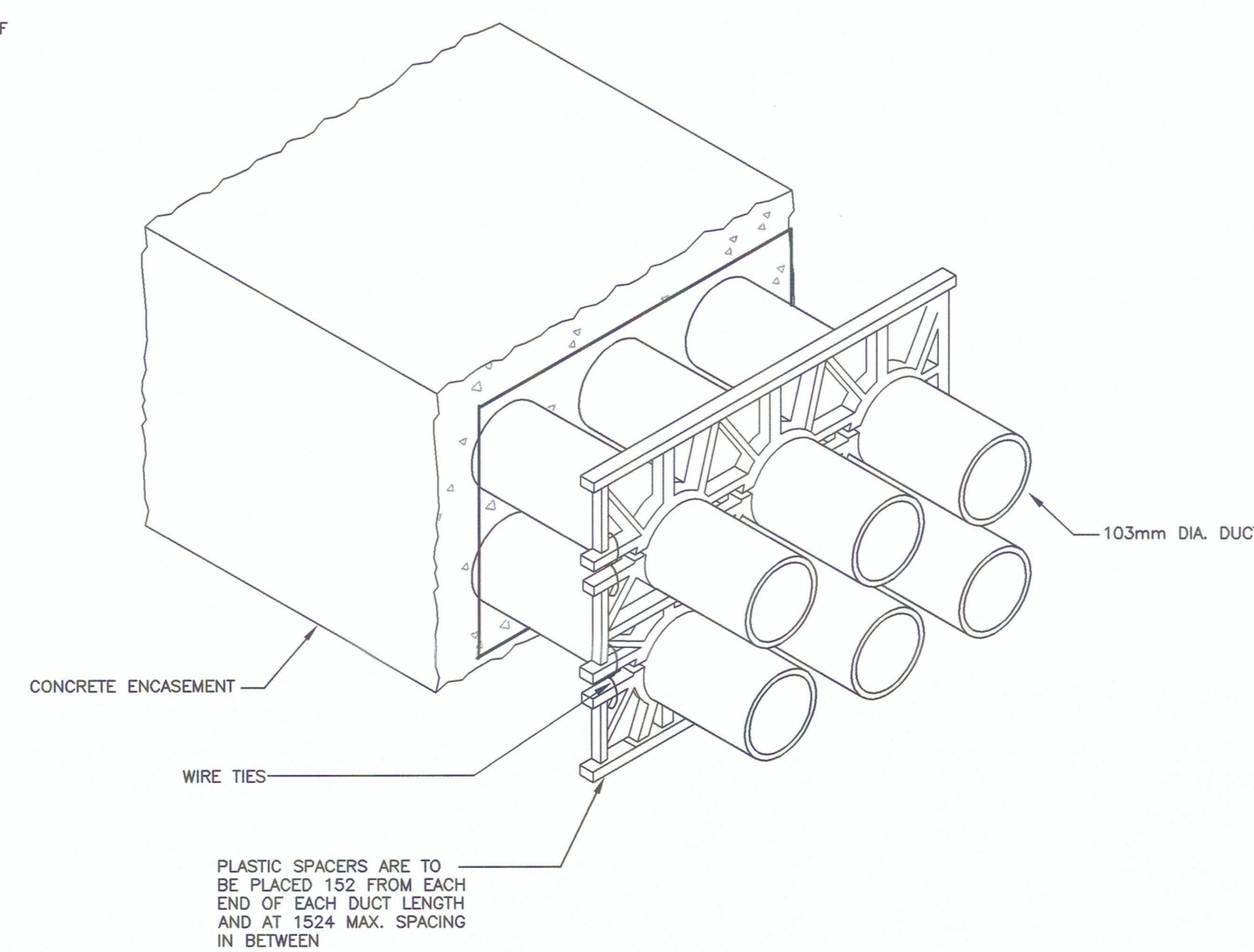


**I** TRENCH SECTION DETAIL – US-4 TO HV-18  
E-105 N.T.S.



**NOTES:**

- SEE SPECIFICATIONS FOR DUCTBANK MARKINGS.
- REFER TO SPECIFICATIONS, DRAWINGS AND SCHEDULES FOR NUMBER, SIZE AND TYPE OF CONDUITS.
- ADD RED OCHRE TO TOP LAYER OF CONCRETE.



PLASTIC SPACERS ARE TO BE PLACED 152 FROM EACH END OF EACH DUCT LENGTH AND AT 1524 MAX. SPACING IN BETWEEN

**H** TYPICAL – UNDERGROUND CONCRETE ENCASED DUCT BANK DETAILS  
N.T.S.



Mar 14 2017

Revision/Description	Date/Date
0 ISSUED FOR TENDER	MAR.14.17

Client/client: **CORRECTIONAL SERVICE CANADA**

Project title/Titre du projet: **METCHOSIN, BC**  
**ELECTRICAL HIGH VOLTAGE UPGRADE (PHASE 2 OF 2) WILLIAM HEAD INSTITUTION**

Consultant Signature Box Only  
Designed by/Concept par: **P.Necpal**  
Drawn by/Dessiné par: **P.Necpal**  
PWGSC Project Manager/Administrateur de Projets TPSGC: **P. Truong**  
PWGSC Regional Manager, Architectural and Engineering Services/ Gestionnaire régional, Services d'architectural et de génie, TPSGC: **P. Paul**

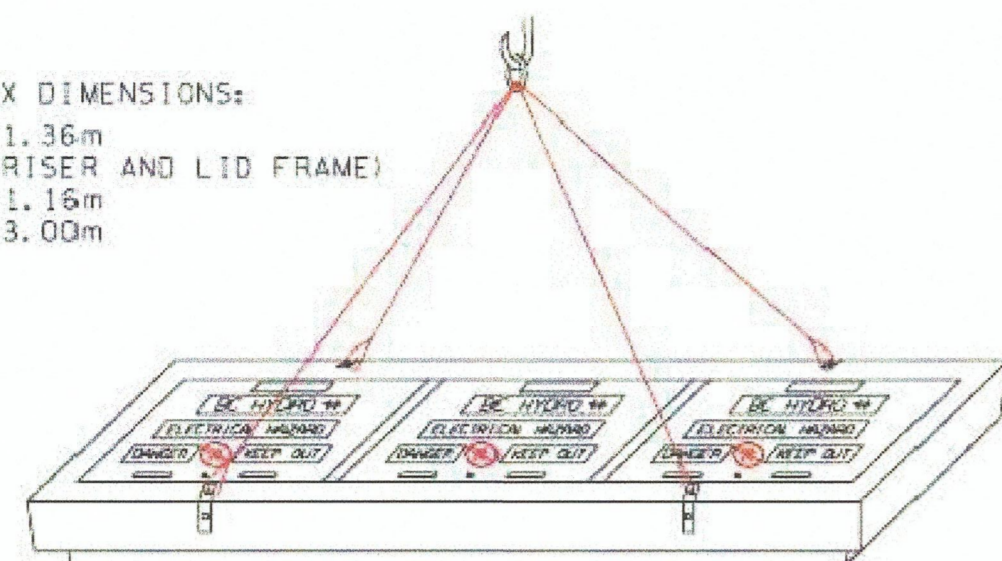
Drawing title/Titre du dessin: **ELECTRICAL DETAILS**

Project No./No. du projet	Sheet/Feuille	Revision no./La Revision no.
<b>R.069376.001</b>	<b>E-200</b>	
	<b>13</b>	<b>OF 22</b>

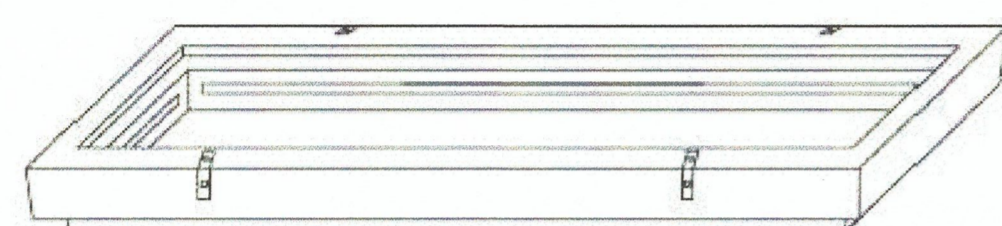




APPROX. BOX DIMENSIONS:  
 HEIGHT: 1.36m (INCL. RISER AND LID FRAME)  
 WIDTH: 1.15m  
 LENGTH: 3.00m

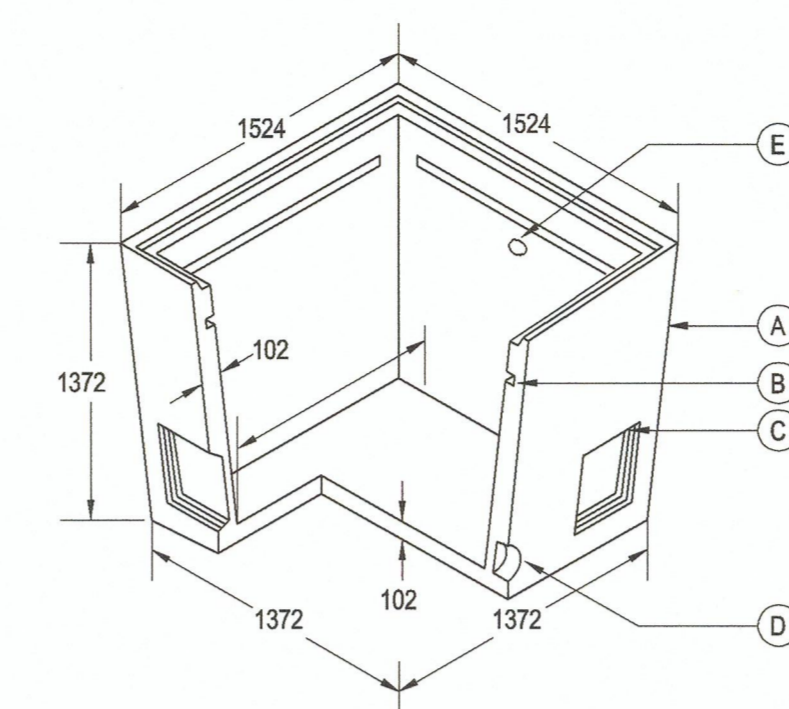


APPROX. BOX WEIGHTS:  
 832 BOX 1950kg  
 832 RISER 290kg  
 832 COLLAR & LID 560kg

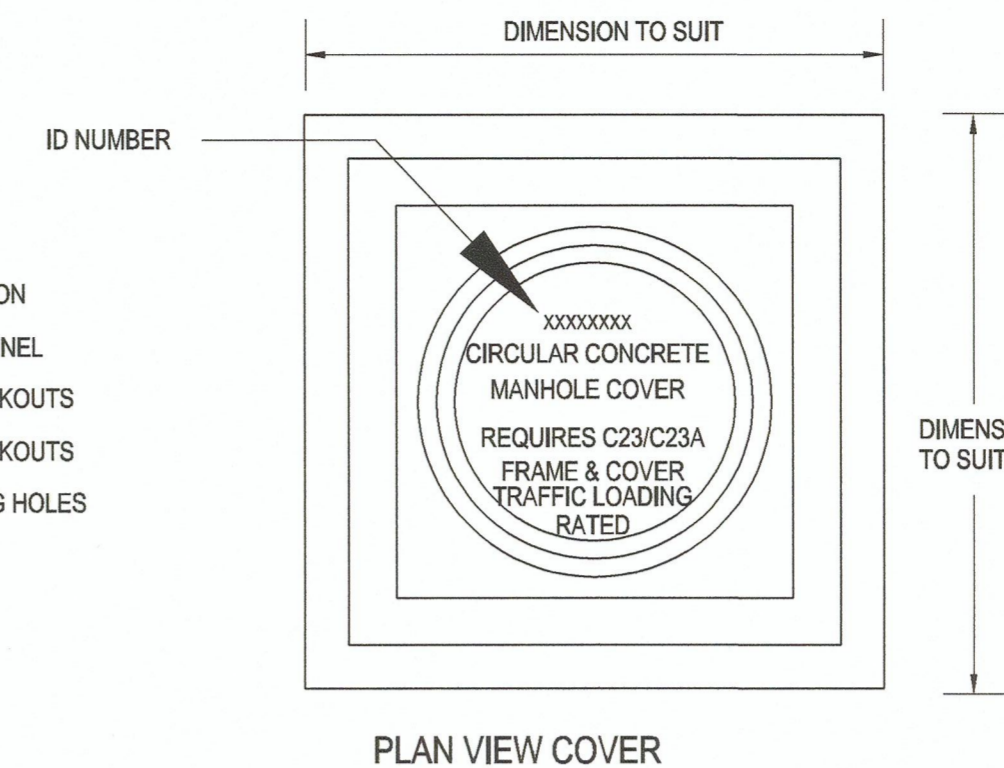


GENERAL NOTES:

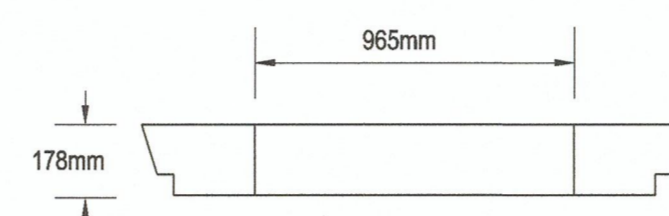
1. WELD MANHOLE ID ON TOP OF LIDS
2. PULLBOX CONSTRUCTION TO BE RATED FOR TRAFFIC LOADING AS PER THE AMERICAN ASSOCIATION FOR STATE AND HIGHWAY TRANSPORTATION OFFICIALS, STANDARD AASHTO M306 SPECIFICATION FOR DRAINAGE, SEWER, UTILITY, AND RELATED CASTINGS.
3. PROVIDE GROUNDING PER DETAIL 'C' FOR ALL NEW UNDERGROUND PULLBOXES.



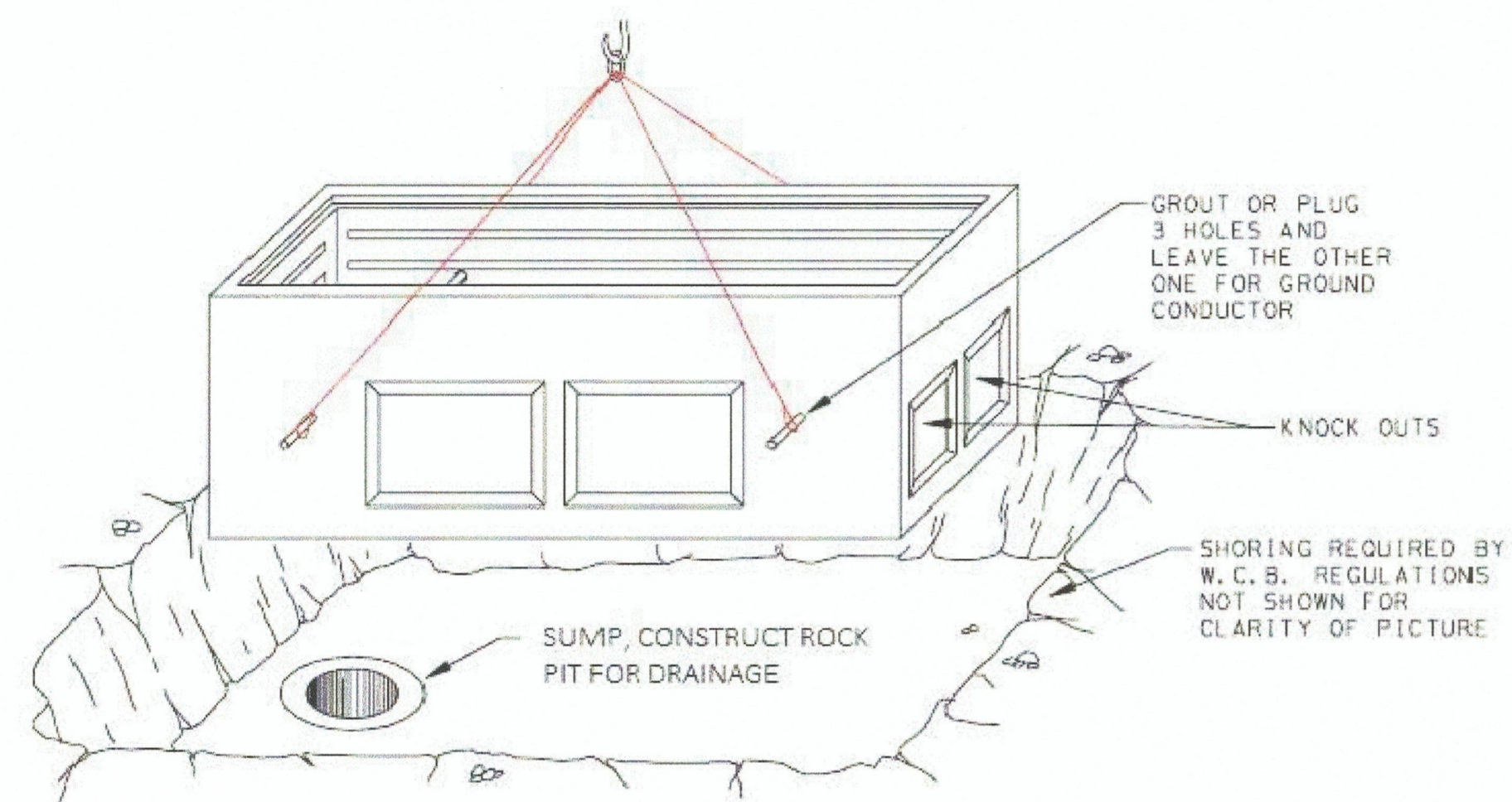
- (A) BODY SECTION
- (B) CABLE CHANNEL
- (C) 8-305 KNOCKOUTS
- (D) 4-127 KNOCKOUTS
- (E) 2-51 LIFTING HOLES



PLAN VIEW COVER

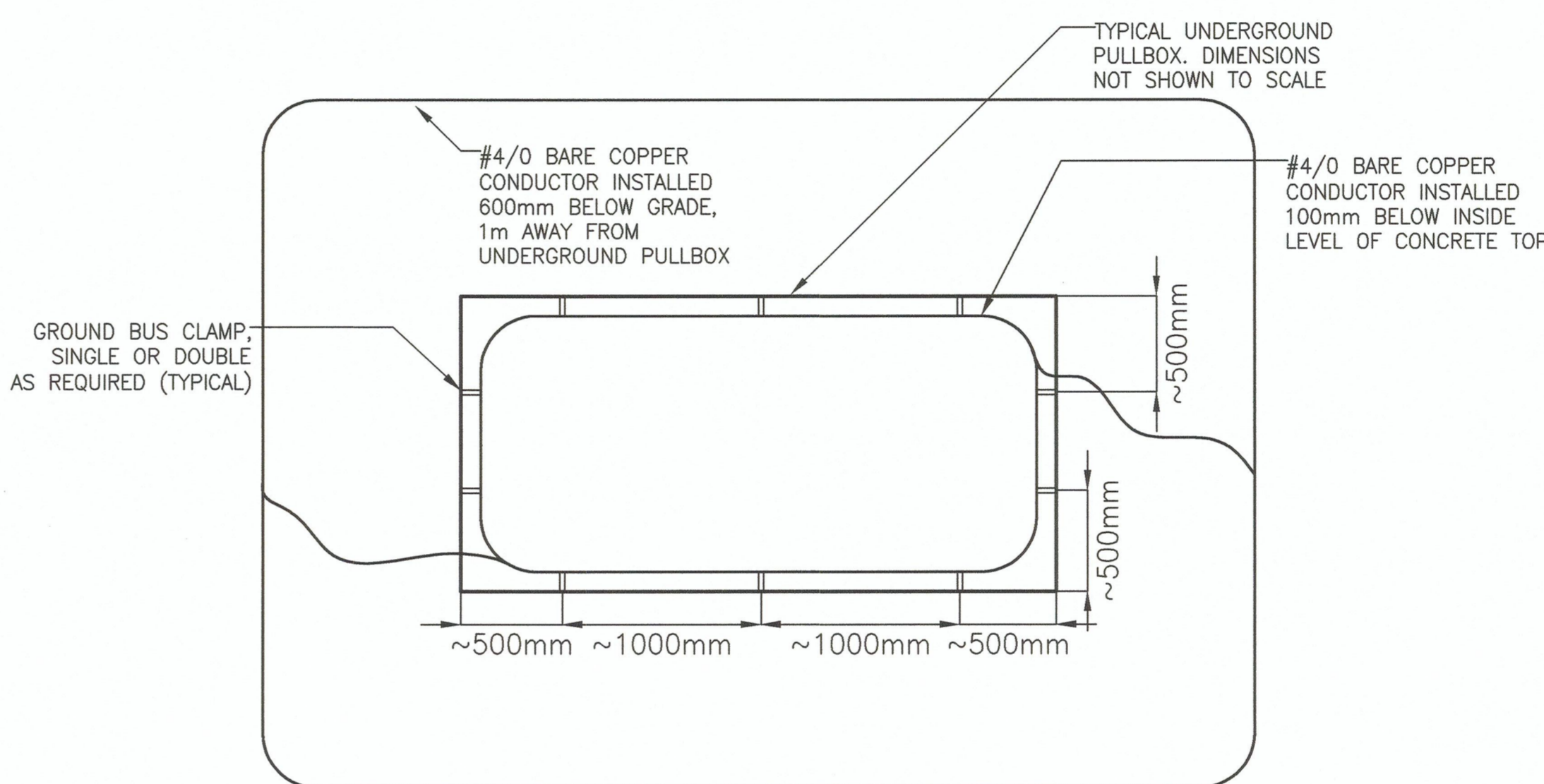


(A) UNDERGROUND PULLBOX  
N.T.S.



SITE PREPARATION FOR BOX, RISER, AND LID INSTALLATION

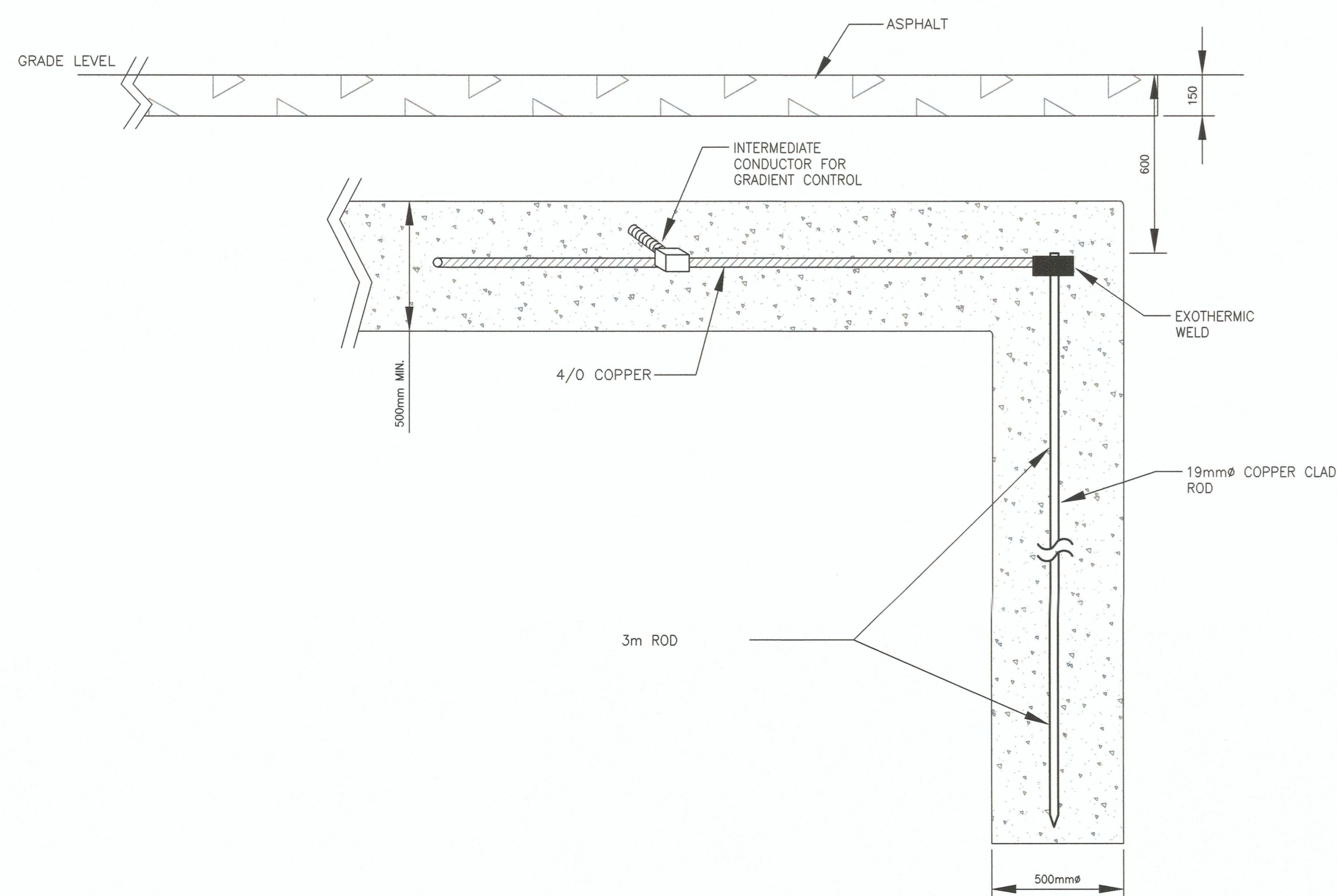
(B) 832 JUNCTION BOX - PB-BCH  
N.T.S.



(C) TYPICAL DETAIL FOR GROUNDING UNDERGROUND PULLBOXES  
N.T.S.

GROUNDING OF UNDERGROUND PULLBOXES GENERAL NOTES:

1. ADAPT GROUNDING OF UNDERGROUND PULLBOXES FROM BC HYDRO STANDARD ESS3 R3-01. PROVIDE ADDITIONAL #4/0 CU GROUND LOOP AROUND PULLBOX AND TIE TO INTERNAL GROUND LOOP.



(D) TYPICAL REQUIREMENTS FOR GROUNDING  
N.T.S.



Mar 14 2017

0	ISSUED FOR TENDER	MAR.14.17
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Revision / Révision	Description / Description	Date / Date
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Client/client: CORRECTIONAL SERVICE CANADA

Project title/Titre du projet: METCHOSIN, BC

ELECTRICAL HIGH VOLTAGE UPGRADE (PHASE 2 OF 2) WILLIAM HEAD INSTITUTION

Consultant Signature Box Only

Designed by/Concept par: P.Necpal  
 Drawn by/Dessiné par: P.Necpal  
 PWGSC Project Manager/Administrateur de Projets: P.Trung  
 PWGSC Regional Manager, Architectural and Engineering Services/ Gestionnaire régional, Services d'architecture et de génie: P.Paul

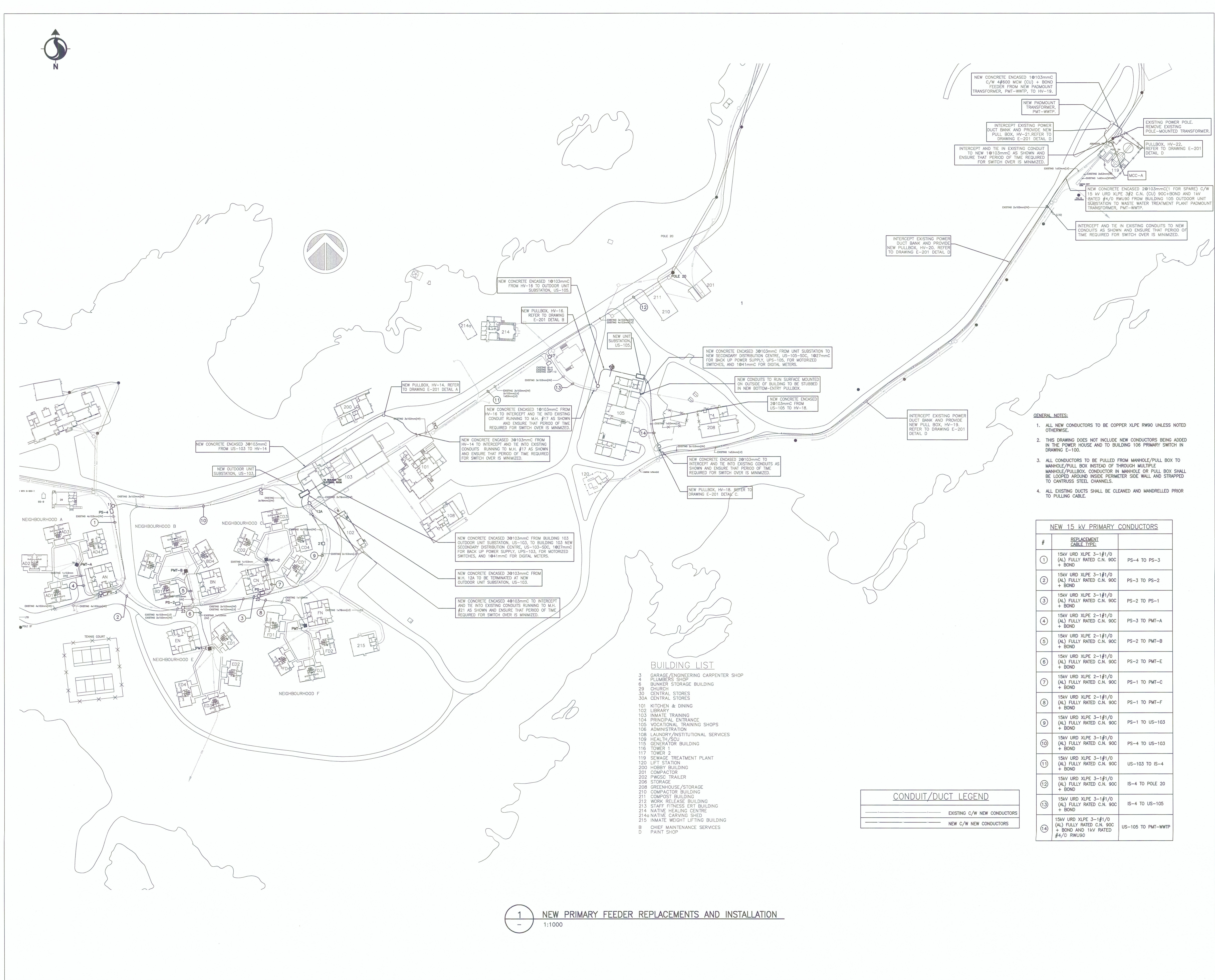
Drawing title/Titre du dessin: ELECTRICAL DETAILS

Project No./No. du projet	Sheet/feuille	Revision no./La Révision no.
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R.069376.001 E-201







- GENERAL NOTES:**
1. ALL NEW CONDUCTORS TO BE COPPER XLPE RW90 UNLESS NOTED OTHERWISE.
  2. THIS DRAWING DOES NOT INCLUDE NEW CONDUCTORS BEING ADDED IN THE POWER HOUSE AND TO BUILDING 106 PRIMARY SWITCH IN DRAWING E-100.
  3. ALL CONDUCTORS TO BE PULLED FROM MANHOLE/PULL BOX TO MANHOLE/PULL BOX INSTEAD OF THROUGH MULTIPLE MANHOLE/PULLBOX. CONDUCTOR IN MANHOLE OR PULL BOX SHALL BE LOOPED AROUND INSIDE PERIMETER SIDE WALL AND STRAPPED TO CANTRESS STEEL CHANNELS.
  4. ALL EXISTING DUCTS SHALL BE CLEANED AND MANDRELLED PRIOR TO PULLING CABLE.

NEW 15 kV PRIMARY CONDUCTORS		
#	REPLACEMENT CABLE TYPE	
1	15kV URD XLPE 3-1#1/0 (AL) FULLY RATED C.N. 90C + BOND	PS-4 TO PS-3
2	15kV URD XLPE 3-1#1/0 (AL) FULLY RATED C.N. 90C + BOND	PS-3 TO PS-2
3	15kV URD XLPE 3-1#1/0 (AL) FULLY RATED C.N. 90C + BOND	PS-2 TO PS-1
4	15kV URD XLPE 2-1#1/0 (AL) FULLY RATED C.N. 90C + BOND	PS-3 TO PMT-A
5	15kV URD XLPE 2-1#1/0 (AL) FULLY RATED C.N. 90C + BOND	PS-2 TO PMT-B
6	15kV URD XLPE 2-1#1/0 (AL) FULLY RATED C.N. 90C + BOND	PS-2 TO PMT-E
7	15kV URD XLPE 2-1#1/0 (AL) FULLY RATED C.N. 90C + BOND	PS-1 TO PMT-C
8	15kV URD XLPE 2-1#1/0 (AL) FULLY RATED C.N. 90C + BOND	PS-1 TO PMT-F
9	15kV URD XLPE 3-1#1/0 (AL) FULLY RATED C.N. 90C + BOND	PS-1 TO US-103
10	15kV URD XLPE 3-1#1/0 (AL) FULLY RATED C.N. 90C + BOND	PS-4 TO US-103
11	15kV URD XLPE 3-1#1/0 (AL) FULLY RATED C.N. 90C + BOND	US-103 TO IS-4
12	15kV URD XLPE 3-1#1/0 (AL) FULLY RATED C.N. 90C + BOND	IS-4 TO POLE 20
13	15kV URD XLPE 3-1#1/0 (AL) FULLY RATED C.N. 90C + BOND	IS-4 TO US-105
14	15kV URD XLPE 3-1#1/0 (AL) FULLY RATED C.N. 90C + BOND AND 14kV RATED #4/0 RW90	US-105 TO PMT-WTTP

- BUILDING LIST**
- 3 GARAGE/ENGINEERING CARPENTER SHOP
  - 4 PLUMBERS SHOP
  - 6 BUNKER STORAGE BUILDING
  - 29 CHURCH
  - 30 CENTRAL STORES
  - 30A CENTRAL STORES
  - 101 KITCHEN & DINING
  - 102 LIBRARY
  - 103 INMATE TRAINING
  - 104 PRINCIPAL ENTRANCE
  - 105 VOCATIONAL TRAINING SHOPS
  - 106 ADMINISTRATION
  - 108 LAUNDRY/INSTITUTIONAL SERVICES
  - 109 HEALTH/SCU
  - 115 GENERATOR BUILDING
  - 116 TOWER 1
  - 117 TOWER 2
  - 119 SEWAGE TREATMENT PLANT
  - 120 LIFT STATION
  - 200 HOBBY BUILDING
  - 201 COMPACTOR BUILDING
  - 202 PWSC TRAILER
  - 206 STORAGE
  - 208 GREENHOUSE/STORAGE
  - 210 COMPACTOR BUILDING
  - 211 COMPOST BUILDING
  - 212 WORK RELEASE BUILDING
  - 213 STAFF FITNESS EXERCISE BUILDING
  - 214 NATIVE HEALING CENTRE
  - 214a NATIVE CARVING SHED
  - 215 INMATE WEIGHT LIFTING BUILDING
  - B CHIEF MAINTENANCE SERVICES
  - D PAINT SHOP

**CONDUIT/DUCT LEGEND**

	EXISTING C/W NEW CONDUCTORS
	NEW C/W NEW CONDUCTORS

1 1:1000  
1. PRIMARY FEEDER REPLACEMENTS AND INSTALLATION

0	ISSUED FOR TENDER	MAR.14.17
Client/client		
<b>CORRECTIONAL SERVICE CANADA</b>		
Project title/Titre du projet <b>METCHOSIN, BC</b>		
<b>ELECTRICAL HIGH VOLTAGE UPGRADE (PHASE 2 OF 2) WILLIAM HEAD INSTITUTION</b>		
Consultant/Signature Box Only		
Designed by/Concept par <b>P.Necpal</b>		
Drawn by/Dessiné par <b>P.Necpal</b>		
PWGSC Project Manager/Administrateur de Projets TPSCG <b>P. Truong</b>		
PWSSC, Regional Manager, Architectural and Engineering Services/ Gestionnaire régional, Services d'architectural et de génie, TPSCG <b>P. Paul</b>		
Drawing title/Titre du dessin <b>UPDATED PARTIAL SITE PLAN: HIGH VOLTAGE FEEDER REPLACEMENT</b>		
Project No./No. du projet <b>R.069376.001</b>	Sheet/Feuille <b>E-202</b>	Revision no./La Révision no.
	15 of 22	





Mar 14 2017

0	ISSUED FOR TENDER	MAR.14.17
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Revision/	Description	Date/Date

Client/client  
**CORRECTIONAL SERVICE CANADA**

Project title/Titre du projet  
**METCHOSIN, BC**

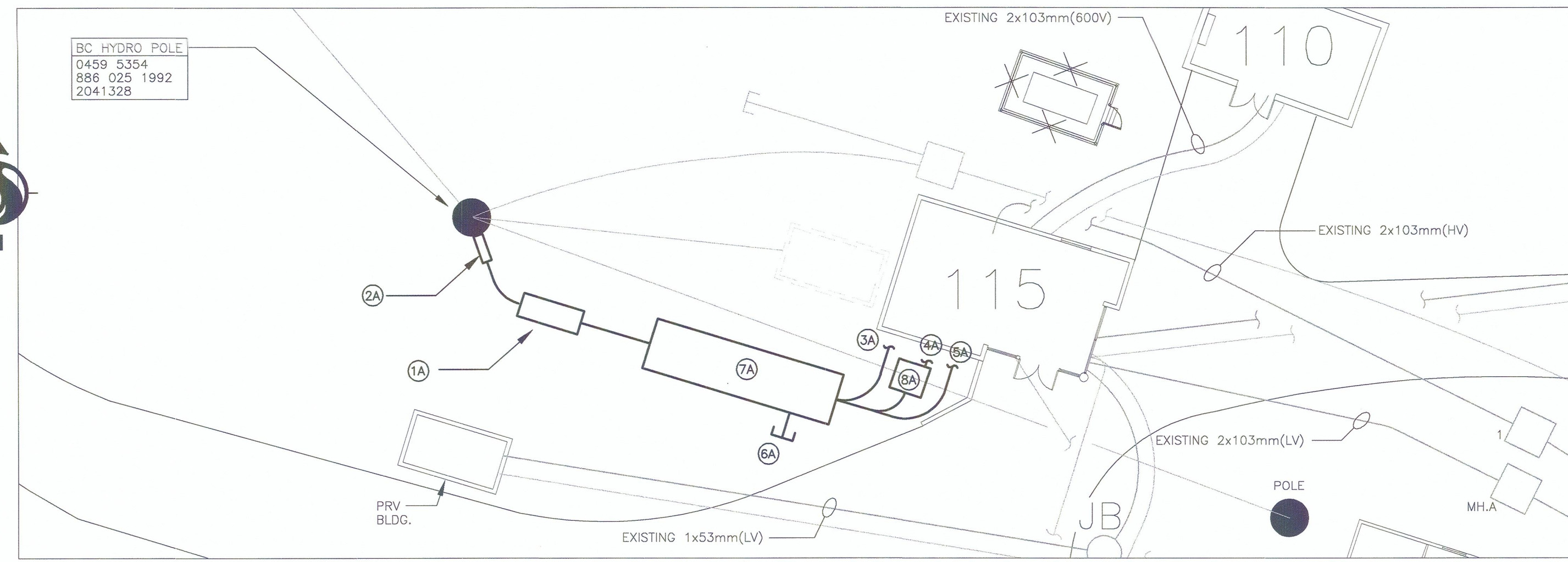
**ELECTRICAL HIGH VOLTAGE UPGRADE (PHASE 2 OF 2) WILLIAM HEAD INSTITUTION**

Consultant Signature Box Only

Designed by/Concept par  
**P.Necpal**  
Drawn by/Dessiné par  
**P.Necpal**  
PWGSC Project Manager/Administrateur de Projets TPSCG  
**P. Truong**  
PWGSC, Regional Manager, Architectural and Engineering Services /  
Généraliste régionale, Services d'architecture et de génie, TPSCG  
**P. Paul**

Drawing title/Titre du dessin  
**MAIN POWER HOUSE (BLDG.115)  
PHASING NOTES**

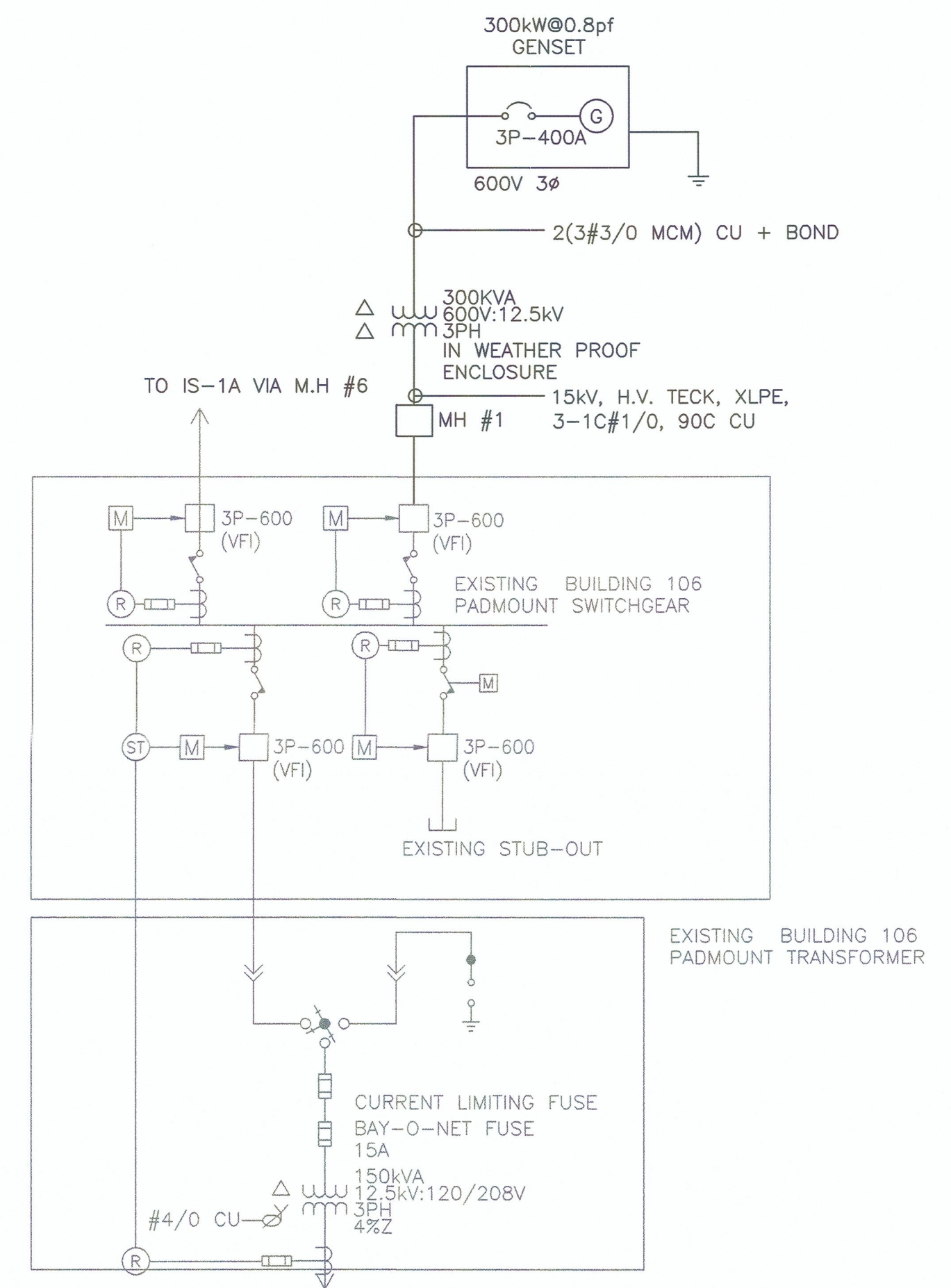
Project No./No. du projet	Sheet/Feuille	Revision no./ La Revision no.
<b>R.069376.001</b>	<b>E-203</b>	
	16	22



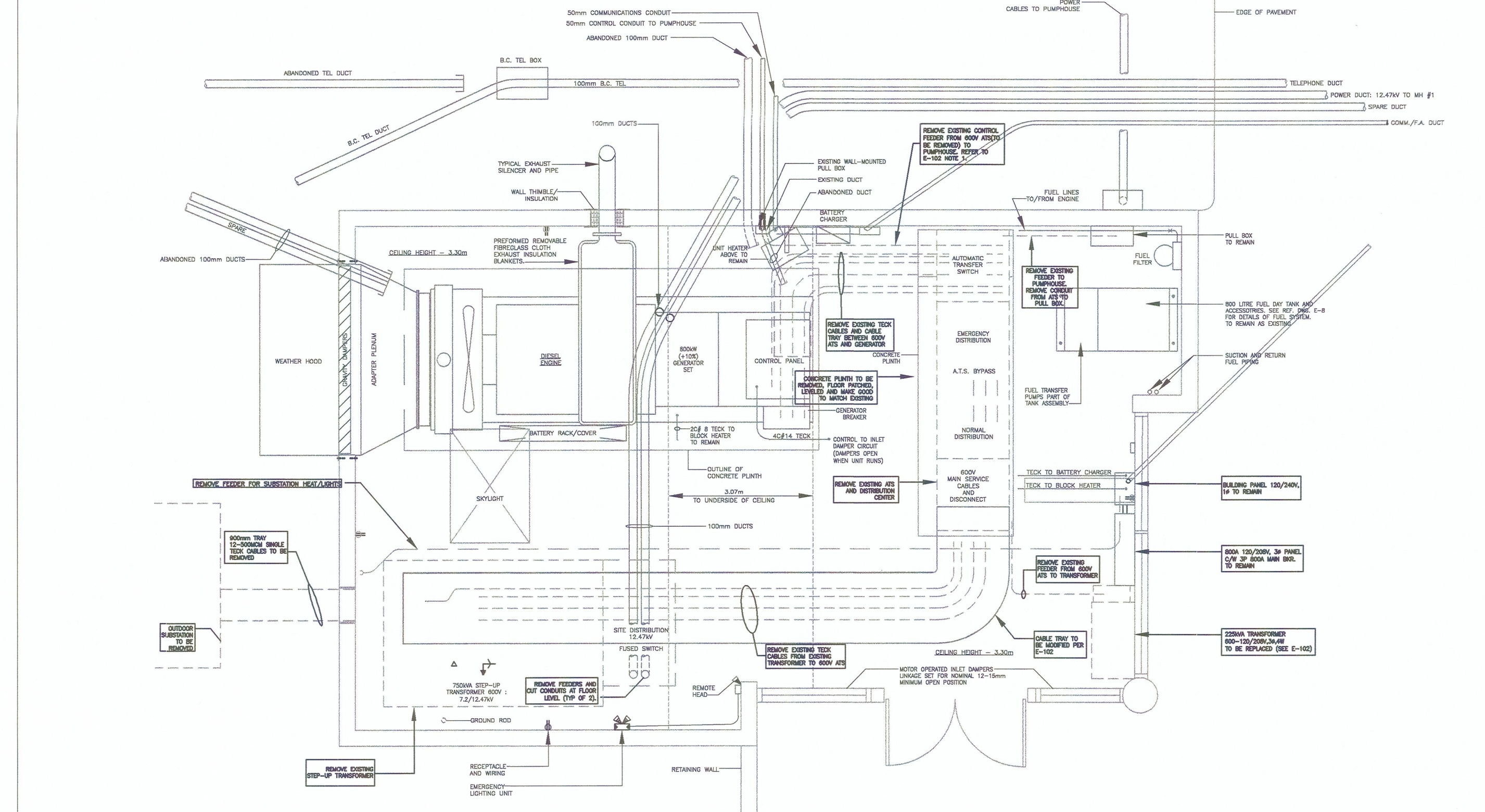
**1 PHASE-A**  
1:200

- SEQUENCE OF WORK - PHASE A - WORK TO INCLUDE THE FOLLOWING:**
- 1A INSTALL NEW 832 PULL BOX, FB-BCH, TO MEET B.C. HYDRO STANDARDS INCLUDING ROCK PIT FOR DRAINAGE.
  - 2A INSTALL NEW CONCRETE PILASTER C/W 3Ø78mmC AND COVER FOR LENGTH OF HYDRO POLE TO BC HYDRO STANDARDS FROM BC HYDRO POLE TO THE NEW UNIT SUBSTATION, US-1.
  - 3A INSTALL NEW CONCRETE ENCASED CONDUITS TO STUB 1.5m AWAY FROM BUILDING FOUNDATION. 1Ø103mmC FOR 750kVA TRANSFORMER, 1Ø103mmC FOR SPARE, AND 1Ø53mmC FOR HEATING AND LIGHTING.
  - 4A INSTALL NEW CONCRETE ENCASED CONDUITS 1Ø103mmC FROM US-1 TO 300 kVA TRANSFORMER. INSTALL 1Ø103mmC FROM PMT-15 1.5m AWAY FROM BUILDING FOUNDATION.
  - 5A INSTALL NEW CONCRETE ENCASED CONDUITS TO STUB 1.5m AWAY FROM BUILDING FOUNDATION. 2Ø103mmC FOR SITE DISTRIBUTION (1 FOR SPARE), 1Ø41mmC FOR DIGITAL METERING NETWORK AND 1Ø53mmC FOR RELAYS TO GENERATOR CONTROL PANEL.
  - 6A STUB 3Ø78mmC 1.5m AWAY FROM UNIT SUBSTATION FOR PROVISION FOR FUTURE LOAD BREAK. CAP DUCT AT BOTH ENDS.
  - 7A INSTALL THE UNIT SUBSTATION'S CONCRETE PAD AND COMPLETE ALL GROUNDING INSTALLATION OF THE UNIT SUBSTATION, US-1. COMPLETE US-1 INSTALLATION.
  - 8A INSTALL THE PAD MOUNT TRANSFORMER CONCRETE PAD AND COMPLETE ALL GROUNDING INSTALLATION. COMPLETE PMT-115 INSTALLATION.

- MAIN POWER HOUSE GENERAL NOTES:**
1. CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ROOM AND EQUIPMENT LOCATIONS, AS WELL AS CONDUIT ROUTING ON SITE. DO NOT USE DRAWING SCALE FOR MATERIALS TAKE-OFF AND EXACT CONDUIT ENTRY POINTS.
  2. COORDINATE NEW ELECTRICAL INSTALLATION WITH EXISTING CEILING PIPING, BUS DUCT, FIRE ALARM, AND LUMINAIRES.
  3. INFORMATION SHOWN ON THIS RECORD DRAWING SHALL BE VALIDATED ON SITE PRIOR TO COMMENCEMENT OF CONSTRUCTION.
  4. CLEAN ALL DUCTS, AND CAP AND SEAL ALL CONDUITS.
  5. TEST AND CHECK FEEDERS BEFORE TERMINATION.
  6. RESTORE ASPHALT PAVEMENT, INCLUDING BASE AND SUB BASE GRAVELS TO MATCH OR EXCEED THE EXISTING THICKNESS.

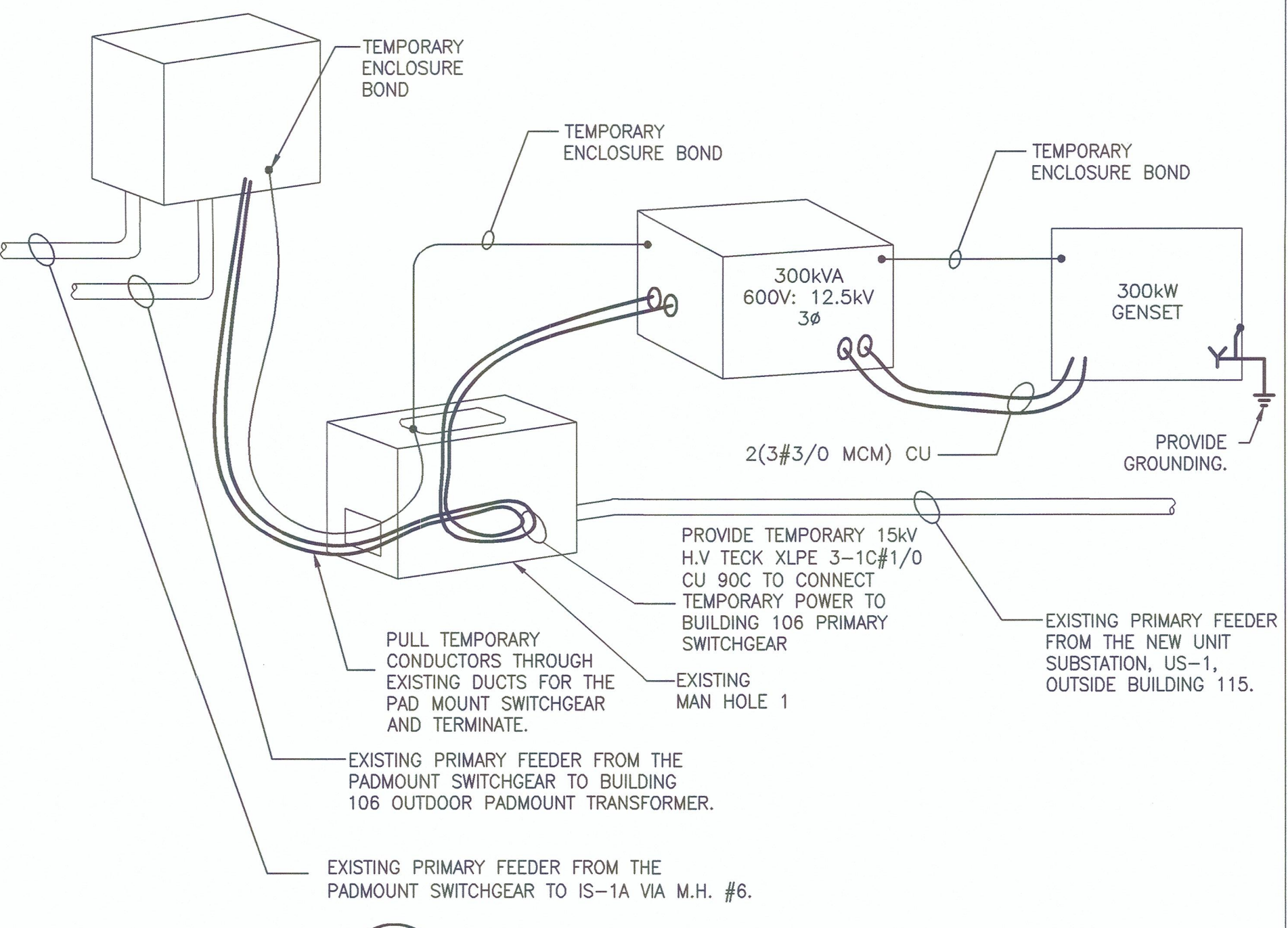


**4 TEMPORARY SITE POWER SUPPLY SINGLE LINE**  
N.T.S.

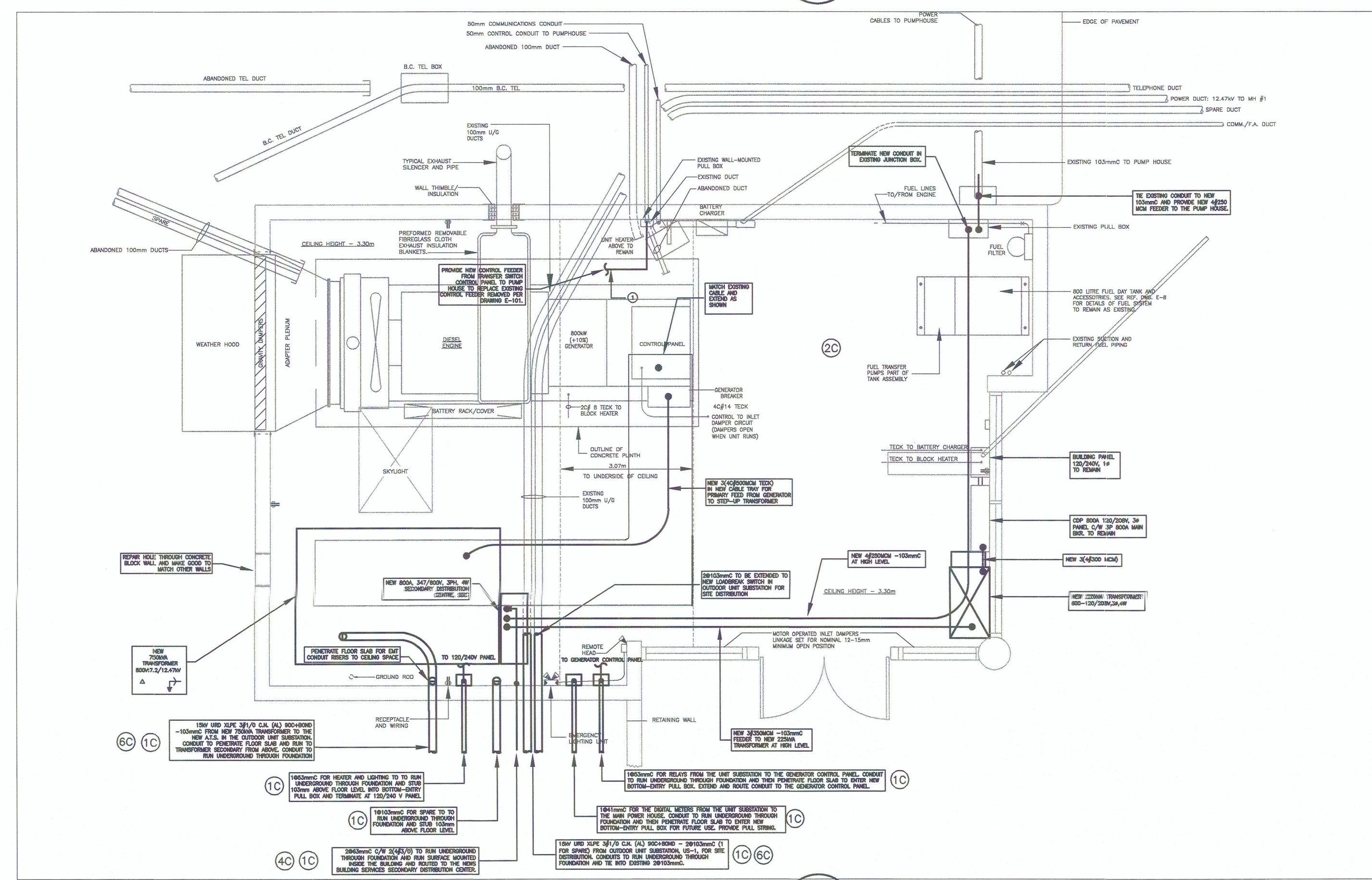


**2 PHASE B**  
1:50

- SEQUENCE OF WORK - PHASE B - WORK TO INCLUDE THE FOLLOWING:**
- 1B ARRANGE POWER SHUTDOWN TO BUILDING 115. PROVIDE TEMPORARY POWER TO THE SITE DISTRIBUTION AT BUILDING 115, PROVIDE TEMPORARY POWER AT THE PUMP HOUSE AT THE MAIN BREAKER, AND AT EXISTING BODA CDP FOR BUILDINGS NEAR FRONT OF SITE (E.G. PRINCIPLE ENTRANCE AND OTHERS). INTERRUPT POWER TO BUILDING 115. REFER TO DETAIL 4 AND 5 IN DRAWING E-203 FOR ADDITIONAL INFORMATION FOR TEMPORARY SITE POWER.
  - 2B REMOVE EXISTING EQUIPMENT AS SHOWN IN DRAWING 203 DETAIL 2 PHASE B.



**5 TEMPORARY SITE POWER SUPPLY DETAIL**  
N.T.S.



**3 PHASE C**  
1:50

- SEQUENCE OF WORK - PHASE C - WORK TO INCLUDE THE FOLLOWING:**
- 1C EXTEND CONDUITS FROM PERIMETER INTO THE MAIN POWER HOUSE.
  - 2C RESTORE FLOOR LEVEL AND MAKE GOOD TO MATCH EXISTING FINISH FLOOR IN THE MAIN POWER HOUSE.
  - 3C INSTALL NEW ELECTRICAL EQUIPMENT AS NOTED IN DRAWING E-203 DETAIL 3 PHASE C.
  - 4C INSTALL NEW 2(4#3/0) CONDUCTORS FROM PMT-115 TO THE NEW BUILDING SERVICES DISTRIBUTION CENTER.
  - 5C INSTALL NEW 15kV URD XLPE 3#1 /0 C.N. (AL) 90C + BOND
  - 6C TIE IN NEW GROUND CABLES FROM THE NEW UNIT SUBSTATION, US-1, TO EXISTING GROUND BAR IN THE MAIN POWER HOUSE.
  - 7C TEST, ENERGIZE AND COMMISSION THE NEW UNIT SUBSTATION, US-1.

- TEMPORARY GENERATOR NOTES:**
1. PROVIDE THE FOLLOWING WITH TEMPORARY PRIME POWER RATED GENERATORS FOR BACK-UP:
    - 1.1 PUMP HOUSE - 275kW, 347/600V, 3Ø
    - 1.2 CDP 800A - 125kW, 120/208V, 3Ø
    - 1.3 SITE DISTRIBUTION - 300kW, 347/600V, 3Ø & 300kVA STEP-UP TRANSFORMER (REFER TO DETAILS 4 AND 5)
  2. GENERATORS TO BE SKID-MOUNTED AND COMPLETE WITH SOUND ATTENUATING, WEATHERPROOF ENCLOSURE, TO 68-72 dB AT 7m AWAY FROM GENERATOR.
  3. ERECT TEMPORARY SECURITY FENCING TO BE COMPLETED UNDER A SEPARATE CONTRACT BY OTHERS.
  4. GENERATORS TO BE TIED IN TO ELECTRICAL EQUIPMENT AS FOLLOWS:
    - 3.2 MAIN POWER HOUSE - WITH GENERATOR OUTSIDE BUILDING ELECTRICAL ROOM, CABLES TO BE CONNECTED TO MAIN LUGS OF EXISTING CDP 800A IN MAIN POWER HOUSE.
    - 3.1 PUMP HOUSE - WITH GENERATOR OUTSIDE THE PUMP HOUSE, CABLES TO BE CONNECTED TO THE SERVICE BREAKER OF THE PUMP HOUSE.
    - 3.2 SITE DISTRIBUTION - REFER TO DETAILS 4 AND 5 IN DRAWING E-203
  6. SAFETY MEANS AND LOCKOUT TO BE PROVIDED TO PREVENT UNDESIRABLE REVERSE FEED.

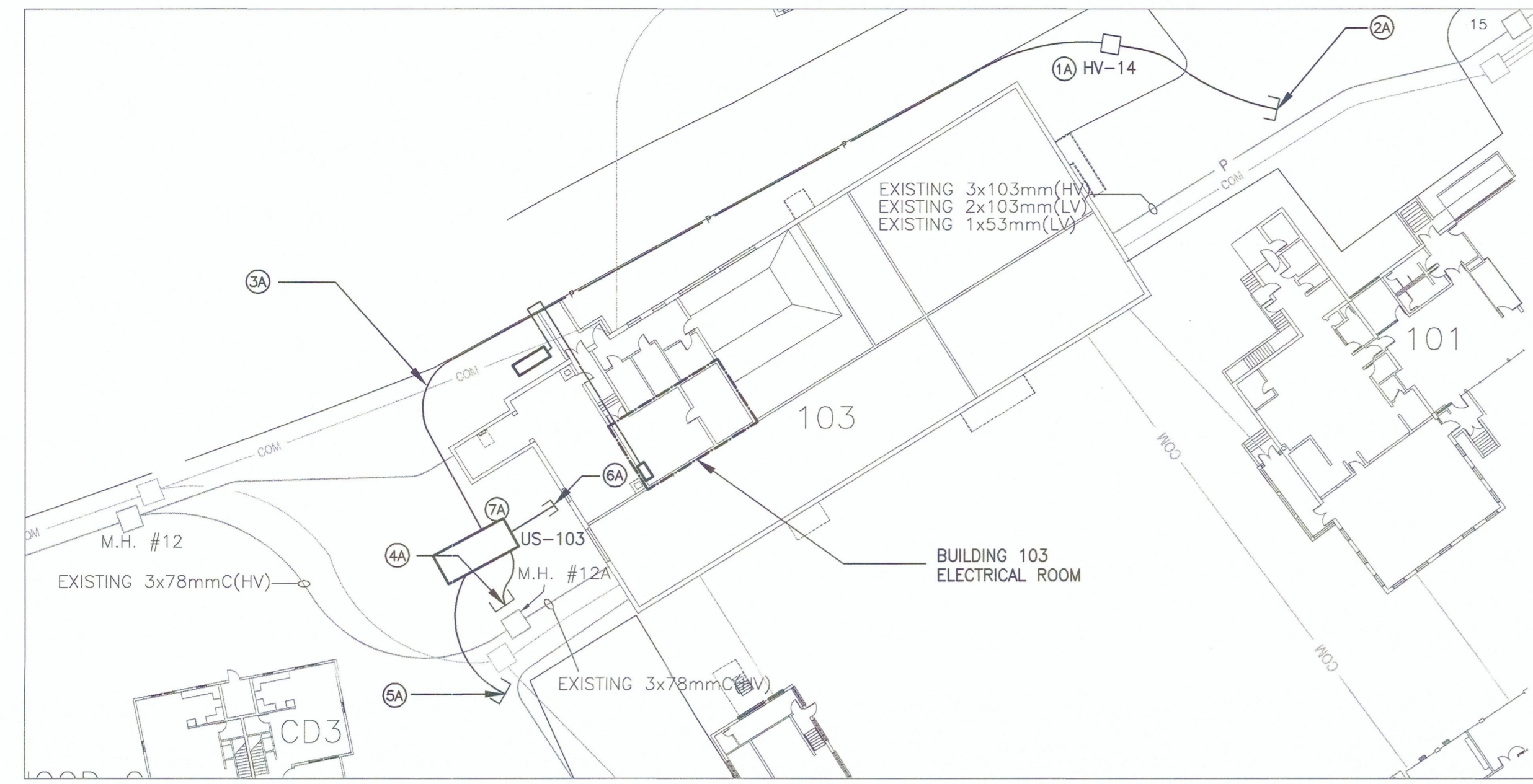




**BUILDING 103 GENERAL NOTES:**

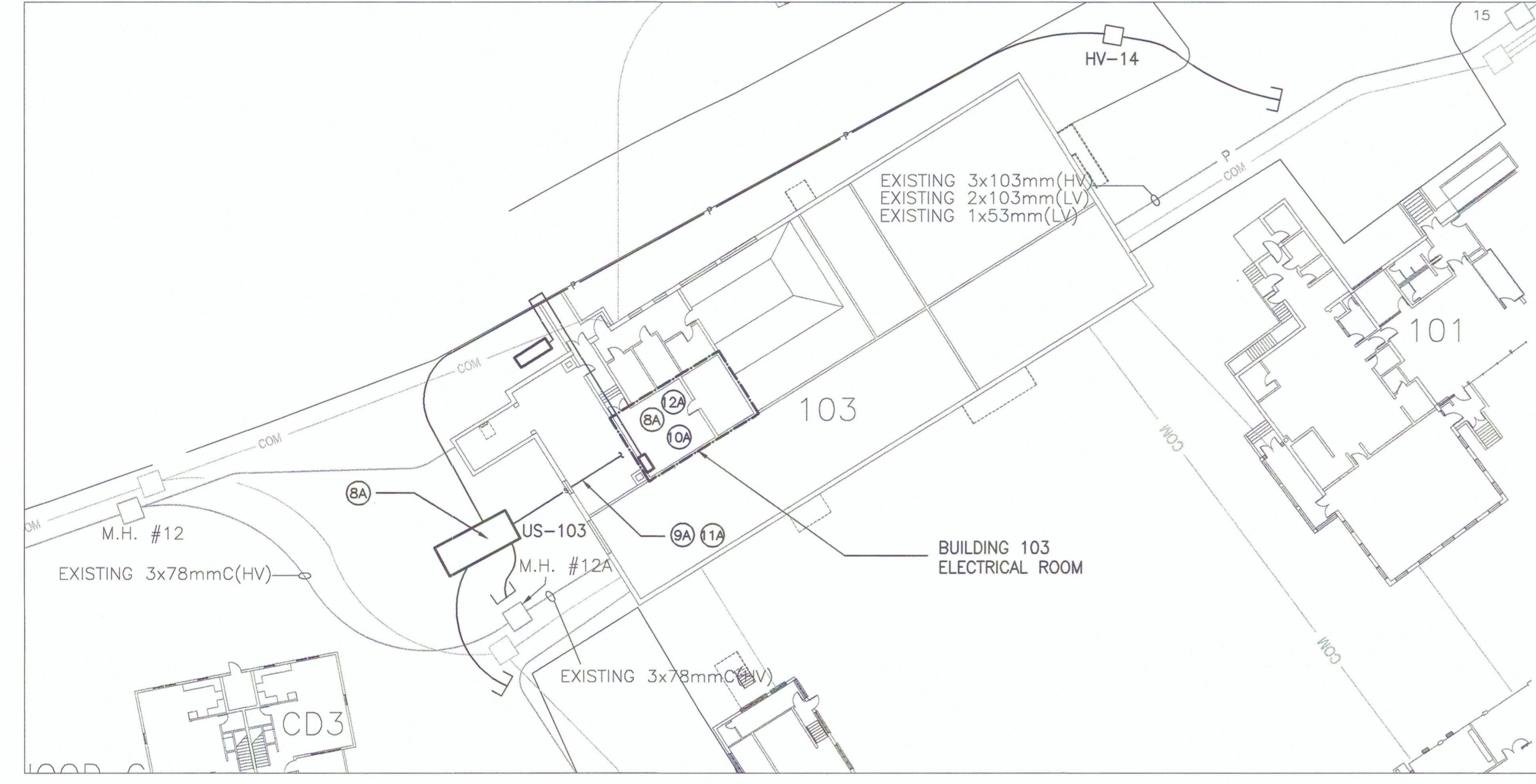
- CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ROOM AND EQUIPMENT LOCATIONS, AS WELL AS CONDUIT ROUTING ON SITE. DO NOT USE DRAWING SCALE FOR MATERIALS TAKE-OFF AND EXACT CONDUIT ENTRY POINTS.
- COORDINATE NEW ELECTRICAL INSTALLATION WITH EXISTING CEILING PIPING, BUS DUCT, FIRE ALARM, AND LUMINAIRES.
- INFORMATION SHOWN ON THIS RECORD DRAWING SHALL BE VALIDATED ON SITE PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- CLEAN ALL DUCTS, AND CAP AND SEAL ALL CONDUITS.
- TEST AND CHECK FEEDERS BEFORE TERMINATION.
- RESTORE ASPHALT PAVEMENT, INCLUDING BASE AND SUB BASE GRAVELS TO MATCH OR EXCEED THE EXISTING THICKNESS.

BLOCK DIAGRAM LEGEND	
	EXISTING TO REMAIN
	EXISTING TO BE REMOVED
	NEW



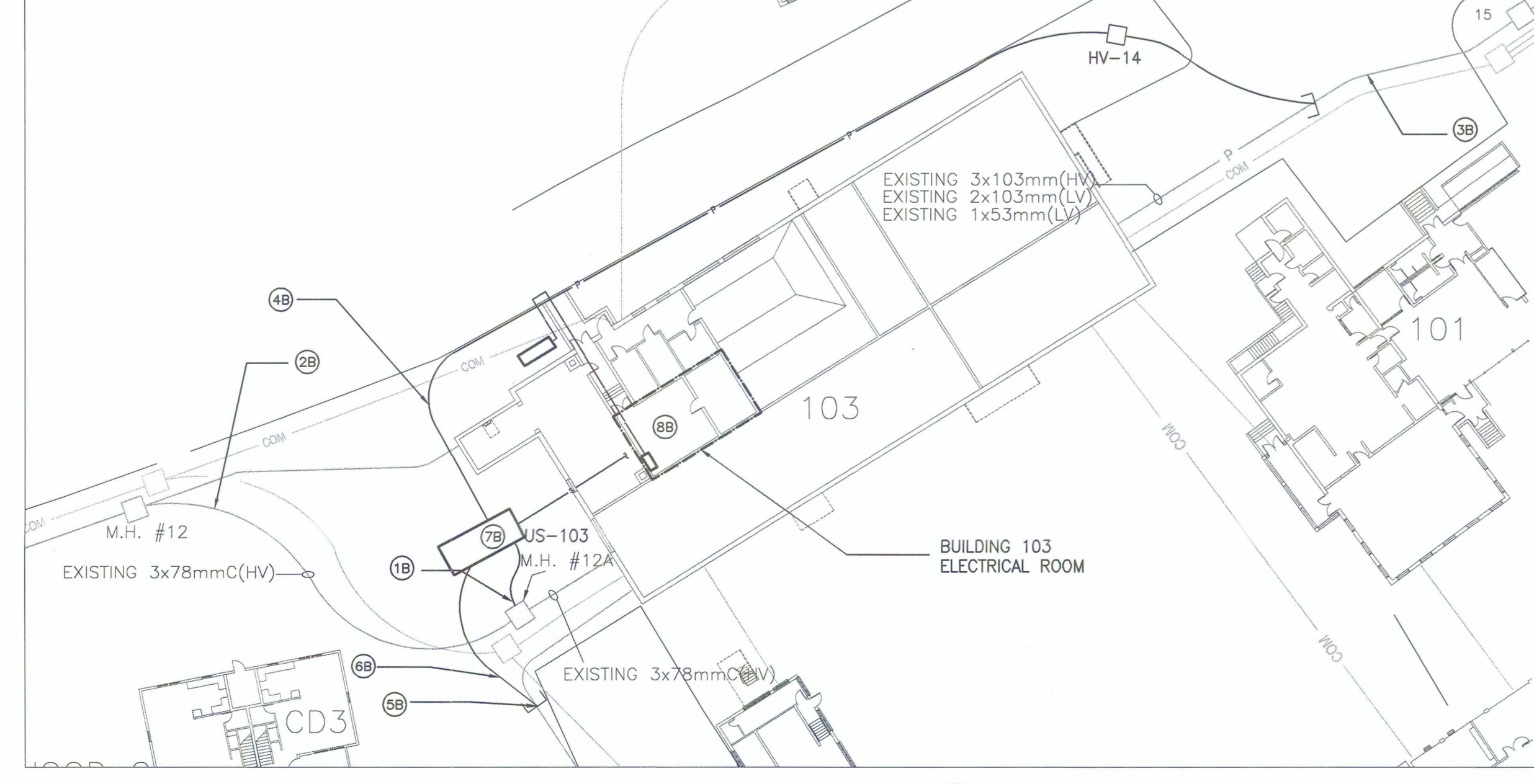
**1 PRE-PHASE A**  
000 1:400

- SEQUENCE OF WORK - PRE-PHASE A - WORK TO INCLUDE THE FOLLOWING:**
- INSTALL NEW PULL BOX, HV-14.
  - INSTALL NEW CONCRETE ENCASED 3Ø103mmC FROM PULL BOX, HV-14, AND STUB-OUT 1m FROM THE EXISTING U/G DUCT TO M.H. #15.
  - INSTALL NEW CONCRETE ENCASED 3Ø103mmC FROM PULL BOX, HV-14, TO THE NEW UNIT SUBSTATION, US-103.
  - INSTALL NEW CONCRETE ENCASED 3Ø103mmC FROM NEW UNIT SUBSTATION, US-103, AND STUB-OUT 1m FROM THE EXISTING M.H. #12A.
  - INSTALL NEW CONCRETE ENCASED 4Ø103mmC FROM NEW UNIT SUBSTATION, US-103, AND STUB-OUT 1m FROM THE EXISTING U/G DUCT TO M.H. #21. REFER TO DRAWING E-002 FOR LOCATION OF M.H. #21.
  - INSTALL NEW CONCRETE ENCASED CONDUITS TO STUB 1.5m FROM US-1 TO BUILDING 103 FOUNDATION, 3Ø103mmC FOR THE NEW SECONDARY DISTRIBUTION CENTER, AND 1Ø41mmC FOR THE DIGITAL METERS.
  - INSTALL THE CONCRETE PAD AND COMPLETE GROUNDING INSTALLATION OF THE NEW UNIT SUBSTATION, US-103, COMPLETE US-103 INSTALLATION.



**2 PHASE A**  
000 1:400

- SEQUENCE OF WORK - PHASE A - WORK TO INCLUDE THE FOLLOWING:**
- ARRANGE POWER SHUT DOWN TO BUILDING 103. PROVIDE TEMPORARY POWER TO BUILDING 103 AT THE EXISTING SECONDARY DISTRIBUTION CENTER, BUILDING 105 AT EXISTING DISTRIBUTION CENTER, AND WASTE WATER TREATMENT PLANT AT THE MAIN BREAKER TO MCC-A. DISRUPT POWER TO BUILDING 103 VIA PRIMARY SWITCH 4.
  - EXTEND AND ROUTE THE NEW CONDUITS TO BUILDING 103 ELECTRICAL ROOM.
  - INSTALL NEW ELECTRICAL EQUIPMENT AND REMOVE AS NOTED IN DRAWING E-103 DETAIL 2.
  - TIE SECONDARY FEEDERS FROM THE NEW UNIT SUBSTATION TO THE NEW SECONDARY DISTRIBUTION CENTER, US-103-SDC, AND TEST CABLES BEFORE TERMINATION.
  - PROVIDE BRANCH WIRING FROM THE NEW SECONDARY DISTRIBUTION CENTER TO THE NEW JUNCTION BOX TO TIE THE EXISTING LOADS IN PHASE B.

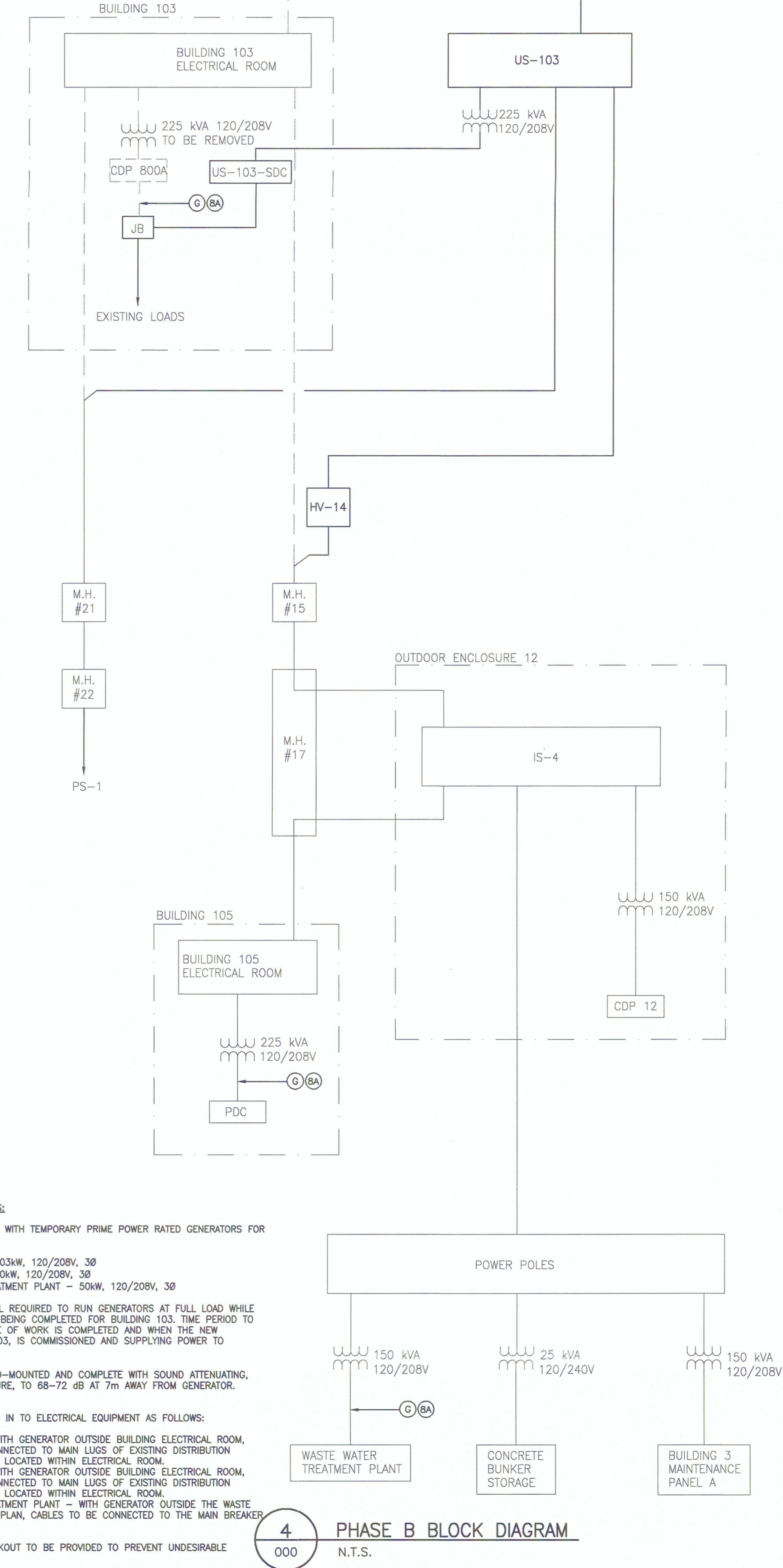


**3 PHASE B**  
000 1:400

- SEQUENCE OF WORK - PHASE B - WORK TO INCLUDE THE FOLLOWING:**
- EXTEND THE 3Ø103mmC FROM THE NEW UNIT SUBSTATION, US-103, TO M.H. #12A.
  - PULL OUT PRIMARY FEEDER FROM PS-4 TO BUILDING 103 ELECTRICAL. REPLACE WITH NEW PRIMARY FEEDER FROM PS-4 TO THE NEW UNIT SUBSTATION, US-103. TEST FEEDER BEFORE TERMINATION.
  - PULL OUT PRIMARY FEEDER FROM BUILDING 103 TO IS-4. EXTEND THE 3Ø103mmC FROM THE PULL BOX, HV-14 AND TIE INTO THE EXISTING CONDUIT TO M.H. #15.
  - PROVIDE NEW FEEDER FROM US-103 TO IS-4. TEST FEEDER BEFORE TERMINATION. REMOVE TEMPORARY GENERATORS FOR BUILDING 105, OUTDOOR ENCLOSURE TRANSFORMER 12, CONCRETE BUNKER STORAGE, BUILDING 103 MAINTENANCE, AND WASTE WATER TREATMENT PLANT.
  - PULL OUT PRIMARY FEEDER FROM BUILDING 103 TO PS-1. EXTEND 4Ø103mmC TO THE TIE INTO EXISTING CONDUIT TO M.H. #21.
  - PROVIDE NEW FEEDER FROM US-103 TO PS-1. TEST FEEDER BEFORE TERMINATION.
  - TEST, ENERGIZE AND COMMISSION THE UNIT SUBSTATION, US-103.
  - OUT OVER AND TIE ALL EXISTING LOADS ONE BY ONE FED BY THE CDP-800A TO THE NEW SECONDARY DISTRIBUTION CENTER, US-103-SDC USING THE NEW JUNCTION BOX. REMOVE BUILDING 103 TEMPORARY GENERATOR. REMOVE EXISTING CDP-800A.

**TEMPORARY GENERATOR NOTES:**

- PROVIDE THE FOLLOWING WITH TEMPORARY PRIME POWER RATED GENERATORS FOR BACK-UP:
  - BUILDING 103 - 103kW, 120/208V, 3Ø
  - BUILDING 105 - 40kW, 120/208V, 3Ø
  - WASTE WATER TREATMENT PLANT - 50kW, 120/208V, 3Ø
 SUPPLY ALL DIESEL FUEL REQUIRED TO RUN GENERATORS AT FULL LOAD WHILE SEQUENCE OF WORK IS BEING COMPLETED FOR BUILDING 103. TIME PERIOD TO EXTEND UNTIL SEQUENCE OF WORK IS COMPLETED AND WHEN THE NEW UNIT SUBSTATION, US-103, IS COMMISSIONED AND SUPPLYING POWER TO ITS RESPECTIVE AREAS.
- GENERATORS TO BE SKID-MOUNTED AND COMPLETE WITH SOUND ATTENUATING, WEATHERPROOF ENCLOSURE, TO 68-72 dB AT 7m AWAY FROM GENERATOR.
- GENERATORS TO BE TIED IN TO ELECTRICAL EQUIPMENT AS FOLLOWS:
  - BUILDING 103 - WITH GENERATOR OUTSIDE BUILDING ELECTRICAL ROOM, CABLES TO BE CONNECTED TO MAIN LUGS OF EXISTING DISTRIBUTION SECONDARY BOARD LOCATED WITHIN ELECTRICAL ROOM.
  - BUILDING 105 - WITH GENERATOR OUTSIDE BUILDING ELECTRICAL ROOM, CABLES TO BE CONNECTED TO MAIN LUGS OF EXISTING DISTRIBUTION SECONDARY BOARD LOCATED WITHIN ELECTRICAL ROOM.
  - WASTE WATER TREATMENT PLANT - WITH GENERATOR OUTSIDE THE WASTE WATER TREATMENT PLANT, CABLES TO BE CONNECTED TO THE MAIN BREAKER OF THE MCC.
- SAFETY MEANS AND LOCKOUT TO BE PROVIDED TO PREVENT UNDESIRABLE REVERSE FEED.
- ERECT TEMPORARY SECURITY FENCING TO ENCLOSE TEMPORARY GENERATOR.



**4 PHASE B BLOCK DIAGRAM**  
000 N.T.S.



0	ISSUED FOR TENDER	MAR.14.17
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Revision/	Description/Description	Date/Date

Client/client

**CORRECTIONAL SERVICE CANADA**

Project title/Titre du projet  
**METCHOSIN, BC**

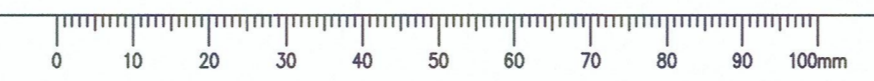
**ELECTRICAL HIGH VOLTAGE UPGRADE (PHASE 2 OF 2) WILLIAM HEAD INSTITUTION**

Consultant Signature Box Only

Designed by/Concept par  
**P.Necpal**  
Drawn by/Dessiné par  
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PWGSC Project Manager/Administrateur de Projets TPSCG  
**P. Truong**  
PWGSC Regional Manager, Architectural and Engineering Services/ Gestionnaire régionale, Services d'architecture et de génie, TPSCG  
**P. Paul**

Drawing title/Titre du dessin  
**BUILDING 103 PHASING NOTES**

Project No./No. du projet <b>R.069376.001</b>	Sheet/Feuille <b>E-204</b>	Revision no./La Révision no. <b>17 OF 22</b>
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**GENERAL NOTES:**

- CLEAN ALL DUCTS.
- CAP AND SEAL ALL CONDUITS.
- TEST AND CHECK FEEDERS BEFORE TERMINATION.
- RESTORE ASPHALT PAVEMENT, INCLUDING BASE AND SUB BASE GRAVELS, TO MATCH OR EXCEED THE EXISTING THICKNESS.



**SEQUENCE OF WORK - PHASE A - WORK TO INCLUDE THE FOLLOWING:**

- INSTALL NEW PULL BOX, HV-16 AND HV-18.
- INSTALL NEW CONCRETE ENCASED 1Ø103mmC FROM PULL BOX, HV-16, AND STUB-OUT 1m FROM THE EXISTING U/G DUCT FROM M.H. #17 TO BUILDING 105 ELECTRICAL ROOM.
- INSTALL NEW CONCRETE ENCASED 1Ø103mmC FROM PULL BOX, HV-16, TO THE NEW UNIT SUBSTATION, US-105.
- INSTALL NEW CONCRETE ENCASED 2Ø103mmC FROM THE NEW UNIT SUBSTATION, US-105, TO THE NEW PULL BOX, HV-18.
- INSTALL NEW CONCRETE ENCASED 2Ø103mmC FROM THE NEW PULL BOX, HV-18, AND TIE TO THE EXISTING 2Ø103mmC GOING TO THE WASTE WATER TREATMENT PLANT.
- INSTALL WALL MOUNTED PULL BOXES.
- INSTALL NEW CONCRETE ENCASED CONDUITS FROM US-1 TO BUILDING 105 FOUNDATION, 3Ø103mmC FOR THE NEW SECONDARY DISTRIBUTION CENTER, AND 1Ø41mmC FOR THE DIGITAL METERS. NEW CONDUITS FROM UNIT SUBSTATION TO STUB UP FROM GRADE AND RUN SURFACE MOUNTED ON OUTSIDE OF BUILDING INTO NEW BOTTOM-ENTRY PULL BOX.
- INSTALL CONCRETE PAD AND NEW UNIT SUBSTATION. COMPLETE GROUNDING INSTALLATION OF THE NEW UNIT SUBSTATION. COMPLETE US-105 UNIT SUBSTATION INSTALLATION.

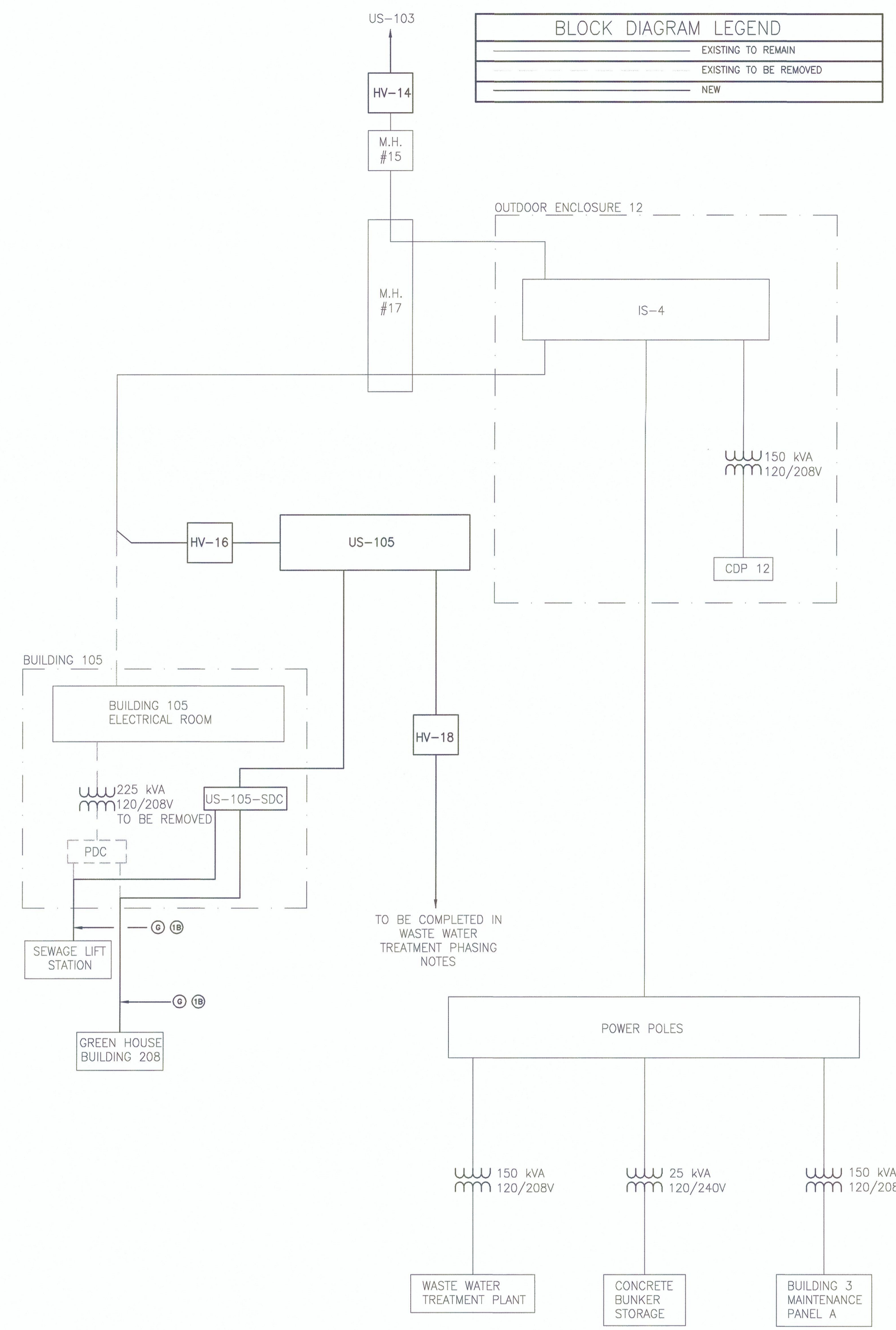
1 PHASE A  
000 1:300



**SEQUENCE OF WORK - PHASE B - WORK TO INCLUDE THE FOLLOWING:**

- ARRANGE POWER SHUTDOWN TO BUILDING 105. PROVIDE TEMPORARY POWER TO THE SEWAGE LIFT STATION AND GREEN HOUSE BUILDING 208 CONNECTED TO THE EXISTING PANEL 'PDC'. DISRUPT POWER TO BUILDING 105 VIA IS-4A.
- PULL OUT PRIMARY FEEDER FROM BUILDING 105 ELECTRICAL ROOM TO IS-4.
- EXTEND THE 1Ø103mmC FROM HV-16 TO TIE INTO THE EXISTING 1Ø103mmC FROM IS-4 TO BUILDING 105 ELECTRICAL ROOM. PROVIDE NEW PRIMARY FEEDER FROM IS-4 TO US-105. TEST FEEDER BEFORE TERMINATION.
- REMOVE EXISTING TRANSFORMER, DISTRIBUTION BOARD, AND FUSED ISOLATION SWITCHES IN BUILDING 105 ELECTRICAL ROOM. INSTALL THE NEW ELECTRICAL EQUIPMENT AS NOTED IN DRAWING E-105.
- PENETRATE CONDUITS THROUGH EXTERIOR WALL AT HIGH LEVEL ROUTE CONDUITS AS NOTED IN DRAWING E-105 DETAIL 2.
- PROVIDE SECONDARY FEEDER FROM US-105 TO THE NEW SECONDARY DISTRIBUTION CENTER. TEST FEEDER BEFORE TERMINATION.
- COMPLETE TESTING AND COMMISSIONING AND THEN ENERGIZE THE UNIT SUBSTATION, US-105.
- CUT OVER AND TIE ALL EXISTING LOADS ONE BY ONE FED BY THE TEMPORARY GENERATORS TO THE NEW SECONDARY DISTRIBUTION CENTER, US-105-SDC.

1 PHASE B  
000 1:300



3 PHASE B BLOCK DIAGRAM  
000 N.T.S.

**TEMPORARY GENERATOR NOTES:**

- PROVIDE THE FOLLOWING WITH TEMPORARY PRIME POWER RATED GENERATORS FOR BACK-UP:
  - SEWAGE LIFT STATION - 30kW, 120/208V, 3Ø
  - GREEN HOUSE BUILDING 208 - 20kW, 120/208V, 3Ø
- GENERATORS TO BE SKID-MOUNTED AND COMPLETE WITH SOUND ATTENUATING, WEATHERPROOF ENCLOSURE, TO 68-72 dB AT 7m AWAY FROM GENERATOR.
- SAFETY MEANS AND LOCKOUT TO BE PROVIDED TO PREVENT UNDESIRABLE REVERSE FEED.



Revision/	Description/Description	Date/Date
0	ISSUED FOR TENDER	MAR.14.17

CORRECTIONAL SERVICE CANADA

Project title/Titre du projet  
**METCHOSIN, BC**

**ELECTRICAL HIGH VOLTAGE UPGRADE (PHASE 2 OF 2) WILLIAM HEAD INSTITUTION**

Consultant Signature Box Only

Designed by/Concept par  
**P.Necpal**

Drawn by/Dessiné par  
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PWGSC Project Manager/Administrateur de Projets TPSSC  
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**P. Paul**

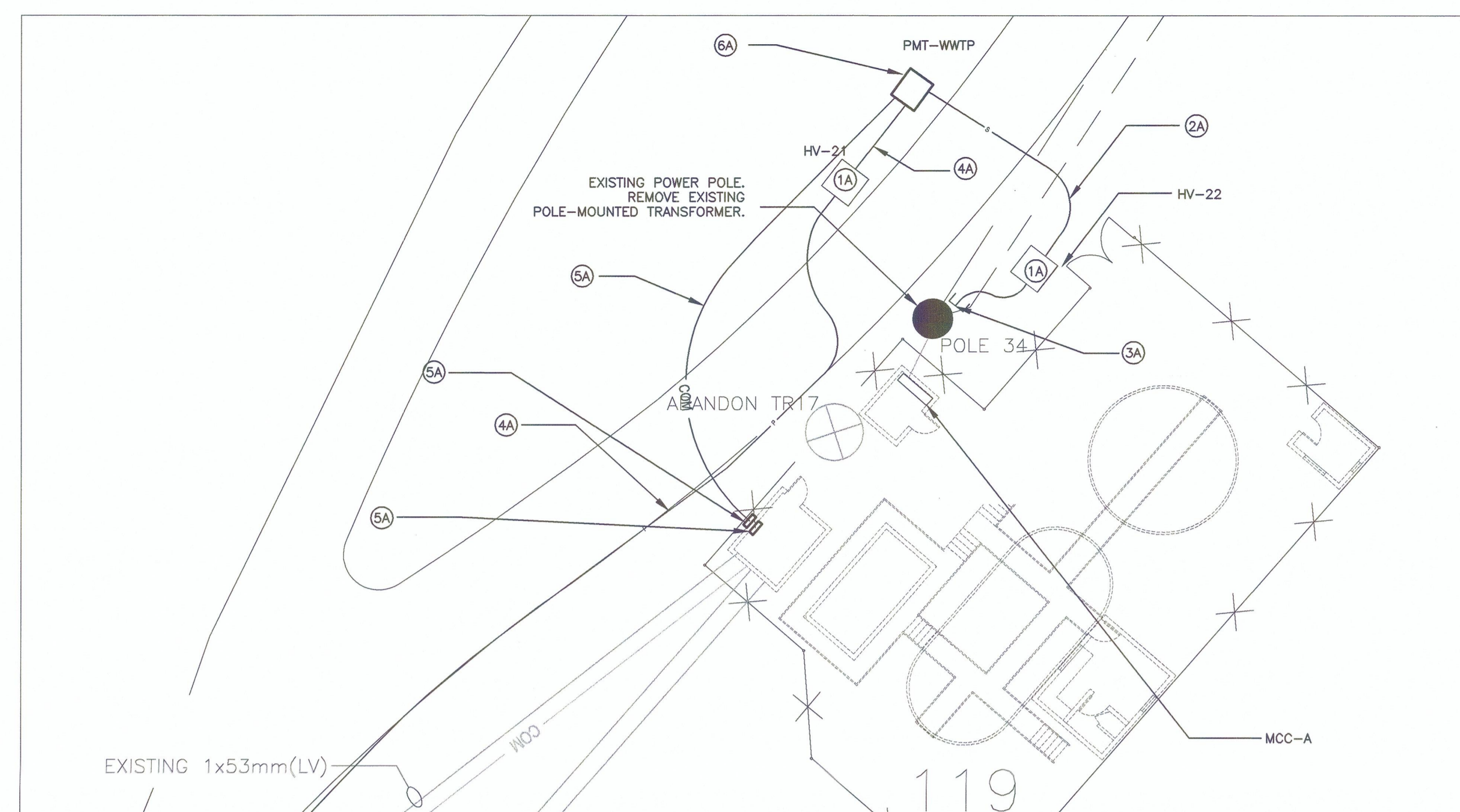
Drawing title/Titre du dessin  
**BUILDING 105 PHASING NOTES**

Project No./No. du projet  
**R.069376.001**

Sheet/Feuille  
**E-205**

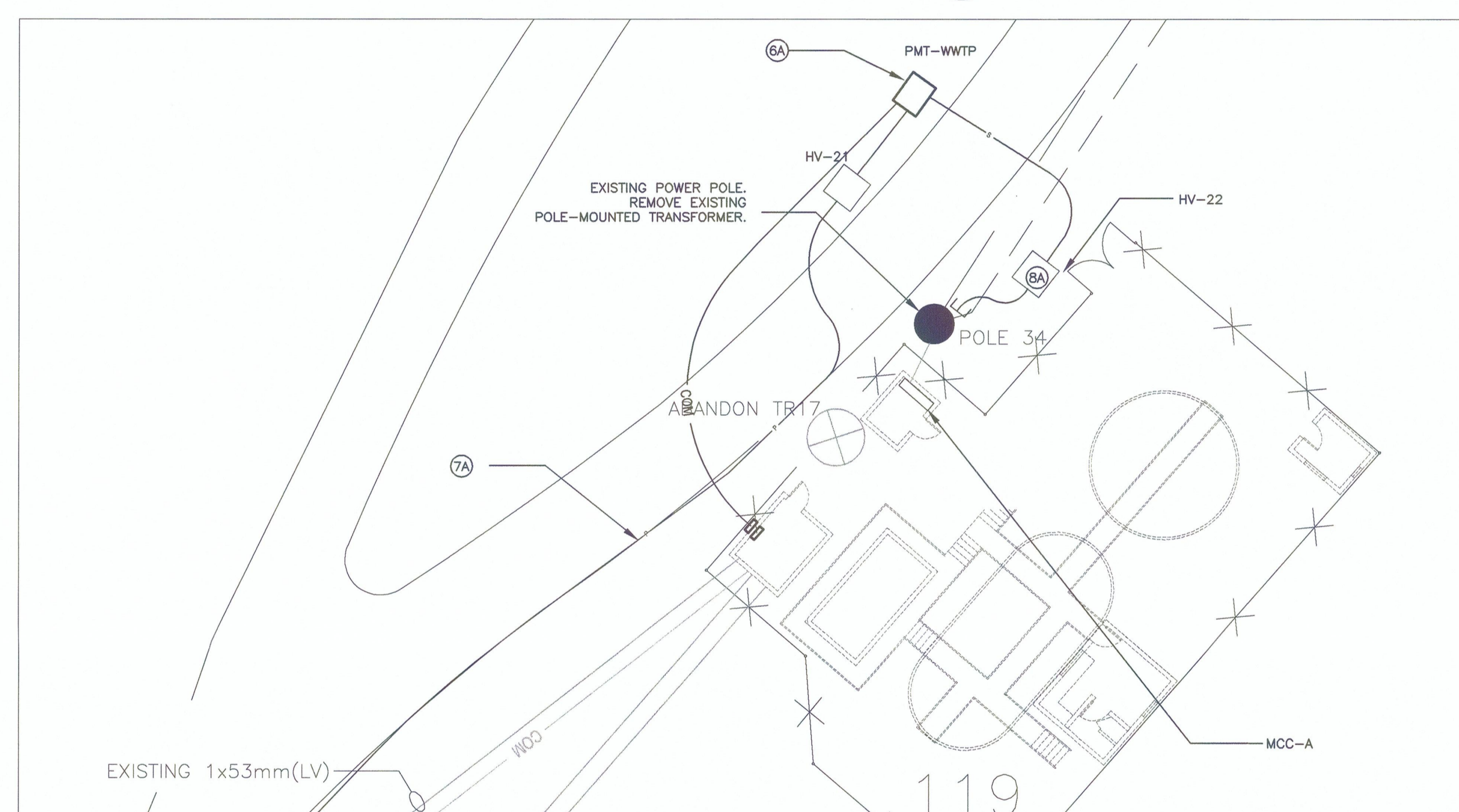
Revision no./La Révision no.  
**18 of 22**





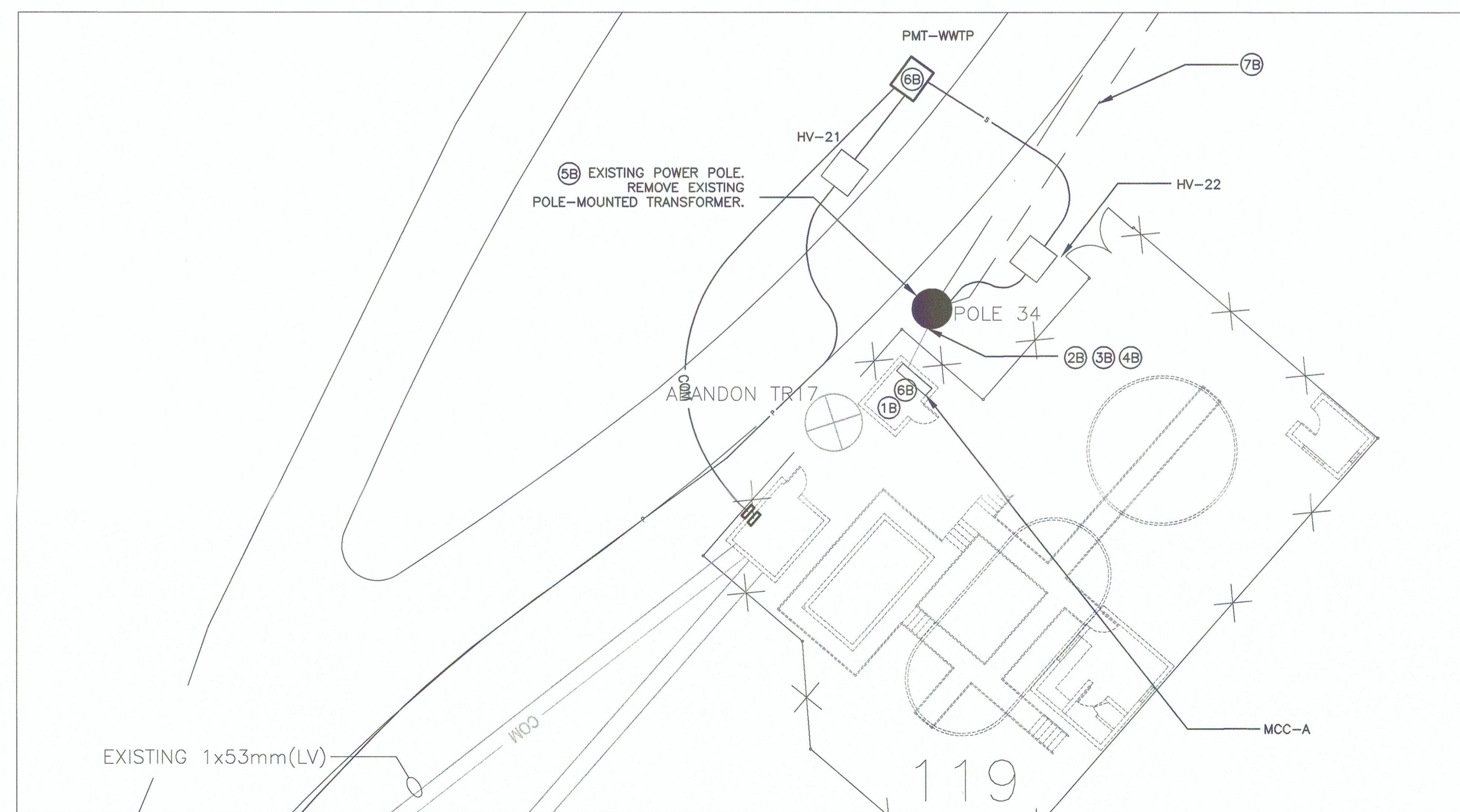
- SEQUENCE OF WORK - PRE-PHASE A - WORK TO INCLUDE THE FOLLOWING:**
- 1A) INSTALL NEW PULL BOXES, HV-19, 20, 21 AND 22.
  - 2A) INSTALL NEW CONCRETE ENCASED 1Ø103mmC FROM NEW PADMOUNT TRANSFORMER TO NEW PULL BOX, HV-22.
  - 3A) INSTALL NEW CONCRETE ENCASED 1Ø103mmC FROM PULL BOX, HV-22, AND STUB-OUT 1m FROM THE EXISTING U/G DUCT TO MCC-A.
  - 4A) INSTALL NEW CONCRETE ENCASED 2Ø103mmC FROM NEW PADMOUNT TRANSFORMER TO HV-21, AND NEW CONCRETE ENCASED 2Ø103mmC FROM HV-21 AND TIE TO EXISTING 2Ø103mmC (REFER TO DRAWINGS E-004 AND E-202, FOR EXISTING 2Ø103mmC CONDUIT STUB LOCATION).
  - 5A) INSTALL NEW BOTTOM-ENTRY PULL BOX AND TOP-ENTRY PULL BOX FOR COMMUNICATIONS. INSTALL NEW 1Ø27mmC FOR THE DIGITAL METER FROM THE NEW PADMOUNT TRANSFORMER TO THE BOTTOM-ENTRY PULL BOX. CONDUIT TO RUN SURFACE MOUNTED AND ENTER BOTTOM-ENTRY PULL BOX, PENETRATE WALL AT HIGH LEVEL AND ENTER BOTTOM-ENTRY PULL BOX. PROVIDE PULL STRING.
  - 6A) INSTALL GROUNDING AND TRANSFORMER CONCRETE PAD

**1 PRE-PHASE A**  
000 1:200



- SEQUENCE OF WORK - PHASE A - WORK TO INCLUDE THE FOLLOWING:**
- 6A) INSTALL THE NEW PADMOUNT TRANSFORMER, PMT-WWTP. COMPLETE ALL GROUNDING REQUIREMENTS OF THE NEW PADMOUNT TRANSFORMER. COMPLETE PADMOUNT TRANSFORMER INSTALLATION.
  - 7A) PULL PRIMARY FEEDER FROM BUILDING 105 UNIT SUBSTATION TO THE PADMOUNT TRANSFORMER VIA HV-18, 19, 20 AND 21. TEST CABLE BEFORE TERMINATION AND REPLACE IF CABLE TEST FAILS.
  - 8A) CONNECT THE SECONDARY FEEDER TO THE NEW PADMOUNT TRANSFORMER. PULL AND COIL THE FEEDER IN THE PULL BOX, HV-22.

**2 PHASE A**  
000 1:200

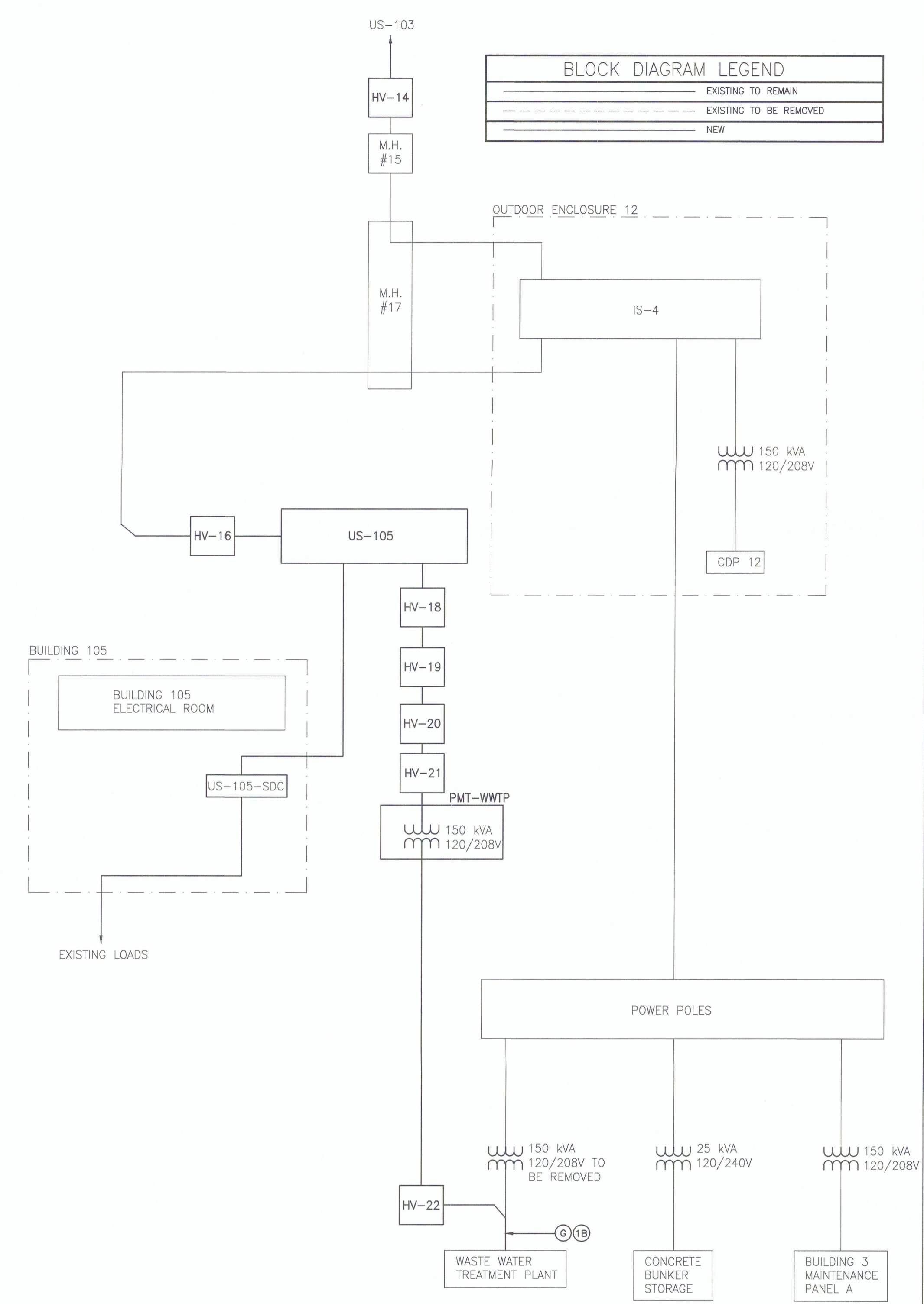


- SEQUENCE OF WORK - PHASE B - WORK TO INCLUDE THE FOLLOWING:**
- 1B) ARRANGE POWER SHUT DOWN OF THE WASTE WATER TREATMENT PLANT AND PROVIDE TEMPORARY POWER TO MCC-A AT THE MAIN BREAKER. DISRUPT POWER TO MCC-A.
  - 2B) INTERCEPT EXISTING U/G DUCT TO MCC-A AND PULL OUT THE EXISTING FEEDER FROM THE POLE TO MCC-A.
  - 3B) EXTEND THE NEW 1Ø103mmC STUB-OUT AND TIE TO THE EXISTING CONDUIT TO MCC-A.
  - 4B) PULL SECONDARY FEEDER FROM HV-19 TO MCC-A. CHECK FEEDER FOR PHASE ROTATION BEFORE TERMINATION.
  - 5B) REMOVE EXISTING POLE MOUNTED TRANSFORMER AND CONDUIT.
  - 6B) TEST AND COMMISSION THE PADMOUNT TRANSFORMER, PMT-WWTP.
  - 7B) REMOVE EXISTING CONDUCTORS, GANG OPERATED SWITCHES, INSULATORS BETWEEN POLE 31 AND 34.

**3 PHASE 3**  
000 1:200

**PHASING GENERAL NOTES:**

1. CLEAN ALL DUCTS.
2. CAP AND SEAL ALL CONDUITS.
3. TEST AND CHECK FEEDERS BEFORE TERMINATION.
4. RESTORE ASPHALT PAVEMENT, INCLUDING BASE AND SUB BASE GRAVELS, TO MATCH OR EXCEED THE EXISTING THICKNESS.



**4 PHASE B BLOCK DIAGRAM**  
000 N.T.S.

**TEMPORARY GENERATOR NOTES:**

1. PROVIDE THE FOLLOWING WITH TEMPORARY PRIME POWER RATED GENERATORS FOR BACK-UP:
  - 1.1 WASTE WATER TREATMENT PLANT - 50kW, 120/208V, 3Ø
  - 1.2 SUPPLY ALL DIESEL FUEL REQUIRED TO RUN GENERATORS AT FULL LOAD WHILE SEQUENCE OF WORK IS BEING COMPLETED FOR THE WASTE WATER TREATMENT PLANT. TIME PERIOD TO EXTEND UNTIL SEQUENCE OF WORK IS COMPLETED AND WHEN THE NEW PADMOUNT TRANSFORMER, PMT-WWTP, IS COMMISSIONED AND SUPPLYING POWER TO THE WASTE WATER TREATMENT PLANT.
2. GENERATORS TO BE SKID-MOUNTED AND COMPLETE WITH SOUND ATTENUATING, WEATHERPROOF ENCLOSURE, TO 88-72 dB AT 7m AWAY FROM GENERATOR.
3. GENERATORS TO BE TIED IN TO ELECTRICAL EQUIPMENT AS FOLLOWS:
  - 3.1 WASTE WATER TREATMENT PLANT - WITH GENERATOR OUTSIDE THE WASTE WATER TREATMENT PLANT. CABLES TO BE CONNECTED TO THE MAIN BREAKER OF THE MCC.
4. SAFETY MEANS AND LOCKOUT TO BE PROVIDED TO PREVENT UNDESIRABLE REVERSE FEED.
5. ERECT TEMPORARY SECURITY FENCING TO ENCLOSE TEMPORARY GENERATOR.

Revision/Revised	Description/Description	Date/Date
0	ISSUED FOR TENDER	MAR.14.17

Client/client  
**CORRECTIONAL SERVICE CANADA**

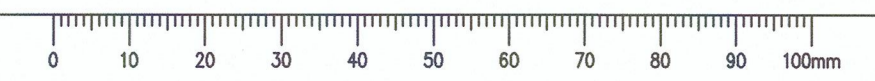
Project title/Titre du projet  
**METCHOSIN, BC**

**ELECTRICAL HIGH VOLTAGE UPGRADE (PHASE 2 OF 2) WILLIAM HEAD INSTITUTION**

Consultant Signature Box Only  
Designed by/Concept par  
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Drawn by/Dessiné par  
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PWGC Project Manager/Administrateur de Projets TP50C  
**P. Truong**  
PWGC Regional Manager, Architectural and Engineering Services / Gestionnaire régional, Services d'architectural et de génie, TP50C  
**P. Paul**

Drawing title/Titre du dessin  
**WASTE WATER TREATMENT PLANT PHASING NOTES**

Project No./No. du projet	Sheet/Feuille	Revision no./No. de révision
<b>R.069376.001</b>	<b>E-206</b>	







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**CORRECTIONAL SERVICE CANADA**

Project Title/Titre du projet  
**METCHOSIN, BC**

**ELECTRICAL HIGH VOLTAGE UPGRADE (PHASE 2 OF 2) WILLIAM HEAD INSTITUTION**

Consultant Signature Box Only

Designed by/Concept par  
**P.Necpal**

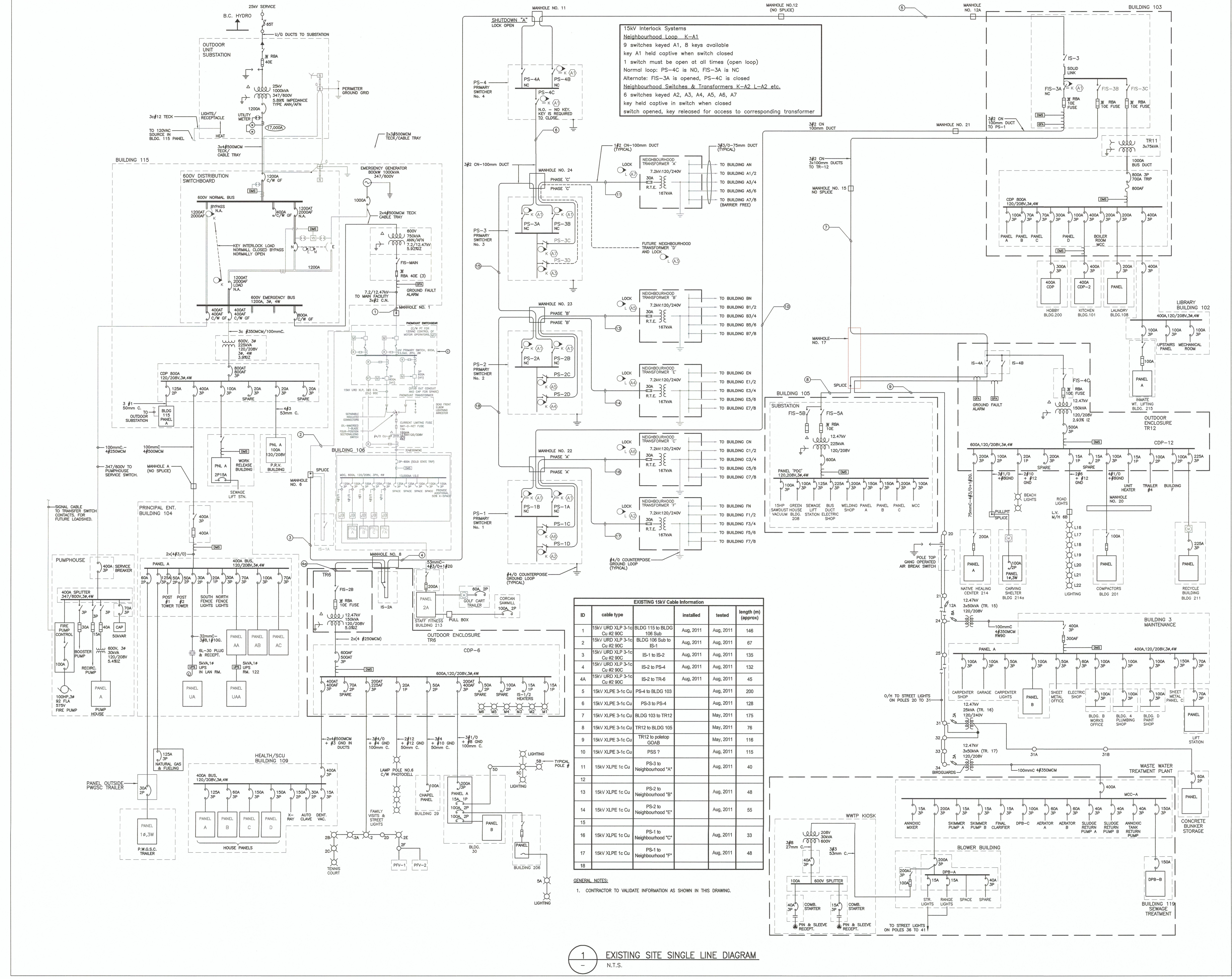
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**P. Paul**

EXISTING SITE  
SINGLE LINE DIAGRAM

Project No./No. du projet	Sheet/Feuille	Revision no./ La Révision no.
R.069376.001	E-400	
	20	22



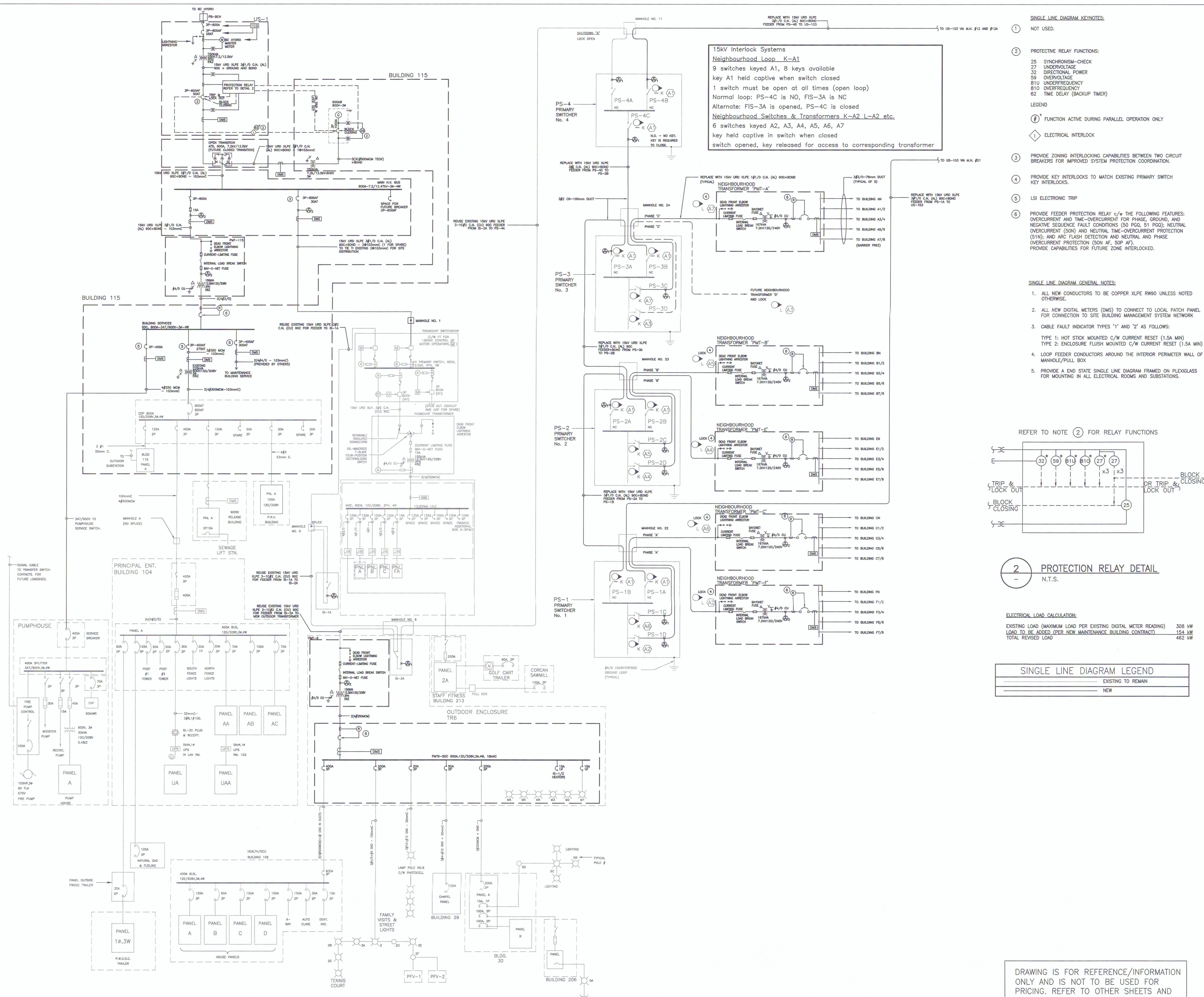
**15kV Interlock Systems**  
Neighbourhood Loop K-A1  
9 switches keyed A1, B keys available  
key A1 held captive when switch closed  
1 switch must be open at all times (open loop)  
Normal loop: PS-4C is NO, FIS-3A is NC  
Alternate: FIS-3A is opened, PS-4C is closed  
Neighbourhood Switches & Transformers K-A2 L-A2 etc.  
6 switches keyed A2, A3, A4, A5, A6, A7  
key held captive in switch when closed  
switch opened, key released for access to corresponding transformer

ID	cable type	installed	tested	length (m) (approx)
1	15kV URD XLP 3-1c Cu #2 90C	BLDG 115 to BLDG 106 Sub	Aug, 2011	146
2	15kV URD XLP 3-1c Cu #2 90C	BLDG 106 Sub to IS-1	Aug, 2011	67
3	15kV URD XLP 3-1c Cu #2 90C	IS-1 to IS-2	Aug, 2011	135
4	15kV URD XLP 3-1c Cu #2 90C	IS-2 to PS-4	Aug, 2011	132
4A	15kV URD XLP 3-1c Cu #2 90C	IS-2 to TR-6	Aug, 2011	45
5	15kV XLPE 3-1c Cu	PS-4 to BLDG 103	Aug, 2011	200
6	15kV XLPE 3-1c Cu	PS-3 to PS-4	Aug, 2011	128
7	15kV XLPE 3-1c Cu	BLDG 103 to TR12	May, 2011	175
8	15kV XLPE 3-1c Cu	TR12 to BLDG 105	May, 2011	76
9	15kV XLPE 3-1c Cu	TR12 to poletop GOAB	May, 2011	116
10	15kV XLPE 3-1c Cu	PSS 7	Aug, 2011	115
11	15kV XLPE 1c Cu	Neighbourhood "A"	Aug, 2011	40
12				
13	15kV XLPE 1c Cu	Neighbourhood "B"	Aug, 2011	48
14	15kV XLPE 1c Cu	Neighbourhood "C"	Aug, 2011	55
15				
16	15kV XLPE 1c Cu	PS-1 to Neighbourhood "C"	Aug, 2011	33
17	15kV XLPE 1c Cu	PS-1 to Neighbourhood "F"	Aug, 2011	48
18				

GENERAL NOTES:  
1. CONTRACTOR TO VALIDATE INFORMATION AS SHOWN IN THIS DRAWING.

**1** EXISTING SITE SINGLE LINE DIAGRAM  
N.T.S.

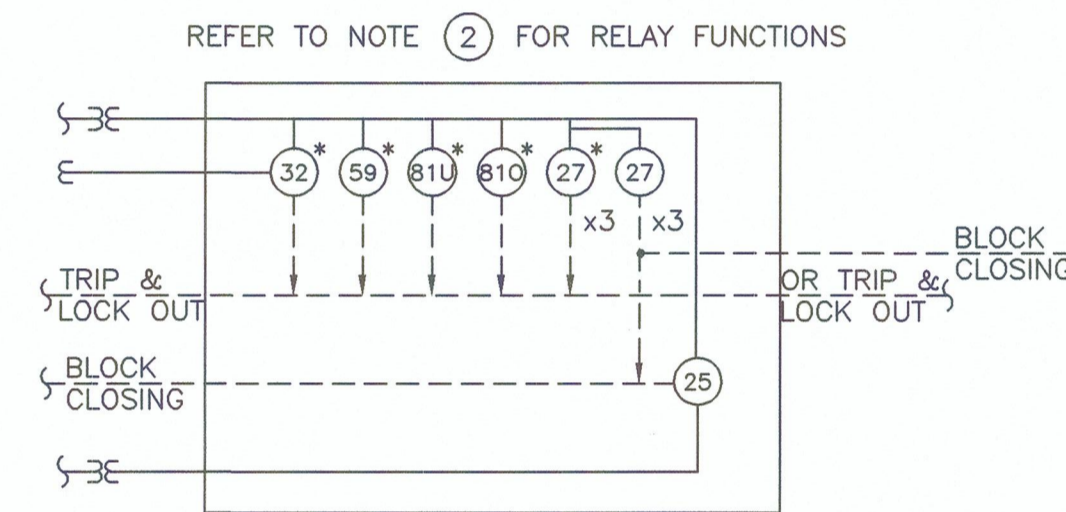




**15kV Interlock Systems**  
Neighbourhood Loop K-A1  
9 switches keyed A1, 8 keys available  
key A1 held captive when switch closed  
1 switch must be open at all times (open loop)  
Normal loop: PS-4C is NO, FIS-3A is NC  
Alternate: FIS-3A is opened, PS-4C is closed  
Neighbourhood Switches & Transformers K-A2 L-A2 etc.  
6 switches keyed A2, A3, A4, A5, A6, A7  
key held captive in switch when closed  
switch opened, key released for access to corresponding transformer

- SINGLE LINE DIAGRAM KEYNOTES:**
- NOT USED.
  - PROTECTIVE RELAY FUNCTIONS:  
25 SYNCHRONISM-CHECK  
27 UNDERVOLTAGE  
32 DIRECTIONAL POWER  
59 OVERVOLTAGE  
81U UNDERFREQUENCY  
82 TIME DELAY (BACKUP TIMER)  
LEGEND  
Ⓢ FUNCTION ACTIVE DURING PARALLEL OPERATION ONLY  
◇ ELECTRICAL INTERLOCK
  - PROVIDE ZONING INTERLOCKING CAPABILITIES BETWEEN TWO CIRCUIT BREAKERS FOR IMPROVED SYSTEM PROTECTION COORDINATION.
  - PROVIDE KEY INTERLOCKS TO MATCH EXISTING PRIMARY SWITCH KEY INTERLOCKS.
  - LSI ELECTRONIC TRIP
  - PROVIDE FEEDER PROTECTION RELAY c/w THE FOLLOWING FEATURES:  
OVERCURRENT AND TIME-OVERCURRENT FOR PHASE, GROUND, AND NEGATIVE SEQUENCE FAULT CONDITIONS (50 PGO, 51 PGO); NEUTRAL OVERCURRENT (50N) AND NEUTRAL TIME-OVERCURRENT PROTECTION (51N); AND ARC FLASH DETECTION AND NEUTRAL AND PHASE OVERCURRENT PROTECTION (50N AF, 50P AF).  
PROVIDE CAPABILITIES FOR FUTURE ZONE INTERLOCKED.

- SINGLE LINE DIAGRAM GENERAL NOTES:**
- ALL NEW CONDUCTORS TO BE COPPER XLPE RW90 UNLESS NOTED OTHERWISE.
  - ALL NEW DIGITAL METERS (DMS) TO CONNECT TO LOCAL PATCH PANEL FOR CONNECTION TO SITE BUILDING MANAGEMENT SYSTEM NETWORK
  - CABLE FAULT INDICATOR TYPES "1" AND "2" AS FOLLOWS:  
TYPE 1: HOT STICK MOUNTED C/W CURRENT RESET (1.5A MIN)  
TYPE 2: ENCLOSURE FLUSH MOUNTED C/W CURRENT RESET (1.5A MIN)
  - LOOP FEEDER CONDUCTORS AROUND THE INTERIOR PERIMETER WALL OF MANHOLE/PULL BOX
  - PROVIDE A END STATE SINGLE LINE DIAGRAM FRAMED ON PLEXIGLASS FOR MOUNTING IN ALL ELECTRICAL ROOMS AND SUBSTATIONS.



**2 PROTECTION RELAY DETAIL**  
N.T.S.

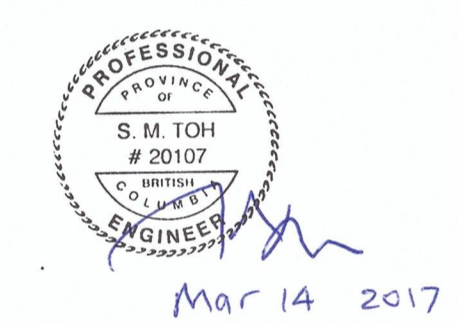
**ELECTRICAL LOAD CALCULATION:**

EXISTING LOAD (MAXIMUM LOAD PER EXISTING DIGITAL METER READING)	308 kW
LOAD TO BE ADDED (PER NEW MAINTENANCE BUILDING CONTRACT)	154 kW
<b>TOTAL REVISED LOAD</b>	<b>462 kW</b>



DRAWING IS FOR REFERENCE/INFORMATION ONLY AND IS NOT TO BE USED FOR PRICING. REFER TO OTHER SHEETS AND PARTIAL SINGLE LINE DIAGRAMS FOR SCOPE OF WORKS TO BE PRICED.

**1 SITE SINGLE LINE DIAGRAM - NEW**  
N.T.S.



0	ISSUED FOR TENDER	MAR.14.17
Revision/	Description/Description	Date/Date
Client/client		

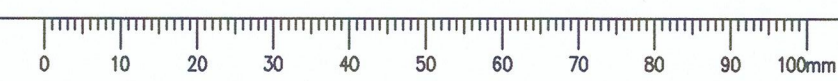
**CORRECTIONAL SERVICE CANADA**

Project title/Titre du projet  
**METCHOSIN, BC**  
**ELECTRICAL HIGH VOLTAGE UPGRADE (PHASE 2 OF 2) WILLIAM HEAD INSTITUTION**

Consultant Signature Box Only  
Designed by/Concept par  
**P.Necpal**  
Drawn by/Dessiné par  
**P.Necpal**  
PWSCC Project Manager/Administrateur de Projets TPSCC  
**P. Truong**  
PWSCC Regional Manager, Architectural and Engineering Services/Gestionnaire régional, Services d'architecture et de génie, TPSCC  
**P. Paul**

Drawing title/Titre du dessin  
**SITE SINGLE LINE DIAGRAM - NEW (1 OF 2)**

Project No./No. du projet <b>R.069376.001</b>	Sheet/Feuille <b>E-401</b>	Revision no./La Révision no. <b>21 OF 22</b>
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0	ISSUED FOR TENDER	MAR.14.17
Revision/	Description/Description	Date/Date
Client/client		

**CORRECTIONAL SERVICE CANADA**

Project Title/Titre du projet  
**METCHOSIN, BC**

**ELECTRICAL HIGH VOLTAGE UPGRADE (PHASE 2 OF 2)**  
**WILLIAM HEAD INSTITUTION**

Consultant Signature Box Only

Designed by/Concept par  
**P.Necpal**

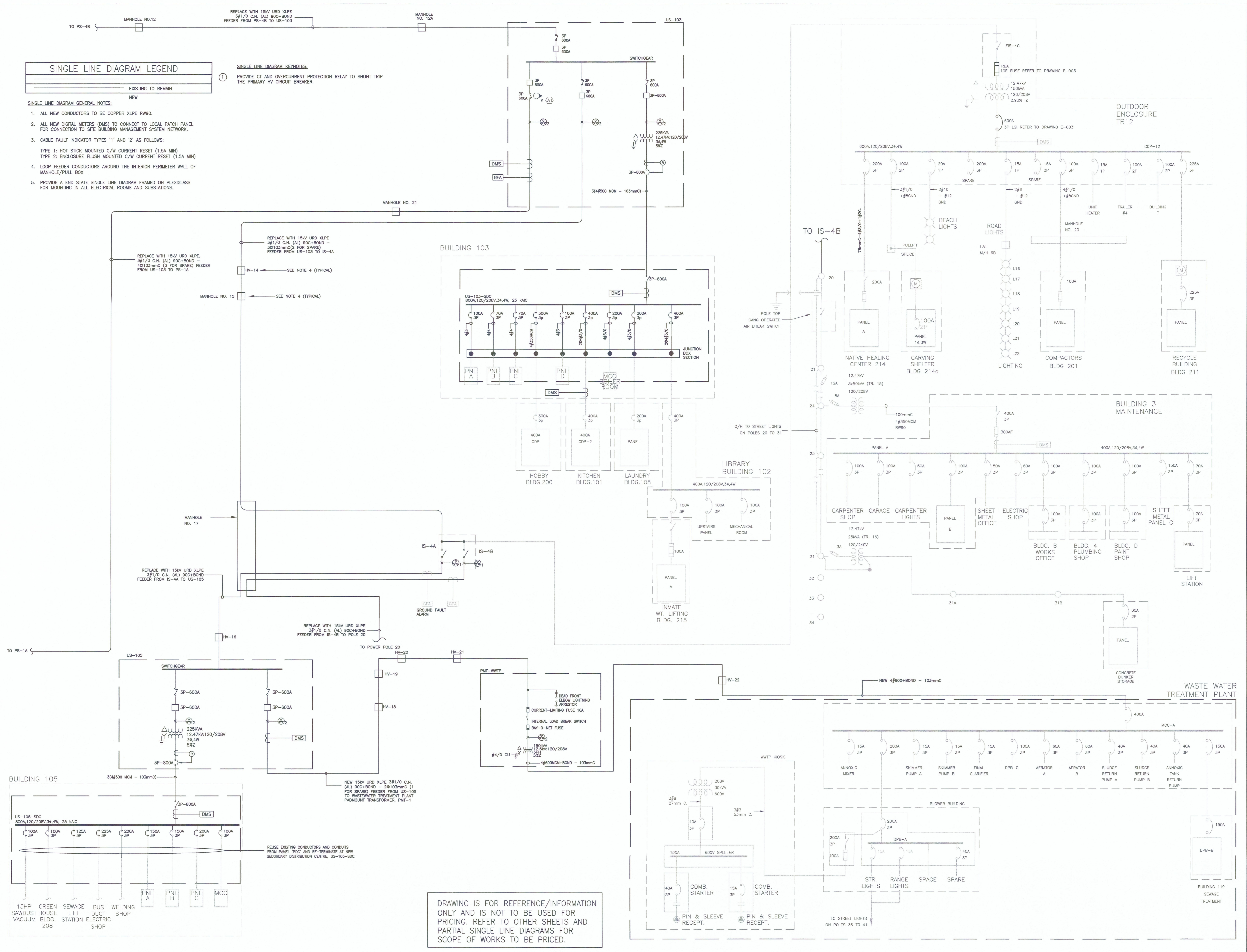
Drawn by/Dessiné par  
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Gestionnaire régional, Services d'architecture et de génie, TPSGC  
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Drawing Title/Titre du dessin  
**SITE SINGLE LINE DIAGRAM -**  
**NEW (2 OF 2)**

Project No./No. du projet <b>R.069376.001</b>	Sheet/Feuille <b>E-402</b>	Revision no./La Révision no.
	<b>22</b>	<b>OF 22</b>



**SINGLE LINE DIAGRAM LEGEND**

(Solid line)	EXISTING TO REMAIN
(Dashed line)	NEW

- SINGLE LINE DIAGRAM GENERAL NOTES:**
- ALL NEW CONDUCTORS TO BE COPPER XLPE RW90.
  - ALL NEW DIGITAL METERS (DMS) TO CONNECT TO LOCAL PATCH PANEL FOR CONNECTION TO SITE BUILDING MANAGEMENT SYSTEM NETWORK.
  - CABLE FAULT INDICATOR TYPES '1' AND '2' AS FOLLOWS:  
TYPE 1: HOT STICK MOUNTED C/W CURRENT RESET (1.5A MIN)  
TYPE 2: ENCLOSURE FLUSH MOUNTED C/W CURRENT RESET (1.5A MIN)
  - LOOP FEEDER CONDUCTORS AROUND THE INTERIOR PERIMETER WALL OF MANHOLE/PULL BOX
  - PROVIDE A END STATE SINGLE LINE DIAGRAM FRAMED ON PLEXIGLASS FOR MOUNTING IN ALL ELECTRICAL ROOMS AND SUBSTATIONS.

**SINGLE LINE DIAGRAM KEYNOTES:**

1. PROVIDE CT AND OVERCURRENT PROTECTION RELAY TO SHUNT TRIP THE PRIMARY HV CIRCUIT BREAKER.

DRAWING IS FOR REFERENCE/INFORMATION ONLY AND IS NOT TO BE USED FOR PRICING. REFER TO OTHER SHEETS AND PARTIAL SINGLE LINE DIAGRAMS FOR SCOPE OF WORKS TO BE PRICED.

**1** SITE SINGLE LINE DIAGRAM - NEW  
N.T.S.

