NOTES:

1. FOR SYMBOLS AND ABBREVIATIONS, SEE ESD'S.
2. UNLESS NOTED OTHERWISE, ALL BREAKERS ARE 3–POLE. FOR ADDITIONAL BREAKER DETAILS, FRAME SIZES, AND TRIP UNIT RATINGS, SEE SWITCHBOARD FRONT ARRANGEMENT DRAWINGS AND PANEL SCHEDULES.
3. DISCONNECT SWITCH DESIGNATIONS ARE BASED ON BREAKER NUMBERS. OTHER SWITCHES ARE NUMBERED SIMILARLY BUT ARE NOT SHOWN.
4. MINIMUM SIZES OF HV SHIP–SHORE SERVICE CABLES ARE BASED ON 5MVA LOAD AS FOLLOWS. AS–BUILT SIZES ARE MARKED ON 1–LINE DIAGRAM.

Trfr Tap	Rated Secondary Current	x1.25 (CEC)	Teck Cable Size	Teck Cable Rating	Portable Cable Size	Portable Cable Rating
12.47kV	232 A	289 A	1–3c 300kCM	295 A	1–3c 4/0	326 A
11kV	262 A	328 A	2–3c 300kCM	590 A	2–3c 4/0	652 A
6.6kV	437 A	547 A	2–3c 300kCm	590 A	2–3c 4/0	652 A

5. FAULT LEVELS ARE RMS SYMMETRICAL INTERRUPTING DUTIES BASED ON THE SHORT CIRCUIT STUDY OF 31 JULY 2013.
6. STANDARD PWGSC FONT SIZE OF 2.5mm IS NOT IMPLEMENTED BY SPECIAL PERMISSION.
7. GROUND RELAY FPE TLR–3–25–F EXCEPT WHERE NOTED OTHERWISE.
8. FILTER BANK POWER FACTOR CONTROLLERS ARE ESTAMAT PFC12.

REFERENCE DRAWINGS	REF. No.
FPE SB830–W1, REV. 2	1
FPE SC–1119–A, REV. 5 (1980)	2
FPE SC–1118–W1, REV. 5 (1983)	3
FPE SC–1118–W2, REV 3.	4
FPE SC–1120–W1, REV. 3 (1980)	5
SIMPOWER/TTI 12894–171 THRU 176 (2002)	6
FPE SB–6164–W1, REV. 6 (1983)	7
EMD E5 SOUTHSIDE SUBSTATION 1–LINE	8
EMD E4 NORTH LANDING WHARF 1–LINE	9
EMD E3 PUMPHOUSE 1–LINE	10
EMD E6 STANDBY SYSTEM 1–LINE	11
EMD E1 NUMBERING SYSTEM	12
E1 of 3 PWGSC #846352 (KEEL BLOCK)	13
E1 PENINSULA W.W. (AES 2002)	14
EMD E12 MAIN SUBSTATION PANEL SCHEDULES	15
DND–EGD 12kV OVERHEAD LINE REPORT 2012	16
EMD E50 PULL BOX DETAILS	17
EMD E32 BASE MAP VIEWPORT – EAST GATE	18

TEMPORARY NOTES:

1. VERIFY BREAKER NUMBERS.
2. VERIFY PT SOURCE.
3. CONFIRM MAIN BREAKER
4. (NOT USED)
5. FIELD VERIFY.
6. RENUMBER PANELS PER NEW SYSTEM.
7. (NOT USED)
8. (NOT USED)
9. (NOT USED)
10. CHANGE NAMEPLATE TO MISCELLANEOUS SERVICE PANEL.
11. CHANGE BREAKER NAMEPLATE.
12. (NOT USED)
13. (NOT USED)
14. (NOT USED)
15. VOLTMETER AND AMMETER REMOVED?
16. PROVIDE NEW NAMEPLATE.
17. ASSIGN OR CONFIRM SCADA NUMBERS.
18. CONFIRM CIRCUIT CONNECTIONS.
19. (NOT USED)
20. (NOT USED)

15	BY TURKAN: UPDATED SHORT CIRCUIT LEVELS PER NOTE 5.	02 AUG 2013
14	BY TURKAN: 10 MVA UPGRADE RECORD ISSUE; ARC–FLASH STUDY FIELD DATA UPDATE	16 JUL 2013
13	BY TURKAN: 12.5MS–20S WAS 1–POLE; ADDED PNLS. 2PA & 2PB; UPDATED 2.4MS–21 TO –22 METERING & PROTECTION; MOVED G1 DISTRIBUTION TO REF.11; ISSUED FOR ARC–FLASH STUDY FIELD SURVEY REQUIREMENTS.	03 DEC 2012
12	BY TURKAN: UPDATED DND–EGD O/H AND U/G LINE, AND 12.5MS–1 METERING & PROTECTION	10 SEP 2012
11	INCLUDED STANDBY GENERATOR LOADS ELECTRICAL SAFETY UPGRADE DESIGN CRITERIA	14 FEB 2011
10	BY RFA: 6MS–55 WAS 6MS–5; ADDED NGRSW TO T12.5MS–2 PER ELITE E2, REV.10	7 JUNE 2008
9	BY RFA: ADDED CME SHOPS & OFFICES TO 6MS–5	28 FEB 2008
8	BY RFA: UPDATED 6MS PER VIC SHIP OFFICE FEEDER AS–BUILTS.	19 DEC 2006
7	BY RFA: UPDATED FAULT LEVELS PER ELITE STUDY OF 6 OCT 2006	16 NOV 2006
6	BY PWGSC: ADDED AS BUILTS FOR VIC SHIP OFFICE BUILDING	15 MAY 2006
5	BY RFA: 6MS–9 FEEDER SIZE CHANGED TO MATCH NEW TRANSFORMER RATING OF 150kVA	17 MAR 2006
4	BY RFA: ADDED VIC. SHIP OFFICE BUILDING SERVICE TO 6MS	27 JAN 2006
3	BY RFA: GENERAL UPDATE FOR APPROVED EMD ISSUE, INCLUDING MAGNA IV MARK–UPS FOR 2004 HV MAINTENANCE TENDER	15 AUG 2005
2	BY RFA: ADDED KEY INTERLOCK TO 2.4 MS–20; ISSUED FOR 2004 HV MAINTENANCE TENDER	7 OCT 2004
1	AS BUILT; (PWGSC #846354, RFA #237–20211) PER BREWIS SUBMISSION OF 24 JUN 04; 3 PT'S ON LOAD SIDE OF 12.5MS–1 WAS 2	10 AUG 2004
revisions		date

Public Works and Government Services Canada / Travaux publics et Services Gouvernementaux Canada

Pacific Region

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Project No. 207-12082

A detail no. no. du detail
B location drawing no. sur dessin no.
C drawing no. dessin no.

project / projet

ESQUIMALT GRAVING DOCK
ESQUIMALT, B.C.

ELECTRICAL MASTER DRAWING

drawing / dessin

MAIN SUBSTATION SINGLE–LINE DIAGRAM

designed / concu: M. K. ÇANÇAR
drawn / dessine: ME/SL/PP/BQ
approved / approuve:
date:
tender / Soummission:
PWGSC Project Manager / Administrateur de projets TPSGC:
project no. / no. du projet: —
drawing no. / no. du dessin: EMD E2 REV.15