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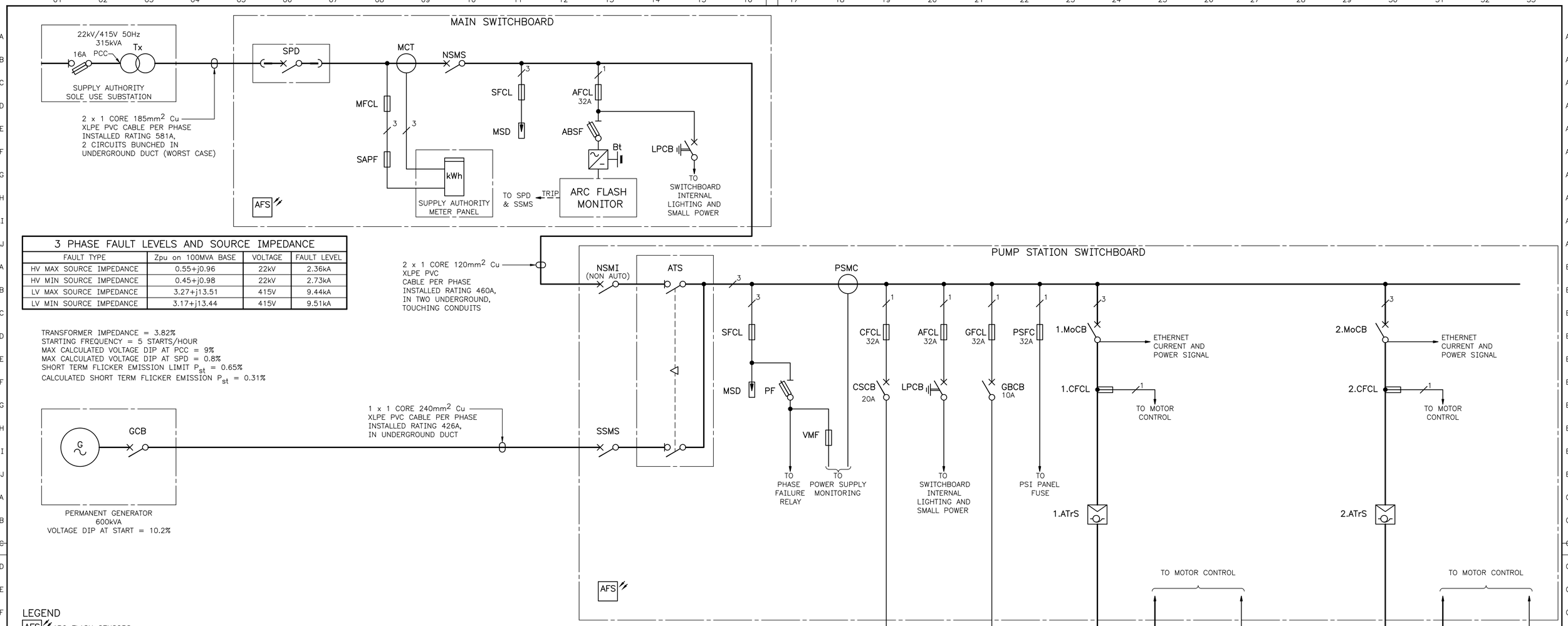

3 PHASE FAULT LEVELS AND SOURCE IMPEDANCE

FAULT TYPE	Zpu on 100MVA BASE	VOLTAGE	FAULT LEVEL
HV MAX SOURCE IMPEDANCE	0.55+j0.96	22kV	2.36kA
HV MIN SOURCE IMPEDANCE	0.45+j0.98	22kV	2.73kA
LV MAX SOURCE IMPEDANCE	3.27+j13.51	415V	9.44kA
LV MIN SOURCE IMPEDANCE	3.17+j13.44	415V	9.51kA

TRANSFORMER IMPEDANCE = 3.82%
STARTING FREQUENCY = 5 STARTS/HOUR
MAX CALCULATED VOLTAGE DIP AT PCC = 9%
MAX CALCULATED VOLTAGE DIP AT SPD = 0.8%
SHORT TERM FLICKER EMISSION LIMIT P_{st} = 0.65%
CALCULATED SHORT TERM FLICKER EMISSION P_{st} = 0.31%

LEGEND

AFS — ARC FLASH SENSORS LOCATED WITHIN

CODE SCHEDULE

ABSF	ARC FLASH MONITOR BATTERY CHARGER SUPPLY FUSE
AFCL	ANCILLARY FAULT CURRENT LIMITER
AFS	ARC FLASH SENSOR
ATrS	AUTOTRANSFORMER STARTER
ATS	AUTOMATIC TRANSFER SWITCH
Bt	BATTERY
CFCL	CONTROL FAULT CURRENT LIMITER
CSCB	CONTROL CUBICLE SUPPLY CIRCUIT BREAKER
DLS	DOOR LIMIT SWITCH
GBCB	GENERATOR BATTERY CHARGER CIRCUIT BREAKER
GCB	GENERATOR CIRCUIT BREAKER
GFCL	GENERATOR BATTERY CHARGER FAULT CURRENT LIMITER
kWh	KILOWATT HOUR METER
LPCB	LIGHTING AND POWER OUTLETS CIRCUIT BREAKER
MCT	METERING CURRENT TRANSFORMER
MFCL	METERING FAULT CURRENT LIMITER
MoCB	MOTOR CIRCUIT BREAKER
MSD	MAINS SURGE DIVERTER
NSMI	NORMAL SUPPLY MAIN ISOLATOR
NSMS	NORMAL SUPPLY MAIN SWITCH
PCC	POINT OF COMMON COUPLING
PF	POTENTIAL FUSE
PSFC	POWER SYSTEM INTERFACE FAULT CURRENT LIMITER
PSMC	POWER SUPPLY MONITOR CURRENT TRANSFORMER
SAPF	SUPPLY AUTHORITY POTENTIAL FUSE
SFCL	SURGE DIVERTER FAULT CURRENT LIMITER
SPD	SERVICE PROTECTION DEVICE
SSMS	STANDBY SUPPLY MAIN SWITCH
Tx	TRANSFORMER
VMF	VOLTAGE MONITORING FUSE

GENERAL NOTES

1. CONSTRUCT SWITCHBOARD IN ACCORDANCE WITH THE WATER CORPORATION STANDARD SPECIFICATION DS26.9 FOR GENERAL SWITCHBOARD REQUIREMENTS DS26.11 FOR SWITCHBOARDS RATED >200A TO ⩽ 440A
2. NEUTRAL AND EARTH CONNECTIONS NOT SHOWN

CAUTION
VALUES SHOWN ARE INDICATIVE ONLY, DRAWING IS ONLY A PRESENTATION EXAMPLE OF A COMPLETED DESIGN

ISSUE	DATE	GRID	REVISION	DRN	REC	APPD
G	01/2024		CFCL, AFCL, GFCL AND PSFC SYMBOLS REVISED	SAM	~~TK~~	~~EG~~ EG
F	07/2021		SUPPLY INFORMATION REVISED; CAUTION NOTE ADDED	PH	TL	EG
E	11/2019		ANCILLIARY AND MOTOR STARTER CIRCUITS REVISED	PH	EG	NJ
D	03/2019		MAIN SWITCHBOARD NSMS RELOCATED	SAM	EG	NHJ
C	02/2019		ANCILLIARY CIRCUITS, PFCL AND PTPF REVISED; PSMS DELETED; NSMS ADDED	PH	EG	NJ
B	05/2018		MOTOR CONNECTION AND CABLING REVISED; DLS ADDED	PH	EF	KOG

DESIGN SURVEY NONE | VERTICAL DATUM NONE | COORDINATE SYS NONE | ASCON SURVEY NONE | DES REF | DES CALC E FONG | DES CHD K O'GRADY | DRN P HARVEY | Q.C. CHD S MEMORY | NORTH POINT

SUBMITTED 24/07/2017 E FONG (SIGNED) SENIOR ENGINEER – ELECTRICAL
RECOMMENDED 24/07/2017 K O'GRADY (SIGNED) PRINCIPAL ENGINEER – ELECTRICAL
APPROVED 24/07/2017 N JOHNSON (SIGNED) SNR PRINCIPAL ENGINEER – ELECT

ENGINEERING

WATER CORPORATION

ELECTRICAL STANDARD SWITCHBOARD DESIGNS
SMALL PUMP STATIONS
ELECTRICAL PRIMARY DESIGN – DRAWING EXAMPLE
WASTEWATER 440A – POWER DIAGRAM

FILE | PROJECT | PLAN MN01–32–2 | CAD | ISSUE G | ORIGINAL SHEET SIZE A1 | MF

566
810

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STANDARDS\APPROVED\MN01\PREAPPROVAL\MN01–032–002–01G 17:19 12/01/2024 MEMORYSO/NB46194