

**NOTES:**

1. THIS DRAWING SUPERCEDES PART OF DRAWING 1-04WA-F-E0001.
2. THIS DRAWING CONTAINS UNVERIFIED INFORMATION FROM EXISTING DOCUMENTATION.
3. THE ENGINEER'S RESPONSIBILITY IS LIMITED TO THE ARC FLASH STUDY AND RECOMMENDED MITIGATION.

**LEGEND:**

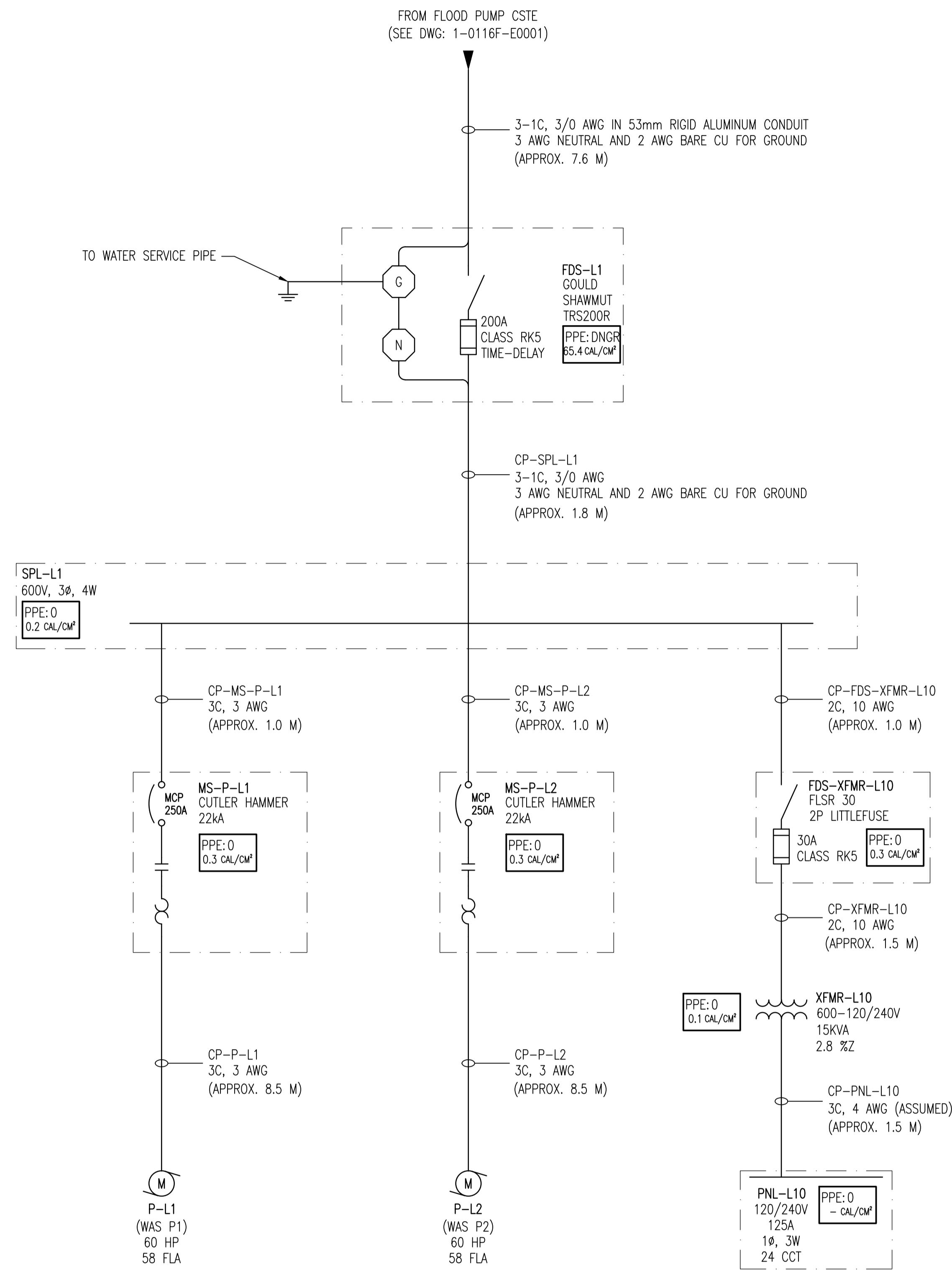
PPE: 4 ← HAZARD/RISK CATEGORY  
 29 CAL/CM² ← INCIDENT ENERGY

ARC FLASH VALUES CALCULATED ARE BASED ON THE PROTECTION SETTINGS SPECIFIED IN THIS DRAWING. ALL PHASE 1 REQUIRED WORK MUST BE COMPLETED PRIOR TO APPLYING ARC FLASH LABELS.

**PHASE 1 REQUIRED WORK:**

- (A) CHANGE CB-PNL-F1 STPU SETTING TO BE 3600A (3), GFPU SETTING TO BE 1200A (6 x 200A) AND GFTD SETTING TO BE 300 MS.
- (B) CHANGE CB-MS-P-F4 INST SETTING TO BE 2000A (5).
- (C) AFFIX NEW IDENTIFICATION LAMACOIDS TO:  
 XFMR-F1  
 PNL-F1  
 MS-P-F1  
 MS-P-F2  
 MS-P-F3  
 MS-P-F4  
 XFMR-F10  
 PNL-F10  
 DS-P-F12  
 MMS-P-F12  
 MMS-EF-F1  
 MMS-P-F11

<p><b>SNC-LAVALIN INC.</b>          148 Nature Park Way          Winnipeg, MB, Canada R3P 0X7          204-786-8080</p>				<p>ENGINEER'S SEAL</p>	
<p>DESIGNED BY: I. CHURCH                  CHECKED BY: C. REIMER                  DRAWN BY: BDK                  APPROVED BY: C. REIMER                  SCALE: NTS                  RELEASED FOR CONSTRUCTION BY: [Signature]                  DATE: 2009/06/26</p>				<p>ORIGINAL DRAWING SEALED BY: C. J. REIMER                  SNC-LAVALIN MEMBER #21968                  2011/05/18 REV. 00</p>	
<p>ISSUED FOR CITY USE 2011/05/17 TMC CJR</p>				<p>CITY DRAWING NUMBER: 1-0116F-E0001</p>	
<p>NO. REVISIONS DATE DESIGN CHECK</p>				<p>SHEET 001 REV. 00 SIZE A1</p>	



**NOTES:**

1. THIS DRAWING SUPERCEDES PART OF DRAWING 1-04WA-F-E0001.
2. THIS DRAWING CONTAINS UNVERIFIED INFORMATION FROM EXISTING DOCUMENTATION.
3. THE ENGINEER'S RESPONSIBILITY IS LIMITED TO THE ARC FLASH STUDY AND RECOMMENDED MITIGATION.

**LEGEND:**

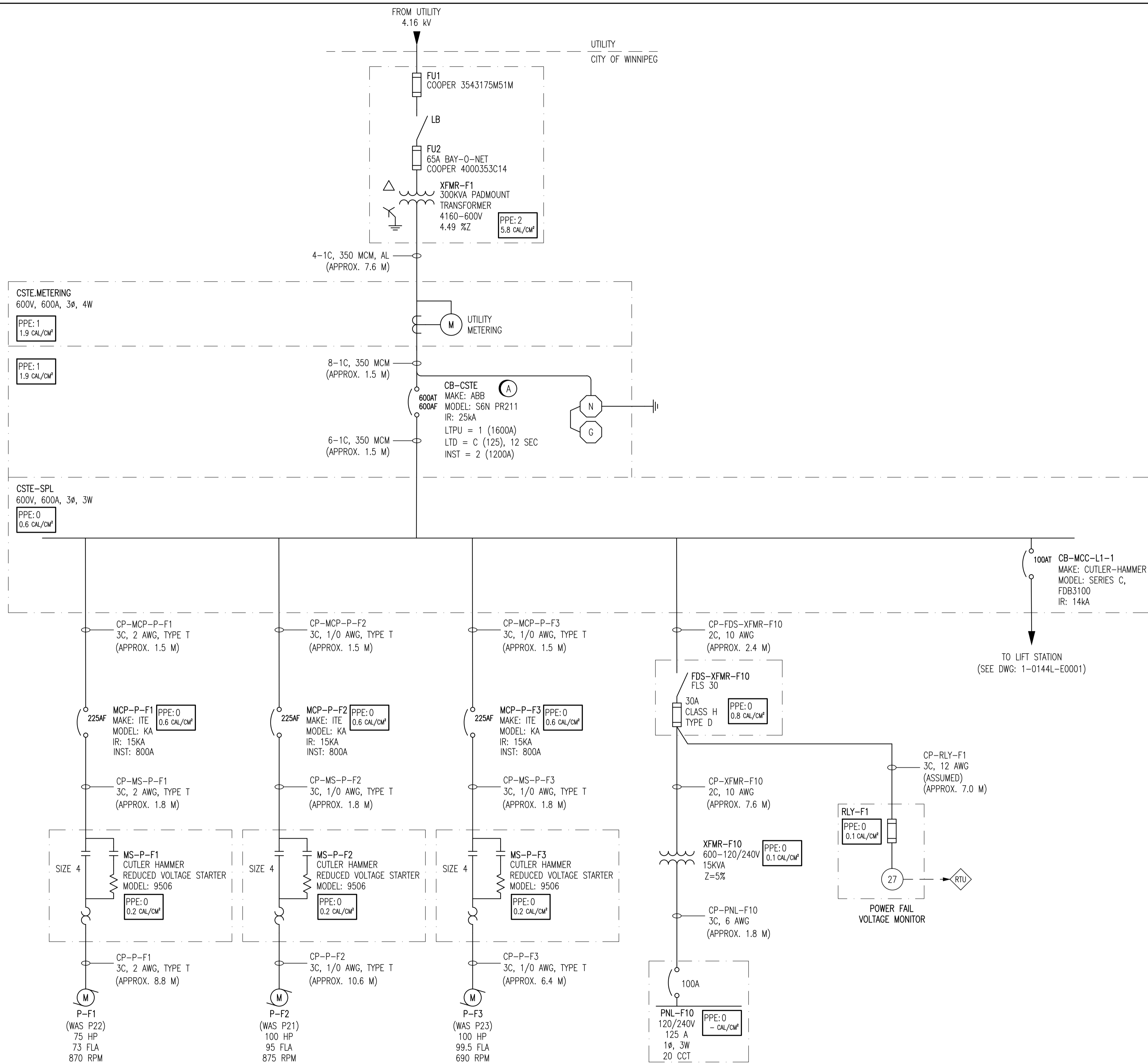
PPE: 4 ← HAZARD/RISK CATEGORY  
 29 CAL/CM² ← INCIDENT ENERGY

ARC FLASH VALUES CALCULATED ARE BASED ON THE PROTECTION SETTINGS SPECIFIED IN THIS DRAWING. ALL PHASE 1 REQUIRED WORK MUST BE COMPLETED PRIOR TO APPLYING ARC FLASH LABELS.

**PHASE 1 REQUIRED WORK:**

- (A) AFFIX NEW IDENTIFICATION LAMACOIDS TO:
- FDS-L1
  - SPL-L1
  - MS-P-L1
  - MS-P-L2
  - FDS-XFMR-L10
  - XFMR-L10
  - PNL-L10

				<p>SNC-LAVALIN INC. 148 Nature Park Way Winnipeg, MB, Canada R3P 0X7 204-786-8080</p>		ENGINEER'S SEAL	
				DESIGNED BY: I. CHURCH CHECKED BY: C. REIMER DRAWN BY: S. FUNK APPROVED BY: C. REIMER SCALE: NTS RELEASED FOR CONSTRUCTION BY: DATE: 2010/10/21		ORIGINAL DRAWING SEALED BY: C. J. REIMER SNC-LAVALIN MEMBER # 21968 2011/05/18 REV. 00	
00 ISSUED FOR CITY USE 2011/05/17 TMC CJR				CONSULTANT NO.:		THE CITY OF WINNIPEG WATER AND WASTE DEPARTMENT AUBREY WASTEWATER LIFT STATION ARC FLASH STUDY SINGLE LINE DIAGRAM	
NO. REVISIONS DATE DESIGN CHECK				CITY DRAWING NUMBER 1-0116L-E0001		SHEET REV. SIZE 001 00 A1	



**PHASE 1 REQUIRED WORK:**

- (A) ADJUST THE CB-CSTE INSTANTANEOUS SETTING TO 2 (1200A) AND THE LONG TIME DELAY SETTING TO C (125).
- (B) AFFIX IDENTIFICATION LAMACOIDS TO:
  - XFMR-F1
  - MCP-P-F1
  - MCP-P-F2
  - MCP-P-F3
  - MS-P-F1
  - MS-P-F2
  - MS-P-F3
  - FDS-XFMR-F10
  - XFMR-F10
  - PNL-F10

**NOTES:**

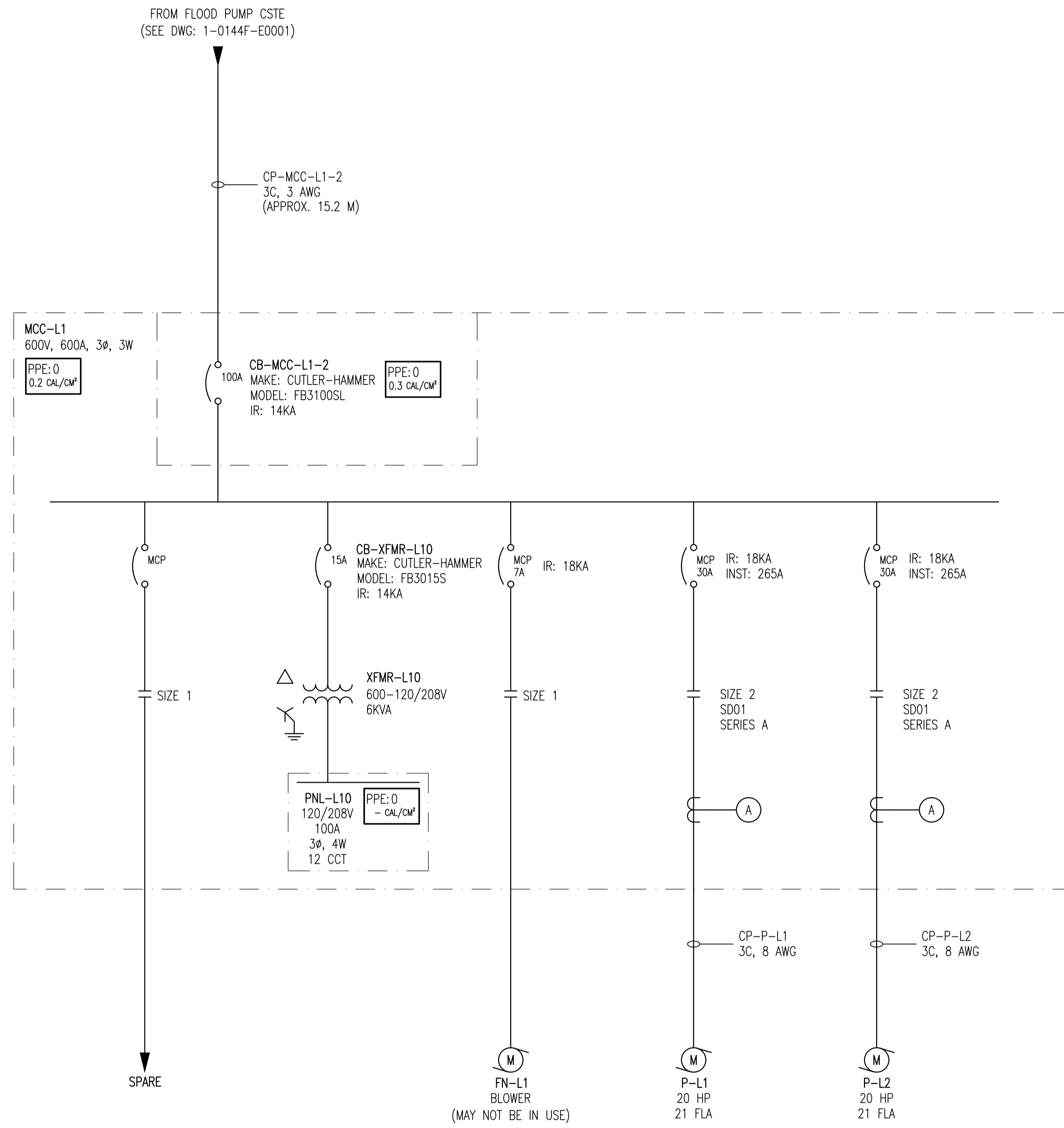
1. THIS DRAWING SUPERCEDES KGS DRAWING (DOES NOT HAVE A NUMBER).
2. THIS DRAWING CONTAINS UNVERIFIED INFORMATION FROM EXISTING DOCUMENTATION.
3. THE ENGINEER'S RESPONSIBILITY IS LIMITED TO THE ARC FLASH STUDY AND RECOMMENDED MITIGATION.

**LEGEND:**

**PPE: 4** - HAZARD/RISK CATEGORY  
**29 CAL/CM<sup>2</sup>** - INCIDENT ENERGY

ARC FLASH VALUES CALCULATED ARE BASED ON THE PROTECTION SETTINGS SPECIFIED IN THIS DRAWING. ALL PHASE 1 REQUIRED WORK MUST BE COMPLETED PRIOR TO APPLYING ARC FLASH LABELS.

<p><b>SNC-LAVALIN INC.</b>                  148 Nature Park Way                  Winnipeg, MB, Canada R3P 0X7                  204-786-8080</p>				ENGINEER'S SEAL	
				ORIGINAL DRAWING SEALED BY: C. J. REIMER SNC-LAVALIN MEMBER # 21968 2011/05/19 REV. 00	
DESIGNED BY: A. SMALLUCK		CHECKED BY: C. REIMER		THE CITY OF WINNIPEG WATER AND WASTE DEPARTMENT HART FLOOD PUMPING STATION ARC FLASH STUDY SINGLE LINE DIAGRAM	
DRAWN BY: S. COATES		APPROVED BY: C. REIMER			
SCALE: NTS		RELEASED FOR CONSTRUCTION BY: DATE:		CITY DRAWING NUMBER <b>1-0144F-E0001</b>	
DATE: 2009/09/14		DATE:			
CONSULTANT NO.:		SHEET NO.: 001		REV.: 00	
NO. REVISIONS		DATE		SIZE: A1	



**PHASE 1 REQUIRED WORK:**

- (A) AFFIX NEW IDENTIFICATION LAMACOIDS TO:  
 MCC-L1  
 XFMR-L10  
 PNL-L10

**NOTES:**

1. THIS DRAWING SUPERCEDES KGS DRAWING (DOES NOT HAVE A NUMBER).
2. THIS DRAWING CONTAINS UNVERIFIED INFORMATION FROM EXISTING DOCUMENTATION.
3. THE ENGINEER'S RESPONSIBILITY IS LIMITED TO THE ARC FLASH STUDY AND RECOMMENDED MITIGATION.

**LEGEND:**

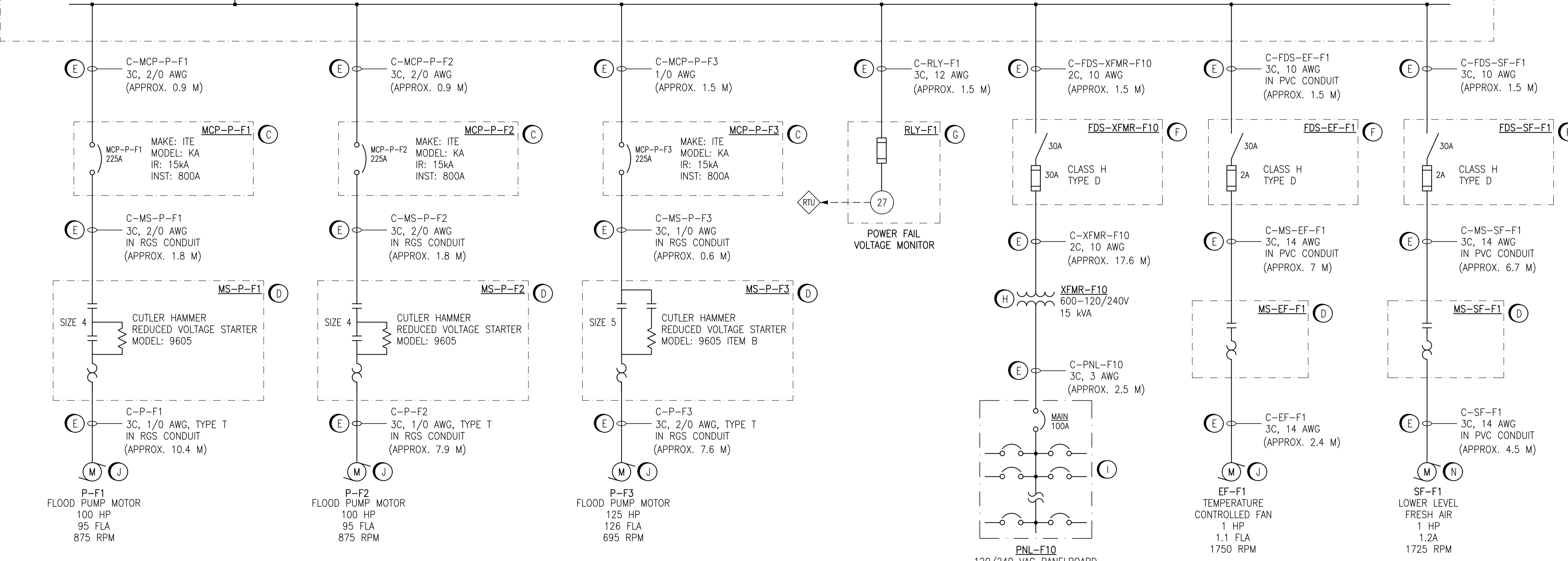
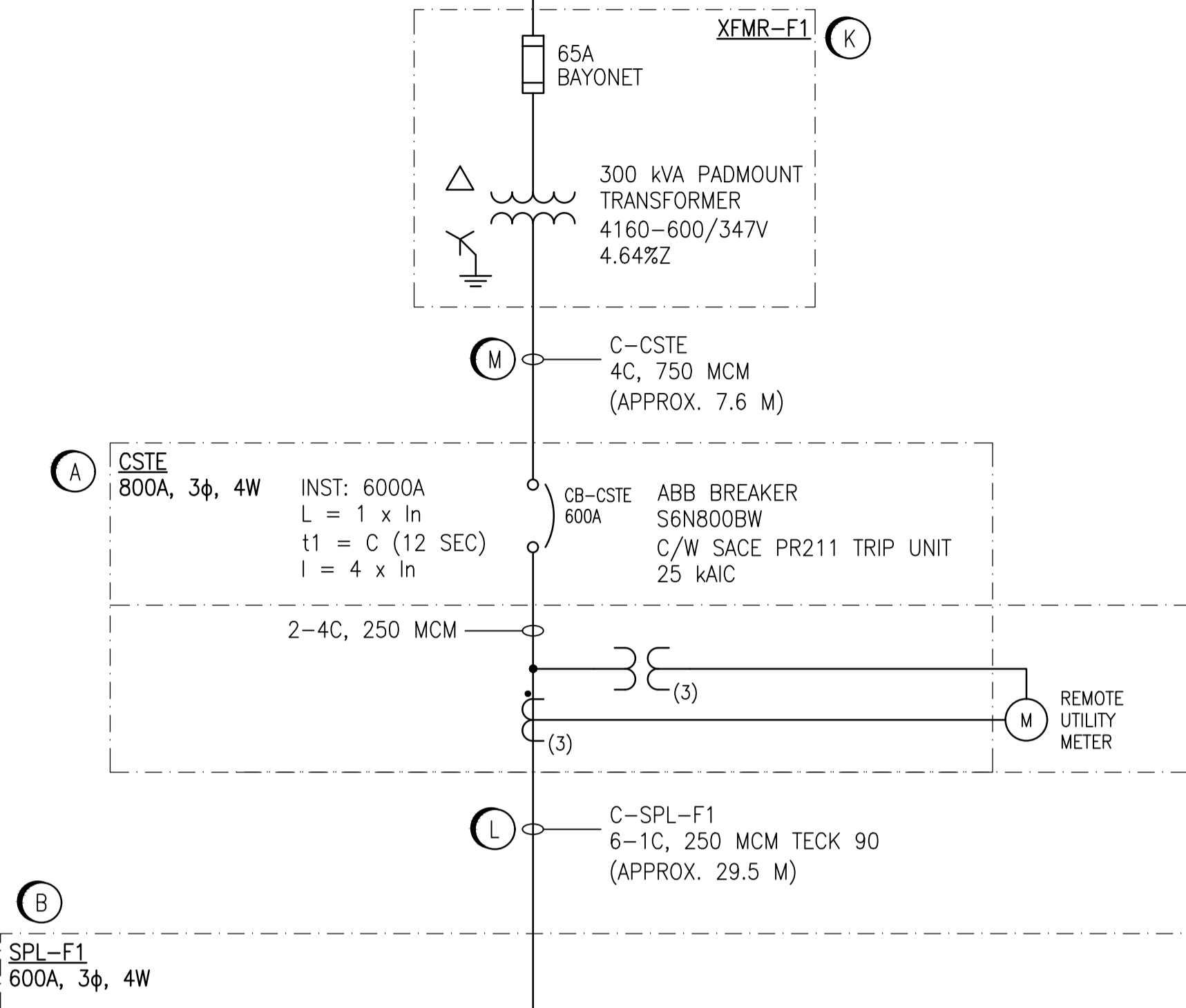
PPE: 4 - HAZARD/RISK CATEGORY  
 29 cal/cm² - INCIDENT ENERGY

ARC FLASH VALUES CALCULATED ARE BASED ON THE PROTECTION SETTINGS SPECIFIED IN THIS DRAWING. ALL PHASE 1 REQUIRED WORK MUST BE COMPLETED PRIOR TO APPLYING ARC FLASH LABELS.

	 <b>SNC-LAVALIN INC.</b> 148 Nature Park Way Winnipeg, MB, Canada R3P 0X7 204-786-8080	ENGINEER'S SEAL	 <b>THE CITY OF WINNIPEG</b> WATER AND WASTE DEPARTMENT
	DESIGNED BY: A. SMALLUCK DRAWN BY: S. COATES SCALE: NTS DATE: 2009/09/14	CHECKED BY: C. REIMER APPROVED BY: C. REIMER RELEASED FOR CONSTRUCTION BY: C. REIMER DATE:	ORIGINAL DRAWING SEALED BY: C. J. REIMER SNC-LAVALIN MEMBER # 21968 2011/05/19 REV. 00
00 ISSUED FOR CITY USE 2011/05/19 APS CJR	CONSULTANT NO.:	CITY DRAWING NUMBER <b>1-0144L-E0001</b>	SHEET REV. SIZE 001 00 A1

FROM MANITOBA HYDRO  
4160V SUPPLY

UTILITY  
CITY OF WINNIPEG



- SPECIFIC NOTES:**
- (A) EXISTING CUSTOMER SERVICE TERMINATION ENCLOSURE (CSTE) INCLUDING REMOTE METER ENCLOSURE REMAINED.
  - (B) PROVIDED DEMOLITION OF EXISTING SPLITTER AND ALL ASSOCIATED SUPPORTS ALONG WITH ALL DOWNSTREAM CABLING AND CONDUIT. CONSULTED WITH THE CITY OF WINNIPEG IF ANY EQUIPMENT SHOULD BE KEPT, OTHERWISE ALL EQUIPMENT WAS DISPOSED.
  - (C) PROVIDED DEMOLITION OF EXISTING FLOOD PUMP CIRCUIT BREAKERS AND ALL ASSOCIATED CABLING AND CONDUIT. CONSULTED WITH THE CITY OF WINNIPEG IF ANY EQUIPMENT SHOULD BE KEPT, OTHERWISE ALL EQUIPMENT WAS DISPOSED.
  - (D) PROVIDED DEMOLITION OF EXISTING MOTOR STARTERS AND ALL ASSOCIATED CABLING AND CONDUIT. CONSULTED WITH THE CITY OF WINNIPEG IF ANY EQUIPMENT SHOULD BE KEPT, OTHERWISE ALL EQUIPMENT WAS DISPOSED.
  - (E) PROVIDED DEMOLITION OF ALL EXISTING CABLING AND ASSOCIATED CONDUIT.
  - (F) PROVIDED DEMOLITION OF EXISTING DISCONNECT SWITCHES AND ALL ASSOCIATED CABLING AND CONDUIT. CONSULTED WITH THE CITY OF WINNIPEG IF ANY SWITCHES SHOULD BE KEPT, OTHERWISE SWITCHES WERE DISPOSED.
  - (G) PROVIDED DEMOLITION OF EXISTING POWER FAIL VOLTAGE MONITOR PANEL AND ALL ASSOCIATED CABLING AND CONDUIT. CONSULTED WITH THE CITY OF WINNIPEG IF ANY EQUIPMENT SHOULD BE KEPT, OTHERWISE ALL EQUIPMENT WAS DISPOSED.
  - (H) PROVIDED DEMOLITION OF EXISTING 600-120/240V TRANSFORMER AND ALL ASSOCIATED CABLING AND CONDUIT.
  - (I) PROVIDED DEMOLITION OF EXISTING 120/240V PANELBOARD AND ALL DOWNSTREAM LOADS INCLUDING ASSOCIATED CABLING AND CONDUIT.
  - (J) EXISTING MOTORS REMAINED.
  - (K) EXISTING 300kVA TRANSFORMER XFMR-F1 REMAINED.
  - (L) EXISTING CABLING WAS REUSED AND REROUTED FOR USE. DISCONNECTED CABLING AT SPLITTER SPL-F1. TEMPORARILY PULLED CABLING BACK TO STATION ENTRANCE DOOR. PROVIDED DEMOLITION OF CABLE SUPPORTS AND SPACER BLOCKS.
  - (M) EXISTING CABLE REMAINED.
  - (N) PROVIDED DEMOLITION OF EXISTING FAN.

- GENERAL NOTES:**
- THIS DRAWING SUPERCEDES EXISTING CITY OF WINNIPEG DRAWING 1-0173F-E0001-001.
  - THE INFORMATION ON THIS DRAWING WAS BASED ON INFORMATION PROVIDED ON EXISTING DRAWINGS AND MAY NOT HAVE BEEN VERIFIED.
  - THE EXTENT OF THE DESIGN INCLUDED THE DEMOLITION OF THE EQUIPMENT AS SHOWN.

- PRE-DEMOLITION NOTES:**
- COORDINATED WITH MANITOBA HYDRO AND THE CITY OF WINNIPEG EXAMINATION DEPARTMENT TO ARRANGE FOR A SERVICE UPGRADE.
  - NO TEMPORARY POWER FROM MANITOBA HYDRO WAS REQUIRED FOR THE FLOOD PUMPS WHILE DEMOLITION/CONSTRUCTION WAS UNDERWAY. A TEMPORARY GENERATOR WAS NEEDED TO BE PROVIDED FOR LOADS ASSOCIATED WITH HEATING, LIGHTING, ETC DURING DEMOLITION AND NEW CONSTRUCTION. OTHERWISE THE CONTRACTOR NEEDED TO PROVIDE A TEMPORARY SERVICE AND CONSULT WITH MANITOBA HYDRO. THE STATION CONTAINS DOMESTIC WATER PIPING AND ASSOCIATED HEAT TRACING. IT WAS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THE DOMESTIC WATER PIPING DID NOT FREEZE DURING CONSTRUCTION WORK. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGES RESULTING FROM DOMESTIC WATER PIPING FREEZING.

**RECORD DRAWING**  
 CONTRACTOR: TROTTER & MORTON IND.  
 SUBSTANTIAL PERFORMANCE: 2021/06/25  
 TOTAL PERFORMANCE: 2021/09/17

1-0173F-D0002	DRAWING INDEX
1-0173F-E0004	ELECTRICAL PLAN LAYOUT WET WELL AND DRY WELL DEMOLITION
1-0173F-E0003	PLAN LAYOUT MOTOR ROOM AND COMMUNUTOR CHAMBER DEMOLITION
DRAWING NUMBER	REFERENCE DRAWINGS



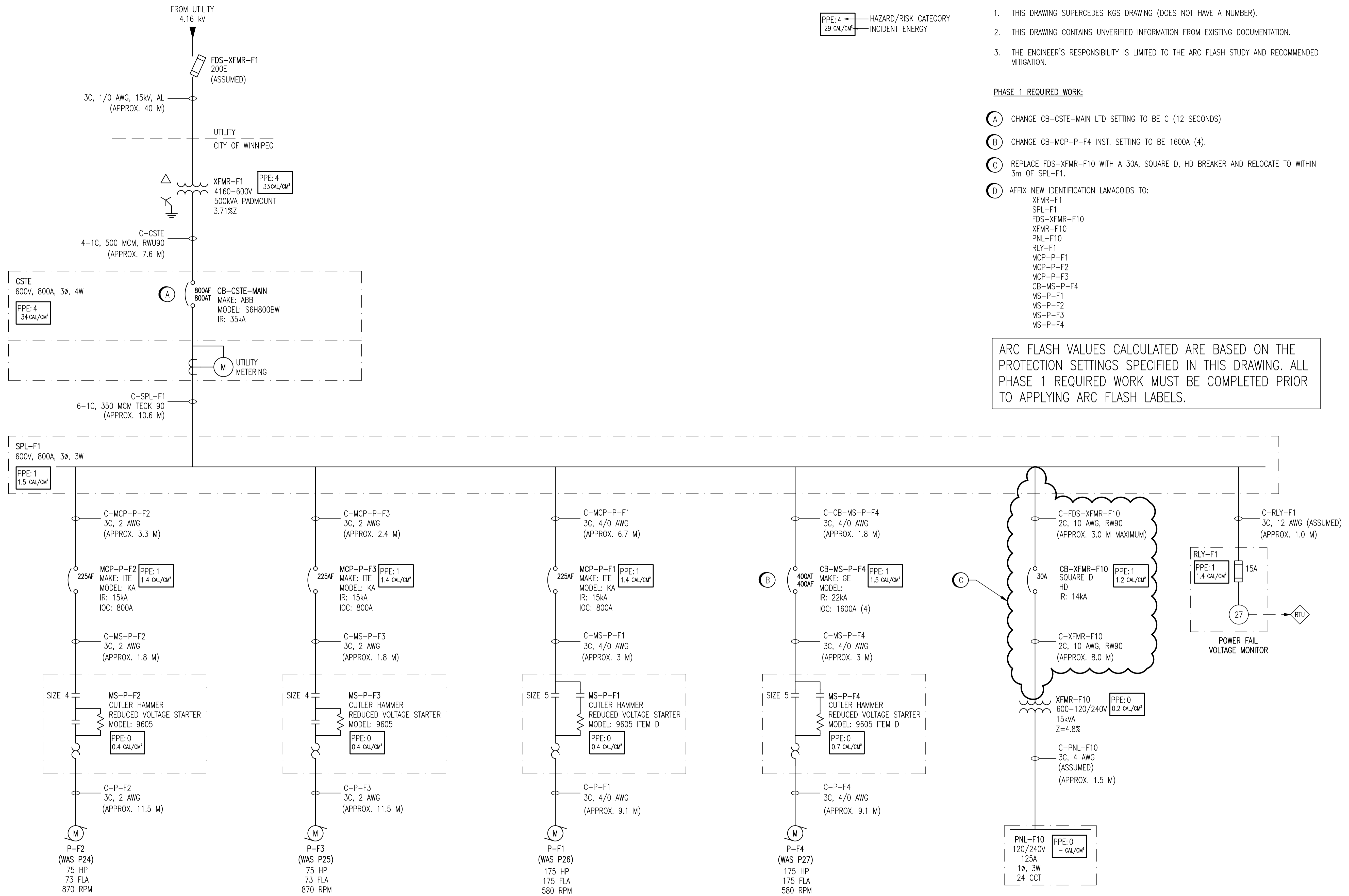
		<b>SNC-LAVALIN INC.</b> 148 Nature Park Way Winnipeg, MB, Canada R3P 0X7 204-786-8080	
DESIGNED BY:	K. SAPIAK	CHECKED BY:	B. CLEVEN
DRAWN BY:	K. SAPIAK	APPROVED BY:	B. CLEVEN
SCALE:	N.T.S.	ISSUED FOR CONSTRUCTION BY:	K. ZUREK
DATE:	2020/03/12	DATE:	2020/08/19
NO.	REVISIONS	DATE	DESIGN CHECK
01	RECORD DRAWING	2024/03/25	BC
00	ISSUED FOR CONSTRUCTION	2020/08/19	KS BC

ENGINEER'S SEAL

**THE CITY OF WINNIPEG**  
 WATER AND WASTE DEPARTMENT

POLSON FLOOD PUMPING STATION  
 2020 UPGRADES  
 ELECTRICAL SINGLE LINE DIAGRAM  
 DEMOLITION

CITY DRAWING NUMBER	SHEET	REV.	SIZE
1-0173F-E0002	001	01	A1



**LEGEND:**

PPE: 4	HAZARD/RISK CATEGORY
29 CAL/CM <sup>2</sup>	INCIDENT ENERGY

- NOTES:**
- THIS DRAWING SUPERCEDES KGS DRAWING (DOES NOT HAVE A NUMBER).
  - THIS DRAWING CONTAINS UNVERIFIED INFORMATION FROM EXISTING DOCUMENTATION.
  - THE ENGINEER'S RESPONSIBILITY IS LIMITED TO THE ARC FLASH STUDY AND RECOMMENDED MITIGATION.

- PHASE 1 REQUIRED WORK:**
- (A) CHANGE CB-CSTE-MAIN LTD SETTING TO BE C (12 SECONDS)
  - (B) CHANGE CB-MCP-P-F4 INST. SETTING TO BE 1600A (4).
  - (C) REPLACE FDS-XFMR-F10 WITH A 30A, SQUARE D, HD BREAKER AND RELOCATE TO WITHIN 3m OF SPL-F1.
  - (D) AFFIX NEW IDENTIFICATION LAMACOIDS TO:
    - XFMR-F1
    - SPL-F1
    - FDS-XFMR-F10
    - XFMR-F10
    - PNL-F10
    - RLY-F1
    - MCP-P-F1
    - MCP-P-F2
    - MCP-P-F3
    - CB-MS-P-F4
    - MS-P-F1
    - MS-P-F2
    - MS-P-F3
    - MS-P-F4

ARC FLASH VALUES CALCULATED ARE BASED ON THE PROTECTION SETTINGS SPECIFIED IN THIS DRAWING. ALL PHASE 1 REQUIRED WORK MUST BE COMPLETED PRIOR TO APPLYING ARC FLASH LABELS.

<p><b>SNC-LAVALIN INC.</b>                  148 Nature Park Way                  Winnipeg, MB, Canada R3P 0X7                  204-786-8080</p>				<p>ENGINEER'S SEAL</p>	
<p>DESIGNED BY: I. CHURCH</p>		<p>CHECKED BY: C. REIMER</p>		<p>ORIGINAL DRAWING                  SEALED BY:                  C. J. REIMER                  SNC-LAVALIN                  MEMBER # 21968                  2011/05/18                  REV. 00</p>	
<p>DRAWN BY: D. RAMJEET</p>		<p>APPROVED BY: C. REIMER</p>			
<p>SCALE: NTS</p>		<p>RELEASED FOR CONSTRUCTION BY: [Signature]</p>			
<p>DATE: 2009/09/03</p>		<p>DATE:</p>		<p>CITY DRAWING NUMBER                  1-0185F-E0001</p>	
<p>ISSUED FOR CITY USE</p>		<p>2011/05/16</p>		<p>SHEET 001</p>	
<p>NO. REVISIONS</p>		<p>DATE DESIGN CHECK</p>		<p>REV. 00</p>	
<p>CONSULTANT NO.:</p>				<p>SIZE A1</p>	