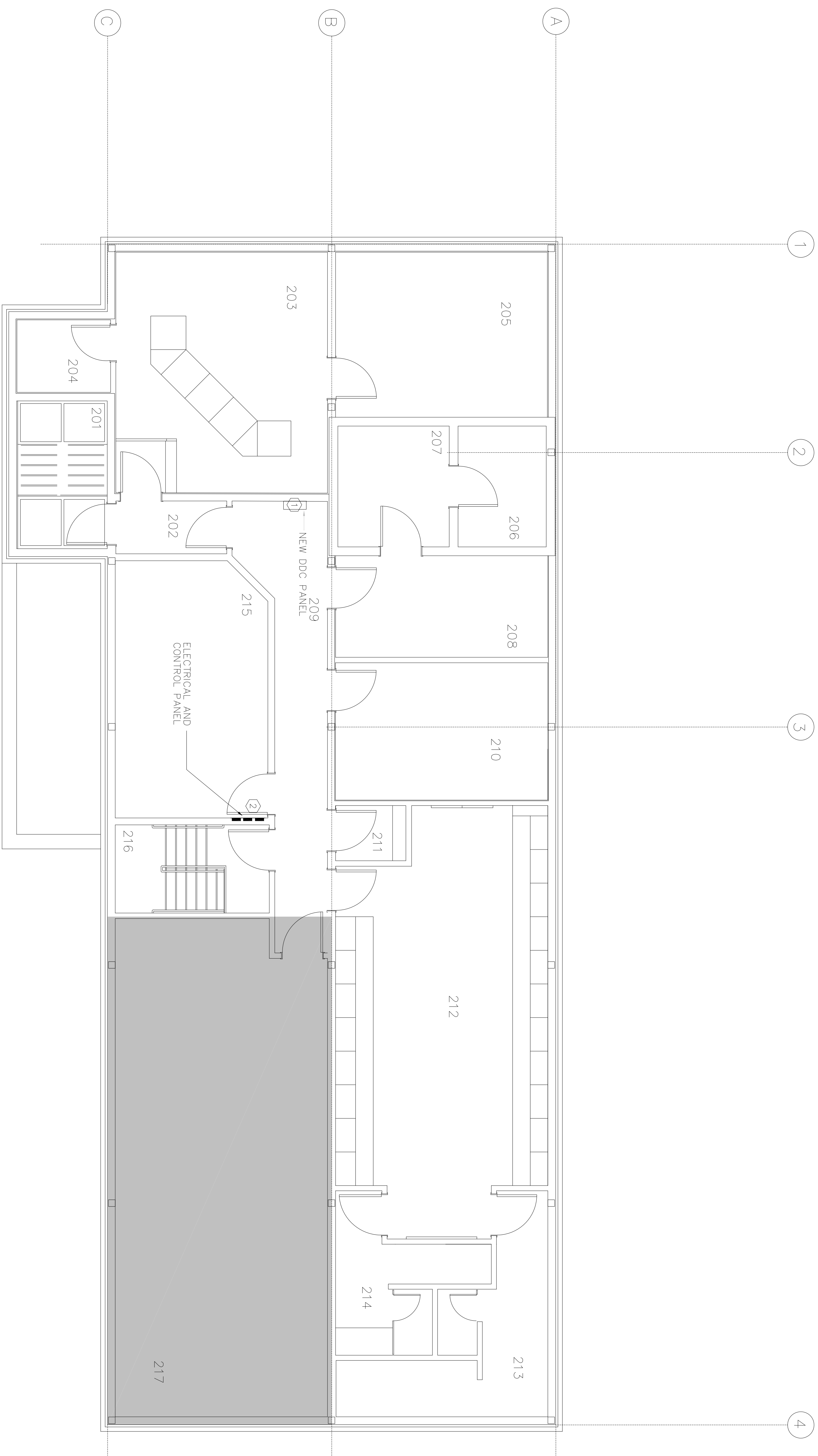


Stantec project number  
114725629

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|          |                       |          |
| 4        | ISSUED FOR TENDER     | 03/03/20 |
| 3        | ISSUED FOR PRE-TENDER | 06/22/20 |
| 2        | 99% QA/QC REVIEW      | 03/18/20 |
| 1        | 50% REVIEW            | 02/03/20 |
| 0        | 50% DESIGN PACKAGE    | 02/03/20 |
| revision |                       | date     |

|   |     |
|---|-----|
| EDMONTON, ALBERTA   |     |
| MAXIMUM SECURITY<br>INSTITUTION<br>DISSOCIATION & SEGREGATION<br>AND GATE HOUSE<br>HEATING CONTROLS |     |
| drawing   | des |
| GATEHOUSE LEVEL 2 HEATING<br>PLAN   |     |

|                |                |
|----------------|----------------|
| designed by    | conçu par      |
| drawn by       | dessiné par    |
| approved by    | approuvé par   |
| project number | num. du projet |
| drawing number | num. du dessin |



KEYNOTES:

1 LOCATION OF NEW DDC CONTROL PANEL(S).

2. FROM ELECTRICAL PANEL IN MECHANICAL ROOM PROVIDE FOUR (4) 120 VOLT 15 AMP CIRCUITS TO NEW DDC PANEL AND TIE-IN DDC PANEL. COORDINATE WORK WITH MECHANICAL SUB-TRADE. PROVIDE SEPARATE NEUTRAL FOR EACH CIRCUIT. ALL WIRING TO BE IN EMT CONDUIT. CONDUIT WITHIN THE MECHANICAL ROOM TO BE SURFACE MOUNTED. CONDUIT IN CORRIDOR TO BE CONCEALED IN THE CEILING SPACE.

GENERAL NOTES:

1. CONTRACTOR TO CONFIRM LOADING OF PANELBOARD DURING NORMAL OPERATING HOURS TO ENSURE PANELBOARD IS NOT OVERLOADED. ENSURE LOAD BALANCE ON PANELBOARD.
2. CONTRACTOR TO TEST GROUNDING AT PANELBOARD TO ENSURE GROUND IS ACCEPTABLE. REPORT TO THE ENGINEER TECH FINDINGS.

## Southwire Technical Support Voltage Drop Calculator

Download the App:

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 Android

## Results

1 conductor per phase utilizing a #4 Copper conductor will limit the voltage drop to 0.27% or less when supplying 2,000 amps for 30 feet on a 120 volt system.

**For Engineering Information Only:**

15.0 Amps Rated ampacity of selected conductor

2.9495 Ohms Resistance (Ohms per 1000 feet)

0.058 Ohms Reactance (Ohms per 1000 feet)

3.5999999999999996 volts maximum allowable voltage drop at 3%

0.322. Actual vol

\*Note to User: All ampacity values are taken from the section of 310.15 of the NEC. The conductor characteristics are taken from Table 3 of the NEC. The calculations used to determine the recommended conductor sizes for branch circuits are based on 60°C ampacity ratings for circuits rated 100 amps or less or marked for use with 144-MVA #1 AWG. Circuits rated over 100 amps or marked for conductors larger than #1 AWG are determined using 75°C ampacity ratings. Calculations to determine service and feeder conductor sizes are based on overcurrent device ampacity rather than actual expected loads which are conservative and may yield oversized conductors. No calculations take into account temperature correction factors or conductor derating.

This voltage drop calculator is applicable only to NEC applications. It does not optimize conductor sizes for several different loads at various points in a circuit. The total combined load and length of the circuit must be used. Consult with an engineer if your application requires more complex engineering calculations.



**PERMIT TO PRACTICE**  
**STANTEC CONSULTING LTD.**

Signature \_\_\_\_\_  
Date MARCH 3, 2017

**PERMIT NUMBER:** P 0258  
The Association of Professional  
Engineers and Geoscientists of Alberta