

0	2016/08/18	ISSUED FOR CONSTRUCTION
#	date	issue notes

professional seals



project information

SEVEN OAKS POOL

444 Adsum Drive  
Winnipeg, MB  
Canada

client

drawing information

**ELECTRICAL SINGLE LINE DIAGRAM & LOAD CALCULATIONS**

drawn by: GCN

approved by:

scale: AS NOTED

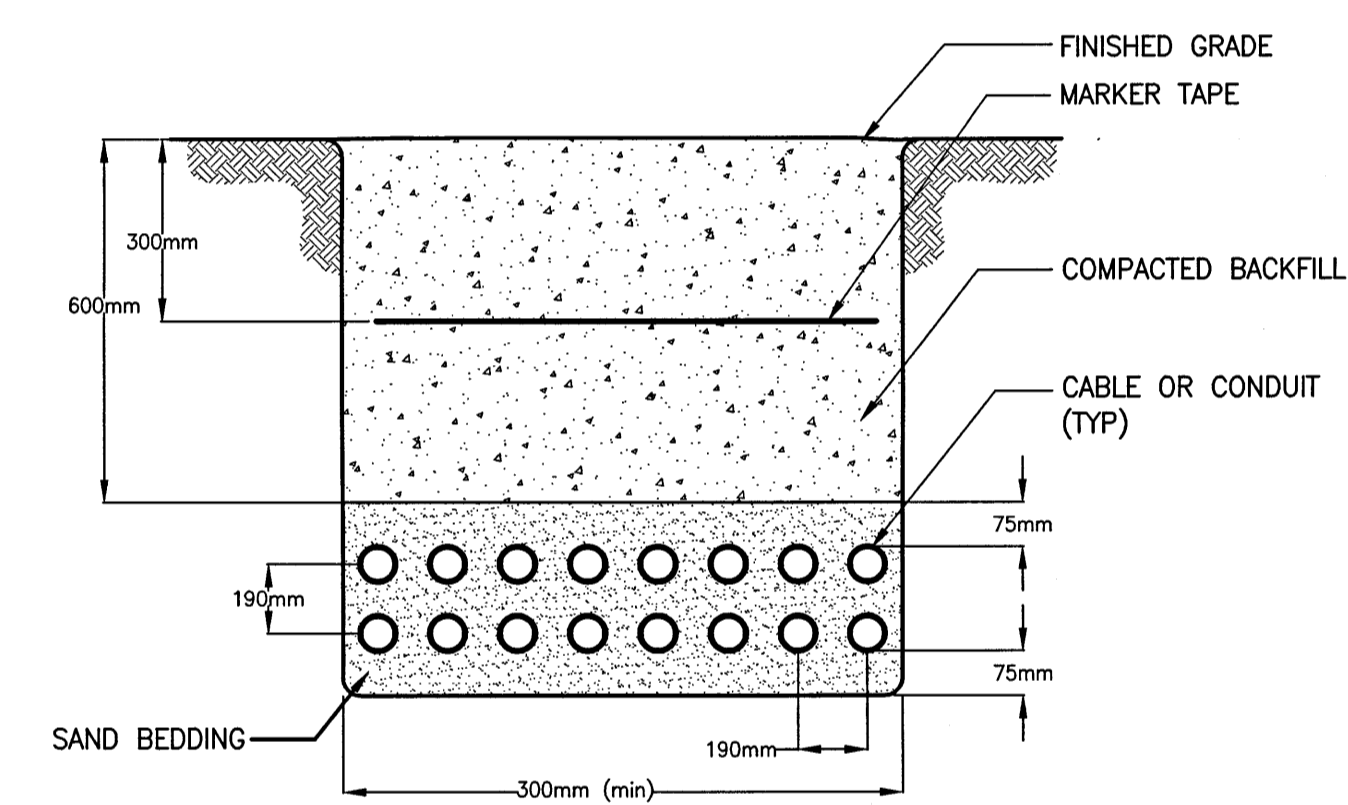
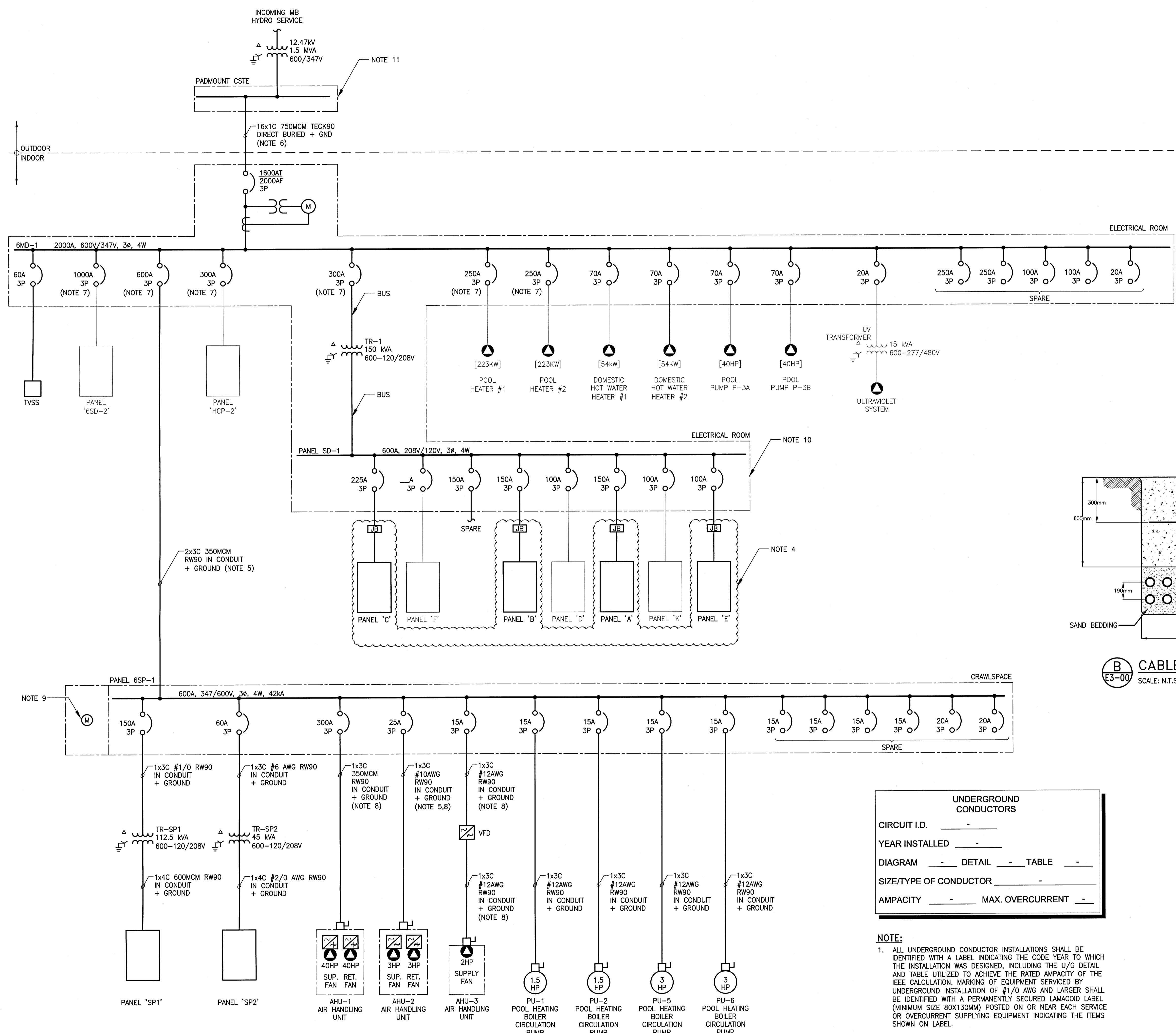
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rev. #: R-0

**SEVEN OAKS POOL RENOVATION & ADDITION**  
BID OPPORTUNITY NO. 645-2016

- NOTES:**
- GREY LINE WEIGHT DENOTES EXISTING.
  - EXISTING LOAD INFORMATION WAS PROVIDED BY HYDRO UP TO JUNE OF 2014. THE VALUE SHOWN WAS DETERMINED FROM THE PEAK VALUE WITHIN A FIVE YEAR RANGE.
  - THE ELECTRICAL DISTRIBUTION EQUIPMENT SUPPLIER SHALL PROVIDE AN ARC FLASH STUDY AND UV/WATER RESISTANT VINYL LABELS FOR ALL NEW EQUIPMENT. CONTRACTOR SHALL COORDINATE INSTALLED CABLE LENGTHS AND SIZES WITH THE VENDOR.
  - PANELS A,B,C, AND E SHALL BE REPLACED WITH NEW PANELS TO MATCH EXISTING. NEW PANELS SHALL BE RELOCATED IN THE MEZZANINE. EXTEND ALL EXISTING CIRCUITS TO NEW PANEL LOCATION.
  - INDICATED RUNS SHALL HAVE 100% SPACING BETWEEN CONDUITS. CONTRACTOR SHALL MOUNT NEW CONDUITS TO BASEMENT CEILING AS REQUIRED C/W A UNISTRUT AND P-CLAMO CONSTRUCTION. ALL STRUTS SHALL BE SUPPORTED TO THE CONCRETE DIRECTLY OR IN A TRAPEZE METHOD.
  - CABLE SIZED ACCORDING TO CEC TABLE D8A. INSTALL CABLES IN ACCORDANCE WITH DETAIL 5 OF DIAGRAM D8.
  - PROVIDE INFORMATION METERING ON THE SIX (6) BRANCHES INDICATED.
  - INDICATED CABLES SHALL BE C/W 1000V RATED INSULATION.
  - PROVIDE AND INSTALL AN ELKOR WATTS ON UNIVERSAL POWER TRANSDUCER COMPLETE WITH REMOTE DISPLAY MODULE.
  - PANEL SD-1 SHALL BE A 30 CIRCUIT PANEL.
  - PROVIDE AND INSTALL A NEW OUTDOOR PAD MOUNT CSTE.
  - ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR TRENCHING AND RETURNING SITE TO EXISTING CONDITIONS.



**B CABLE TRENCH DETAIL**  
SCALE: N.T.S. (NOTE 12)

<b>UNDERGROUND CONDUCTORS</b>
CIRCUIT I.D. _____
YEAR INSTALLED _____
DIAGRAM _____ DETAIL _____ TABLE _____
SIZE/TYPE OF CONDUCTOR _____
AMPACITY _____ MAX. OVERCURRENT _____

**NOTE:**

- ALL UNDERGROUND CONDUCTOR INSTALLATIONS SHALL BE IDENTIFIED WITH A LABEL INDICATING THE CODE YEAR TO WHICH THE INSTALLATION WAS DESIGNED, INCLUDING THE U/G DETAIL AND TABLE UTILIZED TO ACHIEVE THE RATED AMPACITY OF THE IEEE CALCULATION. MARKING OF EQUIPMENT SERVICED BY UNDERGROUND INSTALLATION OF #1/0 AWG AND LARGER SHALL BE IDENTIFIED WITH A PERMANENTLY SECURED LAMACOID LABEL (MINIMUM SIZE 80X130MM) POSTED ON OR NEAR EACH SERVICE OR OVERCURRENT SUPPLYING EQUIPMENT INDICATING THE ITEMS SHOWN ON LABEL.

**A BURIED CABLE LAMACOID LABEL**  
SCALE: N.T.S.

LOAD CALCULATION	
EXISTING FACILITY DEMAND LOAD	= 770kVA
ESTIMATED NEW ADDITION LOAD	= 304kVA
FUTURE (25%)	= 268kVA
<b>ESTIMATED TOTAL LOAD</b>	<b>= 1342kVA</b>

FAULT CURRENT CALCULATION	
* 1500kVA TRANSFORMER: Z = 4%	
* 150kVA TRANSFORMER: Z = 1.8%	
208V SYSTEM SHORT CIRCUIT AMPACITY	$\frac{1}{\sqrt{3} \left( \frac{1.8\%}{150kVA} \right)} 208 = 23.13kA$
600V SYSTEM SHORT CIRCUIT AMPACITY	$\frac{1}{\sqrt{3} \left( \frac{4\%}{1500kVA} \right)} 600 = 36.10kA$
	PROVIDE 18kA MINIMUM
	PROVIDE 42kA MINIMUM

\* THIS IMPEDANCE VALUE IS BASED ON THE VALUE PROVIDED UNDER THE MANITOBA HYDRO ELECTRICAL CODE, 11th EDITION.  
\* CONTRACTOR AND MANUFACTURER TO ENSURE ALL FUSES AND BREAKERS ARE AN APPROVED CSA SERIES TESTED COMBINATION.

**1 SINGLE LINE DIAGRAM - NEW**  
SCALE: N.T.S.

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