

ABBREVIATIONS	SINGLE LINE	GROUNDING
<p>AFF ABOVE FINISHED FLOOR                      AFG ABOVE FINISHED GRADE                      AL ALUMINUM                      CCT CIRCUIT                      CP CONTROL PANEL                      CU COPPER                      C/W COMPLETE WITH                      CSTE CUSTOMER SERVICE TERMINATION ENCLOSURE                      FVNR FULL VOLTAGE NON REVERSING                      GFI GROUND FAULT INTERRUPTER                      GND GROUND                      LAH HIGH LEVEL ALARM                      LSH HIGH LEVEL SWITCH                      O/C OVER COUNTER                      O/H OVERHEAD                      MMS MANUAL MOTOR STARTER                      PEC PHOTO ELECTRIC CONTROL                      PNL PANEL                      U/C UNDER COUNTER                      U/G UNDERGROUND                      VFD VARIABLE FREQUENCY DRIVE                      XFMR TRANSFORMER</p>	<p> UTILITY METER</p> <p> CIRCUIT BREAKER                      XX = CURRENT RATING                      Y = 1: SINGLE POLE                      Y = 2: DUAL POLE                      Y = 3: TRIPLE POLE</p> <p> DISTRIBUTION TRANSFORMER: DELTA-WYE</p>	<p> GROUND LOOP #4/0 CU</p> <p> C TAB CONNECTOR</p> <p> LOOP CONNECTOR</p> <p> GROUND ROD</p> <p> INSPECTION CHAMBER</p> <p> STEEL COLUMN GROUND CONNECTOR</p> <p> #4/0 DOWN CONDUCTOR IN CONDUIT</p> <p> COPPER GROUND PLATE</p> <p> PIGTAIL FOR FUTURE CONNECTION</p> <p> ISOLATED GROUND</p>
TAGGING	LINE SYMBOLS	
<p>SYSTEM CODES:                      90 POWER                      91 CONTROLS/NETWORKING                      92 FIRE ALARM                      93 LIFE SAFETY</p> <p>VOLTAGE:                      0 SYSTEMS/NON-DISTRIBUTION                      1 120/208                      2 UNUSED                      3 UNUSED                      4 480V                      5 UTILITY                      6 600V</p> <p>POSITION : AAA-99-6 88</p> <p>DEVICE TYPE   DEVICE NUMBER   VOLTAGE   SYSTEM</p>	<p> CONDUCTOR</p> <p> UNDERGROUND CONDUCTOR</p> <p> OVERHEAD CONDUCTOR</p> <p> TRIPPING OR INTERLOCKING CIRCUIT</p> <p> EQUIPMENT OUTLINE</p>	



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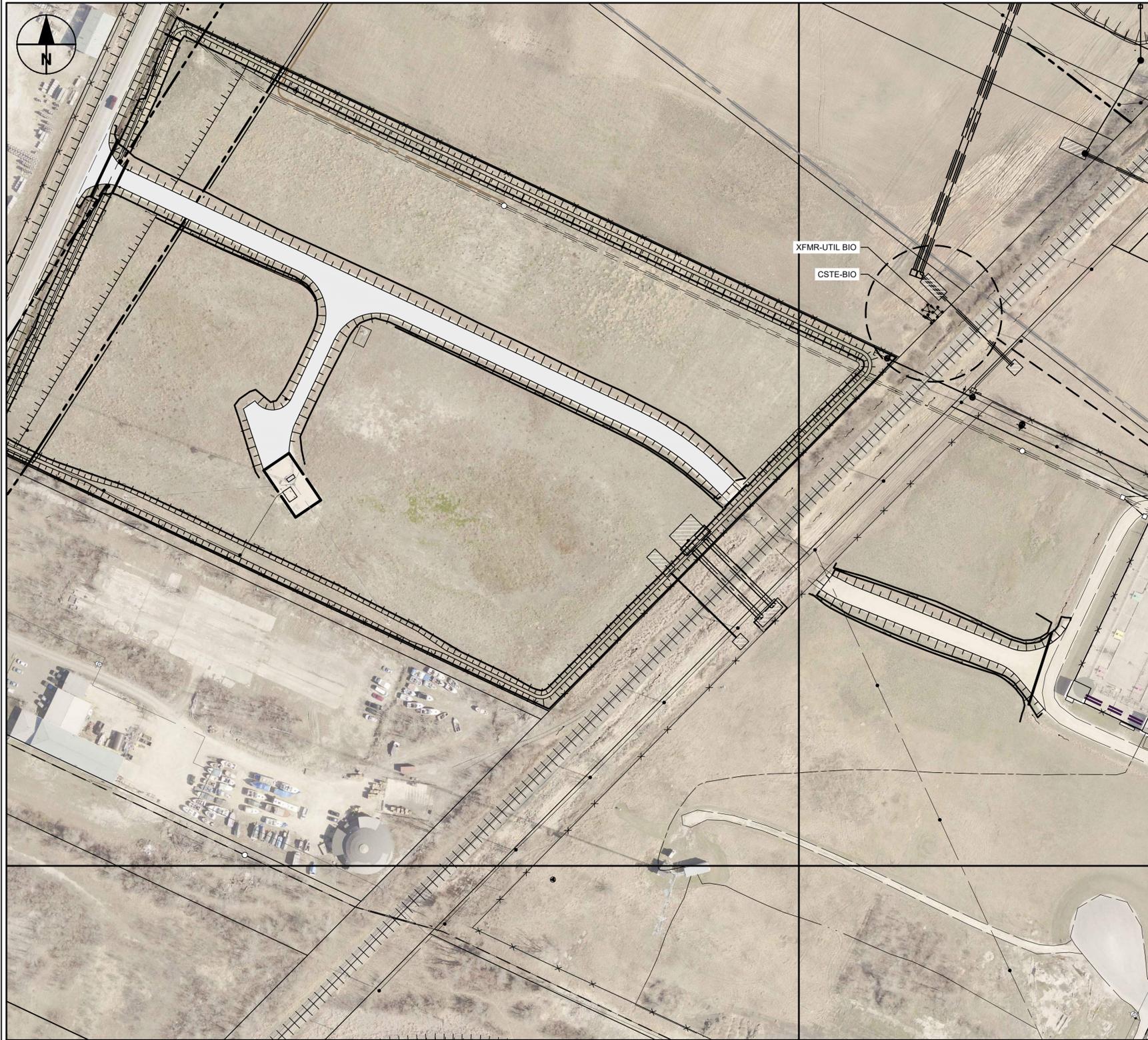
ENGINEER'S SEAL

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

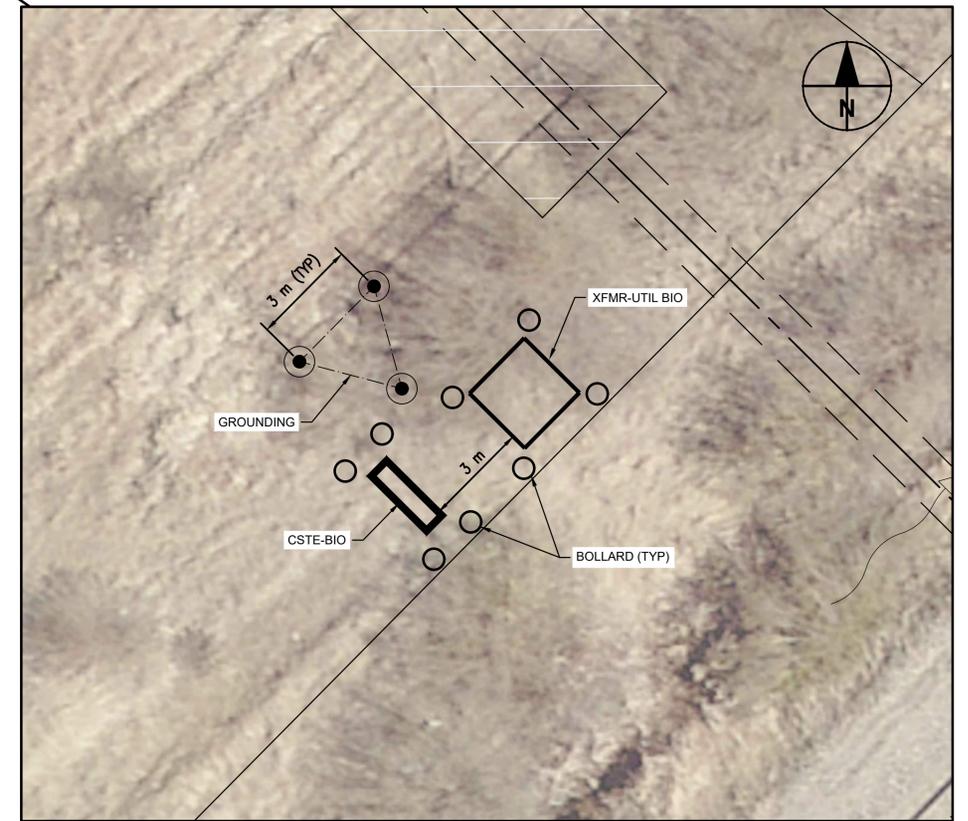
NEWPCC - BIOSOLID FACILITY  
 CONSTRUCTION POWER AND CSTE WORK  
 ELECTRICAL  
 LEGEND

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SHEET	REV.	SIZE
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**SITE PLAN**  
SCALE: 1:1000



**DETAIL VIEW**  
SCALE: 1:100



**METRIC**  
WHOLE NUMBERS INDICATE MILLIMETRES  
DECIMALIZED NUMBERS INDICATE METRES

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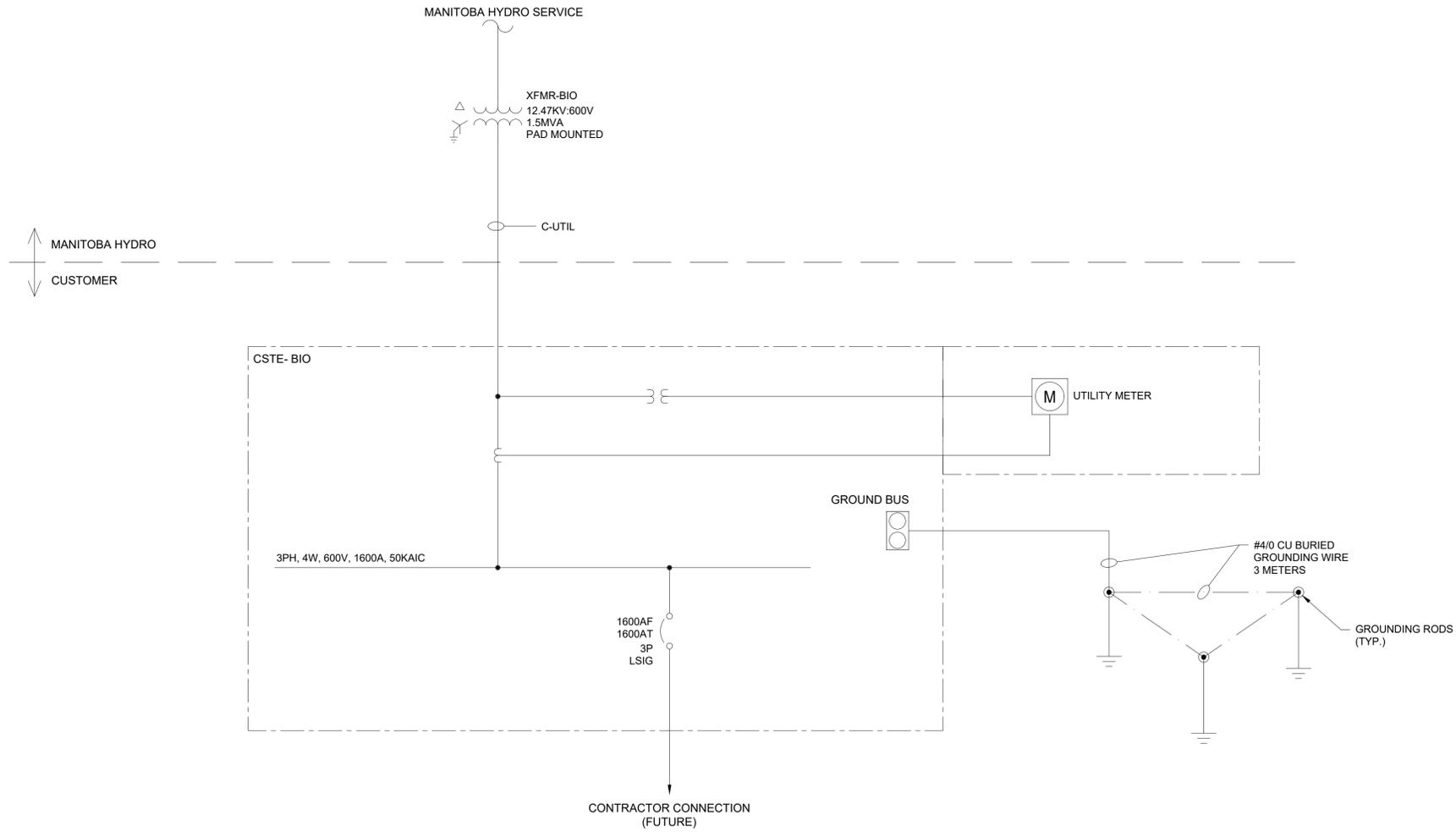
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WATER AND WASTE DEPARTMENT

NEWPCC - BIOSOLID FACILITY  
CONSTRUCTION POWER AND CSTE WORK  
ELECTRICAL  
SITE PLAN & DETAIL

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**SINGLE LINE DIAGRAM**

**MANITOBA HYDRO SCOPE NOTE:**

1. PROVIDE AND INSTALL NEW 1.5MVA 12.47KV:600V PAD MOUNT TRANSFORMER.
2. PROVIDE AND INSTALL NEW UTILITY CABLES (QUANTITY 1C x 11, 1000 MCM ALUMINUM) FROM MANITOBA HYDRO PAD MOUNT TRANSFORMERS TO CSTE ENCLOSURE.
3. PROVIDE AND INSTALL POTENTIAL TRANSFORMERS, CURRENT TRANSFORMERS AND METER IN THE CSTE METERING COMPARTMENT.
4. COORDINATE WITH CITY OF WINNIPEG AND CONTRACTOR FOR EXCAVATIONS AND SITE RESTORATION FOR CABLING INSTALLATION.

**CONSTRUCTION NOTE:**

1. CONTRACTOR PROVIDE AND INSTALL NEW 600VOLT CUSTOMER SERVICE TERMINATION ENCLOSURE WITH METERING COMPARTMENT (CSTE-BIO).
2. COORDINATE WITH MANITOBA HYDRO FOR THE INSTALLATION OF THE NEW SERVICE.
3. PROVIDE AND INSTALL 4 X 152 mm CONDUITS TO ROUTE C-UTIL CABLE INTO CSTE, PROVIDE INSTALLATION AS PER DETAIL DRAWINGS.
4. CONTRACTOR TO PROVIDE AND INSTALL GROUND RODS, CONDUCTORS AND STRUCTURE.

**GENERAL NOTE:**

1. ALL EQUIPMENT SHOWN ON THIS DRAWING BELOW THE "MH-CUSTOMER" LINE, EXCLUDING THE C-UTIL CABLE (PROVIDED BY MANITOBA HYDRO), IS NEW AND PROVIDED BY THE CONTRACTOR.
2. ALL CONDUITS ARE PVC.
3. ALL ELECTRICAL EQUIPMENT IS SECURED WITH PADLOCKS.
4. CONTRACTOR MUST COMPLY WITH THE LATEST CANADIAN ELECTRICAL CODE REQUIREMENTS FOR ALL ELECTRICAL INSTALLATION WORK.
5. PROVIDE BONDING TO FREE STANDING STRUCTURE PER CEC CODE REQUIREMENT.



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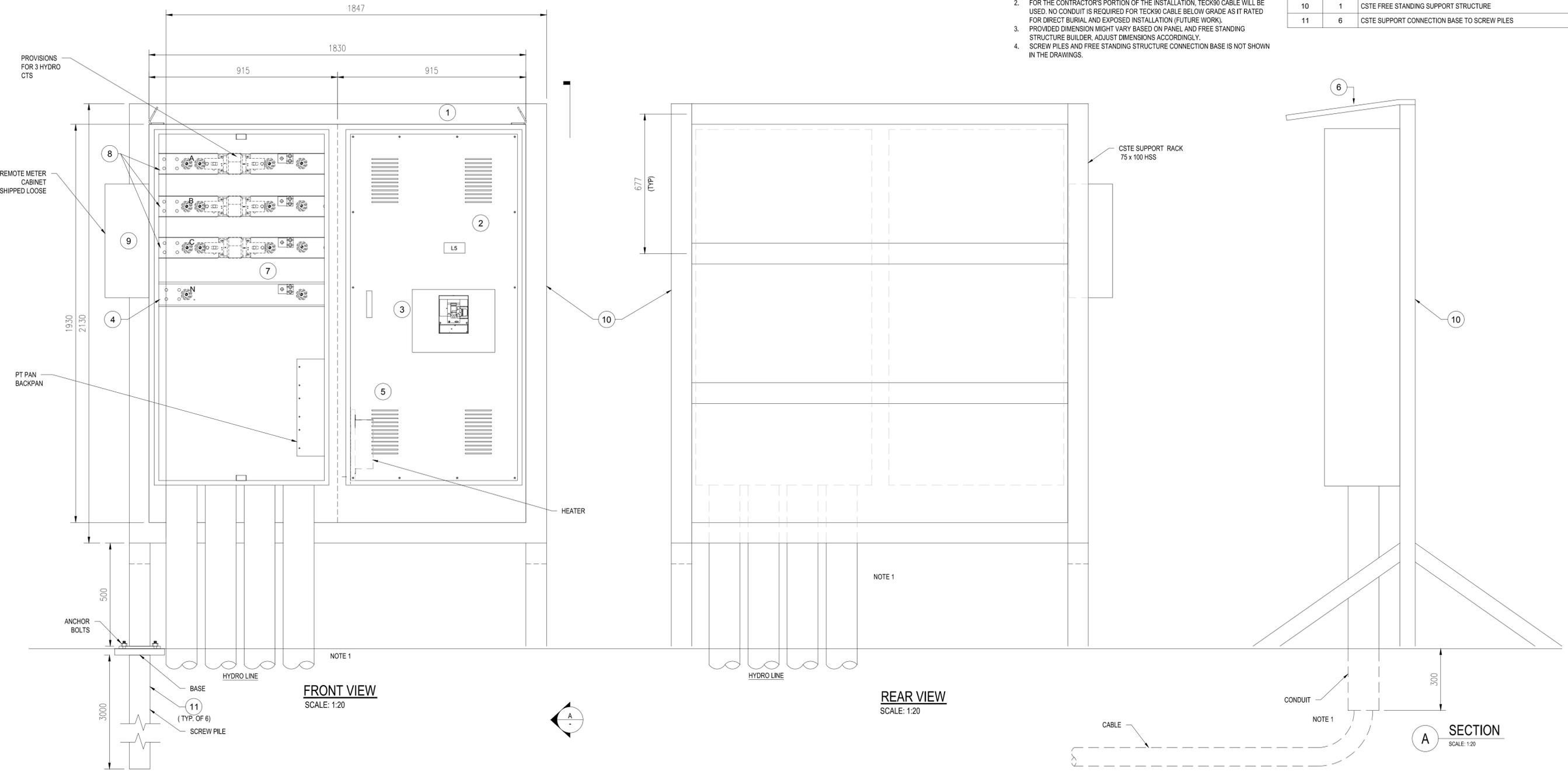
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ENGINEER'S SEAL

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

NEWWPC - BIOSOLID FACILITY  
 CONSTRUCTION POWER AND CSTE WORK  
 ELECTRICAL  
 SINGLE LINE DIAGRAM

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NOTE:  
 1. THE MANITOBA HYDRO CABLES WILL BE INSTALLED TO RUN STRAIGHT DOWN IN 4 x 152 mm CONDUITS, CONTINUE BELOW GRADE TO MEET CABLE BENDING RADIUS. 152 mm CONDUITS TO BE BURIED 300 mm BELOW GRADE. C-UTIL WILL BE RUN TO, AND TERMINATED AT MANITOBA HYDRO SUPPLIED TRANSFORMER. THE C-UTIL TO BE DIRECT BURIED 1 METRE PAST CSTE STRUCTURE.  
 2. FOR THE CONTRACTOR'S PORTION OF THE INSTALLATION, TECK90 CABLE WILL BE USED. NO CONDUIT IS REQUIRED FOR TECK90 CABLE BELOW GRADE AS IT RATED FOR DIRECT BURIAL AND EXPOSED INSTALLATION (FUTURE WORK).  
 3. PROVIDED DIMENSION MIGHT VARY BASED ON PANEL AND FREE STANDING STRUCTURE BUILDER, ADJUST DIMENSIONS ACCORDINGLY.  
 4. SCREW PILES AND FREE STANDING STRUCTURE CONNECTION BASE IS NOT SHOWN IN THE DRAWINGS.

BILL OF MATERIAL		
ITEM	QTY	MATERIAL DESCRIPTION
1	1	CSTE METERED SECTION 1600 AMP 347/600 VOLT 3 PHASE 4 WIRE 50 KA c/w PROVISIONS TO SUIT UTILITY CT'S AND PT'S
2	1	HINGED OUTER DOOR OVER CSTE SECTION C/W 3 POINT PADLOCKING HANDLE
3	1	1600 AMP 3 POLE LSIG BREAKER 80 % RATED 50 KAIC WITH BREAKER LOCK OFF
4	1	1600 AMP NEUTRAL CT
5	1	200 WATT HEATER C/W STAT./DIN RAIL MOUNT BREAKER
6	1	ANTI-CONDENSATE ROOF
7	1	HINGED OUTER DOOR WITH 3 POINT PADLOCKING HANDLE
8	1	FACTORY ASSEMBLED AND WIRED SERVICE ENTRANCE APPROVED ALUMINUM BUS BAR
9	1	POWDER COATED ASA 61 GREY INCLUDES RMC501 METER CABINET - SUPPLIED LOOSE
10	1	CSTE FREE STANDING SUPPORT STRUCTURE
11	6	CSTE SUPPORT CONNECTION BASE TO SCREW PILES

**FRONT VIEW**  
SCALE: 1:20

**REAR VIEW**  
SCALE: 1:20

**SECTION A**  
SCALE: 1:20



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 WATER AND WASTE DEPARTMENT

NEWPCC - BIOSOLID FACILITY  
 CONSTRUCTION POWER AND CSTE WORK  
 ELECTRICAL  
 CSTE LAYOUT

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