

ELECTRICAL SPECIFICATION

26 05 00 - COMMON WORK RESULTS FOR ELECTRICAL

CONTRACT
 1. THE TERM "PROVIDE" MEANS SUPPLY AND INSTALLATION OF REFERENCED ITEM, WORK AND/OR SYSTEM INCLUDING ALL LABOUR, MATERIALS, EQUIPMENT, SERVICES, COORDINATION WITH OTHERS, PROGRAMMING, VERIFICATION, COMMISSIONING, WARRANTY AND OTHER MANUFACTURER, CODES, STANDARDS AND CONTRACT DOCUMENTS REQUIRED ELEMENTS FOR A COMPLETE AND OPERATIONAL SYSTEM.

2. PROVIDE ALL SYSTEMS AS OUTLINED IN THE SPECIFICATIONS AND INDICATED IN THE DRAWINGS, UNLESS SPECIFICALLY NOTED THAT THE MATERIAL/EQUIPMENT, LABOUR OR OTHER SERVICES ARE NOT IN SCOPE.
 3. THE REQUIREMENTS OF THIS SPECIFICATIONS ARE IN ADDITION TO THOSE SPECIFIED WITHIN THE GENERAL CONDITIONS AND OTHER SECTIONS OF THE CONTRACT DOCUMENTS, WHERE THE SPECIFICATIONS AND DRAWINGS CONTRADICT EACH OTHER, REQUEST CLARIFICATION PRIOR TO PRICING, AND WHEN CLARIFICATION IS NOT FORMALLY COMMUNICATED IN AN ADDENDUM TO ALL BIDDERS, ALLOW FOR THE MOST EXPENSIVE OPTION.

CODES AND PERMITS
 4. OBTAIN AND PAY FOR ALL PERMITS AND LICENSES.

5. PROVIDE INSTALLATION AS PER THE CURRENT EDITION OF THE CANADIAN ELECTRICAL CODE, CURRENT EDITION OF THE BC BUILDING CODE, RELEVANT MUNICIPALITY BYLAWS AND THE ELECTRICAL INSPECTION AUTHORITY.

EQUIPMENT AND MATERIALS
 6. ALL SUPPLIED MATERIALS SHALL BE IN NEW CONDITION AND MUST BEAR A CERTIFICATION MARK INDICATING THAT THE PRODUCT WAS TESTED AND HAS MET THE CERTIFICATION REQUIREMENTS FOR USE IN CANADA. IF REQUIRED, OBTAIN AND PAY FOR FIELD CERTIFICATION OF EQUIPMENT.

WARRANTY
 7. PROVIDE WARRANTY FOR ALL INSTALLATION TO BE PROTECTED AGAINST DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF NOT LESS THAN 1 YEAR AFTER FINAL APPROVAL. ELECTRICAL CONTRACTOR MUST COVER ALL COSTS OF REPAIR AND REPLACEMENT OF DEFECTIVE MATERIALS AND WORKMANSHIP INCLUDING BUT NOT LIMITED TO PARTS, LABOR, TRAVEL EXPENSES, EXPENSIBLE MATERIALS AND OTHER ITEMS REQUIRED FOR A REPAIR.

8. PROVIDE STANDARD MANUFACTURER'S WARRANTY FOR ALL EQUIPMENT PROVIDED.

SUBSTITUTIONS OR ALTERNATES
 9. WHERE THE TERM "OR APPROVED EQUIVALENT" IS USED, ALTERNATES REQUIRE ACCEPTANCE BY ENGINEER PRIOR TO PRICING/TENDER COMPLETION.

10. THE TERM "OR EQUIVALENT" MEANS A PRODUCT, MATERIAL OR EQUIPMENT OF EQUAL OR HIGHER QUALITY, AND ALTERNATES DO NOT REQUIRE ACCEPTANCE BY ENGINEER PRIOR TO PRICING/TENDER COMPLETION.

11. WHERE OTHER SUBSTITUTIONS ARE DESIRED, REQUEST APPROVAL OF SUBSTITUTIONS AND RECEIVE WRITTEN APPROVAL OF ACCEPTANCE FROM ENGINEER PRIOR TO PROCEEDING. REQUEST FOR APPROVAL MUST BE SPECIFIC, ACCOMPANIED WITH APPLICABLE SPECIFICATION SHEETS IN PDF FORMAT, AND NO LESS THAN FIVE DAYS PRIOR TO TENDER STAGE COMPLETION DATE.

12. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING THE ACCEPTABILITY OF PHYSICAL DIMENSIONS AND CRITERIA(S) DESCRIBED WITHIN THE CONTRACT DOCUMENTS FOR THE PRODUCT, MATERIAL OR EQUIPMENT BEING SUBSTITUTED. IN THE EVENT THAT THE PHYSICAL DIMENSIONS AND/OR CRITERIA(S) DESCRIBED WITHIN THE CONTRACT DOCUMENTS IS FOUND UNACCEPTABLE DURING CONSTRUCTION, IT IS THE CONTRACTOR'S RESPONSIBILITY TO RECTIFY THE CONDITION AT THE CONTRACTOR'S COST.

CONSTRUCTION COORDINATION
 13. PROVIDE SCANNING PRIOR TO TRENCHING, SAW CUTTING, CHIPPING, AND CORING/DRILLING. CONFIRM ACCEPTANCE OF LOCATION WITH STRUCTURAL ENGINEER TO ENSURE STRUCTURAL INTEGRITY OF THE STRUCTURE.

14. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC IN NATURE AND DO NOT INDICATE ALL REQUIRED COMPONENTS TO MAKE THE SYSTEM COMPLETE AND OPERATIONAL. UPDATE AS-BUILT DRAWINGS TO INDICATE ACTUAL INSTALL.

SHOP DRAWINGS
 15. SUBMIT SHOP DRAWINGS FOR THE FOLLOWING ITEMS:
 a. LUMINAIRES

PROJECT RECORD DRAWINGS
 16. PROVIDE ONE SET OF FULL SIZE ELECTRICAL DRAWINGS ON SITE RECORD SITE CHANGES, SITE INSTRUCTIONS, CHANGE ORDERS, ANY OTHER ALTERNATIONS, CONDUIT ROUTING, FIRE ALARM DEVICE ADDRESSES AND DATA OUTLET ADDRESSES ON THE DRAWINGS. HAND OVER DIGITAL RECORD DRAWINGS TO ENGINEER AND HARD COPY TO OWNER FORCES.

17. PROVIDE RECORD DRAWINGS IN AUTOCAD 2021 AND PDF FORMAT WITH ALL THE CHANGES INCORPORATED. HAND OVER RECORD DRAWINGS TO ENGINEER FOR FINAL REVIEW.

18. THE ELECTRICAL CONTRACTOR MAY CHOOSE TO HIRE THE ENGINEER TO CONVERT CONTRACTOR MARKUPS OF RECORD DRAWINGS TO AUTOCAD 2021 AND PDF FORMAT AT A COST OF \$500 PER SHEET.

MECHANICAL SYSTEM COORDINATION
 19. FOR MECHANICAL EQUIPMENT AND OTHER EQUIPMENT SUPPLIED AND MOUNTED BY OTHERS, PROVIDE WIRING, STARTERS, CONNECTIONS, CONTROLS, WIRING AND DISCONNECTS FOR A COMPLETE AND OPERATIONAL SYSTEM.

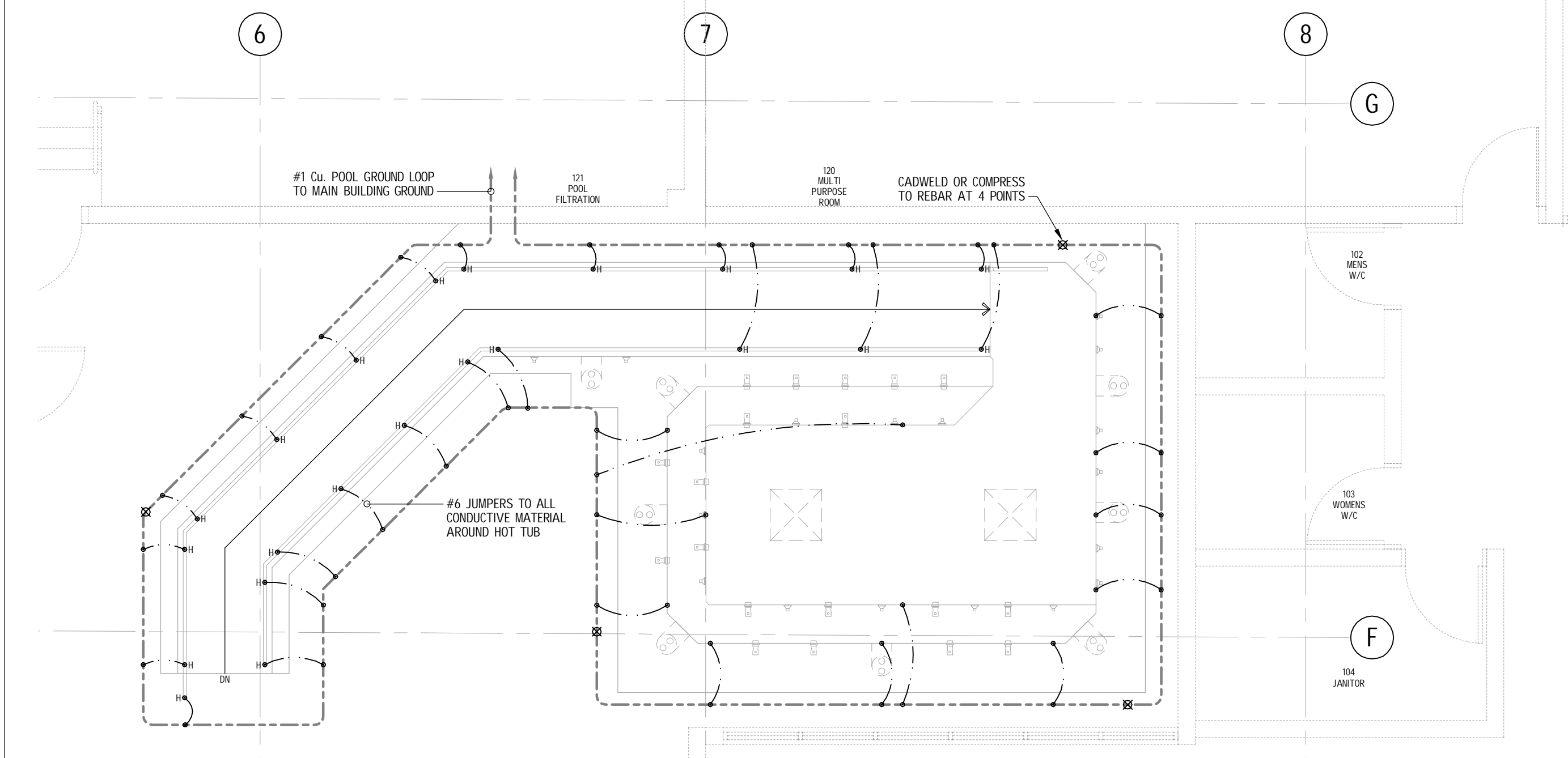
20. ALL LOW VOLTAGE CONTROL WIRING BY OTHERS, ALL LINE VOLTAGE CONTROL WIRING BY ELECTRICAL CONTRACTOR.

21. WIRE AND CONNECT LINE VOLTAGE CONTROLS SUPPLIED BY OTHERS FOR MECHANICAL EQUIPMENT. COORDINATE LOCATION OF LINE VOLTAGE CONTROLS SUPPLIED BY OTHERS AS SUCH EQUIPMENT ARE NOT SHOWN ON PLANS.

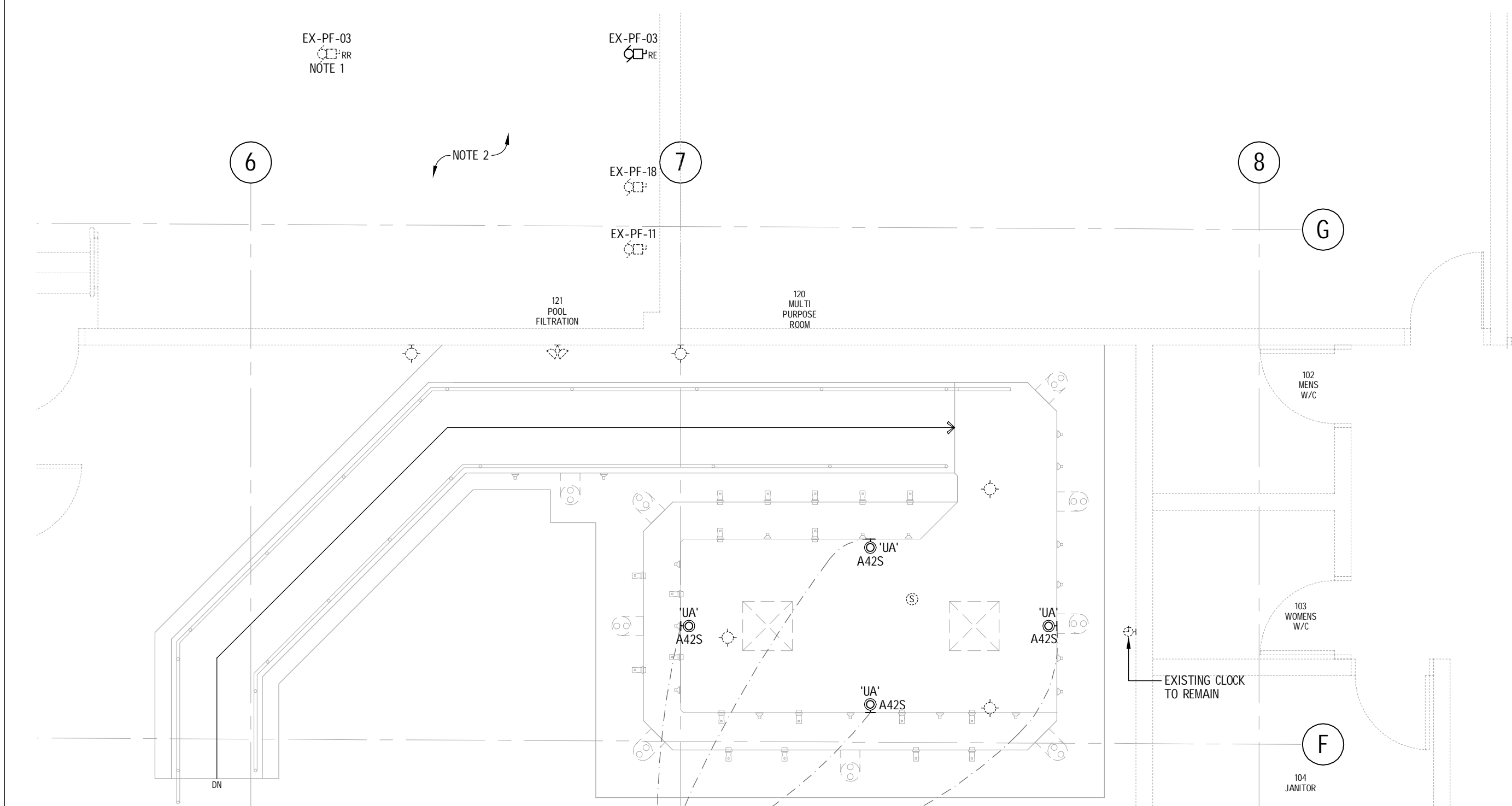
22. WHERE LINE VOLTAGE IS REQUIRED FOR EQUIPMENT SUPPLIED BY CONTROLS CONTRACTOR, PROVIDE WIRING, CONDUIT, TRANSFORMER AND OTHER EQUIPMENT OR LABOR REQUIRED TO ENABLE LOW VOLTAGE CONTROLS CONTRACTOR TO COMPLETE WORK FOR A COMPLETE AND OPERATIONAL SYSTEM.

23. COORDINATE AND CONFIRM ELECTRIC CHARACTERISTICS (VOLTAGE, PHASE, AMPERAGE, HORSEPOWER) AND CONTROLS FOR ALL MECHANICAL SYSTEMS WITH MECHANICAL DRAWINGS, SPECIFICATIONS AND MECHANICAL TRADE ON SITE.

26 15 25 - GROUNDING AND BONDING
 1. PROVIDE AND INSTALL COPPER GROUND LOOP AND MINIMUM #6 JUMPER AS PER CEC SECTION 68-058 TO GROUND ALL METAL PARTS WITHIN 15m OF THE POOL. ALL RECEPTABLES AND LIGHTING WITHIN 3.0m OF THE POOL NEED TO HAVE GFI PROTECTION.
 2. PERFORM ALL REQUIRED SECONDARY ELECTRICAL WORK GROUNDING AND BONDING WORK IN ACCORDANCE WITH THE REQUIREMENTS OF GOVERNING CODES AND STANDARDS, INCLUDING THE ELECTRICAL SAFETY AUTHORITY.
 3. BOND METALLIC CONDUITS, BOXES, CABLE TRAY DUCTS, AND NON-CURRENT CARRYING METAL PARTS OF EQUIPMENT TOGETHER TO FORM A CONTINUOUS GROUND SYSTEM. IN ELECTRICAL EQUIPMENT ROOMS, SOLIDLY BOND CIRCUITS, PANELBOARDS, CONDUITS, EQUIPMENT ENCLOSURES, AND OTHER EQUIPMENT TO PERIMETER GROUND BUS USING BRONZE CONNECTORS AND HARDWARE.



1 E1.0 PROPOSED GROUNDING LAYOUT



2 E1.0 PROPOSED ELECTRICAL LAYOUT

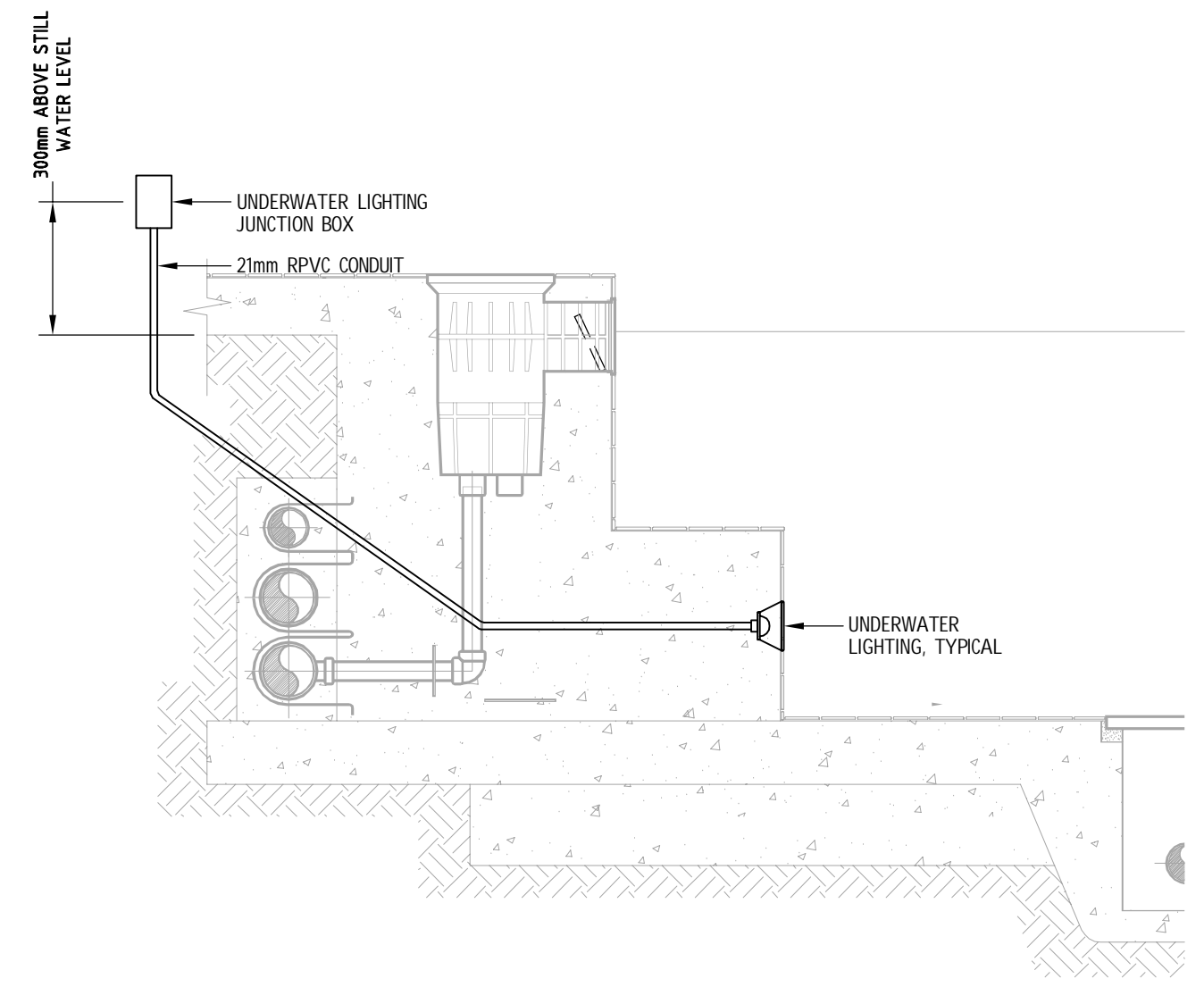
MECHANICAL SCHEDULE - PEACE RIVER HOT TUB REPLACEMENT																									
UNIT NUMBER	UNIT DESCRIPTION	UNIT LOCATION	ELECTRICAL LOAD			EQUIPMENT			STARTER			DISCONNECT			CONTROL			POWER			ELECTRICAL PANEL		FEED		NOTES
			MCA	FLA	KVA	VOLTAGE	PHASE	INS FALL	SUPPLY	INS FALL	SUPPLY	INS FALL	SUPPLY	INS FALL	SUPPLY	INS FALL	SUPPLY	INS FALL	SUPPLY	INS FALL	SUPPLY	INS FALL	SUPPLY	INS FALL	
EX-PF-03	EXISTING HYDRO-AIR JET BOOSTER PUMP	POOL FILTRATION 121				10	600	3	M	M	E	-	-	-	-	-	-	-	-	-	EXISTING	3	10	21	1,2
EX-PF-11	EXISTING HOT TUB CHEMICAL LOOP PUMP	POOL FILTRATION 121				1.5	208	1	M	M	E	-	-	-	-	-	-	-	-	-	EXISTING				3,4
EX-PF-18	EXISTING HOT TUB CIRCULATION PUMP	POOL FILTRATION 121				20	600	3	M	M	E	-	-	-	-	-	-	-	-	-	EXISTING				3,4,5

- NOTES:**
 1. REUSE EXISTING STARTER AND DISCONNECT SWITCH. PROVIDE NEW WIRING TO PUMP FROM EXISTING STARTER/BREAKER LOCATION.
 2. RECONNECT TO HYDROJET CONTROL PANEL.
 3. DISCONNECT EXISTING PUMP AND RECONNECT WITH EXISTING WIRING AFTER NEW PIPING MODIFICATION.
 4. RECONNECT TO EXISTING CONTROLS.
 5. RECONNECT TO EXISTING ASSOCIATED VFD.

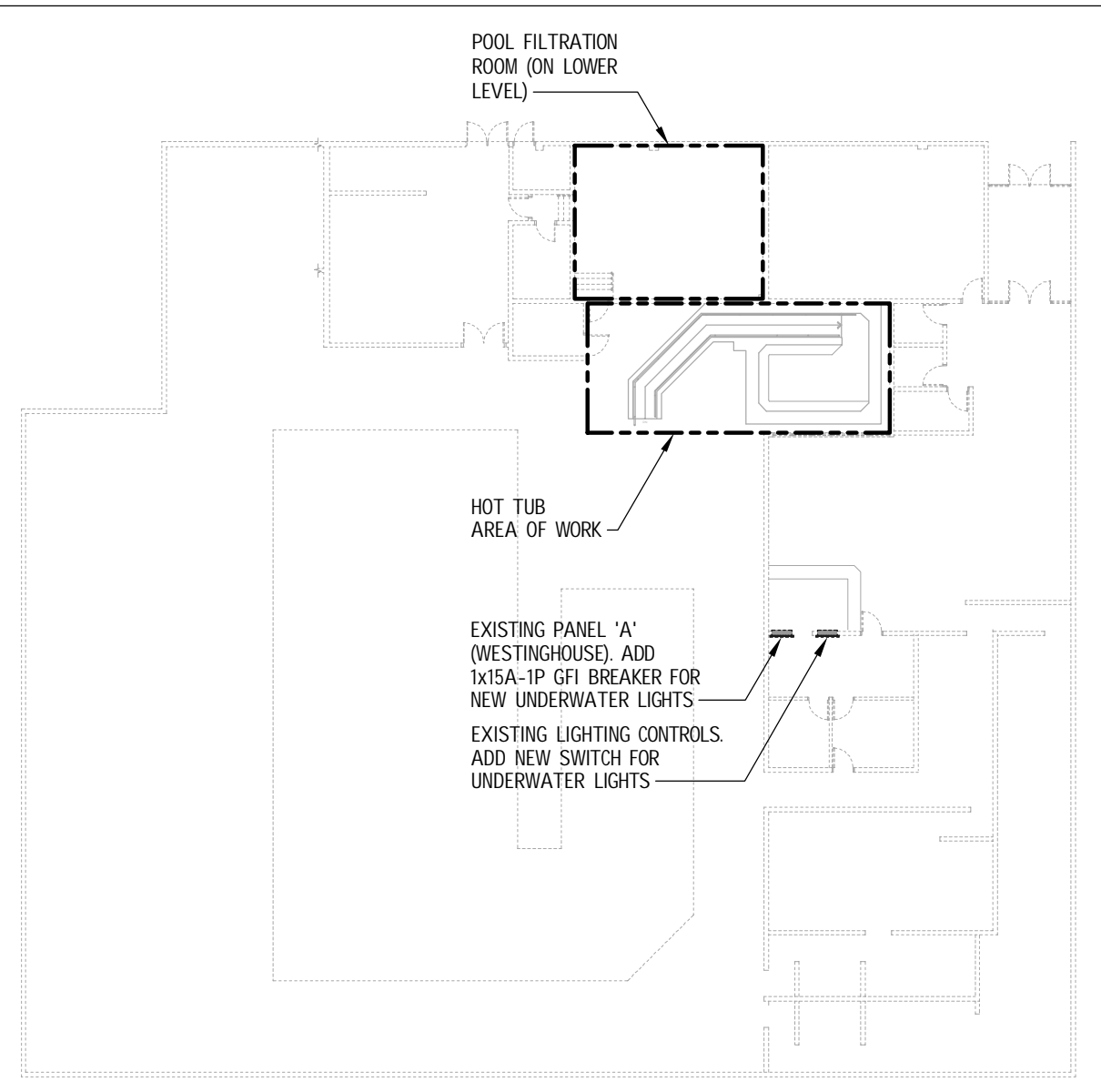
NOTES:

- DISCONNECT EXISTING 10.0HP 600V, 3PH HYDRO JET PUMP AND RELOCATE TO NEW LOCATION (SHOWN). WIRE AND CONNECT WITH NEW 3/4" RWPV 25mm PVC CONDUIT. REUSE EXISTING STARTED IN MCC.
- WIRE AND CONNECT HOT TUB CURRENT COLLECTOR TO MAIN GROUND WITH #6 GREEN GROUND.
- PROVIDE AND INSTALL EMERGENCY SHUT DOWN SWITCH, VISUAL/AUDIBLE ALARM, AND TIMER CONTROLS FOR HOT TUB. REFER TO DETAIL 4/E10 FOR ADDITIONAL INFORMATION.
- PROVIDE MEGGER TEST ON ALL EXISTING CABLING TO ENSURE ADEQUATE INSULATION.
 PROVIDE SEPARATE PRICE FOR:
 5. PROVIDE WET NICH UNDERWATER LED LIGHTS C/W CUSTOM LENGTH POWER CABLES: HYDREL, 442IC LED SWM, 5000lm, 3500K, IP68, WIDE FLOOD OPTION.
 6. ALL ELECTRICAL WIRING IN WET OR DAMP LOCATION TO BE IN RPVC CONDUITS.
 7. ALL CONDUITS AND GROUNDING ENTERING HOT TUB AREA: PROVIDE WATER TIGHT SEALS.

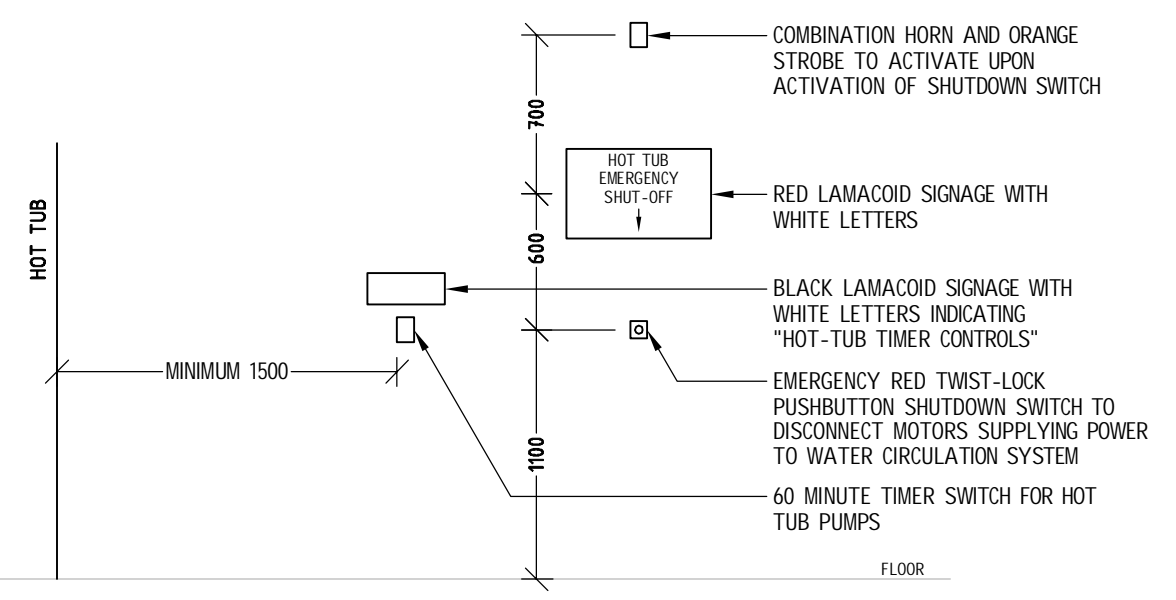
LEGEND	
GENERAL	
RE	EXISTING DEVICE IN RELOCATED LOCATION
RR	EXISTING DEVICE TO BE REMOVED AND RELOCATED
WP	WEATHERPROOF DEVICE
POWER	
⊖	DISCONNECT
⊕	MOTOR CONNECTION
⊕	JUNCTION BOX
⊕	DOUBLE PUSHBUTTON
⊕	CLOCK OUTLET
LIGHTING	
⊕	RECESSED STEP LUMINAIRE
⊕	SURFACE MOUNTED LUMINAIRE
⊕	WALL MOUNTED LUMINAIRE
EMERGENCY	
⊕	WALL MOUNTED DUAL REMOTE EMERGENCY HEADS
COMMUNICATIONS	
⊕	CEILING MOUNTED SPEAKER



3 E1.0 UNDERWATER LIGHTING SECTION DETAIL



LEVEL 1 KEYPLAN SCALE 1:100



4 E1.0 HOT-TUB EMERGENCY SWITCH AND CONTROLS DETAIL

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 PRA APEGA ID #: 111020
 DATE: 2024-03-20
PERMIT NUMBER: P005622
 The Association of Professional Engineers and Geoscientists of Alberta (APEGA)
 PERMIT NUMBER: P-682

NO.	ISSUE	DATE
3	ISSUED FOR BUILDING PERMIT	03/19/24
2	ISSUED FOR PRICING	01/23/24
1	ISSUED FOR REVIEW	12/13/23

PROJECT
PEACE RIVER HOT TUB REPLACEMENT
 9911-100 STREET, P.O. BOX 6600
 PEACE RIVER, AB T8S 1S4

TITLE
ELECTRICAL LAYOUT, LEGEND, AND SCHEDULES

PROJECT NO.	1-23-155	SHEET NO.
DRAWN	LG	E1.00
CHECKED	JS	
DATE	MARCH 2024	
SCALE	AS NOTED	REV 3