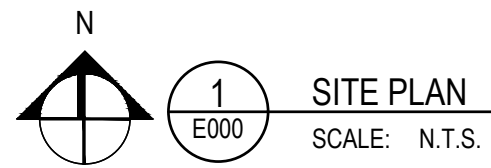
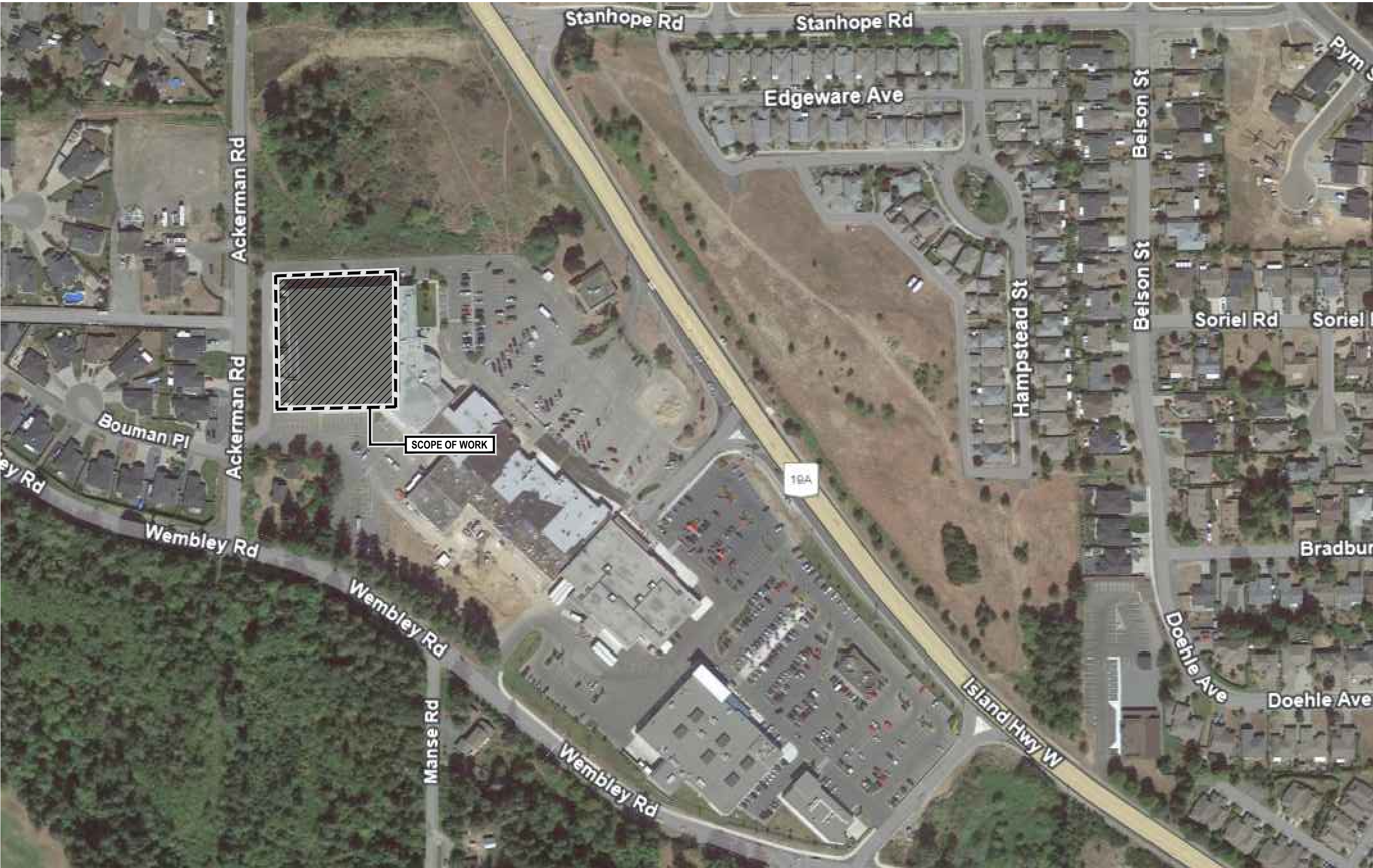


OCEANSIDE PLACE ARENA NEW DEHUMIDIFIER

830 W ISLAND HWY W, PARKSVILLE, BC



DRAWING LIST	
E000	COVER PAGE
E010	SINGLE LINE DIAGRAM
E100	DEMOLITION PLAN
E150	NEW POWER PLAN - GROUND FLOOR
E151	NEW POWER PLAN - MEZZANINE
E200	ELECTRICAL DETAILS I
E201	ELECTRICAL DETAILS II
E210	MECHANICAL SCHEDULE & LOAD CALCULATION
E300	ELECTRICAL SPECIFICATIONS

SCOPE LADDERING:	
SCOPE 1:	HEAT PUMP, DEHUMIDIFIER, HYDRONIC HEADER TO ARENA
SCOPE 2:	HYDRONIC HEADER IN ARENA WITH TOP OUTS (NO ELECTRICAL)
SCOPE 3:	LOBBY AIR HANDLER INTEGRATION (HC3) (NO ELECTRICAL)
SCOPE 4:	POND AIR HANDLER (AHU7)
SCOPE 5:	CHANGE ROOM AIR HANDLER INTEGRATION (HC1 & HC2) (NO ELECTRICAL)
SCOPE 6:	BOILER REPLACEMENTS

POWER AND COMMUNICATION OUTLETS													
		POWER					PWR & COMM COMBO STRUCTURED OUTLET	COMMUNICATIONS					
		SINGLE	DUPLEX	SPLIT	QUAD	CORD REEL DROP		DATA	VOICE	STRUCTURED OUTLET			
WALL	S-15R					-		-				#D/#V/#C/#H	WALL
	S-15R GFI					-	-	-	-	-	-	-	
	S-20R					-	-	-	-	-	-	-	
	S-20R GFI					-	-	-	-	-	-	-	
FLOOR	S-15R	-		-		-		#D/#V/#C/#H				#D/#V/#C/#H	FLOOR
	S-20R	-		-		-		#D/#V/#C/#H	-	-	-	-	
CEILING	S-15R	-		-		-	-				#D/#V/#C/#H	CEILING	
	S-20R	-		-		-	-				#D/#V/#C/#H		
	W/ RCPT	-	-	-	-		-	-	-	-	-		-
	W/O RCPT	-	-	-	-		-	-	-	-	-	-	
RECEPTACLE ABBREVIATIONS						COMMUNICATION ABBREVIATIONS			COMMUNICATIONS NOTES: COMMUNICATION OUTLETS TO BE ANNOTATED AS #C FOR COAXIAL, #D FOR DATA, #V FOR VOICE AND #H FOR HDMI DROPS. IE. 1C/2D/2V/1H INDICATES 1 CCTV, 2 DATA, 2 VOICE AND 1 HDMI.				
USB: C/W DUAL MIN. 3.1A USB PORTS.						WAP: WIRELESS ACCESS POINT.							
IG: C/W ISOLATED GROUND						C: CATV.							
HP: HOSPITAL GRADE						D: DATA.							
WP: WEATHER PROOF						H: HDMI							
HK: HOUSE KEEPING.						V: VOICE.							
ARC: ARC FAULT PROTECTION.													

GENERAL	
	KEY NOTE - CIRCLE
	KEY NOTE - HEXAGON
	KEY NOTE - SQUARE
	DETAIL MARK
	DETAIL MARK C/W LEADER
	SECTION VIEW
	SECTION CUT
	ELEVATION VIEWS
	NORTH ARROW
	REVISION TRIANGLE
	TEXT BOX
	GENERAL TAG BOX
	MECHANICAL EQUIPMENT TAG / SLD FEEDER SIZE
	LUMINAIRE TAG
	PROCESS EQUIPMENT TAG
	BRACKET
	BREAK / CONTINUATION MARK
1 E000	
LINE1 LINE2 SCALE: X1/4\"/>	

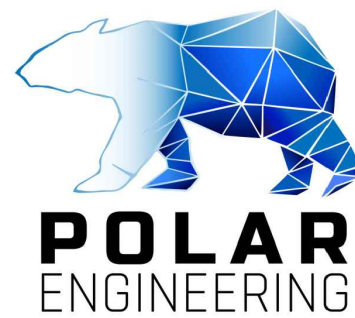
POWER	
	PACPOLE BY ELECTRICAL CONTRACTOR
	FURNITURE POLE SUPPLIED BY FURNITURE SUPPLIER, WIRED BY ELECTRICAL CONTRACTOR
	FURNITURE WHIP CONNECTION - POWER
	FURNITURE WHIP CONNECTION - COMMUNICATION
	JUNCTION BOX - WALL / FLOOR / CEILING
	PULL BOX - WALL / FLOOR / CEILING
	DIRECT EQUIPMENT CONNECTION
	MOTOR CONNECTION
	MOTOR CONNECTION C/W DISCONNECT
	MOTOR CONNECTION C/W DISCONNECT & MAGNETIC STARTER
	DISCONNECT SWITCH
	FUSED DISCONNECT SWITCH
	DISCONNECT SWITCH C/W MAGNETIC STARTER
	MAGNETIC STARTER
	MOTOR RATED DISCONNECT SWITCH
	CONDUIT RUN UP
	CONDUIT RUN DOWN
	CONDUIT STUB-OUT
	PUSH BUTTON
	THERMOSTAT
	GROUND BUS
	PANEL RECESSED
	PANEL SURFACE
	TRANSFORMER (SIZE VARY)
	ROOM REFERENCE GROUND BUS
	VARIOUS FREQUENCY DRIVE
	ELECTRIC BASEBOARD HEATER
	INDICATES ABOVE COUNTER

SINGLE LINE DIAGRAM	
	CIRCUIT BREAKER - 600V OR LESS
	CIRCUIT BREAKER - GREATER THAN 600V
	DRAW-OUT CIRCUIT BREAKER - 600V OR LESS
	DRAW-OUT CIRCUIT BREAKER - GREATER THAN 600V
	DISCONNECT
	DISCONNECT - FUSED
	LOAD BREAK SWITCH
	LOAD BREAK SWITCH - FUSED
	FUSE - 600V OR LESS
	FUSE - GREATER THAN 600V
	POTHEAD
	STRESS CONE
	SURGE PROTECTIVE DEVICE
	CURRENT TRANSFORMER
	POTENTIAL TRANSFORMER
	TRANSFORMER
	DELTA-WYE / DELTA-DELTA CONNECTION
	DELTA / WYE / GROUND CONNECTION
	JUNCTION BOX
	PULL BOX
	LIGHTENING ARRESTER
	UTILITY METER
	DIGITAL METERING UNIT
	SHUNT TRIP
	TRIP CONTROL
	MOTOR OPERATOR FOR CIRCUIT BREAKERS OR SWITCHES
	INTERLOCK
	KIRK KEY INTERLOCK SYSTEM
	RELAY - SINGLE OR DUAL
	PARALLELING CONTROL UNIT
	GENERATOR SIZE AS NOTED
	RECTIFIER
	INVERTER
	ISOLATED GROUND BUSBAR
	UPS
	HAND-OFF-AUTO
	BYPASS
	FLYWHEEL
	PANELBOARD
	TRANSFER SWITCH
	AUTOMATIC TRANSFER SWITCH C/W SINGLE BYPASS
	AUTOMATIC TRANSFER SWITCH C/W DOUBLE BYPASS
	INDUCTOR
	CAPACIATOR
	CONTACT NORMALLY OPEN (NO)
	CONTACT NORMALLY CLOSED (NC)
	MAGNETIC MOTOR STARTER
	MANUAL MOTOR STARTER
	MOTOR OVERLOAD
	DOOR INTERLOCK SWITCH
	REACTOR (LINE OR LOAD)
	NEUTRAL GROUNDING RESISTER

ABBREVIATIONS:	
E	= EXISTING EQUIPMENT TO REMAIN
R	= REMOVE EXISTING EQUIPMENT AND ASSOCIATED WIRING AND DEVICES
ER	= EXISTING EQUIPMENT TO BE RELOCATED
ERR	= EXISTING EQUIPMENT TO BE RELOCATED AND REPLACED WITH NEW
RP	= EXISTING EQUIPMENT IN RELOCATED POSITION
RN	= EXISTING EQUIPMENT TO BE REPLACED WITH NEW
HE	= HIGH ELEVATION (TO BE CONFIRMED WITH ARCHITECT)
BP#	= BATTERY PACK (# INDICATES BP NUMBER)
GFCI	= GROUND FAULT CIRCUIT INTERRUPTER
WP	= WEATHERPROOF
ADO	= AUTOMATIC DOOR OPERATOR
+XX	= DIMENSIONED HEIGHT ABOVE FINISHED FLOOR
AFF	= ABOVE FINISHED FLOOR
RI	= ROUGH-IN
HK	= HOUSEKEEPING RECEPTACLE
EM	= EMERGENCY POWERED DEVICE
FR	= FRIDGE (DEDICATED RECEPTACLE)
MW	= MICROWAVE (DEDICATED RECEPTACLE)
DW	= DISHWASHER
RNG	= RANGE
RNGHD	= RANGE HOOD
WSHR	= WASHING MACHINE
DRYR	= CLOTH DRYER
CKTP	= COOK TOP
OV	= OVEN
WO	= WALL OVER

NOTES:

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B	ISSUED FOR TENDER REVIEW	01/17/2024
A	ISSUED FOR PRELIMINARY DESIGN	08/02/2024
NO	SUBMISSIONS:	DATE: MM/DD/YYYY

STATUS:

CLIENT:	
POLAR ENGINEERING	
300 - 722 CORMORANT ST, VICTORIA, BC V8W 1P8	

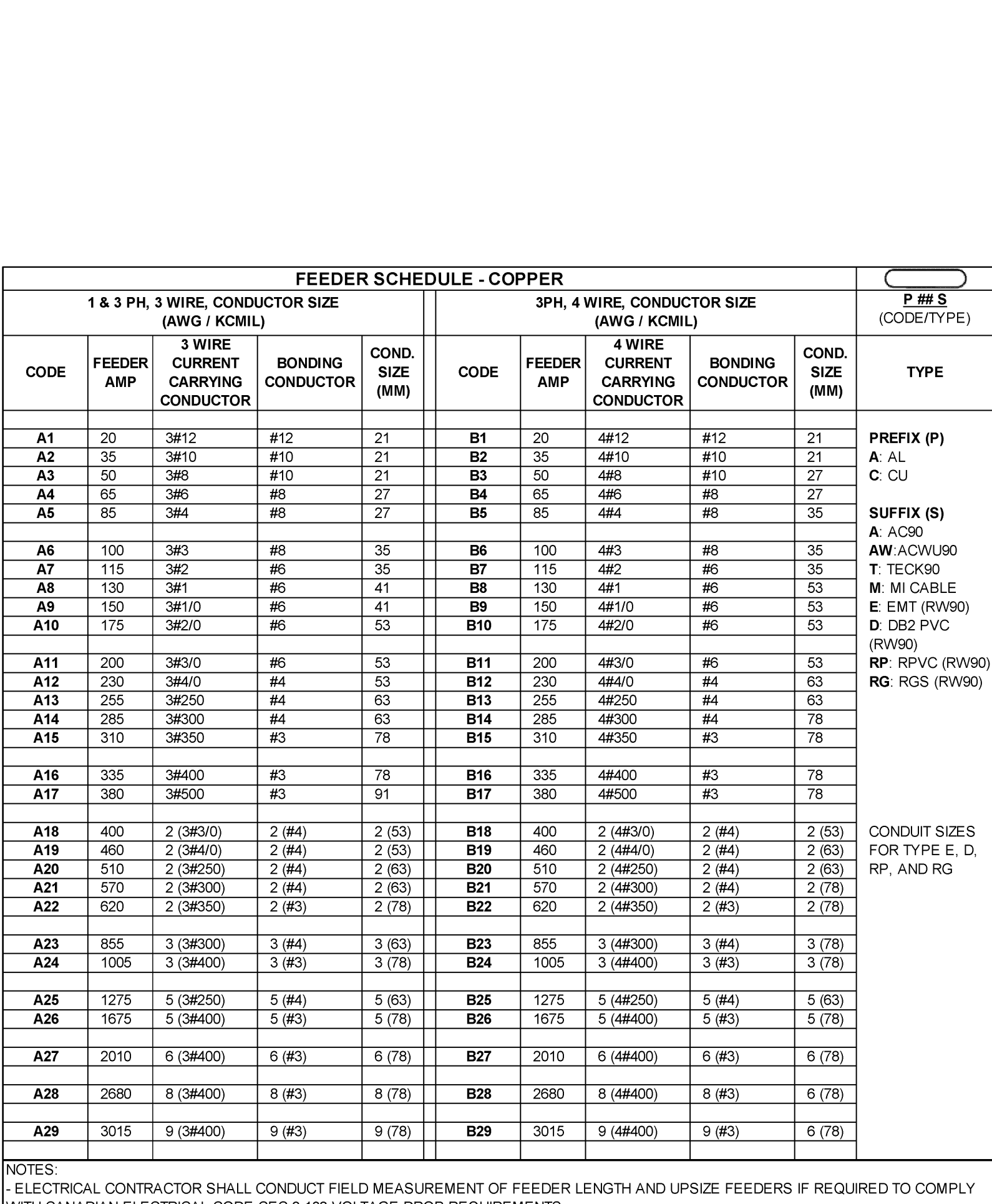
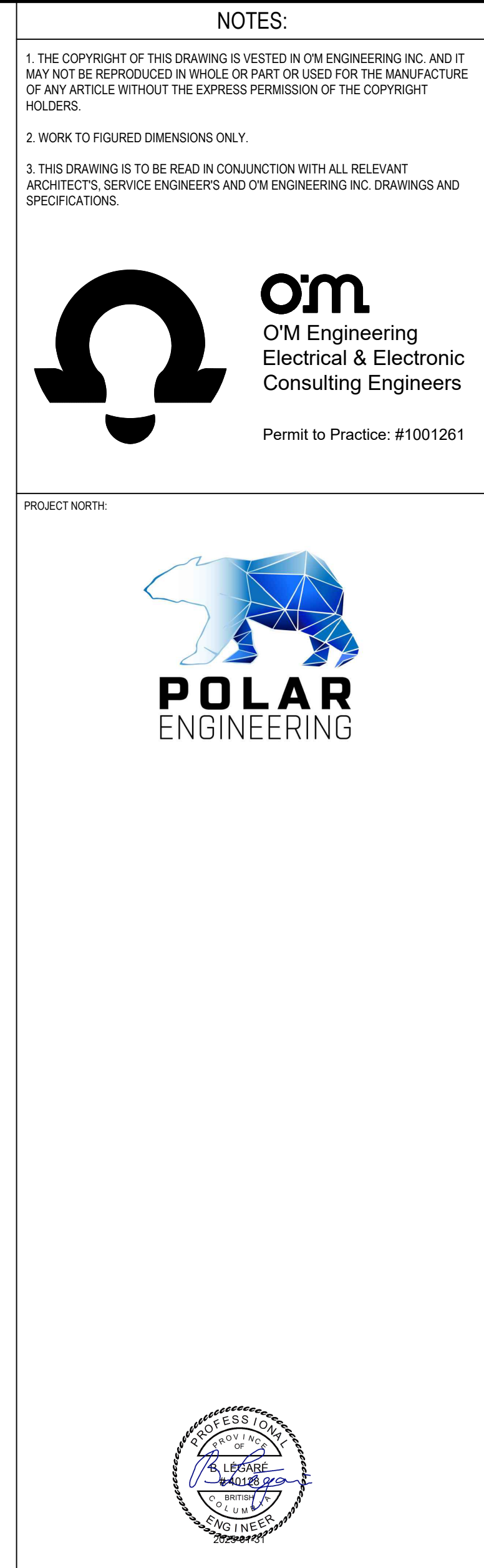
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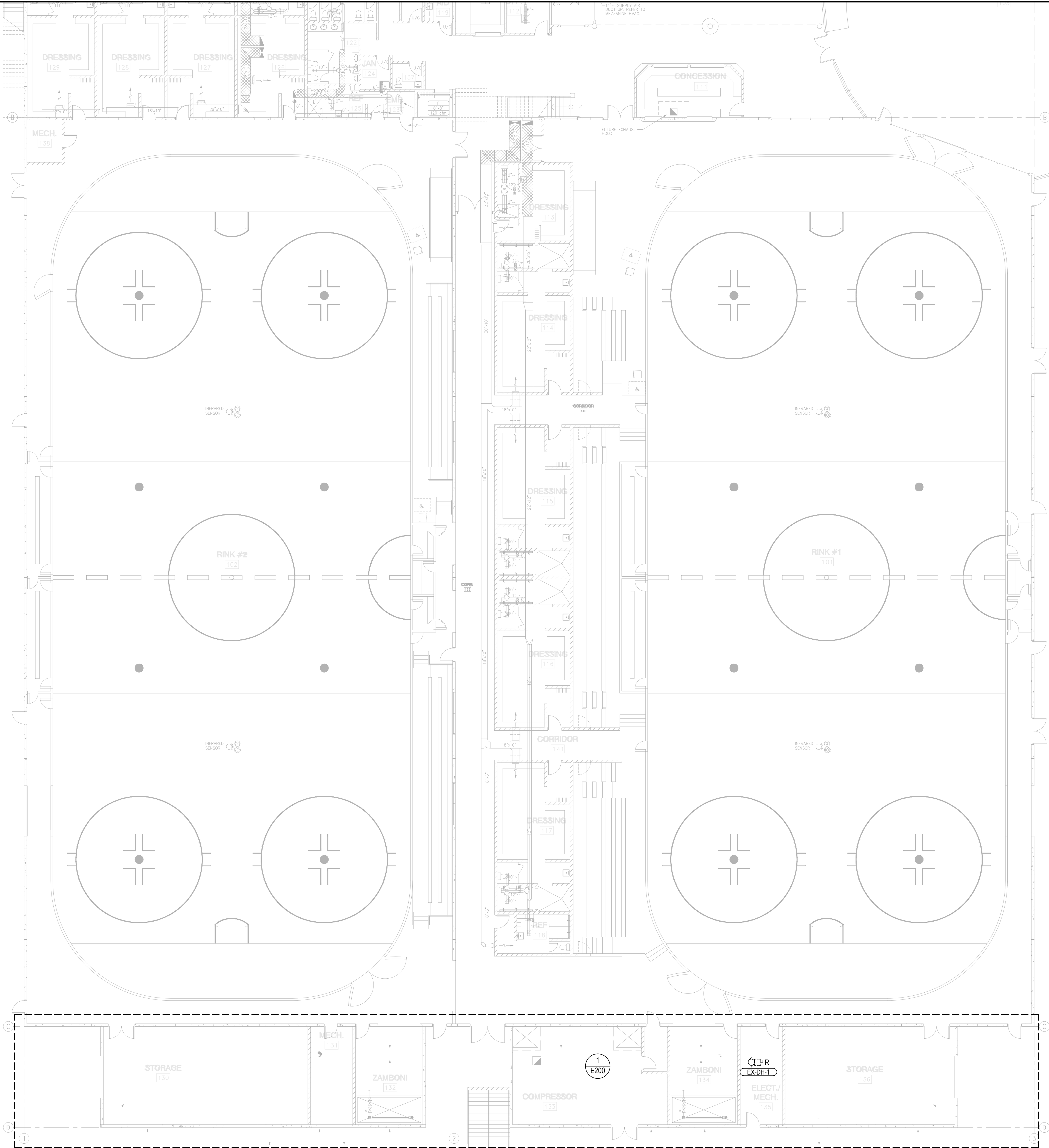
OCEANSIDE PLACE ARENA  
NEW DEHUMIDIFIER  
830 W ISLAND HWY W, PARKSVILLE, BC

DRAWING TITLE:

COVER PAGE

SCALE AT 2436:	DATE:	DRAWN/DESIGNED:	CHECKED:
AS NOTED	1/31/25	BK	BL
PROJECT NO:	DRAWING NO:	REVISION:	
24-281	E000	C	





GENERAL NOTES:

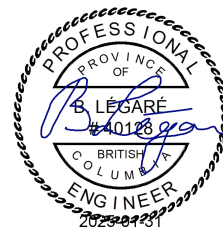
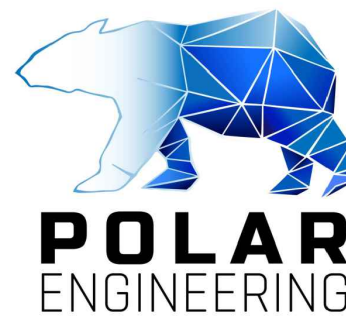
- CONTRACTOR TO VERIFY THE SITE FOR ALL DEMOLISHING AS REQUIRED.
- CONTRACTOR SHALL REVIEW AND COORDINATE WITH ARCHITECTURAL AND MECHANICAL DRAWINGS TO DETERMINE THE EXACT EXTENT OF THE DEMOLITION WORK BEING DONE.
- ALL REDUNDANT, UNUSED WIRING AND JUNCTION BOXES INCLUDING ANY WIRING IN THE CEILING SPACE SHALL BE REMOVED BY THIS CONTRACTOR. ALL UNUSED WIRING SHALL BE REMOVED BACK TO SOURCE AND MADE SAFE.
- ALL DEVICES SHOWN WITHIN THE DEMOLITION AREA ARE TO BE REMOVED AND STORED FOR REUSE UNLESS OTHERWISE NOTED. THE CONTRACTOR IS TO REVIEW ARCHITECTURAL MECHANICAL DRAWINGS AND REVIEW THE SITE IN DETAIL TO DETERMINE THE EXACT QUANTITIES OF DEVICES AND MECHANICAL EQUIPMENT INCLUDED IN THE DEMOLITION.
- ALL DEVICES SHOWN OUTSIDE OF THE DEMOLITION AREA ARE TO REMAIN UNLESS OTHERWISE NOTED. ENSURE DEVICES TO REMAIN CONTINUE TO WORK AND ARE NOT IMPACTED. DO NOT REMOVE ANY CABLING/WIRING FOR OUTLETS OR EQUIPMENT THAT ARE NOT WITHIN THE CURRENT CONSTRUCTION SCOPE OF WORK AREA.
- FOR ALL EXISTING DEVICES INDICATED TO REMAIN, OR NOT INDICATED TO BE REMOVED, UNINSTALL/REINSTALL AND RECONNECT TO ALLOW CONSTRUCTION AS NECESSARY.
- WHERE INDICATED FOR REMOVE AND REINSTALL, ALLOW FOR REMOVAL, REINSTALLATION OF PANELS, DEVICES AND ALL ASSOCIATED WIRING.
- FOR ALL ITEMS INDICATED TO BE REMOVED, REMOVE ITEMS INCLUDING CONDUIT AND WIRING ALL THE WAY BACK TO THE NEAREST PANELBOARD AND MAKE IT SAFE. DISPOSE OF WASTE MATERIALS APPROPRIATELY, OR RECYCLE AS APPLICABLE. STORE ITEMS FOR REUSE, SUCH AS LUMINAIRES, FIRE ALARM DEVICES, SECURITY DEVICES, AND PANELBOARDS. HAND OVER ITEMS TO OWNER FOR REUSE, IF REQUIRED BY OWNER.
- THE INTENT OF THESE DRAWINGS IS TO AID BIDDING CONTRACTORS IN DETERMINING THE APPROXIMATE EXTENT OF THE EXISTING EQUIPMENT TO BE REMOVED AND THE EQUIPMENT TO BE RE-USED. THESE DRAWINGS ARE PROVIDED FOR THE BIDDING PROCESS AND ARE FOR INFORMATION PURPOSES ONLY. EXACT COUNTS AND EXTENT OF WIRING TO BE REMOVED, RE-USED, RELOCATED IS TO BE DETERMINED ON SITE BY THE CONTRACTOR. CONTRACTOR SHALL ALLOW FOR RELOCATION, RE-WIRING OF OUTLETS AND DEVICES WHICH ARE NOT SHOWN ON DRAWINGS BUT WHICH MAY BE FOUND AS WORK PROCEEDS. CONTRACTOR TO USE HIS EXPERIENCE AND BEST JUDGMENT FROM SITE VISIT AND WORK OF A SIMILAR NATURE TO DETERMINE HOW MUCH WORK THIS WILL entail. MAKE ALLOWANCE IN TENDER PRICE AS NECESSARY. THE CONTRACTOR IS TO ALLOW FOR SITE VISITS, PRIOR TO SUBMITTING TENDER, TO VERIFY ALL ITEMS THAT ARE TO BE REMOVED.
- WHERE FIRE ALARM DEVICES ARE REQUIRED TO BE RELOCATED TO FACILITATE CONSTRUCTION ACTIVITIES, RECONNECT AND PERFORM RE-VERIFICATION AS REQUIRED. WHERE FIRE ALARM DEVICES ARE REMOVED AND THE FIRE ALARM SYSTEM IS MODIFIED, RE-PROGRAM AND RE-VERIFY THE SYSTEM. NOTE THAT MULTIPLE RE-VERIFICATIONS WILL BE NECESSARY DUE TO THE DEMOLITION.

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NO	SUBMISSIONS:	DATE: MM/DD/YYYY

STATUS:
CLIENT:
POLAR ENGINEERING 300 - 722 CORMORANT ST, VICTORIA, BC V8W 1P8

PROJECT NAME/ADDRESS:
OCEANSIDE PLACE ARENA NEW DEHUMIDIFIER 830 W ISLAND HWY W, PARKSVILLE, BC

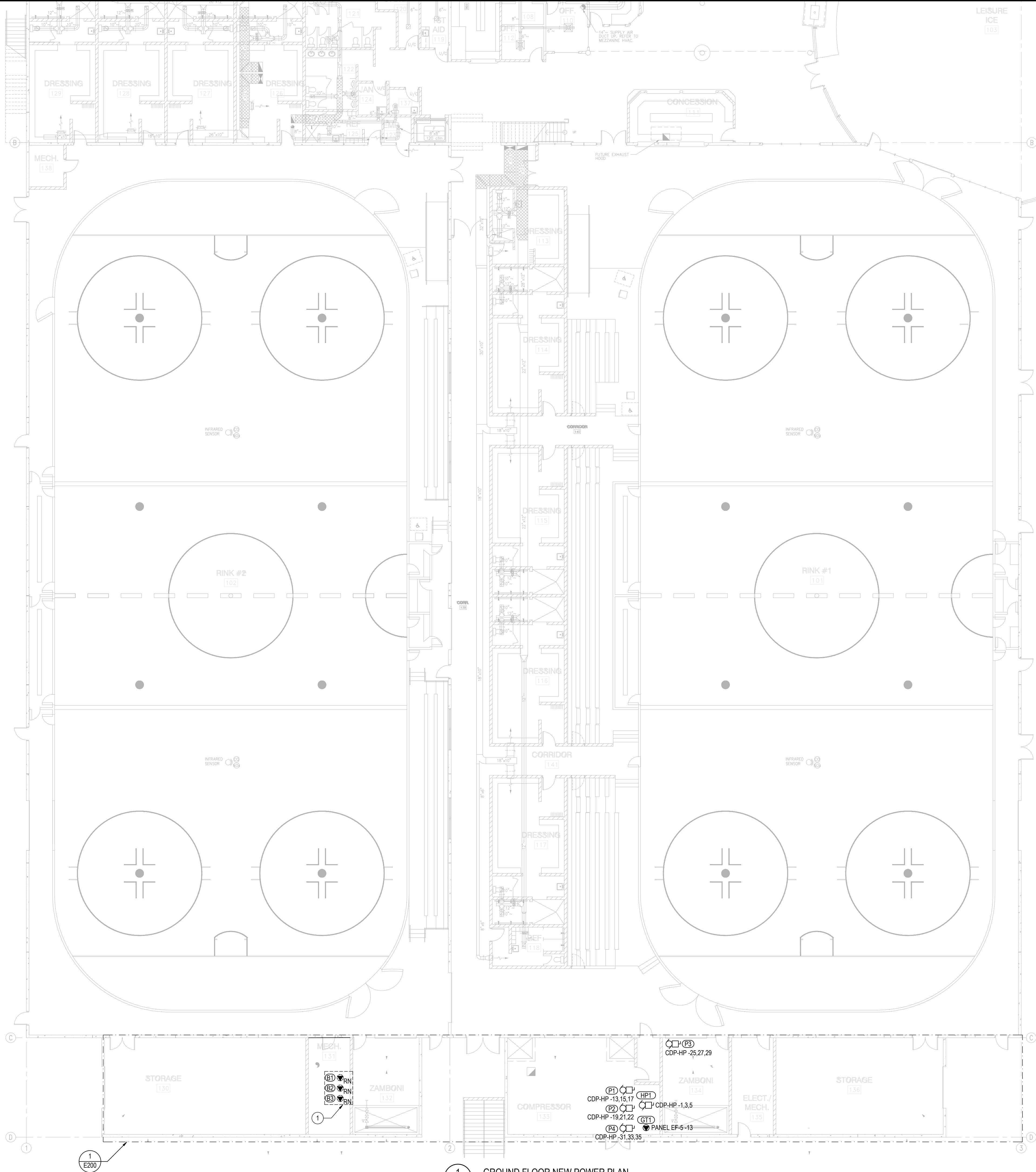
DRAWING TITLE:
DEMOLITION PLAN

DRAWING TITLE:

DEMOLITION PLAN

SCALE AT 24-36: AS NOTED	DATE: 1/31/25	DRAWN/DESIGNED: BK	CHECKED: BL
PROJECT NO: 24-281	DRAWING NO: E100		REVISION: C

1  
E100  
GROUND FLOOR DEMOLITION PLAN  
SCALE: 1:150



GENERAL NOTES:

- THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH MECHANICAL DRAWINGS. ENGINEER SHALL BE NOTIFIED OF ANY CONFLICTS PRIOR TO PROCEEDING WITH INSTALLATION.
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- THE CONTRACTOR SHOULD NOTIFY THE ENGINEER IF ANY CIRCUIT IS MISSING ON ANY DEVE AND OBTAIN DIRECTION FOR THE CIRCUIT NUMBER. NO EXTRAS WILL BE ALLOWED IF ANY CIRCUIT NUMBER IS MISSING ON DRAWING.
- THE TOTAL NUMBER OF BENDS IN A CONDUIT SYSTEM SHALL NOT EXCEED TWO 90 DEGREE BENDS. THE INSIDE RADIUS OF A BEND IN A CONDUIT SHALL BE AT LEAST 6 TIMES THE INTERNAL DIAMETER. WHEN THE CONDUIT SIZE IS LARGER THAN 53mm, THE INSIDE RADIUS SHALL BE AT LEAST 10 TIMES THE INTERNAL DIAMETER.
- ALL PATHWAYS THROUGH FIRE RATED WALLS OR FLOORS MUST BE FIRE STOPPED.
- ELECTRICAL CONTRACTOR SHALL LABEL CONDUIT EVERY 10 FEET, BOTH AND BEFORE PASSING THROUGH WALL OR FLOOR. ALL JUNCTION BOXES AND PULL BOXES SHALL BE LABELED.
- ALL PATHWAYS THROUGH FIRE RATED WALLS OR FLOOR SHALL BE FIRE STOPPED.
- ELECTRICAL CONTRACTOR SHALL ALLOW FOR X-RAY AND CORING IN QUOTE. CORE LOCATIONS SHALL BE REVIEWED BY STRUCTURAL ENGINEER PRIOR TO PROCEEDING. COST OF STRUCTURAL ENGINEER SHALL BE INCLUDED IN QUOTE.
- ELECTRICAL CONTRACTOR SHALL WEATHER SEAL AROUND ALL PENETRATIONS TO EXTERIOR.

CIRCUITING NOTES:

- CIRCUITING ANNOTATIONS ARE PROVIDED FOR GROUPING PURPOSE ONLY. CONTRACTOR TO FIND SPACE IN REFERENCED PANEL AND CONNECT.
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- CONTRACTOR SHALL ALLOW FOR MODIFICATION TO EXISTING WIRING AS REQUIRED TO ENSURE IT WILL BE OPERATIONAL WITH NEW LIGHTING CONTROL CONFIGURATION.

CABLING ON EXTERIOR OF BUILDING GENERAL NOTES:

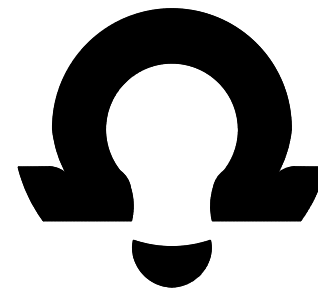
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- REFER TO DETAILS ON E.90 FOR FEEDER SIZES AND THEIR ASSOCIATED CONDUCTORS TAGS.
- CONTRACTOR TO COORDINATE WITH MECHANICAL DRAWINGS FOR FINAL ROUTING AND DETAILS FOR ROOF CURBING.
- ALL UNISTRUT TO BE HOT DIPPED GALVANIZED AND ALL HARDWARE TO BE IN STAINLESS STEEL. CUT EDGES OF UNISTRUT TO BE PAINTED WITH GALVACON.
- CONTRACTOR TO ALLOW FOR SCANNING, CORING AND MAKING GOOD OF PENETRATIONS ALONG CABLE ROUTE. PROVIDE 2 HOUR RATED FIRE STOPPING WHEN PENETRATING FIRE WALL.
- ELECTRICAL CONTRACTOR TO SUPPLY AND INSTALL ALL NEW ROOFING MAIN SUPPORTS FOR ALL ELECTRICAL WORK.

KEY NOTES:

- EXISTING BOILERS 1.2.3 IN THE MECHANICAL ROOM (RM131) TO BE REPLACED WITH NEW. ELECTRICAL CONTRACTOR TO DISCONNECT AND RECONNECT POWER CONNECTION DURING THE CONSTRUCTION.

NOTES:

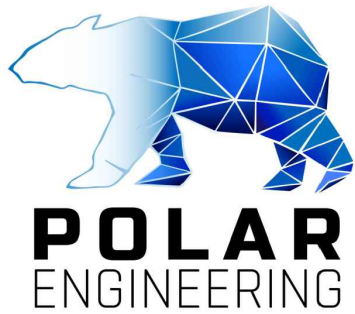
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O'M Engineering  
Electrical & Electronic  
Consulting Engineers

Permit to Practice: #1001261

PROJECT NORTH:



POLAR  
ENGINEERING



REV.	REVISIONS:	DATE: (MM/DD/YYYY)
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POLAR ENGINEERING  
300 - 722 CORMORANT ST, VICTORIA, BC V8W 1P8

PROJECT NAME/ADDRESS:

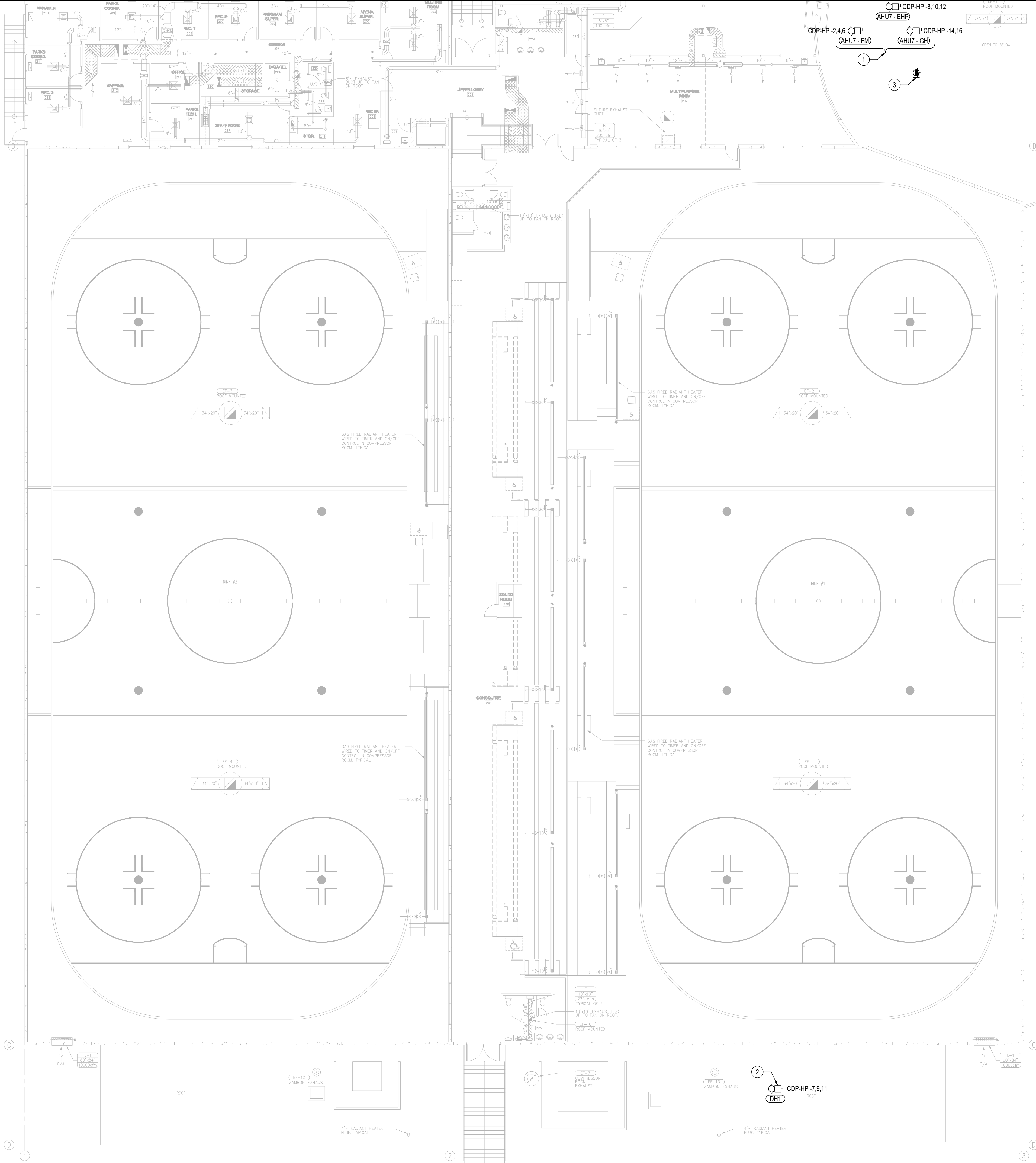
OCEANSIDE PLACE ARENA  
NEW DEHUMIDIFIER  
830 W ISLAND HWY W, PARKSVILLE, BC

DRAWING TITLE:

NEW POWER PLAN - GROUND FLOOR

SCALE AT 24x36:	DATE:	DRAWN/DESIGNED:	CHECKED:
AS NOTED	1/31/25	BK	BL
PROJECT NO:	DRAWING NO:	REVISION:	
24-281	E150	C	

1  
E150  
GROUND FLOOR NEW POWER PLAN  
SCALE: 1:150



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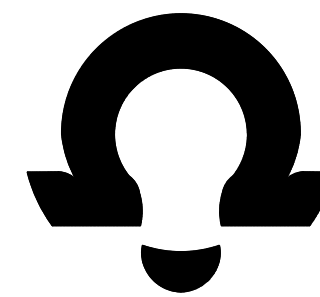
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- REFER TO DETAILS ON E.90 FOR FEEDER SIZES AND THEIR ASSOCIATED CONDUCTORS TAGS.
- CONTRACTOR TO COORDINATE WITH MECHANICAL DRAWINGS FOR FINAL ROUTING AND DETAILS FOR ROOF CURBING.
- ALL UNISTRUIT TO BE HOT DIPPED GALVANIZED AND ALL HARDWARE TO BE IN STAINLESS STEEL. CUT EDGES OF UNISTRUIT TO BE PAINTED WITH GALVACON.
- CONTRACTOR TO ALLOW FOR SCANNING, CORING AND MAKING GOOD OF PENETRATIONS ALONG CABLE ROUTE. PROVIDE 2 HOUR RATED FIRE STOPPING WHEN PENETRATING FIRE WALL.
- ELECTRICAL CONTRACTOR TO SUPPLY AND INSTALL ALL NEW ROOFING MAIN SUPPORTS FOR ALL ELECTRICAL WORK.

KEY NOTES:

- AIR HANDLING UNIT 'AHU7' TO BE MOUNTED ON ROOFTOP. REFER TO MECHANICAL DRAWINGS FOR THE EXACT LOCATION OF THE UNIT AND ITS COMPONENTS. ELECTRICAL CONTRACTOR TO PROVIDE PROPOSED ROUTING FOR REVIEW PRIOR TO INSTALLATION.
- DEHUMIDIFIER 'DH1' TO BE LOCATED ON THE MEZZANINE. REFER TO MECHANICAL DRAWINGS FOR THE EXACT LOCATION OF THE UNIT.
- INSTALL NEW ROOFTOP MAINTENANCE RECEPTACLE ADJACENT TO MECHANICAL EQUIPMENT. REFER TO DETAIL ON E201. MAINTENANCE RECEPTACLE TO BE FED FROM CLOSEST AVAILABLE PANEL AND CIRCUITED BY DEDICATED CIRCUIT BREAKER. ALLOW FOR MINIMUM OF 10'FT 2"IN 21mmC.

NOTES:

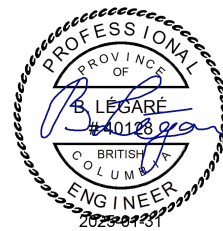
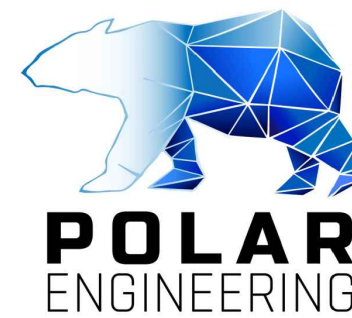
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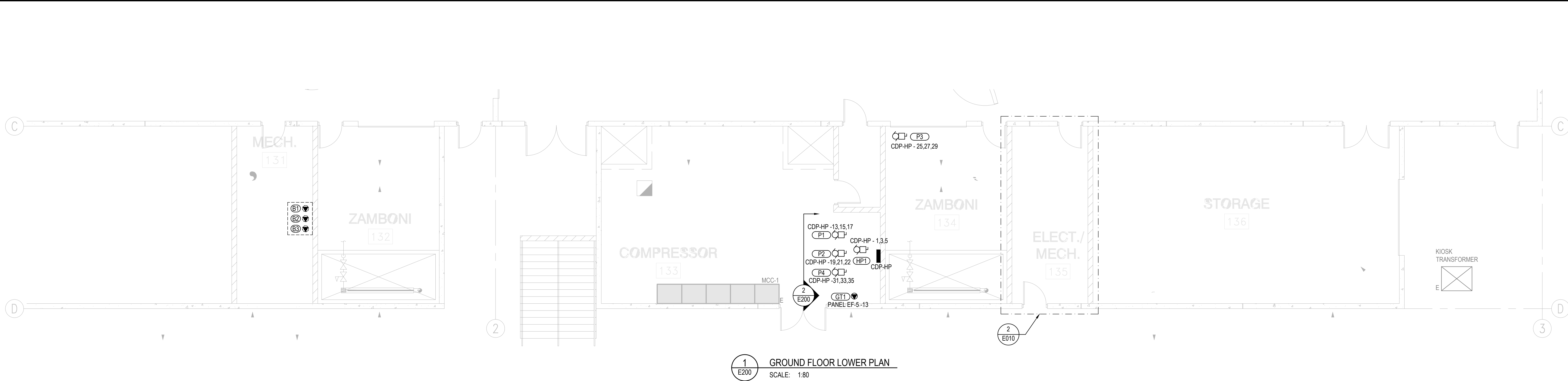
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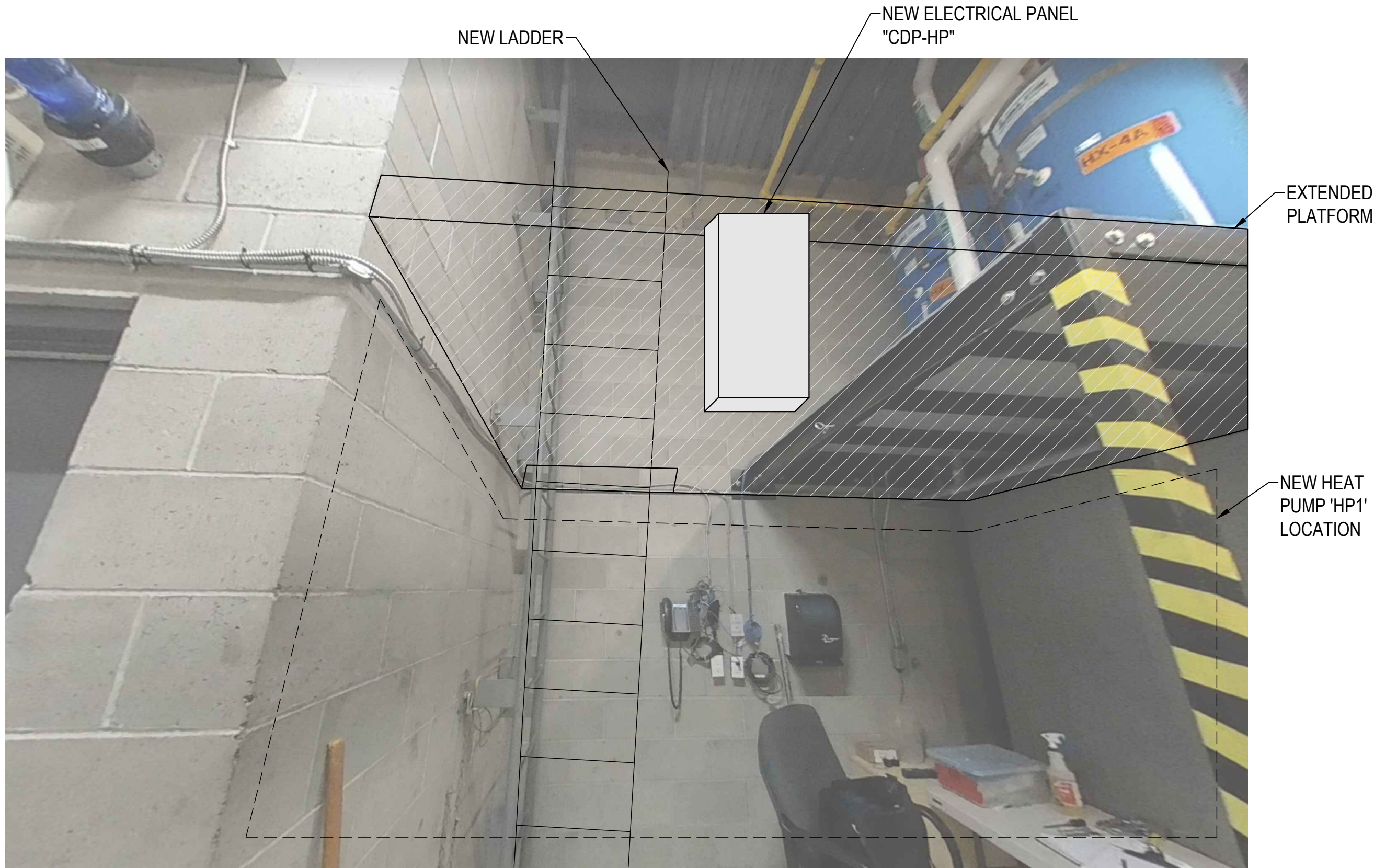
REV. REVISIONS DATE: MM/DD/YYYY

REV.	REVISIONS	DATE: MM/DD/YYYY
C	ISSUED FOR TENDER	01/31/2024
B	ISSUED FOR TENDER REVIEW	01/17/2024
A	ISSUED FOR PRELIMINARY DESIGN	08/02/2024
NO	SUBMISSIONS	DATE: MM/DD/YYYY
STATUS:		
CLIENT:		
POLAR ENGINEERING 300 - 722 CORMORANT ST, VICTORIA, BC V8W 1P8		
PROJECT NAME/ADDRESS:		
OCEANSIDE PLACE ARENA NEW DEHUMIDIFIER 830 W ISLAND HWY W, PARKSVILLE, BC		
DRAWING TITLE:		
NEW POWER PLAN - MEZZANINE		
SCALE AT 243R:		
AS NOTED	DATE: 1/31/25	DRAWN/DESIGNED: BK
PROJECT NO: 24-281	DRAWING NO: E151	CHECKED: BL
		REVISION: C

1  
E151  
MEZZANINE NEW POWER PLAN  
SCALE: 1:150



1 GROUND FLOOR LOWER PLAN  
SCALE: 1:80



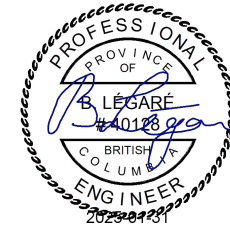
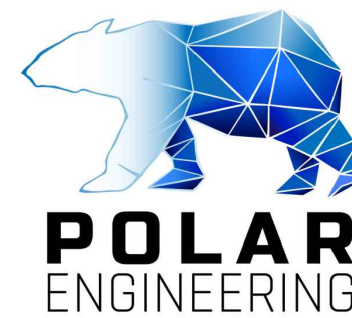
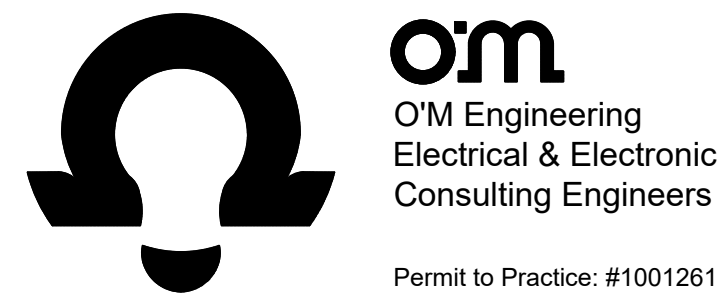
2 NEW PANEL 'CDP-HP' LOCATION  
SCALE: N.T.S.

NEW													347/600 V		3	PH	4	W	
PANEL		CDP-HP		FED FROM: MDC-1 LOCATION: COMPRESSOR ROOM (133) FEED ENTRY: BOTTOM NEMA: 2										600 A		MAIN BUS		25	KA
														600 A		MAIN BKR			
													BONDING SURFACE		BUS MOUNT				
		DESCRIPTION	BKR AMP	PL	NOTE	KILOWATTS			NOTE	PL	BKR AMP	DESCRIPTION							
						A	B	C											
1	3	HEAT PUMP 'HP1'	450A	3		61.6	3				3	20A	AHU FAN MOTORS 'AHU7-FM'	2					
5							61.6	3						4					
														6					
7	9	DEHUMIDIFIER 'DH1'	80A	3		10.6	8.1				3	40A	AHU EXTERNAL HP 'AHU7-EHP'	8					
11							10.6	8.1						10					
														12					
13	15	HP CONDENSER PUMP 'P1'	15A	3		0.3	0.75				2	15A	AHU GAS HEATER 'AHU7-GH'	14					
17							0.3	0.75						16					
19														18					
	21	HP HYDRONIC PUMP 'P2'	15A	3		2.02								20					
23							2.02							22					
														24					
25	27	DEHUMIDIFIER CIRCULATOR PUMP 'P3'	15A	3		0.43								26					
29							0.43							28					
								0.43						30					
31	33	HP SUBCOOLER PUMP 'P4'	15A	3		0.3								32					
35							0.3							34					
								0.3						36					
37	39													38					
41														40					
														42					
43	45													44					
47														46					
														48					
TOTALS						87.10	87.10	86.35											
TOTAL LOAD						260.55	KW	251.01	AMPS										

3 CDP-HP - PANEL SCHEDULE  
SCALE: N.T.S.

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NO SUBMISSIONS: DATE: MM/DD/YYYY

STATUS:

CLIENT:

POLAR ENGINEERING  
300 - 722 CORMORANT ST, VICTORIA, BC V8W 1P8

PROJECT NAME/ADDRESS:

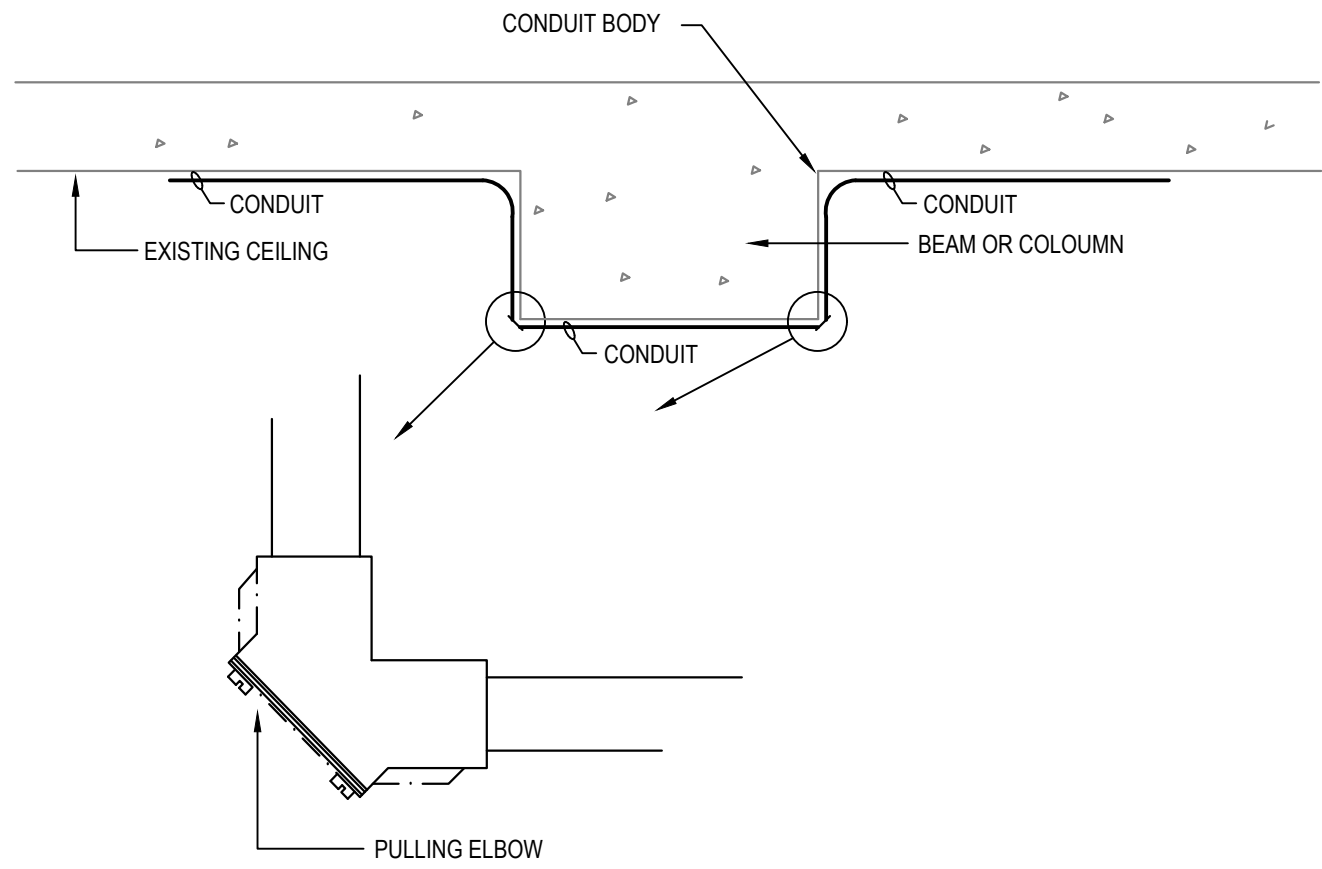
OCEANSIDE PLACE ARENA  
NEW DEHUMIDIFIER  
830 W ISLAND HWY W, PARKSVILLE, BC

DRAWING TITLE:

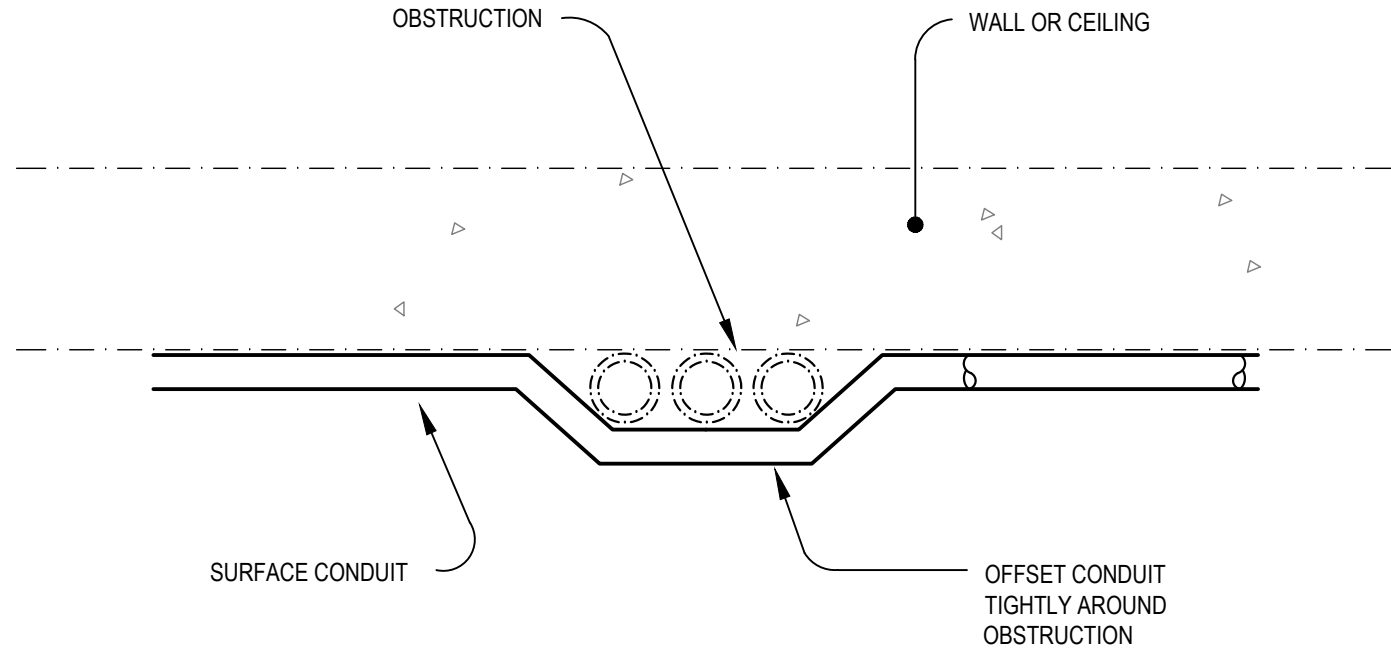
ELECTRICAL DETAILS I

SCALE AT 243R: AS NOTED DATE: 1/31/25 DRAWN/DESIGNED: BK CHECKED: BL

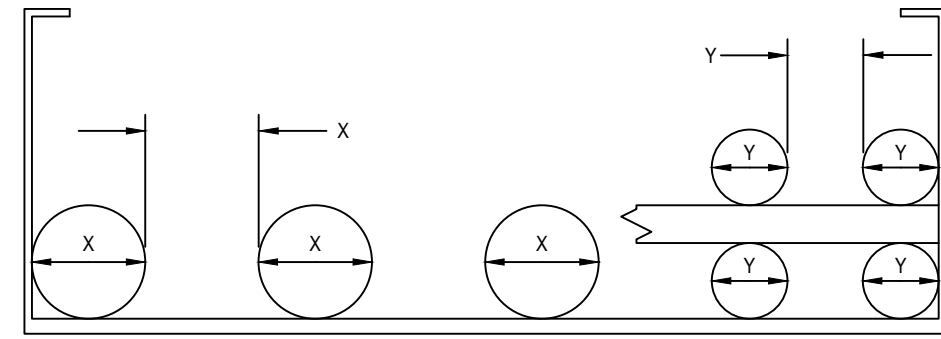
PROJECT NO: 24-281 DRAWING NO: E200 REVISION: C



1 CONDUIT AROUND BEAMS OR COLUMNS DETAIL  
SCALE: NTS

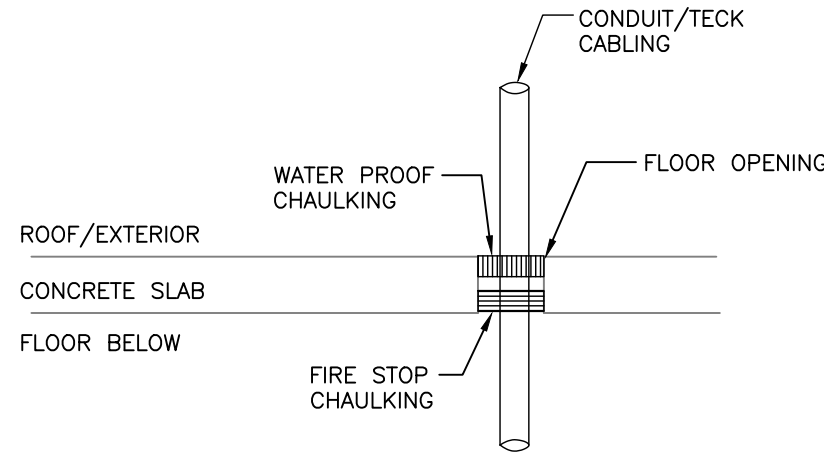


2 CONDUIT SURFACE DETAIL  
SCALE: NTS



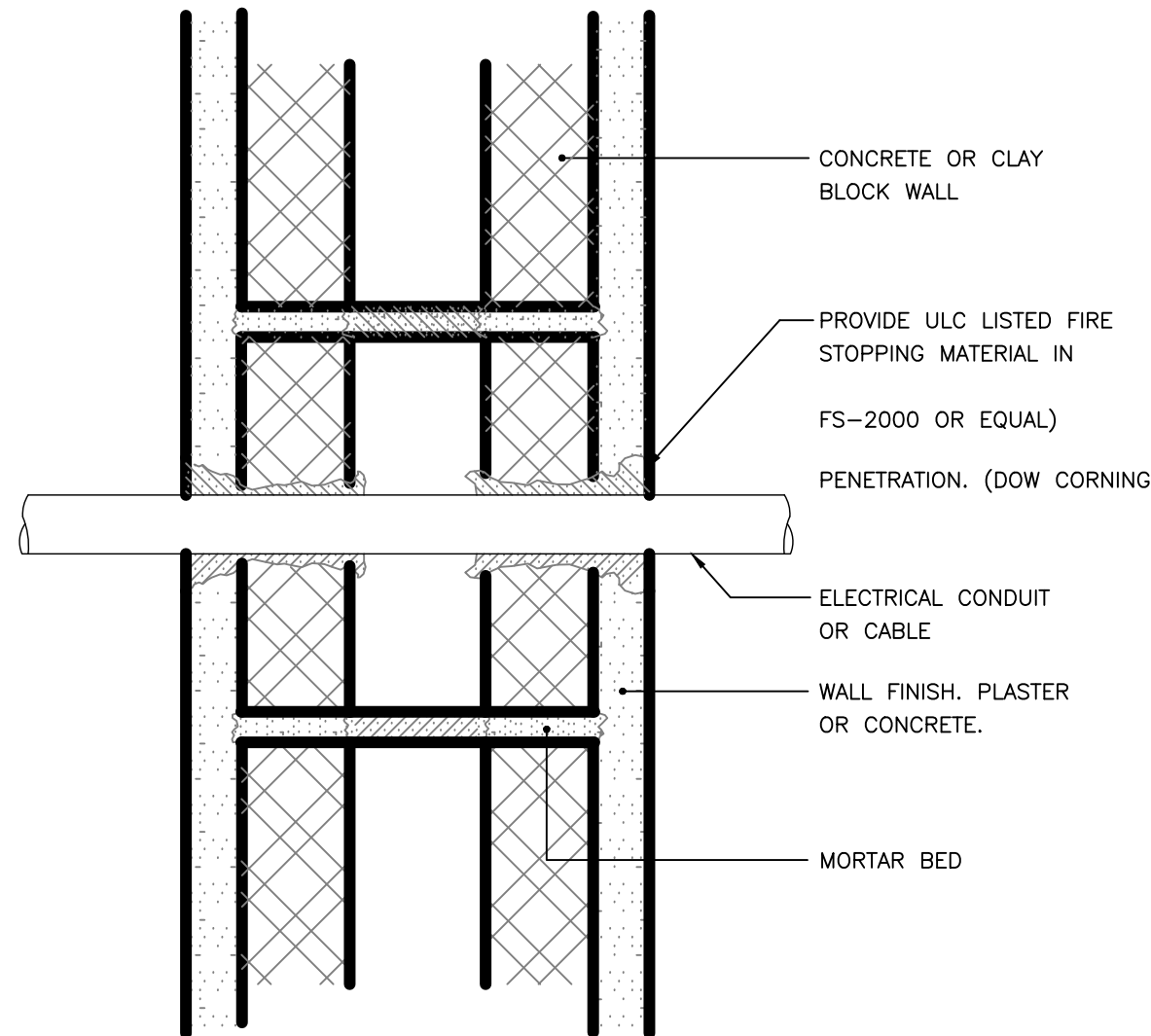
- NOTES:
1. MAINTAIN MINIMUM 100% SPACING BETWEEN CABLE IN POWER CABLE TRAYS. WHERE CABLE IN THE CABLE TRAYS REQUIRE TO BE STACKED, MAINTAIN MINIMUM 100% SPACING OF THE LARGEST CABLE.
  2. IN GENERAL ALL FEEDERS SHALL BE TECK CABLE RUN IN TRAY. WHERE FEEDERS MUST LEAVE/ENTER THE BUILDING, PROVIDE ALUMINUM JUNCTION BOX AND/OR ALUMINUM SPLITTER BOX AND TRANSITION TO FIRE RATED CABLE WHERE NOTED ON DRAWINGS.

3 TYPICAL POWER CABLE TRAY DETAIL  
SCALE: NTS

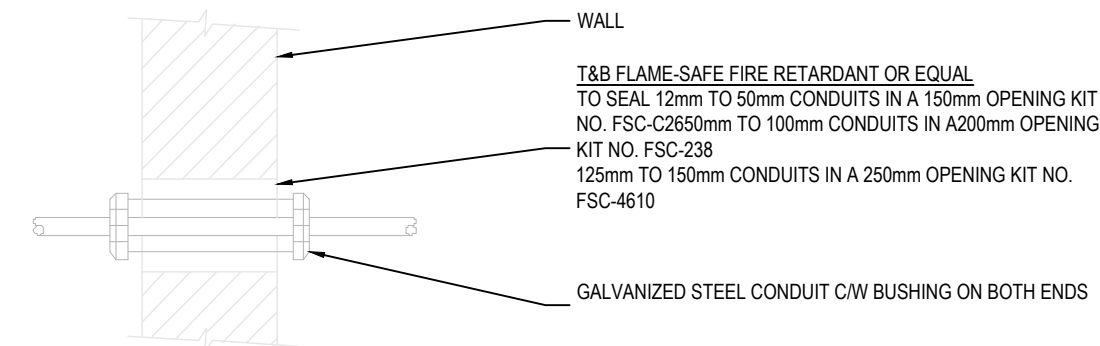


- NOTES:
1. ALL INSTALLATION TO SUIT BASE BUILDING GUIDELINES.

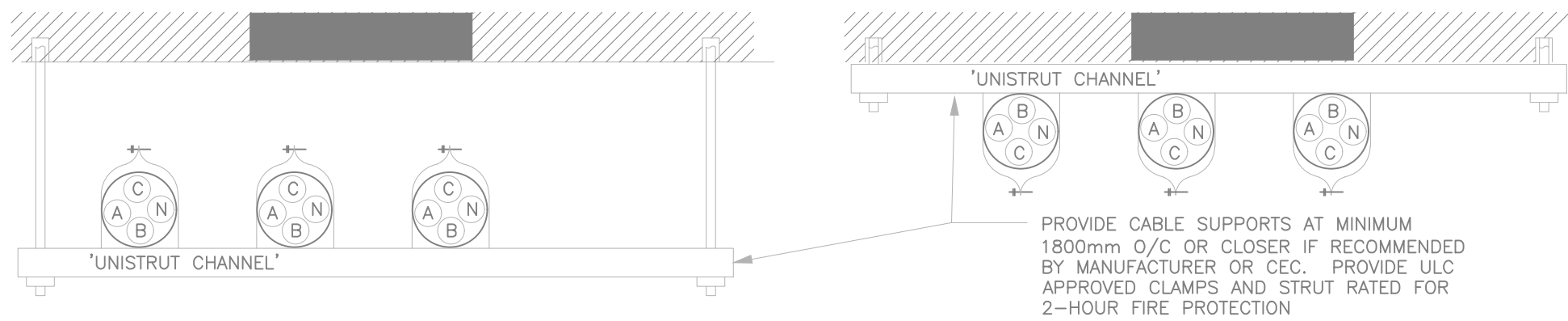
4 TYPICAL FIRE STOPPING AND WATERPROOFING  
SCALE: NTS



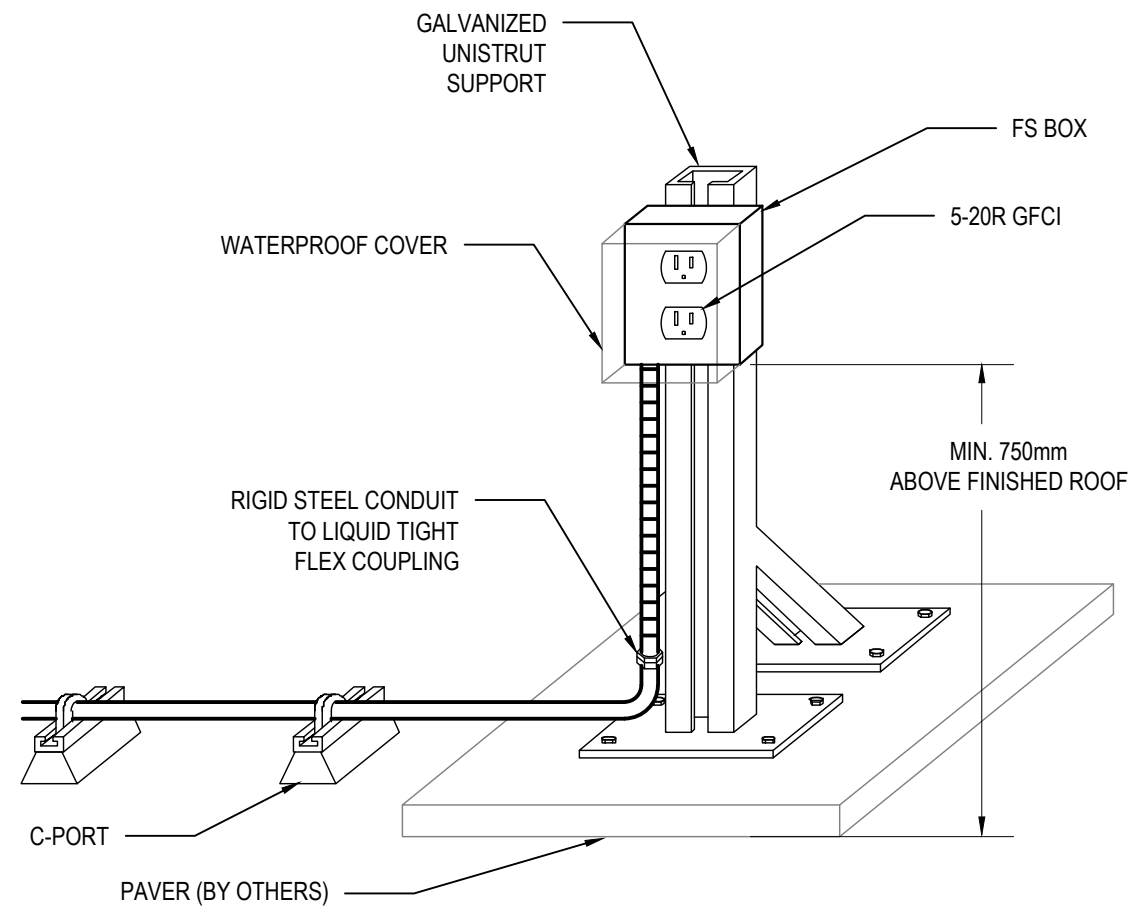
5 HORIZONTAL PENETRATION FIRE STOP  
SCALE: NTS



6 CONDUIT SLEEVE THROUGH WALL OR FLOOR  
SCALE: NTS



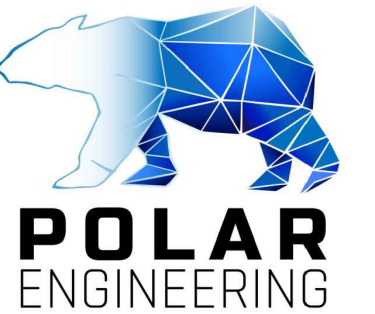
7 TYPICAL CONDUIT INSTALLATION DETAIL  
SCALE: NTS



8 ROOFTOP MAINTENANCE RECEPTACLE DETAIL  
SCALE: NTS

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NO.	SUBMISSIONS	DATE (MM/DD/YYYY)

STATUS:

CLIENT:

POLAR ENGINEERING  
300 - 722 CORMORANT ST, VICTORIA, BC V8W 1P8

PROJECT NAME/ADDRESS:  
OCEANSIDE PLACE ARENA  
NEW DEHUMIDIFIER  
830 W ISLAND HWY W, PARKSVILLE, BC

DRAWING TITLE:

ELECTRICAL DETAILS II

SCALE AT 24x36:	DATE:	DRAWN/DESIGNED:	CHECKED:
AS NOTED	1/31/25	BK	BL
PROJECT NO:	DRAWING NO:	REVISION:	
24-281	E201	C	

PROJECT NO. 24-281  
Date 2025-01-27

OCEANSIDE ARENA NEW DEHUMIDIFIER

TOTAL EQUIPMENT LOAD262 KVA  
EMERGENCY POWER LOAD- KVA  
STANDBY BACK-UP POWER LOAD- KVA  
NON-EMERG. POWER LOAD262 KVA

o.m

O M Engineering  
Electrical & Electronic  
Consulting Engineers

EQUIPMENT															POWER SOURCE FA INTERFACE	BRANCH CIRCUIT				FEEDER			EQUIPMENT			STARTER				DISC. SWITCH		CONTROL DEVICE			RECEPTACLE / CONNECTOR TYPE	NOTES																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
UNIT					LOAD DATA											PNL	CCT NO.	BREAKERS		WIRES		BND. (CU)	CONDUIT	SUPPLIED	INSTALLED	WIRED	GROUPING	TYPE(B)	TYPE	INSTALLED	WIRED	SUPPLIED	INSTALLED	WIRED			TYPE	SUPPLIED	INSTALLED	WIRED																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
TAG	QTY.	TYPE	DESCRIPTION	LOCATION / AREA SERVED	VOLT	PH	POWER	UNIT	VA PER UNIT	MOCp	MOCp AUTO	FLA	MCA	VA TOTAL				AMPS	POLES	NO. OF WIRE	SIZE (AWG OR KCMIL)																				SIZE (AWG OR KCMIL)	SIZE (mmØ)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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DH1	1	MTR	DEHUMIDIFIER	ROOF ABOVE MECH RM	575	3	32.00	FLA	31.870			80	32.00	40.00	31.870	N	OFF	CDP-4P			80 A	3 P	3	#8	#10	21																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							

1 MECHANICAL SCHEDULE  
E210 SCALE: NTS

## Oceanside Place Arena Load Calculation

### Installed Capacity @ Service Entrance

Existing BC Hydro transformer rating	=	750 kW
Incoming breaker rating 1000 Amps @ 600V	=	1039 kW
Max utilization @ 80%	=	831 kW

### Existing BC Hydro Peak Demand

BC Hydro Max Demand of Arena from Jan 2023 to Dec 2023	=	321 kW
Spare capacity available at Main Distribution Cabinet (MDC)	=	429 kW


### New Mechanical Load (from Polar Engineering)

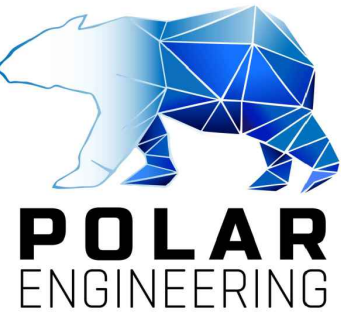
Heat pump 'HP-1'	=	185.0 kW
Dehumidifier 'DH1'	=	32.0 kW
HP Condenser Pump 'P1'	=	0.9 kW
HP Hydronic Pump 'P2'	=	6.1 kW
Dehumidifier Circulator Pump 'P3'	=	1.3 kW
HP Subcooler Pump 'P4'	=	0.9 kW
AHU Fan Motors 'AHU7-FM'	=	9.0 kW
AHU Gas Heaters 'AHU7-GH'	=	1.5 kW
AHU External HP 'AHU7-EHP'	=	12.8 kW
Glycol Feed Tank 'GT-1'	=	1.0 kW

**Total New Mechanical Load** = **251 kW**

**Spare Capacity on MDC-1** = **179 kW**

2 LOAD CALCULATION  
E210 SCALE: NTS

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<div><div><p><b>O'M Engineering</b> Electrical &amp; Electronic Consulting Engineers</p></div></div> <p>Permit to Practice: #1001261</p>	



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CLIENT:

**POLAR ENGINEERING**  
300 - 722 CORMORANT ST, VICTORIA, BC V8W 1P8

PROJECT NAME/ADDRESS:

OCEANSIDE PLACE ARENA  
NEW DEHUMIDIFIER  
830 W ISLAND HWY W, PARKSVILLE, BC




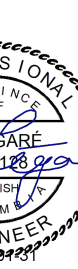
DRAWING TITLE:

### MECHANICAL SCHEDULE & LOAD CALCULATION

SCALE AT 24x36: <b>AS NOTED</b>	DATE: <b>1/31/25</b>	DRAWN/DESIGNED: <b>BK</b>	CHECKED: <b>BL</b>
PROJECT NO: <b>24-281</b>	DRAWING NO: <b>E210</b>		REVISION: <b>C</b>

## ELECTRICAL SPECIFICATIONS

1.	GENERAL	1. GENERAL REQUIREMENTS, INSTRUCTIONS TO BIDDERS, THIS SPECIFICATION AND ANY ADDENDA HERETO FORM PART OF THE CONTRACT DOCUMENTS AND SHALL BE READ IN CONJUNCTION WITH THEM. WORK TO INCLUDE THE FURNISHING OF ALL LABOR AND MATERIALS, UNLESS SPECIFIED OTHERWISE, TO COMPLETE AND PUT INTO OPERATING CONDITION ALL ELECTRICAL SYSTEMS AS INDICATED ON THE DRAWINGS AND SPECIFIED HEREIN.	1. ALL MATERIALS ARE TO BE NEW AND OF THE QUALITY SPECIFIED, AND SHALL BE APPROVED BY CSA OR EQUIVALENT AGENCY RECOGNIZED IN BRITISH COLUMBIA.	2. ALL WORK SHALL BE EXECUTED IN A NEAT AND WORKMANLIKE MANNER BY QUALIFIED TRADESMEN. THE ELECTRICAL CONTRACTOR SHALL KEEP A COMPETENT FOREMAN AND NECESSARY ASSISTANTS ON THE SITE DURING THE PROGRESS OF THE WORK.	3. ALL MATERIAL AND INSTALLATION SHALL MATCH BUILDING STANDARD UNLESS IT IS NOTED OTHERWISE ON THE DRAWINGS.	6. RECORD PLANS & MAINTENANCE MANUALS	1. THE ELECTRICAL CONSULTANT WILL FURNISH TO THE ELECTRICAL TRADE ONE SET OF DRAWINGS TO BE USED FOR AS-BUILT PURPOSES. THE ELECTRICAL TRADE IS TO ACCURATELY RECORD ON THESE PRINTS ALL REVISIONS TO THE ORIGINAL PLANS THAT ARE MADE ON SITE DURING CONSTRUCTION.	2. THE ELECTRICAL TRADE IS TO PRODUCE AT HIS OWN EXPENSE A SET OF RED LINE MARK-UP AS-BUILT DRAWINGS, INCLUDING ALL CHANGES TO THE ORIGINAL TENDER DRAWINGS COVERED BY ADDENDA, CHANGE ORDERS, CHANGES, AND JOB CONDITIONS, AND TURN THESE OVER TO THE ENGINEER IN HARD COPY FORM. COMPLETED AS-BUILT DRAWINGS ARE TO BE CLEARLY MARKED "CERTIFIED AS-BUILT DRAWINGS". REFER TO LINE ITEM 3.	3. ON ENGINEERING SHALL PRODUCE THE RECORD DRAWINGS IN AUTOCAD FORMAT BASED ON THE CERTIFIED AS-BUILT DRAWINGS RECEIVED FROM THE CONTRACTOR. CONTRACTOR SHALL ASSIST ON ENGINEERING IN INTERPRETING ILLEGIBLE OR INDEIPHERABLE RED LINE MARK-UPS.	4. THIS CONTRACTOR SHALL PROVIDE 3 THREE-RING BINDERS FOR MAINTENANCE MANUALS. MANUALS SHALL CONTAIN ALL WARRANTIES, SHOP DRAWINGS, INSPECTION LETTERS, PANEL SCHEDULES, ETC. IN ADDITION TO THE HARD COPY, THE CONTRACTOR SHALL SUBMIT A SOFTCOPY OF THE MAINTENANCE MANUAL VIA USB DRIVE OR BY THE MEANS OF ELECTRONIC FILE TRANSFER.	7. SHOP DRAWINGS	1. THE ELECTRICAL CONTRACTOR IS TO SUBMIT TO THE ELECTRICAL CONSULTANT FOR REVIEW AND APPROVAL, PRIOR TO COMMENCEMENT OF THE WORK, ELECTRICAL CONTRACTOR SHALL ALLOW FOR THE SERVICES OF A STRUCTURAL ENGINEER TO REVIEW PROPOSED CORE HOLE LOCATIONS PRIOR TO CORING.	2. ALL DRAWINGS ARE TO BE SUBMITTED IN PDF FORMAT VIA ELECTRONIC FILE TRANSFER.	3. THE ELECTRICAL CONSULTANT'S REVIEW OF SHOP DRAWINGS IS TO BE FOR GENERAL DESIGN ONLY AND WILL NOT RELIEVE THE ELECTRICAL CONTRACTOR OR SUPPLIERS FROM RESPONSIBILITY FOR ERRORS, PROPER FITTING, CONSTRUCTION OF WORK, AND FURNISHING OF MATERIALS. REVIEW WILL NOT BE CONSTRUED AS APPROVING DEPARTURES FROM CONTRACT DOCUMENT REQUIREMENTS IF SUCH DEPARTURES ARE NOT SPECIFICALLY NOTED. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS.	8. GUARANTEE WARRANTY	1. THE ELECTRICAL CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE WARRANTY, SIGNED BY AUTHORIZED PERSONNEL, STATING:  1. THAT ALL WORK EXECUTED UNDER THIS CONTRACT WILL BE FREE FROM DEFECTS OF MATERIAL AND WORKMANSHIP FOR A PERIOD OF 1 YEAR FROM DATE OF SUBSTANTIAL COMPLETION.  2. THE ABOVE PARTIES FURTHER AGREE TO, AT THEIR OWN EXPENSE, REPAIR AND REPLACE ALL SUCH DEFECTIVE WORK, AND OTHER WORK DAMAGED THEREBY, WHICH FAILS OR BECOMES DEFECTIVE DURING THE TERM OF THE GUARANTEE WARRANTY PROVIDED THAT SUCH FAILURE IS NOT DUE TO IMPROPER USAGE.  3. THE PERIOD OF THE GUARANTEE SPECIFIED WILL IN NO WAY SUPPLANT ANY OTHER GUARANTEE OF A LONGER PERIOD BUT BE BINDING ON WORK NOT OTHERWISE COVERED.	9. SETTING OUT OF THE WORK	1. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR CORRECTING ALL WORK COMPLETED CONTRARY TO THE INTENT OF DRAWINGS AND SPECIFICATIONS AND SHALL BEAR ALL COSTS INVOLVED IN MAKING THE CORRECTIONS. WHERE INTENT OF DRAWINGS AND SPECIFICATIONS IS NOT CLEAR, OBTAIN CLARIFICATION FROM THE ELECTRICAL CONSULTANT BEFORE PROCEEDING WITH WORK.  2. THE ELECTRICAL CONTRACTOR IS TO GIVE WORK HIS PERSONAL SUPERVISION, LAY OUT HIS OWN WORK, DO ALL NECESSARY LEVELING AND MEASURING OR EMPLOY A COMPETENT ENGINEER TO DO SO. FIGURES, FULL SIZE AND DETAIL DRAWINGS TO TAKE PRECEDENCE OVER SCALE MEASUREMENTS.  3. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE CAUSED TO THE OWNER OR ANY OTHER TRADE BY IMPROPER LOCATION OR CARRYING OUT OF HIS WORK.  4. THE ELECTRICAL CONTRACTOR, IN THE SETTING OUT OF HIS WORK, IS TO MAKE REFERENCE TO ARCHITECTURAL, STRUCTURAL, AND MECHANICAL DRAWINGS. HE SHALL CONSULT WITH ALL RELEVANT TRADES IN SETTING OUT LOCATIONS FOR CONDUIT RUNS, LIGHTING FIXTURES, PANEL ASSEMBLIES, AND ALL OTHER ELECTRICAL EQUIPMENT, SO THAT CONFLICTS ARE AVOIDED AND SYMMETRICAL SPACING IS MAINTAINED.	10. EXAMINATION OF THE SITE	1. PRIOR TO SUBMITTING TENDER, THE ELECTRICAL CONTRACTOR SHALL CAREFULLY EXAMINE THE SITE AND ASCERTAIN ALL CONDITIONS WHICH MAY AFFECT HIS TRADE. NO ADDITIONAL MONEY WILL BE ALLOWED FOR WORK RESULTING FROM CONDITIONS THAT SHOULD HAVE BEEN NOTICED AND ACCOUNTED FOR DURING A THOROUGH EXAMINATION OF THE SITE.	11. CUTTING AND PATCHING	1. THE GENERAL TRADE WILL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING REQUIRED FOR ELECTRICAL INSTALLATION. STRUCTURAL MEMBERS MUST NOT BE CUT WITHOUT CONSENT OF THE STRUCTURAL ENGINEER.  2. WHERE WORK DONE BY THE ELECTRICAL TRADE DAMAGES THE WORK OF OTHER TRADES, THE ELECTRICAL TRADE SHALL REPAIR AND MAKE GOOD SUCH DAMAGE TO THE SATISFACTION OF EACH TRADE CONCERNED AND THE ENGINEER.	12. CLEANUP	1. THE ELECTRICAL CONTRACTOR AND HIS SUB-TRADES ARE TO KEEP THE SITE FREE DURING CONSTRUCTION OF DEBRIS, BOXES, PACKING, AND OTHER MATERIALS ASSOCIATED WITH THE WORK OF THIS TRADE. ALL WASTE MATERIAL IS TO BE DISPOSED OF IN A SAFE AND ENVIRONMENTALLY RESPONSIBLE MANNER.  2. UPON COMPLETION OF WORK, THE ELECTRICAL INSTALLATION SHALL BE LEFT IN A CLEAN AND FINISHED CONDITION TO THE SATISFACTION OF THE ELECTRICAL CONSULTANT.	13. ACCESS DOORS	1. THE ELECTRICAL CONTRACTOR IS TO SUPPLY AND INSTALL ACCESS DOORS AS REQUIRED FOR PROPER SERVINGS OF ALL ELECTRICAL WORK. ACCESS DOORS SHALL BE COMPLETE WITH NECESSARY FRAMES AND HINGED DOORS HELD CLOSED WITH CAPTIVE STUDS. ACCESS PANEL TO BE OF NOT LESS THAN 14 GAUGE STEEL, PRIME COAT FINISHED AND PAINTED ON THE JOB TO MATCH THE WALL OR CEILING FINISH.  2. THE NUMBER OF ACCESS DOORS SHALL BE KEPT TO A MINIMUM.  3. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ACCESS PANELS IN THE DRYWALL CEILINGS FOR ALL ELECTRICAL JUNCTION BOXES AND EQUIPMENT IN ACCORDANCE WITH APPLICABLE CODES.  4. PROVIDE FIRE RATED ACCESS HATCHES FOR ALL OPENINGS IN RATED SHAFTS OR WALL ASSEMBLIES. RATING OF ACCESS HATCH SHALL MATCH FIRE RESISTANCE RATINGS OF SHAFT OR WALL ASSEMBLY.	14. CODES, PERMITS AND INSPECTION	1. THE ENTIRE INSTALLATION, INCLUSIVE OF MATERIAL AND LABOR, IS TO COMPLY WITH ALL THE REQUIREMENTS OF ALL APPLICABLE BUILDING CODES AND AUTHORITIES HAVING JURISDICTION, THE CANADIAN ELECTRICAL CODE, AND REGULATIONS OF THE LOCAL INSPECTION DEPARTMENT.  2. THE ELECTRICAL CONTRACTOR IS TO OBTAIN ALL PERMITS REQUIRED FOR EACH STAGE OF WORK, AND AFTER COMPLETION OF THE ENTIRE INSTALLATION FURNISH TO THE ELECTRICAL CONSULTANT A CERTIFICATE OF FINAL INSPECTION AND APPROVAL FROM THE ELECTRICAL INSPECTION DEPARTMENT OF THE AUTHORITY HAVING JURISDICTION.	15. MECHANICAL EQUIPMENT	1. UNLESS SPECIFIED OTHERWISE, THE ELECTRICAL CONTRACTOR IS TO SUPPLY AND INSTALL ALL REQUIRED CONDUIT, WIRING, ELECTRICAL FITTINGS AND CONNECTIONS FOR ALL MOTORS AND OTHER ELECTRICAL EQUIPMENT, EVEN THOUGH SUCH MOTORS AND OTHER ELECTRICAL EQUIPMENT MAY BE SUPPLIED BY OTHERS. WHERE REQUIRED BY THE DRAWINGS OR APPLICABLE REGULATIONS, DISCONNECT SWITCHES, STARTERS, OVERLOAD RELAYS AND OTHER NECESSARY PROTECTIVE DEVICES ARE TO BE SUPPLIED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. MOTORS AND CONTROLS SHALL BE FURNISHED BY THE SUPPLIER OF THE DRIVEN EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL INCLUDE ALL WORK AND CONNECTIONS REQUIRED TO MAKE THE SYSTEM COMPLETE AND OPERATIONAL.  2. THE ELECTRICAL EQUIPMENT MAY INCLUDE BUT NOT BE LIMITED TO SUCH ITEMS AS GRILLE MOTORS AND INTERLOCKS, STOREFRONT AND INTERIOR SIGNAGE,	16. TESTS	1. ALL PORTIONS OF ELECTRICAL WORK ARE TO BE TESTED FOR SATISFACTORY OPERATION.  2. BEFORE ENERGIZING ANY PORTION OF THE ELECTRICAL SYSTEM, THE ELECTRICAL CONTRACTOR SHALL PERFORM MEGGER TESTS ON ALL FEEDERS OVER 60A. ANY PROBLEMS DISCOVERED BY SUCH TESTING ARE TO BE CORRECTED BY THE ELECTRICAL CONTRACTOR AND THE CIRCUITS IN QUESTION RETESTED. THE RESULTS OF ALL FINAL TESTING SHALL BE PROVIDED TO THE ELECTRICAL CONSULTANT IN REPORT FORM.  3. UPON PROJECT COMPLETION, AND IMMEDIATELY PRIOR TO FINAL INSPECTION AND TAKEOVER, THE ELECTRICAL CONTRACTOR SHALL CHECK THE LOAD BALANCE ON ALL FEEDERS AND AT DISTRIBUTION CENTRES, LOAD CENTRES, AND PANELS. THESE CHECKS ARE TO BE CARRIED OUT BY TURNING ON ALL LOADS AND CHECKING LOAD CURRENT BALANCE. IF LOAD UNBALANCE EXCEEDS 15 %, THE CIRCUITS ARE TO BE RECONFIGURED AS NECESSARY TO BALANCE THE LOADS.	17. PAINTING AND FINISHES	1. ALL ELECTRICAL FITTINGS, SUPPORTS, HANGER RODS, PULLBOXES, CHANNEL FRAMES, CONDUIT RACKS, OUTLET BOXES, BRACKETS, AND CLAMPS ARE TO HAVE A GALVANIZED FINISH OR A PAINT FINISH OVER CORROSION-RESISTANT PRIMER.  2. ALL PANELS ARE TO BE FACTORY-FINISHED WITH SPRAY-ON AIR DRY ENAMEL. ALL ENAMEL TO BE APPLIED OVER CORROSION-RESISTANT PRIMER. MATTE OR FLAT TYPE FINISH PAINT WILL NOT BE ACCEPTED. ALL PANELS OR SIMILAR FACTORY-FINISHED UNITS ARE TO BE SCRATCHED OR MARKED DURING INSTALLATION ARE TO BE TOUCHED UP WITH MATCHING SPRAY-ON AIR DRY LAQUER AND, IF REQUIRED TO PROVIDE A SATISFACTORY JOB, TO BE COMPLETELY REFINISHED.  3. ALL PANELBOARDS, PULLBOXES, AND OTHER ELECTRICAL CABINETS AND BOXES ARE TO BE FINISHED IN GRAY ENAMEL.	18. PATHWAYS	1. WHERE REQUIRED BY THE CANADIAN ELECTRICAL CODE, ALL WIRE AND CABLE IS TO BE INSTALLED IN EMT CONDUIT. PROVIDE RAINIGHT FITTINGS FOR ANY EMT INSTALLED ON EXTERIOR OF BUILDING OR AREAS WHERE MOISTURE OR WATER MAY BE PRESENT.  2. UNLESS OTHERWISE NOTED, EMT CONDUIT ARE TO BE CONCEALED IN ALL FINISHED AREAS. IN SERVICE AREAS, CONDUIT AND EMT SHALL BE RUN ON SURFACE UNLESS INDICATED OTHERWISE.  3. SURFACE MOUNTED EMT CONDUIT ARE TO BE INSTALLED PARALLEL TO STRUCTURAL LINES, AND, WHERE BENDS OCCUR IN PARALLEL RUNS, THEY SHALL BE CONCENTRIC.  4. RACEWAYS ARE TO BE INSTALLED FREE FROM DENTS AND BRUISES AND SHALL HAVE THEIR ENDS CAPPED, PLUGGED, OR SEALED AS NECESSARY TO PREVENT ENTRANCE OF DIRT OR MOISTURE.  5. IN ALL AREAS SUBJECT TO MOISTURE, WATERTIGHT FITTINGS MUST BE USED.  6. ALL RACEWAY, EXCEPT WHERE OTHERWISE INDICATED, SHALL BE SIZED IN ACCORDANCE WITH THE CANADIAN ELECTRICAL CODE.  7. TECK90 OR SEAL TIGHT FLEXIBLE CONDUIT IS BE UTILIZED FOR CONNECTIONS TO MOTORS AND MOTOR CONTROLLERS.  8. ALL UNDERGROUND CONDUIT SYSTEMS ARE TO BE OF APPROVED RPVC SCHEDULE 40 CONDUIT, COMPLETE WITH INSTALLED BONDING CONDUIT AT OR BELOW THE DEPTH REQUIRED BY CODE. PROVIDE 150mm CLEAN SAND BEDDING ABOVE AND 75mm BELOW CONDUITS AND CONTINUOUS MARKING TAPE 300mm BELOW GRADE. PROVIDE SUITABLE BACKFILL AND COMPACTION.  9. PROVIDE "GOOSENECK" TYPE METALLIC ROOF FLASHING COMPLETE WITH CABLE HEAD FOR ALL CONDUIT/CABLE ROOF PENETRATIONS. GOOSENECK CONDUIT SHALL BE MINIMUM 2" DIAMETER. GOOSENECK OPENINGS SHALL BE TIGHTLY PACKED WITH MINERAL WOOL AFTER INSTALLATION OF CABLES.  10. PROVIDE RUBBERIZED CONDUIT SUPPORT BLOCKS FOR MOUNTING OF CONDUITS ON ROOF TOPS. SUPPORT BLOCKS SHALL BE UV RESISTANT AND COMPLETE WITH STRUT. CONDUIT SUPPORTS SHALL BE SECURED TO STRUCTURE EVERY 20R WITHOUT COMPROMISING THE WATERPROOFING PROPERTIES OF THE ROOF. NO ROOF PENETRATIONS ALLOWED. ELECTRICAL CONTRACTOR SHALL CONFIRM ANCHORAGE AND SEISMIC RESTRAINT REQUIREMENTS WITH SEISMIC ENGINEER.	19. EXPANSION JOINTS	1. WHERE CONDUITS ARE INSTALLED IN CONCRETE SLABS OR CROSS STRUCTURAL EXPANSION JOINTS, AN APPROVED EXPANSION FITTING SHALL BE INSTALLED.	20. WIRE AND CABLE	1. ALL BUILDING WIRING IS TO BE RW90, 60V, COPPER, EXCEPT WHERE NOTED OTHERWISE. ALL WIRING SHALL BE STRANDED.  2. A MINIMUM CONDUCTOR SIZE OF #12 AWG COPPER IS TO BE USED, EXCEPT WHERE NOTED OTHERWISE.	21. WIRING DEVICES & BOXES	1. ALIGN ALL DEVICES AND PLATES PLUMB AND LEVEL WITH BUILDING STRUCTURAL LINES.  2. ALL OUTLET BOXES ARE TO BE FLUSH MOUNTED EXCEPT WHERE SPECIFIED OTHERWISE.  3. ALL JUNCTION BOXES ARE TO HAVE VISIBLE P-TOUCH LABELS INDICATING THE CIRCUIT NUMBERS UTILIZED; PEN OR FELT IS NOT ACCEPTABLE.  4. SUPPLY AND INSTALL BLANK COVER PLATES FOR ALL UNUSED JUNCTION BOXES, INCLUDING EXISTING.  5. OUTLET BOXES SHALL NOT BE LOCATED BACK TO BACK ON FIRE RATED WALLS SEPARATING TWO OCCUPANCIES. OUTLET BOXES SHALL BE MINIMUM OF 600mm APART.  6. PROVIDE NON-COMBUSTIBLE OUTLET BOXES IN FIRE RATED WALLS.	22. LOCATION OF OUTLETS	1. THE ENGINEER RESERVES THE RIGHT TO CHANGE THE LOCATION OF OUTLETS TO WITHIN 3 M OF POINTS INDICATED ON PLANS WITHOUT EXTRA CHARGE, PROVIDED THE ELECTRICAL CONTRACTOR IS ADVISED BEFORE INSTALLATION IS MADE.  2. ELECTRICAL TRADE TO REFER TO ARCHITECTURAL ROOM ELEVATIONS FOR POSITIONS, AND MOUNTING HEIGHTS OF ALL OUTLETS, SWITCHES, INTERCOMMUNICATION, TELEPHONES, SPEAKERS, CLOCKS, ETC. POSITIONS SHOWN ON ARCHITECTURAL PLANS TO TAKE PRECEDENCE OVER POSITIONS OR MOUNTING HEIGHTS SHOWN ON ELECTRICAL PLANS.	23. PULL BOXES	1. THE ELECTRICAL TRADE SHALL SUPPLY AND INSTALL PULLBOXES AS REQUIRED TO SUIT JOB CONDITIONS. PULLBOXES SHALL CONFORM TO CANADIAN ELECTRICAL CODE REQUIREMENTS. PULLBOXES TO BE BE FINISHED IN ENAMEL OVER CORROSION-RESISTANT PRIMER WITH SCREW-ON OR HINGED COVER IN REMOVABLE CEILING AREAS. PULLBOXES ARE TO BE INSTALLED ABOVE THE CEILING.  2. IF REQUESTED PROVIDE CERTIFIED PROFESSIONALLY SEALED SHOP AND PLACEMENT DRAWINGS WHERE APPLICABLE FOR ALL ELECTRICAL EQUIPMENT AND
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