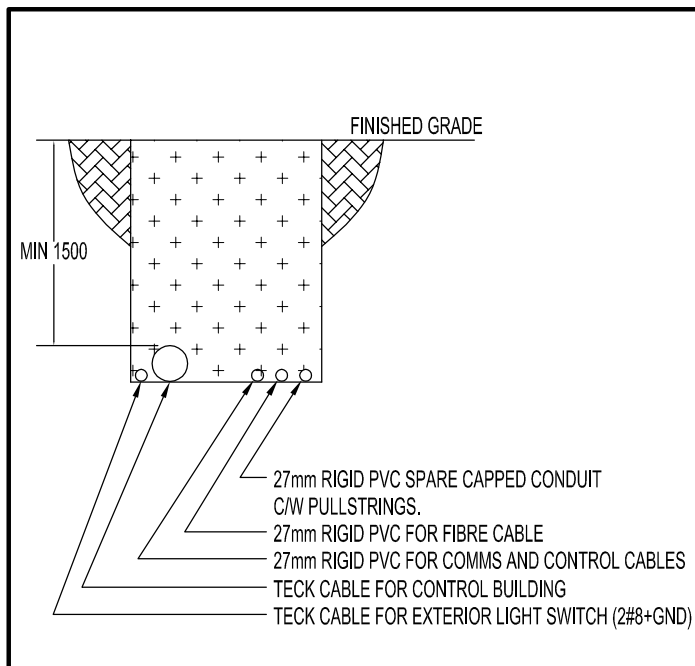
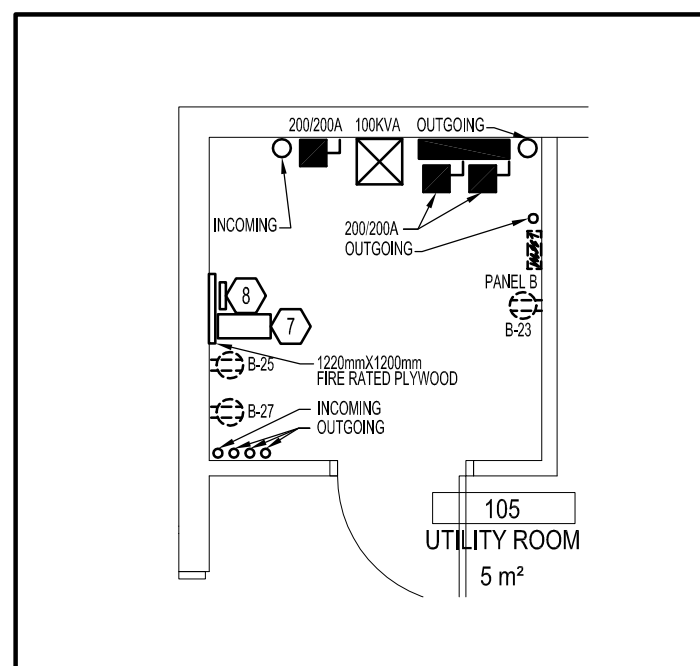


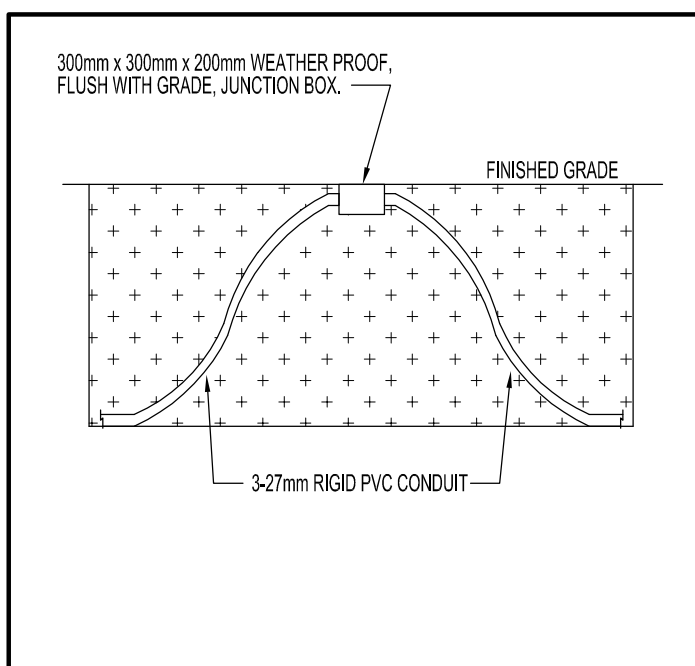
1  
E000  
N.T.S.



2  
E000  
N.T.S.



4  
E000  
N.T.S.

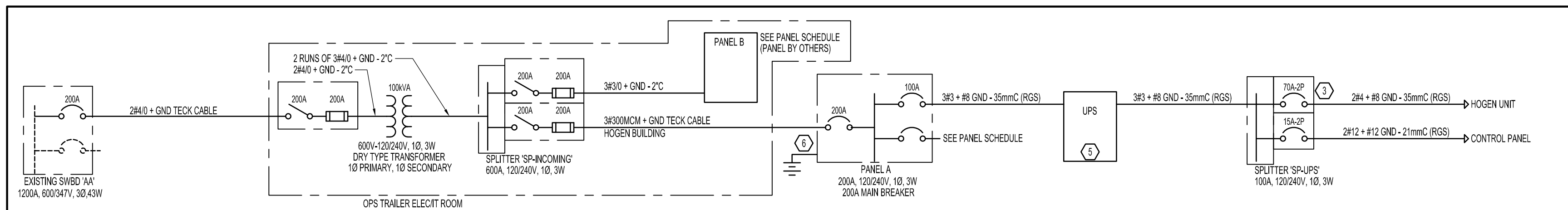


3  
E000  
N.T.S.

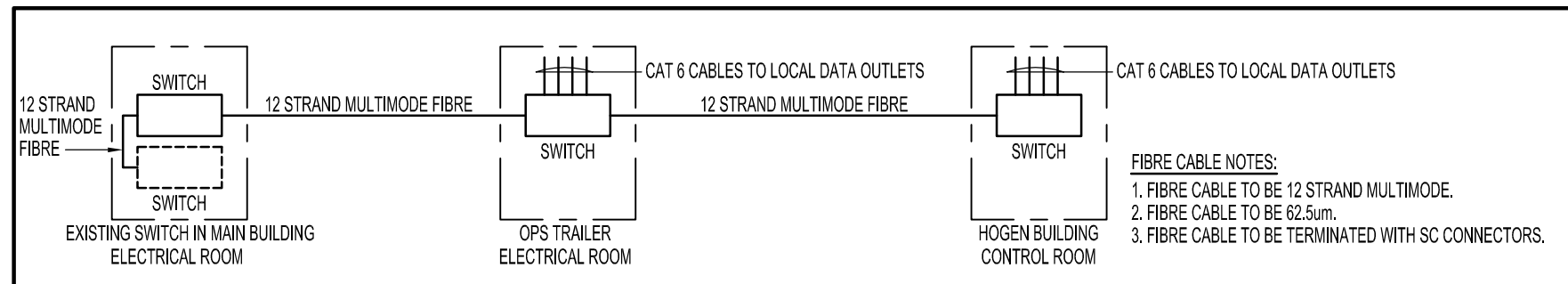


## PANEL SCHEDULE

JOB No.	2151027	CALCULATED BY:		J.P.	DATE:	MAY 2015	MAINS:		225AMPS, 120/240V, 1; 3W								
LOAD DESCRIPTION	No. of REC.	No. of FIXT.	BRKR SIZE	LOAD PER PHASE		CCT. No.	PHASE A   B	CCT. No.	LOAD PER PHASE		BRKR SIZE	No. of FIXT.	No. of REC.	LOAD DESCRIPTION			
				A	B				A	B							
EMERGENCY LIGHTS**	5		15A	200		1	●	2	9600		100A	1		UPS			
LTG-CONTROL ROOM/UPPER	5		15A		317	3	●	4		9600	2P						
LTG-HOGEN ROOM	2		15A	132		5	●	6	4500		40A	3		MTR-FF-1 HEATER			
LTG-INFLATION ROOM	6		15A		396	7	●	8		4500	2P						
LTG-PATIO	3		15A	75		9	●	10	3000		30A	3		MTR-PH-1 HEATER			
REC-WATER PUMP	1		15A		78	11	●	12		3000	2P						
MTR-CONTROL DAMPERS	4		15A	200		13	●	14	1900		30A	1		MTR-DH-1 HEATER			
MTR-PURIFICATION SYSTEM	1		15A		240	15	●	16		1900	2P						
MTR-EXHAUST FAN EF-1	1		15A	129		17	●	18	-		15A			SPARE			
MTR-EXHAUST FAN EF-2	1		15A		129	19	●	20		-	15A			SPARE			
MTR-SUPPLY FAN SF-1	1		15A	1176		21	●	22	-		15A			SPARE			
MTR-HEATED VENT ASSEMBLY****	1		15A		1000	23	●	24		-	15A			SPARE			
REC-IT RECEPTACLE	1		15A	630		25	●	26	-		15A			SPARE			
REC-GENERAL USE	1		15A		300	27	●	28		-	15A			SPARE			
REC-GENERAL USE	1		15A	300		29	●	30	-		15A			SPARE			
						31	●	32									
						33	●	34									
						35	●	36									
						37	●	38									
						39	●	40									
						41	●	42									
SUB-TOTAL WATTS				2842	2460				19000	19000			SUB-TOTAL WATTS				
TOTAL PER PHASE:				PHASE A = 21942		PHASE B = 21460						43,302 KW CONNECTED					
SURFACE MOUNTED				<input checked="" type="checkbox"/>		FLUSH MOUNTED		<input type="checkbox"/>		COLUMN MOUNTED		<input type="checkbox"/>		180 AMP CONNECTED			
* DENOTES PANEL TO HAVE 200A MAIN BREAKER														PANEL DESIGNATION		PANEL A*	
** DENOTES LOCKABLE BREAKER																NEW PANEL	
*** DENOTES GFCI BREAKER																	
**** DENOTES SHUNT TRIP BREAKER																	



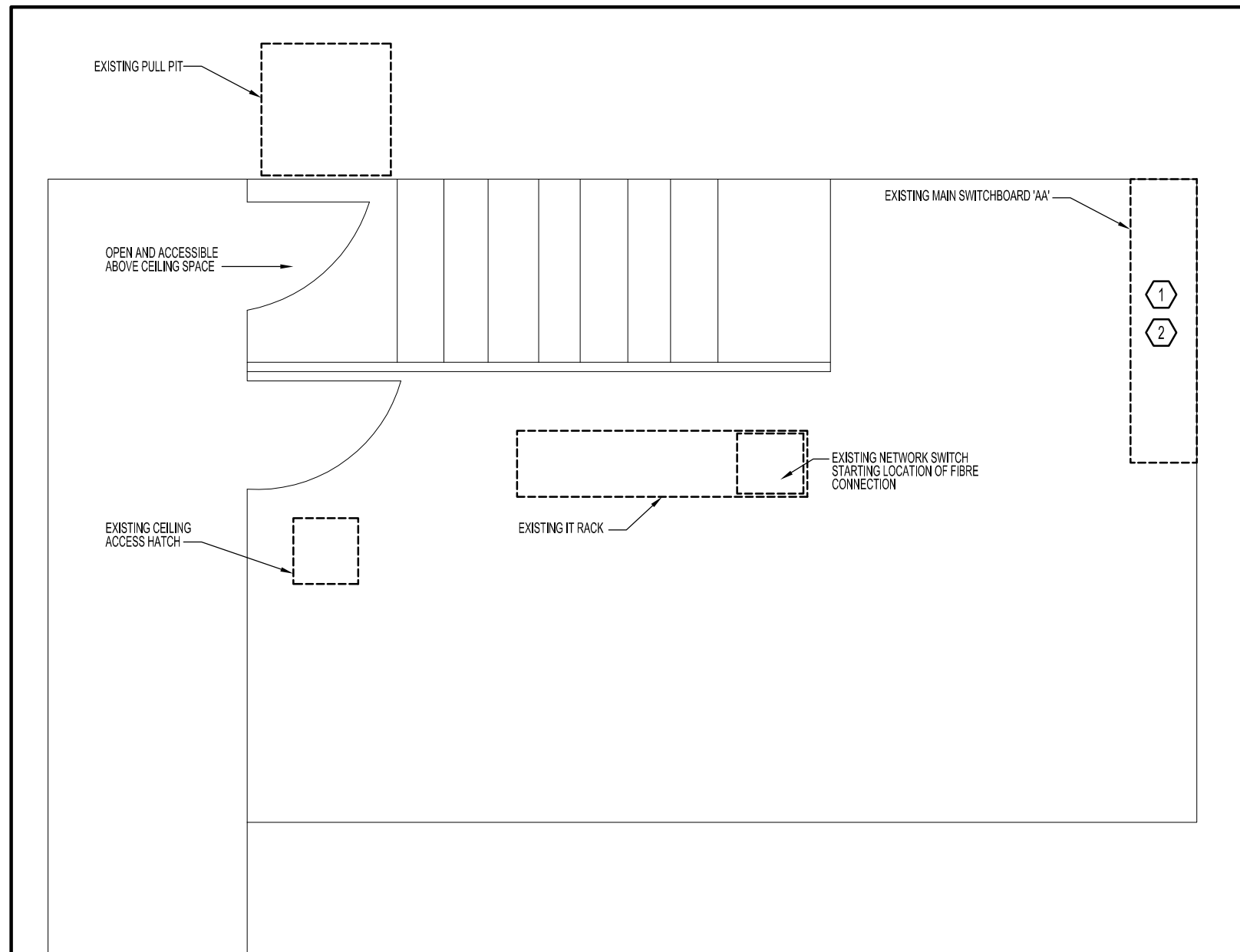
5  
E000  
N.T.S.



6  
E000  
N.T.S.

## LUMINAIRE SCHEDULE

TYPE	DESCRIPTION	LAMP
FA	8 1/8" x 5 5/8" x 50" STEM HUNG FLUORESCENT LUMINAIRE. FIXTURE TO BE SUITABLE FOR DAMP LOCATION. FIXTURE TO BE FULL GASKETED. (MOUNT AT 2400mm AFF). VOLTAGE: 120V LITHONIA LIGHTING: DMV-3-32-120-GE810IS	2-32, T8 WITH IS ELECTRONIC BALLAST
FB	7" x 6" x 50" STEM HUNG FLUORESCENT LUMINAIRE. FIXTURE TO BE RIGID GLASS REINFORCED POLYESTER HOUSING. CERTIFIED FOR USE IN CLASS 1, ZONE 2, GROUP B, GAS GROUP IC. (MOUNT AT 2438mm AFF). VOLTAGE: 120V RIG-A-LITE: MHD-265-4-2-4-TW	2-32, T8 WITH IS ELECTRONIC BALLAST
FC	8.7" x 5.6" x 51.5" WALL MOUNTED FLUORESCENT LUMINAIRE. FIXTURE TO BE SUITABLE FOR USE WHERE GAS IS PRESENT, WITH COPPER-FREE ALUMINUM POWDERED EPOXY. CERTIFIED FOR USE IN CLASS 1, ZONE 1, GROUP B, GAS GROUP IC. (MOUNT AT 2438mm AFF). MOUNT ON 45DEGREE WALL BRACKETS. VOLTAGE: 120V EXLUX: 9000555-6581-8-150-120-60 WITH 1 X 3/4" NPT	2-32, T8 WITH IS ELECTRONIC BALLAST
LA	WALL MOUNTED LED LUMINAIRE. FIXTURE TO BE SUITABLE FOR OUTDOOR USE. FINISHED IN BLACK. (MOUNT AT 2438mm AFF). VOLTAGE: 120V LITHONIA LIGHTING: TVPLD-30C-100-40K-73M-120-DRXD	67W LED 4000K
LB	WALL MOUNTED FLOOD LED LUMINAIRE. FIXTURE TO BE SUITABLE FOR OUTDOOR USE AND HAZARDOUS LOCATIONS. (MOUNT AT - REFER TO ARCHITECTURAL). VOLTAGE: 120V RIG-A-LITE: LHFL-07-L-UT-76	70W LED
LC	SURFACE WALL-MOUNTED LED LUMINAIRE. LUMINAIRE TO BE PREMIUM-GRADE, DIE AND BREAK-FORM, CODE-GAUGE STEEL HOUSING. LUMINAIRE TO BE FINISHED WHITE WITH POLYESTER POWDER PAINT. VOLTAGE: 120V VISIONEERING: LCAD-48-LED-3-40K-037L-JUNY	53W LED 4000K
X1	WALL MOUNTED HAZARDOUS RUNNING MAN LED EXIT SIGN. EXIT SIGN TO BE SUITABLE FOR USE IN HAZARDOUS LOCATIONS. CERTIFIED FOR USE IN CLASS 1, ZONE 2, GAS GROUP IC. (MOUNTED ABOVE THE DOOR). VOLTAGE: 120V LUMACELL: LHC-G-12N604-D10	6W LED
X2	WALL MOUNTED HAZARDOUS RUNNING MAN LED EXIT SIGN. EXIT SIGN TO BE SUITABLE FOR USE IN HAZARDOUS LOCATIONS. CERTIFIED FOR USE IN CLASS 1, DIVISION 1, GROUP B, GAS GROUP IC. (MOUNTED ABOVE THE DOOR). VOLTAGE: 120V LUMACELL: LX-1-S1-P-24 WITH RSTP120/24-RSTP-25	6W LED
X3	WALL MOUNTED HAZARDOUS RUNNING MAN LED EXIT SIGN. EXIT SIGN TO BE SUITABLE FOR USE IN HAZARDOUS LOCATIONS. CERTIFIED FOR USE IN CLASS 1, DIVISION 2, GROUP B, GAS GROUP IC. (MOUNTED ABOVE THE DOOR). VOLTAGE: 120V LUMACELL: LHC-G-12N604-D10	6W LED
BATTERY UNIT PLUS REMOTE HEADS	WALL MOUNTED HAZARDOUS BATTERY UNIT AND REMOTE HEADS. CERTIFIED FOR USE IN CLASS 1, DIVISION 1, GROUP B, GAS GROUP IC. VOLTAGE: 120V BATTERY UNIT - LUMACELL: RQ34S388-2-D14 REMOTE HEADS - LUMACELL: RS20XP24V20WS1W	6W MR16 LED 20W HALOGEN



7  
E000  
1:50

## ELECTRICAL LEGEND

POWER:	
NEW	DESCRIPTION
	WALL MOUNTED 120V, 15A GROUND DUPLEX RECEPTACLE.
	WALL MOUNTED 120V, 15A GROUND DUPLEX RECEPTACLE, MOUNTED OVER THE COUNTER LEVEL.
	WALL MOUNTED 120V, 15A GROUND FAULT DUPLEX RECEPTACLE.
	120V, 10 OUTLET FOR EQUIPMENT AS NOTED.
	240V, 10 OUTLET FOR EQUIPMENT AS NOTED.
	UN-FUSED DISCONNECT SWITCH BY DIV. 16, 'X' DENOTES DISCONNECT SIZE.
	ELECTRICAL JUNCTION BOX.
	MAGNETIC MOTOR STARTER BY DIVISION 20.
	GROUNDING BUS BAR.
	GROUND ROD SYSTEM, MIN 19mm DIAMETER, COPPER CLAD STEEL, 3000mm LONG. CONNECT TO SYSTEM WITH #30 BAR COPPER.
COMMUNICATIONS:	
NEW	DESCRIPTION
	HOGEN BUILDING: COMBINATION VOICE/DATA OUTLET C/W COVERPLATE AND DATA JACKS. RUN 2 CAT 6 CABLES PER OUTLET TO LOCAL IT SWITCH. RUN IN 27mmC (EMT).
	OPERATIONS TRAILER: COMBINATION VOICE/DATA OUTLET C/W COVERPLATE AND DATA JACKS. RUN 2 CAT 6 CABLES PER OUTLET TO IT RACK. RUN IN 27mmC (EMT) TO CABLE TRAY AND CABLE TRAY TO IT RACK.
	WALL MOUNTED EMERGENCY PUSH BUTTON.
SYMBOL	DESCRIPTION
WP	DENOTES WEATHERPROOF.
GFI	DENOTES GROUND FAULT INTERRUPTER.
EYS	DENOTES SEALED WITH EYS FITTING.
EX	DENOTES EXPLOSION PROOF.
LIGHTING	
NEW	DESCRIPTION
	120V LIGHT SWITCH.
	120V 3-WAY LIGHT SWITCH.
	SURFACE OR STEM MOUNTED LUMINAIRE. REFER TO DRAWINGS FOR FIXTURE TYPE. REFER TO SPECIFICATIONS FOR DETAILS.
	WALL MOUNTED LUMINAIRE. REFER TO DRAWINGS FOR FIXTURE TYPE. REFER TO SPECIFICATIONS FOR DETAILS.
LIFE SAFETY:	
NEW	DESCRIPTION
	WALL MOUNTED PICTORIAL EXIT SIGN.
	WALL MOUNTED DUEL HEAD EMERGENCY LIGHT C/W BATTERY. BATTERY UNIT TO BE C/W 120V, DUPLEX RECEPTACLE (T-SLOT), MOUNTED 150mm BELOW FINISHED CEILING.
	WALL MOUNTED REMOTE DUEL HEAD EMERGENCY LIGHT.
	SMOKE DETECTOR.
	SMOKE ALARM - IONIZATION AND PHOTOELECTRIC DETECTION, CEILING MOUNTED.
	FIRE ALARM PULL STATION.
DRAWING KEY NOTES:	
	PROVIDE 200A, 600V, 30, 3W BREAKER IN SWITCHBOARD 'A' FOR OPS TRAILER AND HOGEN BUILDING. NEW BREAKER TO MATCH EXISTING BREAKERS IN SWITCHBOARD.
	CONNECTION OF NEW BREAKER AND SERVICE TO EXISTING SWBD 'A' TO BE DONE AFTER HOURS AT A TIME CONVENIENT TO THE OWNER. 72 HOUR NOTICE IS REQUIRED PRIOR TO SHUTDOWN. ALLOW IN TENDER PRICE FOR, AS MANY AFTER HOURS SHIFTS REQUIRED TO MAKE THE CONNECTIONS. AN 8 HOUR TIME LIMITED SHOULD BE USED TO ACCOUNT FOR THE NUMBER OF SHIFTS REQUIRED.
	WALL MOUNTED SHUNT TRIP BREAKER - 70A, 250V, 2P SOLID NEUTRAL ENCLOSED CIRCUIT BREAKER. EEMAC 1 ENCLOSURE.
	RESERVED.
	12KVA UPS C/W SURGE PROTECTION AND BUILT-IN MANUAL BYPASS SWITCH, 240V IN AND 240V OUT, HARDWIRED. EATON MODEL 9155 OR EQUAL FROM APC.
	CONNECT PANEL TO BUILDING GROUND SYSTEM.
	PROVIDE 700VA, 630W UPS WITH 120V INPUT AND 120V OUTPUT, RECEPTACLES. EATON MODEL 9130 OR EQUAL FROM APC.
	PROVIDE WALL MOUNTED 4-PORT UNMANAGED FAST ETHERNET SWITCH, GIGABIT MODEL.



Public Works and  
Government Services Canada  
Travaux publics et  
Services gouvernementaux Canada



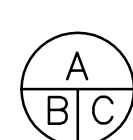
HHAngus & Associates Limited Consulting Engineers  
1127 Leslie Street, Toronto, ON, M5C 2J6 Canada  
www.hhangus.com | T: 416-463-8200 | F: 416-463-8290



FOR BID PURPOSES AND  
NOT FOR CONSTRUCTION

04	ISSUED FOR TENDER	2016-01-29
03	ISSUED FOR 99% PROGRESS SET	2015-12-04
02	ISSUED FOR 66% PROGRESS SET	2015-10-30
01	ISSUED FOR 33% PROGRESS SET	2015-10-09
revision		date

Do not scale drawings.  
Verify all dimensions and conditions on site and immediately  
notify the Departmental Representative of all discrepancies.



A Detail No.  
No. du détail  
B drawing no. - where detail required  
dessin no. - où détail exigé  
C drawing no. - where detailed  
dessin no. - où détaillé

project title  
titre du projet  
**EGBERT** Ontario

6248 8TH LINE, LOL 1N0

NEW HYDROGEN GENERATION (HOGEN)  
AND BALLOON LAUNCHING BUILDING

drawing title  
titre du dessin

## LEGEND

drawn by  
dessiné par

HB

designed by  
conçu par

JP

approved by  
approuvé par

JP

bid  
offre

project manager  
administrateur  
de projets

project date  
date du projet

2016-01-29

project no.  
no. du projet

R.071909.001

drawing no.  
dessiné no.

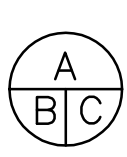
E000



FOR BID PURPOSES AND  
NOT FOR CONSTRUCTION

04	ISSUED FOR TENDER	2016-01-29
03	ISSUED FOR 99% PROGRESS SET	2015-12-04
02	ISSUED FOR 66% PROGRESS SET	2015-10-30
01	ISSUED FOR 33% PROGRESS SET	2015-10-09
revision		date

Do not scale drawings.  
Verify all dimensions and conditions on site and immediately  
notify the Departmental Representative of all discrepancies.

	A Detail No. No. du détail
B	drawing no. — where detail required dessin no. — où détail exigé
C	drawing no. — where detailed dessin no. — où détaillé

project title  
titre du projet  
**EGBERT** Ontario  
6248 8TH LINE, LOL 1N0  
**NEW HYDROGEN GENERATION (HOGEN)  
AND BALLOON LAUNCHING BUILDING**

drawing title  
titre du dessin  
**SITE PLAN**

drawn by  
dessiné par **HB**

designed by  
conc par **JP**

approved by  
approuvé par **JP**

bid  
offre project manager  
administrateur  
de projets

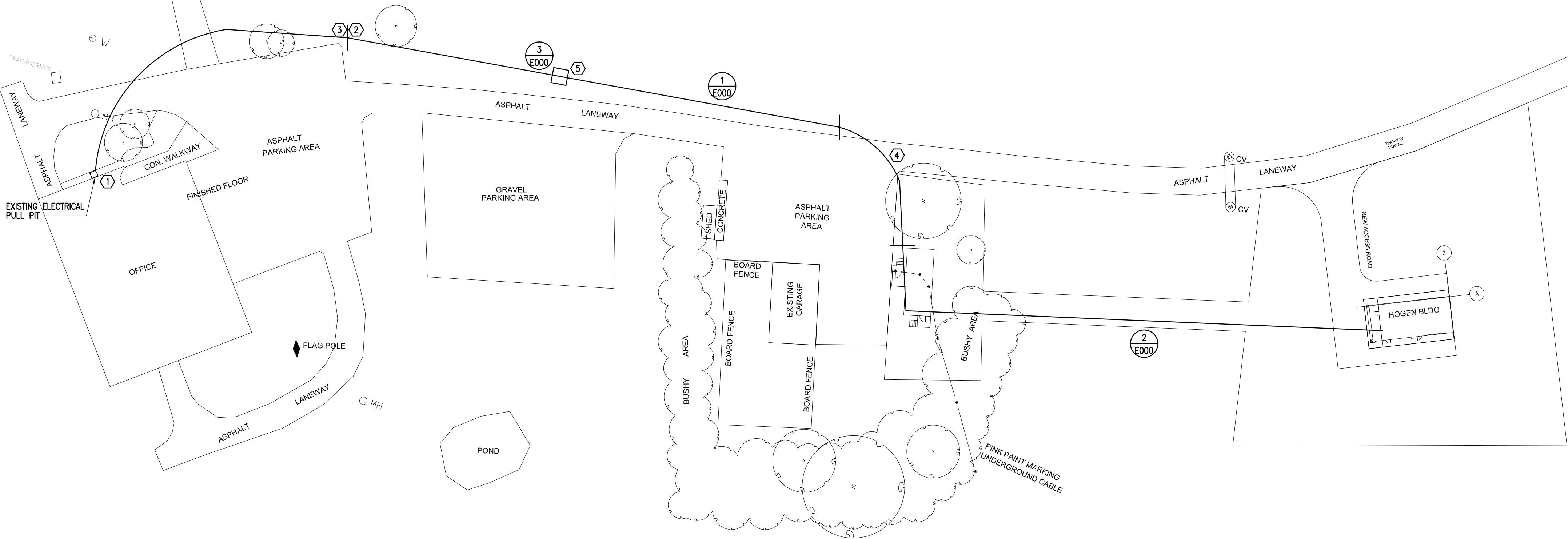
project date  
date du projet **2016-01-29**

project no.  
no. du projet **R.071909.001**

drawing no.  
dessiné no. **E001**

DRAWING KEY NOTES:

- 1 USE EXISTING PULL PIT TO GAIN ACCESS TO THE GROUND LEVEL OF MAIN BUILDING. THERE ARE EMPTY CONDUITS INTO AND OUT OF THE PULL PIT.
- 2 PROVIDE CABLE LOCATES PRIOR TO TRENCHING. FOR ALL TRENCHES EAST OF DELINEATION LINE SHOWN ON THE DRAWING.
- 3 PROVIDE CABLE LOCATES PRIOR TO TRENCHING. FOR ALL TRENCHES WEST OF DELINEATION LINE SHOWN ON THE DRAWING. ALLOW FOR HYDRO-VAC METHOD OF REMOVING SOIL AS THERE ARE KNOWN TO EXISTING SERVICES IN THIS AREA. THE NUMBER OF SERVICES INCREASE THE CLOSER ONE GETS TO THE PULL PIT.
- 4 ROADWAY IS A FIRE ROUTE AND MUST BE MAINTAINED AT ALL TIMES. THEREFORE CONDUITS AND CABLES ARE TO BE DIRECT/DIRECTIONALLY DRILLED UNDER THE ROADWAY.
- 5 WEATHER PROOF FLUSH WITH GRADE JUNCTION BOX, INSTALLED AT THE APPROXIMATE, 100M MARK FOR THE 3-27mm PVC CONDUITS.



**1**  
**E001** **SITE PLAN**  
1:500



**DRAWING NOTES:**

1. ALL CURRENT CARRYING WIRING TO BE COPPER (CU).
2. ALL ELECTRICAL DEVICES, CONDUIT AND WIRING TO BE SURFACE MOUNTED.
3. CONTROL ROOM IS UNCLASSIFIED.
4. INFLATION ROOM IS CLASS 1, ZONE 1
5. HOGEN ROOM IS CLASS 1, ZONE 2
6. ALL WIRING SIZING IS BASED ON RW75.

**HAZARDOUS LOCATION NOTES:****INFLATION ROOM: (CLASS 1, ZONE 1)**

1. ALL ELECTRICAL DEVICES LOCATION IN INFLATION ROOM SHALL BE EXPLOSION RESISTANT, CLASS 1, ZONE 1, GROUP IIC.
2. ALL ELECTRICAL WIRING/CONDUIT LOCATED IN THE INFLATION ROOM SHALL BE SURFACE MOUNTED AND EXPLOSION RESISTANT, CLASS 1, ZONE 1, GROUP IIC.
3. CONDUIT SEALS SHALL BE PROVIDED FOR ALL ELECTRICAL CONDUIT SYSTEMS LOCATED IN THE INFLATION ROOM SHALL BE SURFACE MOUNTED AND EXPLOSION RESISTANT, CLASS 1, ZONE 1, GROUP IIC.
4. ALL SWITCHES AND DISCONNECTS LOCATED IN THE INFLATION ROOM SHALL BE SURFACE MOUNTED AND EXPLOSION PROOF CONSTRUCTION, CLASS 1, ZONE 1, GROUP IIC.
5. ALL SIGNAL AND ALARM SYSTEMS LOCATED IN THE INFLATION ROOM SHALL BE SURFACE MOUNTED AND EXPLOSION PROOF CONSTRUCTION, CLASS 1, ZONE 1, GROUP IIC.
6. ALL LIGHT FIXTURES LOCATED IN THE INFLATION ROOM SHALL BE SURFACE MOUNTED AND EXPLOSION PROOF CONSTRUCTION, CLASS 1, ZONE 1, GROUP IIC.
7. ALL NON-CURRENT-CARRY METAL PARTS OF THE ELECTRICAL EQUIPMENT LOCATED IN THE INFLATION ROOM SHALL BE BONDED TO GROUND SYSTEM.
8. ALL FITTINGS FOR TECK CABLE IN THE INFLATION ROOM SHALL BE OF EXPLOSION PROOF CONSTRUCTION AND BE CSA CERTIFIED FOR CLASS 1, ZONE 1, GROUP IIC HAZARDOUS LOCATIONS.
9. ALL DOORS AND DOOR FRAMES LOCATED AT THE INFLATION ROOM SHALL BE GROUNDED.
10. ALL VENTILATION LOUVERS LOCATED IN THE INFLATION ROOM SHALL BE GROUNDED. TIE TO GROUND BUS BAR BY MINIMUM #6 AWG COPPER GROUND WIRE.
11. SEAL ALL ELECTRICAL WALL PENETRATION TO MAINTAIN WALL RATINGS.
12. TANK AND DIA NEED TO BE BONDED.
13. EACH OVERHEAD DOOR TRACK SHALL BE BONDED TO GROUND AT TOP AND BOTTOM.

**HOGEN ROOM: (CLASS 1, ZONE 2)**

1. ALL ELECTRICAL DEVICES LOCATION IN HOGEN ROOM SHALL BE EXPLOSION RESISTANT, CLASS 1, ZONE 2, GROUP IIC.
2. ALL ELECTRICAL WIRING/CONDUIT LOCATED IN THE HOGEN ROOM SHALL BE SURFACE MOUNTED AND EXPLOSION RESISTANT, CLASS 1, ZONE 2, GROUP IIC.
3. CONDUIT SEALS SHALL BE PROVIDED FOR ALL ELECTRICAL CONDUIT SYSTEMS LOCATED IN THE HOGEN ROOM SHALL BE SURFACE MOUNTED AND EXPLOSION RESISTANT, CLASS 1, ZONE 2, GROUP IIC.
4. ALL SWITCHES AND DISCONNECTS LOCATED IN THE HOGEN ROOM SHALL BE SURFACE MOUNTED AND EXPLOSION PROOF CONSTRUCTION, CLASS 1, ZONE 2, GROUP IIC.
5. ALL SIGNAL AND ALARM SYSTEMS LOCATED IN THE HOGEN ROOM SHALL BE SURFACE MOUNTED AND EXPLOSION PROOF CONSTRUCTION, CLASS 1, ZONE 2, GROUP IIC.
6. ALL LIGHT FIXTURES LOCATED IN THE HOGEN ROOM SHALL BE SURFACE MOUNTED AND EXPLOSION PROOF CONSTRUCTION, CLASS 1, ZONE 2, GROUP IIC.
7. ALL NON-CURRENT-CARRY METAL PARTS OF THE ELECTRICAL EQUIPMENT LOCATED IN THE HOGEN ROOM SHALL BE BONDED TO GROUND SYSTEM.
8. ALL FITTINGS FOR TECK CABLE IN THE HOGEN ROOM SHALL BE OF EXPLOSION PROOF CONSTRUCTION AND BE CSA CERTIFIED FOR CLASS 1, ZONE 2, GROUP IIC HAZARDOUS LOCATIONS.
9. ALL DOORS AND DOOR FRAMES LOCATED AT THE INFLATION ROOM SHALL BE GROUNDED.
10. ALL VENTILATION LOUVERS LOCATED IN THE INFLATION ROOM SHALL BE GROUNDED. TIE TO GROUND BUS BAR BY MINIMUM #6 AWG COPPER GROUND WIRE.
11. SEAL ALL ELECTRICAL WALL PENETRATION TO MAINTAIN WALL RATINGS.
12. ALL METAL SURFACES TO BE BONDED (VENT VALVE ASSEMBLY, WATER LINE SUPPORTS, ETC.)

**DRAWING KEY NOTES:**

- 1 SWITCH IS FOR EXTERIOR FIXTURES.
- 2 12KVA UPS C/W SURGE PROTECTION AND BUILT-IN MANUAL BYPASS SWITCH, 240V IN AND 240V OUT, HARDWIRED, EATON MODEL 9155 OR EQUAL FROM APC.
- 3 100A-120/208V, 1Ø, 3W SPLITTER SP-1
- 4 WALL MOUNTED SHUNT TRIP BREAKER - 70A, 250V, 2P
- 5 SOLID NEUTRAL ENCLOSED CIRCUIT BREAKER, EEMAC 1 ENCLOSURE, RESERVED.
- 6 WIRE AND CONNECT HEATED WALL VENT ASSEMBLY AS PER MANUFACTURES RECOMMENDATIONS. REFER TO MECHANICAL DRAWINGS FOR DETAILS.
- 7 WIRE AND CONNECT HOGEN AS PER MANUFACTURES RECOMMENDATIONS. CONNECT TO ON-BOARD CIRCUIT BREAKER.
- 8 EXTERIOR STACK LIGHTING FOR CONTROL PANEL. TO BE PROVIDED FOR AND INSTALLED BY MECHANICAL CONTRACTOR. ELECTRICAL CONTRACTOR TO PROVIDE 27mm CONDUIT FROM CONTROL PANEL TO STACK LIGHT ASSEMBLY, VIA ATTIC SPACE.
- 9 180W CAPACITY FOR 30 MINUTES.
- 10 EXIT SIGN TRANSFER PANEL. WIRE AND CONNECT EXPLOSION PROOF INFLATION ROOM EXIT SIGNS TO TRANSFER PANEL.
- 11 RESERVED.
- 12 RESERVED.
- 13 LIGHT SWITCH AND LIGHT FIXTURE TO BE IN ATTIC SPACE.
- 14 PROVIDE 700VA, 600W UPS WITH 120V INPUT AND 120V OUTPUT, RECEPTACLES, EATON MODEL 9130 OR EQUAL FROM APC.
- 15 PROVIDE WALL MOUNTED FAST ETHERNET SWITCH, BY ALLIED TELESIS, MODEL AT-F5705EFC.

**EMERGENCY STOP PUSH BUTTON OPERATION:**

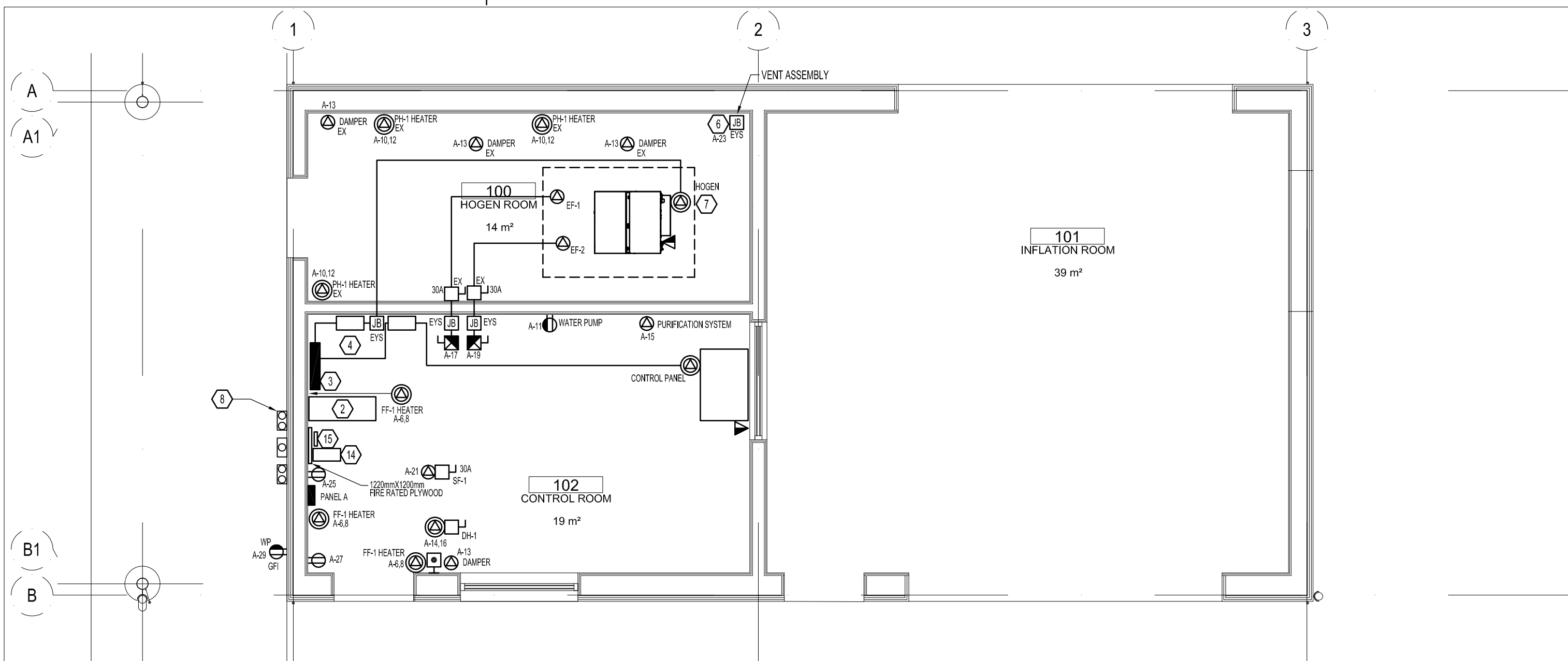
1. EMERGENCY PUSH BUTTON TO BE WIRED IN PARALLEL TO BOTH THE SHUNT TRIP BREAKER FOR THE HOGEN AND HEATED VENT ASSEMBLY. ENSURE TO PROVIDE ALL WIRING AND BOXES FOR THIS FUNCTION. WHEN THE EMERGENCY PUSH BUTTON IS PRESSED THE CONTACTS IN BOTH BREAKERS HAVE TO OPEN TO KILL POWER TO BOTH LOADS.

**LIGHTING BRANCH CIRCUITRY:**

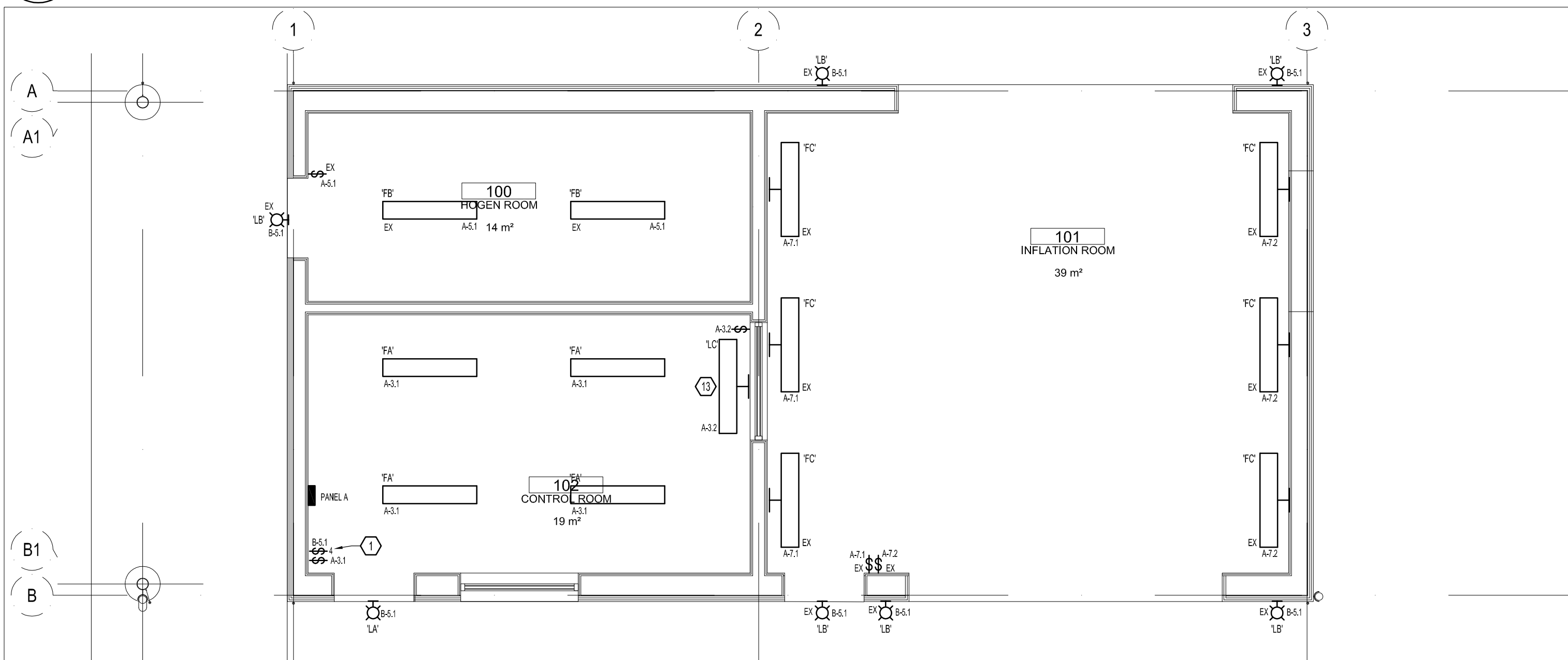
1. CONTROL ROOM: 2#12 + #12 GND - 21mmC (EMT).
2. INFLATION ROOM: 2#12 + #12 GND - 21mmC (RGS).
3. HOGEN ROOM: 2#12 + #12 GND - 21mmC (RGS).
4. DC WIRING FOR EXIT LIGHTING: 2#12 - 21mmC (RGS).

**CONDUITS REQUIREMENTS:**

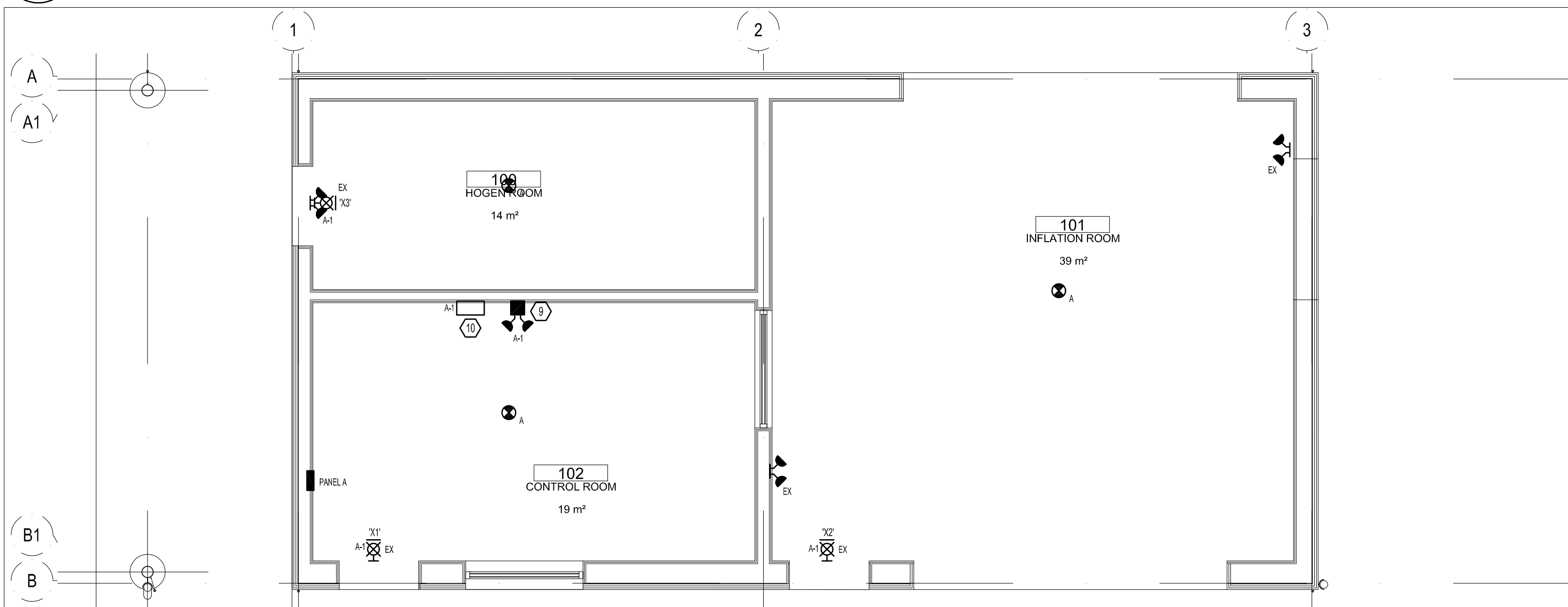
1. ALL CONDUITS FROM THE CONTROL ROOM TO INFLATION ROOM AND/OR HOGEN ROOM SHALL BE RIGID GALVANIZED STEEL (RGS) CONDUIT FROM PANEL A TO POINT OF TERMINATION. CONDUIT SHALL BE PROPERLY SEALED AT ALL WALL PENETRATION POINTS.
2. ALL OTHER CONDUITS TO BE EMT, UNLESS OTHERWISE SPECIFIED.
3. ALL CONDUITS TO BE SURFACE MOUNTED AND TO BE INSTALLED PARALLEL TO THE FLOOR AND WALLS, ALONG BUILDING LINES.

**1 POWER PLAN**

E200 1:50

**2 LIGHTING PLAN**

E200 1:50

**3 LIFE SAFETY PLAN**

E200 1:50



Public Works and  
Government Services Canada  
Travaux publics et  
Services gouvernementaux Canada



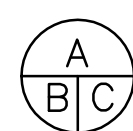
HHAngus & Associates Limited Consulting Engineers  
1127 Leslie Street, Toronto, ON, M5C 2J6 Canada  
www.hhangus.com | T: 416-463-8200 | F: 416-463-8290



FOR BID PURPOSES AND  
NOT FOR CONSTRUCTION

04	ISSUED FOR TENDER	2016-01-29
03	ISSUED FOR 99% PROGRESS SET	2015-12-04
02	ISSUED FOR 66% PROGRESS SET	2015-10-30
01	ISSUED FOR 33% PROGRESS SET	2015-10-09
revision		date

Do not scale drawings.  
Verify all dimensions and conditions on site and immediately  
notify the Departmental Representative of all discrepancies.



- A Detail No.  
No. du détail  
B drawing no. — where detail required  
dessin no. — où détail exigé  
C drawing no. — where detailed  
dessin no. — où détaillé

project title  
titre du projet  
**EGBERT** Ontario

6248 8TH LINE, LOL 1N0

**NEW HYDROGEN GENERATION (HOGEN)  
AND BALLOON LAUNCHING BUILDING**

drawing title  
titre du dessin

**FLOOR PLANS**

drawn by  
dessiné par  
**LA**

designed by  
conc par  
**JP**

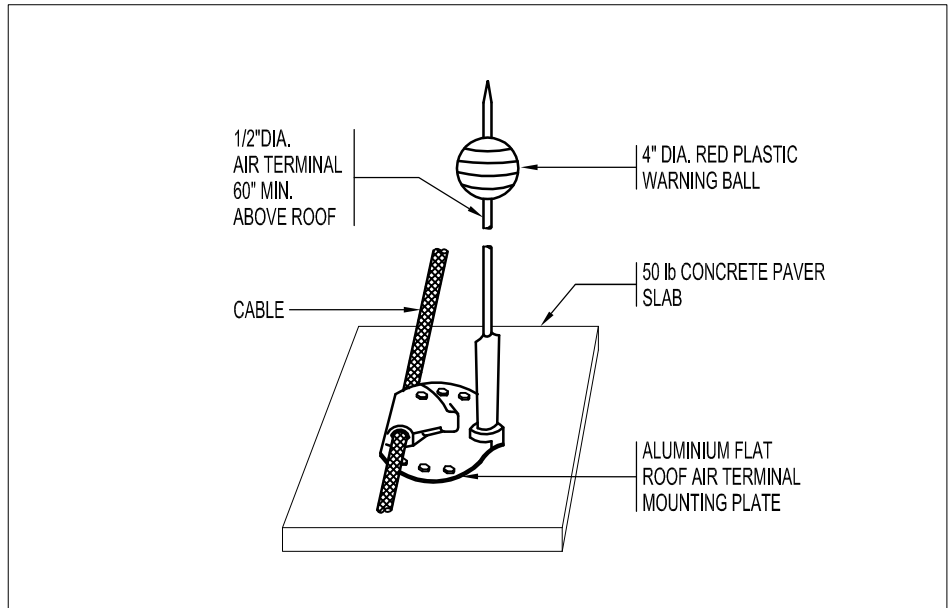
approved by  
approuvé par  
**JP**

bid  
offre  
project manager  
administrateur  
de projets

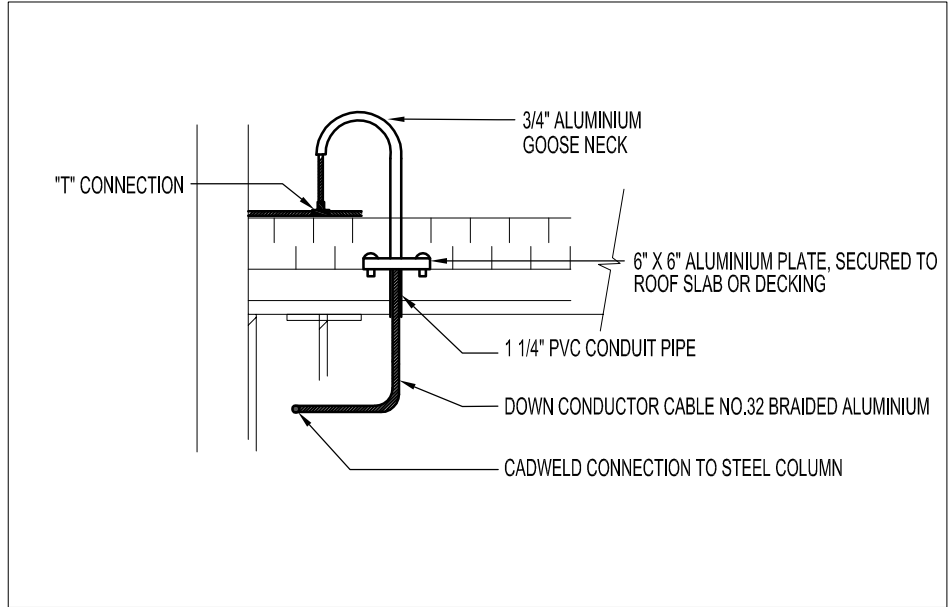
project date  
date du projet  
**2016-01-29**

project no.  
no. du projet  
**R.071909.001**

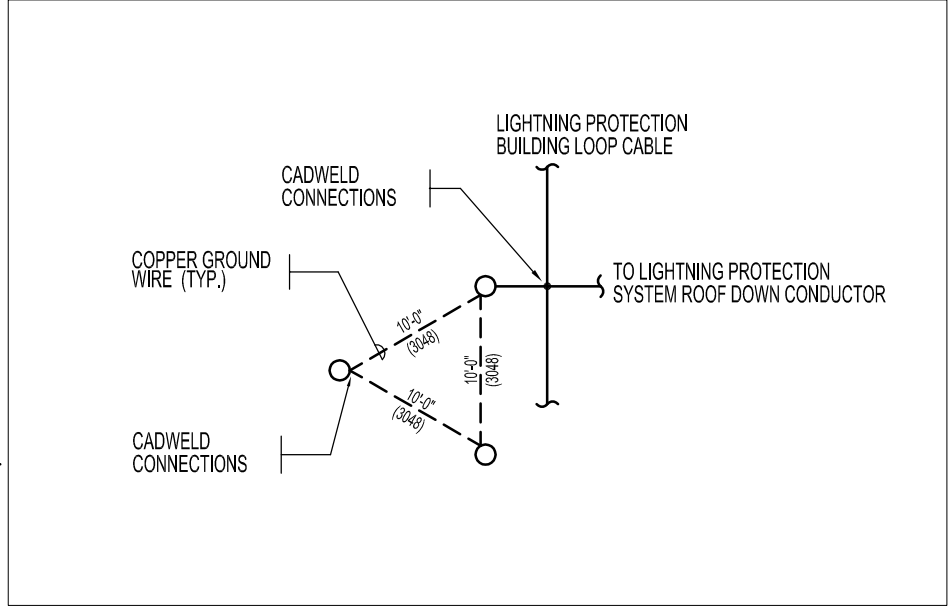
drawing no.  
dessiné no.  
**E200**



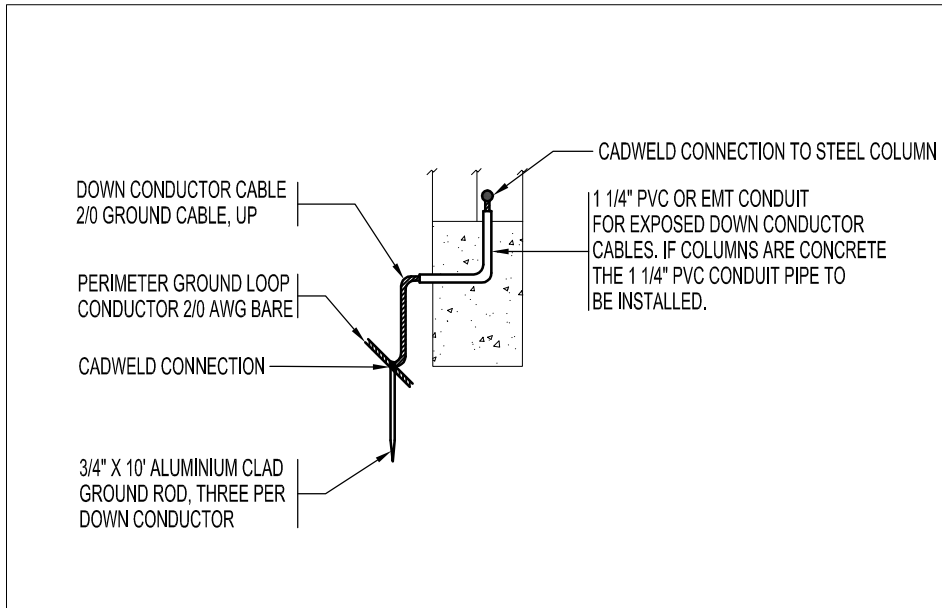
3 ROOF MOUNTING  
E201 N.T.S



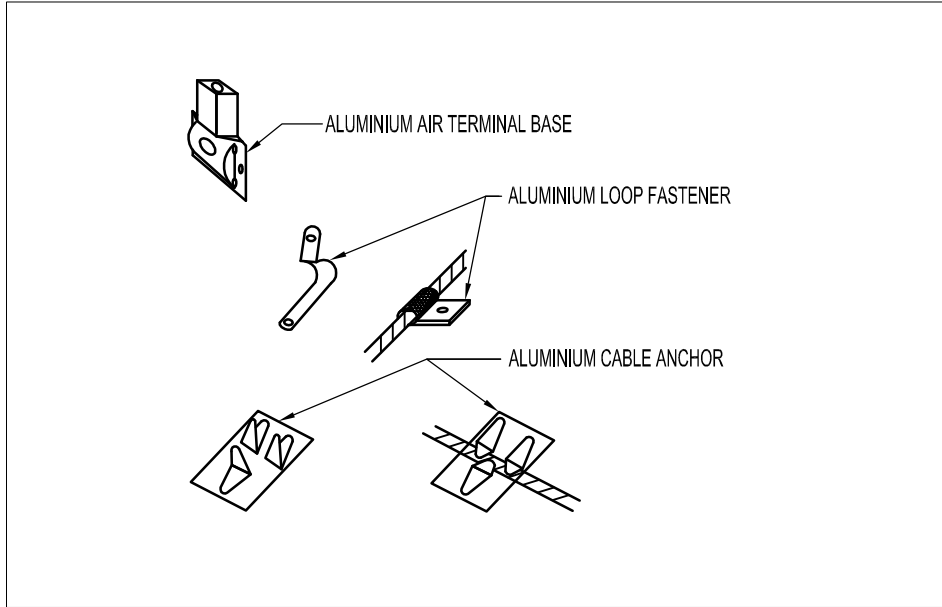
5 DOWN CONDUCT AT ROOF  
E201 N.T.S



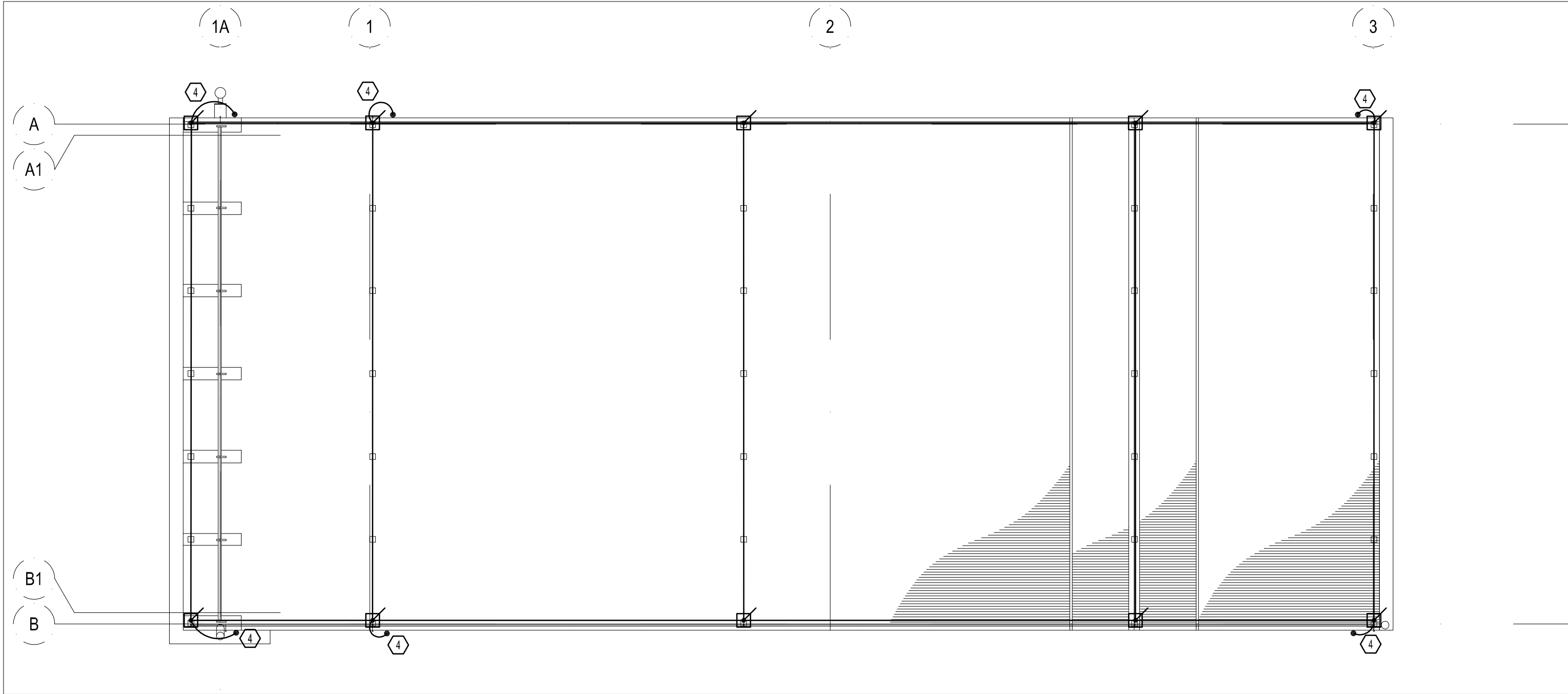
7 GROUNDING DETAIL  
E201 N.T.S



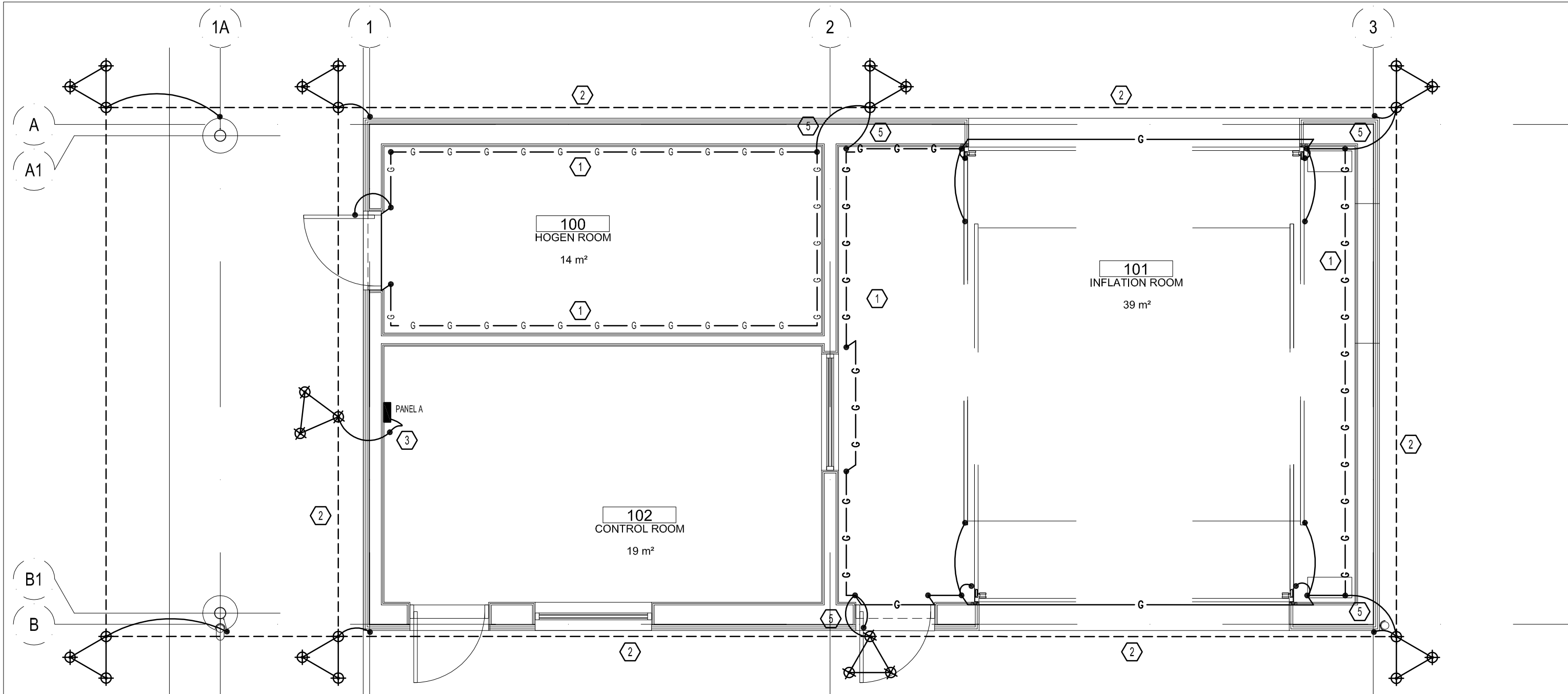
4 DOWN CONDUCT AT GROUND  
E201 N.T.S



6 MISC. FASTENERS  
E201 N.T.S



1 LIGHTNING PROTECTION PLAN  
E201 1:50



2 GROUNDING PLAN  
E201 1:50

- DRAWING KEY NOTES:**
- GROUND BUS BAR MOUNTED AT 1500mm AFF (TYPICAL). CONNECT TO BUILDING GROUND WITH #3/0 BARE COPPER AND BOND ALL METAL SUPPORTS (WINDOW FRAMES, SUPPORTS FOR GAS SENSORS, ETC.) PIPING AND SERVICES. TIE TO BUILDING GROUND GRID.
  - BURIED #300MCM BARE ALUMINUM CABLE. MIN DEPTH 750mm BELOW GRADE.
  - CONNECT PANEL TO BUILDING GROUND SYSTEM. USE PROPER COPPER TO ALUMINUM TRANSITION CABLE.
  - DOWN CONDUCTOR FROM ROOF TO UNDERGROUND GROUNDING SYSTEM. #300MCM BARE ALUMINUM CABLE EXPOSED ON INSIDE WALL. IF LIGHTNING PROTECTION ENGINEER DEEMS THAT THE STRUCTURE CAN BE USED INSTEAD OF AN ALUMINUM DOWN CONDUCTOR, THIS IS ACCEPTABLE AND SHOULD BE NOTED ON THE SHOP DRAWINGS.
  - CONNECTION FROM ALUMINUM GROUND SYSTEM TO COPPER BUS BAR. USE EQUIVALENT #300MCM AL OR #4/0 CU CABLE TO CONNECT THE TWO SYSTEMS.
- LIGHTNING PROTECTION**
- ALL GROUND RODS SHALL BE MINIMUM 19mm DIAMETER, ALUMINUM CLAD STEEL, 3000mm LONG.
  - LIGHTNING PROTECTION DOWN CONDUCTORS, GROUP LOOP CONDUCTORS AND ALL INTERCONNECTIONS TO RODS, DOWN CONDUCTORS AND OTHER SYSTEM GROUNDS SHALL BE MINIMUM 115,000 CIRCULAR MIL, 375 RY1000R STRANDED ALUMINUM.
  - GROUND LOOP CONDUCTOR TO BE INSTALLED TO A MINIMUM DEPTH OF 750mm BELOW GRAD OR SLAB.



FOR BID PURPOSES AND  
NOT FOR CONSTRUCTION

04	ISSUED FOR TENDER	2016-01-29
03	ISSUED FOR 99% PROGRESS SET	2015-12-04
02	ISSUED FOR 66% PROGRESS SET	2015-10-30
01	ISSUED FOR 33% PROGRESS SET	2015-10-09
revision		date

Do not scale drawings.  
Verify all dimensions and conditions on site and immediately  
notify the Departmental Representative of all discrepancies.

A	Detail No.
B	No. du detail
C	drawing no. — where detail required dessin no. — où détail exigé
	drawing no. — where detailed dessin no. — où détaillé

project title  
titre du projet  
**EGBERT** Ontario  
6248 8TH LINE, LOL 1N0

**NEW HYDROGEN GENERATION (HOGEN)  
AND BALLOON LAUNCHING BUILDING**

drawing title  
titre du dessin

**GROUNDING**

drawn by  
dessiné par  
**HB**

designed by  
conc par  
**JP**

approved by  
approuvé par  
**JP**

bid  
offre  
project manager  
administrateur  
de projets

project date  
date du projet  
**2016-01-29**

project no.  
no. du projet  
**R.071909.001**

drawing no.  
dessiné no.  
**E201**