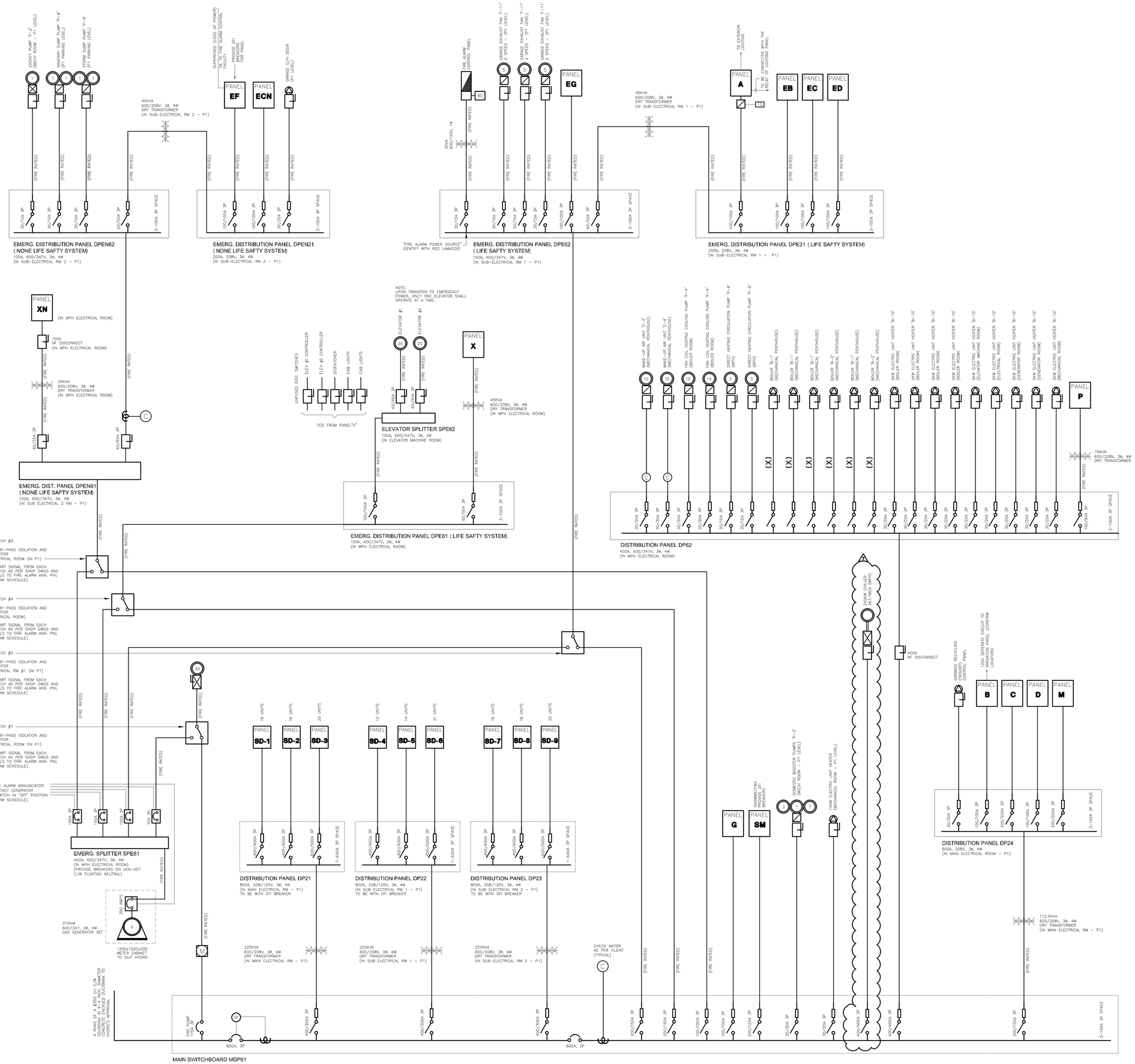

GENERAL NOTES

1. EMERGENCY FEEDERS TO BE PROTECTED FOR A MINIMUM OF TWO HOURS AND TO BE MI PYROTENAX CABLES OR STANDARD CABLES IN A FIRE RATED ENCLOSURE ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION. CONCRETE ENCASED CONDUITS (MIN 75MM) WHERE POSSIBLE AND APPROVED WILL BE ACCEPTABLE.
2. NOTE FOR BOILER PUMPS:

   BOILER PUMP SIZES AND VOLTAGE TO BE CONFIRMED ON SITE WITH DIV. 15 AND TO SUIT SHOP DRAWINGS. FEEDERS TO BE SIZED ACCORDINGLY AND FED FROM APPROPRIATE PANEL, 120/208V PANEL WITHIN MECHANICAL PENTHOUSE.
3. FEEDERS MARKED THUS "X" TO BE VERIFIED FROM SHOP DRAWINGS, FEEDERS AND BREAKERS SIZED ACCORDINGLY TO SUIT.
4. ALL GROUNDING AND BONDING CONDUCTOR REQUIREMENTS TO BE IN ACCORDANCE WITH CODE, TO BE AS PER TABLES 16 AND 17 AND TO SUIT INSPECTORS REQUESTS.
5. RATINGS OF ALL MECHANICAL EQUIPMENT TO BE CONFIRMED FROM MANUFACTURER'S SHOP DRAWINGS PRIOR TO ROUGH-IN.
6. PROVIDE A 32MM EMT CONDUIT C/W PULL STRING FROM CABINET TO THE CT COMPARTMENT OF MAIN SWITCHBOARD.
7. PROVIDE A 19MM EMT CONDUIT C/W PULL STRING AND PLASTIC BUSHINGS FROM THE TELEPHONE BACKBOARD TO THE UPPER RIGHT CORNER OF THE CABINET. SUPPLY AND INSTALL A RJ11 (4-PIN) JACK IN UPPER RIGHT HAND CORNER.
8. PROVIDE A 120V DUPLEX RECEPTACLE IN THE BOTTOM RIGHT CORNER OF THE CABINET.
9. ELECTRICAL CONTRACTOR TO PROVIDE "TORONTO" HYDRO WITH TWO SETS OF SWITCHBOARD DRAWINGS FOR APPROVAL, AND ONE COPY TO ESA.

ESTIMATED LOAD BREAKDOWN

LOAD DESCRIPTION	KW
SUITES	150 + 1 GUEST
A/C UNIT	108
ELEVATORS	50
MISC. LIGHTS	50
MISC. POWER	50
MECHANICAL	72
RETAIL SPACES	0
MISC. HEATING	143
RESTAURANTS	0
TOTAL	729
ANTICIPATED TRANSFORMER SIZE:	750KVA
SERVICE SWITCHBOARD:	800A, 600/347V, 3 PHASE, 4 WIRE FULL RATED

BREAKER OR FUSE	CONDUCTORS AND CONDUITS	BREAKER OR FUSE	CONDUCTORS AND CONDUITS
15A, 20A, 25A:	3(4)#12-16C +#12 GROUNDING	250A:	3(4)#250MCM-63C +#4 GROUNDING
30A, 35A:	3(4)#10-16C +#10 GROUNDING	300A:	3(4)#350MCM-63C +#4 GROUNDING
40A, 50A:	3(4)#8-27C +#10 GROUNDING	350A:	3(4)#500MCM-78C +#3 GROUNDING
60A:	3(4)#6-27C +#10 GROUNDING	400A:	2 RUNS OF 3(4)#3/0-53C +#3 GROUNDING
70A, 80A:	3(4)#4-27C +#8 GROUNDING	500A:	2 RUNS OF 3(4)#250MCM-63C +#2 GROUNDING
90A, 100A:	3(4)#3-27C +#8 GROUNDING	600A:	2 RUNS OF 3(4)#350MCM-63C +#1 GROUNDING
125A:	3(4)#1-35C +#6 GROUNDING	700A:	2 RUNS OF 3(4)#500MCM-78C +#1/0 GROUNDING
150A:	3(4)#1/0-41C +#6 GROUNDING	800A:	3 RUNS OF 3(4)#300MCM-63C +#1/0 GROUNDING
175A:	3(4)#2/0-41C +#6 GROUNDING	900A:	3 RUNS OF 3(4)#300MCM-63C +#2/0 GROUNDING
200A:	3(4)#3/0-53C +#6 GROUNDING	1000A:	4 RUNS OF 3(4)#250MCM-63C +#2/0 GROUNDING
225A:	3(4)#4/0-53C +#4 GROUNDING	1200A:	4 RUNS OF 3(4)#350MCM-63C +#3/0 GROUNDING
		1600A:	5 RUNS OF 3(4)#400MCM-78C +#4/0 GROUNDING

SECONDARY FEED TO 3ø TRANSFORMER		600/208V
	PRIMARY BREAKER OR FUSE	SECONDARY CONDUCTOR AND CONDUIT
30KVA	35A	4#2-53C +#6 GROUNDING
45KVA	50A	4#1/0-41C +#6 GROUNDING
75KVA	90A	4#300MCM CORFLEX +#4 GROUNDING
112.5KVA	125A	4#500MCM CORFLEX +#3 GROUNDING
225KVA	250A	2 RUNS OF 4#500MCM CORFLEX +#3/0 GROUNDING
300KVA	350A	3 RUNS OF 4#500MCM CORFLEX +#3/0 GROUNDING
450KVA	500A	4 RUNS OF 4#500MCM CORFLEX +#4/0 GROUNDING

SERVICE SECONDARY CONDUCTORS IN CONCRETE ENCASED DUCTBANK		600V
	DUCTBANK UNDER SLAB	DUCTBANK IN SOIL
500KVA (600A)	2 RUNS OF 350MCM	2 RUNS OF 350MCM
750KVA (900A)	3 RUNS OF 350MCM	3 RUNS OF 500MCM
1000KVA (1200A)	3 RUNS OF 750MCM	4 RUNS OF 500MCM
1500KVA (1800A)	4 RUNS OF 750MCM	6 RUNS OF 500MCM

NOTES

1. 3 WIRES ARE USED FOR ALL 3 PHASE MOTORS AND TRANSFORMER PRIMARY, 4 WIRES FOR OTHER LOADS. FEEDERS ARE UP TO 100 FEET LONG. ADJUST SIZES ACCORDINGLY IF LONGER TO ADJUST THE VOLTAGE DROP TO CODE REQUIREMENT.
2. ALL CABLES SHOWN ARE COPPER. ALUMINUM CONDUCTORS CAN BE USED IF APPROVED BY THE ENGINEER. ADJUST RATINGS TO SUIT.
3. CABLES AND CONDUCTORS TO BE APPROVED FOR TYPE OF DUTY TO PERFORM (UNDERGROUND, DRY LOCATION, HAZARDOUS AREA, ETC.) TO SUIT CODE REQUIREMENT.
4. CABLE SIZE AND DUCTBANK DETAILS TO HYDRO AND ESA STANDARDS, ALLOW FOR COORDINATION.
5. ELECTRICAL CONTRACTOR TO PROVIDE COORDINATION STUDY TO ENGINEER PRIOR TO ORDER, INCLUDING MANUFACTURERS RECOMMENDATIONS.
6. ELECTRICAL CONTRACTOR TO PROVIDE TWO SETS OF SWITCHBOARD DISTRIBUTION DRAWINGS TO TORONTO HYDRO AND ONE COPY TO ESA FOR APPROVAL.
7. ELECTRICAL CONTRACTOR TO GROUNDING SYSTEM TO SUIT HYDRO & ESA
8. SHORT CIRCUIT: TO SUIT COORDINATION STUDY

NO.	BY	DESCRIPTION	DATE
07	CM	REVISED AS PER SI E-13	2017-10-18
06	CM	REVISED AS PER SI E-5	2017-08-23
05	CM	ISSUED FOR CONSTRUCTION	2017-08-09
04	CM	PROGRESS FOR CONSTRUCTION	2017-07-18
03	CM	ISSUED FOR PERMIT	2016-12-28
02	CM	REVISED AS PER ESA COMMENTS AND FOR CLARIFICATION	2016-05-19
01	CM	ISSUED FOR TENDER	2016-03-15

REVISIONS

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United Engineering Inc. is not responsible for the accuracy of Architectural, structural, interior design, etc. on this drawing.
Refer to the appropriate trade drawings before proceeding with any work. Installation must conform to all applicable codes and requirements of the authorities having jurisdiction.
This drawing is not to be scaled, all symbols are graphic representations only.

Project North

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TITLE
SINGLE LINE DIAGRAM ELECTRICAL

PROJECT
PROPOSED RESIDENTIAL DEVELOPMENT
25 BAKER HILL BLVD.

ROYAL PINE HOMES
STOUFFVILLE, ONTARIO

DRAWN	CHECKED	SCALE
CM	MG	N.T.S.
DATE	PROJECT	DRAWING
SEPT. 2015	14-016	E-11
		OF 12