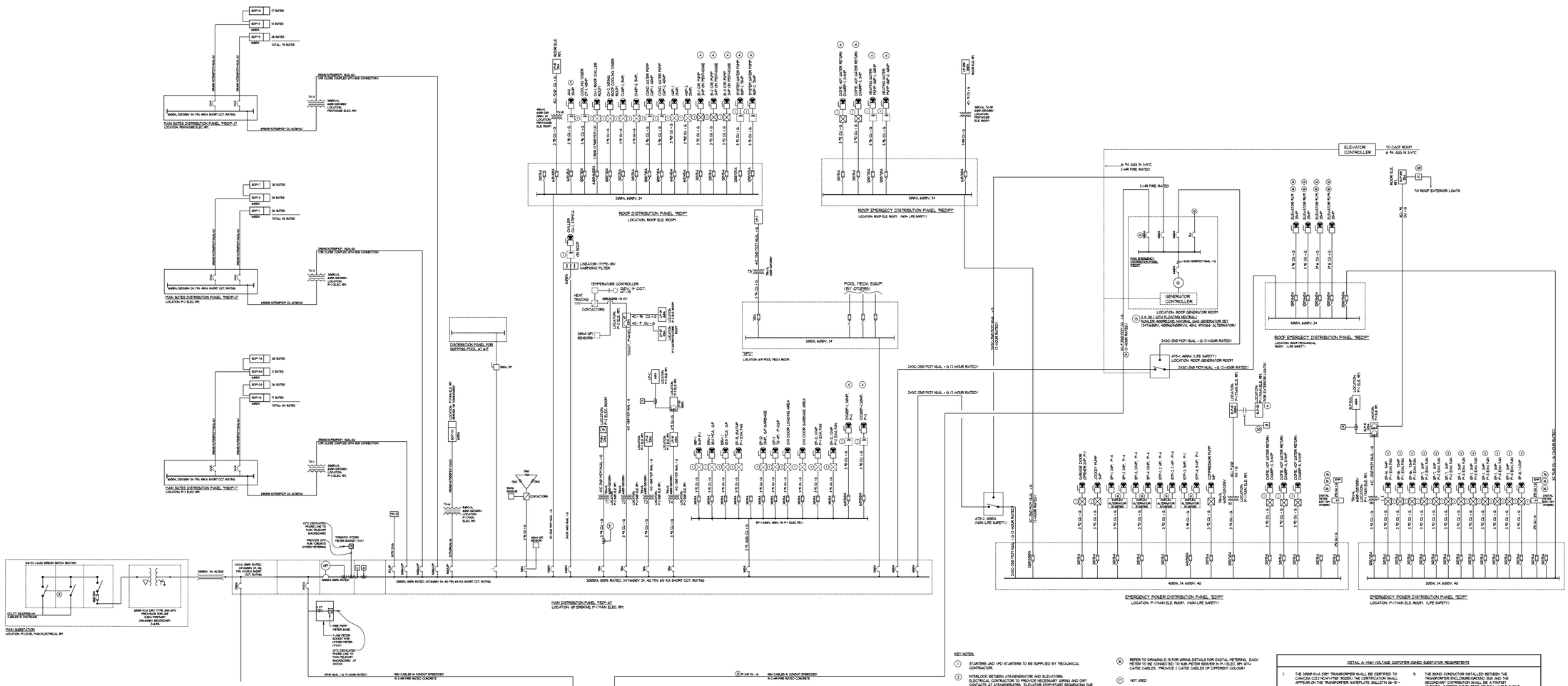
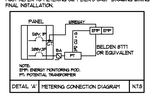


KEY NOTES:

1. STARTERS AND VFD STARTERS TO BE SUPPLIED BY MECHANICAL CONTRACTOR.
2. INTERLOCK BETWEEN ATS/GENERATOR AND ELEVATORS. ELECTRICAL CONTRACTOR TO PROVIDE NECESSARY WIRING AND DRY CONTACTS AT ATS/GENERATING. ELEVATOR SHOP/START BEGINNING DUE TO FIRE ALARM ATTAVATION AND/OR POWER OUTAGE SHALL BE BY ELEVATOR VENDOR.
3. ELECTRICAL CONTRACTOR TO PROVIDE 4-CONDUCTOR RS-485 CABLE (BELDEN 9842/BELDEN 3081A OR DELCO 47960) IN 1 IN EPT CONDUIT.
4. ALL LOADS DESIGNATED SHALL BE INTERLOCKED WITH THE FIRE PUMP, I.E. WHEN THE FIRE PUMP STARTS ALL THESE LOADS SHALL STOP RUNNING.
5. PROVIDE HYDRO METER BASE CUTLAR HAMMER (EATON) TB9-13 IN 5"x5" ELEC. BOX C/U 1" EPT. PROVIDE 1-1/2" EPT TO UTILITY COMPARTMENT OF MAIN SWITCHBOARD.
6. 1C - SINGLE CONDUCTOR CABLES TO RUN WITH 1 CABLE DIA. SEPARATION AND SUPPORTED BY INSTRUCT OR TRAY AS PER EBA. 3C OR 4C - 3 OR 4-CONDUCTOR CABLES (AGM) (AKA STRESSED CONPER) WITH FRANZ REQUIREMENTS). 2P + - - SINGLE CONDUCTOR CABLES RUN WITHIN DIFFERENT CONDUITS.
7. MAIN FEEDERS TO TOWER ROOF SWITCHBOARDS/EQUIPMENT SHALL BE RUN IN ELECTRICAL SHAFT.
8. NEMA COMBINATION STARTER C/U SAFETY DISCONNECT (BY DIV. 15).
9. ALL CABLES CONNECTING EQUIPMENT TO EMERGENCY POWER SHALL BE RUNNING IN FIRE RATED CONDUIT OR ENCLOSED IN ON A V.C. APPROVED 2-HR FIRE RESISTANT ENCLOSURE.
10. NOT USED
11. CONNECT ASK CONTACT TO CAGF MANUAL START/STOP SWITCH FOR FIREFIGHTERS.
12. CONTRACTOR SHALL PROVIDE SHORT CIRCUIT STUDY AND RELAY COORDINATION STUDY FOR EQUIPMENT SHOWN ON THIS DRAWING AND ALL POWER DISTRIBUTION DEVICES SUBJECTED TO SHORT CIRCUIT CURRENTS AND ARE PROPERLY COORDINATED.
13. GENERATOR SILENCER SHALL BE HOSPITAL GRADE "HOCKEY PUCK" AND RECTANGULAR SHAPE. CONTRACTOR TO FABRICATE SILENCER AFTER SITE MEASUREMENT.
14. * = SITE PENDING ON EQUIPMENT SHOP DRAWING DATA.
15. REFER TO DRAWING E-19 FOR WIRING DETAILS FOR DIGITAL METERING. EACH METER TO BE CONNECTED TO SUB-METER SERVER IN P-1 ELEC. RM. WITH CAT6E CABLES. PROVIDE 2 CAT6E CABLES OF DIFFERENT COLOUR.
16. NOT USED
17. ONLY ONE ELEVATOR WILL BE OPERATIONAL ON EMERGENCY POWER AT A TIME.
18. METERING CONNECTIONS ARE CONCEPTUAL ONLY. ELECTRICAL CONTRACTOR TO REFER TO METERING SUPPLIER'S SHOP DRAWING WIRING DIAGRAM FOR FINAL INSTALLATION.



DETAIL "A" METERING CONNECTION DIAGRAM — NTS

SUPPLY, INSTALL AND COMMISSION AN SPP METERING CENTER COMPLETE WITH ONE SET OF PTS.

1. MOUNT AND POWER (ENERGY MONITORING POD WITH A DEDICATED 15AV SINGLE PHASE BREAKER COMPLETE WITH BREAKER LOCK.

2. SUPPLY, INSTALL AND TERMINATE TWO BELDEN 8771 OR EQUIVALENT #22 (600V) TWISTED PAIR INDIVIDUALLY SHIELDED CABLE BETWEEN THIS SPP AND AN EXISTING IN ORDER TO TIE IN TO NETWORK.

3. MOUNT POTENTIAL TRANSFORMERS FACTORY MOUNTED IN ENCLOSURE AND CONNECT TO THE SERVICE TO BE METERED VIA A DEDICATED 3 POLE BREAKER COMPLETE WITH BREAKER LOCK OR FUSED DISCONNECT.

4. SUPPLY, INSTALL AND TERMINATE A BELDEN 8771 OR EQUIVALENT #22 (600V) TWISTED PAIR INDIVIDUALLY SHIELDED CABLE BETWEEN THE PTS TO THE CAMYA ENERGY MONITORING POD.

19. TORK COSMOPRIME ELECTRIC 1-CHANNEL ASTRONOMICAL TYPE CLOCK C/U SEASONAL, HOLIDAY AND EARTH HOUR OVER-RIDE.
20. GENERAL NEUTRAL BUS SHALL BE FLOATING (NOT CONNECTED TO THE PRAFE GROUND). ALL POWER CONTROLS AND COMMUNICATION CONDUCTORS SHALL BE PROTECTED AGAINST FIRE EXPOSURE AS PER OBC. RULE 46-300 AND RULE 42-3013/3 OBSC 3012.
21. THE CONDUITS FOR CTS TO BE RIGID CONDUIT.

DETAIL A: HIGH VOLTAGE CUSTOMER-OWNED SUBSTATION REQUIREMENTS

1. THE 3000 KVA DRY TRANSFORMER SHALL BE CERTIFIED TO CAN/CSA C22.2 NO.47-M90 (R2001). THE CERTIFICATION SHALL APPEAR ON THE TRANSFORMER NAMEPLATE. BULLETIN 34-B-1.
2. A BLOCK OUTLINE AND SINGLE LINE DIAGRAM SHALL BE POSTED AT THE DISTRIBUTION SWITCHGEAR AND EACH SUBSTATION IN ACCORDANCE WITH RULE 36-006.
3. SUITABLE WARNING SIGNS SHALL BE INSTALLED AS REQUIRED BY RULE 36-006, 36-008 (A) AND BULLETIN 36-B-1.
4. COMPARTMENTS CONTAINING FUSES SHALL HAVE THE COVER (OR DOOR) INTERLOCKED WITH THE SWITCH SO THAT IT CANNOT BE OPENED UNLESS THE SWITCH IS IN THE OFF POSITION AND THE SWITCH CANNOT BE PLACED IN THE CLOSED POSITION UNTIL THE FUSE COMPARTMENT HAS BEEN CLOSED. RULE 36-008
5. THE TWO MAIN INCOPING SUPPLY 28KV SWITCHES SHALL BE INTERLOCKED TO PREVENT BOTH FROM BEING CLOSED AT ONE TIME. RULE 6-206
6. THE NEUTRAL ON THE 27.6/16KV SYSTEM SHALL BE BROUGHT INTO THE CUSTOMER-OWNED SUBSTATION AND CONNECTED TO THE STATION GROUND GRID. RULE 36-300(3)
7. THE PRIMARY "HOT" CONNECTION OF THE HIGH VOLTAGE TRANSFORMER SHALL BE CONNECTED TO THE LOC SYSTEM NEUTRAL, WHEN REQUIRED BY THE LDC. RULE 2-404, RULE 75-064
8. THE LOW VOLTAGE NEUTRAL "NOT OF THE TRANSFORMER SHALL BE GROUNDED TO THE STATION ELECTRODE WITH A 3/0 AWG COPPER CONDUCTOR. RULES 10-806, 10-1204 AND 10-1206.
9. THE BOND CONDUCTOR INSTALLED BETWEEN THE TRANSFORMER ENCLOSURE/GROUND BUS AND THE SECONDARY DISTRIBUTION SHALL BE A MINIMUM 2/0 AWG COPPER CONDUCTOR OR EQUIVALENT. TABLE 16, RULE 10-1006 AND RULE 10-814.

10. ALL CONNECTIONS TO THE STATION GROUND ELECTRODE THAT ARE TO BE PERMANENTLY BURIED MUST BE MADE BY AN APPROVED THERMITE WELD COMPRESSION CONNECTORS OR OTHER APPROVED MECHANICAL CONNECTOR. RULE 10-806, 10-1206
11. THE HIGH VOLTAGE SWITCHGEAR GROUND BUS MUST BE CONNECTED TO THE GROUND ELECTRODES BY MEANS OF A 2/0 AWG CONDUCTOR. RULES 36-300 AND 36-308
12. THE UNIT SUBSTATION SHALL BE GROUNDED TO THE MAIN STATION GROUND ELECTRODE BY RUNNING TWO 2/0 AWG COPPER GROUNDING CONDUCTORS. GROUNDING CONDUCTORS MUST BE PHYSICALLY SEPERATED SO THEY CANNOT BE SIMULTANEOUSLY DAMAGED BY A SINGLE EXCAVATION. WHERE CIRCUIT CURRENTS EXCEEDING 14000A APPIL THE GROUNDING CONDUCTOR SIRE SHALL BE INCREASED AND SHALL BE SUCH THAT IT WILL NOT SUFFER THERMAL DAMAGE OR BE A FIRE HAZARD UNDER THE SEVEREST FAULT CONDITIONS OCCURRING IN THE SYSTEM. RULE 36-300(3)
13. RULE 6-206 AND BULLETIN 6-B REQUIRE THE CUSTOMER'S SERVICE EQUIPMENT BE INSTALLED WITHIN 13M FROM WHERE THE CUSTOMER'S SERVICE CONDUCTORS ENTER THE NON-COMBUSTIBLE BUILDING. PLEASE ENSURE THE SERVICE CONDUCTORS ENTER THE BUILDING AT THE FOUNDATION OR BASEMENT WALL OR THAT ADDITIONAL PROTECTION IS INSTALLED AS DETAILED IN BULLETIN 6-A - AND RULE 6-208.

ELECTRICAL LEGEND

LIGHTING

	FLUORESCENT LIGHT FIXTURE, TYPE AS INDICATED
	NIGHT LIGHT OR LIGHT CONNECTED TO EMERGENCY POWER
/20K	CEILING MOUNTED/WALL MOUNTED LIGHT FIXTURE, INSCRIBED LETTER DENOTES TYPE
	POLE MOUNTED LIGHT FIXTURE INSCRIBED LETTER DENOTES TYPE
	CAPPED CEILING LIGHT OUTLET
	TRACK LIGHT
	STRIP LIGHT
	UNDER CABINET FLUORESCENT LIGHT FIXTURE
/	CEILING MOUNTED/WALL MOUNTED EXIT SIGN
	SINGLE/DUAL EMERGENCY LAMP REMOTE HEAD
	EMERGENCY BATTERY PACK
PP	OCCUPANCY SENSOR POWER PACKS
S / S/S / S3, S4, S5, S6	SINGLE/TWO/THREE POLE, SINGLE/TWO/THREE THROW TOGGLE SWITCH RESPECTIVELY. ("3","4","5" DENOTES 3-WAY,4-WAY,PILOT LIGHT, DIMMER SWITCHED LIGHT RESPECTIVELY.)
	MASTER LIGHTING SHUT-OFF SWITCH
	SENSOR WALL SWITCH PIR, SELF POWERED
	OCCUPANCY SENSOR, CEILING MOUNTED

POWER

	REGULAR DUPLEX RECEPTACLE
	DUPLEX RECEPTACLE, GROUND FAULT INTERRUPT
	5-20R T-SLOT DUPLEX RECEPTACLE
	SINGLE RECEPTACLE TYPE AND CONFIGURATION AS SPECIFIED FOR DRYER
	CONNECTION FOR OVEN/COOKTOP
	ABOVE COUNTER DEVICE
	CEILING MOUNTED DEVICES
	FLOOR MOUNTED DEVICES
	DISCONNECT SWITCH, NON-FUSED
	DISCONNECT SWITCH FUSED
	COMBINATION STARTER
	FRACTIONAL MOTOR/FAN DIRECT CONNECTION
	DIRECT CONNECTION, SINGLE PHASE
	DIRECT CONNECTION, THREE PHASE
T	THERMOSTAT
D	DRYER SENSOR
	HEAT TRACE
EWH	ELECTRICAL HEATER
	ELECTRICAL PANEL / SECURITY PANEL

TELECOMMUNICATION

	TV/CABLE OUTLET
	TELEPHONE OUTLET
	TELEPHONE/TV CABLE (MULTI-PORT OUTLET)
	DATA OUTLET
	DATA/TELEPHONE OUTLET
DB	IN SUITE TELECOMM. BOX C/U RECEPTACLE
SP	WIFI LOCATION
PB / VC	PA/MC SPEAKER / VOLUME CONTROL
RR	RADIO RECEIVER

SECURITY

IC / IMC	INTERCOM / ENTERPHONE
IC	INTERCOM WITH CAMERA
PB / PBR	PANIC BUTTON / PANIC INTERCOM STATION
CR	CARD READER
ARGU / ARR	AUTOMATIC RELEASE CARD ACCESS/RADIO RECEIVER
ES	ELECTRIC STRIKE
ML	MAGLOCK
DC / MC	DOOR CONTACT / WINDOW CONTACT
DO	AUTOMATIC DOOR OPERATOR
MD	MOTION DETECTOR
PB	PUSH BUTTON
	SECURITY CAMERA

LIFE SAFETY

	FIRE ALARM SMOKE DETECTOR
	SMOKE ALARM
	FIRE ALARM DUCT TYPE SMOKE DETECTOR
	FIRE ALARM HEAT DETECTOR
	FIXED TEMP. 88 °C DEGREE HEAT DETECTOR
	MOISTURE PROOF HEAT DETECTOR
	CO ALARM
	COMBINATION SMOKE & CO ALARM
CO / W	CO SENSOR / NO SENSOR
	FIRE ALARM MANUAL PULL STATION
	FIREFIGHTER'S HANDSET
	FIRE ALARM STROBE-HORN, WALL MTD.
	FIRE ALARM TYN-HORN, WALL MTD.
	FIRE ALARM SPEAKER/STROBE CEILING MTD.
	FIRE ALARM SPEAKER, CEILING MTD.
FAAT	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL

PRIORITY	ISSUED FOR ---		S.T.
DATE	NO.	DESCRIPTION	BY

MARK VOID ALL PRINTS DATED PREVIOUS TO FINAL DATE ABOVE

REVISIONS

CONTRACTOR MUST CHECK AND VERIFY ALL DIMENSIONS AND CONDITIONS ON THE JOB AND REPORT DISCREPANCIES TO THE ENGINEERS BEFORE PROCEEDING WITH THE WORK. ALTERATIONS TO WORK AS SHOWN BY THE ENGINEERS AND NOT SHOWN MUST BE REPORTED UPON COMPLETION OF THE WORK.

DRAWINGS ARE NOT TO BE SCALED

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DRAWING TITLE:
SINGLE LINE DIAGRAM

PROJECT TITLE:
ALEXANDRA PARK
XXX
TORONTO ONTARIO

DRAWN BY:	CHECKED BY:	SCALE:
S.O.	S.T.	
DATE: FEB. 13	PROJECT NUMBER: 1313	DRAWING NUMBER: E-30 OF

Drawing name: \\CADSERVER\Current Dwgs\1313 - Alexandra Park\E30-1313.DWG Plotted: Mar 10, 2014 - 10:46am