

14K 2026 CANADIAN INSTRUCTION SET

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PAGE #

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OF

54

DISCIPLINE:

ELECTRICAL

TITLE:

NOTES, SYMBOLS

LEGEND AND SINGLE

LINE DIAGRAM

SHEET NUMBER:

E0.1

ELECTRICAL SYMBOLS LIST:

ALL SYMBOLS MAY NOT APPLY TO THIS PROJECT.

	SINGLE RECEPTACLE: 15A HUBBELL 18" TO CENTER UNO
	DUPLEX RECEPTACLE: 20A HUBBELL HBL5361W 18" TO CENTER UNO
	DUPLEX GFCI RECEPTACLE: 20A HUBBELL GFSG5362W (NEMA 5-20R) 18" TO CENTER UNO, WHITE
	FOURPLEX RECEPTACLE - (2) 20A DUPLEX 18" TO CENTER UNO
	FOURPLEX GFCI RECEPTACLE - (2) 20A DUPLEX 18" TO CENTER UNO
	COMPUTER RECEPTACLE AT 18" AFF TO CENTER UNO, HUBBELL #G5362 ORANGE
	COMPUTER QUADRAPLEX AT 18" AFF TO CENTER UNO, HUBBELL #G5362 ORANGE
	WEATHERPROOF COVER: FOR SINGLE RECEPTACLES, 'TAYMAC' MODEL NO. MM410C FOR DUPLEX RECEPTACLES, 'HUBBELL' MODEL NO. WP828MP (VERTICAL MOUNT NO. WP828MHP)
	SPECIAL RECEPTACLE AS NOTED ON DRAWINGS 18" TO CENTER UNO
	DATA TELEPHONE BOX & WHITE COVER PLATE AT 18" AFF TO CENTER UNO. PROVIDE 3/4" CONDUIT WITH PULL STRING TO 6" A.F.C.
	JUNCTION BOX IN ACCESSIBLE LOCATION
	JUNCTION BOX MTD. IN JOIST AREA. CONDUITS CONNECTED BETWEEN SUCH BOXES SHALL BE ROUTED IN JOIST AREA
	CIRCUIT IN CONDUIT RUN BELOW SLAB
	CIRCUIT IN CONDUIT CONCEALED IN WALLS OR ABOVE CEILING
	HOMERUN TO PANELBOARD OR AS NOTED
	NATIONAL ACCOUNT EMS VENDOR PUSH-BUTTON OVERRIDE - FURNISHED BY NATIONAL ACCOUNT EMS VENDOR, INSTALLED & WIRED BY E.
	HORN AND SPEAKER - REFER TO EDC SYMBOLS LISTS FOR FURTHER INFORMATION, NO CONDUIT STUB NEEDED.
	DOOR BUZZER EDWARDS #1065-G5, 24V, 6 WATT, WITH <u>COVERED COVER PLATE, HUBBELL METALLIC WALL PLATE #55771</u> (OBTAINED FROM NATIONAL ACCOUNT VENDOR).
	DOOR HORN EDWARDS #867-AQ 24V (OBTAINED FROM NATIONAL ACCOUNT VENDOR).
	PUSH-BUTTON - EDWARDS #C59, LOW VOLTAGE (24V), 1- PHASE, 4A - AC, FLUSH MOUNTED AT 42" AFF (OBTAINED FROM NATIONAL ACCOUNT VENDOR).
	CONDUIT TURNING DOWN
	CONDUIT TURNING UP
	VOLUME CONTROL, BY OTHERS - PROVIDE SINGLE GANG BOX AT 42" AFF UNO & 1/2" CONDUIT TO CEILING SPACE
	MOTOR - SIZE AS INDICATED ON DWGS
	DISCONNECT SWITCH - SIZE AND FUSES AS PER MANUFACTURER'S RECOMMENDATIONS ('WP' WHERE OUTSIDE)
	PANELBOARD - MOUNT AT 6'-6" TO TOP
	DOOR CONTACT, SEE DETAIL 2/E2.1
	3/4" PLYWOOD TELEPHONE MOUNTING BOARD WITH #6 CU. GROUND AND DEDICATED DUPLEX CONV. RECEPTACLES AS SHOWN ON PLANS. FURNISH IN ACCORDANCE WITH TELCO REQUIREMENTS. SIZE AS NOTED
	WEATHERPROOF (RAIN TIGHT)
	SERVICE ENTRANCE SECTION
	ELECTRICAL CONTRACTOR
	ELECTRIC WATER COOLER
	UNLESS NOTED OTHERWISE
	CONDUIT
	EXHAUST FAN - 120V, UNLESS OTHERWISE NOTED
	GROUND FAULT CIRCUIT INTERRUPTER
	ISOLATED GROUND
	SPRINKLER ALARM CONTROL PANEL
	MAIN CIRCUIT BREAKER
	MAIN LUGS ONLY
	SENSOR - SEE MECHANICAL & ELECTRICAL SHEETS FOR EXACT LOCATIONS. SENSORS (GENERAL) AT 60" AFF UNO.
	COMBINATION TEMPERATURE / HUMIDITY SENSOR - SEE MECHANICAL PLANS. SENSORS (GENERAL) AT 60" AFF UNO.
	ADJUSTABLE THERMOSTAT - SEE MECHANICAL PLAN FOR EXACT LOCATIONS. SENSORS (GENERAL) AT 42" AFF TO CENTER, UNO.
	EMS MONITORING SENSOR - SEE MECHANICAL PLANS. SENSORS (GENERAL) AT 60" AFF UNO
	NATIONAL ACCOUNT EMS VENDOR SENSOR AND SPACE TEMPERATURE SENSOR (TIED TO NATIONAL ACCOUNT EMS VENDOR PANEL AND SHOWN FOR COORDINATION ON E2.0)
	ABOVE FINISH CEILING
	FIRE ALARM PULL STATION MOUNTED @41" AFF TO TOP OF DEVICE.
	FIRE ALARM COMBO HORN/STROBE
	FIRE ALARM COMBO HORN/STROBE (CEILING MOUNTED)
	FIRE ALARM ANNUNCIATOR PANEL
	DUCT SMOKE DETECTOR
	LED ELECTRONIC DRIVER/TRANSFORMER
	EMERGENCY CALL SYSTEM
	EMERGENCY PUSHBUTTONS @42" AFF
	BARRIER-FREE DOOR PUSHBUTTONS @42" AFF
	REMOTE DUCT SMOKE TEST STATION
	CEILING MOUNTED FIRE ALARM STROBE LIGHT IN BARRIER-FREE WASHROOM

ELECTRICAL GENERAL NOTES:

- ALL LED AND/OR FLUORESCENT LAMPS NOT INCLUDED WITH FIXTURES ARE FURNISHED BY THE GENERAL CONTRACTOR THROUGH THE NATIONAL ACCOUNT VENDOR.
- PROVIDE FIXTURE SAFETY CHAINS WHERE REQUIRED.
- ALL LAY-IN FIXTURES SHALL BE FURNISHED WITH 'TEXTURE SUPPORT CLIPS' PER O.E.S.C. #30-302.
- OFFSET LIGHT FIXTURES AS NEEDED TO CLEAR STRUCTURAL BRIDGING ACROSS STORE.
- ALL LIGHT SWITCHES SHALL BE LOCATED AS CLOSE AS POSSIBLE TO ADJACENT DOOR FRAMES AT BARRIER-FREE HEIGHTS. COORDINATE LOCATIONS WITH ALL FIXTURES/EQUIPMENT.
- ALL LIGHTING SHALL BE CIRCUITED AS SHOWN TO ALLOW MULTI-LEVEL SWITCHING FOR ENERGY MANAGEMENT CONTROL. SEE SHEET EM2.
- CONDUIT AND PIPING SHALL BE ROUTED PARALLEL WITH WALLS IN MAIN SALES AND RECEIVING. RUNS SHALL BE GROUPED TOGETHER WHERE PRACTICAL & HOLD AS HIGH AS POSSIBLE AND SUSPEND TIGHT TO THE TOP CORD OF JOIST.
- PROVIDE 200 DEGREE BALLASTS FOR FIXTURES LOCATED OUTSIDE.
- ALL ELECTRICAL CONDUITS/WIRING MUST RUN OVERHEAD (UNO) UNLESS REQUIRED TO RUN UNDERGROUND. ANY EXCEPTIONS MUST BE APPROVED BY PETSMART CONSTRUCTION MANAGER.
- SNAP SWITCHES THAT ARE GROUPED OR GANGED IN AN ENCLOSURE WITH OTHER SNAP SWITCHES OR SIMILAR DEVICES THAT THE VOLTAGE BETWEEN THE ADJACENT DEVICES EXCEEDS 300 VOLTS, MUST HAVE A PERMANENT BARRIER INSTALLED BETWEEN THE ADJACENT DEVICES PER THE CANADIAN ELECTRICAL CODE.
- GENERAL CONTRACTORS SHALL CONTACT THE NATIONAL ACCOUNT VENDOR FOR ACCOUNT BID PRICING ON FIRE AND BURGLAR ALARM SYSTEMS - SEE SPECIFICATIONS.
- PROVIDE (2) PULL STRINGS IN EACH EMPTY CONDUIT FOR DATA & PHONE BOXES.
- REFER TO "EM" SHEETS FOR SENSOR MOUNTING.
- SEE ARCHITECTURAL ELEVATION DRAWINGS FOR EXACT PLACEMENT OF OUTLETS.
- E.C. TO VERIFY EXACT CONDUIT SIZE PRIOR TO ROUGH-IN OF BOXES FOR PHONE AND DATA.
- WHERE CONDUITS, DEVICE BOXES, ETC., ARE SURFACE MOUNTED, SEAL ALL PENETRATIONS WITH SKA, SKAFLEX 1A POLYURETHANE SEALANT.
- ALL NIGHT LIGHT FIXTURES ARE TO BE UNSWITCHED.
- SEE SHEET E0.1 FOR SINGLE LINE DIAGRAM KEYED NOTES.
- PROVIDE CONDUIT FOR LOW VOLTAGE WIRING WHEN REQUIRED BY CODE. TERMINATE PHONE & DATA WIRING AT PETSMART SERVER LOCATION.
- BURGLAR ALARM PACKAGE: THE ALARM PACKAGE WILL REQUIRE AN AVERAGE OF 15 CONDUIT DROPS WITH BOXES, AND 35 BACK BOXES (ONLY) FOR CEILING MOUNTED DEVICES. THIS IS SUBJECT TO CHANGE BASED ON LOCAL REQUIREMENTS AND FINAL SUPPLIER SHOP DRAWINGS. ALL CEILING MOUNTED ALARM & INTRUSION DEVICES WILL REQUIRE A BACK BOX PROVIDED BY THE E.C. ANY QUESTIONS, CONTACT NATIONAL ACCOUNT BURGLAR ALARM VENDOR. SEE ARCHITECTURAL DRAWING F2.0 PRODUCT SCHEDULE.
- LED CIRCUIT: EACH CIRCUIT FOR LED LIGHTING SHALL HAVE A DEDICATED NEUTRAL. LED DRIVERS WILL FAIL IF NEUTRALS ARE SHARED.
- EC IS RESPONSIBLE TO OBTAIN QUOTES FROM NATIONAL ACCOUNT VENDORS (GRAYBAR ELECTRIC AND NATIONAL ACCOUNT EMS VENDOR CONTROLS).
- ALL EQUIPMENT, WATER LINES, CEILING GRID, HVAC DUCTWORK, ROOF LEADER PIPING, CONDUITS, LIGHT FIXTURES, AND FIRE SPRINKLER LINES MUST BE SUSPENDED FROM THE JOISTS ONLY. DO NOT LAY ALONG THE BOTTOM CHORD OF JOISTS OR SUSPEND FROM THE ROOF DECK.

LIGHTING SYMBOLS:

ALL SYMBOLS MAY NOT APPLY TO THIS PROJECT.

	4 1/2" W x 4 7/8" L LED LIGHT
	4 1/2" W x 4 7/8" L LED NIGHT LIGHT
	2 1/2" LED LIGHT
	2 1/2" NIGHT LED LIGHT
	2" W x 4" L WALL MOUNTED LED LIGHT
	RECESSED LED DOWN LIGHT.
	EXTERIOR WALL MOUNTED FIXTURE.
	EXIT SIGNS
	WALL MOUNTED BATTERY PACK
	CEILING MOUNT, 1 OR 2 HEAD EMERGENCY FIXTURE. - CEILING MOUNT TO STRUCTURE (U/S JOISTS) IN SALES AND RECEIVING AREAS OR T-BAR CEILING. - WALL MOUNTED ONLY WHERE NOTED "WM"
	SINGLE POLE TOGGLE SWITCH MOUNTED AT 42" A.F.F. TO CENTER, UNO. HUBBELL #1221W, 20A, 120/347V.
	SINGLE POLE DIMMER SWITCH, LUTRON DVSTV-WH, 0-10V DIMMER MOUNTED AT 42" A.F.F. TO CENTER, UNO.
	THREE WAY TOGGLE SWITCH MOUNTED AT 42" A.F.F. TO CENTER, UNO. HUBBELL #1223W, 20A, 120/347V
	CEILING MOTION SENSOR - "SENSOR SWITCH" MODEL #CMR-PDT9-W, LINE VOLTAGE.

WALL DEVICES AND COVERPLATE FINISHES:

- ALL WALL DEVICES (RECEPTACLES, SWITCHES, DATA OUTLETS ETC.) AND COVERPLATES ARE TO BE WHITE, EXCEPT:
- RECEIVING - ROOM 117, MECHANICAL ROOMS AND SIMILAR AREAS WITH EXPOSED CONDUIT TO HAVE GALVANIZED STEEL COVERPLATES PAINTED TO MATCH ADJACENT SURFACE.
 - I.G. RECEPTACLES TO BE ORANGE

FIRE ALARM CRITERIA:

- BUILDING FIRE ALARM SYSTEM IS NEW AND IS TO BE PROVIDED AND INSTALL BY THIS ELECTRICAL CONTRACTOR.
- ELECTRICAL CONTRACTOR IS TO PROVIDE ALL DEVICES SHOWN FOR A COMPLETE SYSTEM.
- ALL MATERIAL AND LABOUR FOR LOW VOLTAGE SYSTEMS SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR. GENERAL CONTRACTOR SHALL PROVIDE ALL NECESSARY ELECTRICAL POWER AND ANY CONDUIT SHOWN ON THE ELECTRICAL DRAWINGS FOR FIRE ALARM EQUIPMENT. SMOKE DETECTORS IN RTU AIR DUCTS SHALL BE PROVIDED IN RTU'S AS SHOWN AND AS REQUIRED BY CODE (RTU REQUIRED VENDOR).
- FIRE ALARM SYSTEM DESIGN SHALL BE IN ACCORDANCE WITH ALL APPLICABLE LOCAL REQUIREMENTS.
- FIRE ALARM SYSTEM SHALL INCLUDE, AS A MINIMUM, MANUAL PULL STATIONS AT ALL EGRESS DOORS, SMOKE DETECTORS IN RTU'S AS INDICATED AND SIGNALING DEVICES AS SHOWN.
- GENERAL CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL ITEMS REQUIRED FOR A COMPLETE FIRE ALARM SYSTEM.
- FIRE ALARM SYSTEM DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH CAN/ULC-S524 AND SHALL BE VERIFIED IN ACCORDANCE WITH CAN/ULC-S537.
- NATIONAL BURGLAR/FIRE VENDOR SHALL BE CONTACTED TO PROVIDE FINAL MONITORING AND HARDWARE CONNECTIONS. CELLULAR DIALER WILL NEED TO BE INCLUDED IN PACKAGE. IF MONITORING IS DONE BY THE BUILDING LANDLORD, NATIONAL ACCOUNT VENDOR IS STILL TO BE CONTACTED FOR REQUIRED ADDITIONAL TIE-IN/MODULE FOR PETSMART NATIONAL ACCOUNT EMS VENDOR SYSTEM.
- WHERE FIRE PROTECTION AND LIFE SAFETY SYSTEMS AND SYSTEMS WITH FIRE PROTECTION AND LIFE SAFETY FUNCTIONS ARE INTEGRATED WITH EACH OTHER, THE SYSTEMS SHALL BE TESTED AS A WHOLE IN ACCORDANCE WITH CAN/ULC-S1001 "INTEGRATED SYSTEMS TESTING FOR FIRE PROTECTION AND LIFE SAFETY SYSTEMS", TO VERIFY THAT THE SYSTEMS HAVE BEEN PROPERLY INTEGRATED.

GENERAL UTILITIES NOTES:

- TEMPORARY POWER TO BE SUPPLIED AND PAID FOR BY THIS CONTRACTOR.
- THIS CONTRACTOR IS TO PAY FOR ALL UTILITIES USED IN THEIR SCOPE OF WORK.
- PROVIDE TEMPORARY 600V POWER FOR FLOOR POLISHER, AND IF REQUIRED 208V TO 600V STEP-UP TRANSFORMER.

UTILITY TRANSFORMER FAULT CALCULATION

Ventilation Air Chart_2025 Standards.

SERVICE ENTRANCE	CALCULATION
VOLTAGE (L-L): 600V	I-FLA=[RATED KVA * 1000]/[V-L-L*SQRT(PHASE)]
PHASE (PH): 3	
AMPS: 400A	I-FLA= 481A
FULL LOAD KVA: 416KVA	
TRANSFORMER: 500KVA	M=100%-Z= 76.9
IMPEDANCE (%Z): 1.3%Z	I-SC=I-FLA*M= 37 KA

CALCULATION IS BASED ON ESTIMATED TRANSFORMER SIZE WITH %Z FROM BUSSMANN SPD. CONTRACTOR SHALL CONTACT UTILITY AND VERIFY I-SC AVAILABLE AT SECONDARY OF TRANSFORMER. CONTACT ENGINEER FOR RE-CALCULATION IF LARGER THAN CALCULATED.

MOTOR LOAD FAULT CALCULATION

Ventilation Air Chart_2025 Standards.

STARTING I-SC:	37 KA	CALCULATION
MOTOR LOAD (KVA):	141KVA	I-SC(ML)=I-ML*6= 813A
MOTOR LOAD (A):	136A	I-SC=I-SC+I-SC(ML)= 38 KA

FEEDER FAULT CALCULATION

Ventilation Air Chart_2025 Standards.

STARTING I-SC:	38 KA	IMPEDANCE BASED ON 3 SINGLE CONDUCTORS IN NON-PHASE (PH):
VOLTAGE (L-L): 600V		MAGNETIC CONDUIT
FEEDER SIZE: 250		CALCULATION
FEEDER MATERIAL: CU	*f=[SQRT(PHASE)*L*IS-C]/[Q*C*V-L-L]	
FEEDER LENGTH (L): 100FT	M=1/(1+f)= 0.773	
FEET PER OHMS (G): 18,594 FT/OHMS	I-SC=I-SC*M= 29 KA	

*FOR SINGLE PHASE SYSTEMS, FEEDER LENGTH IS DOUBLED AND VOLTAGE IS LINE-NEUTRAL (OR V-L/2)

STEP-DOWN TRANSFORMER FAULT CALCULATION

Ventilation Air Chart_2025 Standards.

STARTING I-SC:	29 KA	CALCULATION
VOLTAGE (PRI): 600V	F=[I-SC(PRI)*V-PRF*SQRT(PHASE)*Z]/[KVA * 1000]	
VOLTAGE (SEC): 208V	F= 6.887	
PHASE (PH): 3PHASE	M=1/(1+f)= 0.127	
KVA TRANSFORMER: 150KVA	I-SC=V-PRF*V-SEC*I-SC*M=	
%Z TRANSFORMER: 3.40%	I-SC= 10.7KA	

3.4%Z MAXIMUM, CONTACT ENGINEER FOR RECALCULATION IF LESS.

MAIN ELECTRICAL INTEGRATED POWER CENTER (IPC):

GENERAL NOTES & CRITICAL DESIGN REQUIREMENTS

- THE INTEGRATED POWER CENTER (IPC) SHALL BE DELIVERED AS A SINGLE UNIT WITH NO SHIPPING SPLITS. THIS INSURES THAT ALL INTERNAL CONDUCTORS ARE TERMINATED PROPERLY AND NO EXTRA FIELD LABOUR IS REQUIRED TO RECONNECT CABINET SECTIONS OR TO RECONNECT COILED UP CONDUCTORS.
- PROVIDE A MAXIMUM OF 9'-0" PRODUCT WIDTH TO MEET THE FOOTPRINT REQUIREMENTS (INCLUDES O.E.S.C. CODE CLEARANCE).
- TOP LIFT PROVISIONS FOR EASE OF LIFTING AND SETTING INTEGRATED POWER CENTER (IPC) PRODUCT AGAINST BUILDING WALL. THE ESTIMATED PRODUCT WEIGHT IS 1800 LBS.
- INTEGRATED POWER CENTER (IPC) PRODUCT WILL BE DELIVERED WITH THE TRANSFORMER LOOSE.
- ELECTRICAL CONTRACTOR (EC) SHALL BE RESPONSIBLE FOR THE PURCHASE OF NATIONAL ACCOUNT VENDOR'S INTEGRATED POWER CENTER (IPC) PRODUCT AND LOOSE PANELS INDICATED. EC SHALL PROVIDE PURCHASE ORDER TO NATIONAL ACCOUNT VENDOR TO GUARANTEE A MANUFACTURING SLOT IN THE SCHEDULE TO MEET REQUESTED DELIVER DATE. CONTACT NATIONAL ACCOUNT VENDORS FOR PURCHASING, DELIVERY AND PRODUCT COORDINATION REQUIREMENTS. SEE SHEET F2.0 FOR NATIONAL ACCOUNT VENDORS CONTACT INFORMATION. NOTE: CONTACT NATIONAL ACCOUNT VENDOR 2 WEEKS PRIOR TO DELIVERY TO CONFIRM DELIVERY AND OBTAIN SITE SPECIFIC PRODUCT DRAWINGS (FINAL EQUIPMENT LOCATIONS/STUB-UP COORDINATION).
- EC RESPONSIBLE TO RE-TORQUE ALL PRE-WIRED FEEDER/BRANCH CIRCUIT TERMINATIONS UPON DELIVERY OF INTEGRATED POWER CENTER (IPC) PRODUCT.
- EC RESPONSIBLE FOR OFF LOADING AND SETTING PREFABRICATED INTEGRATED POWER CENTER (IPC) PRODUCT WHEN IT ARRIVES ON SITE. REFER TO INTEGRATED POWER CENTER (IPC) - CRITICAL DESIGN REQUIREMENTS (NOTES 2 & 3) FOR ADDITIONAL INFORMATION.
- EC IS RESPONSIBLE TO OBTAIN QUOTES FROM NATIONAL ACCOUNT VENDORS.
- EC IS RESPONSIBLE TO GIVE NATIONAL ACCOUNT VENDOR A 6 WEEKS WRITTEN REQUEST OF THE REQUIRED ON-SITE DATE. USE CONTACT INFORMATION FURNISHED IN #1 ABOVE.
- EC TO CONTACT NATIONAL ACCOUNT VENDOR TO OBTAIN SITE SPECIFIC DRAWINGS. DRAWINGS IN PLANS ARE FOR ESTIMATING PURPOSES ONLY. NATIONAL ACCOUNT VENDOR WILL PROVIDE A SET OF "AS-BUILT" DRAWINGS TO THE SUCCESSFUL EC. SO ACCURATE ROUGH-IN COORDINATION CAN BE COMPLETED.
- EC IS RESPONSIBLE TO DETERMINE IF AN EXTERIOR MEANS OF DISCONNECT IS REQUIRED. IF SO, PLEASE REFER TO THE OPTIONS SECTION IN THE NATIONAL ACCOUNT VENDOR PROPOSAL TO CHOOSE THE PRICE ADDER FOR A SHUNT TRIP OR FUSIBLE DISCONNECT.

SINGLE LINE DIAGRAM SYMBOLS LEGEND:

- PROVIDED BY NATIONAL ACCOUNT VENDOR WITHIN INTEGRATED POWER CENTER (IPC) PRODUCT WITH EQUIPMENT INSTALLED AND FACTORY WIRED. NOTE: EC SHALL WALL MOUNT AND RE-TORQUE ALL CONNECTIONS.
- PROVIDED BY EC.
- FURNISHED BY NATIONAL ACCOUNT VENDOR, INSTALLED BY EC.
- EXISTING TO REMAIN.
- INSTALLED UNDER SHELL PORTION OF CONTRACT BY LANDLORD'S ELECTRICAL CONTRACTOR.

SINGLE LINE DIAGRAM KEY NOTES:

- SERVICE UTILITY COMPANY PADMOUNT TRANSFORMER. VERIFY AVAILABLE FAULT CURRENT WITH UTILITY COMPANY.
- PRIMARY SERVICE: CONTACT SIZE PER UTILITY COMPANY PRIMARY FEED. COORDINATE ROUTING AND REQUIREMENTS WITH UTILITY COMPANY PRIOR TO BID.
- TRANSFORMER PAD: 6" MINIMUM CONCRETE. VERIFY EXACT REQUIREMENTS WITH UTILITY COMPANY PRIOR TO BID.
- 400A SERVICE FEEDER: 2 RUNS OF 4 #350MCM RW90 FOR UNDERGROUND SERVICE IN 4". VERIFY FEEDER REQUIREMENTS WITH UTILITY COMPANY PRIOR TO BID.
- C/T CABINET: EXTERIOR C/T CABINET (PROVIDE PER UTILITY COMPANY REQUIREMENTS).
- UTILITY METER: UTILITY COMPANY METER. COORDINATE WITH UTILITY COMPANY.
- ENERGY MONITORING METER: VERIS WATT TRANSUDCER & PHASE LOSS MONITOR KW PULSE METER PROVIDED, INSTALLED & WIRED BY NATIONAL ACCOUNT VENDOR IN INTEGRATED POWER CENTER (IPC) ENCLOSURE.
- E.M.S. CONTROLLER: TO (E.M.S.) CONTROLLER. CONTRACTOR TO COORDINATE REQUIREMENTS WITH NATIONAL ACCOUNTS VENDOR.
- MAIN BONDING JUMPER: PROVIDE #2/0 CU.
- GROUND BOND: PROVIDE #2/0 CU., BOND TO COLD WATER MAIN AND BUILDING STEEL. EXTEND SYSTEM GROUND TO SPRINKLER.
- GROUND ROD: PROVIDE (20' - #1/0 CU. GROUNDING ELECTRODE (20' IN CONCRETE FOOTING) PER LOCAL CODE.
- MDP: SEE MDP SCHEDULE ON E0.2.
- PHASE LOSS MONITOR: PROVIDED BY NATIONAL ACCOUNT VENDOR - INSTALLED WITHIN THE PREFABRICATED INTEGRATED POWER CENTER (IPC) PRODUCT. (1) 2 CONDUCTOR 18 GA. TO SAVVY CONTROLLER.
- PHASE LOSS FEEDER: 3x #12 RW90 CU IN 3/4". SEE SHEET EM2 FOR CONNECTION REQUIREMENT. CONDUCTOR LENGTH SHALL BE 12' MINIMUM.
- NOT USED.
- DISTRIBUTION TRANSFORMER "TI-LDP": 150KVA XFMR., PRI: 600V DELTA, SEC: 120/208V WYE, 1507 C RISE. PROVIDE TP-1 ENERGY EFFICIENT TYPE TRANSFORMER.
- TRANSFORMER GROUND: #1/0 CU. GROUND TO BUILDING STEEL.
- TRANSFORMER FEEDER: 3x #3/0 RW90 CU, (1) #6 CU. GROUND IN 2 1/2".
- "LDP" FEEDER: PARALLEL RUNS: 2x (#4350MCM + GND IN 4").
- 150A/3P CIRCUIT BREAKER: 208V, 3A, 14KAIC CIRCUIT BREAKER FOR SERVICE TO REMOTE (LOOSE) PANEL AS INDICATED.
- 150A CIRCUIT BREAKER SECONDARY FEEDER: SECONDARY FEEDER SHALL BE 4 x #2/0 RW90 CU, (1) #6 CU. GROUND & (1) #6 CU. ISOLATED GROUND (IN 2 1/2" OUTSIDE OF INTEGRATED POWER CENTER (IPC) ENCLOSURE).
- 100A/3P CIRCUIT BREAKER: 208V, 3A, 14KAIC CIRCUIT BREAKER FOR SERVICE TO REMOTE (LOOSE) PANEL AS INDICATED.
- 100A CIRCUIT BREAKER SECONDARY FEEDER: SECONDARY FEEDER SHALL BE 4x #1/0 RW90 CU, (1) #8 CU GROUND, (1) #8 ISOLATED GROUND (IN 2 1/2" OUTSIDE OF INTEGRATED POWER CENTER (IPC) ENCLOSURE).
- CONDUCTORS IN CONDUIT (TYPICAL).
- ROUTE SERVICE FEEDERS THRU CTS FOR VERIS WATT TRANSUDCER PULSE METER READINGS.
- 400A SERVICE FEEDER WITH GROUND: 2 RUNS OF #350MCM RW90 FOR UNDERGROUND SERVICE IN 4".
- ISOLATED GROUND: TERMINATE CONDUCTORS ON INTEGRATED POWER CENTER (IPC) GROUND BUS
- EMS: NATIONAL ACCOUNT VENDOR CONTROL EQUIPMENT FURNISHED, INSTALLED AND WIRED BY NATIONAL ACCOUNT VENDOR INTERNAL TO INTEGRATED POWER CENTER (IPC) PRODUCT. EQUIPMENT TO INCLUDE: OPUS, LTC, CONTACTORS, CONTROL POWER TRANSFORMERS, RELAYS/BASES & COMPUTER SHELF. REFER TO ENERGY MANAGEMENT DRAWINGS EMI, EM2, & E2.2 FOR ADDITIONAL INFORMATION.
- 4" CONCRETE HOUSEKEEPING PAD FOR NATIONAL ACCOUNT VENDOR INTEGRATED POWER CENTER (IPC)
- PANEL LDP: 120/208V, 3A, 4W, 600A RATED, 54 CIRCUITS, NO MAIN BREAKER REQUIRED.

MINIMUM WIRE AND CONDUIT SIZES:

FOR CIRCUIT BREAKERS AND FUSES

AMPS	FEEDER SIZE	GROUND	CONDUIT
15	#12	#12	3/4"
20	#12	#12	3/4"
25	#10	#10	3/4"
30	#10	#10	3/4"
35	#8	#10	3/4"
40	#8	#10	3/4"
45	#8	#10	3/4"
50	#8	#10	3/4"
60	#6	#10	1"
70	#4	#8	1"
80	#4	#8	1"
90	#3	#8	1 1/4"
100	#3	#8	1 1/4"

PROVIDE THE FOLLOWING QUANTITIES:

- 1 POLE CIRCUIT: 1 HOT, 1 NEUTRAL, 1 GROUND
- 2 POLE CIRCUIT: 2 HOT, 1 GROUND
- 3 POLE CIRCUIT: 3 HOT, 1 GROUND
- 1 POLE TO CIRCUIT: 1 HOT, 1 NEUTRAL, 1 GROUND, 1 ISOLATED GROUND.
- *NONE RUNS OF 75' OR GREATER TO BE W/IN #10.

1 SINGLE LINE DIAGRAM

E0.1

NTS

DESIGNER NOTE:

WHERE BUILDING SHELL IS EXISTING, REPLACE UFER WITH (3) 3/4" x 10' LONG COPPER U/LD STEEL RODS, 6" ON CENTER, 1' FROM EXTERIOR FINISH W/IN EXTERIOR WELD.

DESIGNER NOTE:

ON A PROJECT SPECIFIC BASIS, REVERSE MIRROR ORIENTATION OF INTEGRATED POWER CENTER (IPC) BASED ON W/IN SITE. IT TO BE REVERSE MIRROR OF INTEGRATED POWER CENTER (IPC) IS THE MDP.

DESIGNER NOTE:

TOTAL SECONDARY REQUIREMENT FOR TRANSFORMER FULL LOAD AMPERAGE.

DESIGNER NOTE:

COORDINATE REQUIREMENTS FOR DISCONNECT SWITCH WITH UTILITY COMPANY.

DESIGNER NOTE:

CONTACT UTILITY COMPANY FOR AVAILABLE FAULT CURRENT AND REQUIRED DISCONNECT SW. FOR NEXT LOWER MOVEMENT FOR COST SAVINGS IS 15'.

DESIGNER NOTE:

WHERE PROJECT IS A SHELL/TI SPLIT PACKAGE, REFERENCE SINGLE LINE DIAGRAM SYMBOLS E 10 TO 24 FOR KEY.

DESIGNER NOTE: COORDINATE WITH E. PLUMBING DESIGNER IF EXISTING PUMP IS APPLICABLE FOR DISCONNECT. PROVIDE PUMP NOT USED IN PLACE OF INFORMATION.

