

GENERAL CONDITIONS OF CONTRACT

1. **GENERAL:**
 - 1.1. ALL WORK SHOWN OR IMPLIED ON THESE DRAWINGS SHALL CONFORM TO THE ONTARIO ELECTRICAL SAFETY CODE (LATEST EDITION) AND TO THE RULES, REGULATIONS, REQUIREMENTS AND BYLAWS OF THE AUTHORITY HAVING JURISDICTION.
 - 1.2. ELECTRICAL CONTRACTOR TO ENSURE THAT ALL ELECTRICAL EQUIPMENT IS EFFECTIVELY GROUNDED TO MEET THE ONTARIO ELECTRICAL SAFETY CODE REQUIREMENTS.
 - 1.3. ELECTRICAL CONTRACTOR TO ENSURE THAT ALL WIRE SIZES TO BE IN ACCORDANCE WITH ONTARIO ELECTRICAL SAFETY CODE REQUIREMENTS WITH REGARDS TO VOLTAGE DROP. ELECTRICAL CONTRACTOR WILL BE OBLIGED TO INCREASE (AT NO EXTRA COST TO THE PROJECT) WIRE AND CONDUIT SIZES WHEREVER REQUIRED TO CONFORM WITH ALL REQUIREMENTS.
 - 1.4. ALL ITEMS NOTED ON ELECTRICAL LAYOUTS ARE THE SPECIFIC RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO SUPPLY, INSTALL AND WARRANTY IN GOOD WORKING ORDER UNLESS SPECIFICALLY NOTED FOR ANOTHER DIVISION. PROVIDE BREAKERS, WIRING, CONDUIT, DISCONNECTS, STARTERS ETC. WHERE REQUIRED BY CODE TO INSURE THAT THE EQUIPMENT IS IN RUNNING OPERATIONAL ORDER.
 - 1.5. ALL WORK IS TO BE COORDINATED WITH ALL OTHER TRADES AND EXISTING INSTALLATIONS TO AVOID INSTALLATION INTERFERENCE. AREAS OF COORDINATION CONFLICT SHALL BE ORGANIZED BY THE SITE COORDINATOR TO ENSURE NO ADDITIONAL COSTS ARE ADDED TO THE PROJECT.
 - 1.6. THE WORK OF THE ELECTRICAL CONTRACTOR SHALL MEET THE APPROVAL OF THE OWNER AND EITHER OR BOTH MAY DISAPPROVE OF THE QUALITY OF THE WORKMANSHIP, MATERIALS OR EQUIPMENT, IN WHICH CASE THE ELECTRICAL CONTRACTOR SHALL BE OBLIGED TO CORRECT THE SITUATION TO THE SATISFACTION OF THE ENGINEER AND/OR THE OWNER.
 2. **EXAMINATION OF WORK:**
CONTRACTOR TO EXAMINE THE SITE AND LOCAL CONDITIONS LIKELY TO AFFECT THE WORK INDICATED AND SPECIFIED PRIOR TO SUBMITTING HIS FINAL TENDER PRICE.
 3. **LIABILITY:**
THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR LAYING OUT HIS WORK AND FOR ANY DAMAGE CAUSED TO THE OWNER AND TO OTHER CONTRACTORS BY IMPROPER LOCATION OR CARRYING OUT OF THIS WORK. CONTRACTOR TO CARRY ALL NECESSARY INSURANCE COVERAGE.
- THE CONTRACTOR SHALL PROTECT ALL FINISHED AND UNFINISHED WORK OF HIS OWN AND OF OTHER CONTRACTORS INCLUDING EXISTING INSTALLATIONS FROM DAMAGE DUE TO THE CARRYING OUT OF HIS WORK.
4. **INTENT:**
IT IS THE INTENT OF THESE SPECIFICATIONS AND DRAWINGS TO PROVIDE FOR A COMPLETE AND FULLY OPERATING SYSTEM IN COMPLETE ACCORDANCE WITH ALL APPLICABLE CODES. THESE SPECIFICATIONS MAY NOT COVER EACH AND EVERY ITEM REQUIRED FOR THE COMPLETE ELECTRICAL INSTALLATIONS; THEREFORE, THE CONTRACTOR SHALL MAKE PROVISIONS FOR ALL LABOUR, MATERIAL AND EQUIPMENT DEEMED NECESSARY TO COMPLETE THE ELECTRICAL SYSTEM.
 5. **CERTIFICATES, FEES, ETC.:**
CONTRACTOR MUST PAY ALL FEES AND OBTAIN ALL PERMITS NECESSARY FOR THIS PROJECT. PROVIDE AUTHORITIES WITH PLANS AND INFORMATION FOR ACCEPTANCE CERTIFICATES. FURNISH INSPECTION CERTIFICATES AS EVIDENCE THAT WORK CONFORMS WITH REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.
 6. **"AS-BUILT" DRAWINGS:**
KEEP IN THE JOB OFFICE AN EXTRA SET OF WHITE PRINTS AND SPECIFICATIONS ON WHICH ALL CHANGES AND DEVIATIONS SHALL BE RECORDED DAILY. AT THE COMPLETION OF THE PROJECT, TURN OVER TO THE ENGINEER TWO SETS OF NEAT "AS-BUILT" RECORD DRAWINGS AND SPECIFICATIONS.
 7. **SHOP DRAWINGS:**
BEFORE FABRICATION OF ANY MATERIALS OR EQUIPMENT. SUBMIT, THROUGH THE GENERAL CONTRACTOR, A MINIMUM OF ONE (1) SET OF ELECTRONIC SHOP DRAWINGS AND DATA SHEETS COVERING ALL ITEMS OF EQUIPMENT FURNISHED AND INTENDED FOR INSTALLATION UNDER THIS CONTRACT FOR APPROVAL BY THE ENGINEER AND THE OWNER.
 8. **MATERIAL:**
 - 8.1. REPLACE MATERIAL AND WORKMANSHIP BELOW SPECIFIED QUALITY AND RELOCATE WORK WRONGLY PLACED TO THE SATISFACTION OF THE ENGINEER AND THE OWNER.
 - 8.2. MATERIALS AND EQUIPMENT INSTALLED SHALL BE NEW AND OF BEST QUALITY SPECIFIED. USE THE SAME MANUFACTURER FOR EACH SPECIFIC APPLICATION.
 - 8.3. ALL NEW MATERIALS SUPPLIED UNDER THIS CONTRACT SHALL CARRY CSA APPROVAL.
 - 8.4. FOLLOW MANUFACTURERS' INSTRUCTIONS REGARDING THE HANDLING, INSTALLING AND TESTING OF THEIR EQUIPMENT.
 - 8.5. EQUIPMENT SUBSTITUTION: ALL EQUIPMENT SUPPLIED SHALL BE EXACTLY AS SPECIFIED HEREIN. SUBSTITUTIONS OR ALTERNATIVES TO WHAT IS SPECIFIED WILL NOT BE ACCEPTED AFTER THE CLOSING OF TENDERS. SUBSTITUTION OR ALTERNATIVES MUST BE SUBMITTED PRIOR TO TENDER CLOSING AND MUST BE APPROVED BY ENGINEER AND OWNER. SUBSTITUTE OR EQUIVALENT EQUIPMENT MAY BE SUBMITTED FOR APPROVAL BUT ONLY DURING THE TENDER PERIOD. AFTER TENDER CLOSES, NO SUBSTITUTE OR EQUIVALENT EQUIPMENT WILL BE APPROVED. ALL EQUIVALENCY DECISIONS MADE BY THE ENGINEER AND THE OWNER WILL BE FINAL. THE BURDEN OF PROOF OF EQUIVALENT PRODUCTS BOTH IN TERMS OF PERFORMANCE AND QUALITY SHALL BE ON THE CONTRACTOR.
 9. **EQUIPMENT IDENTIFICATION:**
ELECTRICAL CONTRACTOR TO PROVIDE LAMICOID LABELS ON ALL NEW JUNCTION BOXES AND INDICATE VOLTAGE, PHASE AND PANEL CIRCUIT NUMBERS AND LOCATION. PROVIDE LABELS ON ALL WALL RECEPTACLES TO INDICATE PANELS AND CIRCUIT NUMBERS. UPDATE ELECTRICAL PANEL LEGENDS. SUBMIT ALL NEW EQUIPMENT IDENTIFICATION TO THE OWNER FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
- WIRING IDENTIFICATION: IDENTIFY WIRING WITH PERMANENT INDELIBLE IDENTIFYING MARKINGS, EITHER NUMBERED OR COLORED PLASTIC TAPES, ON BOTH ENDS OF PHASE CONDUCTORS OF FEEDERS AND BRANCH CIRCUIT WIRING.
10. **TESTING:**
ALL TESTING AND INSPECTIONS MUST BE PERFORMED BY THE CONTRACTOR AND WITNESSED BY THE ENGINEER AND THE OWNER PRIOR TO FINAL ACCEPTANCE OF THE PROJECT.
- THE CONTRACTOR SHOULD PROVIDE AND NOTIFY THE OWNER, A SCHEDULE OF ALL WORK AND TESTING. PROVIDE AT LEAST 72 HRS NOTICE FOR TESTING.
11. **GUARANTEE:**
THE ELECTRICAL CONTRACTOR, AS A CONDITION PRECEDENT TO FINAL PAYMENT AFTER COMPLETION OF HIS WORK, SHALL GIVE THE OWNER A WRITTEN GUARANTEE WARRANTING ALL APPARATUS FURNISHED UNDER THE CONTRACT TO REMAIN IN PERFECT SERVICEABLE CONDITION FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE OF HIS WORK BY THE ENGINEER AND THE OWNER.
 12. **HEALTH AND SAFETY:**
IT IS MANDATORY FOR THE CONTRACTOR TO COMPLY WITH THE PROVINCIAL HEALTH AND SAFETY REGULATIONS.
 13. **CLEANING:**
CONTRACTOR IS RESPONSIBLE TO CLEAN THE WORK SITE EVERYDAY AT THE END OF THE WORK DAY AND TO TAKE ANY MEANS POSSIBLE TO PROTECT EXISTING EQUIPMENT AND INSTALLATIONS.
 14. **CO-ORDINATION OF MECHANICAL AND ELECTRICAL WORK:**
PROVIDE COMPLETE WIRING AND CONNECTIONS FOR ALL MOTORS AND OTHER ELECTRICAL EQUIPMENT SPECIFIED IN DIVISION 15. WIRING OF CONTROL CIRCUITS 50 VOLTS AND UNDER IS SPECIFIED IN DIVISION 15.
 15. **LOAD BALANCE:**
MEASURE PHASE CURRENT TO PANELBOARDS WITH NORMAL LOADS (LIGHTING) OPERATING AT TIME OF ACCEPTANCE. ADJUST BRANCH CIRCUIT CONNECTIONS AS REQUIRED TO OBTAIN BEST BALANCE OF CURRENT BETWEEN PHASES AND RECORD CHANGES. MEASURE PHASE VOLTAGES AT LOADS AND ADJUST TRANSFORMER TAPS TO WITHIN 2% OF RATED VOLTAGE OF EQUIPMENT. SUBMIT, AT COMPLETION OF WORK, REPORT LISTING PHASE AND NEUTRAL CURRENTS ON PANELBOARDS, DRY-CORE TRANSFORMERS, OPERATING UNDER NORMAL LOAD. STATE HOUR AND DATE ON WHICH EACH LOAD WAS MEASURED, AND VOLTAGE AT TIME OF TEST.
 16. **FIELD QUALITY CONTROL:**
INSULATION RESISTANCE TESTING: MEGGER CIRCUITS, FEEDERS AND EQUIPMENT UP TO 250 V WITH A 500 V INSTRUMENT. MEGGER 350-600 V CIRCUITS, FEEDERS AND EQUIPMENT WITH A 1000 V INSTRUMENT. CHECK RESISTANCE TO GROUND BEFORE ENERGIZING. CARRY OUT TESTS IN PRESENCE OF ENGINEER. PROVIDE INSTRUMENTS, METERS, EQUIPMENT AND PERSONNEL REQUIRED TO CONDUCT TESTS DURING AND AT CONCLUSION OF PROJECT. SUBMIT TEST RESULTS FOR ENGINEER'S REVIEW.
 17. **CO-ORDINATION OF PROTECTIVE DEVICES:**
ENSURE CIRCUIT PROTECTIVE DEVICES SUCH AS OVERCURRENT TRIPS, RELAYS AND FUSES ARE INSTALLED TO REQUIRED VALUES AND SETTINGS. THE CONTRACTOR SHALL PROVIDE A SHORT CIRCUIT AND COORDINATION STUDY TO CERTIFY THE REQUIRED OVERCURRENT TRIP VALUES.
 18. **FIREPROOFING:**
ALL OPENINGS IN FIRE-RATED WALLS, FLOORS OR CEILINGS ARE TO BE SEALED IN ACCORDANCE WITH CAN4-S115.
 19. **MAINTAINING SERVICES:**
REINSTATE AS SOON AS POSSIBLE ANY DISRUPTED SERVICES ESSENTIAL DURING DEMOLITION OR CONSTRUCTION OR IF NOT INTENDED TO BE REMOVED AS PART OF THIS CONTRACT. ANY EXISTING SERVICE THAT IS TO REMAIN AND IS UNAVOIDABLY DISRUPTED DURING RENOVATION SHALL BE RESTORED TO ITS ORIGINALLY FUNCTIONING STATE.
 20. **O&M MANUAL:**
AT THE END OF THE PROJECT, CONTRACTOR SHALL PROVIDE THE OWNER WITH COMPLETE O&M MANUAL CONTAINING: BUILDING NAME & ADDRESS, PROJECT NAME, PROJECT NUMBER, COMPLETED DATE, NAME ADDRESS AND PHONE NUMBER OF GENERAL CONTRACTOR, NAME ADDRESS AND PHONE NUMBER OF ENGINEER, SIGNED AND DATED LETTER OF WARRANTY IDENTIFYING THE PROJECT BY NAME, PROJECT NUMBER, LOCATION AND WARRANTY PERIOD, EXTENDED WARRANTY OF EQUIPMENT (IF APPLICABLE), CONTACT INFORMATION OF ALL SUBTRADES AND SUPPLIERS, ALL TAB REPORTS, PRE-FUNCTIONAL TESTS, START-UP REPORTS, PERFORMANCE VERIFICATION FORMS, CONTRACTOR CERTIFICATIONS, AS BUILT DRAWINGS, SEQUENCE OF OPERATION, DATA SHEETS AND ALL OTHER INFORMATION CONCERNING THE PROJECT.

ELECTRICAL SPECIFICATIONS

1. **LOCATION OF CONDUIT:**
DRAWINGS DO NOT INDICATE ALL CONDUIT RUNS. THOSE INDICATED ARE IN DIAGRAMMATIC FORM ONLY.
 - 1.1. **CONDUITS:** ELECTRICAL METALLIC TUBING (EMT) WITH COUPLINGS, CONDUIT FASTENINGS; ONE HOLE STEEL STRAPS TO SECURE SURFACE CONDUITS 2" AND SMALLER, TWO HOLE STEEL STRAPS FOR CONDUITS LARGER THAN 2". BEAM CLAMPS TO SECURE CONDUITS TO EXPOSED STEEL WORK, CHANNEL TYPE SUPPORTS FOR TWO OR MORE CONDUITS AT 16'-0" OC. 1/4" DIA. THREADED RODS TO SUPPORT SUSPENDED CHANNELS.
 - 1.2. **CONDUIT FITTINGS:** FITTINGS: MANUFACTURED FOR USE WITH CONDUIT SPECIFIED. COATING: SAME AS CONDUIT. FACTORY "ELLS" WHERE 90° BENDS ARE REQUIRED FOR 1" AND LARGER CONDUITS. WATERTIGHT CONNECTORS AND COUPLINGS FOR EMT. SET-SCREWS ARE NOT ACCEPTABLE. EXPANSION FITTINGS FOR RIGID CONDUIT: WEATHERPROOF EXPANSION FITTINGS WITH INTERNAL BONDING ASSEMBLY SUITABLE FOR 8" LINEAR EXPANSION. WATERTIGHT EXPANSION FITTINGS WITH INTEGRAL BONDING JUMPER SUITABLE FOR LINEAR EXPANSION AND 3/4" DEFLECTION IN ALL DIRECTIONS. WEATHERPROOF EXPANSION FITTINGS FOR LINEAR EXPANSION AT ENTRY TO PANEL.
 - 1.3. **FISH CORD:** POLYPROPYLENE.
 - 1.4. **INSTALLATION:** INSTALL CONDUITS TO CONSERVE HEADROOM IN EXPOSED LOCATIONS AND CAUSE MINIMUM INTERFERENCE IN SPACES THROUGH WHICH THEY PASS. CONCEAL CONDUITS EXCEPT IN MECHANICAL, ELECTRICAL SERVICE ROOMS, AND IN UNFINISHED AREAS. USE RIGID GALVANIZED STEEL THREADED CONDUIT WHERE SUBJECT TO MECHANICAL INJURY. USE ELECTRICAL METALLIC TUBING (EMT) FOR GENERAL USE, EXCEPT IN CAST CONCRETE; BEND CONDUIT COLD. REPLACE CONDUIT IF KINKED OR FLATTENED MORE THAN 1/10TH OF ITS ORIGINAL DIAMETER. MECHANICALLY BEND STEEL CONDUIT OVER 3/4" DIA. INSTALL FISH CORD IN EMPTY CONDUITS, WHERE CONDUITS BECOME BLOCKED, REMOVE AND REPLACE BLOCKED SECTION. DO NOT USE LIQUIDS TO CLEAN OUT CONDUITS. DRY CONDUITS OUT BEFORE INSTALLING WIRE.
 - 1.5. **SURFACE CONDUITS:** RUN PARALLEL OR PERPENDICULAR TO BUILDING LINES. LOCATE CONDUITS BEHIND INFRARED OR GAS FIRED HEATERS WITH 1.5 M CLEARANCE. RUN CONDUITS IN FLANGED PORTION OF STRUCTURAL STEEL. GROUP CONDUITS WHEREVER POSSIBLE ON SUSPENDED OR SURFACE CHANNELS. DO NOT PASS CONDUITS THROUGH STRUCTURAL MEMBERS EXCEPT AS INDICATED. DO NOT LOCATE CONDUITS LESS THAN 3" PARALLEL TO STEAM OR HOT WATER LINES WITH MINIMUM OF 1" AT CROSSOVERS.
 - 1.6. **WIRE AND CABLES:**
CONDUCTORS STRANDED FROM 10 AWG AND LARGER. MINIMUM SIZE OF 12 AWG. COPPER CONDUCTORS SIZE AS INDICATED WITH 600V INSULATION OF CHEMICALLY CROSSLINKED THERMOSETTING POLYETHYLENE MATERIAL RATED RW90.
2. **FLUSH DEVICES:**
SWITCHES AND RECEPTACLES TO BE SPECIFICATION GRADE WITH STAINLESS STEEL COVER PLATES. ALL DEVICES TO MEET OR EXCEED BUILDING STANDARD.
3. **JUNCTION BOXES:**
ALL JUNCTION BOXES SHALL BE COMPLETE WITH BLANK COVER PLATES.
4. **TELEPHONE, DATA LINE AND CABLE TELEVISION OUTLETS:**
PROVIDE TELEPHONE, TV AND DATA OUTLETS AS INDICATED COMPLETE WITH COVERPLATE, 3/4"C STUB-UP INTO CEILING SPACE AND PULL ROPE.
5. **BREAKERS:**
BREAKERS TO BE AMBIENT COMPENSATED, TRIP-FREE, BOLTED TO THE BUS BARS AND SIZED AS SHOWN ON THE PLANS. PROVIDE UPDATED TYPEWRITTEN PANELBOARD DIRECTORIES IN DOOR OF PANELBOARDS SHOWING ARRANGEMENT OF CIRCUITS.
6. **DISCONNECT SWITCHES:**
TO BE HEAVY DUTY, FUSED OR UNFUSED AS NOTED ON CONTRACT DRAWINGS. LOCKABLE, INDUSTRIAL TYPE, EEMAC 1 ENCLOSURE, SOLID NEUTRAL, HRC FUSE SUPPORT, NEMA R OR J (WEATHERPROOF ENCLOSURE FOR EXTERIOR APPLICATIONS).
 - 6.1. DISCONNECT SWITCHES FOR OUTSIDE USE SHALL BE OF TYPE EEMAC 3R.
 - 6.2. DISCONNECT SWITCHES SHALL BE EQUIPPED WITH PROVISION FOR PADLOCKING IN AN "ON-OFF" POSITION AND MECHANICALLY INTERLOCKED DOOR TO PREVENT OPENING WHEN HANDLE IS IN THE "ON" POSITION.
 - 6.3. DISCONNECT SWITCHES SHALL BE SECURELY FIXED TO THE EQUIPMENT IT IS FEEDING, IF APPROVED BY EQUIPMENT MANUFACTURER, OR ELSE IT SHALL BE INSTALLED ON AN INDEPENDENT CHANNEL SUPPORT.
7. **EMERGENCY LIGHTS:**
ENSURE EMERGENCY AND EXIT LIGHTING, IN AREA OF CONSTRUCTION IS FULLY FUNCTIONAL. EXIT LIGHTING TO CONFORM TO CSA C860.
8. **GROUNDING:**
INSTALL COMPLETE PERMANENT, CONTINUOUS, SYSTEM AND CIRCUIT, EQUIPMENT, GROUNDING SYSTEMS INCLUDING CONDUCTORS, CONNECTORS, ACCESSORIES, AS REQUIRED TO CONFORM TO REQUIREMENTS OF LOCAL AUTHORITY HAVING JURISDICTION OVER INSTALLATION. WHERE EMT IS USED, RUN GROUND WIRE IN CONDUIT.
9. **FIRE ALARM SYSTEM:**
FURNISH NEW DEVICES AS SHOWN ON PLANS. THE INSTALLATION OF NEW FIRE ALARM COMPONENTS AND CONNECTIONS SHALL BE DONE UNDER THE SUPERVISION OF THE SUPPLIER OF THE SYSTEM. INSTALLATION SHALL BE IN ACCORDANCE WITH CAN/ULC-S524. THE SYSTEM SHALL BE VERIFIED AS PER CAN/ULC-S537 AND A CERTIFICATE OF VERIFICATION SHALL BE ISSUED. TEST ALL ALARM CIRCUITS TO ENSURE THAT OPERATION OF ANY PULL STATIONS AND FIRE DETECTORS WILL TRANSMIT ALARM TO THE CONTROL PANEL AND ACTUATE GENERAL ALARM TO APPROVAL OF THE ENGINEER AND FIRE INSPECTION AUTHORITIES.
10. **LIGHTING:**
PROVIDE LIGHTING FIXTURES, COMPLETE WITH LAMPS AS INDICATED ON LIGHTING FIXTURE SCHEDULE.
THE LIGHTING FIXTURES MUST BE COMPATIBLE WITH THE CEILING TYPE SPECIFIED IN THE ARCHITECT FINISH SCHEDULE.
THE LIGHTING FIXTURES MUST BE SECURED TO THE STRUCTURE WITH A SAFETY CHAIN.
THE LAMPS AND BALLASTS MUST BE FROM THE SAME MANUFACTURER.
PROVIDE AND INSTALL ALL THE LAMPS REQUIRED FOR THE PROJECT AND ENSURE THAT THEY ARE APPROPRIATE FOR EACH FIXTURE TYPE. ALL LAMPS INSTALLED IN THE SAME TYPE LIGHTING FIXTURE OR IDENTICAL SOURCES SHALL COME FROM A SINGLE MANUFACTURER AND SHALL HAVE THE SAME CAPACITY, DIMENSIONS AND SAME COLOR RENDERING.
ENERGY EFFICIENT LAMPS: T8 LAMPS WITH 2800 LUMENS, 4100K COLOR TEMPERATURE, CRI AT LEAST 85, AND AVERAGE LIFE OF 20,000 HOURS.
ENERGY EFFICIENT BALLASTS: CLASS 3 ELECTRONIC BALLASTS FOR ONE, TWO, THREE OR FOUR 32W T8 LAMPS. NOISE INDEX "A", HIGH POWER FACTOR, INSTANTANEOUS START.
11. **PANEL:**
120/208 VOLT PANEL, 3 PHASES, 4 WIRES C/W CIRCUIT BREAKERS. N.B. SEE DETAIL DRAWINGS (OFCI BREAKERS WHERE NEEDED).
 - 11.1. BUS AND CIRCUIT BREAKERS TO HAVE A RUPTURING CAPACITY OF 22KA @ 250V OR AS INDICATED.
 - 11.2. PROVIDE LOCK-ON DEVICES ON BREAKERS FEEDING COMPUTER RECEPTACLES, EMERGENCY LIGHTING CIRCUITS, EXTERIOR LIGHTING, 24 HOUR LIGHTING, EXIT SIGN CIRCUITS, FIRE ALARM PANELS AND ALL OTHER DEVICES AS INDICATED ON DRAWINGS.
12. **TRANSFORMERS:**
TYPE CD3C; 600 : 120/208 VOLTS, COPPER WINDING THAT MEETS THE REQUIREMENTS OF CSA C802.2-00, NORMAL ENCLOSURE, STANDARD ADJUSTMENT CONNECTION, MOUNTED ON KORFOND TYPE INSULATION.

USE AND INTERPRETATION OF DRAWINGS

GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION ARE PART OF THE CONTRACT DOCUMENTS AND DESCRIBE USE AND INTENT OF THE DRAWING. THE CONTRACT DOCUMENTS INCLUDE NOT ONLY THE DRAWINGS, BUT ALSO THE OWNER-CONTRACTOR AGREEMENTS, CONDITIONS OF THE CONTRACT, THE SPECIFICATIONS, ADDENDA, AND MODIFICATIONS ISSUED AFTER EXECUTION OF THE CONTRACT. THESE CONTRACT DOCUMENTS ARE COMPLEMENTARY, AND WHAT IS REQUIRED BY ANY ONE SHALL BE BINDING AS IF REPEATED BY ALL. WORK NOT COMPLETELY DETAILED HEREON SHALL BE CONSTRUCTED OF THE SAME MATERIALS AND DETAILED SIMILARLY AS WORK SHOWN MORE COMPLETELY ELSEWHERE IN THE CONTRACT DOCUMENTS.

BY USE OF THE DRAWINGS FOR CONSTRUCTION OF THE PROJECT, THE OWNER CONFIRMS THAT HE HAS REVIEWED AND APPROVED THE DRAWINGS. THE CONTRACTOR CONFIRMS THAT HE HAS VISITED THE SITE, FAMILIARIZED HIMSELF WITH THE LOCAL CONDITIONS, VERIFIED FIELD DIMENSIONS AND CORRELATED HIS OBSERVATIONS WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

AS INSTRUMENTS OF SERVICE, ALL DRAWINGS, SPECIFICATIONS, CADG FILES OR OTHER ELECTRONIC MEDIA AND COPIED THERE OF FURNISHED BY THE ENGINEER ARE HIS PROPERTY. THEY ARE TO BE USED ONLY FOR THIS PROJECT AND ARE NOT TO BE USED ON ANY OTHER PROJECT, INCLUDING REPEATS OF THE PROJECT CHANGES TO THE DRAWINGS MAY ONLY BE MADE BY THE ENGINEER.

UNLESS THE REVISION TITLE IS "ISSUED FOR CONSTRUCTION" THESE DRAWINGS SHALL BE CONSIDERED PRELIMINARY AND SHALL NOT BE USED AS A CONSTRUCTION DOCUMENT.

THESE DRAWINGS ILLUSTRATE THE WORK TO BE DONE. THE ENGINEER IS NOT RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SCIENCES, AND PROCEDURES USED TO DO THE WORK, OR THE SAFETY ASPECTS OF CONSTRUCTION AND NOTHING ON THESE DRAWINGS EXPRESSED OR IMPLIED CHANGES THIS CONDITION. CONTRACTOR SHALL DETERMINE ALL CONDITIONS AT THE SITE AND SHALL BE RESPONSIBLE FOR KNOWING HOW THEY AFFECT THE WORK. SUBMITTAL OF A BID TO PERFORM THIS WORK IS ACKNOWLEDGMENT OF THE RESPONSIBILITIES, AND THAT THEY HAVE BEEN FULLY CONSIDERED IN PLANNING OF THE WORK, AND THE BID PRICE. NO CLAIMS FOR EXTRA CHARGES DUE TO THESE CONDITIONS WILL BE FORTHCOMING.

UNAUTHORIZED CHANGES

IN THE EVENT THE CLIENT, THE CLIENT'S CONTRACTORS OR SUBCONTRACTORS, OR ANYONE FOR WHOM THE CLIENT IS LEGALLY LIABLE MAKES OR PERMITS TO BE MADE ANY CHANGES TO ANY REPORTS, PLANS, SPECIFICATIONS OR OTHER CONSTRUCTION DOCUMENTS PREPARED BY OR ASSOCIATED TO, (LRI) WITHOUT OBTAINING LRI'S PRIOR WRITTEN CONSENT, THE CLIENT SHALL ASSUME FULL RESPONSIBILITY FOR THE RESULTS OF SUCH CHANGES. THEREFORE THE CLIENT AGREES TO WAIVE ANY CLAIM AGAINST LRI AND TO RELEASE LRI FROM ANY LIABILITY ARISING DIRECTLY OR INDIRECTLY FROM SUCH UNAUTHORIZED CHANGES.

IN ADDITION, THE CLIENT AGREES TO THE FULLEST EXTENT PERMITTED BY LAW, TO INDEMNIFY AND HOLD HARMLESS LRI FROM ANY DAMAGES, LIABILITIES OR COST, INCLUDING REASONABLE ATTORNEY'S FEES AND COST OF DEFENSE, ARISING FROM SUCH CHANGES.

IN ADDITION, THE CLIENT AGREES TO INCLUDE IN ANY CONTRACTS FOR CONSTRUCTION APPROPRIATE LANGUAGE THAT PROHIBITS THE CONTRACTOR OR ANY SUBCONTRACTORS OR ANY TIER FROM MAKING ANY CHANGES OR MODIFICATIONS TO LRI'S CONSTRUCTION DOCUMENTS WITHOUT THE PRIOR WRITTEN APPROVAL OF LRI AND THAT FURTHER REQUIRES THE CONTRACTOR TO INDEMNIFY BOTH LRI AND THE CLIENT FROM ANY LIABILITY OR COST ARISING FROM SUCH CHANGES MADE WITHOUT SUCH PROPER AUTHORIZATION.

GENERAL NOTES

EXISTING SERVICES AND UTILITIES SHOWN ON THESE DRAWINGS ARE TAKEN FROM THE BEST AVAILABLE RECORDS, BUT MAY NOT BE COMPLETE OR TO DATE. CONTRACTOR SHALL VERIFY IN FIELD FOR LOCATION AND ELEVATION OF PIPES AND CHECK WITH THE UTILITY COMPANIES BEFORE DIGGING OR PERFORMING WORK.

CONTRACTOR IS ADVISED TO COLLECT INFORMATION ON SOIL CONDITIONS BEFORE START OF CONSTRUCTION.

THE ENGINEER WAIVES ANY AND ALL RESPONSIBILITY AND LIABILITY FOR PROBLEMS WHICH ARISE FROM FAILURE TO FOLLOW THESE PLANS, SPECIFICATIONS AND THE DESIGN INTENT THEY CONTAIN, OR FOR PROBLEMS WHICH ARISE FROM OTHER FAILURE TO OBTAIN AND/OR FOLLOW THE ENGINEER'S GUIDANCE WITH RESPECT TO ANY ERRORS, OMISSIONS, INCONSISTENCIES, AMBIGUITIES OR CONFLICTS WHICH ARE ALLEGED.

CONTRACTOR TO VERIFY ALL DIMENSIONS AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES BEFORE WORK COMMENCES, DO NOT SCALE DRAWINGS.

01	ISSUED FOR PERMIT	M.T.	OCT. 05, 2015
No.	REVISIONS	BY	DATE



NOT AUTHENTIC UNLESS SIGNED AND DATED



LRJ

ENGINEERING | INGENIERIE

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CLIENT

LAMARCHE ELECTRIC

DESIGNED BY: K.P. DRAWN BY: K.P. APPROVED BY: M.T.

PROJECT

ELECTRICAL DESIGN
WHITewater BREWERY
HIGHWAY 17, COBDEN

DRAWING TITLE

ELECTRICAL SPECIFICATIONS

PROJECT NO.

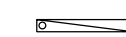
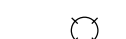
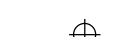
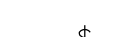

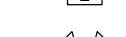
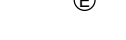
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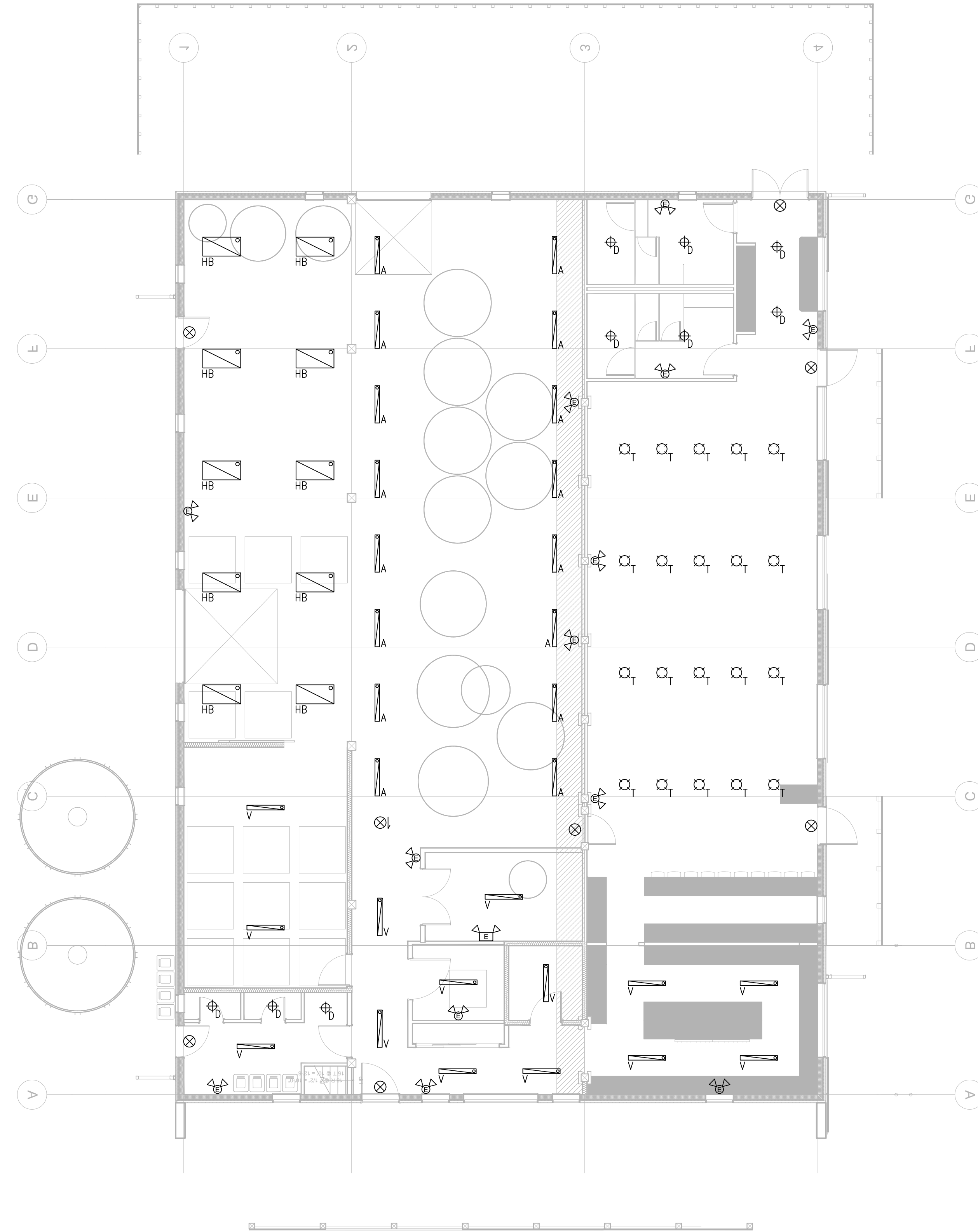
OCT. 05, 2015

E001

LEGEND:

-  STRIP LIGHT FIXTURE
-  TRACK MOUNTED LIGHT FIXTURE
-  RECESSED LIGHT FIXTURE
-  LIGHT SWITCH
-  EMERGENCY BATTERY PACK C/W DOUBLE EMERGENCY LIGHT HEADS
-  REMOTE EMERGENCY LIGHT HEADS
-  ILLUMINATED EXIT SIGN

LIGHT FIXTURE SCHEDULE				
LABEL	QUANTITY	MANUFACTURER	DESCRIPTION	NO. LAMPS
A	16	BEGHELLI	BX910LED4HT50WWT40-120-277-PM	1
D	9	CREE	KR4-9L-30K-120V	1
HB	10	VISIONEERING	FHBE448-T5H054PUNV-P12	4
T	20	JUNO	T271L3KF	1
V	14	BEGHELLI	BS100T5HO-4-XX-254W-120/277V-XX	2



1
E101 LIGHTING LAYOUT - GROUND FLOOR
SCALE: 1/8" = 1'-0"

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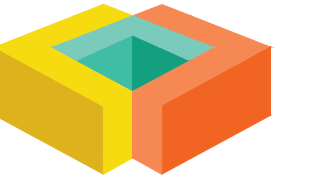
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	REVISIONS	BY	DATE



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5430 Canotek Road | Ottawa, ON, K1J 9G2
www.lrl.ca | (613) 842-3434

CLIENT

LAMARCHE ELECTRIC

DESIGNED BY: K.P. DRAWN BY: K.P. APPROVED BY: M.T.

PROJECT

ELECTRICAL DESIGN
WHITEWATER BREWERY
HIGHWAY 17, COBDEN

DRAWING TITLE

LIGHTING
GROUND FLOOR

PROJECT NO.

150839

DATE

OCT. 05, 2015

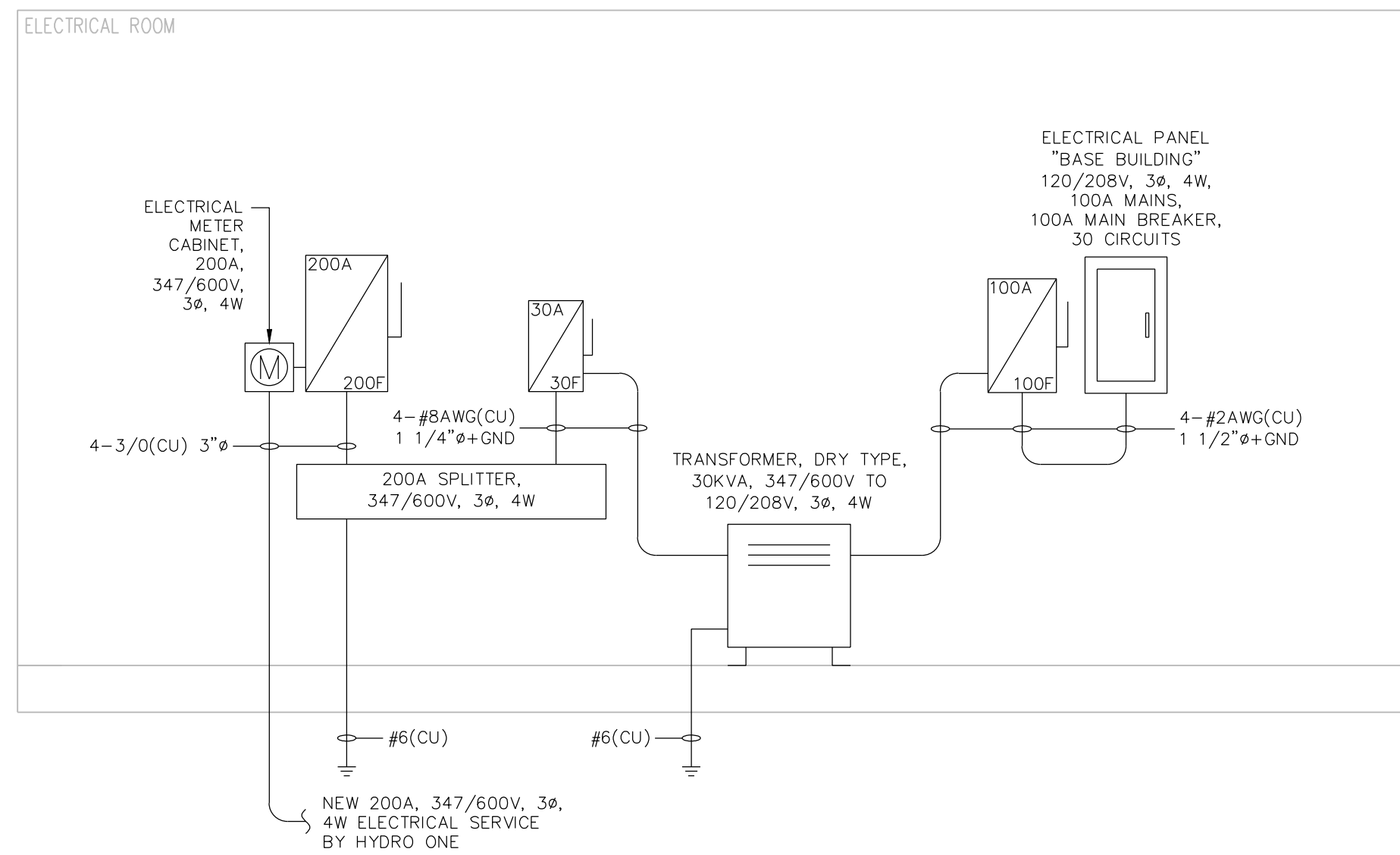
E101

LEGEND:

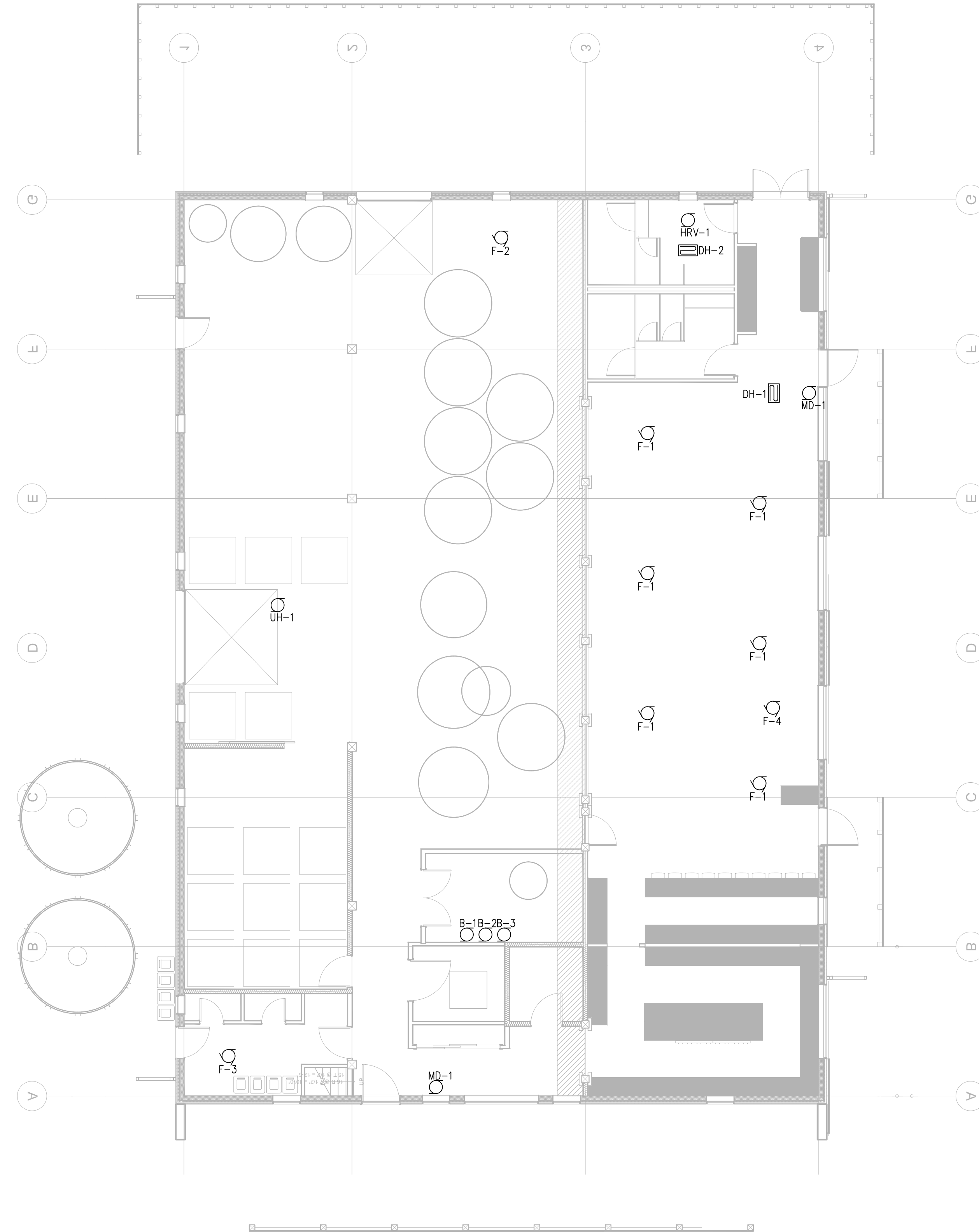
- ELECTRICAL PANEL
- SINGLE PHASE MOTOR
- THREE PHASE MOTOR

ELECTRICAL POWER CONNECTION SCHEDULE

TAG	DESCRIPTION	VOLTAGE	PHASE
B-1, B-2, B-3	GAS FIRED BOILER	120	1
UH-1	GAS FIRED UNIT HEATER	120	1
HRV-1	HEAT RECOVERY VENTILATOR	120	1
MD-1	MOTORIZED DAMPER	120	1
F-1	CIRCULATION FAN	120	1
F-2	EXHAUST FAN - PRODUCTION	120	1
F-3	EXHAUST FAN - WASHROOM/WASTE	120	1
F-4	VENTILATION FAN - RESTAURANT	120	1
DH-1	27kW DUCT HEATER	208	3
DH-2	4.5kW DUCT HEATER	208	3



2 SINGLE LINE DIAGRAM
E201 SCALE: N.T.S.



1 POWER LAYOUT - GROUND FLOOR
E201 SCALE: 1/8" = 1'-0"

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PROJECT
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WHITWATER BREWERY
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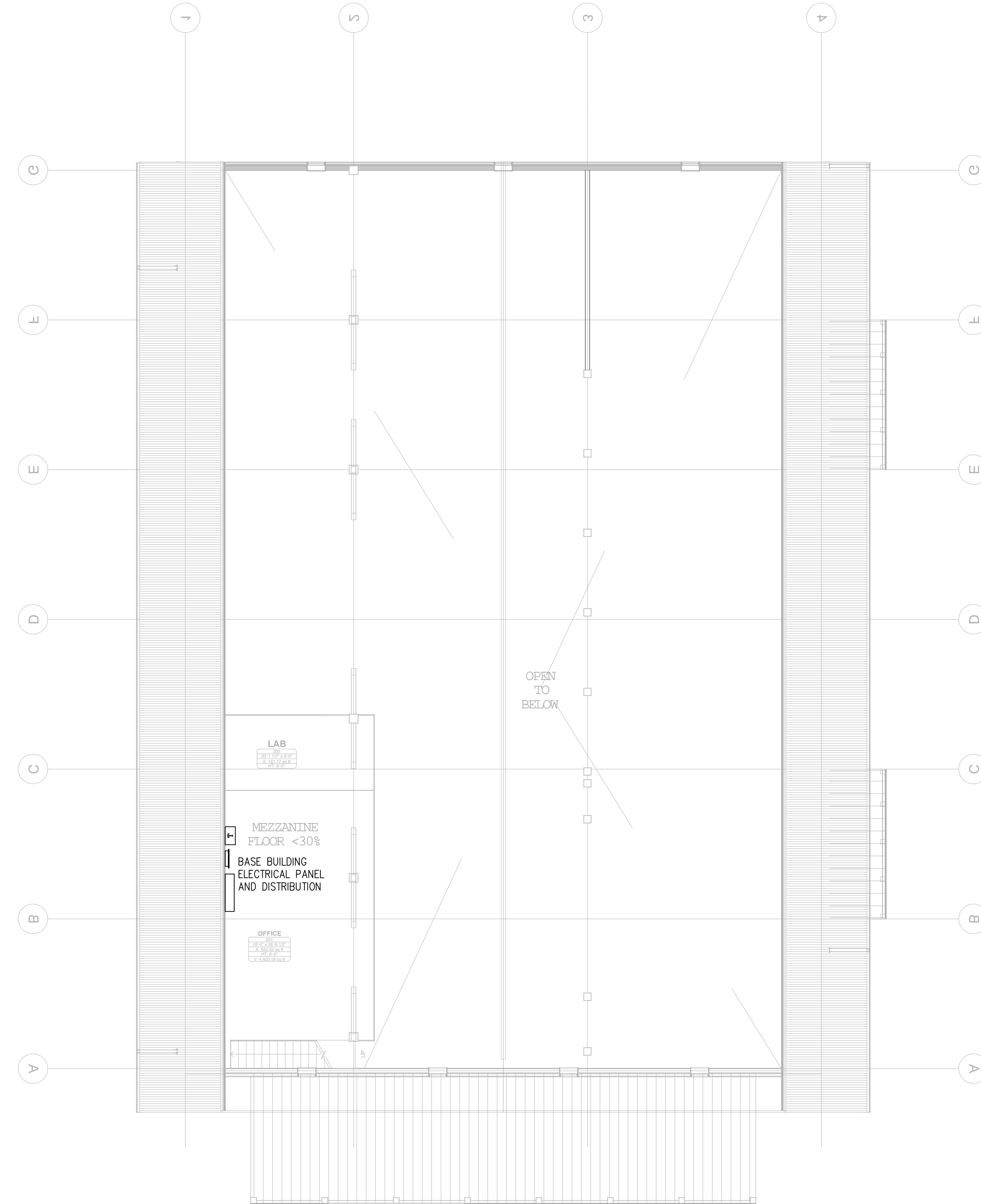
DRAWING TITLE
**POWER
GROUND FLOOR**

PROJECT NO.
150839
DATE
OCT. 05, 2015

E201

LEGEND:

-  ELECTRICAL PANEL
-  SINGLE PHASE MOTOR
-  THREE PHASE MOTOR
-  TRANSFORMER



1 POWER LAYOUT - MEZZANINE
E202 SCALE: 1/8" = 1'-0"

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