

COVERS AND DRAWING LISTS

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Design, Engineering & Construction  
Physical Resources  
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BUILDING #046 RENOVATIONS

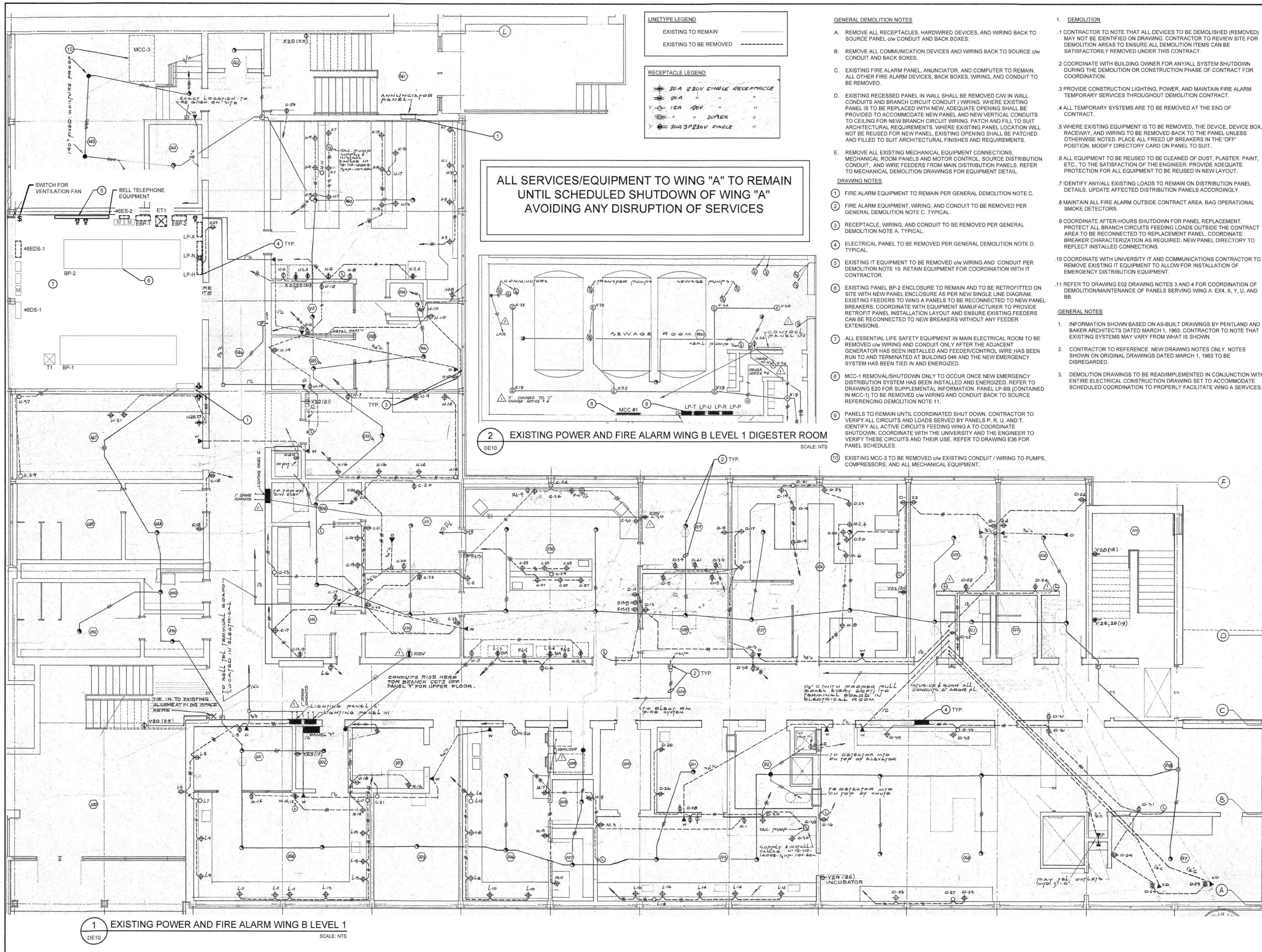
JLR JOB NO. 27915  
ISSUED FOR PERMIT & TENDER  
NOVEMBER 2, 2018

ELECTRICAL DRAWING SET



UNIVERSITY OF GUELPH - BUILDING #046 RENOVATIONS  
JLR JOB NO. 27915





WING 'B'

WING 'C'

WING 'A'

Key Plan

DO NOT SCALE DRAWINGS:  
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UNEXPECTED DISCOVERY OF ASBESTOS:  
Where a friable material is discovered during construction, renovations and/or demolition, and it is suspected to contain asbestos, the Contractor must stop all work that may disturb the material. The Contractor shall advise the Owner of the discovery and await instructions from the owner.

A

B

A = Detail number  
B = Drawing number where detailed

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Orientation

Seal

Seal

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Physical Resources  
Guelph, Ontario. N1G 2W1

Consultant

J.R.

J.L. Richards

ENGINEERS - ARCHITECTS - PLANNERS

Project

BUILDING #046  
RENOVATIONS

Drawing Title

ELECTRICAL  
EXISTING POWER AND FIRE  
ALARM WING B LEVEL 1

Project No.

504034

Location

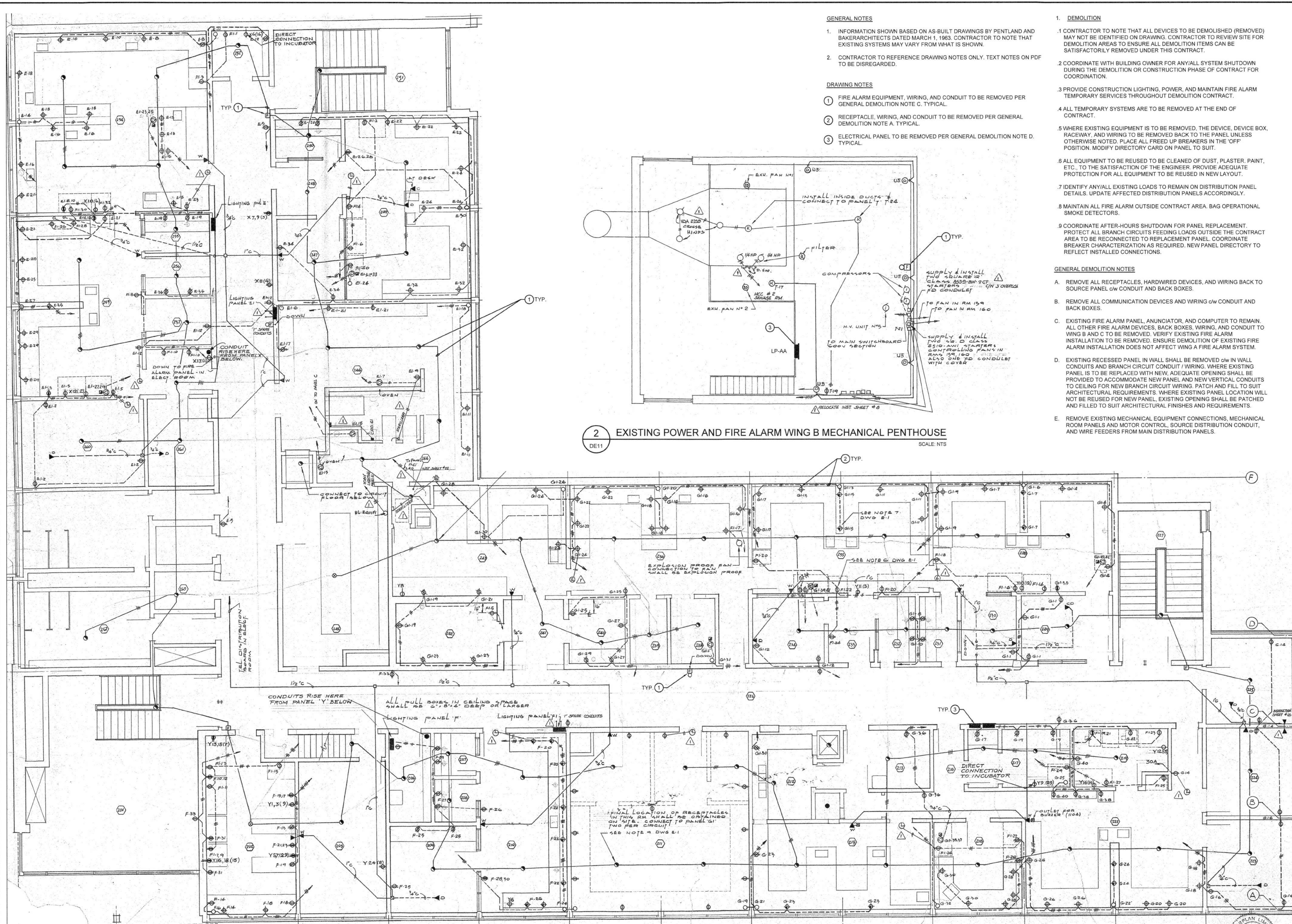
UNIVERSITY OF GUELPH  
BUILDING #046

Scale	NTS	Date	NOV 2, 2018
Drawn by	AM	Drawing No.	
Checked By	HM		
Approved By	HM		
JLR #	27915		
Cad File No.	----		

DE10

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GENERAL NOTES

1. INFORMATION SHOWN BASED ON AS-BUILT DRAWINGS BY PENTLAND AND BAKERARCHITECTS DATED MARCH 1, 1963. CONTRACTOR TO NOTE THAT EXISTING SYSTEMS MAY VARY FROM WHAT IS SHOWN.
2. CONTRACTOR TO REFERENCE DRAWING NOTES ONLY. TEXT NOTES ON PDF TO BE DISREGARDED.

DRAWING NOTES

- 1 FIRE ALARM EQUIPMENT, WIRING, AND CONDUIT TO BE REMOVED PER GENERAL DEMOLITION NOTE C. TYPICAL.
- 2 RECEPTACLE, WIRING, AND CONDUIT TO BE REMOVED PER GENERAL DEMOLITION NOTE A. TYPICAL.
- 3 ELECTRICAL PANEL TO BE REMOVED PER GENERAL DEMOLITION NOTE D. TYPICAL.

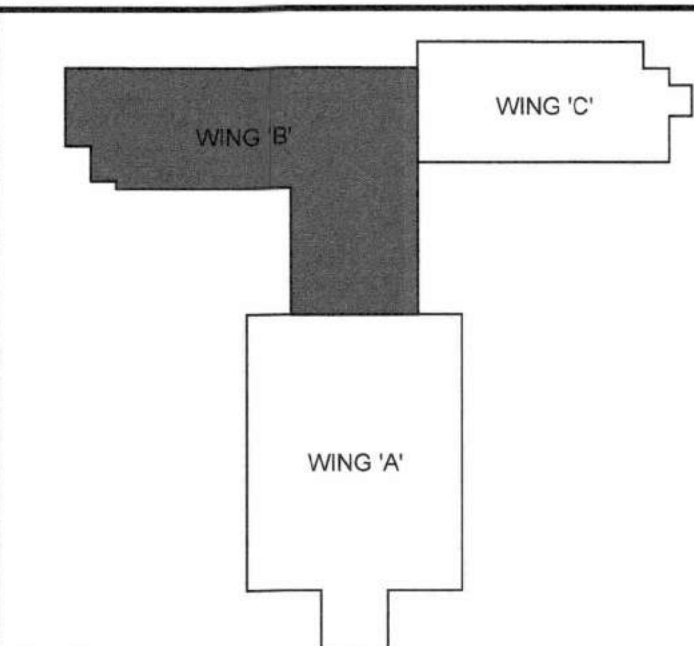
DEMOLITION

1. CONTRACTOR TO NOTE THAT ALL DEVICES TO BE DEMOLISHED (REMOVED) MAY NOT BE IDENTIFIED ON DRAWING. CONTRACTOR TO REVIEW SITE FOR DEMOLITION AREAS TO ENSURE ALL DEMOLITION ITEMS CAN BE SATISFACTORILY REMOVED UNDER THIS CONTRACT.
2. COORDINATE WITH BUILDING OWNER FOR ANYALL SYSTEM SHUTDOWN DURING THE DEMOLITION OR CONSTRUCTION PHASE OF CONTRACT FOR COORDINATION.
3. PROVIDE CONSTRUCTION LIGHTING, POWER, AND MAINTAIN FIRE ALARM TEMPORARY SERVICES THROUGHOUT DEMOLITION CONTRACT.
4. ALL TEMPORARY SYSTEMS ARE TO BE REMOVED AT THE END OF CONTRACT.
5. WHERE EXISTING EQUIPMENT IS TO BE REMOVED, THE DEVICE, DEVICE BOX, RACEWAY, AND WIRING TO BE REMOVED BACK TO THE PANEL UNLESS OTHERWISE NOTED. PLACE ALL FREED UP BREAKERS IN THE 'OFF' POSITION. MODIFY DIRECTORY CARD ON PANEL TO SUIT.
6. ALL EQUIPMENT TO BE REUSED TO BE CLEANED OF DUST, PLASTER, PAINT, ETC., TO THE SATISFACTION OF THE ENGINEER. PROVIDE ADEQUATE PROTECTION FOR ALL EQUIPMENT TO BE REUSED IN NEW LAYOUT.
7. IDENTIFY ANYALL EXISTING LOADS TO REMAIN ON DISTRIBUTION PANEL DETAILS. UPDATE AFFECTED DISTRIBUTION PANELS ACCORDINGLY.
8. MAINTAIN ALL FIRE ALARM OUTSIDE CONTRACT AREA. BAG OPERATIONAL SMOKE DETECTORS.
9. COORDINATE AFTER-HOURS SHUTDOWN FOR PANEL REPLACEMENT. PROTECT ALL BRANCH CIRCUITS FEEDING LOADS OUTSIDE THE CONTRACT AREA TO BE RECONNECTED TO REPLACEMENT PANEL. COORDINATE BREAKER CHARACTERIZATION AS REQUIRED. NEW PANEL DIRECTORY TO REFLECT INSTALLED CONNECTIONS.

GENERAL DEMOLITION NOTES

- A. REMOVE ALL RECEPTACLES, HARDWIRED DEVICES, AND WIRING BACK TO SOURCE PANEL c/w CONDUIT AND BACK BOXES.
- B. REMOVE ALL COMMUNICATION DEVICES AND WIRING c/w CONDUIT AND BACK BOXES.
- C. EXISTING FIRE ALARM PANEL, ANUNCIATOR, AND COMPUTER TO REMAIN. ALL OTHER FIRE ALARM DEVICES, BACK BOXES, WIRING, AND CONDUIT TO WING B AND C TO BE REMOVED. VERIFY EXISTING FIRE ALARM INSTALLATION TO BE REMOVED. ENSURE DEMOLITION OF EXISTING FIRE ALARM INSTALLATION DOES NOT AFFECT WING A FIRE ALARM SYSTEM.
- D. EXISTING RECESSED PANEL IN WALL SHALL BE REMOVED c/w WALL CONDUITS AND BRANCH CIRCUIT CONDUIT / WIRING. WHERE EXISTING PANEL IS TO BE REPLACED WITH NEW, ADEQUATE OPENING SHALL BE PROVIDED TO ACCOMMODATE NEW PANEL AND NEW VERTICAL CONDUITS TO CEILING FOR NEW BRANCH CIRCUIT WIRING. PATCH AND FILL TO SUIT ARCHITECTURAL REQUIREMENTS. WHERE EXISTING PANEL LOCATION WILL NOT BE REUSED FOR NEW PANEL, EXISTING OPENING SHALL BE PATCHED AND FILLED TO SUIT ARCHITECTURAL FINISHES AND REQUIREMENTS.
- E. REMOVE EXISTING MECHANICAL EQUIPMENT CONNECTIONS, MECHANICAL ROOM PANELS AND MOTOR CONTROL, SOURCE DISTRIBUTION CONDUIT, AND WIRE FEEDERS FROM MAIN DISTRIBUTION PANELS.

2 EXISTING POWER AND FIRE ALARM WING B MECHANICAL PENTHOUSE  
SCALE: NTS



Key Plan

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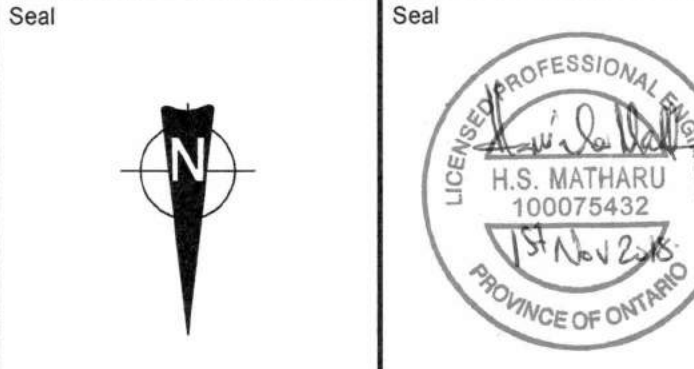
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Orientation	Seal
Seal	Seal



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Guelph, Ontario. N1G 2W1

Consultant  
**J.L. Richards**  
ENGINEERS - ARCHITECTS - PLANNERS

Project  
**BUILDING #046 RENOVATIONS**

Drawing Title  
**ELECTRICAL EXISTING POWER AND FIRE ALARM WING B LEVEL 2**

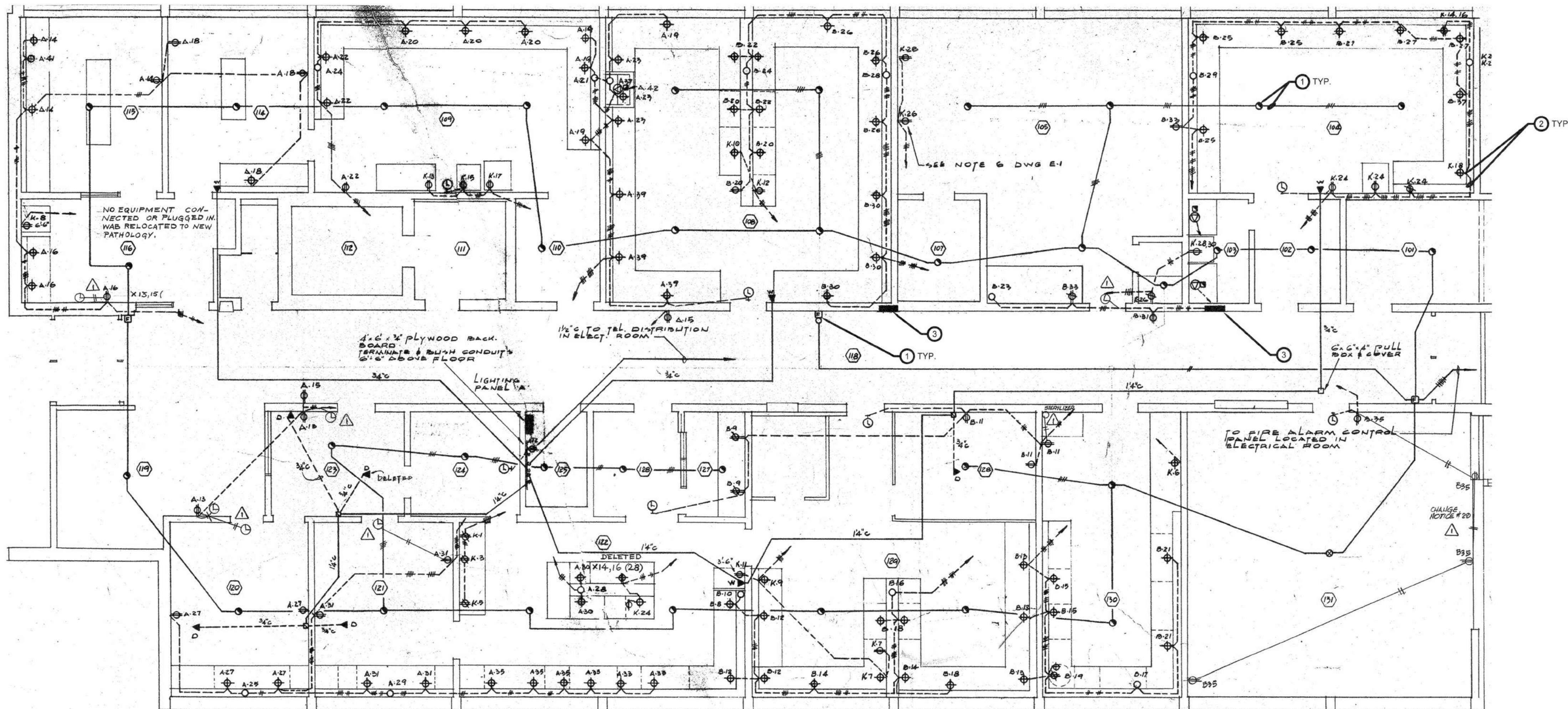
Project No.  
**504034**  
Location  
**UNIVERSITY OF GUELPH BUILDING #046**

Scale NTS	Date NOV 2, 2018
Drawn by AM	Drawing No.
Checked by HM	
Approved by HM	
JLR # 27915	of 170
Cad File No. ----	

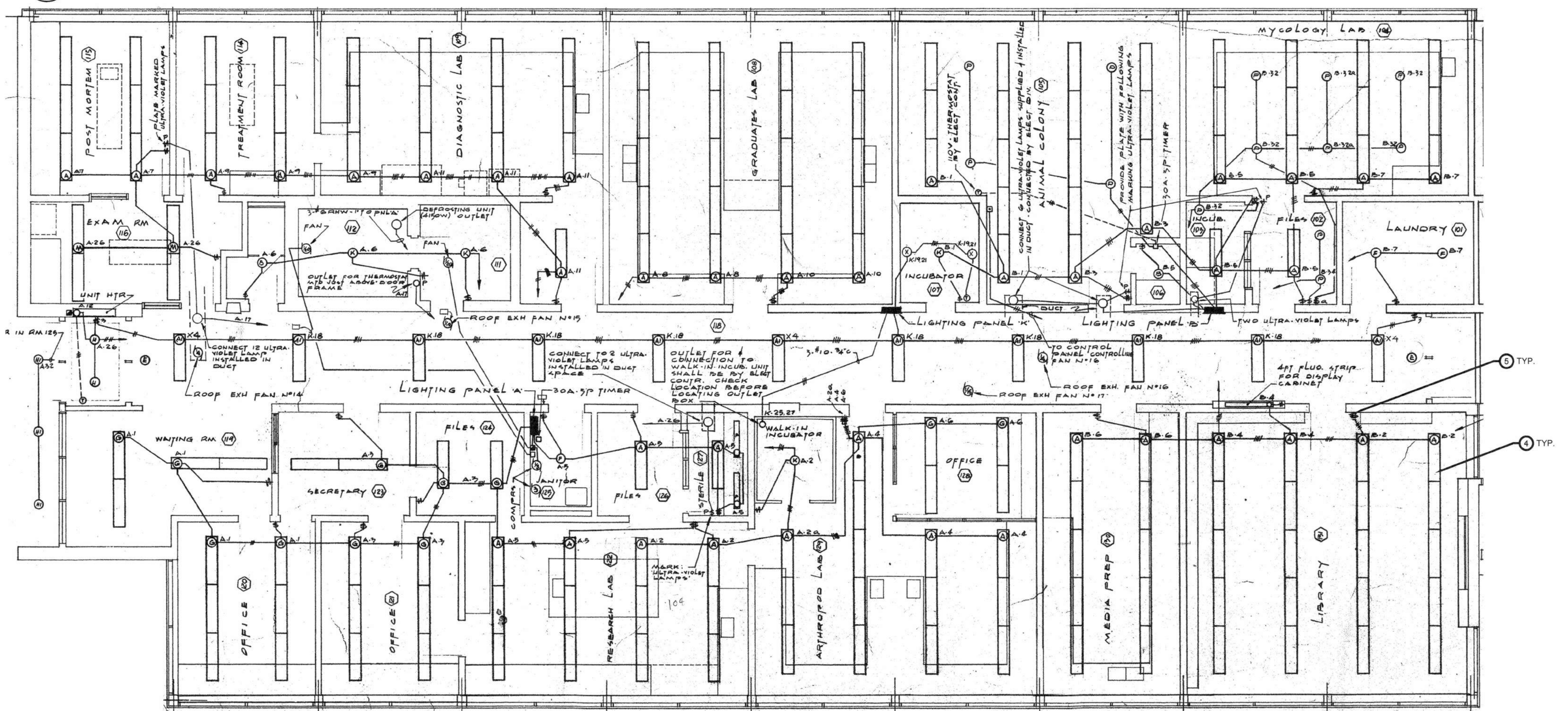
1 EXISTING POWER AND FIRE ALARM WING B LEVEL 2  
SCALE: NTS

DE11

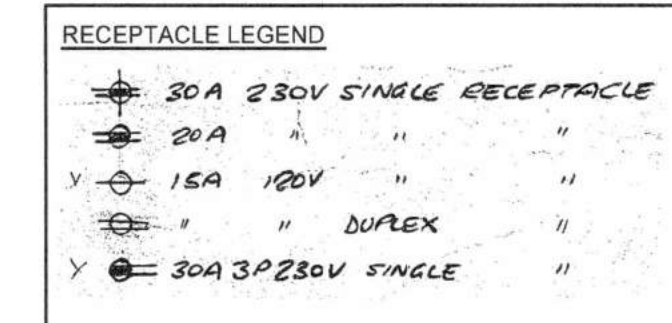




1 EXISTING POWER AND FIRE ALARM SYSTEMS WING C  
DE12 SCALE: NTS



1 EXISTING LIGHTING LAYOUT WING C  
DE12 SCALE: NTS



# GENERAL NOTES

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2. CONTRACTOR TO REFERENCE DRAWING NOTES ONLY. TEXT NOTES ON PDF TO BE DISREGARDED.
3. DEMOLITION DRAWINGS TO BE READ/IMPLEMENTED IN CONJUNCTION WITH ENTIRE ELECTRICAL CONSTRUCTION DRAWING SET TO ACCOMMODATE SCHEDULED COORDINATION TO PROPERLY FACILITATE WING A SERVICES.

# DEMOLITION

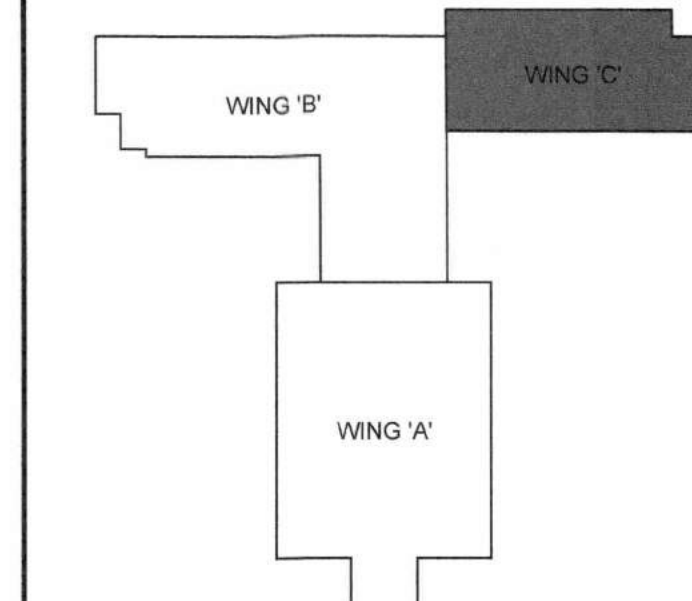
1. CONTRACTOR TO NOTE THAT ALL DEVICES TO BE DEMOLISHED (REMOVED) MAY NOT BE IDENTIFIED ON DRAWING. CONTRACTOR TO REVIEW SITE FOR DEMOLITION AREAS TO ENSURE ALL DEMOLITION ITEMS CAN BE SATISFACTORILY REMOVED UNDER THIS CONTRACT.
2. COORDINATE WITH BUILDING OWNER FOR ANY/ALL SYSTEM SHUTDOWN DURING THE DEMOLITION OR CONSTRUCTION PHASE OF CONTRACT FOR COORDINATION.
3. PROVIDE CONSTRUCTION LIGHTING, POWER, AND MAINTAIN FIRE ALARM TEMPORARY SERVICES THROUGHOUT DEMOLITION CONTRACT.
4. ALL TEMPORARY SYSTEMS ARE TO BE REMOVED AT THE END OF CONTRACT.
5. WHERE EXISTING EQUIPMENT IS TO BE REMOVED, THE DEVICE, DEVICE BOX, RACEWAY, AND WIRING TO BE REMOVED BACK TO THE PANEL UNLESS OTHERWISE NOTED. PLACE ALL FREED UP BREAKERS IN THE 'OFF' POSITION. MODIFY DIRECTORY CARD ON PANEL TO SUIT.
6. ALL EQUIPMENT TO BE REUSED TO BE CLEANED OF DUST, PLASTER, PAINT, ETC. TO THE SATISFACTION OF THE ENGINEER. PROVIDE ADEQUATE PROTECTION FOR ALL EQUIPMENT TO BE REUSED IN NEW LAYOUT.
7. IDENTIFY ANY/ALL EXISTING LOADS TO REMAIN ON DISTRIBUTION PANEL DETAILS. UPDATE AFFECTED DISTRIBUTION PANELS ACCORDINGLY.
8. MAINTAIN ALL FIRE ALARM OUTSIDE CONTRACT AREA. BAG OPERATIONAL SMOKE DETECTORS.
9. COORDINATE AFTER-HOURS SHUTDOWN FOR PANEL REPLACEMENT. PROTECT ALL BRANCH CIRCUITS FEEDING LOADS OUTSIDE THE CONTRACT AREA TO BE RECONNECTED TO REPLACEMENT PANEL. COORDINATE BREAKER CHARACTERIZATION AS REQUIRED. NEW PANEL DIRECTORY TO REFLECT INSTALLED CONNECTIONS.
10. ALL LOW VOLTAGE CABLING FOR SECURITY, VOICE, DATA AND OTHER SYSTEMS TO BE PHOTOGRAPHED AND INVENTORIED BY THE CONTRACTOR. INVENTORY TO INCLUDE LIST OF ANY END DEVICES TO REMAIN. THIS INFORMATION IS TO BE PROVIDED TO THE CONSULTANT FOR REVIEW.
11. CONTRACTOR TO IDENTIFY ALL CABLING THAT IS CURRENTLY ACTIVE. ACTIVE CABLING TO BE TAGGED AND PULLED BACK BEYOND THE PERIMETER OF THE DEMOLITION AREA FOR REINSTATEMENT FOLLOWING DEMOLITION.
12. CONTRACTOR TO REINSTATE ALL CABLING TO ITS ORIGINAL CONDITION AND LOCATION FOLLOWING THE COMPLETION OF DEMOLITION WORKS.
13. CONTRACTOR TO ISSUE AN RFI TO THE CONSULTANT TO ADDRESS CABLING THAT CANNOT BE REINSTATED TO ITS ORIGINAL CONDITION AND/OR LOCATION.
14. CABLE SPLICING IS NOT PERMITTED WITHOUT PRIOR WRITTEN APPROVAL OF THE CONSULTANT.

# GENERAL DEMOLITION NOTES

- A. REMOVE ALL LIGHTING CONTROLS, NORMAL LIGHTING FIXTURES, EMERGENCY LIGHT FIXTURES, EXIT LIGHTS, EBUS, AND WIRING BACK TO SOURCE c/w CONDUIT AND BACK BOXES.
- B. ALL RECEPTACLES, HARDWIRED DEVICES, BACK BOXES, WIRING, AND CONDUIT BACK TO SOURCE PANEL TO REMAIN.
- C. ALL COMMUNICATION DEVICES, BACK BOXES, WIRING, AND CONDUIT TO REMAIN.
- D. EXISTING FIRE ALARM PANEL, ANUNCIATOR, AND COMPUTER TO REMAIN. ALL OTHER FIRE ALARM DEVICES, BACK BOXES, WIRING, AND CONDUIT TO BE REMOVED.
- E. REMOVE ALL EXISTING LIGHTING PANELS c/w SOURCE FEEDER AND CONDUIT BACK TO SOURCE.
- F. REMOVE EXISTING MECHANICAL EQUIPMENT CONNECTIONS, MECHANICAL ROOM PANELS AND MOTOR CONTROL, SOURCE DISTRIBUTION CONDUIT, AND WIRE FEEDERS FROM MAIN DISTRIBUTION PANELS.

# DRAWING NOTES

1. FIRE ALARM EQUIPMENT, WIRING, AND CONDUIT TO BE REMOVED PER GENERAL DEMOLITION NOTE D. TYPICAL.
2. RECEPTACLE, WIRING, AND CONDUIT TO REMAIN PER GENERAL DEMOLITION NOTE B. TYPICAL.
3. ELECTRICAL LIGHTING PANEL TO BE REMOVED PER GENERAL DEMOLITION NOTE E. TYPICAL.
4. LIGHTING FIXTURE, WIRING, AND CONDUIT TO BE REMOVED PER GENERAL DEMOLITION NOTE A. TYPICAL.
5. LIGHTING SWITCH, WIRING, AND CONDUIT TO BE REMOVED PER GENERAL DEMOLITION NOTE A. TYPICAL.



# Key Plan

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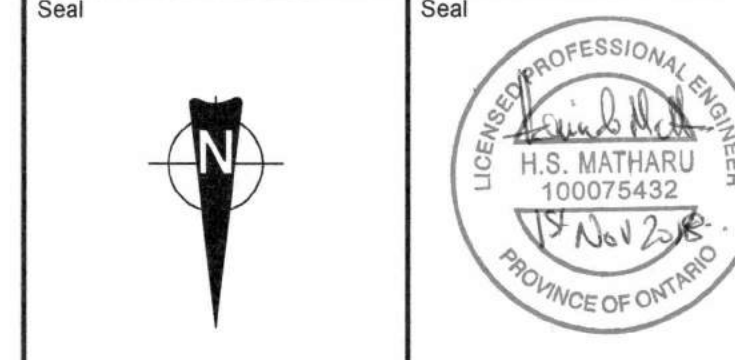
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Seal	Seal



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Consultant [www.jrichards.ca](http://www.jrichards.ca)



Project  
**BUILDING #046 RENOVATIONS**

Drawing Title  
**ELECTRICAL EXISTING ELECTRICAL SYSTEMS WING C**  
Project No.  
**504034**

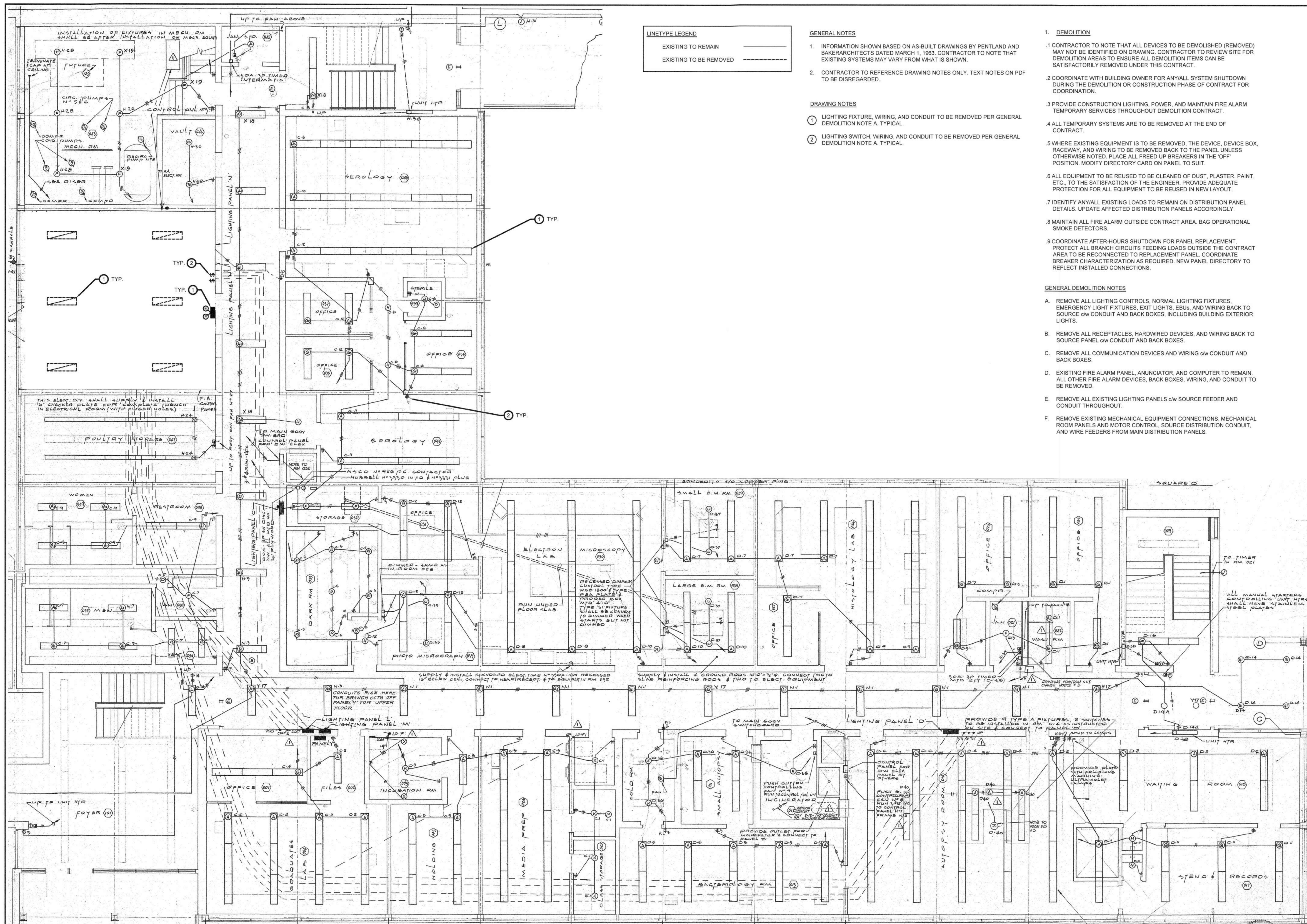
Location  
**UNIVERSITY OF GUELPH BUILDING #046**

Scale NTS	Date NOV 2, 2018
Drawn by AM	Drawing No.
Checked By HM	
Approved By HM	
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**DE12**





1 EXISTING LIGHTING WING B LEVEL 1  
SCALE: NTS

**LINE TYPE LEGEND**  
EXISTING TO REMAIN  
EXISTING TO BE REMOVED

**GENERAL NOTES**

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**DRAWING NOTES**

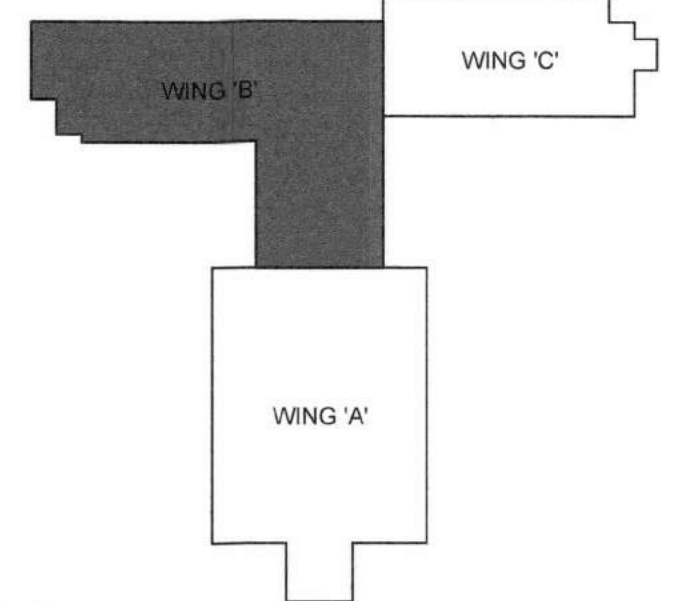
1. LIGHTING FIXTURE, WIRING, AND CONDUIT TO BE REMOVED PER GENERAL DEMOLITION NOTE A. TYPICAL.
2. LIGHTING SWITCH, WIRING, AND CONDUIT TO BE REMOVED PER GENERAL DEMOLITION NOTE A. TYPICAL.

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4. ALL TEMPORARY SYSTEMS ARE TO BE REMOVED AT THE END OF CONTRACT.
5. WHERE EXISTING EQUIPMENT IS TO BE REMOVED, THE DEVICE, DEVICE BOX, RACEWAY, AND WIRING TO BE REMOVED BACK TO THE PANEL UNLESS OTHERWISE NOTED. PLACE ALL FREED UP BREAKERS IN THE 'OFF' POSITION. MODIFY DIRECTORY CARD ON PANEL TO SUIT.
6. ALL EQUIPMENT TO BE REUSED TO BE CLEANED OF DUST, PLASTER, PAINT, ETC., TO THE SATISFACTION OF THE ENGINEER. PROVIDE ADEQUATE PROTECTION FOR ALL EQUIPMENT TO BE REUSED IN NEW LAYOUT.
7. IDENTIFY ANY/ALL EXISTING LOADS TO REMAIN ON DISTRIBUTION PANEL DETAILS. UPDATE AFFECTED DISTRIBUTION PANELS ACCORDINGLY.
8. MAINTAIN ALL FIRE ALARM OUTSIDE CONTRACT AREA. BAG OPERATIONAL SMOKE DETECTORS.
9. COORDINATE AFTER-HOURS SHUTDOWN FOR PANEL REPLACEMENT. PROTECT ALL BRANCH CIRCUITS FEEDING LOADS OUTSIDE THE CONTRACT AREA TO BE RECONNECTED TO REPLACEMENT PANEL. COORDINATE BREAKER CHARACTERIZATION AS REQUIRED. NEW PANEL DIRECTORY TO REFLECT INSTALLED CONNECTIONS.

**GENERAL DEMOLITION NOTES**

- A. REMOVE ALL LIGHTING CONTROLS, NORMAL LIGHTING FIXTURES, EMERGENCY LIGHT FIXTURES, EXIT LIGHTS, EBUS, AND WIRING BACK TO SOURCE c/w CONDUIT AND BACK BOXES, INCLUDING BUILDING EXTERIOR LIGHTS.
- B. REMOVE ALL RECEPTACLES, HARDWIRED DEVICES, AND WIRING BACK TO SOURCE c/w CONDUIT AND BACK BOXES.
- C. REMOVE ALL COMMUNICATION DEVICES AND WIRING c/w CONDUIT AND BACK BOXES.
- D. EXISTING FIRE ALARM PANEL, ANUNCIATOR, AND COMPUTER TO REMAIN. ALL OTHER FIRE ALARM DEVICES, BACK BOXES, WIRING, AND CONDUIT TO BE REMOVED.
- E. REMOVE ALL EXISTING LIGHTING PANELS c/w SOURCE FEEDER AND CONDUIT THROUGHOUT.
- F. REMOVE EXISTING MECHANICAL EQUIPMENT CONNECTIONS, MECHANICAL ROOM PANELS AND MOTOR CONTROL, SOURCE DISTRIBUTION CONDUIT, AND WIRE FEEDERS FROM MAIN DISTRIBUTION PANELS.



Key Plan

**DO NOT SCALE DRAWINGS:**

Contractors must check and verify all site conditions. Notify the Owner's Representative in writing before proceeding with the work if discrepancies are evident between the drawings and the site condition. No extras to the contract will be allowed if discrepancies were evident prior to start of work.

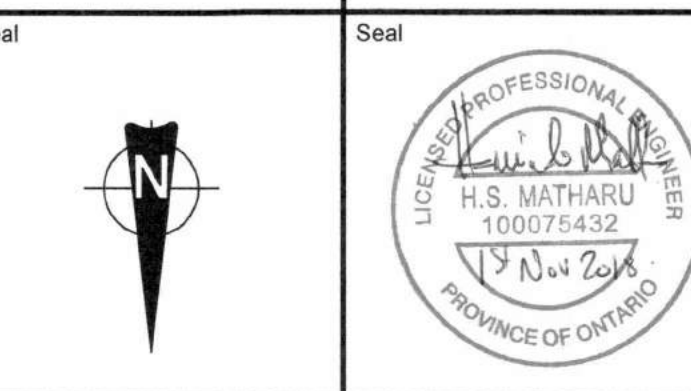
**UNEXPECTED DISCOVERY OF ASBESTOS:**

Where a friable material is discovered during construction, renovations and/or demolition, and it is suspected to contain asbestos, the Contractor must stop all work that may disturb the material. The Contractor shall advise the Owner of the discovery and await instructions from the owner.

A	A = Detail number
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Orientation	Seal
Seal	Seal



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Consultant  
J.L. Richards  
ENGINEERS - ARCHITECTS - PLANNERS

Project  
**BUILDING #046 RENOVATIONS**

Drawing Title  
**ELECTRICAL EXISTING LIGHTING WING B LEVEL 1**

Project No.  
**504034**

Location  
**UNIVERSITY OF GUELPH BUILDING #046**

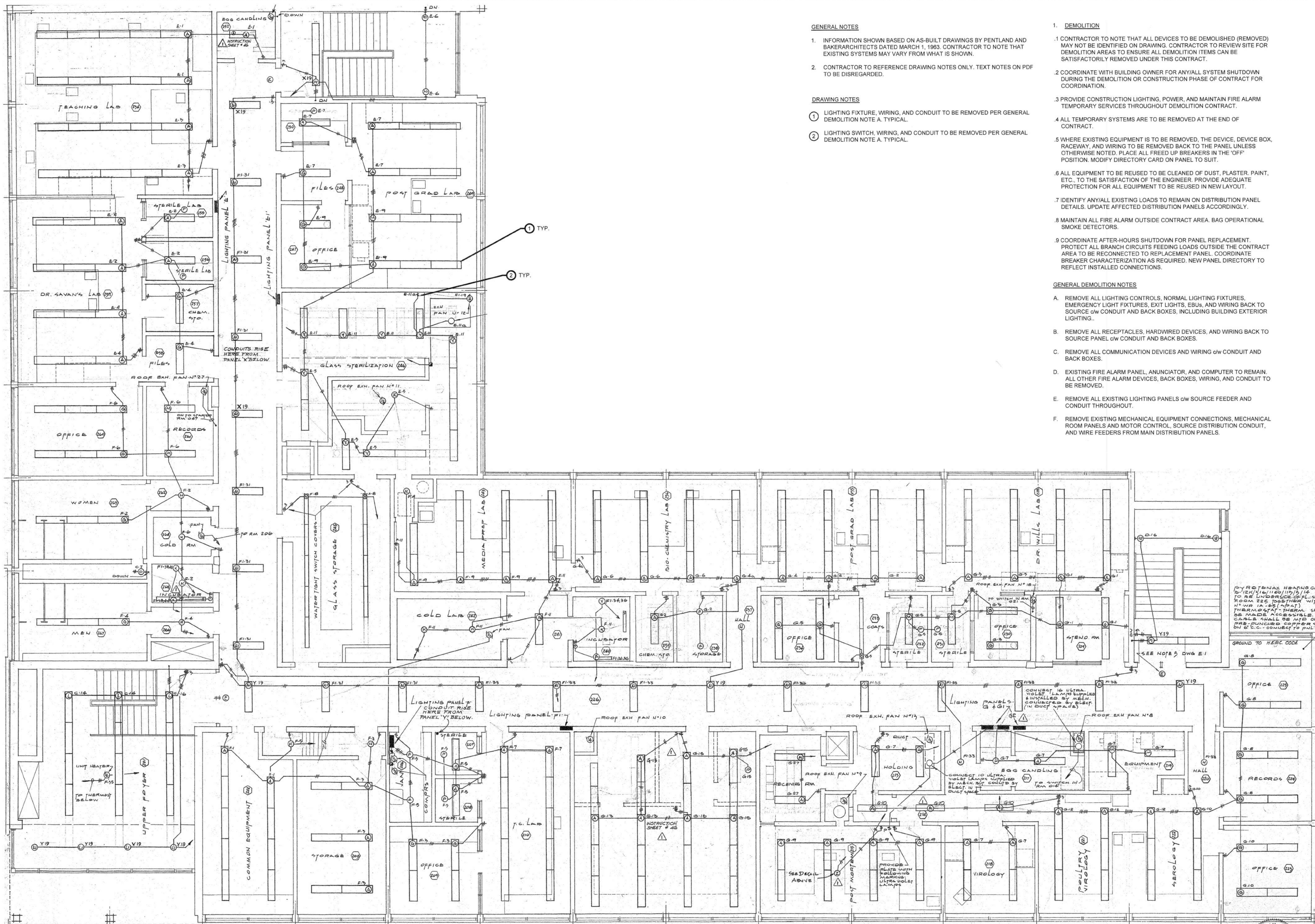
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AM  
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HM  
Approved by  
HM  
JLR #  
27915

Cad File No. ----

**DE13**  
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#### GENERAL NOTES

1. INFORMATION SHOWN BASED ON AS-BUILT DRAWINGS BY PENTLAND AND BAKERARCHITECTS DATED MARCH 1, 1993. CONTRACTOR TO NOTE THAT EXISTING SYSTEMS MAY VARY FROM WHAT IS SHOWN.
2. CONTRACTOR TO REFERENCE DRAWING NOTES ONLY. TEXT NOTES ON PDF TO BE DISREGARDED.

#### DRAWING NOTES

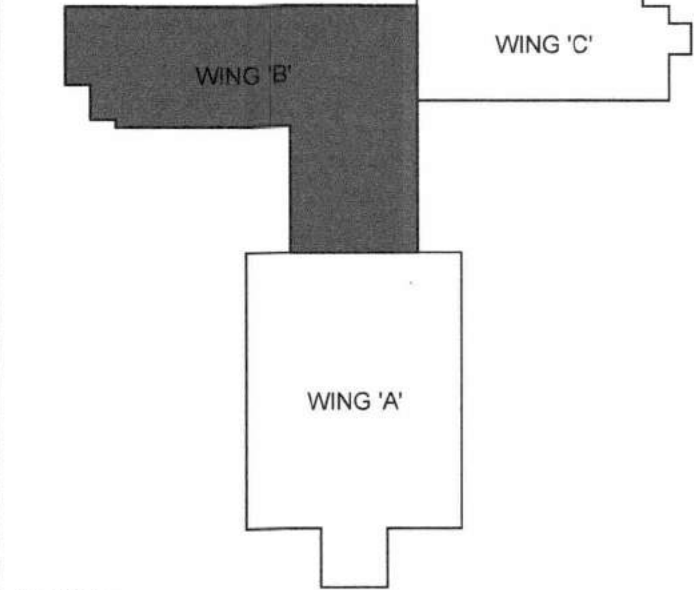
1. LIGHTING FIXTURE, WIRING, AND CONDUIT TO BE REMOVED PER GENERAL DEMOLITION NOTE A. TYPICAL.
2. LIGHTING SWITCH, WIRING, AND CONDUIT TO BE REMOVED PER GENERAL DEMOLITION NOTE A. TYPICAL.

#### 1. DEMOLITION

1. CONTRACTOR TO NOTE THAT ALL DEVICES TO BE DEMOLISHED (REMOVED) MAY NOT BE IDENTIFIED ON DRAWING. CONTRACTOR TO REVIEW SITE FOR DEMOLITION AREAS TO ENSURE ALL DEMOLITION ITEMS CAN BE SATISFACTORILY REMOVED UNDER THIS CONTRACT.
2. COORDINATE WITH BUILDING OWNER FOR ANYALL SYSTEM SHUTDOWN DURING THE DEMOLITION OR CONSTRUCTION PHASE OF CONTRACT FOR COORDINATION.
3. PROVIDE CONSTRUCTION LIGHTING, POWER, AND MAINTAIN FIRE ALARM TEMPORARY SERVICES THROUGHOUT CONSTRUCTION CONTRACT.
4. ALL TEMPORARY SYSTEMS ARE TO BE REMOVED AT THE END OF CONTRACT.
5. WHERE EXISTING EQUIPMENT IS TO BE REMOVED, THE DEVICE, DEVICE BOX, RACEWAY, AND WIRING TO BE REMOVED BACK TO THE PANEL UNLESS OTHERWISE NOTED. PLACE ALL FREED UP BREAKERS IN THE 'OFF' POSITION. MODIFY DIRECTORY CARD ON PANEL TO SUIT.
6. ALL EQUIPMENT TO BE REUSED TO BE CLEANED OF DUST, PLASTER, PAINT, ETC., TO THE SATISFACTION OF THE ENGINEER. PROVIDE ADEQUATE PROTECTION FOR ALL EQUIPMENT TO BE REUSED IN NEW LAYOUT.
7. IDENTIFY ANYALL EXISTING LOADS TO REMAIN ON DISTRIBUTION PANEL DETAILS. UPDATE AFFECTED DISTRIBUTION PANELS ACCORDINGLY.
8. MAINTAIN ALL FIRE ALARM OUTSIDE CONTRACT AREA. BAG OPERATIONAL SMOKE DETECTORS.
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#### GENERAL DEMOLITION NOTES

- A. REMOVE ALL LIGHTING CONTROLS, NORMAL LIGHTING FIXTURES, EMERGENCY LIGHT FIXTURES, EXIT LIGHTS, EBUS AND WIRING BACK TO SOURCE c/w CONDUIT AND BACK BOXES, INCLUDING BUILDING EXTERIOR LIGHTING.
- B. REMOVE ALL RECEPTACLES, HARDWIRED DEVICES, AND WIRING BACK TO SOURCE c/w CONDUIT AND BACK BOXES.
- C. REMOVE ALL COMMUNICATION DEVICES AND WIRING c/w CONDUIT AND BACK BOXES.
- D. EXISTING FIRE ALARM PANEL, ANUNCIATOR, AND COMPUTER TO REMAIN. ALL OTHER FIRE ALARM DEVICES, BACK BOXES, WIRING, AND CONDUIT TO BE REMOVED.
- E. REMOVE ALL EXISTING LIGHTING PANELS c/w SOURCE FEEDER AND CONDUIT THROUGHOUT.
- F. REMOVE EXISTING MECHANICAL EQUIPMENT CONNECTIONS, MECHANICAL ROOM PANELS AND MOTOR CONTROL, SOURCE DISTRIBUTION CONDUIT, AND WIRE FEEDERS FROM MAIN DISTRIBUTION PANELS.



Key Plan

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#### UNEXPECTED DISCOVERY OF ASBESTOS:

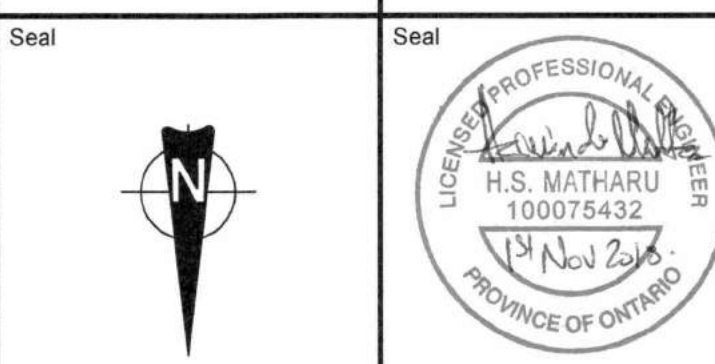
Where a friable material is discovered during construction, renovations and/or demolition, and it is suspected to contain asbestos, the Contractor must stop all work that may disturb the material. The Contractor shall advise the Owner of the discovery and await instructions from the owner.

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ENGINEERS - ARCHITECTS - PLANNERS

Project  
**BUILDING #046  
RENOVATIONS**

Drawing Title  
**ELECTRICAL  
EXISTING LIGHTING WING B  
LEVEL 2**

Project No.  
**504034**

Location  
**UNIVERSITY OF GUELPH  
BUILDING #046**

Scale  
NTS

Date  
NOV 2, 2018

Drawn by  
AM

Drawing No.

Checked By  
HM

Approved By  
HM

JLR #  
27915

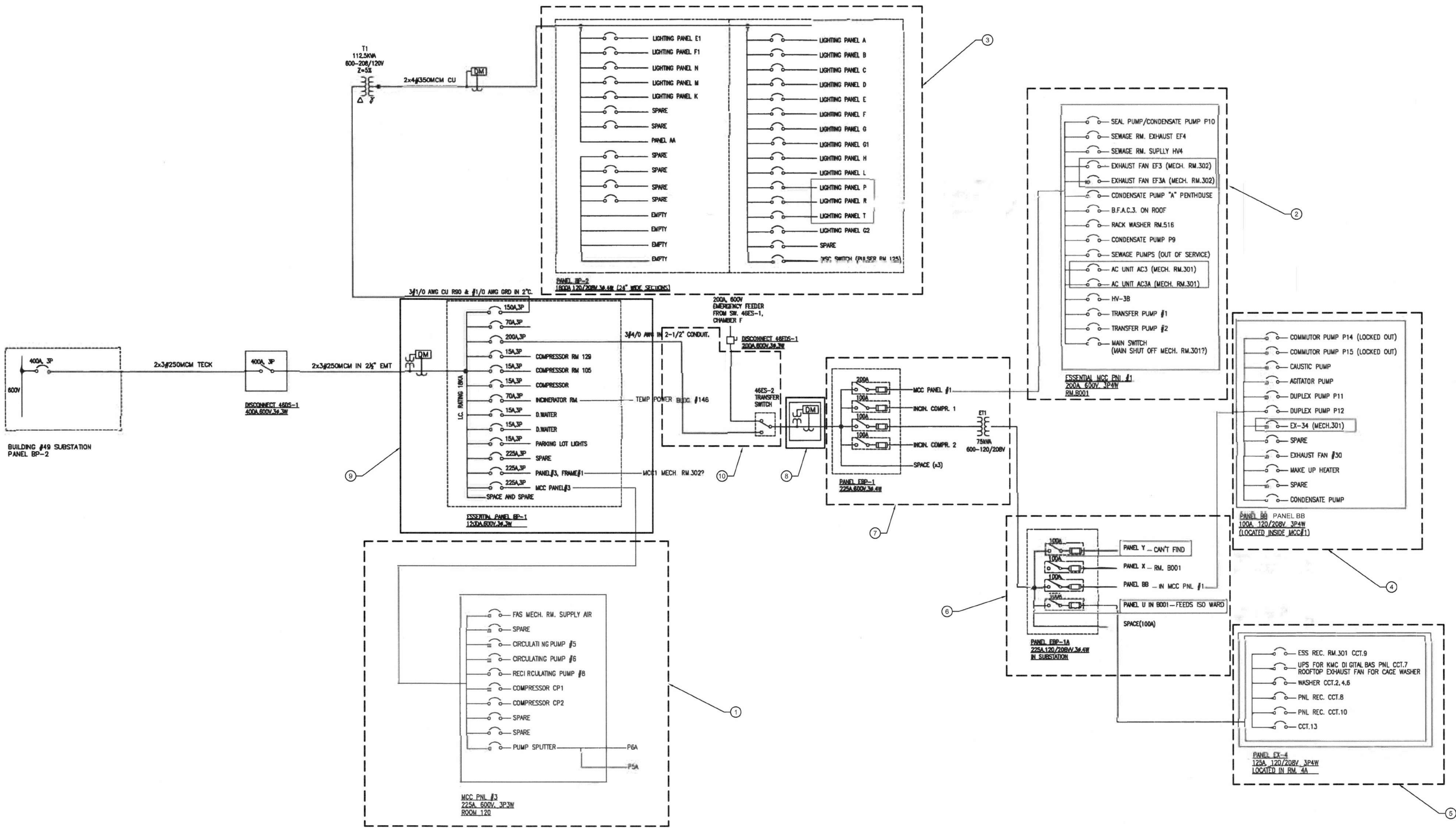
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1 EXISTING LIGHTING WING B LEVEL 2  
SCALE: NTS

**DE14**





# 1 SINGLE LINE DEMOLITION

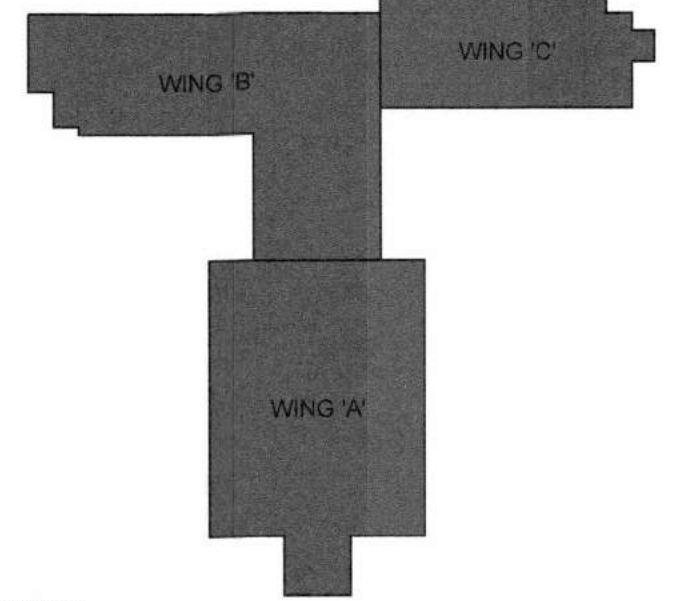
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## GENERAL NOTES:

- DEMOLITION OF ELECTRICAL ITEMS DOWNSTREAM OF EMERGENCY TRANSFER SWITCH 46S-2 TO BE CARRIED OUT ONCE CIRCUITS FOR WING A HAVE BEEN RELOCATED AND CONNECTED / ENERGIZED VIA NEW EMERGENCY DISTRIBUTION.
- ELECTRICAL CONTRACTOR TO COORDINATE AND REVIEW MECHANICAL SYSTEMS DEMOLITION SCOPE AND SEQUENCE TO ENSURE REQUIRED SYSTEMS NEW AND EXISTING ARE POWERED / MAINTAINED DURING THE COURSE OF CONSTRUCTION.
- ELECTRICAL CONTRACTOR TO VERIFY EXISTING DISTRIBUTION AND EQUIPMENT TO BE DEMOLISHED.

## DRAWING NOTES:

- EXISTING MCC-3 IN GROUND FLOOR MECHANICAL ROOM 120 TO BE REMOVED c/w ASSOCIATED CONDUIT AND WIRING TO ALL MECHANICAL EQUIPMENT. DEMOLITION OF ELECTRICAL SYSTEMS TO BE COORDINATED WITH MECHANICAL SYSTEMS DEMOLITION. (DEMOLITION OF MCC-3 TO BE PROVIDED AS A SEPARATE COST)
- EXISTING MCC-1 TO BE REMOVED c/w ASSOCIATED CONDUIT AND WIRING TO ALL MECHANICAL EQUIPMENT. EXISTING CIRCUIT WIRING FOR EF3, EF3A, AC3, AND AC3A TO BE DISCONNECTED AND REROUTED TO NEW STARTER LOCATIONS. PROVIDE NEW WALL MOUNTED HOA STARTERS, AND RECONNECT EXISTING FEEDERS TO NEW STARTERS. NEW STARTERS TO BE FED FROM NEW PANEL DP-2X. REFER TO DRAWING E20 FOR DETAILS. DEMOLITION AND REMOVAL OF MCC-1 SHALL BE CARRIED OUT ONCE CIRCUIT WIRING TO EF3, EF3A, AC3, AND AC3A HAS BEEN RELOCATED AND ENERGIZED FROM NEW EMERGENCY PANEL.
- EXISTING ENCLOSURE FOR PANEL BP-2 TO REMAIN. ALL BREAKERS AND BRANCH FEEDERS TO BE REMOVED AS PER DEMOLITION DRAWINGS. FEEDERS SERVING PANELS P, R, AND T TO REMAIN AND ARE TO BE RECONNECTED TO RETROFITTED PANEL. REFER TO DRAWING E02 AND DEMOLITION DRAWINGS FOR DETAILS.
- EXISTING PANEL BB & MCC-1 TO BE REMOVED c/w ALL ASSOCIATED CONDUIT AND WIRING. FEEDER SERVING EXHAUST FAN EX-34 TO BE RECONNECTED TO NEW PANEL DP-2E. CONTRACTOR TO CONFIRM BREAKER SIZE FOR RECONNECTION. REFER TO DRAWING E02 FOR DETAILS.
- PANEL EX-4 c/w ASSOCIATED CONDUIT AND WIRING TO BE REMOVED.
- PANEL EBP-1A c/w ALL ASSOCIATED CONDUIT AND WIRING TO BE REMOVED. PANEL U TO REMAIN, AND IS TO BE RECONNECTED TO NEW PANEL DP-2E c/w NEW CONDUIT AND FEEDERS.
- PANEL EBP-1 TO BE REMOVED c/w ALL ASSOCIATED CONDUIT AND WIRING.
- EXISTING ELECTRICAL METER TO BE DISCONNECTED AND REWIRED TO METER NEW PANEL DP-1E. REFER TO DRAWING E02.
- EXISTING PANEL BP-1 TO REMAIN.
- EXISTING EMERGENCY TRANSFER SWITCH AND ASSOCIATED CONDUIT AND WIRING TO BE DEMOLISHED. DISCONNECT FOR EMERGENCY GENERATOR FEED TO REMAIN.



Key Plan

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## UNEXPECTED DISCOVERY OF ASBESTOS:

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Consultant  
J.L. Richards  
ENGINEERS - ARCHITECTS - PLANNERS

Project  
BUILDING #046  
RENOVATIONS

Drawing Title  
SINGLE LINE DEMOLITION

Project No.  
504034

Location  
UNIVERSITY OF GUELPH  
BUILDING #046

Scale N.T.S.	Date NOV 2, 2018
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Approved By HM	
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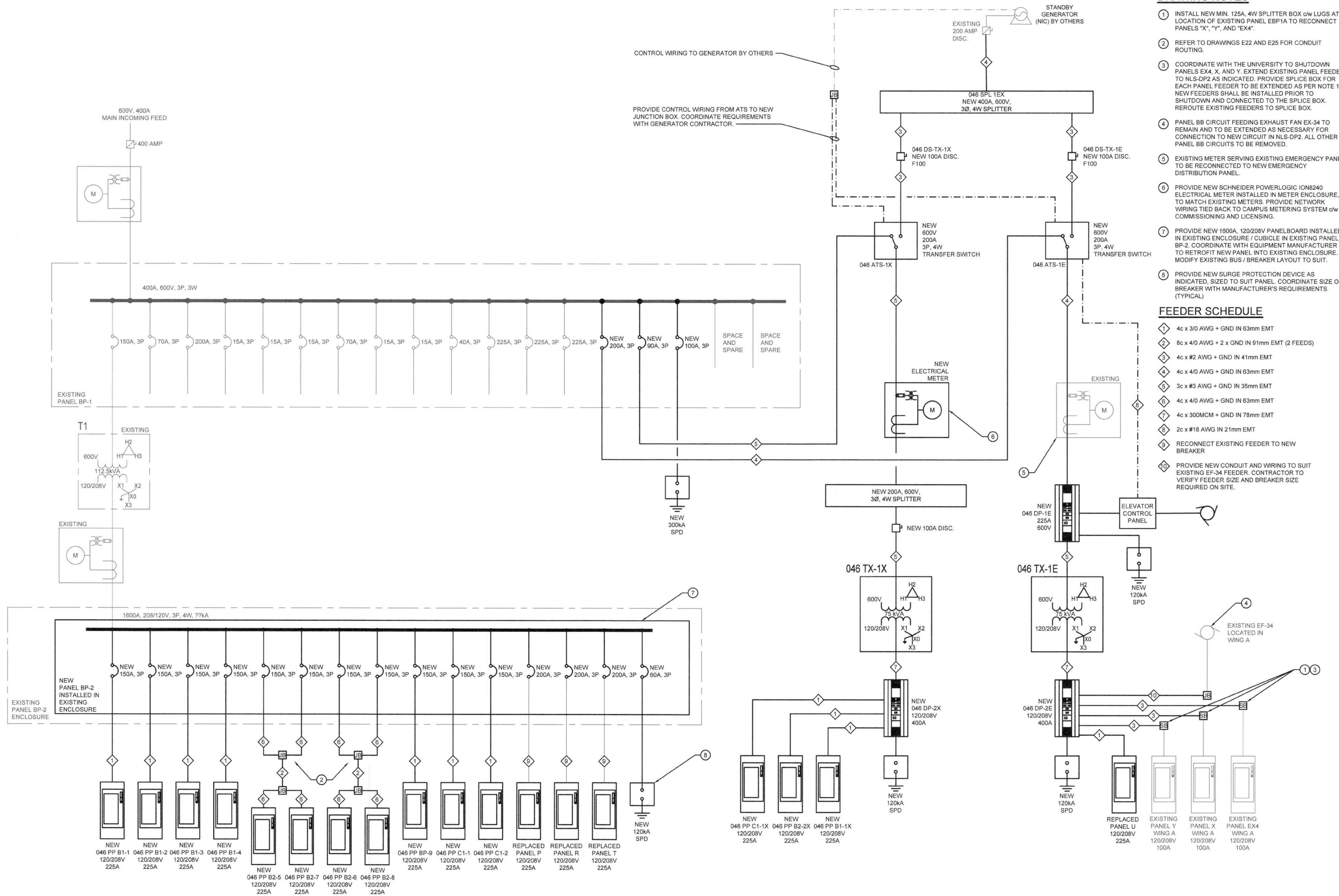
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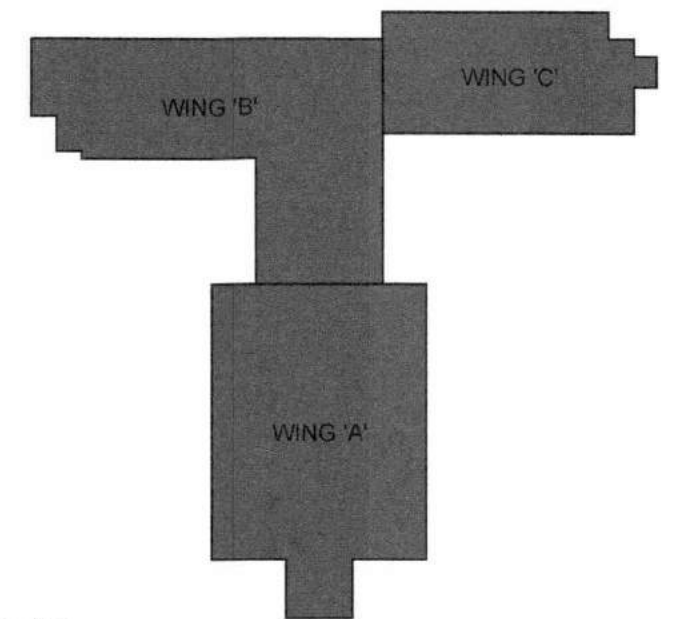


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Project BUILDING #046 RENOVATIONS	
Drawing Title ELECTRICAL ELECTRICAL COVER SHEET LUMINAIRE SCHEDULE	
Project No. 504034	
Location UNIVERSITY OF GUELPH BUILDING #046	
Scale NTS	Date NOV 2, 2018
Drawn by AM	Drawing No.
Checked By HM	E01
Approved By HM	
JLR # 27915	
Cad File No. ----	of 170





1 SINGLE LINE DIAGRAM  
E02 SCALE: N.T.S.



Key Plan

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Project  
**BUILDING #046 RENOVATIONS**

Drawing Title  
**ELECTRICAL SINGLE LINE DIAGRAM**

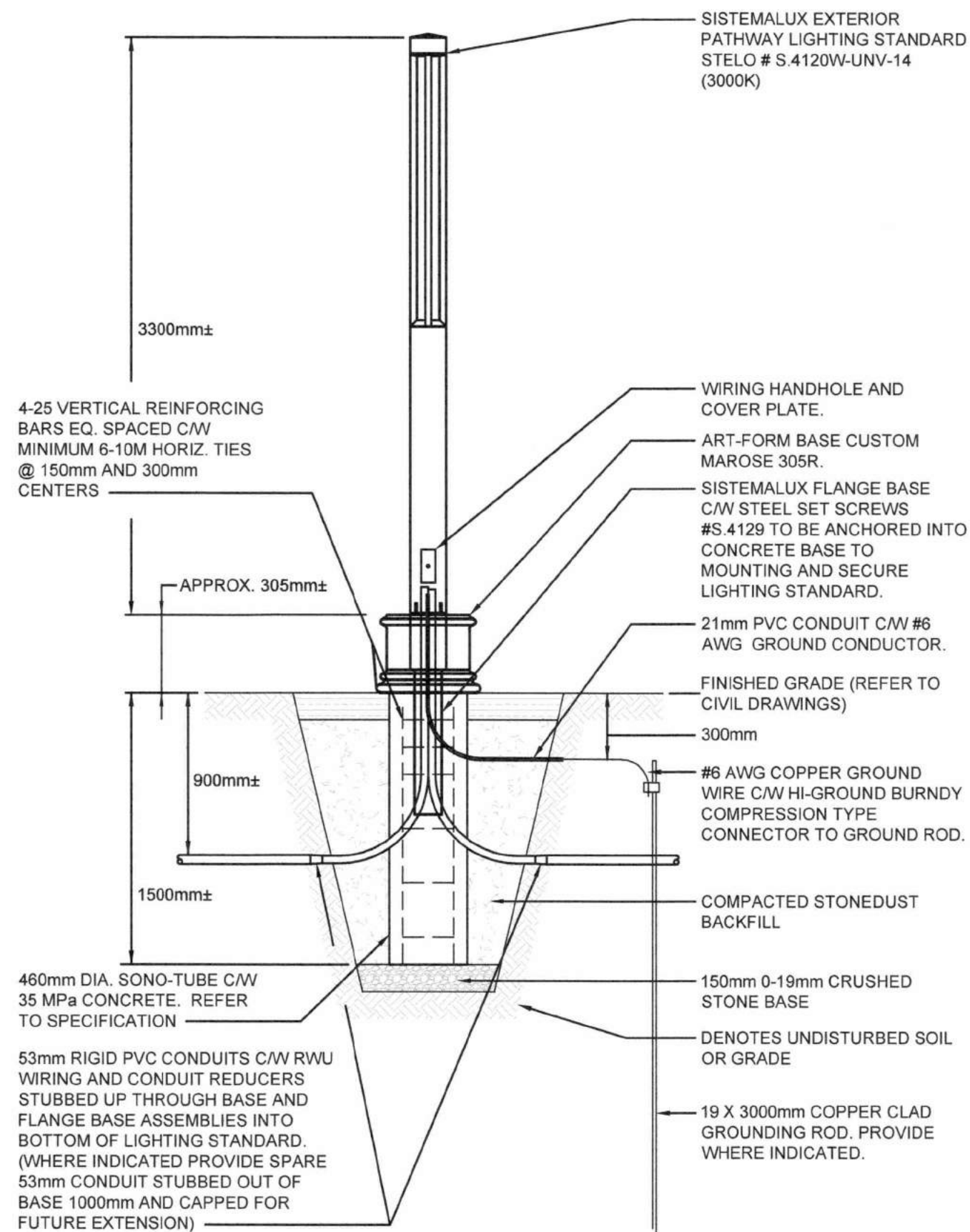
Project No.  
**504034**

Location  
**UNIVERSITY OF GUELPH BUILDING #046**

Scale	Date
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HM	
JLR #	
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1. ALL UNDERGROUND CONDUITS AND WIRING TO BE AS PER OESC, CITY STANDARDS DRAWINGS AND SPECIFICATIONS.
2. PROVIDE GROUNDING RODS AS SHOWN ON THIS DRAWING.
3. VERIFY EXTERIOR LUMINAIRES / LIGHTING STANDARD FINISH WITH ARCHITECT AND BUILDING OWNER PRIOR TO ORDERING.
4. PROVIDE COUPLERS, CONDUIT REDUCERS, AND CONDUIT SPLIT-FITTERS AS REQUIRED TO ACCOMMODATE CONDUIT SIZES BACK TO BUILDING SERVICE AND/OR CONTROLS.
5. ALL GROUNDING CONDUCTORS FOR SITE LIGHTING TO BE MINIMUM #6 GREEN INSULATED RVU.
6. FOR INSTALLATION THESE STANDARDS ARE TO BE READ IN CONJUNCTION WITH OPSD-2100.05, 2100.050, 2101.010, 2103.050, 2200.010, 2200.030, 2200.041, 2215.020 AND 2255.050.
7. COORDINATE WITH LUMINAIRE / LIGHTING STANDARD MANUFACTURE FOR INSTALLATION OF LUMINAIRE ASSEMBLY WITH AN GROUND FLANGE BASE. WHERE FLANGE BASE IS NOT REQUIRED, PROVIDE MINIMUM 900mm LONG ANCHOR BOLD AND LUMINAIRE BASE PLATE ACCESSORY SECURED INTO ART-FORM AND CONCRETE BASE.



- A. CAREFULLY COORDINATE ALL ELECTRICAL WORK WITH ALL OTHER TRADES ON SITE TO ENSURE NO CONFLICTS OR INTERFERENCES OCCUR.
- B. PROVIDE ALL FASTENERS, FITTINGS, JUNCTION, OUTLET, BACKBOXES, CONDUIT, WIRING AND HARDWARE REQUIRED TO ENSURE A COMPLETE AND OPERATIONAL SYSTEM. REFER TO SPECIFICATIONS.
- C. WHERE CONDUIT SYSTEMS CROSS BUILDING EXPANSION JOINTS PROVIDE JUNCTION BOXES ON EITHER SIDE OF JOINT C/W METAL FLEX CONDUIT & WIRING SYSTEM TO BRIDGE JOINT AND ALLOW FOR BUILDING MOVEMENT. REFER TO DETAILS ON DRAWINGS AND / OR SPECIFICATIONS.
- D. ALL JUNCTION BOX CONDUIT AND WIRING SYSTEMS ARE TO BE CONCEALED IN PARTITIONS WALL FLOOR SLABS AND CEILING SPACES UNLESS NOTED OTHERWISE.

E. COORDINATE ON THE DRILL / CUT OPENINGS IN EXISTING PARTITION WALLS, FLOOR SLAB TO FACILITATE INSTALLATION OF ELECTRICAL SYSTEMS. PATCH, REPAIR AND REPAINT ALL OPENINGS TO MATCH EXISTING AND/OR NEW FINISH REQUIREMENTS.

F. SEAL ALL THROUGH WALL, FLOOR SLAB PENETRATIONS WITH APPROVED FIRE STOP SEALANT.

G. PROVIDE LAMACOID NAMEPLATE AND P-TOUCH CIRCUIT IDENTIFICATION ON EQUIPMENT, COVER PLATES, JUNCTION BOXES. REFER TO SPECIFICATION FOR ADDITIONAL INFORMATION.

H. THE WORD "PROVIDE" USED ON THESE DRAWINGS, MEAN THE CONTRACTOR IS RESPONSIBLE TO SUPPLY, INSTALL, WIRE, CONNECT, CONTROL SETUP, TEST, AND COMMISSION EQUIPMENT, DEVICES, AND/OR LUMINAIRES.

- I. ALL ELECTRICAL EQUIPMENT, DEVICE OUTLET BOXES TO BE INSTALLED IN SEPARATE STUD SPACES (SEPARATED BY A STUD) AND PREFERABLY ISOLATED BY MIN. 600mm APART WHERE POSSIBLE FOR WALL ERATED STC 45 OR HIGHER. REFER TO DETAIL 3/E20 ON DRAWINGS.
- J. EXPOSED ELECTRICAL BOXES IN WALLS RATED STC 50 AND HIGHER TO BE SEALED.
- K. REFER TO LUMINAIRE SCHEDULE FOR LIGHTING FIXTURE TYPE AND MOUNTING.  
GANG ALL LIGHT SWITCHES TOGETHER WHERE POSSIBLE UNDER ONE (1) COMMON COVER PLATE UNLESS NOTED OTHERWISE.
- L. COORDINATE MOUNTING AND INSTALLATION OF EXTERIOR / OUTDOOR MOUNTED LUMINAIRES WITH ARCHITECT AND BUILDING OWNER.

M. ALL LUMINAIRES TO BE CHAINED. USE GALVANIZED COIL CHAIN TO SUPPORT LUMINAIRE(S) TO BUILDING STRUCTURE FROM MINIMUM TWO (2) LOCATIONS. CORNER OF EACH TO BE SUPPORTED. POINT ON CHAINS TO BE SECURED. INSTALLATION TO MEET SEISMIC REQUIREMENTS.

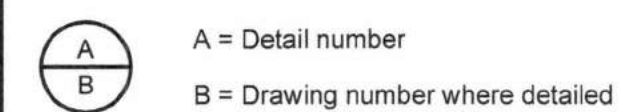
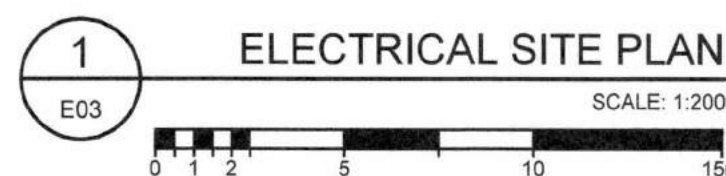
N. ALL LIGHTING FIXTURES NORMAL / EMERGENCY, EXIT LIGHTING TO BE CONNECTED AND SWITCHED AS INDICATED VIA A JUNCTION BOX, CONDUIT AND WIRING SYSTEM AS SPECIFIED.

O. PROVIDE ALL LIGHTING CONTROL WIRING. LINE VOLTAGE (120V), LOW VOLTAGE LIGHTING CIRCUIT, AND CONTROL WIRING VIA CEILING SPACE MOUNTED JUNCTION BOX, CONDUIT AND WIRING SYSTEM TO END DEVICE(S). SENSORS AND / OR MANUAL SWITCHES MAY BE EITHER INDIVIDUALLY WIRED OR WIRED IN TANDEM AS PER LIGHTING CONTROL SCHEDULES. REFER TO LIGHTING CONTROL SCHEDULE AND CONTROL SCHEMATIC DETAILS ON DRAWING E15, E16, E17, E18 AND E30

P. LIGHTING CIRCUIT SWITCHING AS FOLLOWS:

- CIRCUIT (CKT.) AS INDICATED IF "B2-6.2.1" DENOTES: NORMAL POWER PANEL B2-6, CKT. 2, RELAY OR DEVICE SWITCHING POINT 1
- CIRCUIT (CKT.) AS INDICATED IF "B1-1X-30.1" DENOTES: EMERGENCY POWER PANEL B1-1X, CKT. 30, RELAY OR DEVICE SWITCHING POINT 1.

NOTE: EXTERIOR DEVICE SWITCHING POINTS TO BE MADE VIA PROGRAMMABLE DIGITAL TIME CLOCK(S).




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Project

## BUILDING #046 RENOVATIONS

Drawing Title

**ELECTRICAL  
ELECTRICAL SITE PLAN**

Project No. \_\_\_\_\_

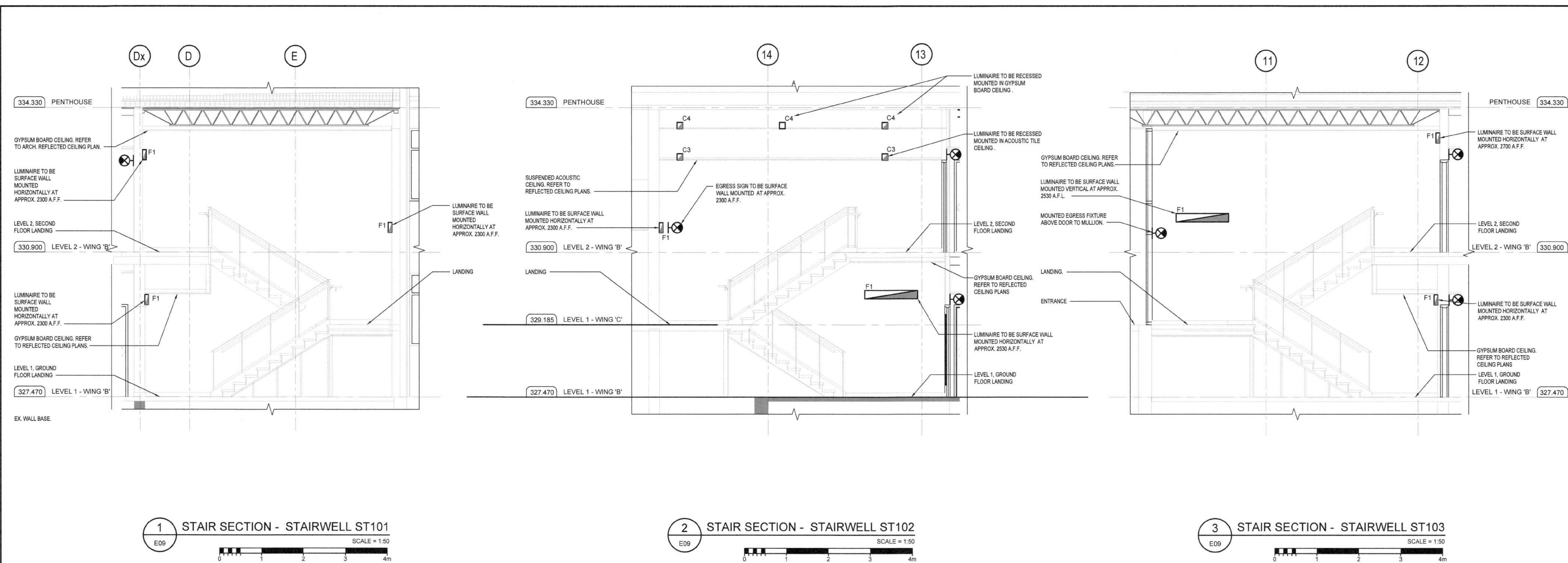
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Location  
UNIVERSITY OF GUELPH  
BUILDING #046

Scale AS INDICATED	Date NOV 2, 2018
Drawn by AM	Drawing No.  <div style="font-size: 48pt; font-weight: bold; text-align: center;">E03</div> <div style="text-align: right;">of 170</div>
Checked By HM	
Approved By HM	
JLR # 27915	

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H1 SERIES LUMINAIRE SCHEDULE				
TYPE	LAMP	DESCRIPTION	MANUFACTURER (MODEL NUMBER)	
H1-A RM.143	LED 3500K 6W/FT	LED LINEAR LUMINAIRE RECESSED IN WOOD FEATURE CEILING, SHAPE LINEAR LENGTH APPROX 2311mm LONG AS SHOWN ON DRAWINGS, 120V, 0-10V DIMMING.	FLUXVERX NOTCH 2 SYMMETRIC TRIMLESS SERIES	(NT1-L-D2-B-B-35-F2-M-XX CW END CAPS, OPTIC KIT, JOIN KIT : NOTE TRIMLESS INSTALLATION, APPROX. 2440mm LONG (VERIFY LENGTH WITH ARCH.WOOD FEATURE CEILING SYSTEM.
H1-B RM. 143	LED 3500K 6W/FT	LED LINEAR LUMINAIRE RECESSED IN WOOD FEATURE CEILING, SHAPE LINEAR LENGTH APPROX 2311mm LONG AS SHOWN ON DRAWINGS, 120V, 0-10V DIMMING.	FLUXVERX NOTCH 2 SYMMETRIC TRIMLESS SERIES	(NT1-L-D2-B-B-35-F2-M-XX CW END CAPS, OPTIC KIT, JOIN KIT : NOTE TRIMLESS INSTALLATION, APPROX. 2311mm LONG (VERIFY LENGTH WITH ARCH.WOOD FEATURE CEILING SYSTEM.
H1-C RM. C108	LED 3500K 6W/FT	LED LINEAR LUMINAIRE RECESSED IN WOOD FEATURE CEILING, SHAPE L, LENGTH APPROX 863mm & 1143mm LONG AS SHOWN ON DRAWINGS, 120V, 0-10V DIMMING.	FLUXVERX NOTCH 2 SYMMETRIC TRIMLESS SERIES	(NT1-P/P2-D2-B-B-35-F2-M-XX CW END CAPS, OPTIC KIT, JOIN KIT : CORNER KIT: NOTE TRIMLESS INSTALLATION, SHAPE L, LENGTH APPROX 863mm & 1143mm LONG (VERIFY LENGTH WITH ARCH.WOOD FEATURE CEILING SYSTEM.
H1-D RM. C106	LED 3500K 6W/FT	LED LINEAR LUMINAIRE RECESSED IN WOOD FEATURE CEILING, SHAPE LINEAR LENGTH APPROX 7722mm LONG AS SHOWN ON DRAWINGS, 120V, 0-10V DIMMING.	FLUXVERX NOTCH 2 SYMMETRIC TRIMLESS SERIES	(NT1-L-D2-B-B-35-F2-M-XX CW END CAPS, OPTIC KIT, JOIN KIT : NOTE TRIMLESS INSTALLATION, APPROX. 7722mm LONG (VERIFY LENGTH WITH ARCH.WOOD FEATURE CEILING SYSTEM.
H1-E RM. C104	LED 3500K 6W/FT	LED LINEAR LUMINAIRE RECESSED IN WOOD FEATURE CEILING, SHAPE LINEAR LENGTH APPROX 7366mm LONG AS SHOWN ON DRAWINGS, 120V, 0-10V DIMMING.	FLUXVERX NOTCH 2 SYMMETRIC TRIMLESS SERIES	(NT1-L-D2-B-B-35-F2-M-XX CW END CAPS, OPTIC KIT, JOIN KIT : NOTE TRIMLESS INSTALLATION, APPROX. 7366mm LONG (VERIFY LENGTH WITH ARCH.WOOD FEATURE CEILING SYSTEM.
H1-F RM. 236	LED 3500K 6W/FT	LED LINEAR LUMINAIRE RECESSED IN WOOD FEATURE CEILING, SHAPE L, LENGTH APPROX 1753mm & 889mm LONG AS SHOWN ON DRAWINGS, 120V, 0-10V DIMMING.	FLUXVERX NOTCH 2 SYMMETRIC TRIMLESS SERIES	(NT1-P/P2-D2-B-B-35-F2-M-XX CW END CAPS, OPTIC KIT, JOIN KIT, CORNER KIT: NOTE TRIMLESS INSTALLATION, SHAPE L, LENGTH APPROX 1753 & 889mm LONG (VERIFY LENGTH WITH ARCH.WOOD FEATURE CEILING SYSTEM.
H1-G RM. C202	LED 3500K 6W/FT	LED LINEAR LUMINAIRE RECESSED IN WOOD FEATURE CEILING, SHAPE LINEAR LENGTH APPROX 3582mm LONG AS SHOWN ON DRAWINGS, 120V, 0-10V DIMMING.	FLUXVERX NOTCH 2 SYMMETRIC TRIMLESS SERIES	(NT1-L-D2-B-B-35-F2-M-XX CW END CAPS, OPTIC KIT, JOIN KIT: NOTE TRIMLESS INSTALLATION, APPROX. 3582mm LONG (VERIFY LENGTH WITH ARCH.WOOD FEATURE CEILING SYSTEM.
H1-H RM. C201	LED 3500K 6W/FT	LED LINEAR LUMINAIRE RECESSED IN WOOD FEATURE CEILING, SHAPE LINEAR LENGTH APPROX 6400mm LONG AS SHOWN ON DRAWINGS, 120V, 0-10V DIMMING.	FLUXVERX NOTCH 2 SYMMETRIC TRIMLESS SERIES	(NT1-L-D2-B-B-35-F2-M-XX CW END CAPS, OPTIC KIT, JOIN KIT : NOTE TRIMLESS INSTALLATION, APPROX. 6400mm LONG (VERIFY LENGTH WITH ARCH.WOOD FEATURE CEILING SYSTEM.
H1-I RM. C201	LED 3500K 6W/FT	LED LINEAR LUMINAIRE RECESSED IN WOOD FEATURE CEILING, SHAPE LINEAR LENGTH APPROX 7696mm LONG AS SHOWN ON DRAWINGS, 120V, 0-10V DIMMING.	FLUXVERX NOTCH 2 SYMMETRIC TRIMLESS SERIES	(NT1-L-D2-B-B-35-F2-M-XX CW END CAPS, OPTIC KIT, JOIN KIT : NOTE TRIMLESS INSTALLATION, APPROX. 7696mm LONG LUMINAIRE TO BE DUEL FED 5255mm SECTION LENGTH OF FIXTURE TO BE FED VIA NORMAL POWER CIRCUIT AND 2440mm LONG SECTION TO BE FED VIA EMERGENCY POWER CIRCUIT. (VERIFY LENGTH WITH ARCH.WOOD FEATURE CEILING SYSTEM.
H1-K RM. C206	LED 3500K 6W/FT	LED LINEAR LUMINAIRE RECESSED IN WOOD FEATURE CEILING, SHAPE LINEAR LENGTH APPROX 7391mm LONG AS SHOWN ON DRAWINGS, 120V, 0-10V DIMMING.	FLUXVERX NOTCH 2 SYMMETRIC TRIMLESS SERIES	(NT1-L-D2-B-B-35-F2-M-XX CW END CAPS, OPTIC KIT, JOIN KIT : NOTE TRIMLESS INSTALLATION, APPROX. 7391mm LONG LUMINAIRE TO BE DUEL FED 4951mm SECTION LENGTH OF FIXTURE TO BE FED VIA NORMAL POWER CIRCUIT AND 2440mm LONG SECTION TO BE FED VIA EMERGENCY POWER CIRCUIT. (VERIFY LENGTH WITH ARCH.WOOD FEATURE CEILING SYSTEM.
H1-L RM. 217	LED 3500K 6W/FT	LED LINEAR LUMINAIRE RECESSED IN WOOD FEATURE CEILING, SHAPE L, LENGTH APPROX 1117mm & 2337mm LONG AS SHOWN ON DRAWINGS, 120V, 0-10V DIMMING.	FLUXVERX NOTCH 2 SYMMETRIC TRIMLESS SERIES	(NT1-P/P2-D2-B-B-35-F2-M-XX CW END CAPS, OPTIC KIT, JOIN KIT, CORNER KIT: NOTE TRIMLESS INSTALLATION, SHAPE L, LENGTH APPROX 1117 & 2337mm LONG (VERIFY LENGTH WITH ARCH.WOOD FEATURE CEILING SYSTEM.
H1-E RM. 217	LED 3500K 6W/FT	LED LINEAR LUMINAIRE RECESSED IN WOOD FEATURE CEILING, SHAPE LINEAR LENGTH APPROX 1727mm LONG AS SHOWN ON DRAWINGS, 120V, 0-10V DIMMING.	FLUXVERX NOTCH 2 SYMMETRIC TRIMLESS SERIES	(NT1-L-D2-B-B-35-F2-M-XX CW END CAPS, OPTIC KIT, JOIN KIT : NOTE TRIMLESS INSTALLATION, APPROX. 1727mm LONG (VERIFY LENGTH WITH ARCH.WOOD FEATURE CEILING SYSTEM.

Key Plan

DO NOT SCALE DRAWINGS:

Contractors must check and verify all site conditions. Notify the Owner's Representative in writing before proceeding with the work if discrepancies are evident between the drawings and the site condition. No extras to the contract will be allowed if discrepancies were evident prior to start of work.

UNEXPECTED DISCOVERY OF ASBESTOS:

Where a friable material is discovered during construction, renovations and/or demolition, and it is suspected to contain asbestos, the Contractor must stop all work that may disturb the material. The Contractor shall advise the Owner of the discovery and await instructions from the owner.

A = Detail number  
B = Drawing number where detailed

0 ISSUED FOR PERMIT & TENDER TA NOV 2, 2018

NO. ISSUED BY DATE

Orientation

Seal

Seal

UNIVERSITY OF GUELPH  
Design, Engineering & Construction  
Physical Resources  
Guelph, Ontario. N1G 2W1

Consultant J.L.Richards ENGINEERS - ARCHITECTS - PLANNERS

Project BUILDING #046 RENOVATIONS

Drawing Title ELECTRICAL STAIR SECTIONS WING B

Project No. 504034

Location UNIVERSITY OF GUELPH BUILDING #046

Scale N.T.S. Date NOV 2, 2018

Drawn by M.C.D. Drawing No.

Checked By H.M.

Approved By H.M.

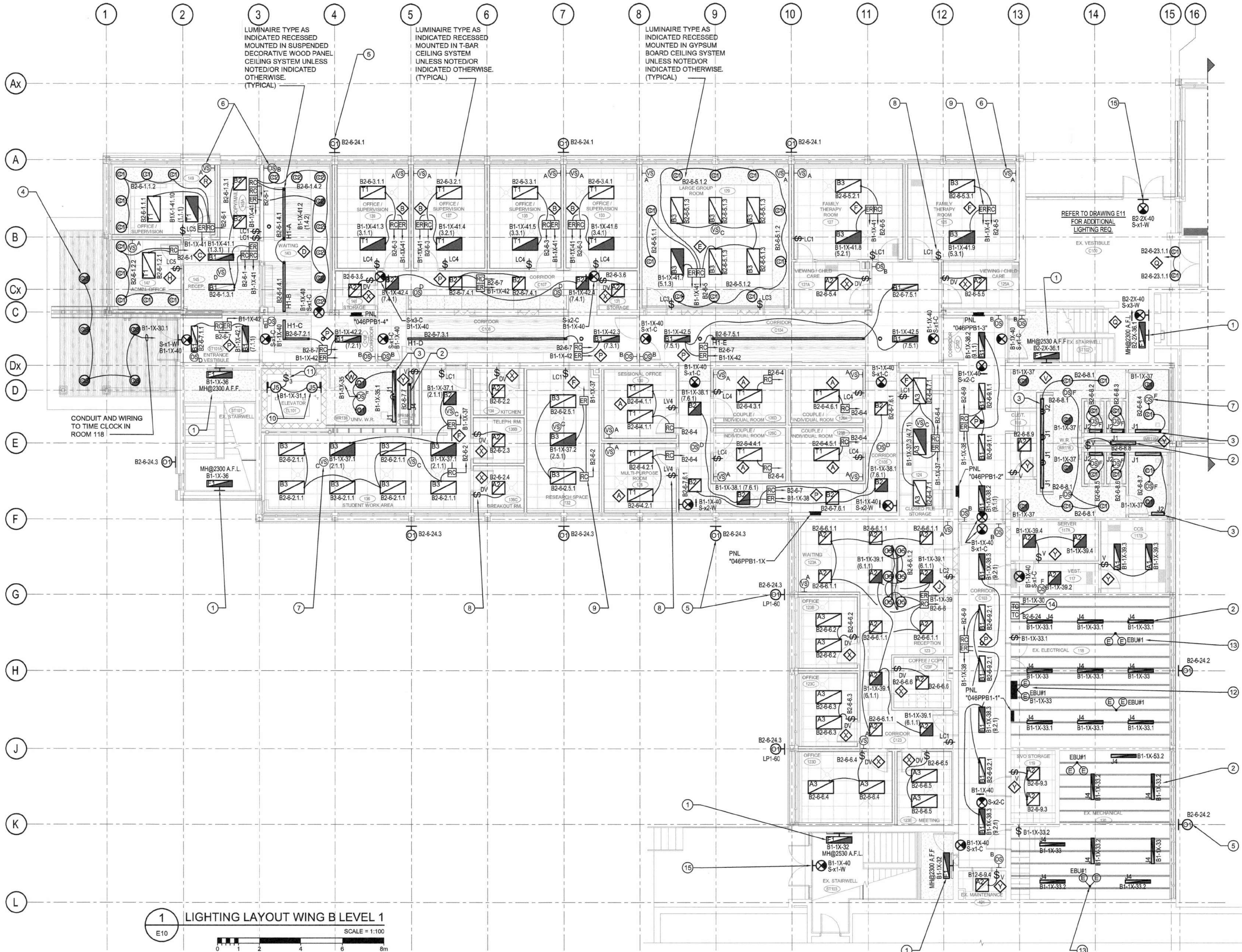
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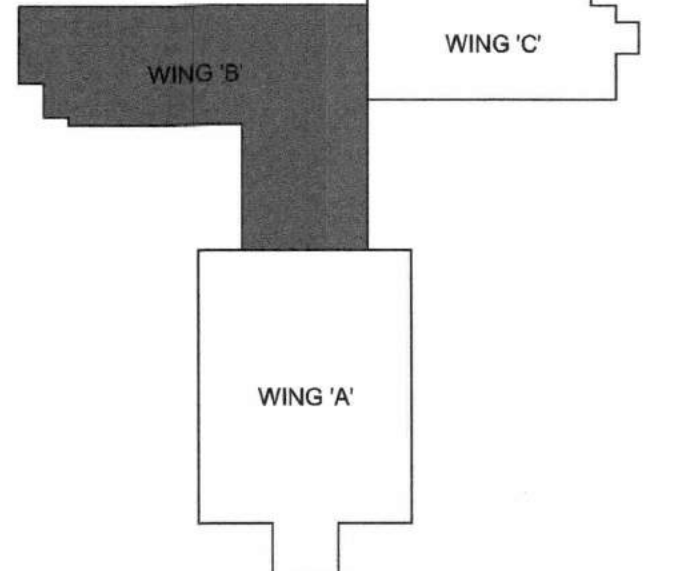
GENERAL NOTES

- A. CAREFULLY COORDINATE ALL ELECTRICAL WORK WITH ALL OTHER TRADES ON SITE TO ENSURE NO CONFLICTS OR INTERFERENCES OCCUR.
- B. PROVIDE ALL FASTENERS, FITTINGS, JUNCTION, OUTLET, BACKBOXES, CONDUIT, WIRING AND HARDWARE REQUIRED TO ENSURE A COMPLETE AND OPERATIONAL SYSTEM. REFER TO SPECIFICATIONS.
- C. WHERE CONDUIT SYSTEMS CROSS BUILDING EXPANSION JOINTS PROVIDE JUNCTION BOXES ON EITHER SIDE OF JOINT C/W METAL FLEX CONDUIT & WIRING SYSTEM TO BRIDGE JOINT AND ALLOW FOR BUILDING MOVEMENT. REFER TO DETAILS ON DRAWINGS AND / OR SPECIFICATIONS.
- D. ALL JUNCTION BOX CONDUIT AND WIRING SYSTEMS ARE TO BE CONCEALED IN PARTITIONS WALL FLOOR SLABS AND CEILING SPACES UNLESS NOTED OTHERWISE.
- E. PROVIDE CHANNEL SUPPORT HANGERS, MIN. 19mm THREADED ROD TRAPEZE HANGER ASSEMBLIES FOR MOUNTING ALL JUNCTION BOX CONDUIT, RACEWAY SYSTEMS, SUPPORT SYSTEM HANGERS TO BE SPACED AT NOT MORE THAN 2400mm APART UNLESS NOTED OTHERWISE. REFER TO SPECIFICATIONS.
- F. ALL ELECTRICAL RACEWAY / SUPPORT SYSTEMS TO BE SECURED TO MEET SEISMIC REQUIREMENTS.
- G. COORDINATE EXACT LOCATION OF OUTLETS/DEVICES WITH ARCHITECTURAL DRAWINGS, MILLWORK DETAILS FANCOM DRAWINGS AND EQUIPMENT REQUIREMENTS.
- H. MOUNTING HEIGHT OF OUTLETS, DEVICES, SWITCHES, CONTROLS IS FROM FINISHED FLOOR TO CENTER-LINE OF EQUIPMENT UNLESS NOTED OTHERWISE. REFER TO ELECTRICAL SPECIFICATION.
- I. COORDINATE ON SITE: DRILL / CUT OPENINGS IN EXISTING PARTITION WALLS, FLOOR SLAB TO FACILITATE INSTALLATION OF ELECTRICAL SYSTEMS. PATCH, REPAIR AND REPAINT ALL OPENINGS TO MATCH EXISTING AND/OR NEW FINISH REQUIREMENTS.
- J. SEAL ALL THROUGH WALL, FLOOR SLAB PENETRATIONS WITH APPROVED FIRE STOP SEALANT.
- K. PROVIDE LAMACOID NAMEPLATE AND P-TOUCH CIRCUIT IDENTIFICATION ON EQUIPMENT, COVER PLATES, JUNCTION BOXES. REFER TO SPECIFICATION FOR ADDITIONAL INFORMATION.
- L. THE WORD "PROVIDE" USED ON THESE DRAWINGS, MEAN THE CONTRACTOR IS RESPONSIBLE TO SUPPLY, INSTALL, WIRE, CONNECT, CONTROL SETUP, TEST, AND COMMISSION EQUIPMENT, DEVICES, AND/OR LUMINAIRES.
- M. ALL ELECTRICAL EQUIPMENT, DEVICE OUTLET BOXES TO BE INSTALLED IN SEPARATE STUD SPACES (SEPARATED BY A STUD) AND PREFERABLY ISOLATED BY MIN. 600mm APART WHERE POSSIBLE FOR WALL ERATED STC 45 OR HIGHER. REFER TO DETAIL 3/E20 ON DRAWINGS.
- N. EXPOSED ELECTRICAL BOXES IN WALLS RATED STC 50 AND HIGHER TO BE SEALED.
- O. REFER TO LUMINAIRE SCHEDULE FOR LIGHTING FIXTURE TYPE AND MOUNTING.
- P. GANG ALL LIGHT SWITCHES TOGETHER WHERE POSSIBLE UNDER ONE (1) COMMON COVER PLATE UNLESS NOTED OTHERWISE.
- Q. COORDINATE MOUNTING AND INSTALLATION OF EXTERIOR / OUTDOOR MOUNTED LUMINAIRES WITH ARCHITECT AND BUILDING OWNER.
- R. ALL LUMINAIRES TO BE CHAINED. USE GALVANIZED COIL CHAIN TO SUPPORT LUMINAIRE(S) TO BUILDING STRUCTURE FROM MINIMUM TWO (2) LOCATIONS. CORNER OF EACH TO BE SUPPORTED. POINT ON CHAINS TO BE SECURED. INSTALLATION TO MEET SEISMIC REQUIREMENTS.
- S. ALL LIGHTING FIXTURES NORMAL / EMERGENCY. EXIT LIGHTING TO BE CONNECTED AND SWITCHED AS INDICATED VIA A JUNCTION BOX, CONDUIT AND WIRING SYSTEM AS SPECIFIED.
- T. PROVIDE ALL LIGHTING CONTROL WIRING, LINE VOLTAGE (120V), LOW VOLTAGE LIGHTING CIRCUIT, AND CONTROL WIRING VIA CEILING SPACE MOUNTED JUNCTION BOX, CONDUIT AND WIRING SYSTEM TO END DEVICE(S). SENSORS AND / OR MANUAL SWITCHES MAY BE EITHER INDIVIDUALLY WIRED OR WIRED IN TANDEM AS PER LIGHTING CONTROL SCHEDULES. REFER TO LIGHTING CONTROL SCHEDULE AND CONTROL SCHEMATIC DETAILS ON DRAWING E15, E16, E17, E18 AND E30
- U. LIGHTING CIRCUIT SWITCHING AS FOLLOWS:
- CIRCUIT (CKT.) AS INDICATED EI "B2-6-2.1" DENOTES: NORMAL POWER PANEL B2-6, CKT. 2, RELAY OR DEVICE SWITCHING POINT 1.
  - CIRCUIT (CKT.) AS INDICATED EI "B2-6-4.1.1" DENOTES: NORMAL POWER PANEL B2-6, CKT. 4, LIGHTING CONTROL RELAY 1, DEVICE SWITCHING POINT 1.
  - CIRCUIT (CKT.) AS INDICATED "B1-1X-36" DENOTES: EMERGENCY POWER PANEL B1-1X, CKT. 36 (NON-MANUAL SWITCHED CIRCUIT AND/OR UN-SWITCHED CIRCUIT TO LUMINAIRE WITH BUILT-IN ON/OFF DIMMING CONTROL).
  - CIRCUIT (CKT.) AS INDICATED EI "B1-1X-37.1 & (2.1.1)" DENOTES: EMERGENCY POWER PANEL B1-1X, CKT. 37, LIGHTING CONTROL RELAY 1, & (2.1.1) DENOTES LUMINAIRE TO BE PROGRAM CONTROLLED TO OPERATE ON / OFF / DIMMING WITH OTHER LOCAL LIGHTING CIRCUIT IN SAME ROOM AS PER LIGHTING CONTROL SCHEMATIC DETAILS.
  - NOTE: INTERIOR DEVICE SWITCHING POINT ARE TO BE MADE VIA LINE VOLTAGE SWITCHES, OCCUPANCY AND/OR VACANCY SENSORS WHERE INDICATED. LOCAL PROGRAMMABLE LIGHTING ROOM CONTROLLERS WITH BUILT-IN RELAYS CONTROLLED VIA LOW VOLTAGE SWITCHES, OCCUPANCY AND/OR VACANCY SENSORS WHERE INDICATED. EXTERIOR DEVICE SWITCHING POINTS TO BE MADE VIA PROGRAMMABLE DIGITAL TIME CLOCK(S).
- ⬠ SYMBOL DENOTES LIGHTING CONTROL SCHEMATIC "A". REFER TO LIGHTING CONTROL SCHEMATIC DETAILS ON DRAWINGS E15, E16, E17, E18



DRAWING NOTES

1. PROVIDE LUMINAIRE TYPE AS INDICATED, SURFACE WALL MOUNT IN STAIRWELL REFER TO STAIR DETAILS ON DRAWING E09. UNLESS NOTED OTHERWISE. (TYPICAL)
2. PROVIDE LUMINAIRE TYPE AS INDICATED, MOUNT SUSPENDED AT APPROX 2400mm A.F.F. FROM EXPOSED BUILDING STRUCTURE (OWS) C/W AC308 WIRING FROM JB SYSTEM TO LUMINAIRE. COORDINATE EXACT LOCATION AND HEIGHT WITH INSTALLATION OF ALL OTHER BUILDING SYSTEMS. PROVIDE STEEL SUPPORT CHANNEL AND TRAPEZE HANGER ASSEMBLIES SECURED TO BUILDING STRUCTURE FOR MOUNTING. (TYPICAL)
3. PROVIDE LUMINAIRE TYPE AS INDICATED, SURFACE MOUNT IN WASHROOM GYPSUM BOARD CEILING VALANCE. REFER TO ARCHITECTURAL DRAWINGS FOR DETAILS. (TYPICAL)
4. PROVIDE EXTERIOR TYPE LUMINAIRE AS INDICATED, FLUSH MOUNT IN NEW EXTERIOR CANOPY/SOFFIT. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION AND MOUNTING HEIGHT. PROVIDE RECESSED OUTLET BOX, CONDUIT & WIRING SYSTEM. ROUTE BACK TO NEW EXTERIOR LIGHTING DIGITAL TIME CLOCK CONTROLLER IN ELECT. 118. (TYPICAL)
5. PROVIDE EXTERIOR TYPE WALL / FACADE MOUNTED LUMINAIRE AS INDICATED, REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION AND MOUNTING HEIGHT. PROVIDE RECESSED OUTLET BOX, CONDUIT & WIRING SYSTEM, ROUTE BACK TO NEW EXTERIOR LIGHTING DIGITAL TIME CLOCK CONTROLLER IN ELECT. 118. (TYPICAL)
6. PROVIDE LIGHTING CONTROL SENSOR TYPE AS INDICATED, CORNER WALL MOUNTED AT 100mm BELOW FINISHED CEILING C/W CONCEALED RECESSED OUTLET BOX, CONDUIT & WIRING SYSTEMS. (TYPICAL)
7. PROVIDE LIGHTING CONTROL SENSOR TYPE AS INDICATED, CEILING MOUNTED C/W CONCEALED RECESSED OUTLET BOX, CONDUIT & WIRING SYSTEMS. (TYPICAL)
8. PROVIDE LIGHTING CONTROL SWITCH TYPE AS INDICATED, FLUSH WALL MOUNTED AT 1100mm A.F.F. C/W CONCEALED RECESSED OUTLET BOX, CONDUIT & WIRING SYSTEMS. (TYPICAL)
9. PROVIDE LOCAL REMOTE CEILING SPACE MOUNTED DIGITAL LIGHTING MANAGEMENT ROOM CONTROLLERS, EMERGENCY BYPASS RELAY CONTROLLERS C/W OUTLET BOXES, CONDUIT AND WIRING SYSTEMS. COORDINATE ACCESSIBLE LOCATION IN CEILING SPACE ON SITE WITH INSTALLATION OF ALL OTHER BUILDING SYSTEMS.
10. PROVIDE LUMINAIRE AS INDICATED, SURFACE WALL MOUNTED VERTICALLY IN ELEVATOR PIT. COORDINATE EXACT LOCATION AND MOUNTING WITH ELEVATOR SYSTEM, SHOP DRAWINGS AND ELEVATOR CONTRACTOR ON SITE. (TYPICAL)
11. PROVIDE WEATHER PROOF TYPE TOGGLE SWITCH, SURFACE MOUNT IN ELEVATOR PIT AT APPROX. 1200mm ABOVE BOTTOM OF PIT. COORDINATE EXACT LOCATION AND MOUNTING WITH ELEVATOR SYSTEM, SHOP DRAWINGS AND ELEVATOR CONTRACTOR ON SITE.
12. PROVIDE EMERGENCY BATTERY UNIT (TWO (2) INTEGRAL 6W LED HEADS 120-12V, TEST SWITCH, AC & DC TERMINAL BLOCKS AND PLUG-IN CORD SET LUMACELL RGS SERIES WITH MIN. 90 MINUTES OF WATTAGE CAPACITY. PROVIDE DUPLEX RECEPTACLE BESIDE EBU CIRCUIT AS INDICATED. (TYPICAL)
13. PROVIDE EMERGENCY REMOTE MOUNTED INTEGRAL HEADS WITH CANOPY. TO BE CONDUIT STEM MOUNTED AT APPROX 2500mm A.F.F. C/W JUNCTION BOX CONDUIT AND WIRING SYSTEM. EBU CIRCUIT AS INDICATED. (TYPICAL)
14. PROVIDE NEW INTERMATIC ASTRONOMIC DIGITAL TIME SWITCH MODEL ET8415CR WITH UP TO FOUR (4) PROGRAMMABLE SWITCHING CIRCUITS, OVER RIDE PUSH BUTTON, 100 HOUR SUPER CAPACITOR TO MAINTAIN PROGRAMMING IN POWER OUTAGE AND NEMA 3R ENCLOSURE. SURFACE WALL MOUNT IN ELECT. ROOM 105. CIRCUIT B2-24 AND/OR B1-1X-30 AS INDICATED. WIRE AND CONNECT NEW EXTERIOR WALL MOUNTED LUMINAIRES AND/OR CANOPY AND PATCHWAY LUMINAIRES TO TIME CLOCKS. PROGRAM TIME CLOCK TO ENERGIZE EXTERIOR LIGHTING AT DUSK AND DE-ENERGIZE LIGHTING AT PRESET TIME TO MEET ASHRAE 90.1 AND SB-10 LIGHTING STANDARDS WITH BUILDING OWNER.
15. PROVIDE NEW EXIT SIGN SURFACE MOUNTED ABOVE DOOR. ROUTE NEW CONDUIT AND WIRING THROUGH MULLION FRAME TO SIGN. COORDINATE EXACT LOCATION ON SITE. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION FOR GLAZING WALL.



Key Plan

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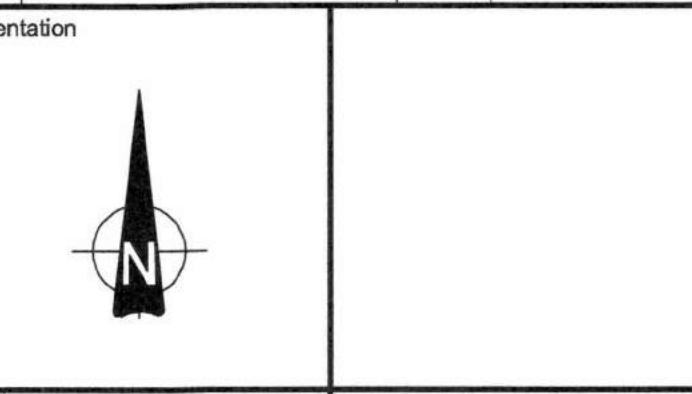
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A = Detail number  
B = Drawing number where detailed

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NO. ISSUED BY DATE



UNIVERSITY OF GUELPH

Design, Engineering & Construction  
Physical Resources  
Guelph, Ontario. N1G 2W1

Consultant [www.jrichards.ca](http://www.jrichards.ca)

J.R. J.L. Richards  
ENGINEERS - ARCHITECTS - PLANNERS

Project

**BUILDING #046  
RENOVATIONS**

Drawing Title

**ELECTRICAL  
LIGHTING LAYOUT WING B  
LEVEL 1**

Project No.

**504034**

Location

**UNIVERSITY OF GUELPH  
BUILDING #046**

Scale AS INDICATED Date NOV 2, 2018

Drawn by AM Drawing No.

Checked by HM

Approved By HM

JLR # 27915

Cad File No. ----

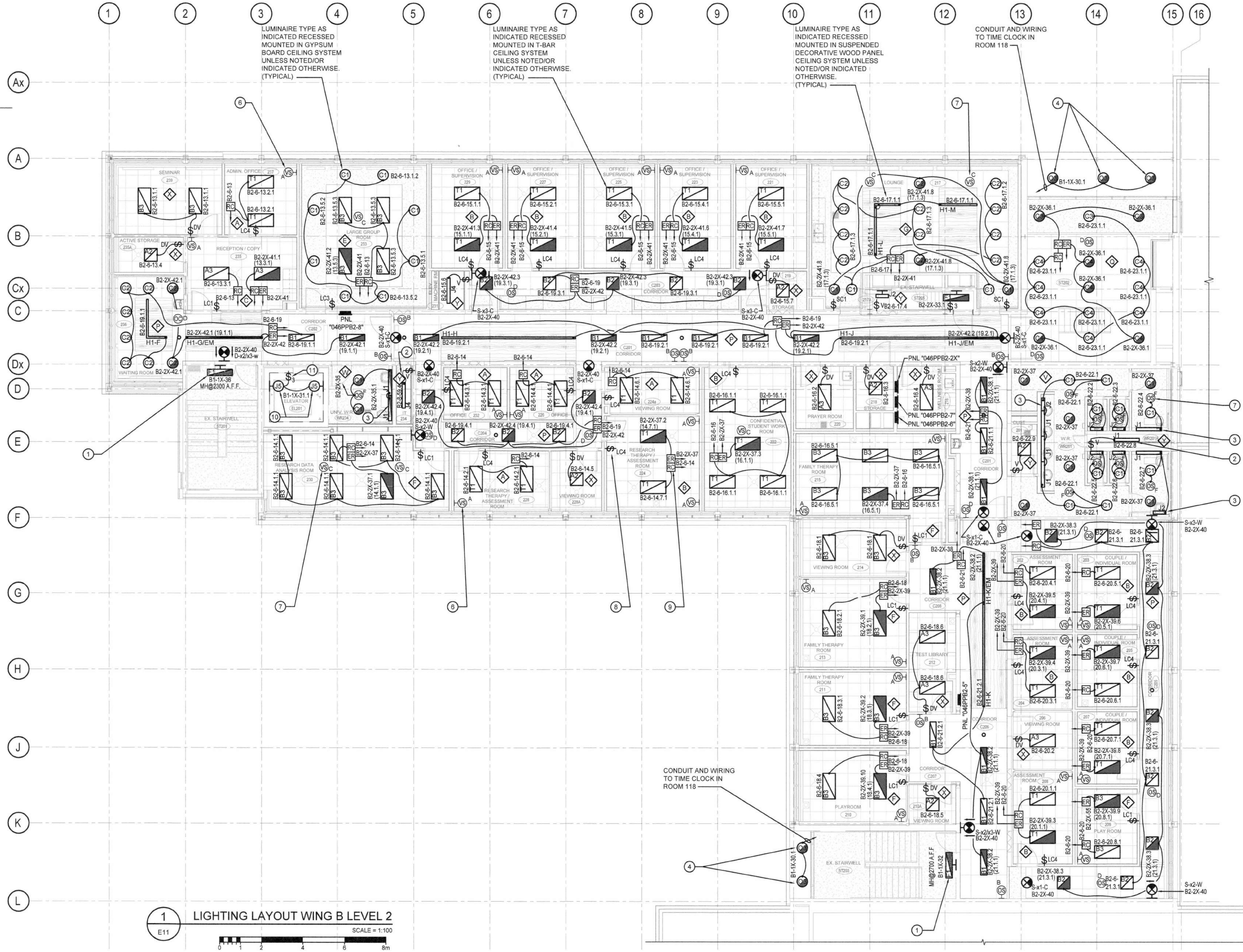
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of 170



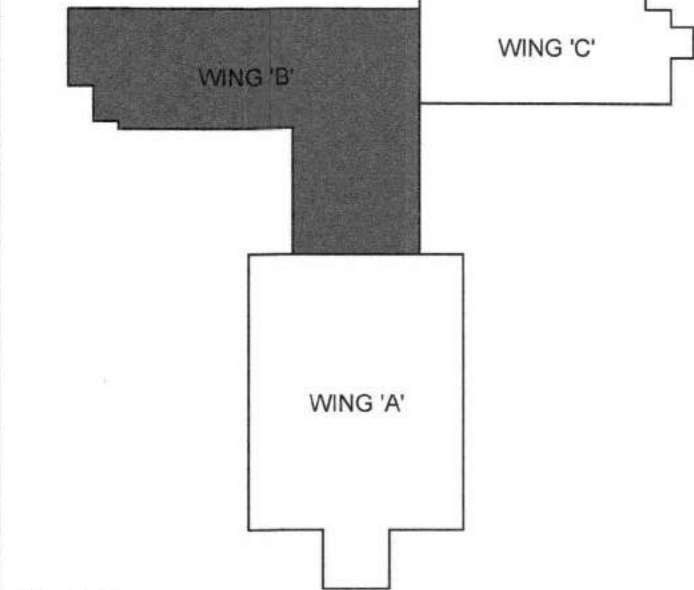
GENERAL NOTES

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- C. WHERE CONDUIT SYSTEMS CROSS BUILDING EXPANSION JOINTS PROVIDE JUNCTION BOXES ON EITHER SIDE OF JOINT C/W METAL FLEX CONDUIT & WIRING SYSTEM TO BRIDGE JOINT AND ALLOW FOR BUILDING MOVEMENT. REFER TO DETAILS ON DRAWINGS AND / OR SPECIFICATIONS.
- D. ALL JUNCTION BOX CONDUIT AND WIRING SYSTEMS ARE TO BE CONCEALED IN PARTITIONS WALL FLOOR SLABS AND CEILING SPACES UNLESS NOTED OTHERWISE.
- E. PROVIDE CHANNEL SUPPORT HANGERS, MIN. 19mm THREADED ROD TRAPEZE HANGER ASSEMBLIES FOR MOUNTING ALL JUNCTION BOX CONDUIT, RACEWAY SYSTEMS. SUPPORT SYSTEM HANGERS TO BE SPACED AT NOT MORE THAN 2400mm APART UNLESS NOTED OTHERWISE. REFER TO SPECIFICATIONS.
- F. ALL ELECTRICAL RACEWAY / SUPPORT SYSTEMS TO BE SECURED TO MEET SEISMIC REQUIREMENTS.
- G. COORDINATE EXACT LOCATION OF OUTLETS/DEVICES WITH ARCHITECTURAL DRAWINGS, MILLWORK DETAILS FANCOM DRAWINGS AND EQUIPMENT REQUIREMENTS.
- H. MOUNTING HEIGHT OF OUTLETS, DEVICES, SWITCHES, CONTROLS IS FROM FINISHED FLOOR TO CENTERLINE OF ELECTRICAL SYSTEMS. PATCH, REPAIR AND REPAINT ALL OPENINGS TO MATCH EXISTING AND/OR NEW FINISH REQUIREMENTS.
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- P. GANG ALL LIGHT SWITCHES TOGETHER WHERE POSSIBLE UNDER ONE (1) COMMON COVER PLATE UNLESS NOTED OTHERWISE.
- Q. COORDINATE MOUNTING AND INSTALLATION OF EXTERIOR / OUTDOOR MOUNTED LUMINAIRES WITH ARCHITECT AND BUILDING OWNER.
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- T. PROVIDE ALL LIGHTING CONTROL WIRING, LINE VOLTAGE (120V), LOW VOLTAGE LIGHTING CIRCUIT, AND CONTROL WIRING VIA CEILING SPACE MOUNTED JUNCTION BOX, CONDUIT AND WIRING SYSTEM TO END DEVICE(S). SENSORS AND / OR MANUAL SWITCHES MAY BE EITHER INDIVIDUALLY WIRED OR WIRED IN TANDEM AS PER LIGHTING CONTROL SCHEDULES. REFER TO LIGHTING CONTROL SCHEDULE AND CONTROL SCHEMATIC DETAILS ON DRAWING E15, E16, E17, E18 AND E30.
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  - CIRCUIT (CKT.) AS INDICATED EI: "B2-6-4.1.1" DENOTES: NORMAL POWER PANEL B2-6, CKT. 4, LIGHTING CONTROL RELAY 1, DEVICE SWITCHING POINT 1.
  - CIRCUIT (CKT.) AS INDICATED "B1-1X-36" DENOTES: EMERGENCY POWER PANEL B1-1X, CKT. 36 (NON-MANUAL SWITCHED CIRCUIT AND/OR UN-SWITCHED CIRCUIT TO LUMINAIRE WITH BUILT-IN ON/OFF/DIMMING CONTROL).
  - CIRCUIT (CKT.) AS INDICATED EI: "B1-1X-37.1 & (2.1.1)" DENOTES: EMERGENCY POWER PANEL B1-1X, CKT. 37, LIGHTING CONTROL RELAY 1, & (2.1.1) DENOTES LUMINAIRE TO BE PROGRAM CONTROLLED TO OPERATE ON / OFF / DIMMING WITH OTHER LOCAL LIGHTING CIRCUIT IN SAME ROOM AS PER LIGHTING CONTROL SCHEDULE DETAILS.
  - NOTE: INTERIOR DEVICE SWITCHING POINT ARE TO BE MADE VIA, LINE VOLTAGE SWITCHES, OCCUPANCY AND/OR VACANCY SENSORS WHERE INDICATED. LOCAL PROGRAMMABLE LIGHTING ROOM CONTROLLERS WITH BUILT-IN RELAYS CONTROLLED VIA LOW VOLTAGE SWITCHES, OCCUPANCY AND/OR VACANCY SENSORS WHERE INDICATED. EXTERIOR DEVICE SWITCHING POINTS TO BE MADE VIA PROGRAMMABLE DIGITAL TIME CLOCK(S).
- ◇ SYMBOL DENOTES LIGHTING CONTROL SCHEMATIC "A". REFER TO LIGHTING CONTROL SCHEMATIC DETAILS ON DRAWINGS E15, E16, E17, E18



DRAWING NOTES

1. PROVIDE LUMINAIRE TYPE AS INDICATED, SURFACE WALL MOUNT IN STAIRWELL REFER TO STAIR DETAILS ON DRAWING E09. UNLESS NOTED OTHERWISE. (TYPICAL)
2. PROVIDE LUMINAIRE TYPE AS INDICATED, MOUNT SUSPENDED AT APPROX 2400mm A.F.F. FROM EXPOSED BUILDING STRUCTURE (OWSJ) C/W AC90 WIRING FROM JB SYSTEM TO LUMINAIRE. COORDINATE EXACT LOCATION AND HEIGHT WITH INSTALLATION OF ALL OTHER BUILDING SYSTEMS. PROVIDE CHANNEL SUPPORT HANGER ASSEMBLIES SECURED TO BUILDING STRUCTURE FOR MOUNTING. (TYPICAL)
3. PROVIDE LUMINAIRE TYPE AS INDICATED, SURFACE MOUNT IN WASHROOM GYPSUM BOARD CEILING VALANCE. REFER TO ARCHITECTURAL DRAWINGS FOR DETAILS. (TYPICAL)
4. PROVIDE EXTERIOR TYPE LUMINAIRE AS INDICATED, FLUSH MOUNT IN NEW EXTERIOR CANOPY/SOFFIT. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION AND MOUNTING HEIGHT. PROVIDE RECESSED OUTLET BOX, CONDUIT & WIRING SYSTEM, ROUTE BACK TO NEW EXTERIOR LIGHTING DIGITAL TIME CLOCK CONTROLLER IN ELECT. 118. (TYPICAL)
5. NOT-USED.
6. PROVIDE LIGHTING CONTROL SENSOR TYPE AS INDICATED, CORNER WALL MOUNTED AT 100mm BELOW FINISHED CEILING C/W CONCEALED RECESSED OUTLET BOX, CONDUIT & WIRING SYSTEMS. (TYPICAL)
7. PROVIDE LIGHTING CONTROL SENSOR TYPE AS INDICATED, CEILING MOUNTED C/W CONCEALED RECESSED OUTLET BOX, CONDUIT & WIRING SYSTEMS. (TYPICAL)
8. PROVIDE LIGHTING CONTROL SWITCH TYPE AS INDICATED, FLUSH WALL MOUNTED AT 1100mm A.F.F. C/W CONCEALED RECESSED OUTLET BOX, CONDUIT & WIRING SYSTEMS. (TYPICAL)
9. PROVIDE LOCAL REMOTE CEILING SPACE MOUNTED DIGITAL LIGHTING MANAGEMENT ROOM CONTROLLERS, EMERGENCY BYPASS RELAY CONTROLLERS C/W OUTLET BOXES, CONDUIT AND WIRING SYSTEMS. COORDINATE ACCESSIBLE LOCATION IN CEILING SPACE ON SITE WITH INSTALLATION OF ALL OTHER BUILDING SYSTEMS.
10. PROVIDE LUMINAIRE AS INDICATED, SURFACE WALL MOUNTED VERTICALLY IN ELEVATOR SHAFT AT APPROX 2000mm BELOW TOP OF SHAFT. COORDINATE EXACT LOCATION AND MOUNTING WITH ELEVATOR SYSTEM, SHOP DRAWINGS AND ELEVATOR CONTRACTOR ON SITE. (TYPICAL)
11. PROVIDE WEATHER PROOF TYPE TOGGLE SWITCH, SURFACE MOUNT IN ELEVATOR PIT AT APPROX. 1200mm ABOVE BOTTOM OF PIT. COORDINATE EXACT LOCATION AND MOUNTING WITH ELEVATOR SYSTEM. SHOP DRAWINGS AND ELEVATOR CONTRACTOR ON SITE.
12. TO 15. NOT-USED.



Key Plan

DO NOT SCALE DRAWINGS:

Contractors must check and verify all site conditions. Notify the Owner's Representative in writing before proceeding with the work if discrepancies are evident between the drawings and the site condition. No extras to the contract will be allowed if discrepancies were evident prior to start of work.

UNEXPECTED DISCOVERY OF ASBESTOS:

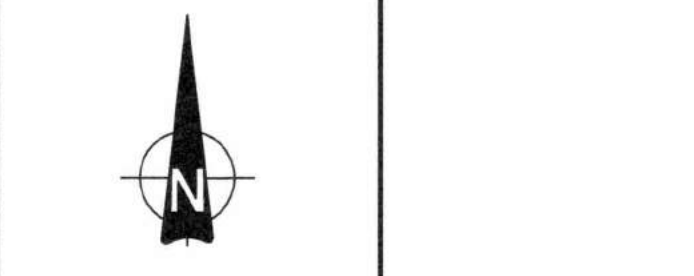
Where a friable material is discovered during construction, renovations and/or demolition, and it is suspected to contain asbestos, the Contractor must stop all work that may disturb the material. The Contractor shall advise the Owner of the discovery and await instructions from the owner.

A	A = Detail number
B	B = Drawing number where detailed

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Orientation



Seal



**UNIVERSITY OF GUELPH**  
Design, Engineering & Construction  
Physical Resources  
Guelph, Ontario. N1G 2W1

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Project  
**BUILDING #046 RENOVATIONS**

Drawing Title  
**ELECTRICAL LIGHTING LAYOUT WING B LEVEL 2**  
Project No.  
**504034**

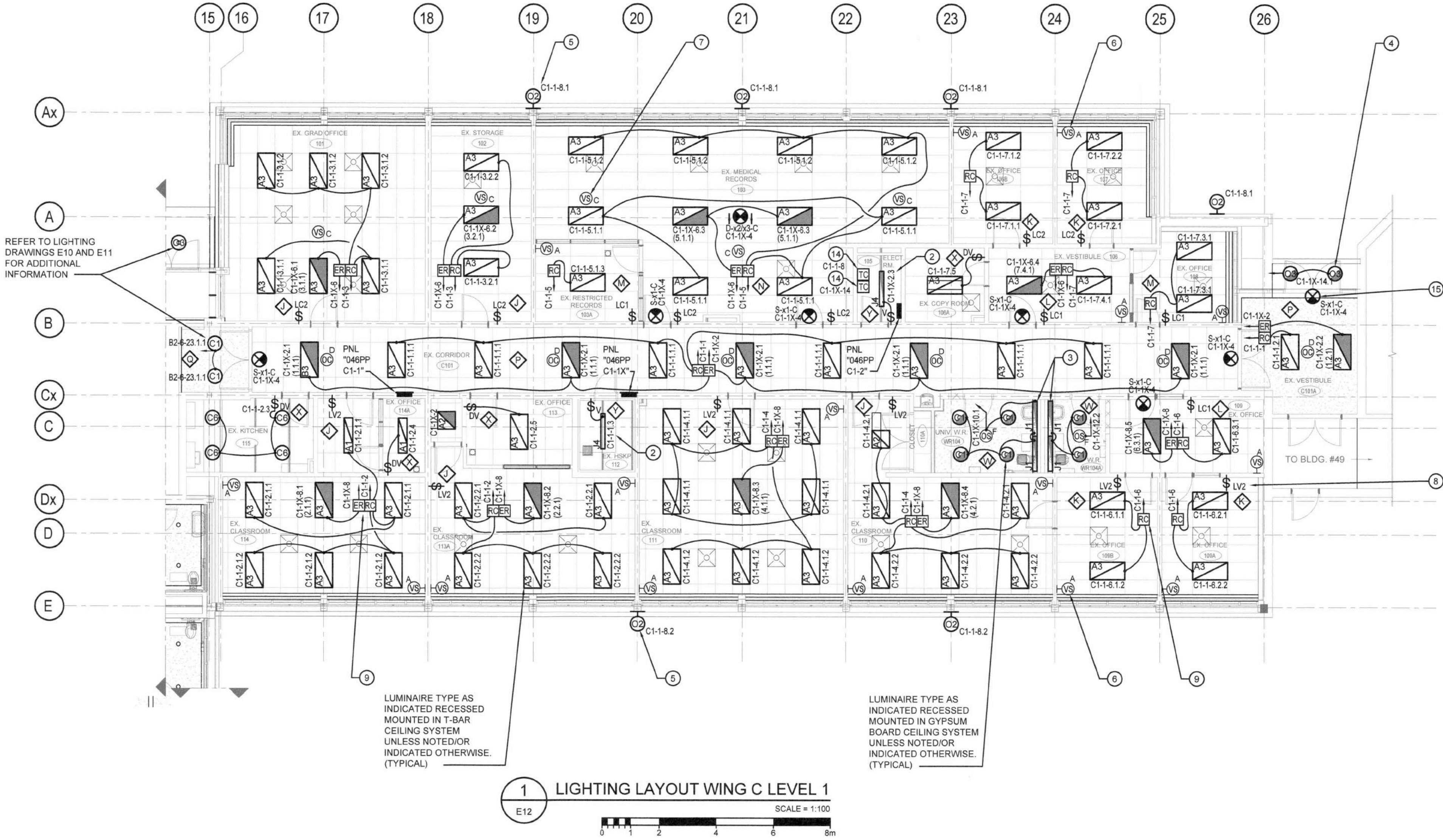
Location  
**UNIVERSITY OF GUELPH BUILDING #046**

Scale AS INDICATED	Date NOV 2, 2018
Drawn by AM	Drawing No.
Checked By HM	<b>E11</b>
Approved By HM	
JLR # 27915	
Cad File No. ----	of 170



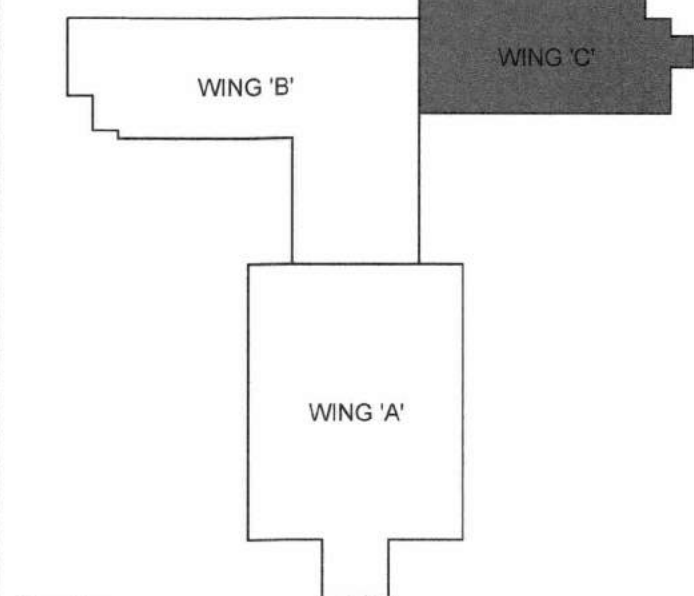
GENERAL NOTES

- A. CAREFULLY COORDINATE ALL ELECTRICAL WORK WITH ALL OTHER TRADES ON SITE TO ENSURE NO CONFLICTS OR INTERFERENCES OCCUR.
- B. PROVIDE ALL FASTENERS, FITTINGS, JUNCTION, OUTLET, BACKBOXES, CONDUIT, WIRING AND HARDWARE REQUIRED TO ENSURE A COMPLETE AND OPERATIONAL SYSTEM. REFER TO SPECIFICATIONS.
- C. WHERE CONDUIT SYSTEMS CROSS BUILDING EXPANSION JOINTS PROVIDE JUNCTION BOXES ON EITHER SIDE OF JOINT C/W METAL FLEX CONDUIT & WIRING SYSTEM TO BRIDGE JOINT AND ALLOW FOR BUILDING MOVEMENT. REFER TO DETAILS ON DRAWINGS AND / OR SPECIFICATIONS.
- D. ALL JUNCTION BOX CONDUIT AND WIRING SYSTEMS ARE TO BE CONCEALED IN PARTITIONS WALL FLOOR SLABS AND CEILING SPACES UNLESS NOTED OTHERWISE.
- E. PROVIDE CHANNEL SUPPORT HANGERS, MIN. 19mm THREADED ROD TRAPEZE HANGER ASSEMBLIES FOR MOUNTING ALL JUNCTION BOX CONDUIT, RACEWAY SYSTEMS. SUPPORT SYSTEM HANGERS TO BE SPACED AT NOT MORE THAN 2400mm APART UNLESS NOTED OTHERWISE. REFER TO SPECIFICATIONS.
- F. ALL ELECTRICAL RACEWAY / SUPPORT SYSTEMS TO BE SECURED TO MEET SEISMIC REQUIREMENTS.
- G. COORDINATE EXACT LOCATION OF OUTLETS/DEVICES WITH ARCHITECTURAL DRAWINGS, MILLWORK DETAILS FANCOM DRAWINGS AND EQUIPMENT REQUIREMENTS.
- H. MOUNTING HEIGHT OF OUTLETS, DEVICES, SWITCHES, CONTROLS IS FROM FINISHED FLOOR TO CENTERLINE OF EQUIPMENT UNLESS NOTED OTHERWISE. REFER TO ELECTRICAL SPECIFICATION.
- I. COORDINATE ON SITE: DRILL / CUT OPENINGS IN EXISTING PARTITION WALLS, FLOOR SLAB TO FACILITATE INSTALLATION OF ELECTRICAL SYSTEMS. PATCH, REPAIR AND REPAINT ALL OPENINGS TO MATCH EXISTING AND/OR NEW FINISH REQUIREMENTS.
- J. SEAL ALL THROUGH WALL, FLOOR SLAB PENETRATIONS WITH APPROVED FIRE STOP SEALANT.
- K. PROVIDE LAMACOID NAMEPLATE AND P-TOUCH CIRCUIT IDENTIFICATION ON EQUIPMENT, COVER PLATES, JUNCTION BOXES. REFER TO SPECIFICATION FOR ADDITIONAL INFORMATION.
- L. THE WORD "PROVIDE" USED ON THESE DRAWINGS, MEAN THE CONTRACTOR IS RESPONSIBLE TO SUPPLY, INSTALL, WIRE, CONNECT, CONTROL SETUP, TEST, AND COMMISSION EQUIPMENT, DEVICES, AND/OR LUMINAIRES.
- M. ALL ELECTRICAL EQUIPMENT, DEVICE OUTLET BOXES TO BE INSTALLED IN SEPARATE STUD SPACES (SEPARATED BY A STUD) AND PREFERABLY ISOLATED BY MIN. 600mm APART WHERE POSSIBLE FOR WALL RATED STC 45 OR HIGHER. REFER TO DETAIL 3/E20 ON DRAWINGS.
- N. EXPOSED ELECTRICAL BOXES IN WALLS RATED STC 50 AND HIGHER TO BE SEALED.
- O. REFER TO LUMINAIRE SCHEDULE FOR LIGHTING FIXTURE TYPE AND MOUNTING.
- P. GANG ALL LIGHT SWITCHES TOGETHER WHERE POSSIBLE UNDER ONE (1) COMMON COVER PLATE UNLESS NOTED OTHERWISE.
- Q. COORDINATE MOUNTING AND INSTALLATION OF EXTERIOR / OUTDOOR MOUNTED LUMINAIRES WITH ARCHITECT AND BUILDING OWNER.
- R. ALL LUMINAIRES TO BE CHAINED. USE GALVANIZED COIL CHAIN TO SUPPORT LUMINAIRE(S) TO BUILDING STRUCTURE FROM MINIMUM TWO (2) LOCATIONS. CORNER OF EACH TO BE SUPPORTED. POINT ON CHAINS TO BE SECURED. INSTALLATION TO MEET SEISMIC REQUIREMENTS.
- S. ALL LIGHTING FIXTURES NORMAL / EMERGENCY. EXIT LIGHTING TO BE CONNECTED AND SWITCHED AS INDICATED VIA A JUNCTION BOX, CONDUIT AND WIRING SYSTEM AS SPECIFIED.
- T. PROVIDE ALL LIGHTING CONTROL WIRING, LINE VOLTAGE (120V), LOW VOLTAGE LIGHTING CIRCUIT, AND CONTROL WIRING VIA CEILING SPACE MOUNTED JUNCTION BOX, CONDUIT AND WIRING SYSTEM TO END DEVICE(S). SENSORS AND / OR MANUAL SWITCHES MAY BE EITHER INDIVIDUALLY WIRED OR WIRED IN TANDEM AS PER LIGHTING CONTROL SCHEDULES. REFER TO LIGHTING CONTROL SCHEDULE AND CONTROL SCHEMATIC DETAILS ON DRAWING E15, E16, E17, E18 AND E30.
- U. LIGHTING CIRCUIT SWITCHING AS FOLLOWS:
- CIRCUIT (CKT.) AS INDICATED EI "B2-6-2.1" DENOTES: NORMAL POWER PANEL B2-6, CKT. 2, RELAY OR DEVICE SWITCHING POINT 1
  - CIRCUIT (CKT.) AS INDICATED EI "B2-6-4.1.1" DENOTES: NORMAL POWER PANEL B2-6, CKT. 4, LIGHTING CONTROL RELAY 1, DEVICE SWITCHING POINT 1.
  - CIRCUIT (CKT.) AS INDICATED "B1-1X-36" DENOTES: EMERGENCY POWER PANEL B1-1X, CKT. 36 (NON-MANUAL SWITCHED CIRCUIT) AND/OR UN-SWITCHED CIRCUIT TO LUMINAIRE WITH BUILT-IN ON/OFF/DIMMING CONTROL.
  - CIRCUIT (CKT.) AS INDICATED EI "B1-1X-37.1 & (2.1.1)" DENOTES: EMERGENCY POWER PANEL B1-1X, CKT. 37, LIGHTING CONTROL RELAY 1, & (2.1.1) DENOTES LUMINAIRE TO BE PROGRAM CONTROLLED TO OPERATE ON / OFF / DIMMING WITH OTHER LOCAL LIGHTING CIRCUIT IN SAME ROOM AS PER LIGHTING CONTROL SCHEMATIC DETAILS.
  - NOTE: INTERIOR DEVICE SWITCHING POINT ARE TO BE MADE VIA, LINE VOLTAGE SWITCHES, OCCUPANCY AND/OR VACANCY SENSORS WHERE INDICATED. LOCAL PROGRAMMABLE LIGHTING ROOM CONTROLLERS WITH BUILT-IN RELAYS CONTROLLED VIA LOW VOLTAGE SWITCHES, OCCUPANCY AND/OR VACANCY SENSORS WHERE INDICATED. EXTERIOR DEVICE SWITCHING POINTS TO BE MADE VIA PROGRAMMABLE DIGITAL TIME CLOCK(S).
- △ SYMBOL DENOTES LIGHTING CONTROL SCHEMATIC "A". REFER TO LIGHTING CONTROL SCHEMATIC DETAILS ON DRAWINGS E15, E16, E17, E18



DRAWING NOTES

- 1 NOT USED.
- 2 PROVIDE LUMINAIRE TYPE AS INDICATED, MOUNT SUSPENDED AT APPROX 2400mm A.F.F. FROM EXPOSED BUILDING STRUCTURE (OWS) C/W AC90 WIRING FROM JB SYSTEM TO LUMINAIRE. COORDINATE EXACT LOCATION AND HEIGHT WITH INSTALLATION OF ALL OTHER BUILDING SYSTEMS. PROVIDE STEEL SUPPORT CHANNEL AND TRAPEZE HANGER ASSEMBLIES SECURED TO BUILDING STRUCTURE FOR MOUNTING. (TYPICAL)
- 3 PROVIDE LUMINAIRE TYPE AS INDICATED, SURFACE MOUNT IN WASHROOM GYPSUM BOARD CEILING VALANCE. REFER TO ARCHITECTURAL DRAWINGS FOR DETAILS. (TYPICAL)
- 4 PROVIDE EXTERIOR TYPE LUMINAIRE AS INDICATED, FLUSH MOUNT IN NEW EXTERIOR CANOPY/SOFFIT. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION AND MOUNTING HEIGHT. PROVIDE RECESSED OUTLET BOX, CONDUIT & WIRING SYSTEM, ROUTE BACK TO NEW EXTERIOR LIGHTING DIGITAL TIME CLOCK CONTROLLER IN ELECT. 105. (TYPICAL)
- 5 PROVIDE EXTERIOR TYPE WALL / FACADE MOUNTED LUMINAIRE AS INDICATED, REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION AND MOUNTING HEIGHT. PROVIDE RECESSED OUTLET BOX, CONDUIT & WIRING SYSTEM, ROUTE BACK TO NEW EXTERIOR LIGHTING DIGITAL TIME CLOCK CONTROLLER IN ELECT. 105. (TYPICAL)
- 6 PROVIDE LIGHTING CONTROL SENSOR TYPE AS INDICATED, CORNER WALL MOUNTED AT 100mm BELOW FINISHED CEILING C/W CONCEALED RECESSED OUTLET BOX, CONDUIT & WIRING SYSTEMS. (TYPICAL)
- 7 PROVIDE LIGHTING CONTROL SENSOR TYPE AS INDICATED, CEILING MOUNTED C/W CONCEALED RECESSED OUTLET BOX, CONDUIT & WIRING SYSTEMS. (TYPICAL)
- 8 PROVIDE LIGHTING CONTROL SWITCH TYPE AS INDICATED, FLUSH WALL MOUNTED AT 1100mm A.F.F. C/W CONCEALED RECESSED OUTLET BOX, CONDUIT & WIRING SYSTEMS. (TYPICAL)
- 9 PROVIDE LOCAL REMOTE CEILING SPACE MOUNTED DIGITAL LIGHTING MANAGEMENT ROOM CONTROLLERS. EMERGENCY BYPASS RELAY CONTROLLERS C/W OUTLET BOXES, CONDUIT AND WIRING SYSTEMS. COORDINATE ACCESSIBLE LOCATION IN CEILING SPACE ON SITE WITH INSTALLATION OF ALL OTHER BUILDING SYSTEMS.
- 10 TO 13 NOT USED.
- 14 PROVIDE NEW INTERMATIC ASTRONOMIC DIGITAL TIME SWITCH MODEL ET8415CR WITH UP TO FOUR (4) PROGRAMMABLE SWITCHING CIRCUITS, OVER RIDE PUSH BUTTON, 100 HOUR SUPER CAPACITOR TO MAINTAIN PROGRAMMING IN POWER OUTAGE AND NEMA 3R ENCLOSURE. SURFACE WALL MOUNT IN ELECT. ROOM 105. CIRCUIT C1-1-8 OR C1-1X-14 AS INDICATED. WIRE AND CONNECT NEW EXTERIOR WALL MOUNTED LUMINAIRES AND/OR CANOPY LUMINAIRES TO TIME CLOCKS. PROGRAM TIME CLOCK TO ENERGIZE EXTERIOR LIGHTING AT DUSK AND DE-ENERGIZE LIGHTING AT PRESET TIME TO MEET ASHRAE 90.1 AND SB-10 LIGHTING STANDARDS WITH BUILDING OWNER.
- 15 PROVIDE NEW EXIT SIGN SURFACE MOUNTED ABOVE DOOR. ROUTE NEW CONDUIT AND WIRING THROUGH MULLION FRAME TO SIGN. COORDINATE EXACT LOCATION ON SITE. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION FOR GLAZING WALL.



Key Plan

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Contractors must check and verify all site conditions. Notify the Owner's Representative in writing before proceeding with the work if discrepancies are evident between the drawings and the site condition. No extras to the contract will be allowed if discrepancies were evident prior to start of work.

UNEXPECTED DISCOVERY OF ASBESTOS:

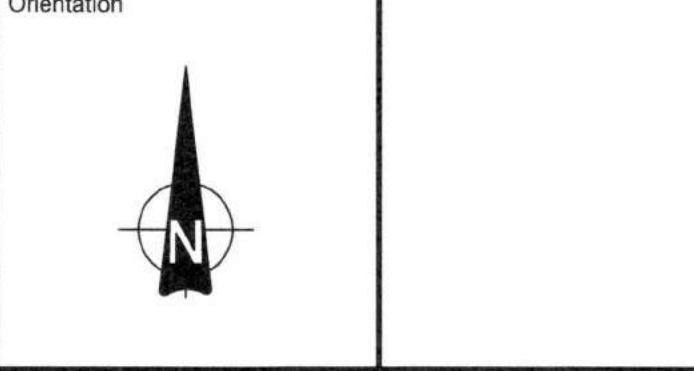
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A = Detail number  
B = Drawing number where detailed

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NO. ISSUED BY DATE

Orientation



UNIVERSITY OF GUELPH

Design, Engineering & Construction  
Physical Resources  
Guelph, Ontario. N1G 2W1

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Project  
BUILDING #046  
RENOVATIONS

Drawing Title  
LIGHTING LAYOUT WING C

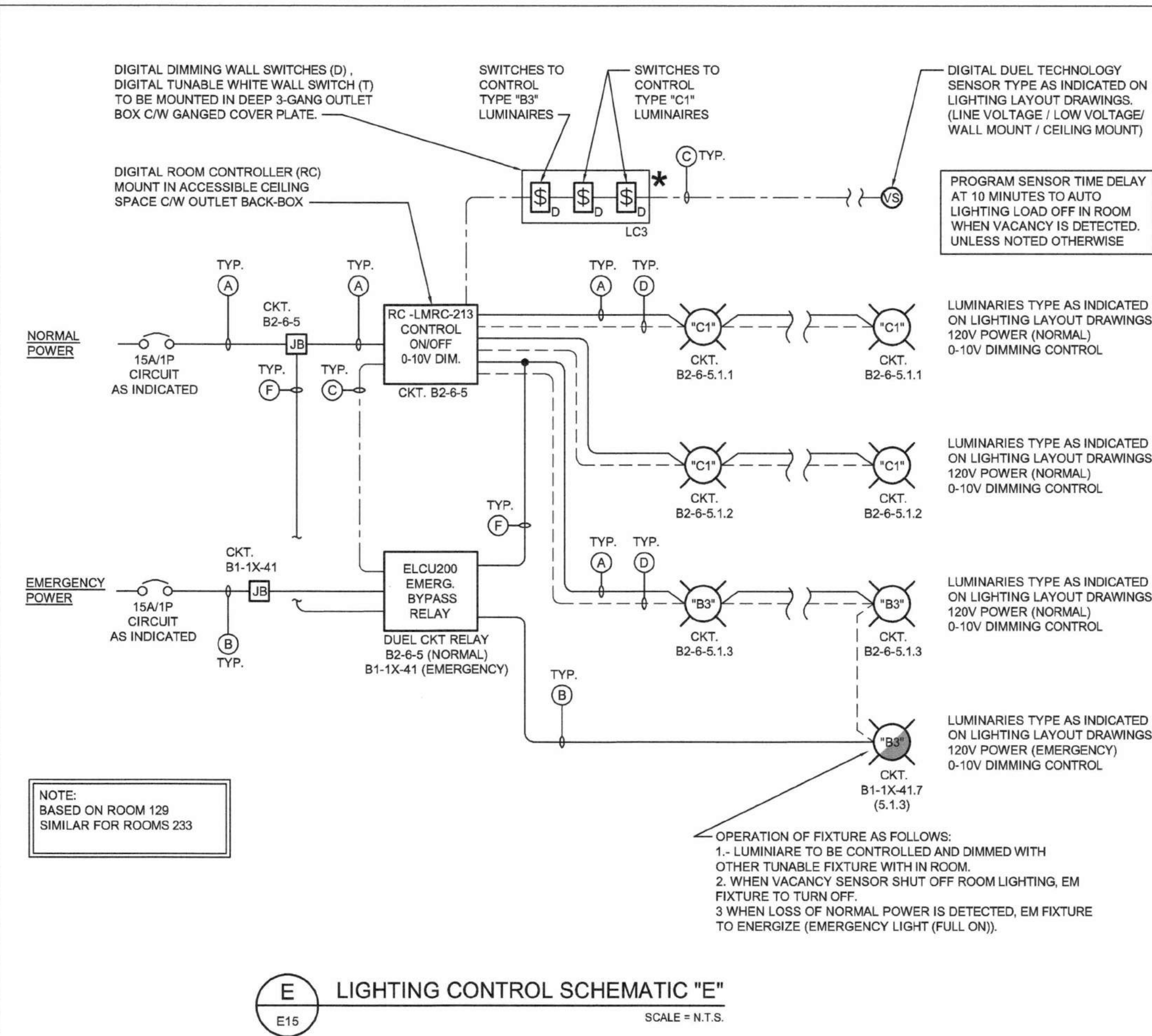
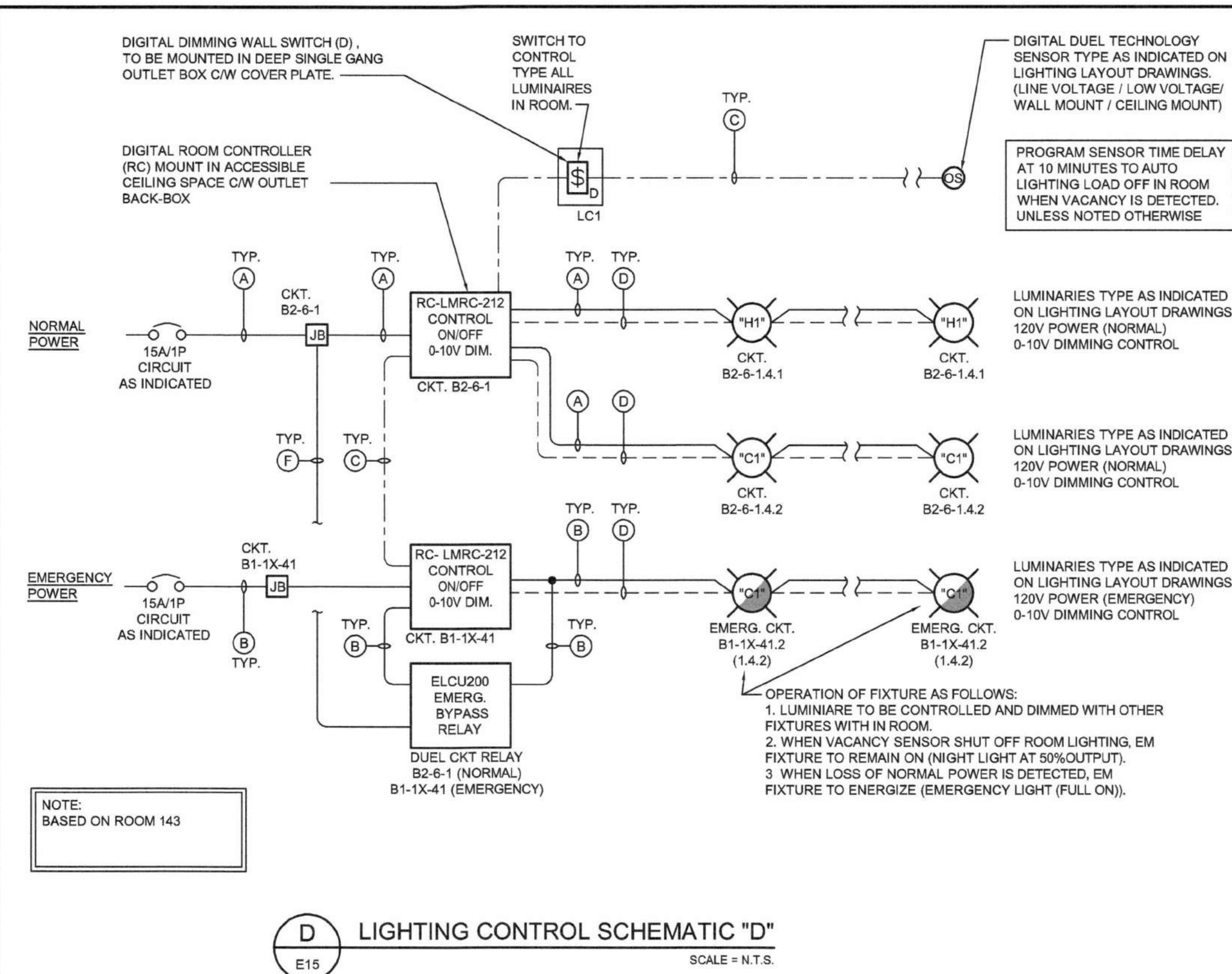
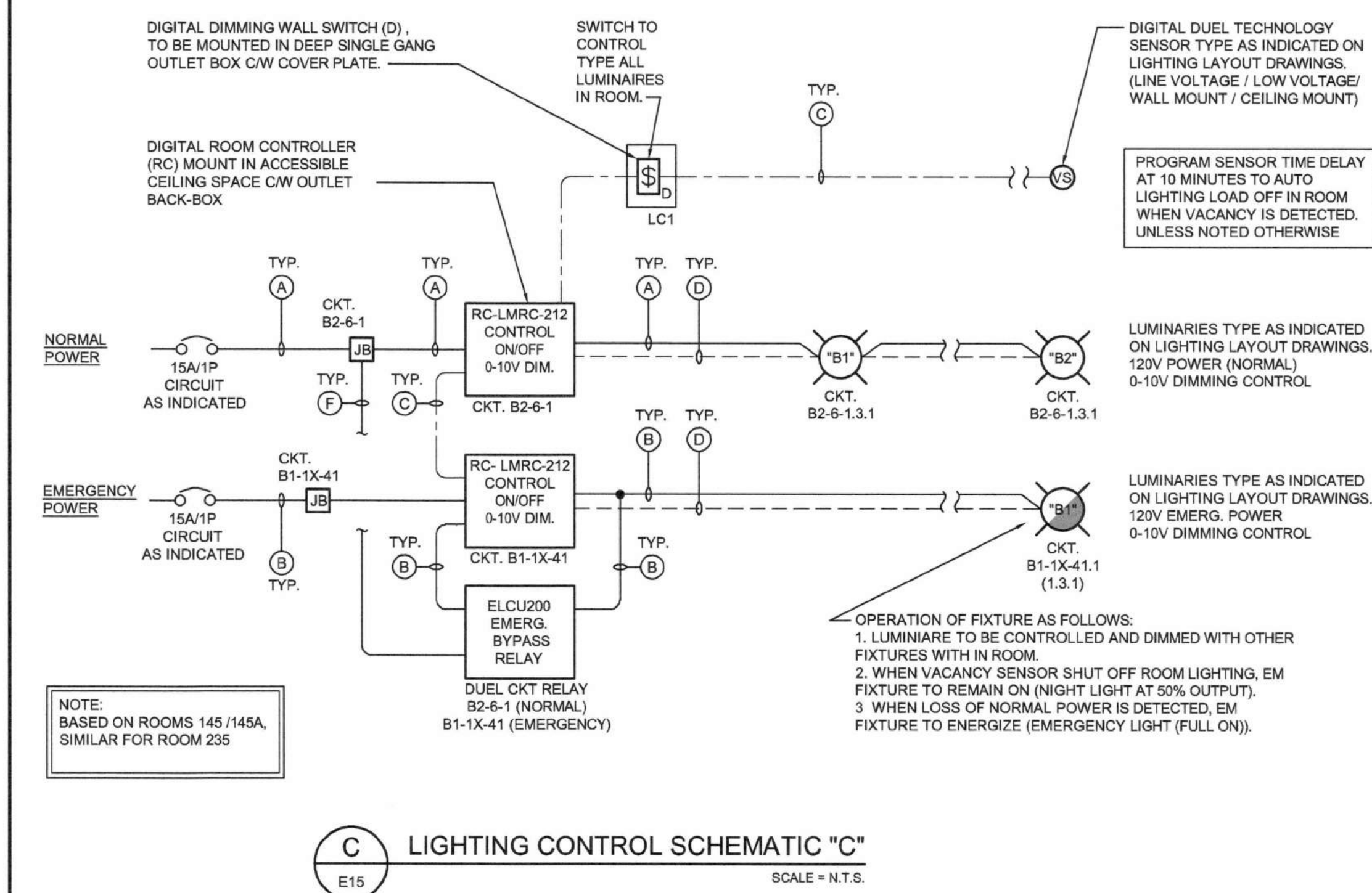
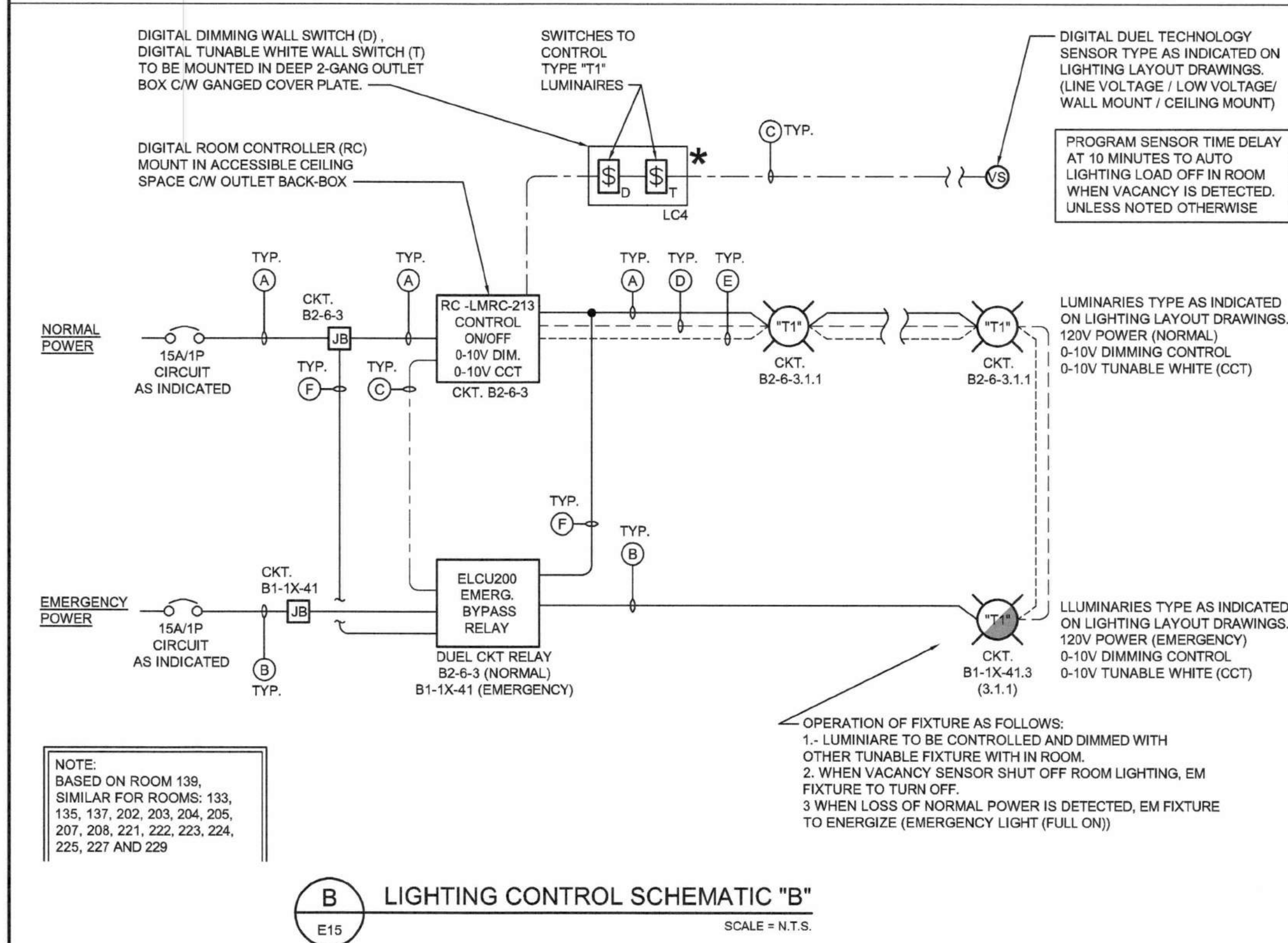
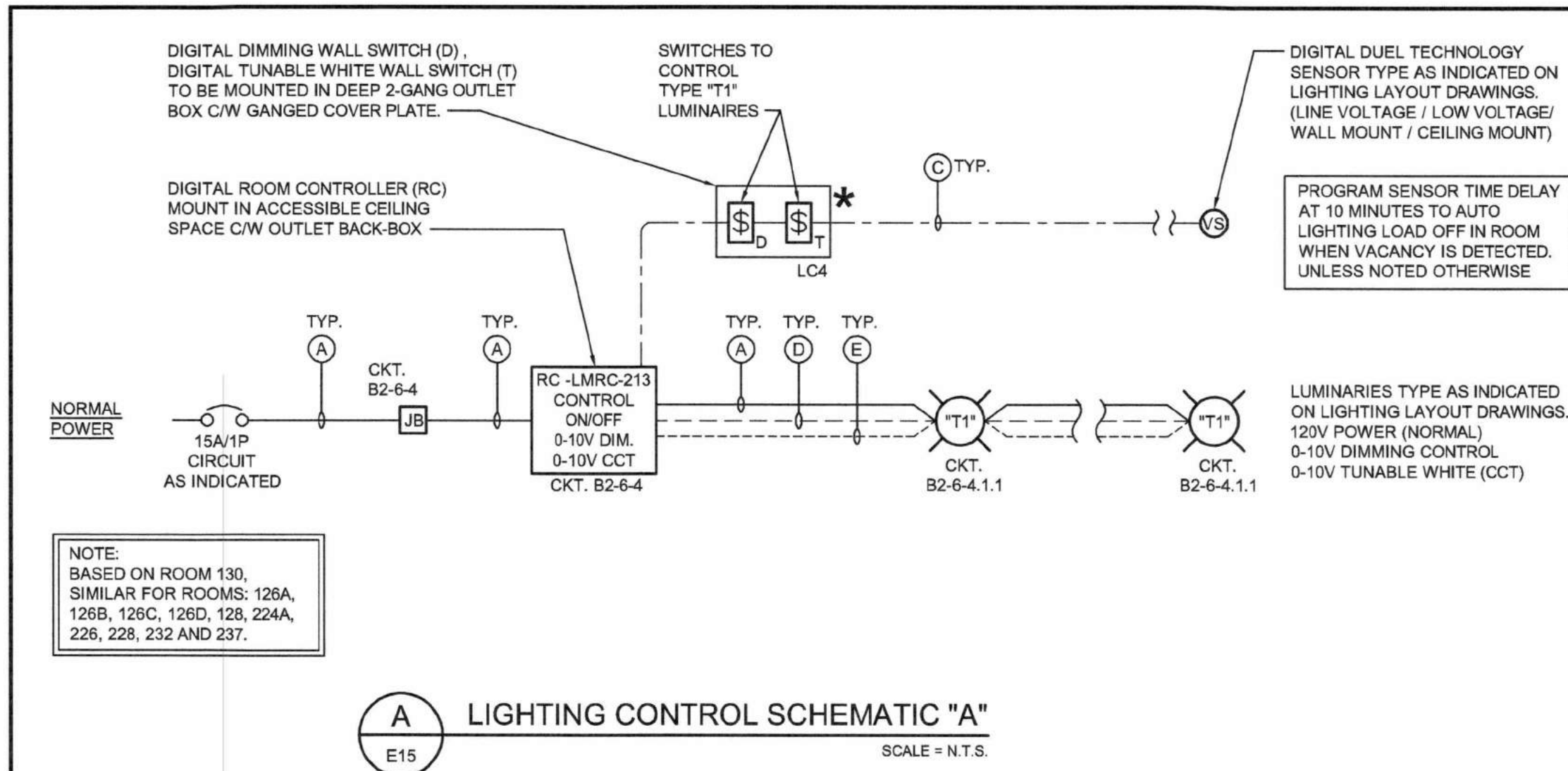
Project No.  
504034

Location  
UNIVERSITY OF GUELPH  
BUILDING #046

Scale AS INDICATED	Date NOV 2, 2018
Drawn by AM	Drawing No.
Checked By HM	E12
Approved By HM	
JLR # 27915	

Cad File No. ---- of 170





LIGHTING CONTROLS MANUFACTURE AND/OR REPRESENTATIVE TO PROVIDE  
DETAILED WIRING DIAGRAMS BASED ON THE LIGHTING CONTROL SCHEMATIC'S  
PROVIDE ON THESE DRAWINGS FOR EACH TYPE / INDIVIDUAL CONTROL SYSTEM  
OUTLINED / SHOWN.  
DETAILED DIAGRAMS TO IDENTIFYING ALL PARTS, CONTROLLERS, DEVICES,  
WIRING AND CONNECTION POINTS REQUIRED FOR COMPLETE AND OPERATIONAL  
LIGHTING CONTROL SYSTEMS.  
MANUFACTURES DETAILED WIRING DIAGRAMS TO BE SUBMITTED TO ELECTRICAL  
CONTRACTOR AND ELECTRICAL ENGINEER FOR RECORDS, SHOP DRAWINGS,  
EACH DIAGRAM TO BE INCLUDED IN BUILDING OWNERS OPERATION AND  
MAINTENANCE MANUALS.

LIGHTING CONTROL DEVICES:	
SC1	5-BUTTON MULTI SCENE CONTROLLER 4 SCENE BUTTONS AND DIMMER BUTTON (LOW VOLTAGE LMRJ CABLE CONNECTION) - WATTSTOPPER - MODEL # LMSW-105-W - ONE COMMON WHITE COVER PLATE
LC1	SINGLE (2) GANG ON / OFF / DIMMER WALL SWITCH WITH VISUAL LED BAR GRAPH INDICATING RELATIVE LIGHTING LEVEL (LOW VOLTAGE LMRJ CABLE CONNECTION) - WATTSTOPPER - MODEL # LMDM-101-W - ONE COMMON WHITE COVER PLATE
LC2	TWO (2) GANG ON / OFF / DIMMER WALL SWITCHES WITH VISUAL LED BAR GRAPH INDICATING RELATIVE LIGHTING LEVEL (LOW VOLTAGE LMRJ CABLE CONNECTION) - SWITCH 1: WATTSTOPPER - MODEL # LMDM-101-W - SWITCH 2: WATTSTOPPER - MODEL # LMDM-101-W - TWO (2) SWITCHES / ONE COMMON WHITE COVER PLATE
LC3	THREE (3) GANG ON / OFF / DIMMER WALL SWITCHES WITH VISUAL LED BAR GRAPH INDICATING RELATIVE LIGHTING LEVEL (LOW VOLTAGE LMRJ CABLE CONNECTION) - SWITCH 1: WATTSTOPPER - MODEL # LMDM-101-W - SWITCH 2: WATTSTOPPER - MODEL # LMDM-101-W - SWITCH 3: WATTSTOPPER - MODEL # LMDM-101-W - THREE (3) SWITCHES / ONE COMMON WHITE COVER PLATE
LC4	TWO (2) GANG ON / OFF / DIMMER WALL SWITCHES WITH VISUAL LED BAR GRAPH INDICATING RELATIVE LIGHTING LEVEL (LOW VOLTAGE LMRJ CABLE CONNECTION) - SWITCH 1: WATTSTOPPER - MODEL # LMDM-101-W - SWITCH 2: WATTSTOPPER - MODEL # LMDM-101-W - SWITCH 3: WATTSTOPPER - MODEL # LMDM-101-W - ONE (1) SWITCHES REQUIRED FOR CONTROL OF DIMMING LUMINAIRES - SWITCH 2: WATTSTOPPER - MODEL # LMDM-101-G - ONE (2) SWITCH REQUIRED FOR CONTROL OF TUNABLE WHITE (CCT) CORRELATED COLOR TEMPERATURE LEVEL WITHIN LUMINAIRES BEING CONTROLLED VIA SWITCH 1 - TWO (2) SWITCHES / ONE COMMON WHITE COVER PLATE
LC5	TWO (2) GANG ON / OFF / DIMMER WALL SWITCHES WITH VISUAL LED BAR GRAPH INDICATING RELATIVE LIGHTING LEVEL (LOW VOLTAGE LMRJ CABLE CONNECTION) - SWITCH 1: WATTSTOPPER - MODEL # LMDM-101-W - SWITCH 2: WATTSTOPPER - MODEL # LMDM-101-G - ONE (2) SWITCH REQUIRED FOR CONTROL OF TUNABLE WHITE (CCT) CORRELATED COLOR TEMPERATURE LEVEL WITHIN LUMINAIRES BEING CONTROLLED VIA SWITCH 1 - SWITCH 3: WATTSTOPPER - MODEL # LMDM-101-05-W - ONE (1) SWITCHES REQUIRED FOR CONTROL OF DIMMING OTHER LUMINAIRES WITHIN ROOM AS INDICATED. - THREE (3) SWITCHES / ONE COMMON WHITE COVER PLATE
DV	SINGLE GANG ON / OFF / DIMMER VACANCY SWITCH 120V (MANUAL ON / AUTO OFF) C/W 0-10V DIMMING - WATTSTOPPER - MODEL # DW-311-W - ONE COMMON WHITE COVER PLATE
V	SINGLE GANG ON / OFF / VACANCY SWITCH 120V (MANUAL ON / AUTO OFF) C/W 0-10V DIMMING - WATTSTOPPER - MODEL # DW-301-W - ONE COMMON WHITE COVER PLATE
A	WALL MOUNT DUEL TECHNOLOGY LOW VOLTAGE VACANCY SENSOR (MANUAL ON / AUTO OFF) (LMRJ CABLE CONNECTION) WATTSTOPPER - MODEL # LMDX-100-W
B	WALL MOUNT DUEL TECHNOLOGY LOW VOLTAGE OCCUPANCY SENSOR (AUTO ON / AUTO OFF) (LMRJ CABLE CONNECTION) WATTSTOPPER - MODEL # LMDX-100-W
C	CEILING MOUNT DUEL TECHNOLOGY LOW VOLTAGE VACANCY SENSOR (MANUAL ON / AUTO OFF) (LMRJ CABLE CONNECTION) WATTSTOPPER - MODEL # LMDC-100-W
D	CEILING MOUNT DUEL TECHNOLOGY LOW VOLTAGE OCCUPANCY SENSOR (AUTO ON / AUTO OFF) (LMRJ CABLE CONNECTION) WATTSTOPPER - MODEL # LMDC-100-W
F	CEILING MOUNT DUEL TECHNOLOGY 120V OCCUPANCY SENSOR (AUTO ON / AUTO OFF) (120V WIRING WITH 0-10V CONTROL WIRING WHERE INDICATED) WATTSTOPPER - MODEL # DT-355-W / CA-1 ADAPTER (120V)

- GENERAL NOTES:**
- REFER TO LIGHTING LAYOUT DRAWINGS FOR ROOM CONTROLLER RC TYPES EI 'A' DENOTES LIGHTING CONTROL SCHEMATIC "A" CONTROL PACKAGE.
  - REFER TO LIGHTING LAYOUT DRAWINGS FOR QUANTITY AND TYPE OF LUMINAIRES AND CONTROL DEVICES IN EACH ROOM C/W LIGHTING CIRCUIT (CKT) NUMBERS.
  - REFER TO LIGHTING LAYOUT DRAWINGS FOR QUANTITY AND TYPE OF LUMINAIRES AND CONTROL DEVICES IN EACH ROOM C/W LIGHTING CIRCUIT (CKT) NUMBERS.
  - REFER TO LUMINAIRE SCHEDULE FOR LIGHTING FIXTURE TYPE DESCRIPTION, MANUFACTURES CAT# AND MOUNTING INFORMATION.
  - GANG ALL LIGHT SWITCHES TOGETHER WHERE POSSIBLE UNDER ONE (1) COMMON COVER PLATE.
  - ALL LUMINAIRES TO BE CHAINED. USE GALVANIZED COIL CHAIN TO SUPPORT LUMINAIRE(S) TO BUILDING STRUCTURE FROM MINIMUM TWO (2) LOCATIONS. CORNER OF EACH TO BE SUPPORTED. POINT ON CHAINS TO BE SECURED. INSTALLATION TO MEET SEISMIC REQUIREMENTS.
  - ALL LIGHTING FIXTURES NORMAL / EMERGENCY, EXIT LIGHTING TO BE CONNECTED AND SWITCHED AS INDICATED VIA A JUNCTION BOX, CONDUIT AND WIRING SYSTEM AS SPECIFIED.
  - PROVIDE ALL LIGHTING CONTROL WIRING, LINE VOLTAGE (120V), LOW VOLTAGE LIGHTING CIRCUIT, AND CONTROL WIRING VIA CEILING SPACE MOUNTED JUNCTION BOX, CONDUIT AND WIRING SYSTEM TO END DEVICE(S). SENSORS AND / OR MANUAL SWITCHES MAY BE EITHER INDIVIDUALLY WIRED OR WIRED IN TANDEM AS PER LIGHTING CONTROL SCHEDULES. REFER TO LIGHTING CONTROL SCHEDULE AND DETAIL ON DRAWINGS.
  - COORDINATE WITH LUMINAIRE MANUFACTURE AND LIGHTING CONTROLS MANUFACTURES FOR ALL WIRING / CABLE TYPES REQUIRED BETWEEN LIGHTING CONTROL DEVICES (ROOM CONTROLS, SWITCHES, SENSORS, RELAYS) AND LUMINAIRE DRIVERS TO ENSURE COMPLETE AND OPERATIONAL SYSTEMS IN EACH ROOM.

- SCHEMATIC NOTES:**
- PROVIDE 120V NORMAL POWER C/W NEW JUNCTION BOX CONDUIT AND WIRING SYSTEM. LIGHTING CIRCUIT (CKT) AS INDICATED ON LIGHTING LAYOUT DRAWINGS.
  - PROVIDE 120V EMERGENCY POWER C/W NEW JUNCTION BOX CONDUIT AND WIRING SYSTEM. LIGHTING CIRCUIT (CKT) AS INDICATED ON LIGHTING LAYOUT DRAWINGS.
  - PROVIDE CAT5 PLENUM RATED LIGHTING SYSTEM CONTROL CABLING C/W JUNCTION BOX, CONDUIT RACEWAY SYSTEM. NOTE WITHIN SAME ROOM BETWEEN CONTROLLERS CAT5 CABLES MAY BE ROUTED WITHOUT CONDUIT RACEWAY IN ACCESSIBLE CEILING SPACES.
  - PROVIDE NEW 0-10V DIMMING CONTROL WIRING C/W NEW JUNCTION BOX CONDUIT AND WIRING SYSTEM. FROM CONTROLLER TO LIGHTING FIXTURES AND BETWEEN LIGHTING FIXTURES AS INDICATED.
  - PROVIDE NEW 0-10V TUNABLE WHITE (CCT) CONTROL WIRING C/W NEW JUNCTION BOX CONDUIT AND WIRING SYSTEM. FROM CONTROLLER TO LIGHTING FIXTURES AND BETWEEN LIGHTING FIXTURES AS INDICATED.
  - PROVIDE NORMAL POWER SENSING C/W NEW JUNCTION BOX CONDUIT AND WIRING SYSTEM. LIGHTING CIRCUIT (CKT) AS INDICATED ON LIGHTING LAYOUT DRAWINGS.

WING 'B'

WING 'C'

WING 'A'

Key Plan

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NO.	ISSUED	BY	DATE

Orientation

Seal

Seal

UNIVERSITY OF GUELPH

Design, Engineering & Construction  
Physical Resources  
Guelph, Ontario. N1G 2W1

Consultant

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Project

**BUILDING #046  
RENOVATIONS**

Drawing Title

**ELECTRICAL  
LIGHTING CONTROL  
SCHEMATICS SHEET No.1**

Project No.

**504034**

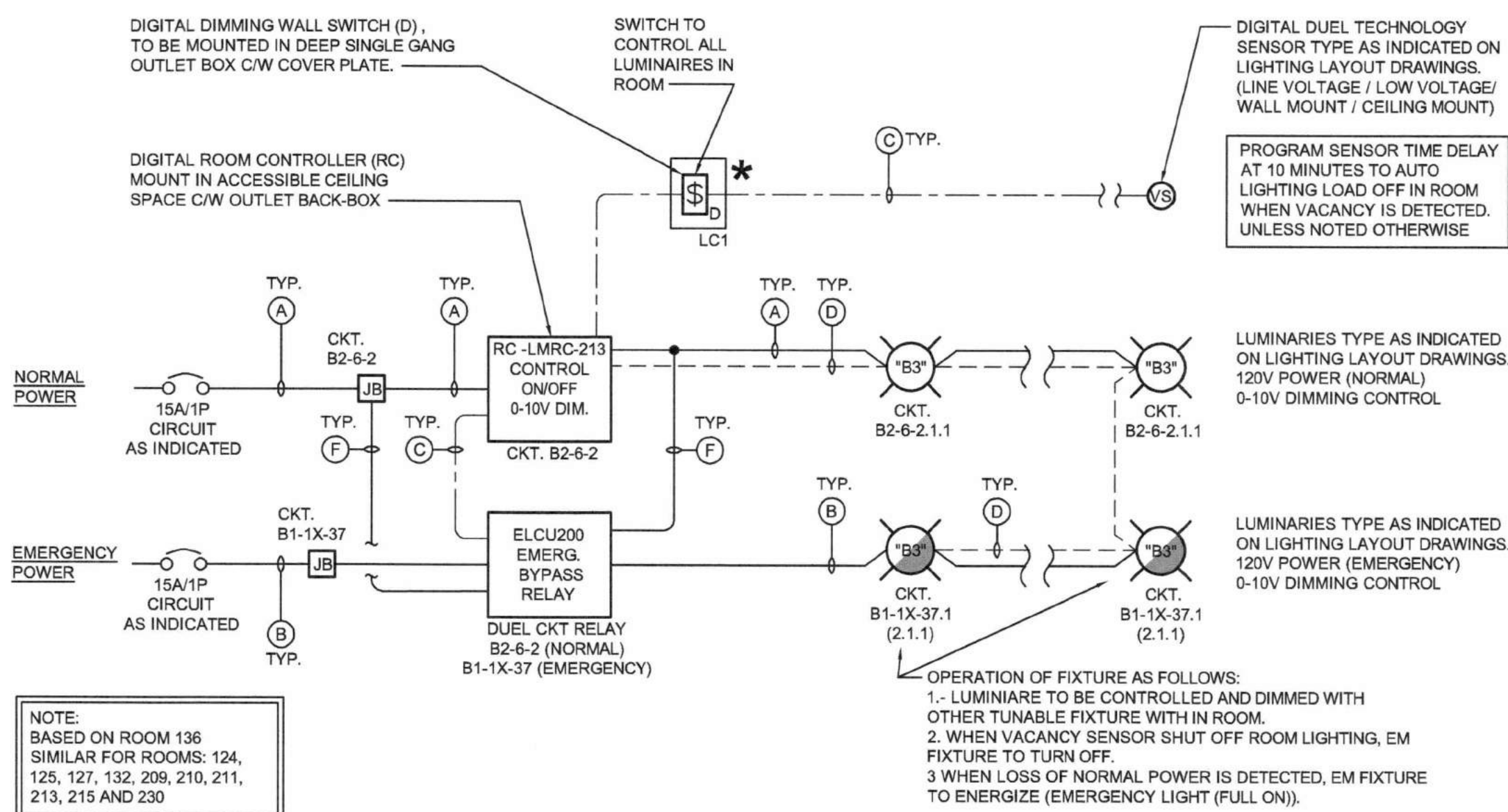
Location

**UNIVERSITY OF GUELPH  
BUILDING #046**

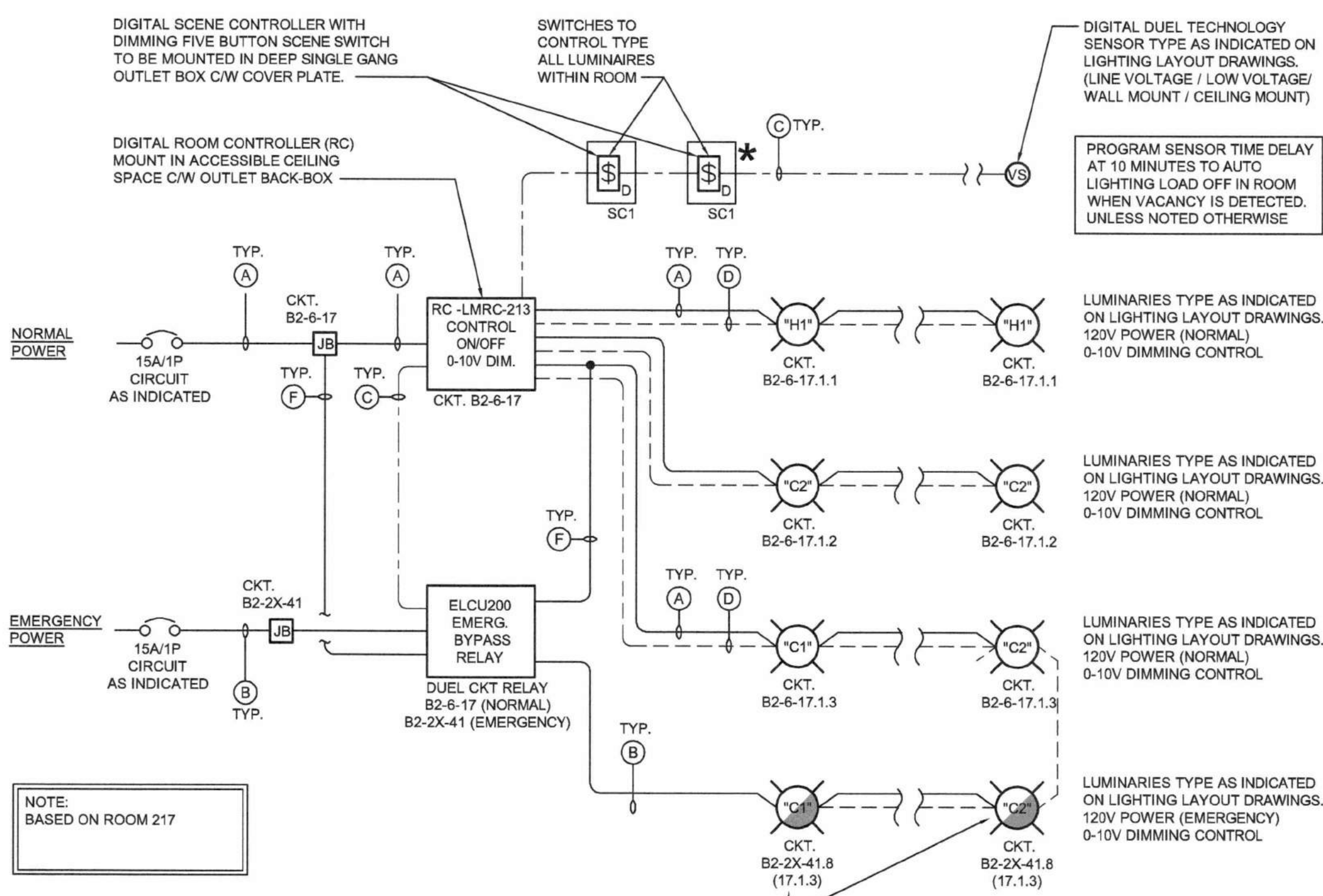
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Drawn by	M.C.D.	Drawing No.	E15
Checked By	H.M.		
Approved By	H.M.		
JLR #	27915		
Cad File No.	----		

of 170



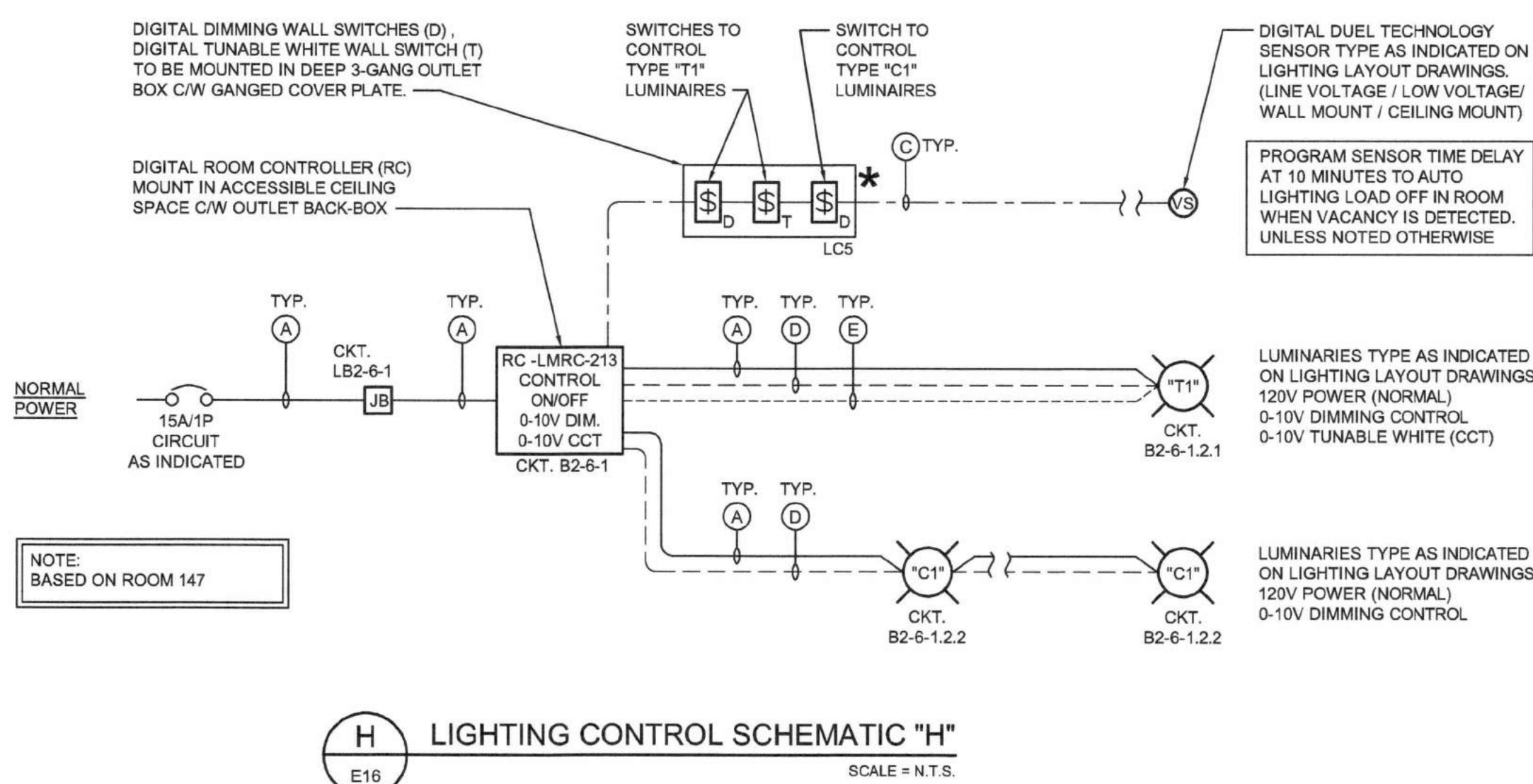


**F** LIGHTING CONTROL SCHEMATIC "F"  
E16 SCALE = N.T.S.

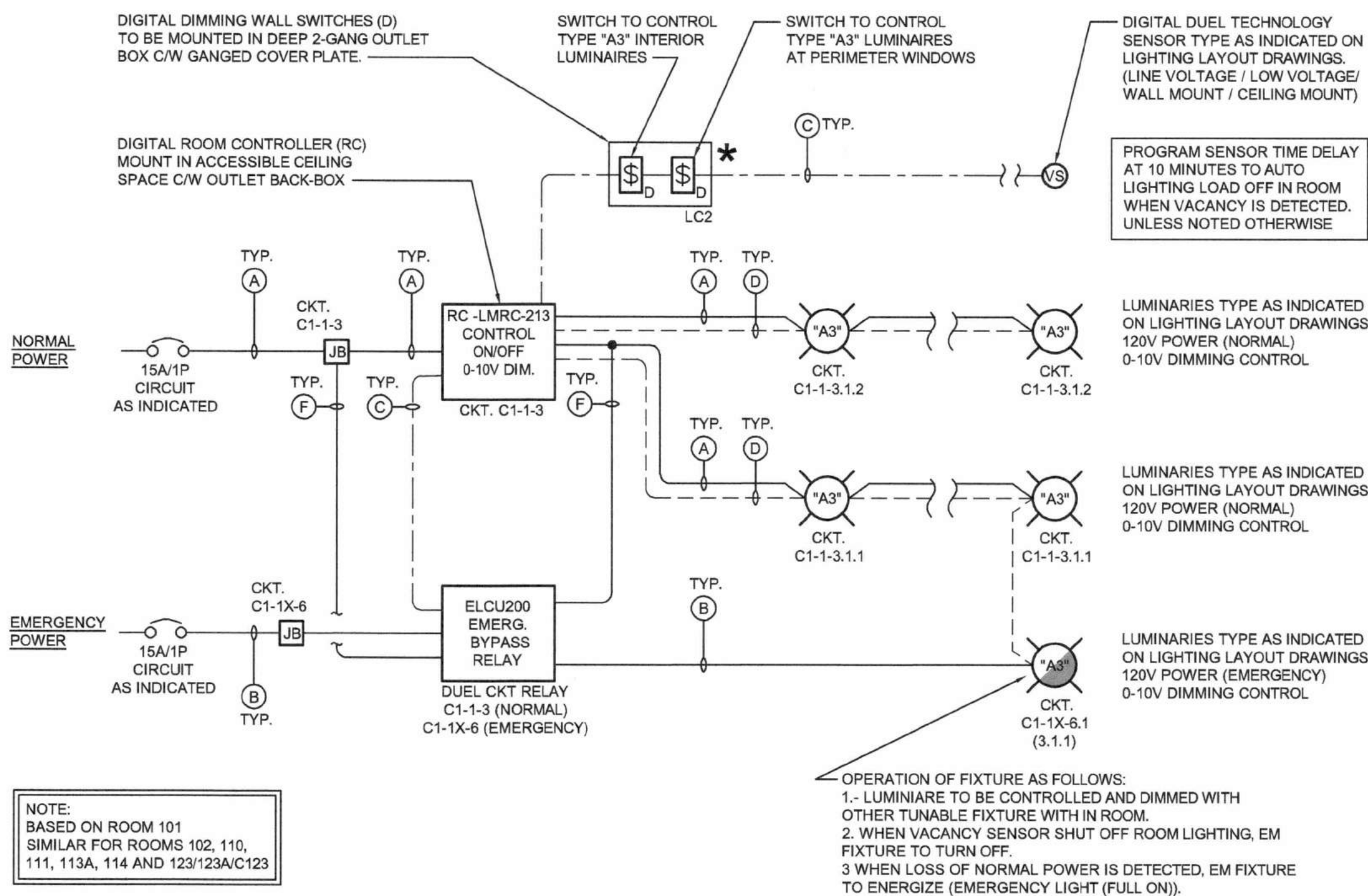


**G** LIGHTING CONTROL SCHEMATIC "G"  
E16 SCALE = N.T.S.

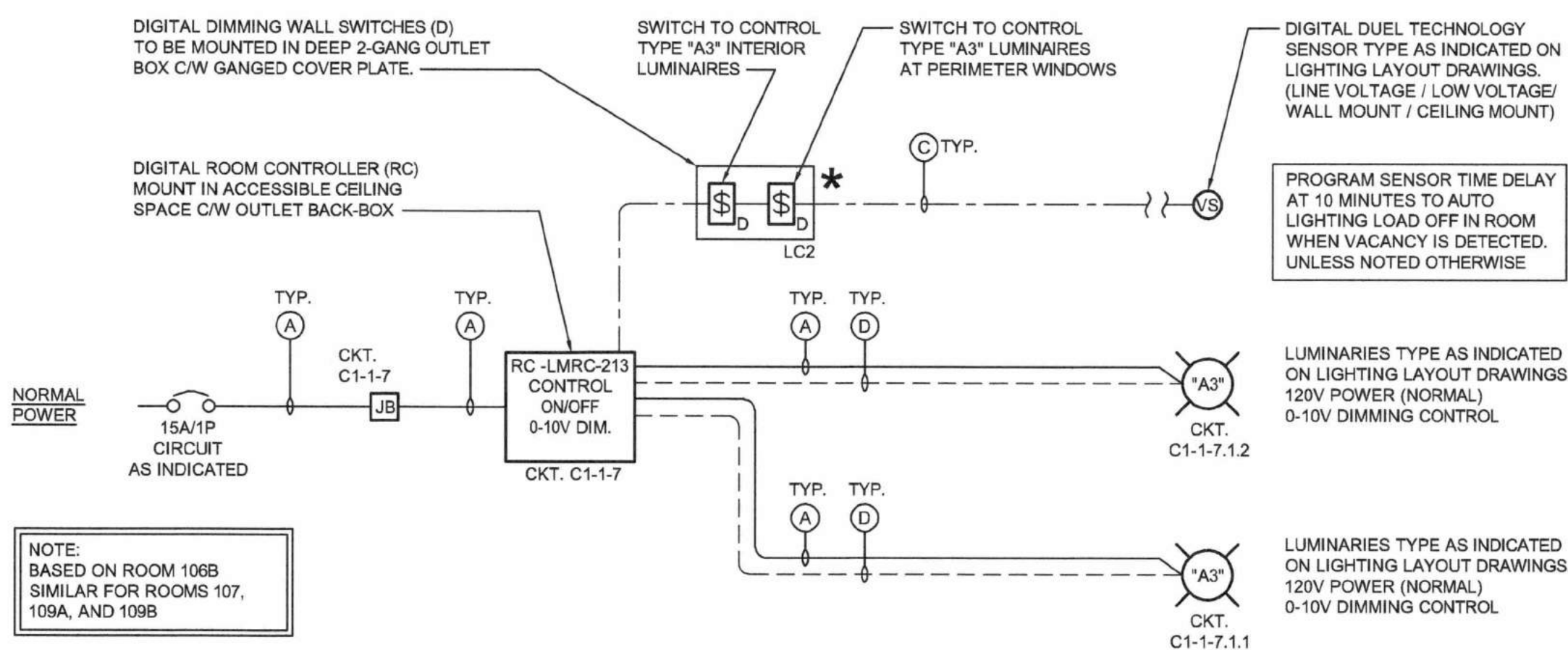
LIGHTING CONTROLS MANUFACTURE AND/OR REPRESENTATIVE TO PROVIDE  
DETAILED WIRING DIAGRAMS BASED ON THE LIGHTING CONTROL SCHEMATIC'S  
PROVIDE ON THESE DRAWINGS FOR EACH TYPE / INDIVIDUAL CONTROL SYSTEM  
OUTLINED / SHOWN.  
DETAILED DIAGRAMS TO IDENTIFYING ALL PARTS, CONTROLLERS, DEVICES,  
WIRING AND CONNECTION POINTS REQUIRED FOR COMPLETE AND OPERATIONAL  
LIGHTING CONTROL SYSTEMS.  
MANUFACTURES DETAILED WIRING DIAGRAMS TO BE SUBMITTED TO ELECTRICAL  
CONTRACTOR AND ELECTRICAL ENGINEER FOR RECORDS, SHOP DRAWINGS,  
EACH DIAGRAM TO BE INCLUDED IN BUILDING OWNERS OPERATION AND  
MAINTENANCE MANUALS.



**H** LIGHTING CONTROL SCHEMATIC "H"  
E16 SCALE = N.T.S.



**J** LIGHTING CONTROL SCHEMATIC "J"  
E16 SCALE = N.T.S.



**K** LIGHTING CONTROL SCHEMATIC "K"  
E16 SCALE = N.T.S.

## LIGHTING CONTROL DEVICES:

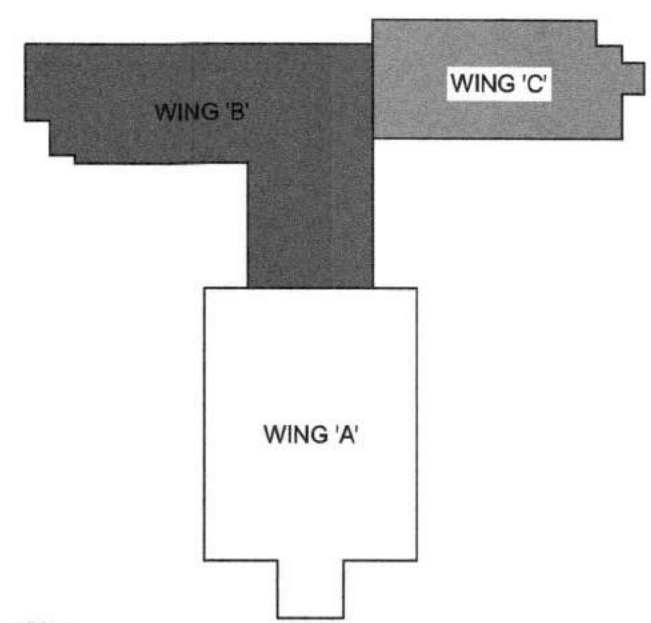
SC1	5-BUTTON MULTI SCENE CONTROLLER 4 SCENE BUTTONS AND DIMMER BUTTON (LOW VOLTAGE LMRJ CABLE CONNECTION) - WATTSTOPPER - MODEL # LMSW-105-W - ONE COMMON WHITE COVER PLATE
LC1	SINGLE (2) GANG ON / OFF / DIMMER WALL SWITCH WITH VISUAL LED BAR GRAPH INDICATING RELATIVE LIGHTING LEVEL (LOW VOLTAGE LMRJ CABLE CONNECTION) - WATTSTOPPER - MODEL # LMDM-101-W - ONE COMMON WHITE COVER PLATE
LC2	TWO (2) GANG ON / OFF / DIMMER WALL SWITCHES WITH VISUAL LED BAR GRAPH INDICATING RELATIVE LIGHTING LEVEL (LOW VOLTAGE LMRJ CABLE CONNECTION) - SWITCH 1: WATTSTOPPER - MODEL # LMDM-101-W - SWITCH 2: WATTSTOPPER - MODEL # LMDM-101-W - TWO (2) SWITCHES / ONE COMMON WHITE COVER PLATE
LC3	THREE (3) GANG ON / OFF / DIMMER WALL SWITCHES WITH VISUAL LED BAR GRAPH INDICATING RELATIVE LIGHTING LEVEL (LOW VOLTAGE LMRJ CABLE CONNECTION) - SWITCH 1: WATTSTOPPER - MODEL # LMDM-101-W - SWITCH 2: WATTSTOPPER - MODEL # LMDM-101-W - SWITCH 3: WATTSTOPPER - MODEL # LMDM-101-W - THREE (3) SWITCHES / ONE COMMON WHITE COVER PLATE
LC4	TWO (2) GANG ON / OFF / DIMMER WALL SWITCHES WITH VISUAL LED BAR GRAPH INDICATING RELATIVE LIGHTING LEVEL (LOW VOLTAGE LMRJ CABLE CONNECTION) - SWITCH 1: WATTSTOPPER - MODEL # LMDM-101-W - SWITCH 2: WATTSTOPPER - MODEL # LMDM-101-W - SWITCH 3: WATTSTOPPER - MODEL # LMDM-101-W - ONE (1) SWITCHES REQUIRED FOR CONTROL OF DIMMING LUMINAIRES - SWITCH 2: WATTSTOPPER - MODEL # LMDM-101-G - ONE (2) SWITCH REQUIRED FOR CONTROL OF TUNABLE WHITE (CCT) CORRELATED COLOR TEMPERATURE LEVEL WITHIN LUMINAIRES BEING CONTROLLED VIA SWITCH 1. - TWO (2) SWITCHES / ONE COMMON WHITE COVER PLATE
LC5	TWO (2) GANG ON / OFF / DIMMER WALL SWITCHES WITH VISUAL LED BAR GRAPH INDICATING RELATIVE LIGHTING LEVEL (LOW VOLTAGE LMRJ CABLE CONNECTION) - SWITCH 1: WATTSTOPPER - MODEL # LMDM-101-W - SWITCH 2: WATTSTOPPER - MODEL # LMDM-101-G - ONE (2) SWITCH REQUIRED FOR CONTROL OF TUNABLE WHITE (CCT) CORRELATED COLOR TEMPERATURE LEVEL WITHIN LUMINAIRES BEING CONTROLLED VIA SWITCH 1. - SWITCH 3: WATTSTOPPER - MODEL # LMDM-101-G - ONE (1) SWITCHES REQUIRED FOR CONTROL OF DIMMING OTHER LUMINAIRES WITHINROOM AS INDICATED. - THREE (3) SWITCHES / ONE COMMON WHITE COVER PLATE
DV	SINGLE GANG ON / OFF / DIMMER VACANCY SWITCH 120V (MANUAL ON / AUTO OFF) C/W 0-10V DIMMING - WATTSTOPPER - MODEL # DW-311-W - ONE COMMON WHITE COVER PLATE
V	SINGLE GANG ON / OFF / VACANCY SWITCH 120V (MANUAL ON / AUTO OFF) C/W 0-10V DIMMING - WATTSTOPPER - MODEL # DW-301-W - ONE COMMON WHITE COVER PLATE
A	WALL MOUNT DUET TECHNOLOGY LOW VOLTAGE VACANCY SENSOR (MANUAL ON / AUTO OFF) (LMRJ CABLE CONNECTION) WATTSTOPPER - MODEL # LMDX-100-W
B	WALL MOUNT DUET TECHNOLOGY LOW VOLTAGE OCCUPANCY SENSOR (AUTO ON / AUTO OFF) (LMRJ CABLE CONNECTION) WATTSTOPPER - MODEL # LMDX-100-W
C	CEILING MOUNT DUET TECHNOLOGY LOW VOLTAGE VACANCY SENSOR (MANUAL ON / AUTO OFF) (LMRJ CABLE CONNECTION) WATTSTOPPER - MODEL # LMDC-100-W
D	CEILING MOUNT DUET TECHNOLOGY LOW VOLTAGE OCCUPANCY SENSOR (AUTO ON / AUTO OFF) (LMRJ CABLE CONNECTION) WATTSTOPPER - MODEL # LMDC-100-W
F	CEILING MOUNT DUET TECHNOLOGY 120V OCCUPANCY SENSOR (AUTO ON / AUTO OFF) (120V WIRING WITH 0-10V CONTROL WIRING WHERE INDICATED) WATTSTOPPER - MODEL # DT-355-W / CA-1 ADAPTER (120V)

## GENERAL NOTES:

- REFER TO LIGHTING LAYOUT DRAWINGS FOR ROOM CONTROLLER RC TYPES EI "A" DENOTES LIGHTING CONTROL SCHEMATIC "A" CONTROL PACKAGE.
- REFER TO LIGHTING LAYOUT DRAWINGS FOR QUANTITY AND TYPE OF LUMINAIRES AND CONTROL DEVICES IN EACH ROOM C/W LIGHTING CIRCUIT (CKT) NUMBERS.
- REFER TO LIGHTING LAYOUT DRAWINGS FOR QUANTITY AND TYPE OF LUMINAIRES AND CONTROL DEVICES IN EACH ROOM C/W LIGHTING CIRCUIT (CKT) NUMBERS.
- REFER TO LUMINAIRE SCHEDULE FOR LIGHTING FIXTURE TYPE DESCRIPTION, MANUFACTURES CAT# AND MOUNTING INFORMATION.
- GANG ALL LIGHT SWITCHES TOGETHER WHERE POSSIBLE UNDER ONE (1) COMMON COVER PLATE.
- ALL LUMINAIRES TO BE CHAINED. USE GALVANIZED COIL CHAIN TO SUPPORT LUMINAIRE(S) TO BUILDING STRUCTURE FROM MINIMUM TWO (2) LOCATIONS. CORNER OF EACH TO BE SUPPORTED. POINT ON CHAINS TO BE SECURED. INSTALLATION TO MEET SEISMIC REQUIREMENTS.
- ALL LIGHTING FIXTURES NORMAL / EMERGENCY, EXIT LIGHTING TO BE CONNECTED AND SWITCHED AS INDICATED VIA A JUNCTION BOX, CONDUIT AND WIRING SYSTEM AS SPECIFIED.
- PROVIDE ALL LIGHTING CONTROL WIRING, LINE VOLTAGE (120V), LOW VOLTAGE LIGHTING CIRCUIT, AND CONTROL WIRING VIA CEILING SPACE MOUNTED JUNCTION BOX, CONDUIT AND WIRING SYSTEM TO END DEVICE(S). SENSORS AND / OR MANUAL SWITCHES MAY BE EITHER INDIVIDUALLY WIRED OR WIRED IN TANDEM AS PER LIGHTING CONTROL SCHEDULES. REFER TO LIGHTING CONTROL SCHEDULE AND DETAIL ON DRAWINGS.
- COORDINATE WITH LUMINAIRE MANUFACTURE AND LIGHTING CONTROLS MANUFACTURES FOR ALL WIRING / CABLE TYPES REQUIRED BETWEEN LIGHTING CONTROL DEVICES ( ROOM CONTROLS , SWITCHES, SENSORS, RELAYS ) AND LUMINAIRE DRIVERS TO ENSURE COMPLETE AND OPERATIONAL SYSTEMS IN EACH ROOM.

## SCHEMATIC NOTES:

- PROVIDE 120V NORMAL POWER C/W NEW JUNCTION BOX CONDUIT AND WIRING SYSTEM. LIGHTING CIRCUIT (CKT) AS INDICATED ON LIGHTING LAYOUT DRAWINGS.
- PROVIDE 120V EMERGENCY POWER C/W NEW JUNCTION BOX CONDUIT AND WIRING SYSTEM. LIGHTING CIRCUIT (CKT) AS INDICATED ON LIGHTING LAYOUT DRAWINGS.
- PROVIDE CAT5 PLENUM RATED LIGHTING SYSTEM CONTROL CABLING C/W JUNCTION BOX, CONDUIT RACEWAY SYSTEM. NOTE WITHIN SAME ROOM BETWEEN CONTROLLERS CAT5 CABLES MAY BE ROUTED WITHOUT CONDUIT RACEWAY IN ACCESSIBLE CEILING SPACES.
- PROVIDE NEW 0-10V DIMMING CONTROL WIRING C/W NEW JUNCTION BOX CONDUIT AND WIRING SYSTEM. FROM CONTROLLER TO LIGHTING FIXTURES AND BETWEEN LIGHTING FIXTURES AS INDICATED.
- PROVIDE NEW 0-10V TUNABLE WHITE (CCT) CONTROL WIRING C/W NEW JUNCTION BOX CONDUIT AND WIRING SYSTEM. FROM CONTROLLER TO LIGHTING FIXTURES AND BETWEEN LIGHTING FIXTURES AS INDICATED.
- PROVIDE NORMAL POWER SENSING C/W NEW JUNCTION BOX CONDUIT AND WIRING SYSTEM. LIGHTING CIRCUIT (CKT) AS INDICATED ON LIGHTING LAYOUT DRAWINGS.



Key Plan

DO NOT SCALE DRAWINGS:

Contractors must check and verify all site conditions. Notify the Owner's Representative in writing before proceeding with the work if discrepancies are evident between the drawings and the site condition. No extras to the contract will be allowed if discrepancies were evident prior to start of work.

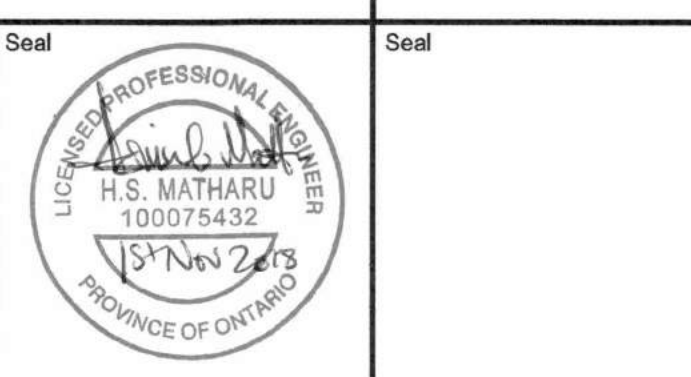
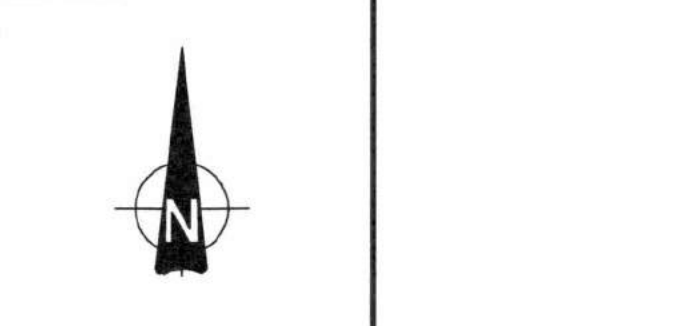
UNEXPECTED DISCOVERY OF ASBESTOS:

Where a friable material is discovered during construction, renovations and/or demolition, and it is suspected to contain asbestos, the Contractor must stop all work that may disturb the material. The Contractor shall advise the Owner of the discovery and await instructions from the owner.

A = Detail number  
B = Drawing number where detailed


0	ISSUED FOR PERMIT & TENDER	TA	NOV 2, 2018
NO.	ISSUED	BY	DATE

Orientation



**UNIVERSITY OF GUELPH**

Design, Engineering & Construction  
Physical Resources  
Guelph, Ontario. N1G 2W1

Consultant www.jrichards.ca



Project  
**BUILDING #046 RENOVATIONS**

Drawing Title  
**ELECTRICAL LIGHTING CONTROL SCHEMATICS SHEET No.2**

Project No.  
**504034**

Location  
**UNIVERSITY OF GUELPH BUILDING #046**

Scale  
N.T.S.

Date  
NOV 2, 2018

Drawn by  
M.C.D.

Checked By  
H.M.

Approved By  
H.M.

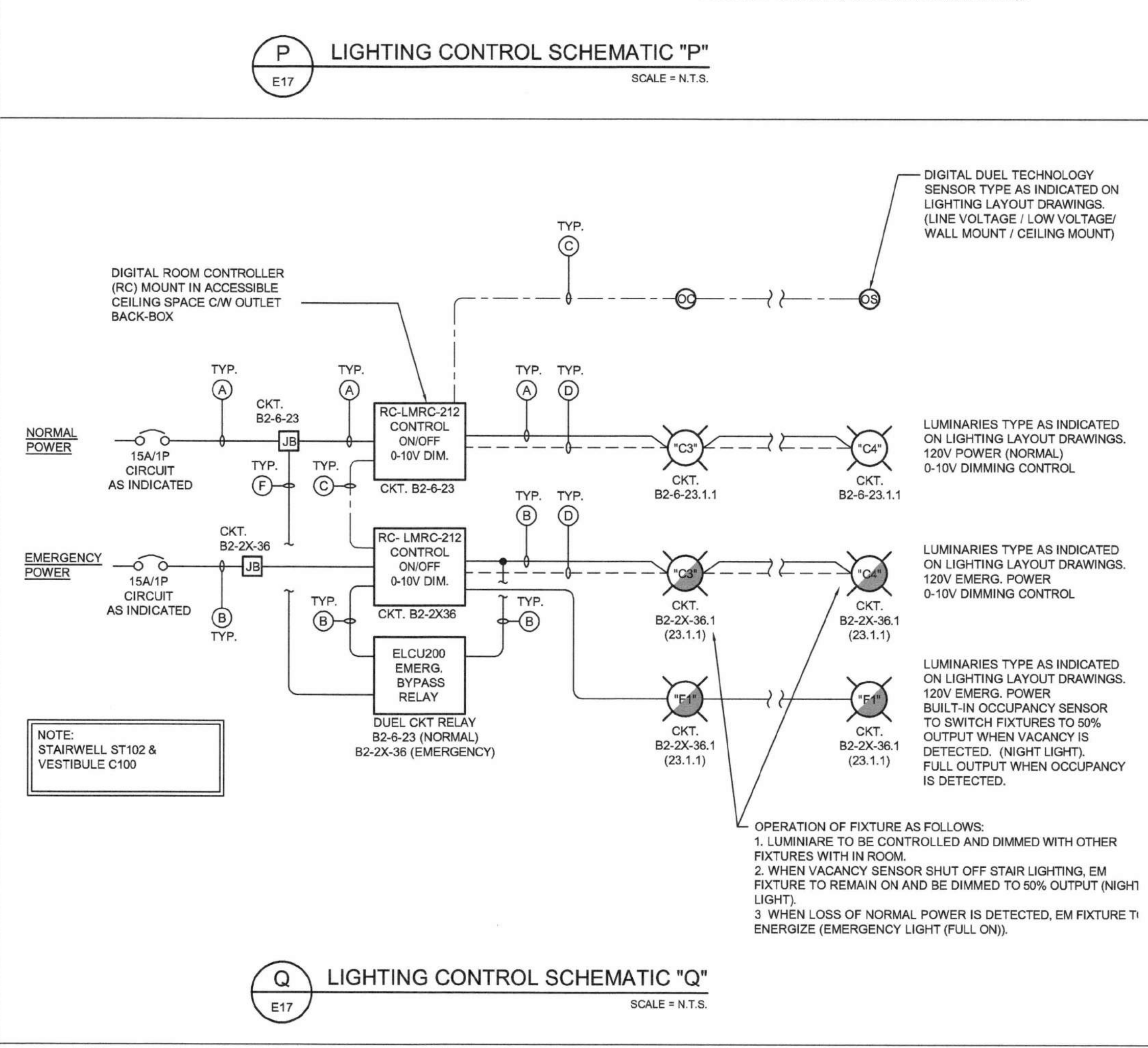
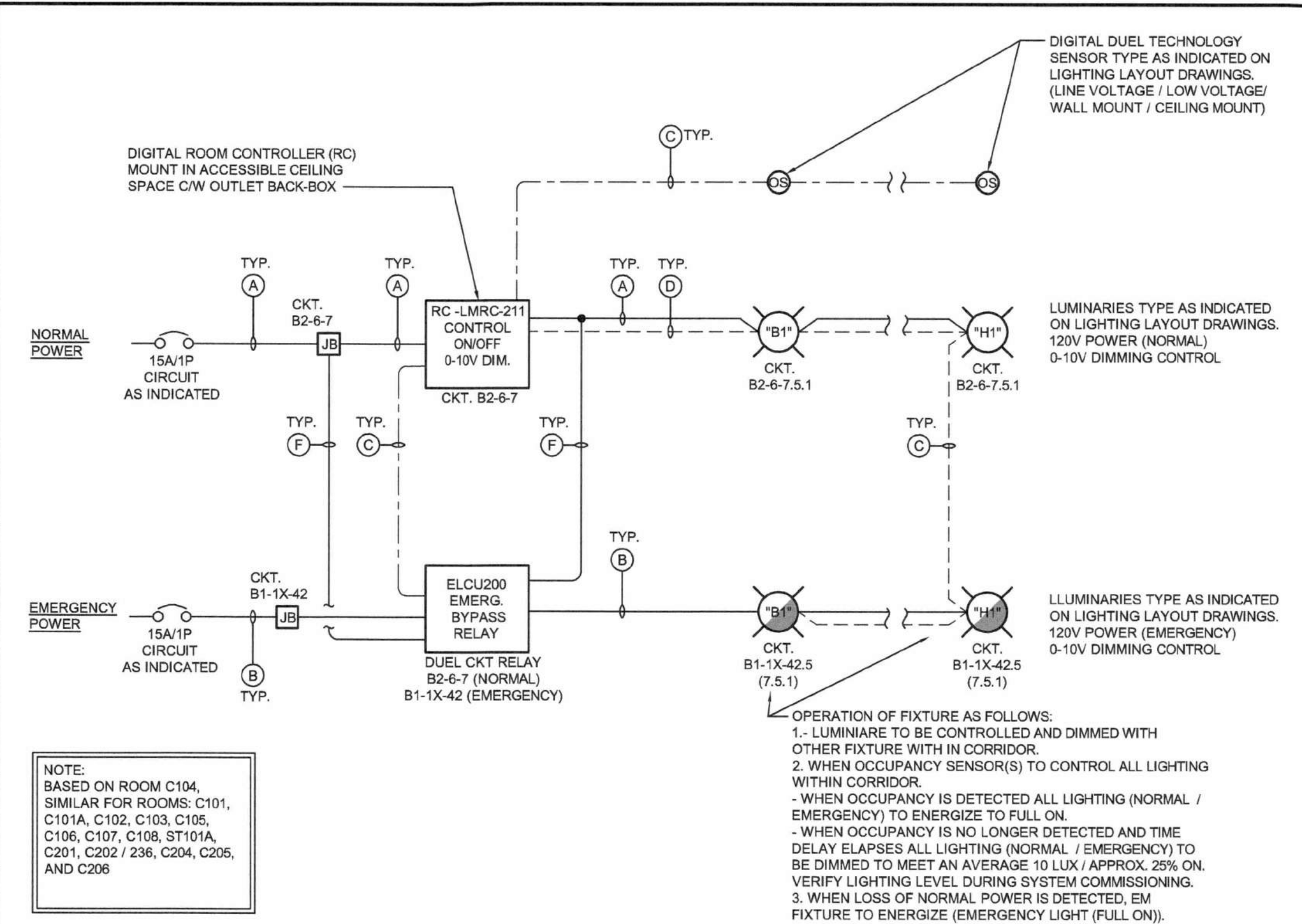
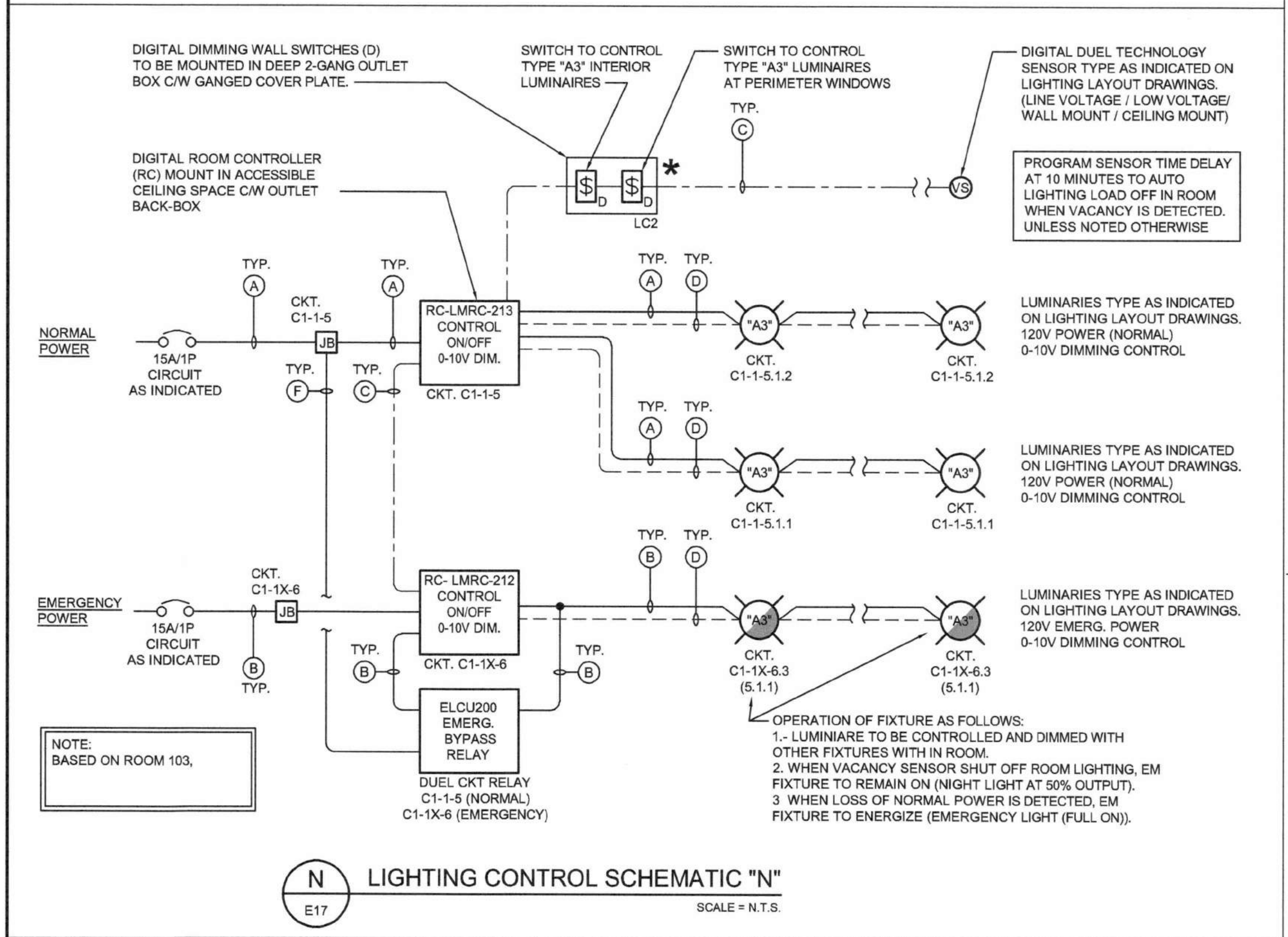
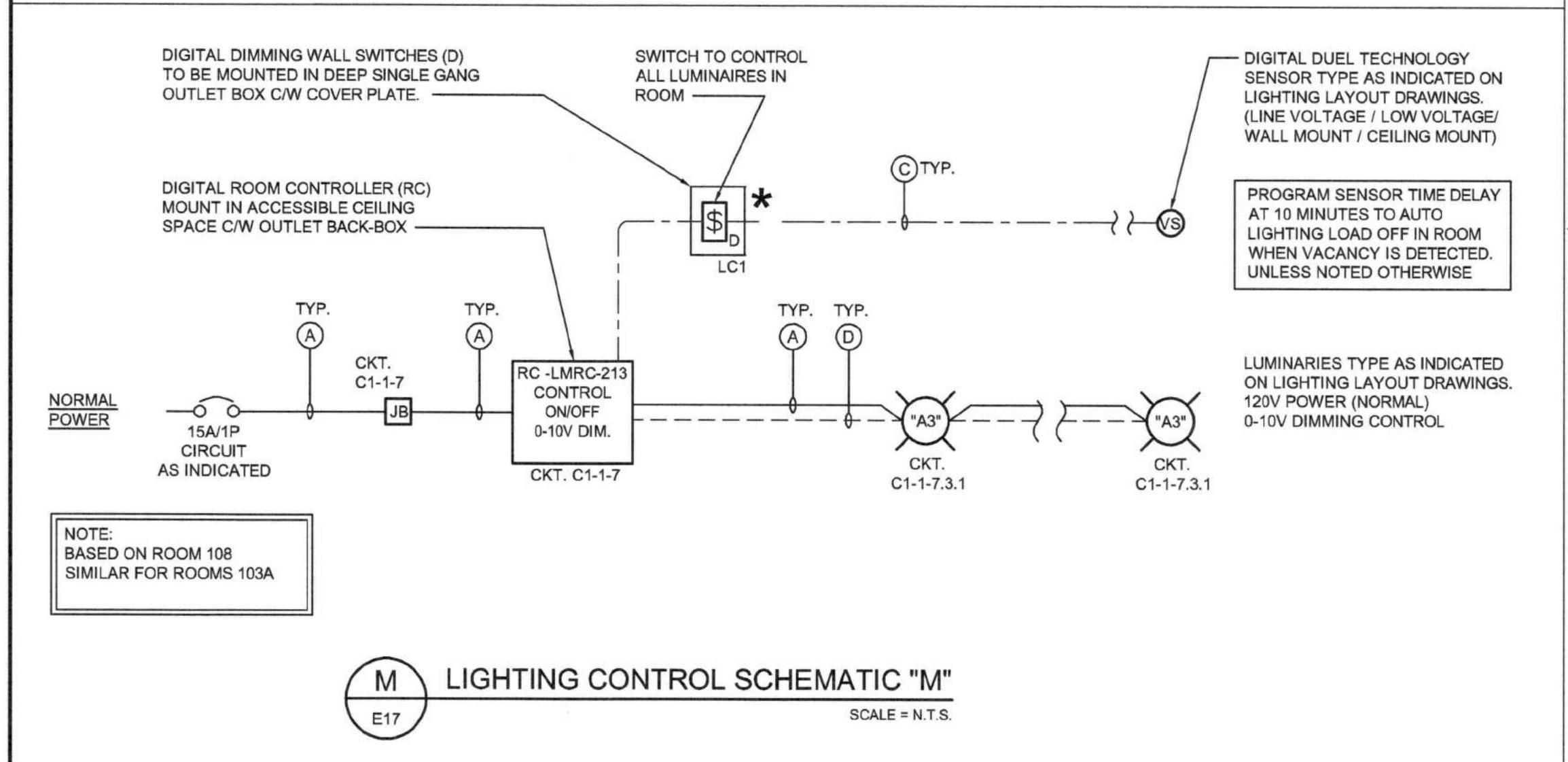
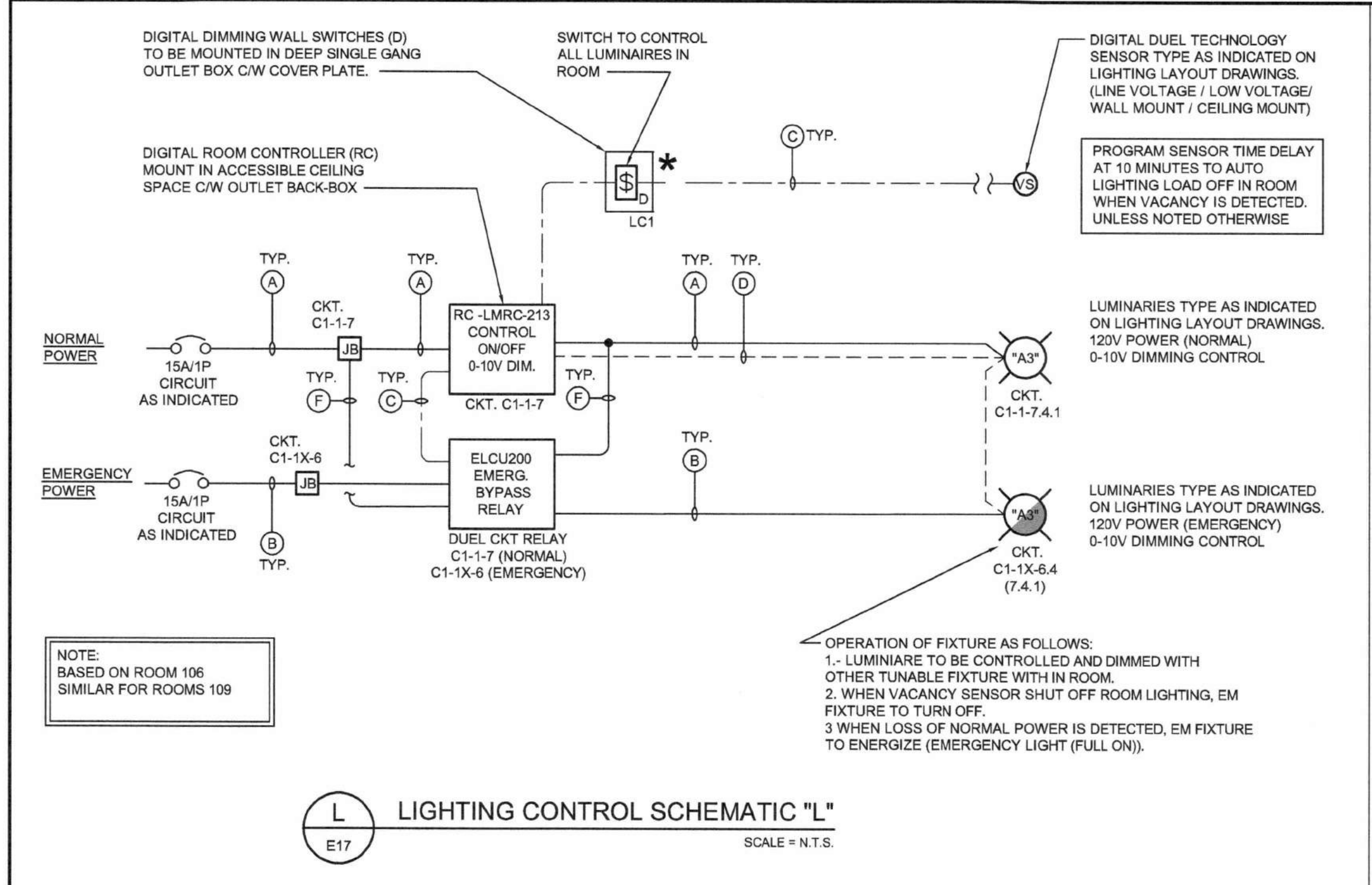
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of 170





LIGHTING CONTROLS MANUFACTURE AND/OR REPRESENTATIVE TO PROVIDE DETAILED WIRING DIAGRAMS BASED ON THE LIGHTING CONTROL SCHEMATIC(S) PROVIDED ON THESE DRAWINGS FOR EACH TYPE / INDIVIDUAL CONTROL SYSTEM OUTLINED / SHOWN. DETAILED DIAGRAMS TO IDENTIFYING ALL PARTS, CONTROLLERS, DEVICES, WIRING AND CONNECTION POINTS REQUIRED FOR COMPLETE AND OPERATIONAL LIGHTING CONTROL SYSTEMS. MANUFACTURERS DETAILED WIRING DIAGRAMS TO BE SUBMITTED TO ELECTRICAL CONTRACTOR AND ELECTRICAL ENGINEER FOR RECORDS, SHOP DRAWINGS, EACH DIAGRAM TO BE INCLUDED IN BUILDING OWNERS OPERATION AND MAINTENANCE MANUALS.

**LIGHTING CONTROL DEVICES:**

SC1	5-BUTTON MULTI SCENE CONTROLLER 4 SCENE BUTTONS AND DIMMER BUTTON (LOW VOLTAGE LMRJ CABLE CONNECTION) - WATTSTOPPER - MODEL # LMSW-105-W - ONE COMMON WHITE COVER PLATE
LC1	SINGLE (2) GANG ON / OFF / DIMMER WALL SWITCH WITH VISUAL LED BAR GRAPH INDICATING RELATIVE LIGHTING LEVEL (LOW VOLTAGE LMRJ CABLE CONNECTION) - WATTSTOPPER - MODEL # LMDM-101-W - ONE COMMON WHITE COVER PLATE
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- GENERAL NOTES:**
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  - REFER TO LIGHTING LAYOUT DRAWINGS FOR QUANTITY AND TYPE OF LUMINAIRES AND CONTROL DEVICES IN EACH ROOM C/W LIGHTING CIRCUIT (CKT) NUMBERS.
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  - ALL LIGHTING FIXTURES NORMAL / EMERGENCY, EXIT LIGHTING TO BE CONNECTED AND SWITCHED AS INDICATED VIA A JUNCTION BOX, CONDUIT AND WIRING SYSTEM AS SPECIFIED.
  - PROVIDE ALL LIGHTING CONTROL WIRING, LINE VOLTAGE (120V), LOW VOLTAGE LIGHTING CIRCUIT, AND CONTROL WIRING VIA CEILING SPACE MOUNTED JUNCTION BOX, CONDUIT AND WIRING SYSTEM TO END DEVICES(S). SENSORS AND / OR MANUAL SWITCHES MAY BE EITHER INDIVIDUALLY WIRED OR WIRED IN TANDEM AS PER LIGHTING CONTROL SCHEDULES. REFER TO LIGHTING CONTROL SCHEDULE AND DETAIL ON DRAWINGS.
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  - PROVIDE CATS PLENUM RATED LIGHTING SYSTEM CONTROL CABLING C/W JUNCTION BOX, CONDUIT RACEWAY SYSTEM. NOTE WITHIN SAME ROOM BETWEEN CONTROLLERS CATS CABLES MAY BE ROUTED WITHOUT CONDUIT RACEWAY IN ACCESSIBLE CEILING SPACES.
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NO.	ISSUED	BY	DATE

Orientation

Seal

**UNIVERSITY OF GUELPH**  
Design, Engineering & Construction  
Physical Resources  
Guelph, Ontario. N1G 2W1

Consultant

**J.R. J.L. Richards**  
ENGINEERS - ARCHITECTS - PLANNERS

Project

**BUILDING #046 RENOVATIONS**

Drawing Title

**ELECTRICAL LIGHTING CONTROL SCHEMATICS SHEET No.3**

Project No.

**504034**

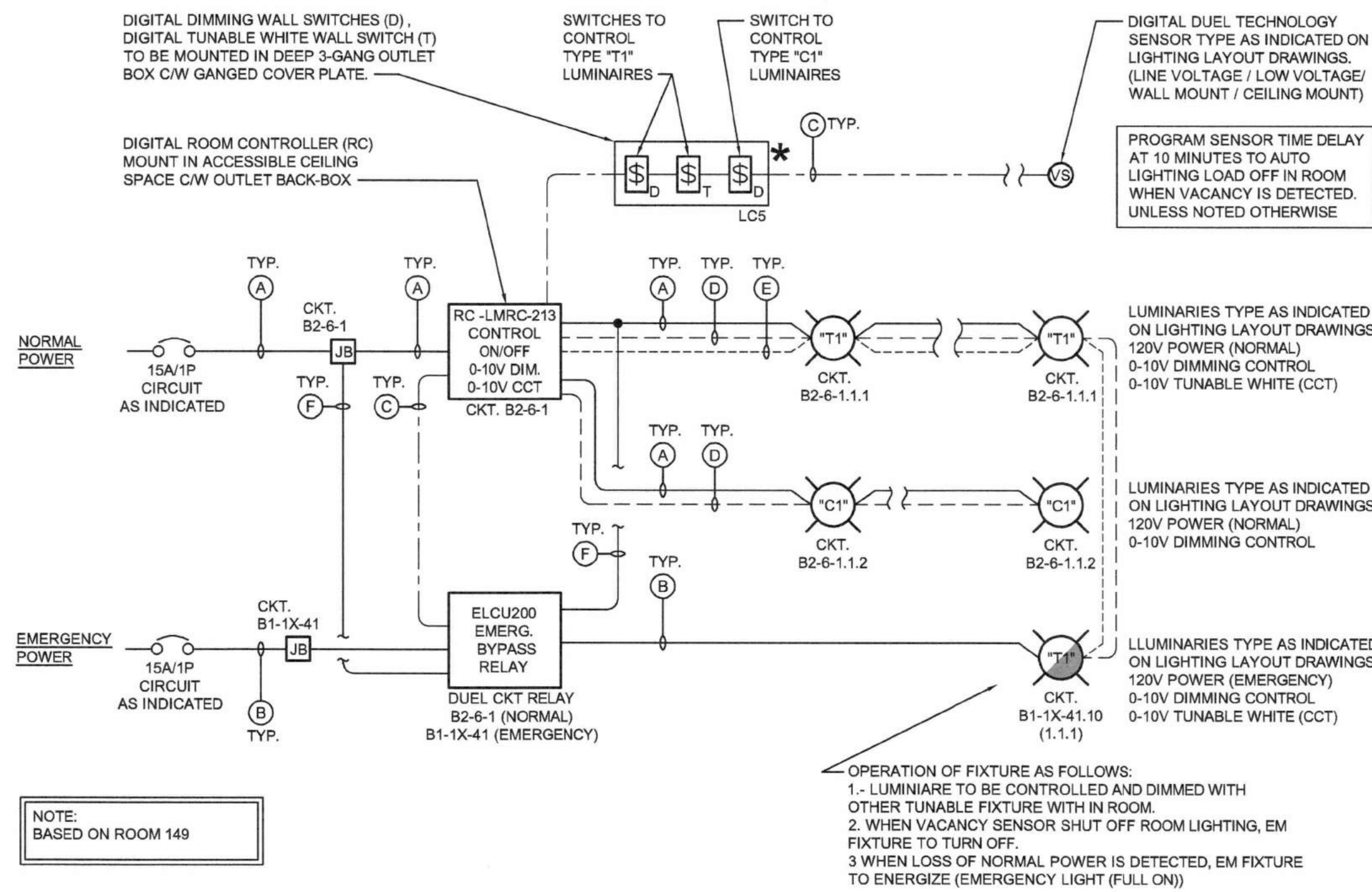
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**UNIVERSITY OF GUELPH BUILDING #046**

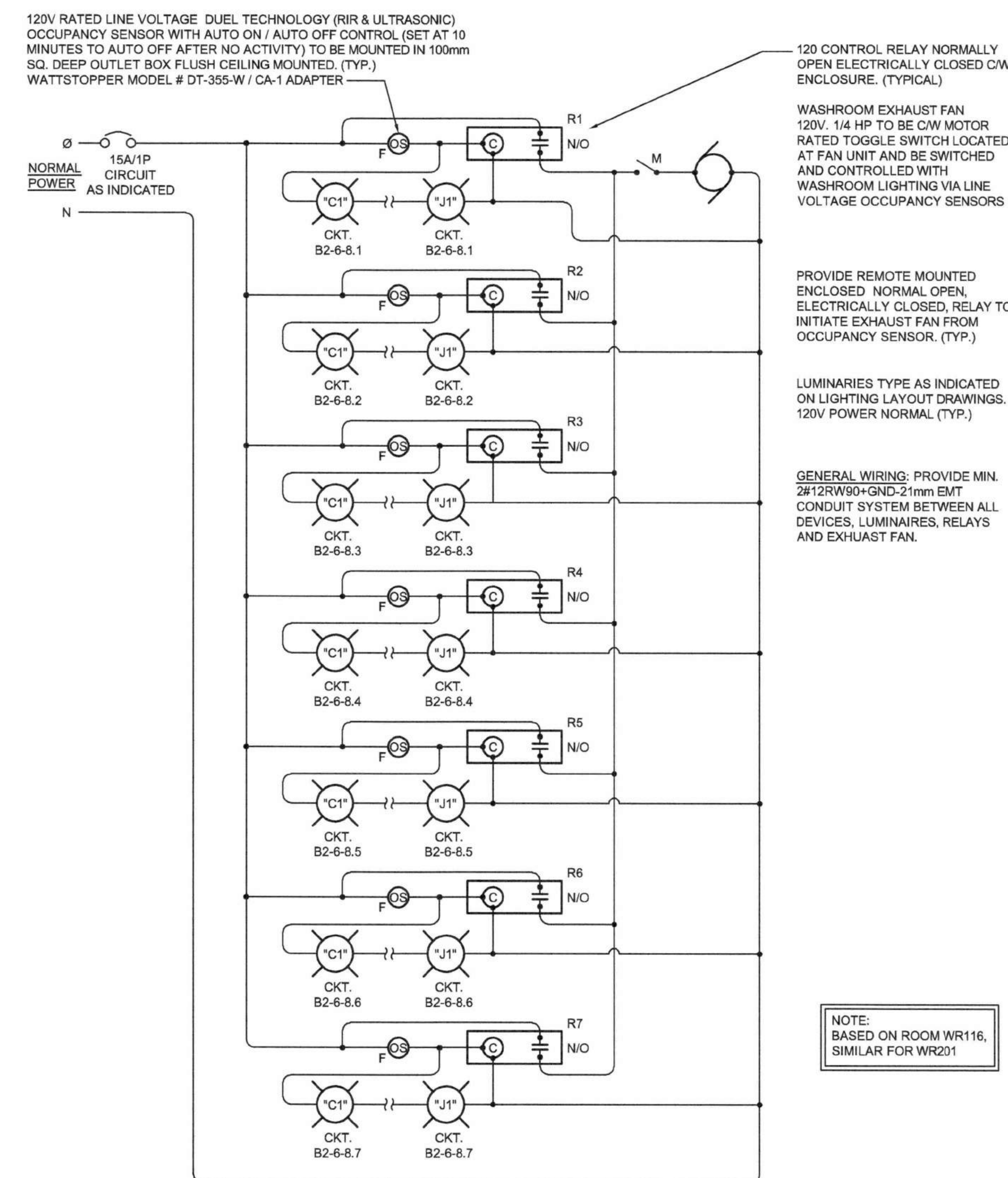
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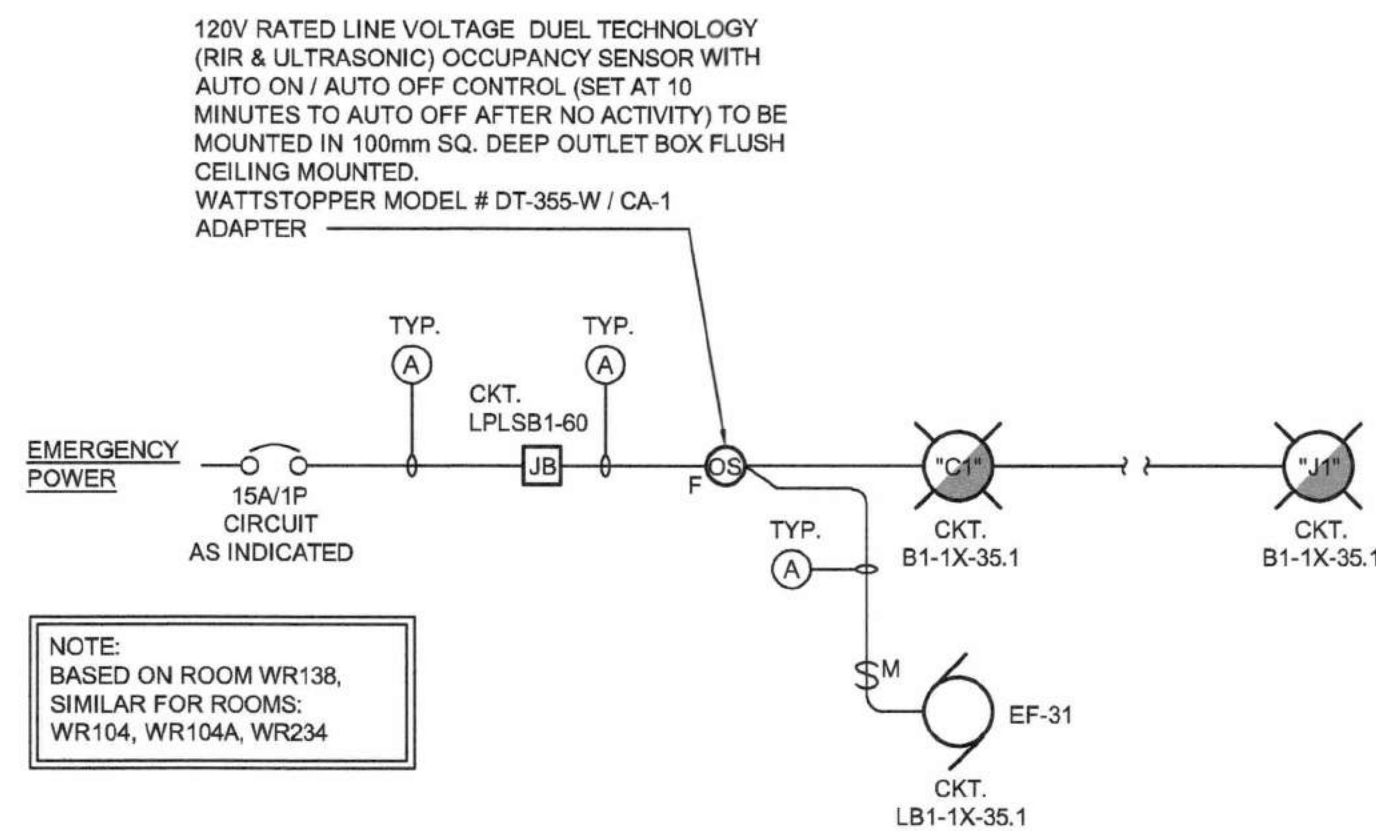




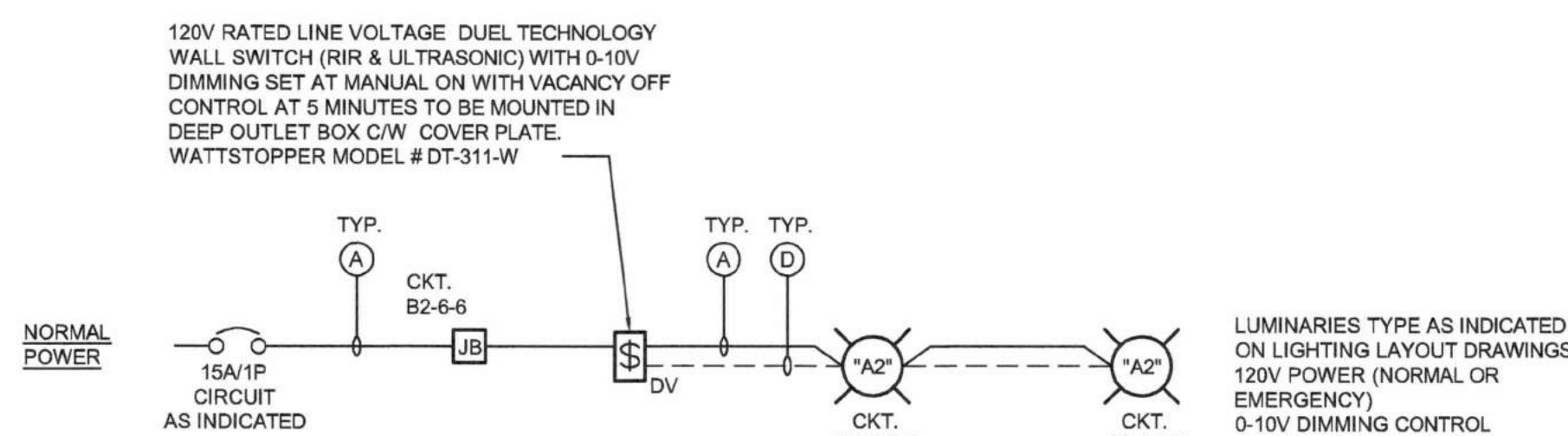
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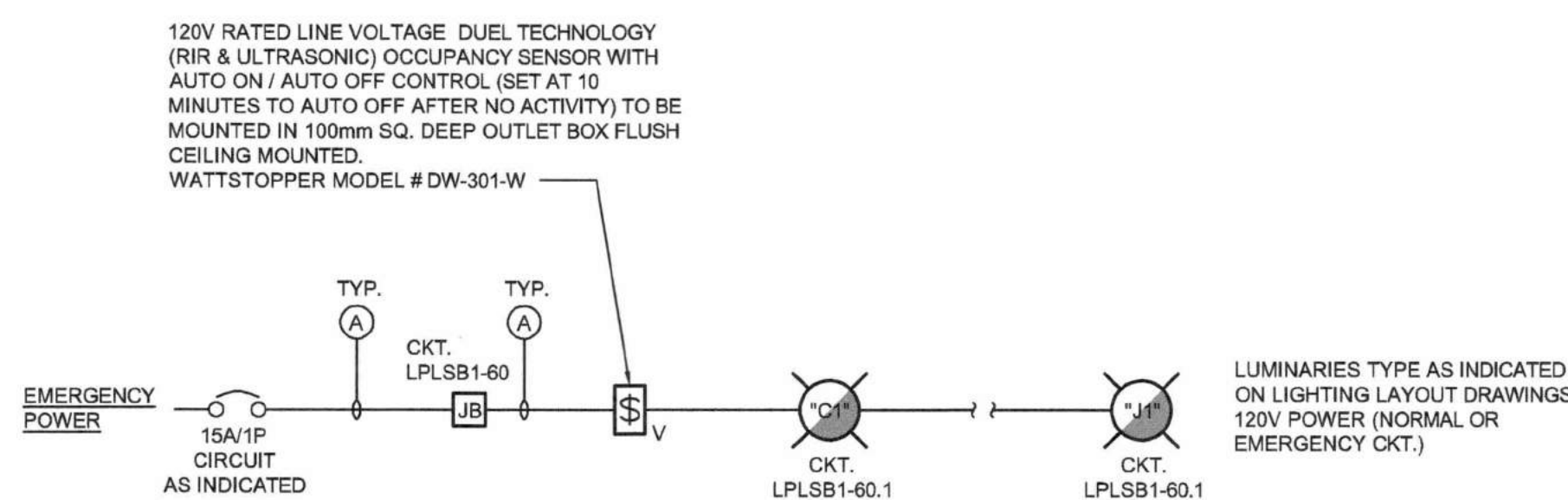
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**W LIGHTING CONTROL SCHEMATIC "W"**  
SCALE = N.T.S.



**X LIGHTING CONTROL SCHEMATIC "X"**  
SCALE = N.T.S.



**Y LIGHTING CONTROL SCHEMATIC "Y"**  
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MAINTENANCE MANUALS.

## LIGHTING CONTROL DEVICES:

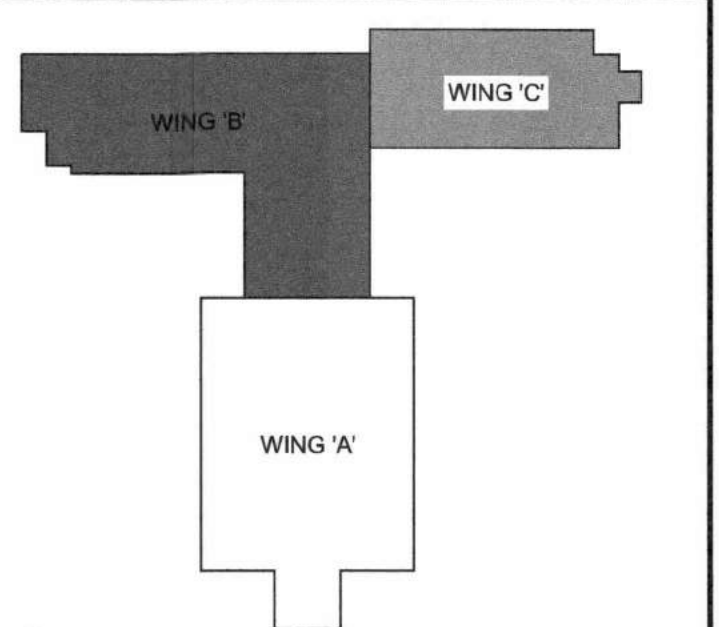
SC1	5-BUTTON MULTI SCENE CONTROLLER 4 SCENE BUTTONS AND DIMMER BUTTON (LOW VOLTAGE LMRJ CABLE CONNECTION) - WATTSTOPPER - MODEL # LMSW-105-W - ONE COMMON WHITE COVER PLATE
LC1	SINGLE (2) GANG ON / OFF / DIMMER WALL SWITCH WITH VISUAL LED BAR GRAPH INDICATING RELATIVE LIGHTING LEVEL (LOW VOLTAGE LMRJ CABLE CONNECTION) - WATTSTOPPER - MODEL # LMDM-101-W - ONE COMMON WHITE COVER PLATE
LC2	TWO (2) GANG ON / OFF / DIMMER WALL SWITCHES WITH VISUAL LED BAR GRAPH INDICATING RELATIVE LIGHTING LEVEL (LOW VOLTAGE LMRJ CABLE CONNECTION) - SWITCH 1: WATTSTOPPER - MODEL # LMDM-101-W - SWITCH 2: WATTSTOPPER - MODEL # LMDM-101-W - TWO (2) SWITCHES / ONE COMMON WHITE COVER PLATE
LC3	THREE (3) GANG ON / OFF / DIMMER WALL SWITCHES WITH VISUAL LED BAR GRAPH INDICATING RELATIVE LIGHTING LEVEL (LOW VOLTAGE LMRJ CABLE CONNECTION) - SWITCH 1: WATTSTOPPER - MODEL # LMDM-101-W - SWITCH 2: WATTSTOPPER - MODEL # LMDM-101-W - SWITCH 3: WATTSTOPPER - MODEL # LMDM-101-W - THREE (3) SWITCHES / ONE COMMON WHITE COVER PLATE
LC4	TWO (2) GANG ON / OFF / DIMMER WALL SWITCHES WITH VISUAL LED BAR GRAPH INDICATING RELATIVE LIGHTING LEVEL (LOW VOLTAGE LMRJ CABLE CONNECTION) - SWITCH 1: WATTSTOPPER - MODEL # LMDM-101-W - ONE (1) SWITCHES REQUIRED FOR CONTROL OF DIMMING LUMINAIRES - SWITCH 2: WATTSTOPPER - MODEL # LMDM-101-G - ONE (2) SWITCH REQUIRED FOR CONTROL OF TUNABLE WHITE (CCT) CORRELATED COLOR TEMPERATURE LEVEL WITHIN LUMINAIRES BEING CONTROLLED VIA SWITCH 1. - SWITCH 3: WATTSTOPPER - MODEL # LMDM-101-105-W - ONE (1) SWITCHES REQUIRED FOR CONTROL OF DIMMING OTHER LUMINAIRES WITHIN ROOM AS INDICATED. - THREE (3) SWITCHES / ONE COMMON WHITE COVER PLATE
LC5	TWO (2) GANG ON / OFF / DIMMER WALL SWITCHES WITH VISUAL LED BAR GRAPH INDICATING RELATIVE LIGHTING LEVEL (LOW VOLTAGE LMRJ CABLE CONNECTION) - SWITCH 1: WATTSTOPPER - MODEL # LMDM-101-W - ONE (1) SWITCHES REQUIRED FOR CONTROL OF DIMMING LUMINAIRES - SWITCH 2: WATTSTOPPER - MODEL # LMDM-101-105-G - ONE (2) SWITCH REQUIRED FOR CONTROL OF TUNABLE WHITE (CCT) CORRELATED COLOR TEMPERATURE LEVEL WITHIN LUMINAIRES BEING CONTROLLED VIA SWITCH 1. - SWITCH 3: WATTSTOPPER - MODEL # LMDM-101-105-W - ONE (1) SWITCHES REQUIRED FOR CONTROL OF DIMMING OTHER LUMINAIRES WITHIN ROOM AS INDICATED. - THREE (3) SWITCHES / ONE COMMON WHITE COVER PLATE
DV	SINGLE GANG ON / OFF / DIMMER VACANCY SWITCH 120V (MANUAL ON / AUTO OFF) C/W 0-10V DIMMING - WATTSTOPPER - MODEL # DW-311-W - ONE COMMON WHITE COVER PLATE
V	SINGLE GANG ON / OFF / VACANCY SWITCH 120V (MANUAL ON / AUTO OFF) C/W 0-10V DIMMING - WATTSTOPPER - MODEL # DW-301-W - ONE COMMON WHITE COVER PLATE
A	WALL MOUNT DUEL TECHNOLOGY LOW VOLTAGE VACANCY SENSOR (MANUAL ON / AUTO OFF) (LMRJ CABLE CONNECTION) WATTSTOPPER - MODEL # LMDX-100-W
B	WALL MOUNT DUEL TECHNOLOGY LOW VOLTAGE OCCUPANCY SENSOR (AUTO ON / AUTO OFF) (LMRJ CABLE CONNECTION) WATTSTOPPER - MODEL # LMDX-100-W
C	CEILING MOUNT DUEL TECHNOLOGY LOW VOLTAGE VACANCY SENSOR (MANUAL ON / AUTO OFF) (LMRJ CABLE CONNECTION) WATTSTOPPER - MODEL # LMDX-100-W
D	CEILING MOUNT DUEL TECHNOLOGY LOW VOLTAGE OCCUPANCY SENSOR (AUTO ON / AUTO OFF) (LMRJ CABLE CONNECTION) WATTSTOPPER - MODEL # LMDX-100-W
F	CEILING MOUNT DUEL TECHNOLOGY 120V OCCUPANCY SENSOR (AUTO ON / AUTO OFF) (120V WIRING WITH 0-10V CONTROL WIRING WHERE INDICATED) WATTSTOPPER - MODEL # DT-355-W / CA-1 ADAPTER (120V)

## GENERAL NOTES:

- REFER TO LIGHTING LAYOUT DRAWINGS FOR ROOM CONTROLLER RC TYPES EI "A"  
DENOTES LIGHTING CONTROL SCHEMATIC "A" CONTROL PACKAGE.
- REFER TO LIGHTING LAYOUT DRAWINGS FOR QUANTITY AND TYPE OF LUMINAIRES AND  
CONTROL DEVICES IN EACH ROOM C/W LIGHTING CIRCUIT (CKT) NUMBERS.
- REFER TO LIGHTING LAYOUT DRAWINGS FOR QUANTITY AND TYPE OF LUMINAIRES AND  
CONTROL DEVICES IN EACH ROOM C/W LIGHTING CIRCUIT (CKT) NUMBERS.
- REFER TO LUMINAIRE SCHEDULE FOR LIGHTING FIXTURE TYPE DESCRIPTION,  
MANUFACTURES CAT# AND MOUNTING INFORMATION.
- GANG ALL LIGHT SWITCHES TOGETHER WHERE POSSIBLE UNDER ONE (1) COMMON  
COVER PLATE.
- ALL LUMINAIRES TO BE CHAINED. USE GALVANIZED COIL CHAIN TO SUPPORT  
LUMINAIRE(S) TO BUILDING STRUCTURE FROM MINIMUM TWO (2) LOCATIONS. CORNER  
OF EACH TO BE SUPPORTED. POINT ON CHAINS TO BE SECURED. INSTALLATION TO  
MEET SEISMIC REQUIREMENTS.
- ALL LIGHTING FIXTURES NORMAL / EMERGENCY, EXIT LIGHTING TO BE CONNECTED AND  
SWITCHED AS INDICATED VIA A JUNCTION BOX, CONDUIT AND WIRING SYSTEM AS  
SPECIFIED.
- PROVIDE ALL LIGHTING CONTROL WIRING, LINE VOLTAGE (120V), LOW VOLTAGE  
LIGHTING CIRCUIT, AND CONTROL WIRING VIA CEILING SPACE MOUNTED JUNCTION BOX,  
CONDUIT AND WIRING SYSTEM TO END DEVICE(S). SENSORS AND / OR MANUAL  
SWITCHES MAY BE EITHER INDIVIDUALLY WIRED OR WIRED IN TANDEM AS PER LIGHTING  
CONTROL SCHEDULES. REFER TO LIGHTING CONTROL SCHEDULE AND DETAIL ON  
DRAWINGS.
- COORDINATE WITH LUMINAIRE MANUFACTURE AND LIGHTING CONTROLS  
MANUFACTURES FOR ALL WIRING / CABLE TYPES REQUIRED BETWEEN LIGHTING  
CONTROL DEVICES ( ROOM CONTROLS , SWITCHES, SENSORS, RELAYS ) AND LUMINAIRE  
DRIVERS TO ENSURE COMPLETE AND OPERATIONAL SYSTEMS IN EACH ROOM.

## SCHEMATIC NOTES:

- PROVIDE 120V NORMAL POWER C/W NEW JUNCTION BOX CONDUIT AND WIRING  
SYSTEM. LIGHTING CIRCUIT (CKT) AS INDICATED ON LIGHTING LAYOUT DRAWINGS.
- PROVIDE 120V EMERGENCY POWER C/W NEW JUNCTION BOX CONDUIT AND  
WIRING SYSTEM. LIGHTING CIRCUIT (CKT) AS INDICATED ON LIGHTING LAYOUT  
DRAWINGS.
- PROVIDE CAT5 PLENUM RATED LIGHTING SYSTEM CONTROL CABLING C/W  
JUNCTION BOX, CONDUIT RACEWAY SYSTEM. NOTE WITHIN SAME ROOM BETWEEN  
CONTROLLERS CAT5 CABLES MAY BE ROUTED WITHOUT CONDUIT RACEWAY IN  
ACCESSIBLE CEILING SPACES.
- PROVIDE NEW 0-10V DIMMING CONTROL WIRING C/W NEW JUNCTION BOX CONDUIT  
AND WIRING SYSTEM. FROM CONTROLLER TO LIGHTING FIXTURES AND BETWEEN  
LIGHTING FIXTURES AS INDICATED.
- PROVIDE NEW 0-10V TUNABLE WHITE (CCT) CONTROL WIRING C/W NEW JUNCTION  
BOX CONDUIT AND WIRING SYSTEM. FROM CONTROLLER TO LIGHTING FIXTURES  
AND BETWEEN LIGHTING FIXTURES AS INDICATED.
- PROVIDE NORMAL POWER SENSING C/W NEW JUNCTION BOX CONDUIT AND  
WIRING SYSTEM. LIGHTING CIRCUIT (CKT) AS INDICATED ON LIGHTING LAYOUT  
DRAWINGS.



Key Plan

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Owner's Representative in writing before proceeding with the  
work if discrepancies are evident between the drawings and the  
site condition. No extras to the contract will be allowed if  
discrepancies were evident prior to start of work.

## UNEXPECTED DISCOVERY OF ASBESTOS:

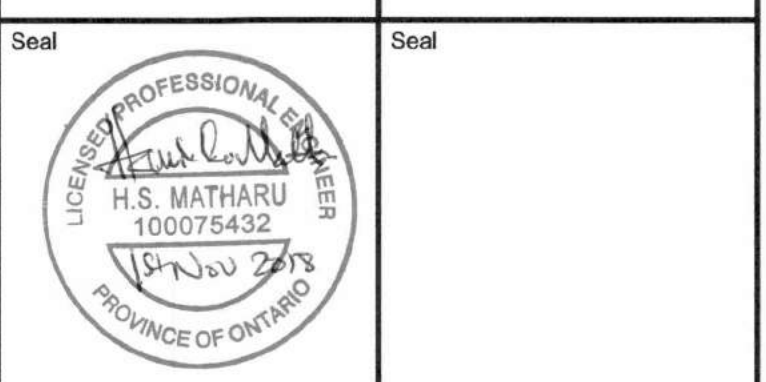
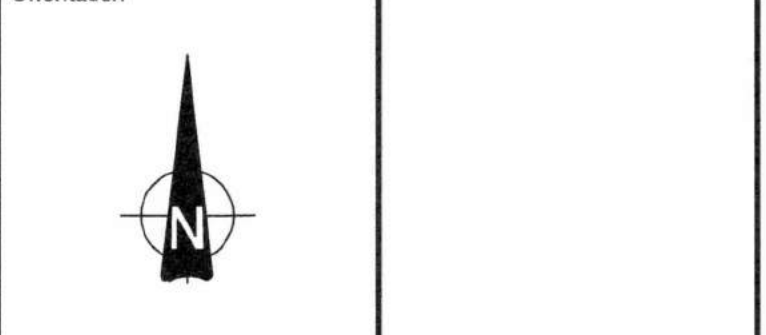
Where a friable material is discovered during construction,  
renovations and/or demolition, and it is suspected to contain  
asbestos, the Contractor must stop all work that may disturb the  
material. The Contractor shall advise the Owner of the discovery  
and await instructions from the owner.

A = Detail number  
B = Drawing number where detailed

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NO. ISSUED BY DATE

Orientation



**UNIVERSITY OF GUELPH**

Design, Engineering & Construction  
Physical Resources  
Guelph, Ontario, N1G 2W1

Consultant www.jrichards.ca

**J.R. J.L. Richards**  
ENGINEERS - ARCHITECTS - PLANNERS

Project  
**BUILDING #046  
RENOVATIONS**

Drawing Title  
**ELECTRICAL  
LIGHTING CONTROL  
SCHEMATICS SHEET No.4**

Project No.  
**504034**

Location  
**UNIVERSITY OF GUELPH  
BUILDING #046**

Scale N.T.S. Date NOV 2, 2018

Drawn by M.C.D. Drawing No.

Checked by H.M.

Approved by H.M.

JLR # 27915

Cad File No. ----

**E18**

of 170

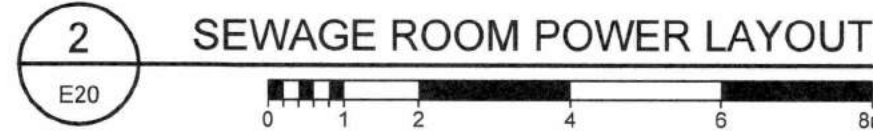
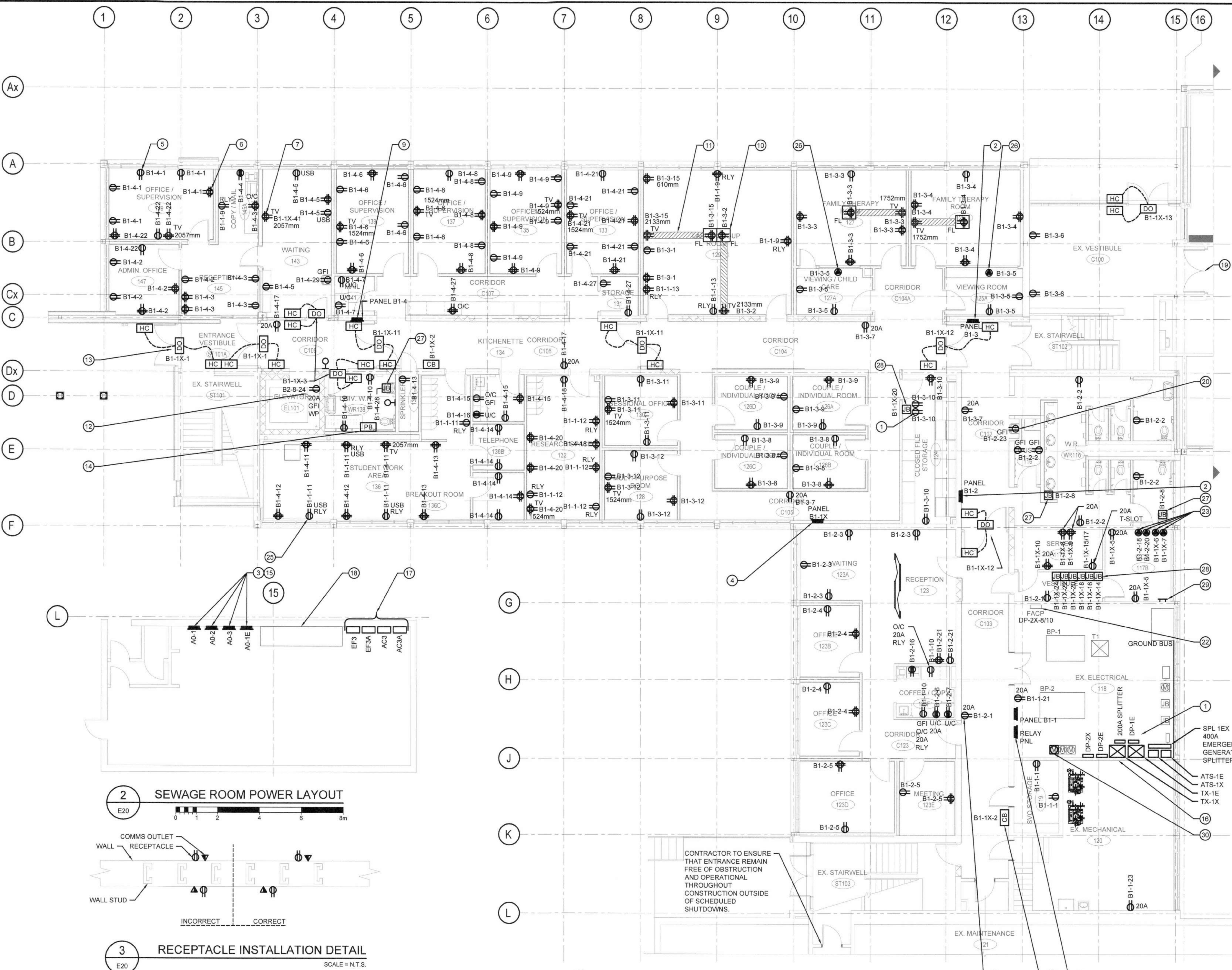


GENERAL NOTES

- A. CAREFULLY COORDINATE ALL ELECTRICAL WORK WITH ALL OTHER TRADES ON SITE TO ENSURE NO CONFLICTS OR INTERFERENCES OCCUR.
- B. PROVIDE ALL FASTENERS, FITTINGS, JUNCTION, OUTLET, BACKBOXES, CONDUIT, WIRING AND HARDWARE REQUIRED TO ENSURE A COMPLETE AND OPERATIONAL SYSTEM. REFER TO SPECIFICATIONS.
- C. WHERE CONDUIT SYSTEMS CROSS BUILDING EXPANSION JOINTS PROVIDE JUNCTION BOXES ON EITHER SIDE OF JOINT C/W METAL FLEX CONDUIT & WIRING SYSTEM TO BRIDGE JOINT AND ALLOW FOR BUILDING MOVEMENT. REFER TO DETAILS ON DRAWINGS AND / OR SPECIFICATIONS.
- D. ALL JUNCTION BOX, CONDUIT AND WIRING SYSTEMS ARE TO BE CONCEALED IN PARTITIONS WALL, FLOOR SLABS AND CEILING SPACES UNLESS NOTED OTHERWISE.
- E. PROVIDE CHANNEL SUPPORT HANGERS, MIN. 19mm THREADED ROD TRAPEZE HANGER ASSEMBLIES FOR MOUNTING ALL JUNCTION BOX CONDUIT, RACEWAY SYSTEMS. SUPPORT SYSTEM HANGERS TO BE SPACED AT NOT MORE THAN 2400mm APART UNLESS NOTED OTHERWISE. REFER TO SPECIFICATIONS.
- F. ALL ELECTRICAL RACEWAY / SUPPORT SYSTEMS TO BE SECURED TO MEET SEISMIC REQUIREMENTS.
- G. COORDINATE EXACT LOCATION OF OUTLETS/DEVICES WITH ARCHITECTURAL DRAWINGS, MILLWORK DETAILS FANCOM DRAWINGS, AND BUILDING OWNER'S AV CONSULTANT DRAWINGS, AND EQUIPMENT REQUIREMENTS.
- H. MOUNTING HEIGHT OF OUTLETS, DEVICES, SWITCHES, CONTROLS IS FROM FINISHED FLOOR TO CENTERLINE OF EQUIPMENT UNLESS NOTED OTHERWISE. REFER TO ELECTRICAL SPECIFICATION.
- I. COORDINATE ON SITE: DRILL / CUT OPENINGS IN EXISTING PARTITION WALLS, FLOOR SLAB TO FACILITATE INSTALLATION OF ELECTRICAL SYSTEMS. PATCH, REPAIR AND REPAINT ALL OPENINGS TO MATCH EXISTING AND/OR NEW FINISH REQUIREMENTS.
- J. SEAL ALL THROUGH WALL, FLOOR SLAB PENETRATIONS WITH APPROVED FIRE STOP SEALANT.
- K. PROVIDE LAMACOID NAMEPLATE AND P-TOUCH CIRCUIT IDENTIFICATION ON EQUIPMENT, COVER PLATES, JUNCTION BOXES. REFER TO SPECIFICATION FOR ADDITIONAL INFORMATION.
- L. THE WORD "PROVIDE" USED ON THESE DRAWINGS, MEAN THE CONTRACTOR IS RESPONSIBLE TO SUPPLY, INSTALL, WIRE, CONNECT, CONTROL, SETUP, TEST, AND COMMISSION EQUIPMENT, DEVICES, AND/OR LUMINAIRES.
- M. ALL ELECTRICAL EQUIPMENT, DEVICE OUTLET BOXES TO BE INSTALLED IN SEPARATE STUD SPACES (SEPARATED BY A STUD) AND PREFERABLY ISOLATED BY MIN. 800mm APART WHERE POSSIBLE FOR WALL RATED STC 45 OR HIGHER. REFER TO DETAIL 3/E20 ON DRAWINGS.
- N. EXPOSED ELECTRICAL BOXES IN WALLS RATED STC 50 AND HIGHER TO BE SEALED
- O. CONTRACTOR SHALL COORDINATE AND PROVIDE CUT / CHASE IN EXISTING WALL WHERE REQUIRED TO RECESS CONDUIT INSTALLATION FOR DEVICES INDICATED.

DRAWING NOTES

1. ELECTRICAL EQUIPMENT INDICATED AS OFFSET FROM WALL IS EXISTING OR TO BE INSTALLED ABOVE/BELOW OTHER EQUIPMENT SHOWN ON WALL. CONTRACTOR TO COORDINATE EXACT INSTALLATION CONFIGURATION ON SITE.
2. INSTALL NEW PANEL BOARD RECESSED MOUNTED, IN WALL WHERE LOCATION / CUT OUT OF PREVIOUSLY DEMOLISHED PANEL EXISTS. MODIFY, PATCH AND REPAIR EXISTING WALL CUT OUT AS NECESSARY TO ACCOMMODATE NEW PANEL DIMENSIONS, FEEDER, BRANCH CIRCUIT CONDUIT AND WIRING. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.
3. INSTALL NEW PANEL BOARD SURFACE MOUNTED TO WALL, IN SAME LOCATION AS PREVIOUSLY DEMOLISHED PANEL.
4. INSTALL NEW PANEL BOARD RECESSED MOUNTED, IN WALL.
5. PROVIDE NEW RECESSED MOUNTED 15A, 125V DUPLEX RECEPTACLE C/W OUTLET BOX, COVER PLATE CONDUIT AND WIRING. CCT AS INDICATED. (TYPICAL)
6. PROVIDE NEW RECESSED MOUNTED 15A, 125V DOUBLE DUPLEX RECEPTACLE C/W OUTLET BOX, COVER PLATE CONDUIT AND WIRING. CCT AS INDICATED. (TYPICAL)
7. PROVIDE NEW RECESSED MOUNTED 15A, 125V RECEPTACLE AS INDICATED C/W CUSTOM OUTLET BOX, COVER PLATE CONDUIT AND WIRING FOR WALL MOUNTED TELEVISION. SIMILAR TO LEVITON 690. CCT AS INDICATED. REFER TO PLAN FOR MOUNTING HEIGHT. COORDINATE EXACT LOCATION WITH ARCHITECTURAL AND FANCOM DRAWINGS, AND WALL MOUNTED BRACKET SYSTEM. (TYPICAL)
8. PROVIDE NEW RECESSED MOUNTED 15/20A, 125V DUPLEX RECEPTACLE C/W OUTLET BOX, COVER PLATE CONDUIT AND WIRING. CCT AS INDICATED. (TYPICAL)
9. COORDINATE LOCATION OF ELECTRICAL PANEL WITH DRINKING FOUNTAIN AND DOOR OPERATOR PADDLE. INFILL WALL AS REQUIRED, REFER TO ARCHITECTURAL.
10. PROVIDE RECESSED MOUNTED POWER AND TELECOMM/DATA FLOOR BOX WITH 2 X 15A, 125V DUPLEX RECEPTABLES C/W CONDUIT & WIRING AND CONDUIT & PULL-CORD SYSTEMS FOR BOTH POWER AND TELECOMMUNICATIONS AS NOTED. LOCATION SHOWN IS FOR ILLUSTRATION ONLY. FINAL LOCATION TO BE DETERMINED WITH FUTURE FURNITURE LAYOUT, FLOOR BOX SYSTEM AND INSTALLATION TO ALLOW FOR COMMUNICATIONS DEVICES OUTLINED IN CONTRACT TELECOMM. / DATA PACKAGE FROM FANCOM. THOMAS BETTS # 665-C1 OR EQUIVALENT. (TYPICAL)
11. CONDUITS SERVING FLOOR BOX TO BE RUN IN CONCRETE FLOOR SLAB. PROVIDE 1 X 21MM CONDUIT FOR POWER, 1 X 27MM CONDUIT FOR DATA, AND 1 X 27MM CONDUIT FOR HDMI. SCAN AND SAW CUT FLOOR TO INSTALL NEW CONDUITS AND FINISH TO SUIT ARCHITECTURAL FINISHES. REFER TO FANCOM DRAWINGS FOR TELECOM DETAILS. (TYPICAL)
12. PROVIDE SURFACE MOUNTED 20A, 125V GFCI, DUPLEX RECEPTACLE C/W FS OUTLET BOX AND WEATHERPROOF COVERPLATE LOCATED IN ELEVATOR PIT AT APPROX. 600mm ABOVE BOTTOM OF PIT. COORDINATE EXACT LOCATION AND HEIGHT WITH ELEVATOR CONTRACTOR AND ELEVATOR SHOP DRAWINGS. RECEPTACLE TO BE FED FROM BRANCH CIRCUIT FOR RECEPTACLE AT TOP OF SHAFT. REFER TO DRAWING E23.
13. PROVIDE OUTLET BOX, CONDUIT AND PULL STRINGS FOR DOOR OPERATOR. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT MOUNTING HEIGHT AND LOCATION OF DOOR PADDLES. REFER TO HARDWARE SPECIFICATIONS. (TYPICAL)
14. PROVIDE CONDUITS AND PULL STRINGS FOR EMERGENCY CALL SYSTEM / DOOR OPERATOR c/w PUSH BUTTONS, 2 x REMOTE ANNUNCIATORS, AND LOW VOLTAGE TRANSFORMER. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT MOUNTING HEIGHT AND LOCATION OF PUSH BUTTONS. CALL SYSTEM TO BE INTEGRATED WITH DOOR OPERATOR. REFER TO HARDWARE SPECIFICATIONS. REFER TO 3/E30 FOR DETAILS. (TYPICAL)
15. PROVIDE NEW FEEDERS COMPLETE WITH NEW BREAKERS AND COORDINATE SHUTDOWN FOR EACH PANEL TO BE REPLACED. RECONNECT EXISTING BRANCH CIRCUIT WIRING TO NEW PANEL. COORDINATE BREAKER LAYOUT AND CIRCUIT WIRING TO MATCH EXISTING. PROVIDE UPDATED PANEL SCHEDULE WITH LOADS IDENTIFIED.
16. ALL NEW EMERGENCY POWER EQUIPMENT (SPLITTER, DP-1E, DP-1X, TX-1X, TX-1E, ATS-1X, ATS-1E, DP-2X, AND DP-2E) TO BE INSTALLED IN ELECTRICAL ROOM FOLLOWING THE COORDINATED DEMOLITION OF THE EXISTING I.T. EQUIPMENT ON THE WALL SHOWN.
17. PROVIDE NEW H.O.A. STARTERS c/w DISCONNECTS AND WIRING FROM NEW ESSENTIAL ELECTRICAL PANEL DP-2X FOR EF3, EF3A, AC3, AND AC3A SERVING WING A. INSTALL STARTERS IN EXISTING SEWAGE ROOM ADJACENT TO EXISTING MCC-1, PRIOR TO DEMOLITION OF MCC-1.
18. MCC-1 TO BE REMOVED AS OUTLINED IN DEMOLITION DRAWING DE10.
19. RETAIN ALL EXISTING ELECTRICAL SYSTEMS SERVING DOOR. SYSTEMS TO BE REINSTATED TO DOOR FOLLOWING REPLACEMENT AND RECONNECTED AS NECESSARY.
20. PROVIDE 120V GFCI DUPLEX RECEPTACLE FOR WATER FOUNTAIN. COORDINATE WITH SHOP DRAWING AND ARCHITECTURAL DRAWINGS FOR EXACT LOCATION AND MOUNTING HEIGHT FOR POINT OF CONNECTION. (TYPICAL)
21. PROVIDE 120VAC / 24VAC TRANSFORMER MOUNTED IN JUNCTION BOX, SIZED TO SUIT, IN CEILING SPACE FOR CODE BLUE EMERGENCY CALL STATION. PROVIDE CONDUIT AND WIRING FROM TRANSFORMER TO CODE BLUE BOX. REFER TO FANCOM DRAWINGS FOR COMMUNICATIONS REQUIREMENTS. (TYPICAL)



DEMOLITION NOTES

THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE DEMOLITION DRAWINGS. ALL SERVICES TO WING "A" TO REMAIN OPERATIONAL FOR DURATION OF CONSTRUCTION WITH LIMITED SHUT DOWN (WEEKENDS) FOR TRANSFER OF SERVICES.

- VERIFY ALL CIRCUITS AND LOADS SERVED IN PANELS P, R, U, AND T. IDENTIFY CIRCUITS WHICH FEED WING "A" TO COORDINATE SHUTDOWN AND REPLACEMENT OF PANELS. COORDINATE WITH THE OWNER AND ENGINEER TO VERIFY THE USE OF THESE CIRCUITS.
- PROVIDE NEW FEEDERS FROM PANEL BP-2 COMPLETE WITH NEW BREAKERS AND COORDINATE SHUTDOWN SHOULD PANELS P, R, T, AND U BE REPLACED AS A SEPARATELY PRICED ITEM. RECONNECT EXISTING BRANCH CIRCUIT WIRING TO NEW PANEL. COORDINATE BREAKER LAYOUT AND CIRCUIT WIRING TO MATCH EXISTING. PROVIDE UPDATED PANEL SCHEDULE WITH LOADS IDENTIFIED. PROVIDE SEPARATE COST FOR REPLACEMENT OF PANELS. OTHERWISE, ALLOW FOR RECONNECTION OF EXISTING FEEDERS TO PANEL BP-2.
- COORDINATE WITH UNIVERSITY IT AND IT CONTRACTOR TO HAVE THE EXISTING IT INSTALLATIONS IN THE ELECTRICAL ROOM REMOVED TO ALLOW FOR INSTALLATION OF EMERGENCY DISTRIBUTION EQUIPMENT.
  - INSTALL TWO (2) NEW AUTOMATIC TRANSFER SWITCHES COMPLETE WITH CONDUIT, POWER, AND CONTROL WIRING (ONE EACH FOR ESSENTIAL AND NON-ESSENTIAL POWER).

- INSTALL TWO (2) NEW STEP-DOWN TRANSFORMERS 600-120/208V (ONE EACH ESSENTIAL AND NON-ESSENTIAL POWER).
- INSTALL THREE (3) NEW PANELS COMPLETE WITH CONDUIT AND WIRING (600V ESSENTIAL, 120/208V NON-ESSENTIAL, 120/208V NON-ESSENTIAL).
- COORDINATE WITH UNIVERSITY AND WING "A" TENANTS TO SHUT DOWN PANELS EX4, X, Y, U, AND B8. EXTEND EXISTING PANEL FEEDER TO NEW ESSENTIAL AND NON-ESSENTIAL PANELS. PROVIDE SPLICE BOX FOR EACH PANEL FEEDER TO BE EXTENDED. NEW FEEDERS SHALL BE INSTALLED PRIOR TO SHUT-DOWN AND CONNECTED TO THE SPLICE BOX. EXISTING FEEDERS SHALL BE RE-ROUTED TO THE SPLICE BOX.
- PROVIDE NEW STARTERS COMPLETE WITH WIRING FROM NON-ESSENTIAL ELECTRICAL PANEL DP-2E. LIST EQUIPMENT AND INSTALL STARTER FOR ALL EXISTING WING "A" MECHANICAL EQUIPMENT. INSTALL STARTERS IN MECHANICAL ROOM ADJACENT TO THE EXISTING MCC, PRIOR TO THE REMOVAL OF THE MCC. COORDINATE SHUTDOWN AND EXTEND EXISTING WIRING FROM EXISTING MCC TO NEW STARTER. NOTE THAT THE MCC CANNOT BE REMOVED OR DE-ENERGIZED UNTIL THE NEW EMERGENCY DISTRIBUTION SYSTEM HAS BEEN INSTALLED AND ENERGIZED. PROVIDE SEPARATE COST TO CARRY OUT THIS SCOPE.
- DISCONNECT EXISTING FEED FROM PANEL BP-1 TO PANEL BP-1. DISCONNECT EXISTING EMERGENCY FEED TO PANEL BP-1. DEMOLISH THE EXISTING MANUAL TRANSFER SWITCH.

WING 'B'

WING 'C'

WING 'A'

Key Plan

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**UNEXPECTED DISCOVERY OF ASBESTOS:**

Where a friable material is discovered during construction, renovations and/or demolition, and it is suspected to contain asbestos, the Contractor must stop all work that may disturb the material. The Contractor shall advise the Owner of the discovery and await instructions from the owner.

A

B

A = Detail number  
B = Drawing number where detailed

0	ISSUED FOR PERMIT & TENDER	TA	NOV 2, 2018
NO.	ISSUED	BY	DATE

Orientation

Seal

Seal

UNIVERSITY OF GUELPH

Design, Engineering & Construction  
Physical Resources  
Guelph, Ontario. N1G 2W1

Consultant

ENGINEERS • ARCHITECTS • PLANNERS

Project

**BUILDING #046  
RENOVATIONS**

Drawing Title

**ELECTRICAL  
POWER LAYOUT WING B  
LEVEL 1**

Project No.

**504034**

Location

**UNIVERSITY OF GUELPH  
BUILDING #046**

Scale	AS INDICATED	Date	NOV 2, 2018
Drawn by	AM	Drawing No.	<b>E20</b>
Checked By	HM		
Approved By	HM		
JLR #	27915	of 170	

Cal File No.

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GENERAL NOTES:

- A. REFER TO DRAWING E32 FOR FIRE ALARM RISER DETAILS.
- B. CONTRACTOR TO PROVIDE ASSISTANCE IN COMMISSIONING OF MAG LOCK CONTROLS.

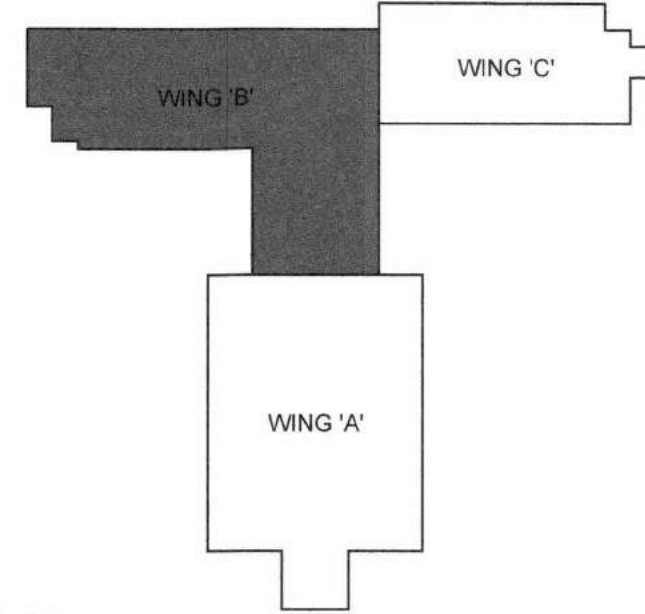
DRAWING NOTES:

- 1 PROVIDE NEW FIRE ALARM PULL STATION TIED INTO EXISTING ADDRESSABLE SYSTEM WIRING.
- 2 PROVIDE NEW SMOKE DETECTOR WITH AUXILIARY CONTACTS TIED TO ELEVATOR CONTROLLER. TIE SMOKE ALARM INTO EXISTING ADDRESSABLE SYSTEM WIRING.
- 3 EXISTING FIRE ALARM CONTROL PANEL. PROVIDE KEY SWITCH AT EXISTING PANEL TO RESET MAG LOCK CONTROLLER. PROVIDE 21MM EMT CONDUIT FROM KEY SWITCH TO MAG LOCK POWER SUPPLIES c/w 2 x #18 AWG.
- 4 PROVIDE NEW BELL STROBE TIED INTO EXISTING MAIN FIRE ALARM CONTROL PANEL.
- 5 PROVIDE NEW SMOKE DETECTOR, CEILING MOUNTED WHERE SHOWN. (TYPICAL)
- 6 PROVIDE NEW FIRE ALARM PULL STATION c/w AUXILIARY CONTACTS TIED INTO MAG LOCK POWER SUPPLY LOCATED IN VESTIBULE 117. PROVIDE 2c x #18 AWG IN 21mm EMT CONDUIT FROM PULL STATION TO MAG LOCK POWER SUPPLY. MAG LOCK TO RELEASE UNDER ANY FIRE ALARM CONDITION. (TYPICAL)
- 7 TERMINATE AT MAG LOCK POWER SUPPLIES. COORDINATE WITH I.T. CONTRACTOR.



1 FIRE ALARM LAYOUT WING B LEVEL 1  
E21

0 1 2 4 6 8m



Key Plan

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NO. ISSUED BY DATE

Orientation



Seal



Seal

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Physical Resources  
Guelph, Ontario. N1G 2W1

Consultant

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J.R. J.L. Richards  
ENGINEERS - ARCHITECTS - PLANNERS

Project

BUILDING #046  
RENOVATIONS

Drawing Title

ELECTRICAL  
FIRE ALARM LAYOUT WING  
B LEVEL 1

Project No.

504034

Location

UNIVERSITY OF GUELPH  
BUILDING #046

Scale

AS INDICATED

Date

NOV 2, 2018

Drawn by

AM

Drawing No.

Checked By

HM

Approved By

HM

JLR #

27915

E21

of 170

Cad File No. ----



GENERAL NOTES:

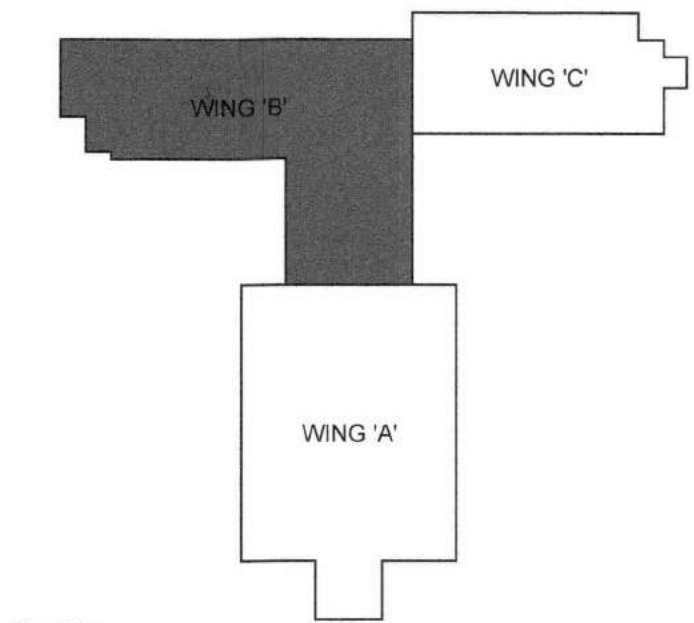
- A. COORDINATE WIRING TO MECHANICAL EQUIPMENT AS PER MOTOR STARTER AND CONTROL LIST REQUIREMENTS ON DRAWING E31.
- B. COORDINATE WITH MECHANICAL EQUIPMENT PROVIDER TO TEST AND COMMISSION EQUIPMENT.

DRAWING NOTES

1. PROVIDE DEDICATED 120V CIRCUIT INSTALLED IN CEILING MOUNTED JUNCTION BOX FOR POWER TO MECHANICAL VAV BOXES. CIRCUIT AS INDICATED. MECHANICAL CONTRACTOR TO SUPPLY TRANSFORMER AND LOW VOLTAGE WIRING. COORDINATE EXACT LOCATION ON SITE WITH MECHANICAL CONTRACTOR. (TYPICAL OF 4)
2. PROVIDE HARDWIRED CONNECTION TO MECHANICAL EQUIPMENT. CIRCUIT AS INDICATED. REFER TO DRAWING E31 FOR DETAILS. (TYPICAL)
3. CONDUITS FEEDING PANELS LOCATED ON SECOND FLOOR TO BE RUN VERTICALLY THROUGH NEW ELECTRICAL CHASE.
4. REFER TO SINGLE LINE DIAGRAM E02 FOR FEEDER DETAILS. CONDUITS TO BE RUN FROM EXISTING PANEL BP-2 TO RESPECTIVE PANELS THROUGH MAIN CORRIDOR C103 CEILING SPACE. COORDINATE CONDUIT INSTALLATION ON SITE WITH MECHANICAL CONTRACTOR / DUCT WORK.
5. COORDINATE INSTALLATION OF RECEPTACLE FOR SUMP PUMP WITH MECHANICAL CONTRACTOR.
6. PROVIDE HARDWIRED CONNECTION TO GLYCOL FILLING STATION. COORDINATE WITH MECHANICAL CONTRACTOR.
7. PROVIDE FLUSH MOUNTED PUSH BUTTON FOR SUPPLY / PURGE FANS. PUSH BUTTON TO BE TIED INTO BAS SYSTEM FOR FAN OPERATION. REFER TO DRAWING E31 AND MECHANICAL DRAWINGS FOR DETAILS. COORDINATE ON SITE WITH MECHANICAL CONTRACTOR AND OWNER FOR EXACT LOCATION. (TYPICAL OF 2)
8. WASHROOM EXHAUST FANS TO BE TIED INTO LIGHTING OCCUPANCY SENSOR CIRCUIT. REFER TO LIGHTING CONTROL SCHEMATICS. (TYPICAL OF 2)



1 MECHANICAL EQUIPMENT WING B LEVEL 1



Key Plan

DO NOT SCALE DRAWINGS.

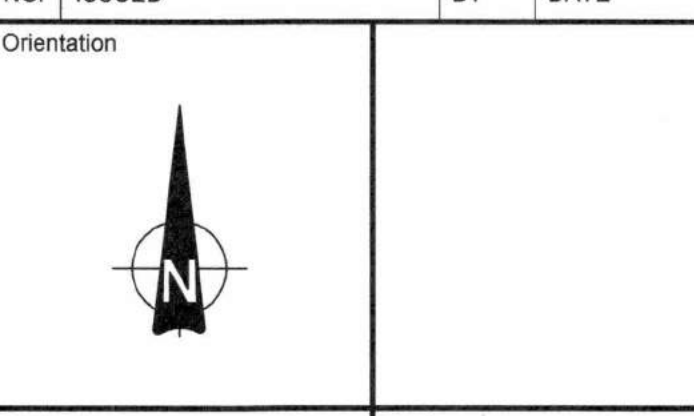
Contractors must check and verify all site conditions. Notify the Owner's Representative in writing before proceeding with the work if discrepancies are evident between the drawings and the site condition. No extras to the contract will be allowed if discrepancies were evident prior to start of work.

UNEXPECTED DISCOVERY OF ASBESTOS:

Where a friable material is discovered during construction, renovations and/or demolition, and it is suspected to contain asbestos, the Contractor must stop all work that may disturb the material. The Contractor shall advise the Owner of the discovery and await instructions from the owner.

A	A = Detail number
B	B = Drawing number where detailed

0	ISSUED FOR PERMIT & TENDER	TA	NOV 2, 2018
NO.	ISSUED	BY	DATE



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Project  
**BUILDING #046 RENOVATIONS**

Drawing Title  
**ELECTRICAL MECHANICAL EQUIPMENT WING B LEVEL 1**  
Project No.  
**504034**

Location  
**UNIVERSITY OF GUELPH BUILDING #046**

Scale AS INDICATED	Date NOV 2, 2018
Drawn by SO	Drawing No. <b>E22</b>
Checked By HM	
Approved By HM	
JLR # 27915	of 170

Cad File No. ----

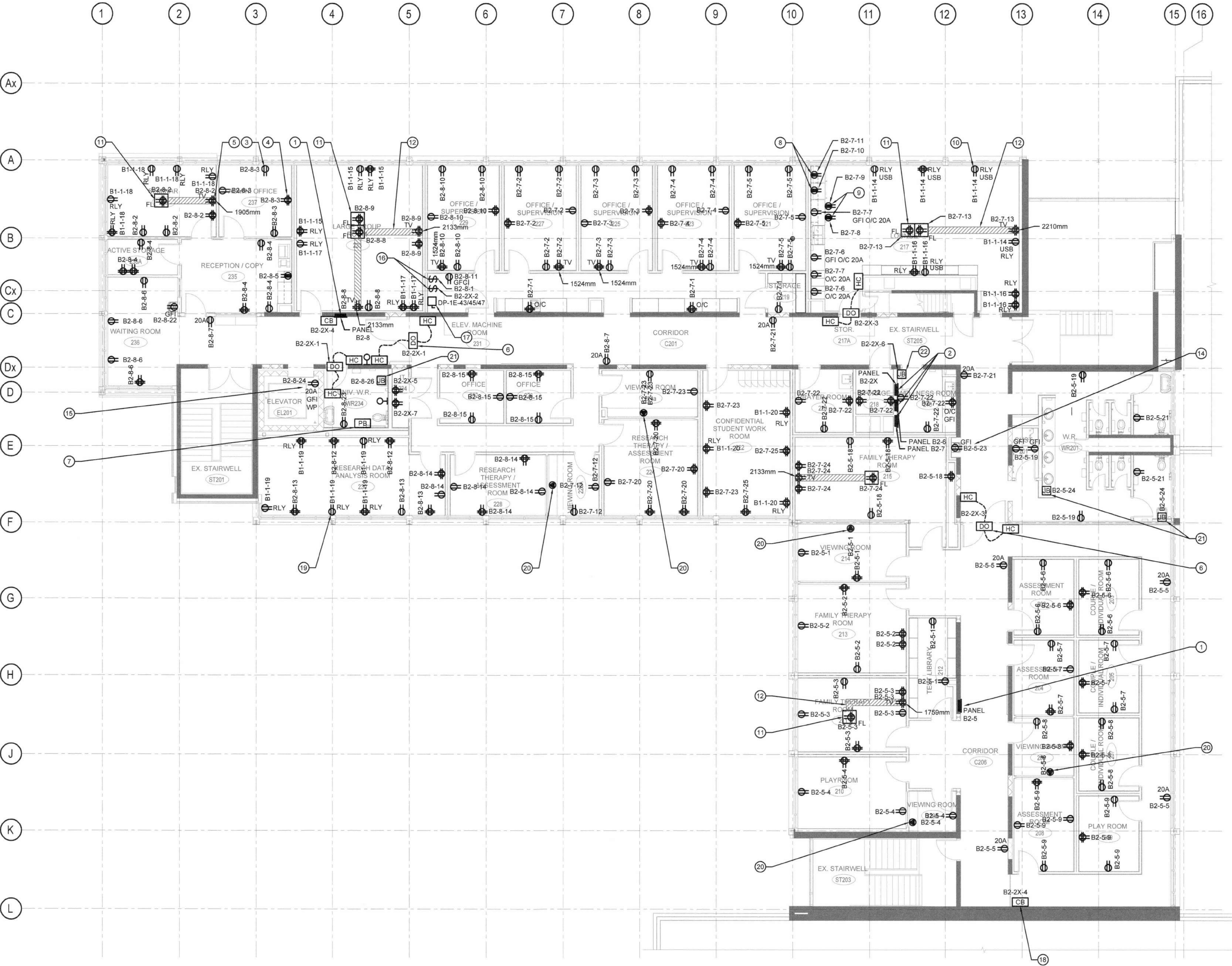


GENERAL NOTES

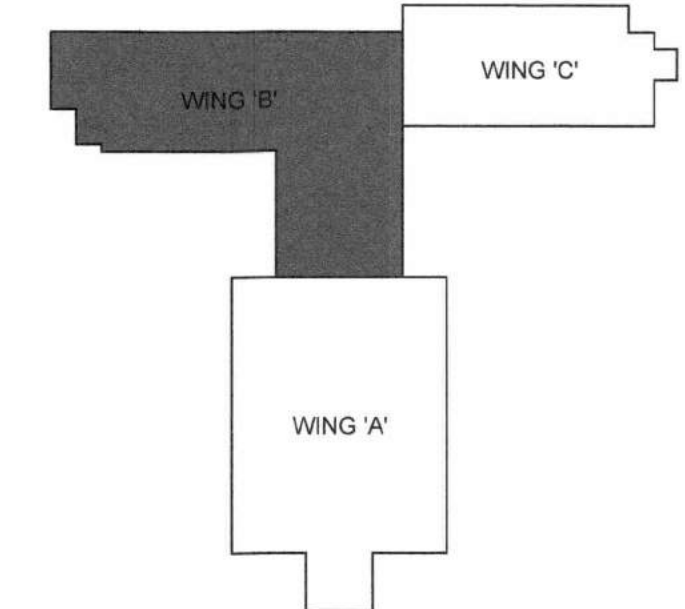
- A. CAREFULLY COORDINATE ALL ELECTRICAL WORK WITH ALL OTHER TRADES ON SITE TO ENSURE NO CONFLICTS OR INTERFERENCES OCCUR.
- B. PROVIDE ALL FASTENERS, FITTINGS, JUNCTION, OUTLET, BACKBOXES, CONDUIT, WIRING AND HARDWARE REQUIRED TO ENSURE A COMPLETE AND OPERATIONAL SYSTEM. REFER TO SPECIFICATIONS.
- C. WHERE CONDUIT SYSTEMS CROSS BUILDING EXPANSION JOINTS PROVIDE JUNCTION BOXES ON EITHER SIDE OF JOINT C/W METAL FLEX CONDUIT & WIRING SYSTEM TO BRIDGE JOINT AND ALLOW FOR BUILDING MOVEMENT. REFER TO DETAILS ON DRAWINGS AND / OR SPECIFICATIONS.
- D. ALL JUNCTION BOX CONDUIT AND WIRING SYSTEMS ARE TO BE CONCEALED IN PARTITIONS WALL FLOOR SLABS AND CEILING SPACES UNLESS NOTED OTHERWISE.
- E. PROVIDE CHANNEL SUPPORT HANGERS, MIN. 19mm THREADED ROD TRAPEZE HANGER ASSEMBLIES FOR MOUNTING ALL JUNCTION BOX CONDUIT, RACEWAY SYSTEMS, SUPPORT SYSTEM HANGERS TO BE SPACED AT NOT MORE THAN 2400mm APART UNLESS NOTED OTHERWISE. REFER TO SPECIFICATIONS.
- F. ALL ELECTRICAL RACEWAY / SUPPORT SYSTEMS TO BE SECURED TO MEET SEISMIC REQUIREMENTS.
- G. COORDINATE EXACT LOCATION OF OUTLETS/DEVICES WITH ARCHITECTURAL DRAWINGS, MILLWORK DETAILS FANCOM DRAWINGS, AND BUILDING OWNER'S A/V CONSULTANT DRAWINGS, AND EQUIPMENT REQUIREMENTS.
- H. MOUNTING HEIGHT OF OUTLETS, DEVICES, SWITCHES, CONTROLS IS FROM FINISHED FLOOR TO CENTER-LINE OF EQUIPMENT UNLESS NOTED OTHERWISE. REFER TO ELECTRICAL SPECIFICATION.
- I. COORDINATE ON SITE: DRILL / CUT OPENINGS IN EXISTING PARTITION WALLS, FLOOR SLAB TO FACILITATE INSTALLATION OF ELECTRICAL SYSTEMS. PATCH, REPAIR AND REPAINT ALL OPENINGS TO MATCH EXISTING AND/OR NEW FINISH REQUIREMENTS.
- J. SEAL ALL THROUGH WALL, FLOOR SLAB PENETRATIONS WITH APPROVED FIRE STOP SEALANT.
- K. PROVIDE LAMACOID NAMEPLATE AND P-TOUCH CIRCUIT IDENTIFICATION ON EQUIPMENT, COVER PLATES, JUNCTION BOXES. REFER TO SPECIFICATION FOR ADDITIONAL INFORMATION.
- L. THE WORD "PROVIDE" USED ON THESE DRAWINGS, MEAN THE CONTRACTOR IS RESPONSIBLE TO SUPPLY, INSTALL, WIRE, CONNECT, CONTROL SETUP, TEST, AND COMMISSION EQUIPMENT, DEVICES, AND/OR LUMINAIRES.
- M. ALL ELECTRICAL EQUIPMENT, DEVICE OUTLET BOXES TO BE INSTALLED IN SEPARATE STUD SPACES (SEPARATED BY A STUD) AND PREFERABLY ISOLATED BY MIN. 600mm APART WHERE POSSIBLE FOR WALL ERATED STC 45 OR HIGHER. REFER TO DETAIL 3/E20 ON DRAWINGS.
- N. EXPOSED ELECTRICAL BOXES IN WALLS RATED STC 50 AND HIGHER TO BE SEALED
- O. CONTRACTOR SHALL COORDINATE AND PROVIDE CUT / CHASE IN EXISTING WALL WHERE REQUIRED TO RECESS CONDUIT INSTALLATION FOR DEVICES INDICATED.

DRAWING NOTES

- 1 NEW ELECTRICAL PANEL TO BE INSTALLED RECESSED IN WALL WHERE LOCATION / CUT OUT OF PREVIOUSLY DEMOLISHED PANEL EXISTS. EXTEND / PATCH EXISTING WALL CUT OUT AS NECESSARY TO ACCOMMODATE NEW PANEL DIMENSIONS. REFER TO ARCHITECTURAL DRAWINGS FOR FURTHER INFORMATION.
- 2 EXISTING WALL SHALL BE CUT OPEN TO INSTALL NEW PANEL AND CONDUITS TO CEILING. REINSTATE TO MEET ARCHITECTURAL FINISHES.
- 3 PROVIDE NEW RECESS MOUNTED 120V DUPLEX RECEPTACLE c/w CONDUIT AND WIRING AS INDICATED. (TYPICAL)
- 4 PROVIDE NEW RECESS MOUNTED 120V DOUBLE DUPLEX RECEPTACLE c/w CONDUIT AND WIRING AS INDICATED. (TYPICAL)
- 5 PROVIDE NEW RECESSED MOUNTED 15A, 125V RECEPTACLE AS INDICATED c/w CUSTOM OUTLET BOX, COVER PLATE CONDUIT AND WIRING FOR WALL MOUNTED TELEVISION. SIMILAR TO LEVITON 690. CCT AS INDICATED. REFER TO PLANS FOR MOUNTING HEIGHT. COORDINATE EXACT LOCATION WITH ARCHITECTURAL AND FANCOM DRAWINGS, AND WALL MOUNTED BRACKET SYSTEM. (TYPICAL)
- 6 PROVIDE OUTLET BOX, CONDUIT AND PULL STRINGS FOR DOOR OPERATOR. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT MOUNTING HEIGHT AND LOCATION OF DOOR PADDLES. REFER TO HARDWARE SPECIFICATIONS. (TYPICAL)
- 7 PROVIDE CONDUITS AND PULL STRINGS FOR EMERGENCY CALL SYSTEM / DOOR OPERATOR c/w PUSH BUTTONS, 2 x REMOTE ANNUNCIATORS, AND LOW VOLTAGE TRANSFORMER. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT MOUNTING HEIGHT AND LOCATION OF PUSH BUTTONS. CALL SYSTEM TO BE INTEGRATED WITH DOOR OPERATOR. REFER TO HARDWARE SPECIFICATIONS. REFER TO 3/E30 FOR DETAILS. (TYPICAL)
- 8 PROVIDE DEDICATED 120V DUPLEX RECEPTACLE FOR REFRIGERATOR MOUNTED AT 1200mm A.F.F.
- 9 PROVIDE DEDICATED 120V DUPLEX RECEPTACLE FOR MICROWAVE. RECEPTACLES TO BE MOUNTED UNDER COUNTER IN MILLWORK. COORDINATE EXACT MOUNTING HEIGHT AND LOCATION WITH ARCHITECTURAL DRAWINGS.
- 10 PROVIDE 120V DUPLEX RECEPTACLE c/w 2 x INTEGRAL USB CHARGING PORTS SIMILAR TO LEVITON T5632. (TYPICAL)
- 11 PROVIDE RECESSED MOUNTED FIRE RATED POKE-THROUGH POWER AND TELECOMM/DATA FLOOR BOX WITH 2 x 15A, 125V DUPLEX RECEPTACLES C/W CONDUIT & WIRING AND CONDUIT & PULL-CORD SYSTEMS FOR BOTH POWER AND TELECOMMUNICATIONS AS NOTED. CONTRACTOR TO SCAN AND CORE THROUGH CONCRETE FLOOR SLAB FOR FLOOR BOX INSTALLATION. FLOOR BOX SYSTEM AND INSTALLATION TO ALLOW FOR COMMUNICATIONS DEVICES OUTLINED IN CONTRACT TELECOMM. / DATA PACKAGE FROM FANCOM. THOMAS AND BETTS RPT6 SERIES OR EQUIVALENT. (TYPICAL)
- 12 CONDUITS SERVING FLOOR BOX TO BE RUN IN UNDER CONCRETE FLOOR SLAB IN CEILING SPACE OF FIRST FLOOR. TERMINATE CONDUITS IN FIRE RATED POKE-THROUGH FLOOR BOX. PROVIDE 1 x 21mm CONDUIT FOR POWER, 1 x 21mm CONDUIT FOR DATA, AND 1 x 27mm CONDUIT FOR HDMI. REFER TO FANCOM DRAWINGS FOR TELECOM DETAILS. (TYPICAL)
- 13 NOT USED
- 14 PROVIDE 120V GFCI DUPLEX RECEPTACLE FOR WATER FOUNTAIN. COORDINATE WITH SHOP DRAWING AND ARCHITECTURAL DRAWINGS FOR EXACT LOCATION AND MOUNTING HEIGHT FOR POINT OF CONNECTION. (TYPICAL)
- 15 PROVIDE SURFACE MOUNTED 20A 120V GFCI, DUPLEX RECEPTACLE C/W FS OUTLET BOX AND WEATHERPROOF COVERPLATE LOCATED AT TOP OF ELEVATOR SHAFT. COORDINATE EXACT LOCATION AND HEIGHT WITH ELEVATOR CONTRACTOR AND ELEVATOR SHOP DRAWINGS.
- 16 PROVIDE 2 x 120V, 15A MOTOR RATED LOCKABLE TOGGLE SWITCHES, 1 x TOGGLE SWITCH FOR ELEVATOR CAB GFCI RECEPTACLE, AND 1 x TOGGLE SWITCH FOR ELEVATOR CAB LIGHTING AND VENTILATION. COORDINATE FEEDERS WITH ELEVATOR SHOP DRAWINGS AND ELEVATOR CONTRACTOR.
- 17 PROVIDE 600V, 3P DISCONNECT c/w AUX CONTACTS FOR ELEVATOR CONTROL PANEL. COORDINATE REQUIREMENTS AND SIZE OF DISCONNECT WITH ELEVATOR SHOP DRAWINGS.
- 18 PROVIDE 120VAC / 24VAC TRANSFORMER MOUNTED IN JUNCTION BOX, SIZED TO SUIT, IN CEILING SPACE FOR CODE BLUE EMERGENCY CALL STATION. PROVIDE CONDUIT AND WIRING FROM TRANSFORMER TO CODE BLUE BOX. REFER TO FANCOM DRAWINGS FOR COMMUNICATIONS REQUIREMENTS. (TYPICAL)
- 19 RECEPTACLES MARKED "RLY" TO BE CONTROLLED VIA RELAY PANEL IN ELECTRICAL ROOM 118. (TYPICAL)
- 20 PROVIDE HARDWIRED POP-UP 120V RECEPTACLE C/W 2 X USB PORTS. BLACK IN COLOUR, RECESSED IN COUNTER TOP MILLWORK. SIMILAR TO LEW ELECTRIC # PUFF-CT-BK-2USB. PROVIDE 6-PORT COMMUNICATIONS EQUIVALENT (LEW ELECTRIC # PUFF-CT-BK-6PORT) C/W CONDUIT AND PULL STRING BACK TO CEILING SPACE, INSTALLED ADJACENT TO POP-UP RECEPTACLE FOR COMMUNICATIONS CONTRACTOR.
- 21 PROVIDE 120V, 15A CIRCUIT TERMINATED IN JUNCTION BOX IN CEILING SPACE FOR AUTOMATIC SINKS. LOW VOLTAGE TRANSFORMER TO BE SUPPLIED BY MECHANICAL CONTRACTOR. COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT LOCATION OF JUNCTION BOX / CIRCUIT.
- 22 PROVIDE JUNCTION BOX WITH 120V CIRCUIT AS INDICATED FOR ACCESS CONTROL / MAG LOCK POWER SUPPLIES. REFER TO HARDWARE SPECIFICATIONS. COORDINATE ON SITE WITH SECURITY / I.T. CONTRACTOR FOR EXACT LOCATION.



1 POWER LAYOUT WING B LEVEL 2



Key Plan

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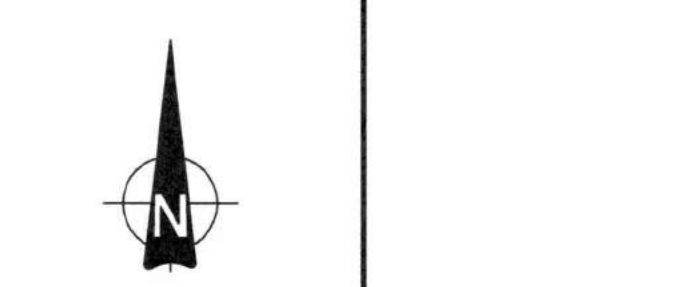
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Project  
BUILDING #046  
RENOVATIONS

Drawing Title  
ELECTRICAL  
POWER LAYOUT WING B  
LEVEL 2  
Project No.  
504034

Location  
UNIVERSITY OF GUELPH  
BUILDING #046

Scale AS INDICATED	Date NOV 2, 2018
Drawn by AM	Drawing No.
Checked By HM	E23
Approved By HM	
JLR # 27915	
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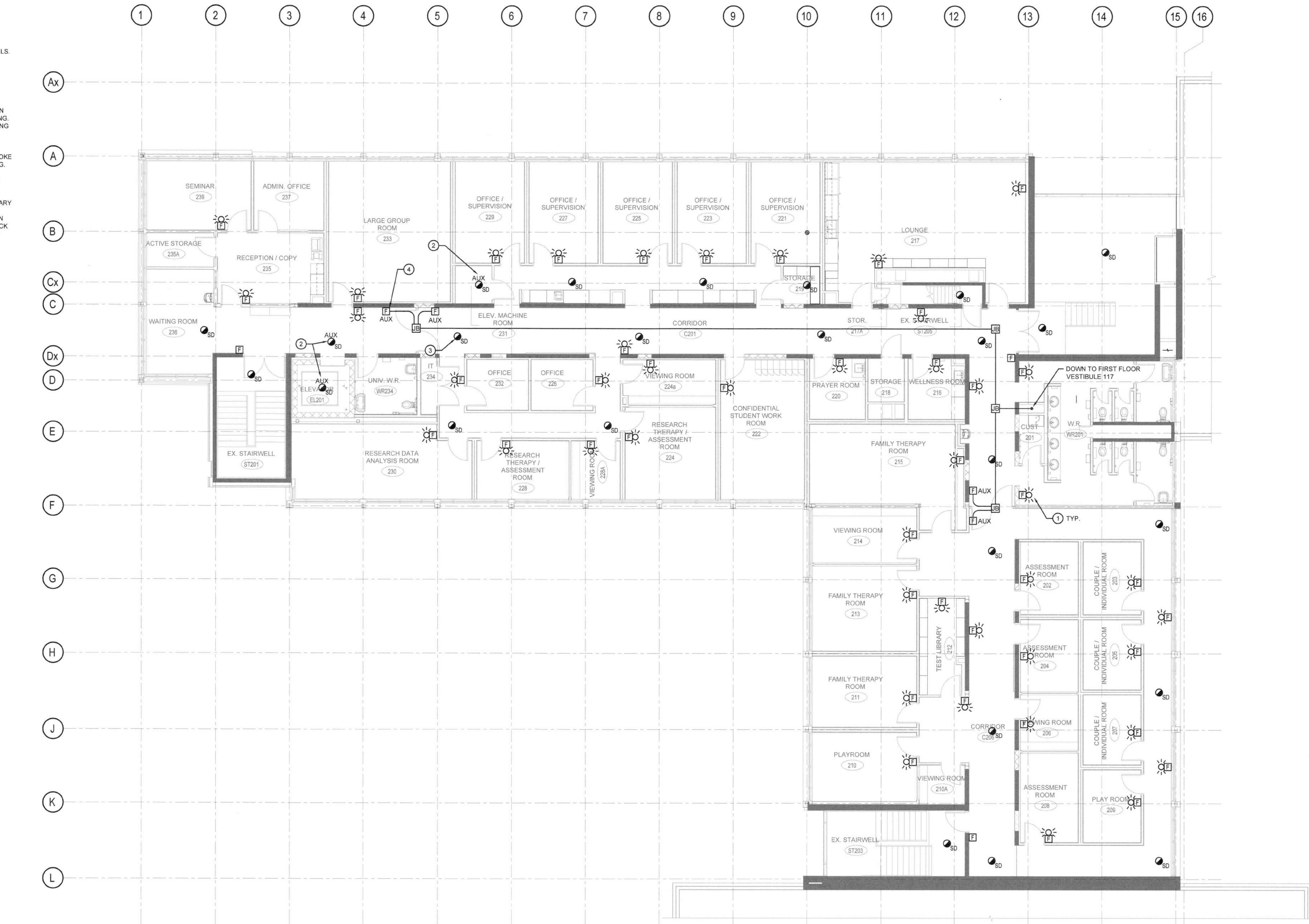


GENERAL NOTES:

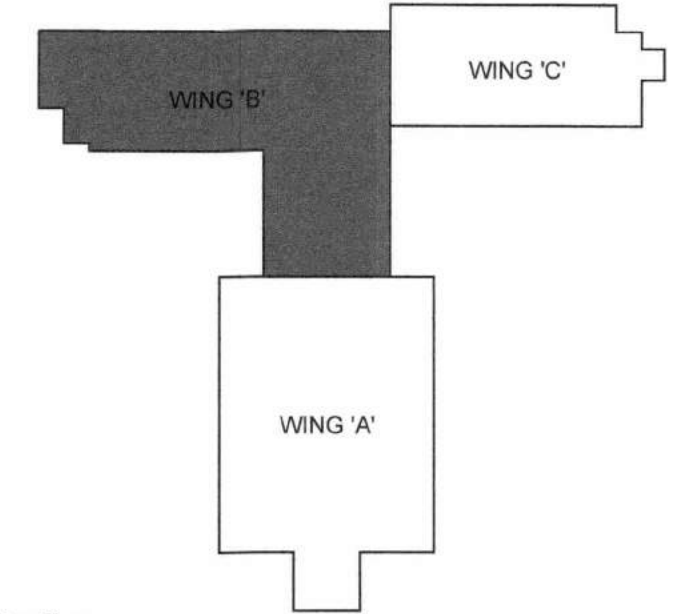
A. REFER TO DRAWING E32 FOR FIRE ALARM RISER DETAILS.

DRAWING NOTES:

- 1 PROVIDE NEW BELL STROBE TIED INTO EXISTING MAIN FIRE ALARM CONTROL PANEL c/w CONDUIT AND WIRING. PROVIDE DEDICATED STROBE WIRING TO SUIT LOADING OF STROBES. (TYPICAL)
- 2 PROVIDE NEW SMOKE DETECTOR WITH AUXILIARY CONTACTS TIED TO ELEVATOR CONTROLLER. TIE SMOKE ALARM INTO EXISTING ADDRESSABLE SYSTEM WIRING.
- 3 PROVIDE NEW SMOKE DETECTOR. TIE SMOKE ALARM INTO EXISTING ADDRESSABLE SYSTEM WIRING.
- 4 PROVIDE NEW FIRE ALARM PULL STATION c/w AUXILIARY CONTACTS TIED INTO MAG LOCK POWER SUPPLY LOCATED IN VESTIBULE 117. PROVIDE 2C X #18 AWG IN 21MM EMT CONDUIT FROM PULL STATION TO MAG LOCK POWER SUPPLY. MAG LOCK TO RELEASE UNDER ANY FIRE ALARM CONDITION. (TYPICAL)



1 FIRE ALARM LAYOUT WING B LEVEL 2  
E24



Key Plan

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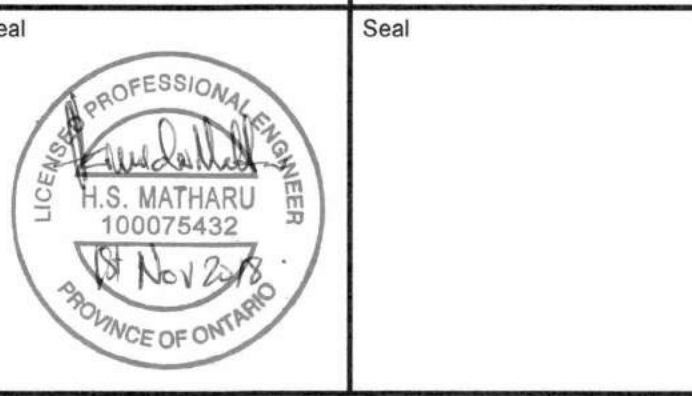
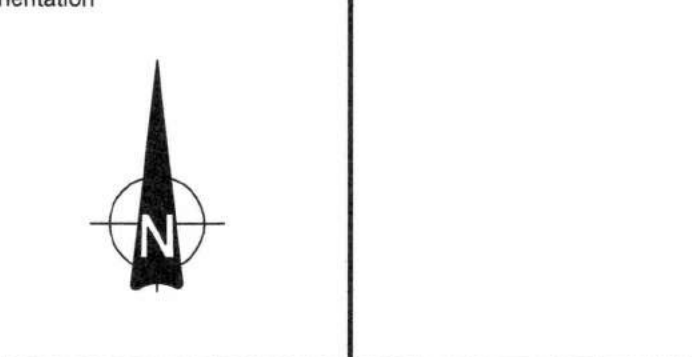
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Orientation



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Project  
BUILDING #046  
RENOVATIONS

Drawing Title  
ELECTRICAL  
FIRE ALARM LAYOUT WING  
B LEVEL 2  
Project No.  
504034

Location  
UNIVERSITY OF GUELPH  
BUILDING #046

Scale AS INDICATED Date NOV 2, 2018  
Drawn by AM Drawing No.  
Checked by HM  
Approved by HM  
JLR # 27915 of 170

E24

Cad File No. ----

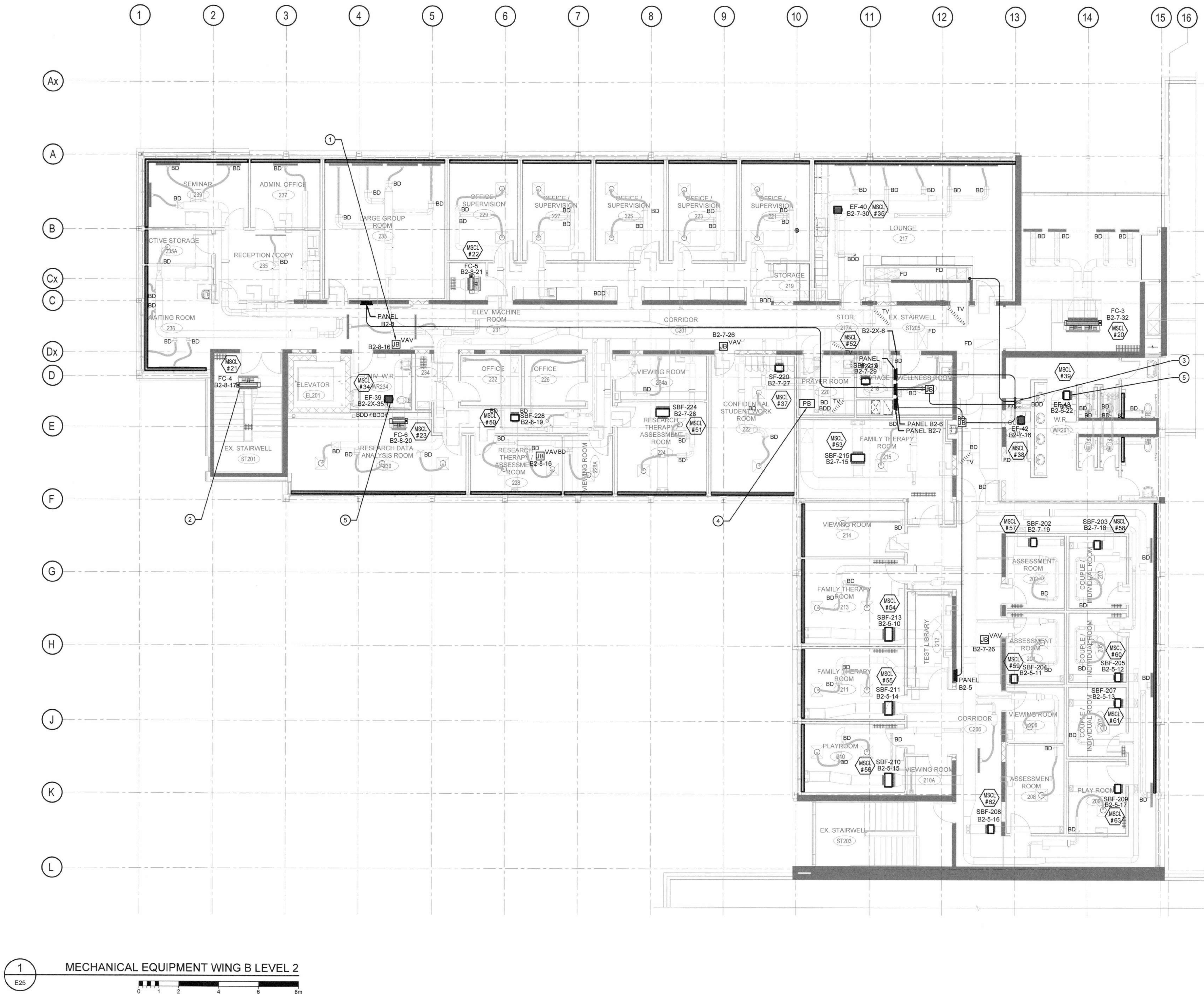


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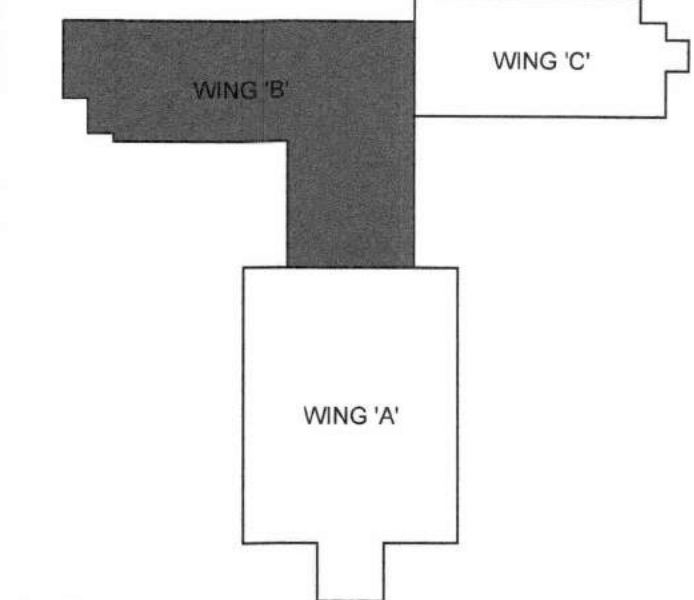
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- 2 PROVIDE HARDWIRED CONNECTION TO MECHANICAL EQUIPMENT. CIRCUIT AS INDICATED. REFER TO DRAWING E31 FOR DETAILS. (TYPICAL)
- 3 REFER TO SINGLE LINE DIAGRAM E02 FOR FEEDER DETAILS. CONDUITS TO BE RUN FROM EXISTING PANEL BP-2 TO RESPECTIVE PANELS THROUGH MAIN CORRIDOR CEILING SPACE. COORDINATE CONDUIT INSTALLATION ON SITE WITH MECHANICAL CONTRACTOR / DUCT WORK.
- 4 PROVIDE FLUSH MOUNTED PUSH BUTTON FOR SUPPLY / PURGE FANS. PUSH BUTTON TO BE TIED INTO BAS SYSTEM FOR FAN OPERATION. REFER TO DRAWING E31 AND MECHANICAL DRAWINGS FOR DETAILS. COORDINATE ON SITE WITH MECHANICAL CONTRACTOR AND OWNER FOR EXACT LOCATION. (TYPICAL OF 2)
- 5 WASHROOM EXHAUST FANS TO BE TIED INTO LIGHTING OCCUPANCY SENSOR CIRCUIT. REFER TO LIGHTING CONTROL SCHEMATICS. (TYPICAL OF 2)



1 MECHANICAL EQUIPMENT WING B LEVEL 2



Key Plan

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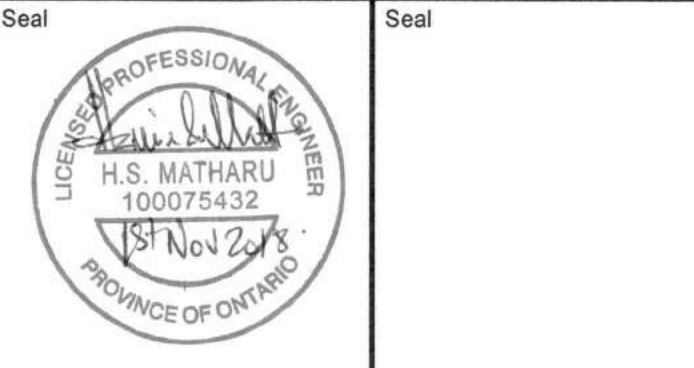
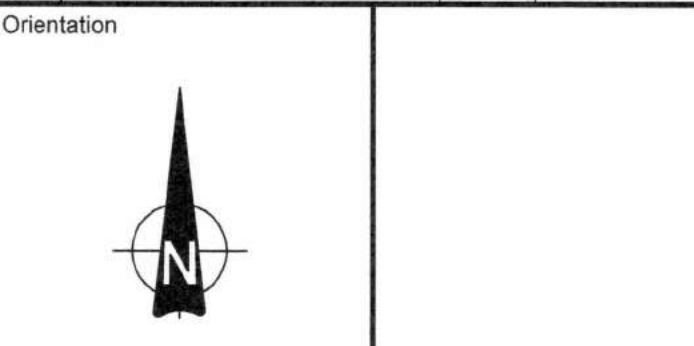
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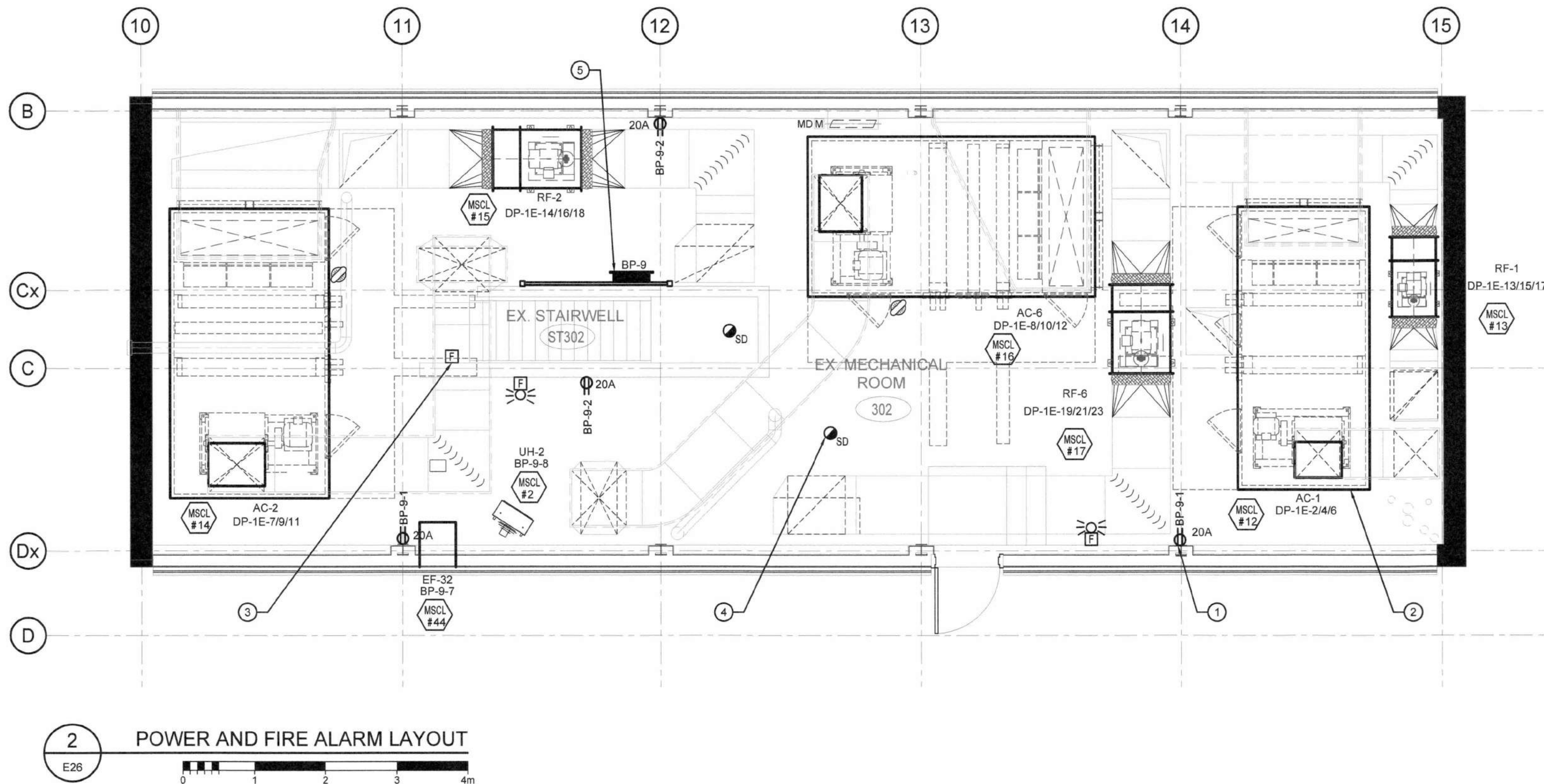
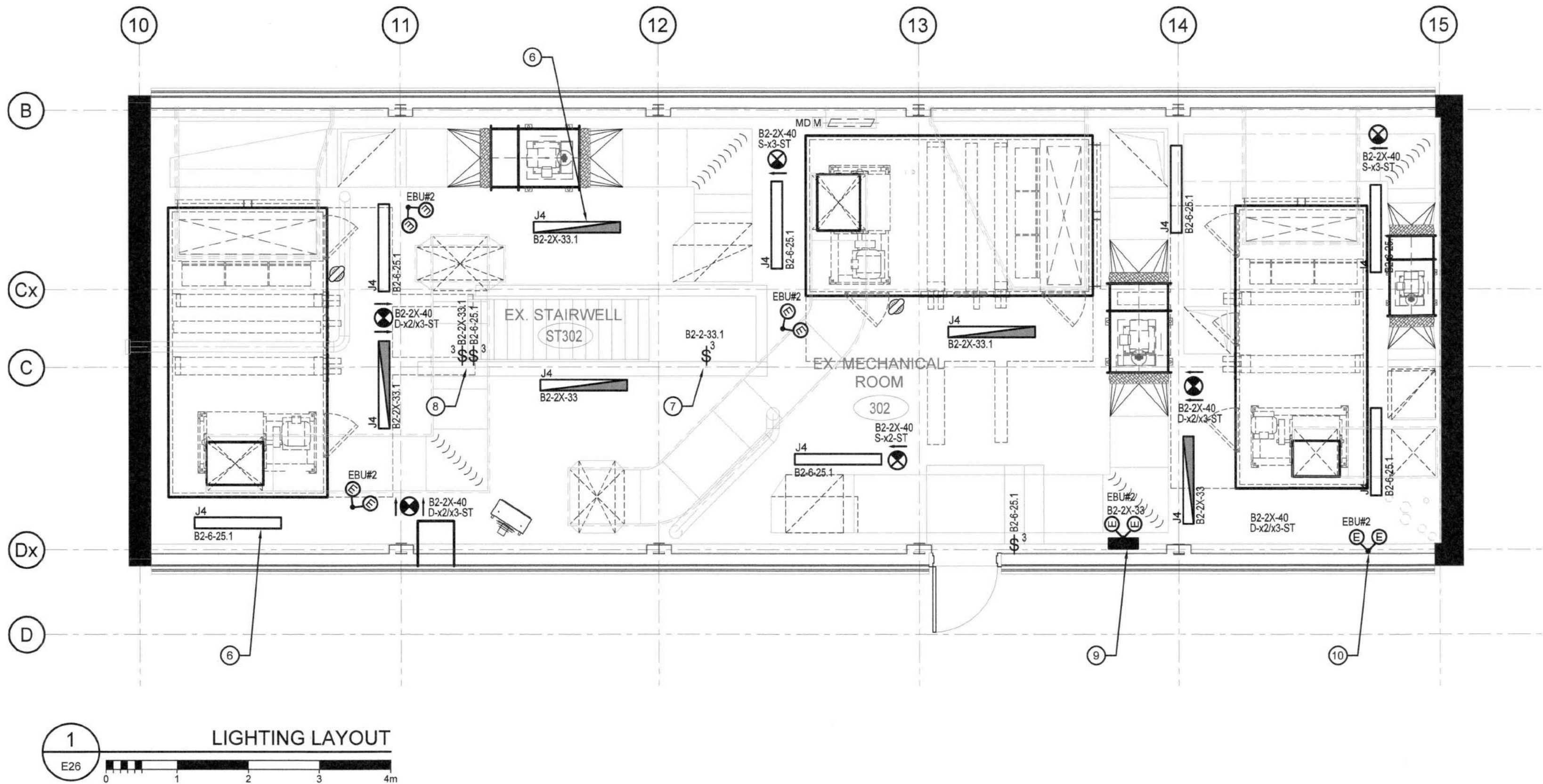
Project  
**BUILDING #046 RENOVATIONS**

Drawing Title  
**ELECTRICAL MECHANICAL EQUIPMENT WING B LEVEL 2**  
Project No.  
**504034**

Location  
**UNIVERSITY OF GUELPH BUILDING #046**

Scale AS INDICATED	Date NOV 2, 2018
Drawn by SO	Drawing No.
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JLR # 27915	



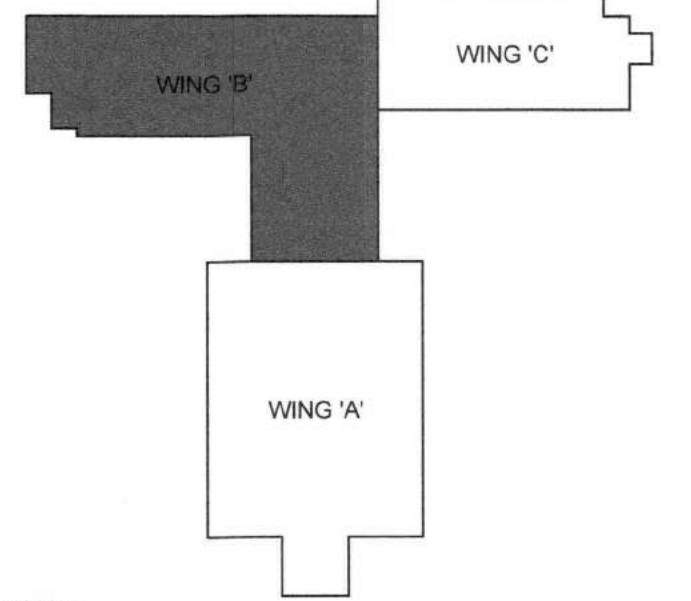


## GENERAL NOTES

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- WHERE CONDUIT SYSTEMS CROSS BUILDING EXPANSION JOINTS PROVIDE JUNCTION BOXES ON EITHER SIDE OF JOINT C/W METAL FLEX CONDUIT & WIRING SYSTEM TO BRIDGE JOINT AND ALLOW FOR BUILDING MOVEMENT. REFER TO DETAILS ON DRAWINGS AND / OR SPECIFICATIONS.
- ALL JUNCTION BOX CONDUIT AND WIRING SYSTEMS ARE TO BE CONCEALED IN PARTITIONS WALL FLOOR SLABS AND CEILING SPACES UNLESS NOTED OTHERWISE.
- PROVIDE CHANNEL SUPPORT HANGERS, MIN. 19mm THREADED ROD TRAPEZE HANGER ASSEMBLIES FOR MOUNTING ALL JUNCTION BOX CONDUIT, RACEWAY SYSTEMS. SUPPORT SYSTEM HANGERS TO BE SPACED AT NOT MORE THAN 2400mm APART UNLESS NOTED OTHERWISE. REFER TO SPECIFICATIONS.
- ALL ELECTRICAL RACEWAY / SUPPORT SYSTEMS TO BE SECURED TO MEET SEISMIC REQUIREMENTS.
- COORDINATE EXACT LOCATION OF OUTLETS/DEVICES WITH ARCHITECTURAL DRAWINGS, MILLWORK DETAILS FANCOM DRAWINGS AND EQUIPMENT REQUIREMENTS.
- MOUNTING HEIGHT OF OUTLETS, DEVICES, SWITCHES, CONTROLS IS FROM FINISHED FLOOR TO CENTER-LINE OF EQUIPMENT UNLESS NOTED OTHERWISE. REFER TO ELECTRICAL SPECIFICATION.
- COORDINATE ON SITE: DRILL / CUT OPENINGS IN EXISTING PARTITION WALLS, FLOOR SLAB TO FACILITATE INSTALLATION OF ELECTRICAL SYSTEMS. PATCH, REPAIR AND REPAINT ALL OPENINGS TO MATCH EXISTING AND/OR NEW FINISH REQUIREMENTS.
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- THE WORD "PROVIDE" USED ON THESE DRAWINGS, MEAN THE CONTRACTOR IS RESPONSIBLE TO SUPPLY, INSTALL, WIRE, CONNECT, CONTROL SETUP, TEST, AND COMMISSION EQUIPMENT, DEVICES, AND/OR LUMINAIRES.
- ALL ELECTRICAL EQUIPMENT, DEVICE OUTLET BOXES TO BE INSTALLED IN SEPARATE STUD SPACES (SEPARATED BY A STUD) AND PREFERABLY ISOLATED BY MIN. 600mm APART WHERE POSSIBLE FOR WALL ERATED STC 45 OR HIGHER. REFER TO DETAIL 3/E20 ON DRAWINGS.
- EXPOSED ELECTRICAL BOXES IN WALLS RATED STC 50 AND HIGHER TO BE SEALED
- REFER TO MOTOR START AND CONTROL LIST ON DRAWING E31 FOR MECHANICAL EQUIPMENT DETAILS.
- REFER TO FIRE ALARM RISER ON DRAWING E32 FOR FIRE ALARM DETAILS.
- REFER TO LUMINAIRE SCHEDULE FOR LIGHTING FIXTURE TYPE AND MOUNTING.
- GANG ALL LIGHT SWITCHES TOGETHER WHERE POSSIBLE UNDER ONE (1) COMMON COVER PLATE UNLESS NOTED OTHERWISE.
- COORDINATE MOUNTING AND INSTALLATION OF EXTERIOR / OUTDOOR MOUNTED LUMINAIRES WITH ARCHITECT AND BUILDING OWNER.
- ALL LUMINAIRES TO BE CHAINED. USE GALVANIZED COIL CHAIN TO SUPPORT LUMINAIRE(S) TO BUILDING STRUCTURE FROM MINIMUM TWO (2) LOCATIONS. CORNER OF EACH TO BE SUPPORTED. POINT ON CHAINS TO BE SECURED. INSTALLATION TO MEET SEISMIC REQUIREMENTS.
- ALL LIGHTING FIXTURES NORMAL / EMERGENCY, EXIT LIGHTING TO BE CONNECTED AND SWITCHED AS INDICATED VIA A JUNCTION BOX, CONDUIT AND WIRING SYSTEM AS SPECIFIED.
- PROVIDE ALL LIGHTING CONTROL WIRING, LINE VOLTAGE (120V), LOW VOLTAGE LIGHTING CIRCUIT, AND CONTROL WIRING VIA CEILING SPACE MOUNTED JUNCTION BOX, CONDUIT AND WIRING SYSTEM TO END DEVICE(S). SENSORS AND / OR MANUAL SWITCHES MAY BE EITHER INDIVIDUALLY WIRED OR WIRED IN TANDEM AS PER LIGHTING CONTROL SCHEDULES. REFER TO LIGHTING CONTROL SCHEDULE AND CONTROL SCHEMATIC DETAILS ON DRAWING E15, E16, E17, E18 AND E30
- LIGHTING CIRCUIT SWITCHING AS FOLLOWS:
  - CIRCUIT (CKT.) AS INDICATED EI "B2-6-2.1" DENOTES: NORMAL POWER PANEL B2-6, CKT. 2, RELAY OR DEVICE SWITCHING POINT 1
  - CIRCUIT (CKT.) AS INDICATED EI: "B2-6-4.1.1" DENOTES: NORMAL POWER PANEL B2-6, CKT. 4, LIGHTING CONTROL RELAY 1, DEVICE SWITCHING POINT 1.
  - CIRCUIT (CKT.) AS INDICATED "B1-1X-36" DENOTES: EMERGENCY POWER PANEL B1-1X, CKT. 36 (NON-MANUAL SWITCHED CIRCUIT AND/OR UN-SWITCHED CIRCUIT TO LUMINAIRE WITH BUILT-IN ON/OFF-DIMMING CONTROL).
  - CIRCUIT (CKT.) AS INDICATED EI: "B1-1X-37.1 & (2.1.1)" DENOTES: EMERGENCY POWER PANEL B1-1X, CKT. 37, LIGHTING CONTROL RELAY 1, & (2.1.1) DENOTES LUMINAIRE TO BE PROGRAM CONTROLLED TO OPERATE ON / OFF / DIMMING WITH OTHER LOCAL LIGHTING CIRCUIT IN SAME ROOM AS PER LIGHTING CONTROL SCHEMATIC DETAILS.
  - NOTE: INTERIOR DEVICE SWITCHING POINT ARE TO BE MADE VIA LINE VOLTAGE SWITCHES, OCCUPANCY AND/OR VACANCY SENSORS WHERE INDICATED. LOCAL PROGRAMMABLE LIGHTING ROOM CONTROLLERS WITH BUILT-IN RELAYS CONTROLLED VIA LOW VOLTAGE SWITCHES, OCCUPANCY AND/OR VACANCY SENSORS WHERE INDICATED. EXTERIOR DEVICE SWITCHING POINTS TO BE MADE VIA PROGRAMMABLE DIGITAL TIME CLOCK(S).

## DRAWING NOTES

- PROVIDE NEW 120V DUPLEX RECEPTACLE c/w OUTLET BOX AND COVER PLATE AS INDICATED.
- PROVIDE HARDWIRED CONNECTION TO MECHANICAL EQUIPMENT. CIRCUIT AS INDICATED. REFER TO DRAWING E31 FOR DETAILS. (TYPICAL)
- PROVIDE NEW FIRE ALARM PULL STATION TIED BACK TO EXISTING ADDRESSABLE FIRE ALARM SYSTEM. PULL STATION TO BE MOUNTED ON UNISTRUT FRAME TO REACH SPECIFIED MOUNTING HEIGHT. REFER TO E32 FOR DETAILS.
- PROVIDE NEW CEILING MOUNTED SMOKE DETECTOR TIED BACK TO EXISTING FIRE ALARM SYSTEM. REFER TO E32 FOR DETAILS. (TYPICAL)
- PROVIDE NEW SURFACE MOUNTED ELECTRICAL PANEL AS INDICATED. PROVIDE UNISTRUT FRAME, c/w CROSS BRACING, FASTENED TO FLOOR AND CEILING OF PENTHOUSE. PROVIDE 2000mm WIDE x 2440mm TALL FIRE RATED PLYWOOD BACKBOARD MOUNTED ON UNISTRUT FRAME. PANEL TO BE INSTALLED ON PLYWOOD BACKBOARD. COORDINATE WITH DIVISION 25 AND ALLOW SPACE FOR BUILDING AUTOMATION SYSTEM CONTROL PANEL.
- PROVIDE LUMINAIRE TYPE AS INDICATED. MOUNT SUSPENDED AT APPROX 2400mm A.F.F. FROM EXPOSED BUILDING STRUCTURE (OWS.) C/W AC60 WIRING FROM JB SYSTEM TO LUMINAIRE. COORDINATE EXACT LOCATION AND HEIGHT WITH INSTALLATION OF ALL OTHER BUILDING SYSTEMS. PROVIDE STEEL SUPPORT CHANNEL AND TRAPEZE HANGER ASSEMBLIES SECURED TO BUILDING STRUCTURE FOR MOUNTING. (TYPICAL)
- PROVIDE LIGHTING CONTROL SWITCH TYPE AS INDICATED, FLUSH WALL MOUNTED AT 1100mm A.F.F. AT BOTTOM OF STAIRS (LEVEL 2) C/W CONCEALED RECESSED OUTLET BOX, CONDUIT & WIRING SYSTEMS. LIGHTING CIRCUIT AS INDICATED. (TYPICAL)
- PROVIDE LIGHTING CONTROL SWITCH TYPE AS INDICATED, SURFACE MOUNTED AT 1100mm A.F.F. PROVIDE FLOOR TO CEILING STEEL CHANNEL SUPPORT FRAME ANCHORED TO BOTH FLOOR SLAB AND UNDERSIDE OF ROOF STRUCTURE (OWS.) FOR MOUNTING, C/W FS TYPE OUTLET BOX, CONDUIT & WIRING SYSTEMS. LIGHTING CIRCUITS AS INDICATED. (TYPICAL)
- PROVIDE EMERGENCY BATTERY UNIT (TWO (2) INTEGRAL 6W LED HEADS 120-12V. TEST SWITCH, AC & DC TERMINAL BLOCKS AND PLUG-IN CORD SET LUMACELL RGS SERIES WITH MIN. 90 MINUTES OF WATTAGE CAPACITY. PROVIDE DUPLEX RECEPTACLE BESIDE EBU CIRCUIT AS INDICATED. (TYPICAL)
- PROVIDE EMERGENCY REMOTE MOUNTED INTEGRAL HEADS WITH CANOPY, TO BE CONDUIT STEM MOUNTED AT APPROX 2400mm A.F.F. C/W JUNCTION BOX CONDUIT AND WIRING SYSTEM. EBU CIRCUIT AS INDICATED. (TYPICAL)
- PROVIDE NEW EXIT SIGN TO BE CONDUIT STEM MOUNTED AT APPROX 2250mm A.F.F. C/W JUNCTION BOX CONDUIT AND WIRING SYSTEM. ROUTE NEW CONDUIT AND WIRING THROUGH MULLION FRAME TO SIGN. COORDINATE EXACT LOCATION ON SITE. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION FOR GLAZING WALL.



Key Plan

### DO NOT SCALE DRAWINGS:

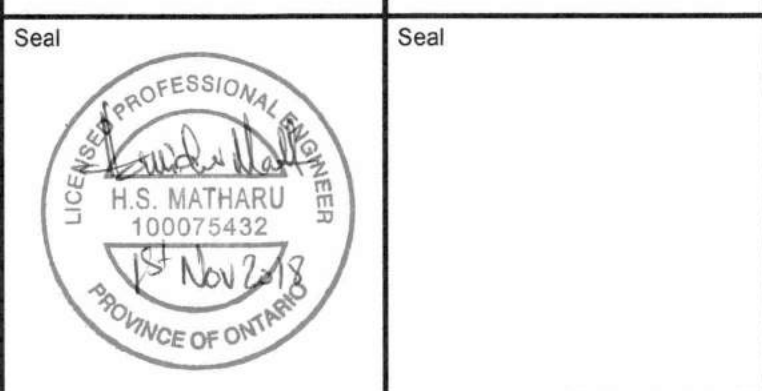
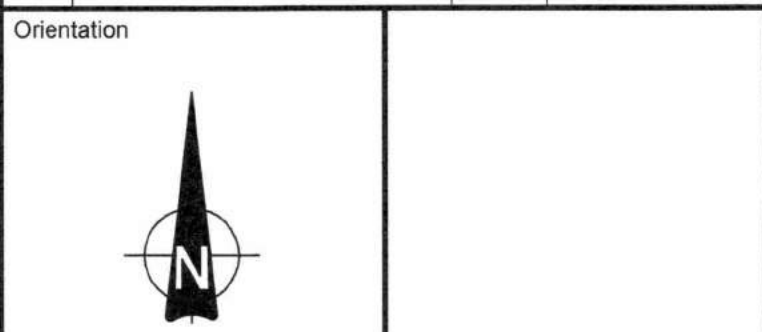
Contractors must check and verify all site conditions. Notify the Owner's Representative in writing before proceeding with the work if discrepancies are evident between the drawings and the site condition. No extras to the contract will be allowed if discrepancies were evident prior to start of work.

### UNEXPECTED DISCOVERY OF ASBESTOS:

Where a friable material is discovered during construction, renovations and/or demolition, and it is suspected to contain asbestos, the Contractor must stop all work that may disturb the material. The Contractor shall advise the Owner of the discovery and await instructions from the owner.

A = Detail number  
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0	ISSUED FOR PERMIT & TENDER	TA	NOV 2, 2018
NO.	ISSUED	BY	DATE



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Design, Engineering & Construction  
Physical Resources  
Guelph, Ontario. N1G 2W1

Consultant **J.L. Richards**  
ENGINEERS - ARCHITECTS - PLANNERS

Project  
**BUILDING #046 RENOVATIONS**

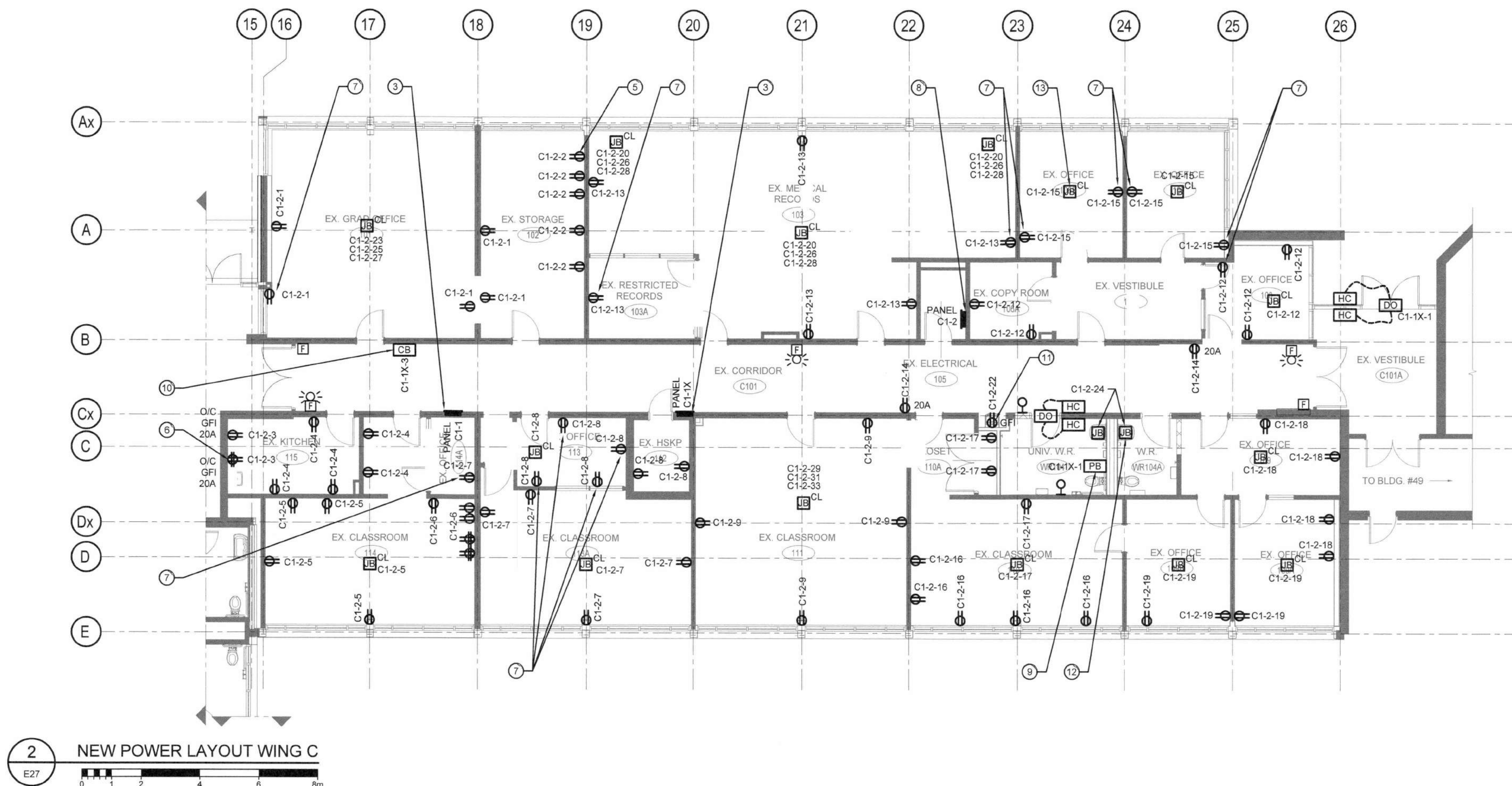
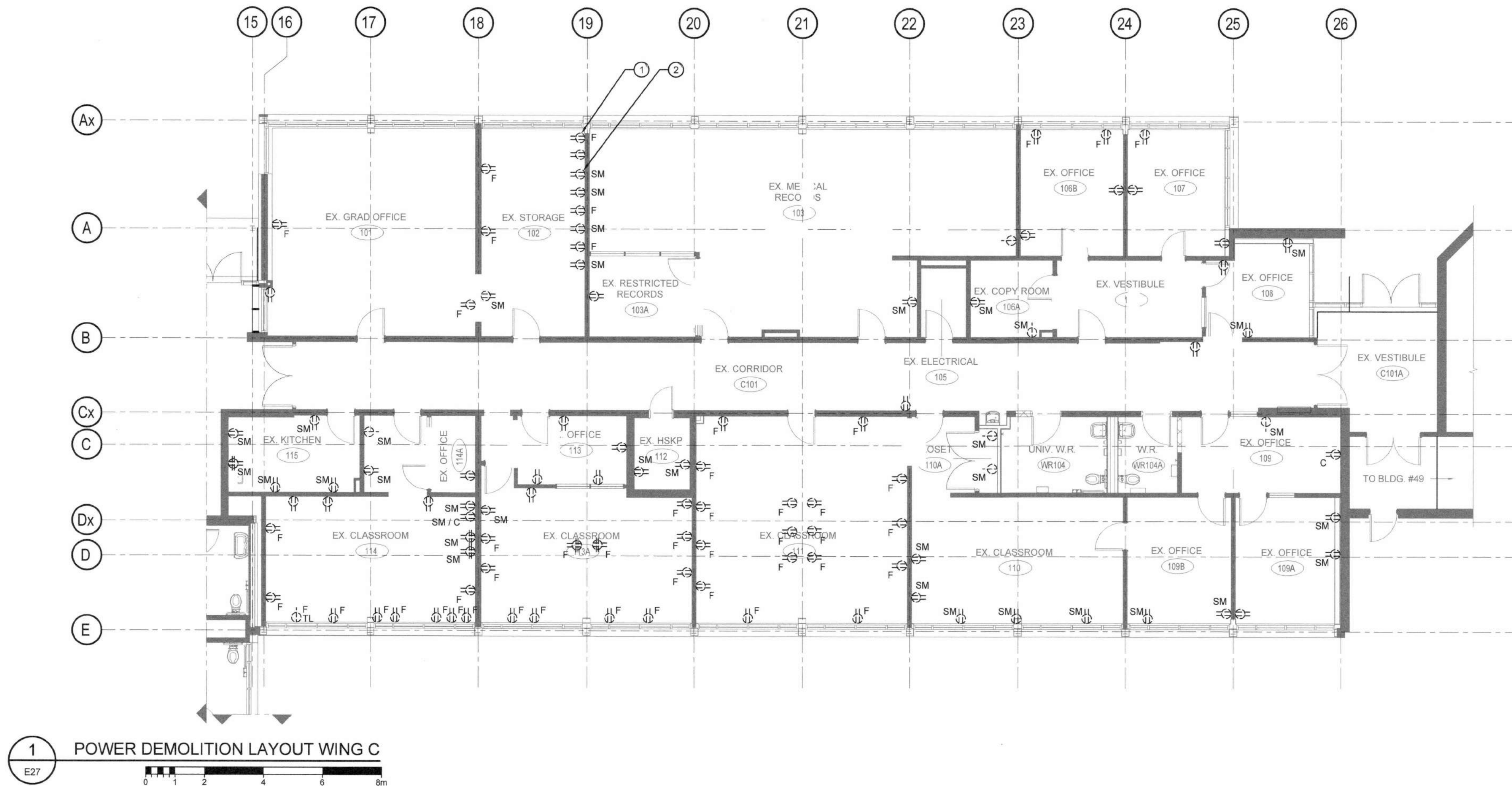
Drawing Title  
**ELECTRICAL ELECTRICAL LAYOUT WING B MECHANICAL PENTHOUSE**  
Project No.  
**504034**

Location  
**UNIVERSITY OF GUELPH BUILDING #046**

Scale AS INDICATED	Date NOV 2, 2018
Drawn by AM	Drawing No.
Checked By HM	<b>E26</b>
Approved By HM	
JLR # 27915	

Cad File No. ---- of 170





## GENERAL NOTES

A. ALL EXISTING RECEPTACLES MAY NOT BE CAPTURED DUE TO EXISTING FURNITURE IN THE SPACE.

## DRAWING NOTES

- DEMOLISH ALL FURNITURE MOUNTED RECEPTACLES BACK TO SOURCE. REFER TO DRAWING DE12. (TYPICAL)
- ALL SURFACE MOUNTED RECEPTACLES TO BE REMOVED AND REPLACED. DEMOLISH EXISTING CONDUIT AND REMOVE WIRING BACK TO SOURCE. REFEED RECEPTACLES WITH ALL NEW CONDUIT AND WIRING. NEW RECEPTACLES TO BE INSTALLED IN ROOM PERIMETER WIREMOLD. REFER TO DE12. (TYPICAL)
- NEW ELECTRICAL PANEL TO BE INSTALLED RECESSED IN WALL WHERE LOCATION / CUT OUT OF PREVIOUSLY DEMOLISHED PANEL EXISTS. EXTEND / PATCH EXISTING WALL CUT OUT AS NECESSARY TO ACCOMMODATE NEW PANEL DIMENSIONS AND NEW CONDUIT RUNS IN WALL TO CEILING SPACE. REFER TO ARCHITECTURAL DRAWINGS FOR FURTHER INFORMATION.
- REPLACE EXISTING FIRE ALARM BELLS WITH BELL STROBES TO BE TIED IN TO EXISTING MAIN FIRE ALARM CONTROL PANEL IN WING B MAIN ELECTRICAL ROOM. (TYPICAL)
- PROVIDE NEW WIREMOLD AL3000 SERIES RACEWAY c/w ALL HARDWARE AND FACEPLATES, SURFACE MOUNTED ON WALL. INSTALL RACEWAY SO THAT RECEPTACLES WITHIN RACEWAY ARE LOCATED 400mm ABOVE FINISHED FLOOR. PROVIDE 120V RECEPTACLES AS INDICATED WITHIN RACEWAY c/w ASSOCIATED COVER PLATES. REFER TO FANCOM DRAWINGS FOR ADDITIONAL DEVICES WITHIN RACEWAY.
- PROVIDE 120V RECEPTACLES AS INDICATED. OVER COUNTER RECEPTACLES INSTALLED IN KITCHEN TO BE SURFACE MOUNTED c/w BACKBOX, CONDUIT, AND WIRING. (TYPICAL)
- PROVIDE NEW 120V DUPLEX RECEPTACLE RECESSED IN WALL. REUSE EXISTING LOCATION / CUTOUT. PROVIDE ALL NEW BACKBOXES, CONDUIT AND WIRING AS NEEDED.
- NEW PANEL TO BE INSTALLED SURFACE WALL MOUNTED IN SAME LOCATION AS PREVIOUSLY DEMOLISHED PANEL.
- PROVIDE CONDUITS AND PULL STRINGS FOR EMERGENCY CALL SYSTEM / DOOR OPERATOR c/w PUSH BUTTONS, 2 x REMOTE ANNUNCIATORS, AND LOW VOLTAGE TRANSFORMER. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT MOUNTING HEIGHT AND LOCATION OF PUSH BUTTONS. CALL SYSTEM TO BE INTEGRATED WITH DOOR OPERATOR. REFER TO HARDWARE SPECIFICATIONS. REFER TO S350 FOR DETAILS. (TYPICAL)
- PROVIDE 120VAC / 24VAC TRANSFORMER MOUNTED IN JUNCTION BOX, SIZED TO SUIT. IN CEILING SPACE FOR CODE BLUE EMERGENCY CALL STATION. PROVIDE CONDUIT AND WIRING FROM TRANSFORMER TO CODE BLUE BOX. REFER TO FANCOM DRAWINGS FOR COMMUNICATIONS REQUIREMENTS. (TYPICAL)
- PROVIDE 120V GFCI DUPLEX RECEPTACLE FOR WATER FOUNTAIN. COORDINATE WITH SHOP DRAWING AND ARCHITECTURAL DRAWINGS FOR EXACT LOCATION AND MOUNTING HEIGHT FOR POINT OF CONNECTION. (TYPICAL)
- PROVIDE 120V, 15A CIRCUIT TERMINATED IN JUNCTION BOX FOR AUTOMATIC SINKS. LOW VOLTAGE TRANSFORMER TO BE SUPPLIED BY MECHANICAL CONTRACTOR. COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT LOCATION OF JUNCTION BOX / CIRCUIT. (TYPICAL OF 2)
- PROVIDE JUNCTION BOX, SIZED TO SUIT, INSTALLED IN CEILING SPACE. TERMINATE INDICATED CIRCUITS IN CEILING JUNCTION BOX AND MAKE SAFE FOR FUTURE USE. (TYPICAL)

## LINETYPE LEGEND

NEW —————  
TO BE DEMOLISHED - - - - -

WING 'B'

WING 'C'

WING 'A'

Key Plan

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Orientation

Seal

Seal

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Project  
**BUILDING #046  
RENOVATIONS**

Drawing Title  
**POWER AND FIRE ALARM  
LAYOUT WING C**

Project No.  
**504034**

Location  
**UNIVERSITY OF GUELPH  
BUILDING #046**

Scale  
AS INDICATED

Drawn by  
SO

Checked By  
HM

Approved By  
HM

JLR #  
27915

Cad File No. -----

Date  
NOV 2, 2018

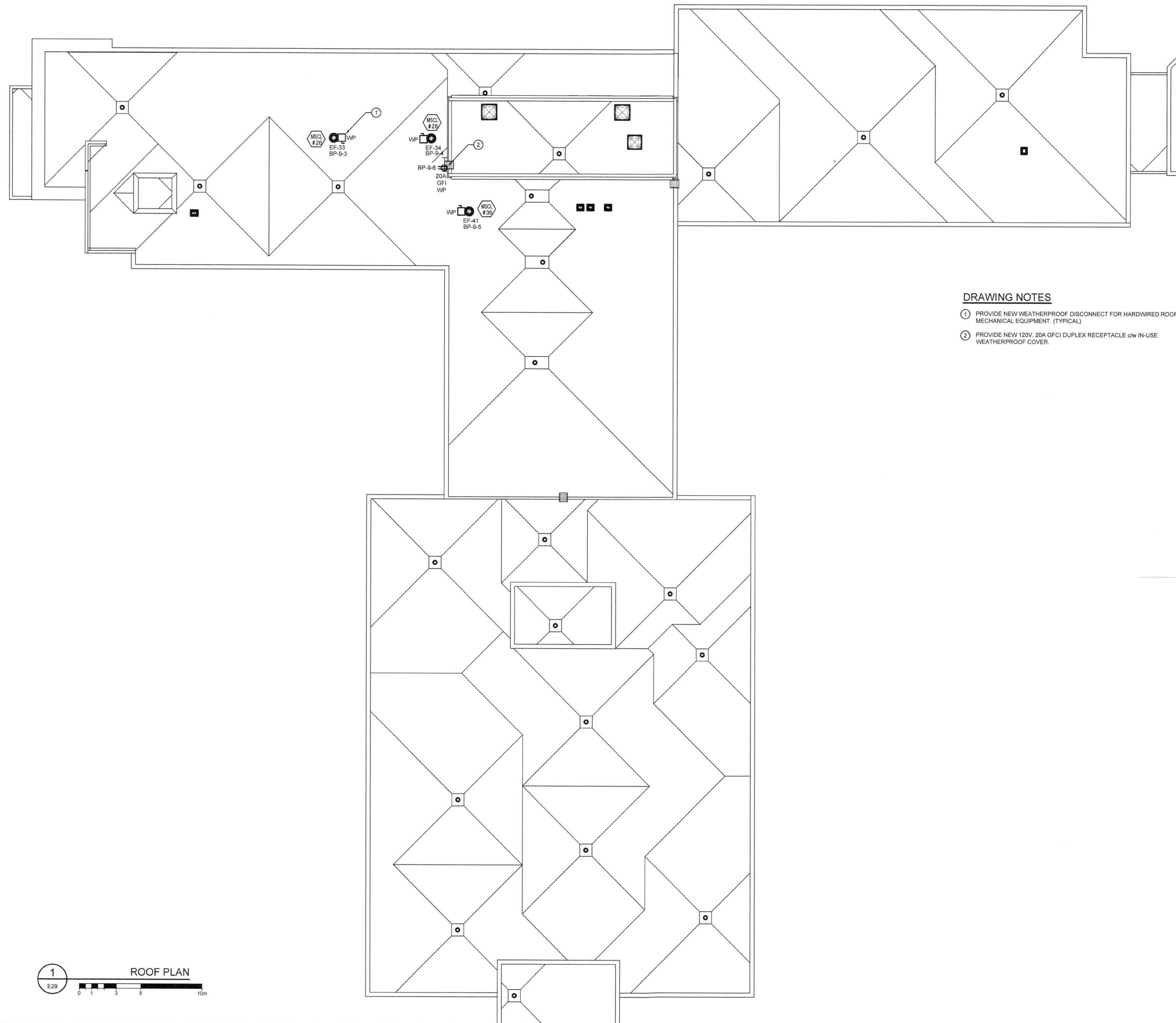
Drawing No.  
**E27**

of 170



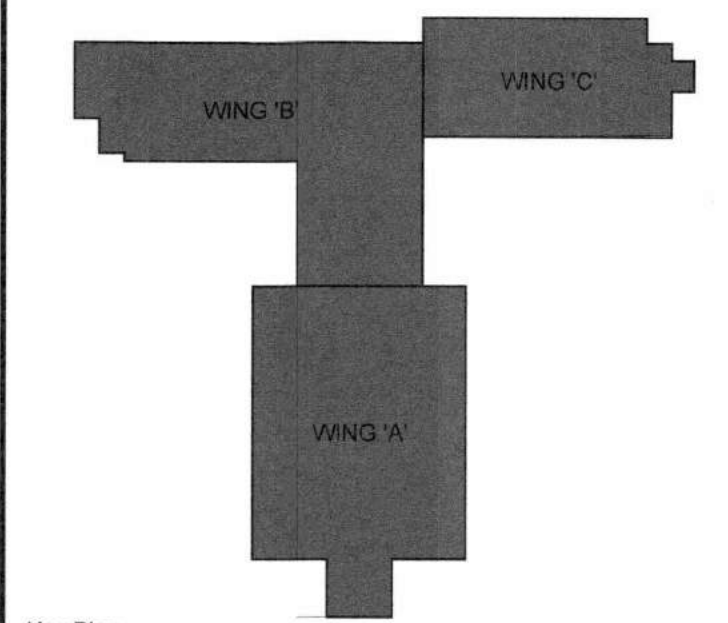
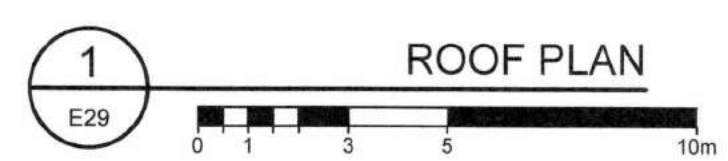
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**DRAWING NOTES**

- ① PROVIDE NEW WEATHERPROOF DISCONNECT FOR HARDWIRED ROOFTOP MECHANICAL EQUIPMENT. (TYPICAL)
- ② PROVIDE NEW 120V, 20A GFCI DUPLEX RECEPTACLE c/w IN-USE WEATHERPROOF COVER.



Key Plan

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Project  
**BUILDING #046  
RENOVATIONS**

Drawing Title  
**ELECTRICAL  
ROOF LAYOUT**

Project No.  
**504034**

Location  
**UNIVERSITY OF GUELPH  
BUILDING #046**

Scale AS INDICATED	Date NOV 2, 2018
Drawn by SO	Drawing No.
Checked By HM	<b>E29</b> of 170
Approved By HM	
JLR # 27915	

Cad File No. ----

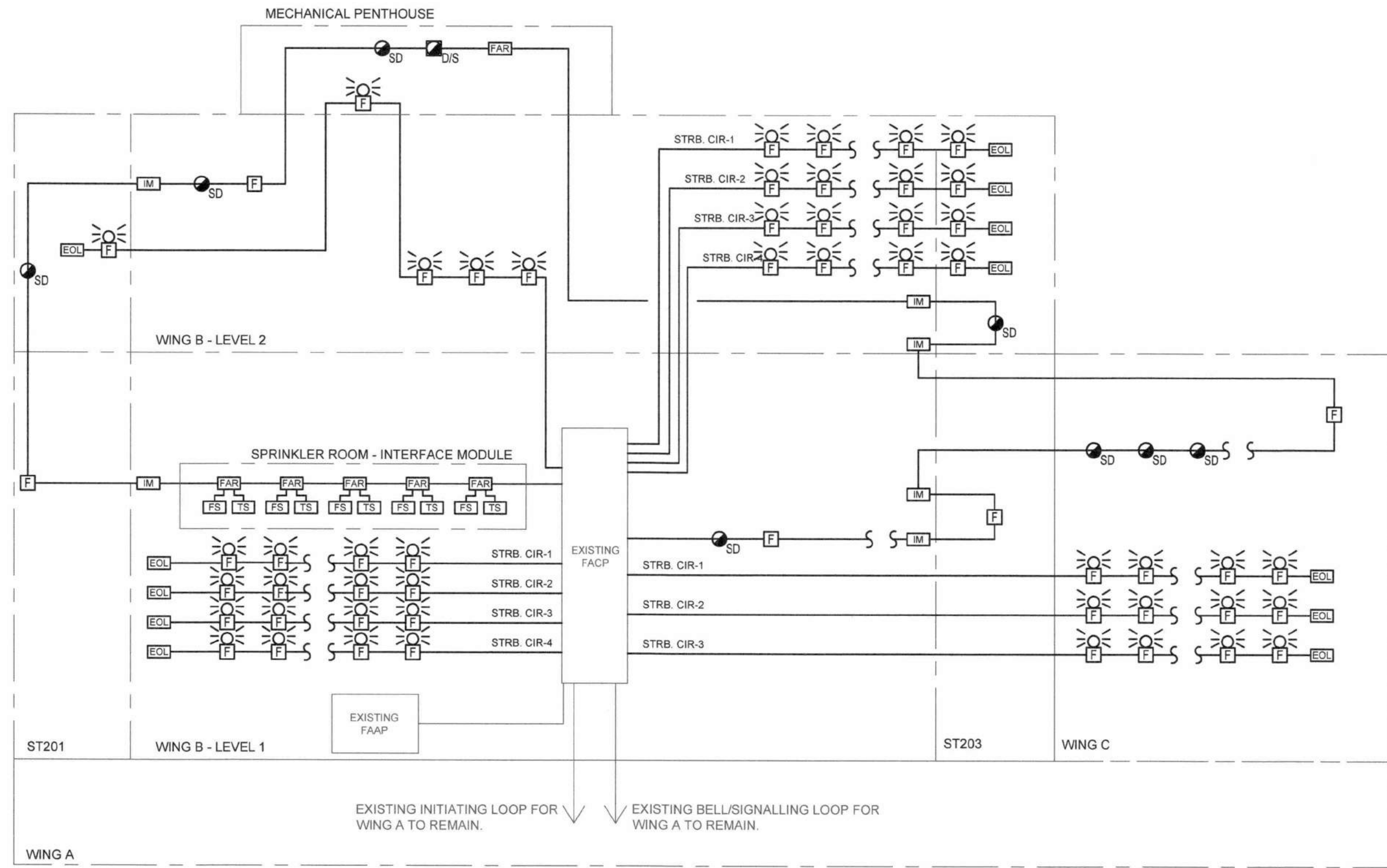










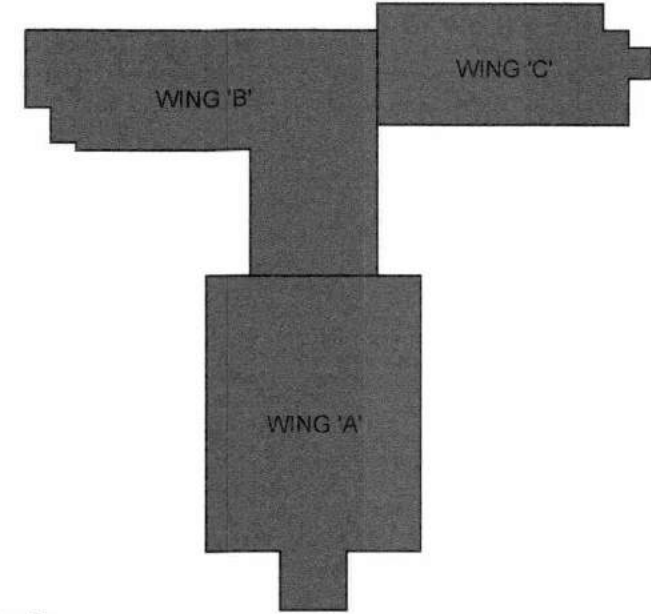


**FIRE ALARM RISER GENERAL NOTES:**

- A. THE RISER DIAGRAM IS INDICATIVE OF A CLASS "A" INITIATING LOOP SYSTEM AND IS INTENDED TO BE AN EXAMPLE ONLY. ALL FIRE ALARM INITIATION LOOPS IN THIS CONTRACT TO BE WIRED TO MEET REQUIREMENTS OF CLASS "A" STANDARDS AND CAN BE MODIFIED TO SUIT SITE CONDITIONS UPON APPROVAL FROM THE ENGINEER. ALL CIRCUITS SHALL BE ADDRESSABLE. EACH BUILDING WILL BE PROVIDED WITH DEDICATED CIRCUIT WIRING FOR INDICATING AND SUPERVISORY CIRCUITS AS INDICATED AND ZONED ACCORDINGLY. REFER TO PLAN DRAWINGS FOR DEVICE QUANTITIES.
- B. PROVIDE CLEARANCE FROM OUTGOING AND RETURN CIRCUITS. OUTGOING AND RETURN CIRCUITS HAVE A SEPARATION OF 10FT FROM EACH OTHER. CONFIRM EXACT ROUTING OF FIRE ALARM CONDUITS ON SITE.
- C. THE CONTRACTOR SHALL DETERMINE EXACT PATH/ROUTING OF ALL SIGNAL AND INITIATING CIRCUITS ON SITE DURING CONSTRUCTION.
- D. ALL SIGNALLING SHALL BE VIA ELECTRONIC AUDIBLE AND VISUAL DEVICES AS SHOWN. STROBES SHALL BE ADJUSTABLE CANDELA LEVELS - MAXIMUM OF 110cd INTENSITY BUT SIZED TO SUIT AREA.
- E. NO CIRCUIT SHALL BE LOADED TO MORE THAN 80% OF ITS MAXIMUM RATED CAPACITY.
- F. FIRE ALARM SYSTEM WIRING SHALL BE PERMANENTLY LABELLED AT EACH END OF EVERY CONDUCTOR.
- G. FIRE ALARM SYSTEM WIRING SHALL BE CONTINUOUS FROM PANEL TO DEVICE NO SPLICING.
- H. ALL FIRE ALARM SYSTEM INITIATION CIRCUITS ARE TO BE WIRED WITH 1 PAIR #16 AWG TWISTED SHIELDED 105°C FAS TYPE FIRE ALARM CABLE IN 1" C.
- I. ALL FIRE ALARM SYSTEM SIGNAL APPLIANCE CIRCUITS ARE TO BE WIRED WITH 2-#14 AWG 105°C FAS TYPE FIRE ALARM CABLE.
- J. ALL FIRE ALARM SYSTEM COMMUNICATION CIRCUITS ARE TO BE INSTALLED IN 3/4" C. PROVIDE COMMUNICATIONS CABLES AS REQUIRED BY FIRE ALARM SYSTEM MANUFACTURER.
- K. ALL POWER SUPPLIES FOR SIGNAL CIRCUITS ARE TO BE LOCATED WITHIN THE FIRE ALARM CONTROL PANELS (F.A.C.P.). FIELD MOUNTED/LOCATED SIGNAL CIRCUIT POWER SUPPLY PANELS WILL NOT BE ACCEPTED.
- L. REFER TO FLOOR PLAN FOR EXACT QUANTITIES OF FIRE ALARM DEVICES.

1 FIRE ALARM RISER DIAGRAM  
E32

LINETYPE LEGEND	
EXISTING	---
NEW	—



**Key Plan**

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Project  
**BUILDING #046  
RENOVATIONS**

Drawing Title  
**ELECTRICAL  
FIRE ALARM RISER  
DIAGRAM**  
Project No.  
**504034**

Location  
**UNIVERSITY OF GUELPH  
BUILDING #046**

Scale NTS	Date NOV 2, 2018
Drawn by AM	Drawing No. <b>E32</b>
Checked By HM	
Approved By HM	
JLR # 27915	of 170

Cad File No. ----



## NEW PANEL "046 PP B1-1"

208/120V, 3PH, 4-WIRE  
225A MAINS  
SURFACE MOUNTED  
10 KAIC

LOAD	DESCRIPTION	BKR	CCT	CCT	BKR	DESCRIPTION	LOAD
	RECEPTACLES RM. 119	15A, 1P	1	2	15A, 1P	UH-1	
	P-3	15A, 1P	3	4	15A, 1P	SPARE	
	EF-37	15A, 1P	5	6	15A, 1P	EF-38	
	FF-1	15A, 1P	7	8	15A, 1P	GLYCOL FILLING STATION RM. 120	
	CONTROLLED RECEPTACLES RM. 145A, 129	15A, 1P	9	10	20A, 1P	CONTROLLED RECEPTACLES RM. 123F	⊙
	CONTROLLED RECEPTACLES RM. 138	15A, 1P	11	12	15A, 1P	CONTROLLED RECEPTACLES RM. 132	⊙
	CONTROLLED RECEPTACLES RM. 129	15A, 1P	13	14	15A, 1P	CONTROLLED RECEPTACLES RM. 217	⊙
	CONTROLLED RECEPTACLES RM. 233	15A, 1P	15	16	15A, 1P	CONTROLLED RECEPTACLES RM. 217	⊙
	CONTROLLED RECEPTACLES RM. 233	15A, 1P	17	18	15A, 1P	CONTROLLED RECEPTACLES RM. 239	⊙
	CONTROLLED RECEPTACLES RM. 230	15A, 1P	19	20	15A, 1P	CONTROLLED RECEPTACLES RM. 222	⊙
	RECEPTACLE RM. 118	20A, 1P	21	22	15A, 1P	HEAT EXCHANGER	
	RECEPTACLE RM. 120	20A, 1P	23	24	15A, 1P	HEAT EXCHANGER	
	SPARE	15A, 1P	25	26	20A, 1P	SPARE	
	SPARE	15A, 1P	27	28	20A, 1P	SPARE	
	SPARE	20A, 1P	29	30	15A, 1P	SPARE	
	SPARE	20A, 1P	31	32	15A, 1P	SPARE	
	SPACE		33	34		SPACE	
	SPACE		35	36		SPACE	
	SPACE		37	38		SPACE	
	SPACE		39	40		SPACE	
	SPACE		41	42		SPACE	

TOTAL CONNECTED LOAD: 0 WATTS

PHASE LOAD TO BE FILLED IN BY CONTRACTOR:

LOAD PHASE A: \_\_\_\_\_

LOAD PHASE B: \_\_\_\_\_

LOAD PHASE C: \_\_\_\_\_

## REMARKS

- ALL LOADS ARE IN WATTS, UNLESS OTHERWISE NOTED.
- ↑ DEDICATED NEUTRAL
- \* GFI
- LOCKED

## NEW PANEL "046 PP B1-2"

208/120V, 3PH, 4-WIRE  
225A MAINS  
RECESS MOUNTED  
10 KAIC

LOAD	DESCRIPTION	BKR	CCT	CCT	BKR	DESCRIPTION	LOAD
	RECEPTACLES RM. C103, 117	20A, 1P	1	2	15A, 1P	RECEPTACLES RM. 116, WR116	
	RECEPTACLES RM. 123A	15A, 1P	3	4	15A, 1P	RECEPTACLES RM. 123B, 123C, 123F	
	RECEPTACLES RM. 123D, 123E	15A, 1P	5	6	20A, 1P	MICROWAVE RM. 123F	
	REFRIGERATOR RM. 123F	15A, 1P	7	8	15A, 1P	AUTOMATIC SINKS RM. WR116	
	VAV BOXES	15A, 1P	9	10	15A, 1P	SBF-128D	
	SBF-126A	15A, 1P	11	12	15A, 1P	SBF-128C	
	SBF-126B	15A, 1P	13	14	15A, 1P	SPARE	
	EF-36	15A, 1P	15	16	15A, 1P	RECEPTACLES RM. 123F	
	SPARE	15A, 1P	17	18	20A, 1P	RECEPTACLES RM. 117B	
	SPARE	15A, 1P	19	20	20A, 1P	RECEPTACLES RM. 117B	
	RECEPTACLES RM. 123	15A, 1P	21	22	15A, 1P	SPARE	
	WATER FOUNTAIN RM. C103	15A, 1P	23	24	15A, 1P	SPARE	
	SPARE	20A, 1P	25	26	15A, 1P	SPARE	
	SPARE	20A, 1P	27	28	15A, 1P	SPARE	
	SPARE	20A, 1P	29	30	20A, 1P	SPARE	
	SPACE		31	32		SPACE	
	SPACE		33	34		SPACE	
	SPACE		35	36		SPACE	
	SPACE		37	38		SPACE	
	SPACE		39	40		SPACE	
	SPACE		41	42		SPACE	

## NEW PANEL "046 PP B1-3"

208/120V, 3PH, 4-WIRE  
225A MAINS  
RECESS MOUNTED  
10 KAIC

LOAD	DESCRIPTION	BKR	CCT	CCT	BKR	DESCRIPTION	LOAD
	RECEPTACLES RM. 129	15A, 1P	1	2	15A, 1P	RECEPTACLES RM. 129	
	RECEPTACLES RM. 127	15A, 1P	3	4	15A, 1P	RECEPTACLES RM. 125	
	RECEPTACLES RM. 125A, 127A	15A, 1P	5	6	15A, 1P	RECEPTACLES RM. C100	
	RECEPTACLES RM. C104, C105	20A, 1P	7	8	15A, 1P	RECEPTACLES RM. 126B, 126C	
	RECEPTACLES RM. 125A, 126D	15A, 1P	9	10	15A, 1P	RECEPTACLES RM. 124	
	RECEPTACLES RM. 130	15A, 1P	11	12	15A, 1P	RECEPTACLES RM. 128	
	SBF-127	15A, 1P	13	14	15A, 1P	SBF-125	
	RECEPTACLES RM. 129	15A, 1P	15	16	15A, 1P	SPARE	
	SPARE	15A, 1P	17	18	15A, 1P	SPARE	
	SPARE	15A, 1P	19	20	15A, 1P	SPARE	
	SPARE	20A, 1P	21	22	20A, 1P	SPARE	
	SPARE	20A, 1P	23	24	20A, 1P	SPARE	
	SPACE		25	26		SPACE	
	SPACE		27	28		SPACE	
	SPACE		29	30		SPACE	
	SPACE		31	32		SPACE	
	SPACE		33	34		SPACE	
	SPACE		35	36		SPACE	
	SPACE		37	38		SPACE	
	SPACE		39	40		SPACE	
	SPACE		41	42		SPACE	

## NEW PANEL "046 PP B1-4"

208/120V, 3PH, 4-WIRE  
225A MAINS  
RECESS MOUNTED  
10 KAIC

LOAD	DESCRIPTION	BKR	CCT	CCT	BKR	DESCRIPTION	LOAD
	RECEPTACLES RM. 149	15A, 1P	1	2	15A, 1P	RECEPTACLES RM. 147	
	RECEPTACLES RM. 145, 145A	15A, 1P	3	4	15A, 1P	RECEPTACLES RM. 145A	
	RECEPTACLES RM. 143	15A, 1P	5	6	15A, 1P	RECEPTACLES RM. 139	
	RECEPTACLES RM. 141	15A, 1P	7	8	15A, 1P	RECEPTACLES RM. 137	
	RECEPTACLES RM. 135	15A, 1P	9	10	15A, 1P	RECEPTACLES RM. WR138	
	RECEPTACLES RM. 136	15A, 1P	11	12	15A, 1P	RECEPTACLES RM. 136	
	RECEPTACLES RM. 136, 138	15A, 1P	13	14	15A, 1P	RECEPTACLES RM. 136B, 136C	
	RECEPTACLES RM. 134	15A, 1P	15	16	15A, 1P	RECEPTACLES RM. 134	
	RECEPTACLES RM. C106, C108	20A, 1P	17	18	15A, 1P	RECEPTACLES RM. 132	
	JOCKEY PUMP	15A, 1P	19	20	15A, 1P	RECEPTACLES RM. 132	
	RECEPTACLES RM. 133	15A, 1P	21	22	15A, 1P	RECEPTACLES RM. 147, 149	
	SPARE	15A, 1P	23	24	15A, 1P	SBF-133	
	VAV BOXES	15A, 1P	25	26	15A, 1P	FF-2	
	RECEPTACLES RM. C107, 131	15A, 1P	27	28	15A, 1P	AUTOMATIC SINKS RM. WR138	
	WATER FOUNTAIN RM. 143	15A, 1P	29	30	15A, 1P	SPARE	
	SPARE	15A, 1P	31	32	15A, 1P	SPARE	
	SPARE	15A, 1P	33	34	15A, 1P	SPARE	
	SPARE	20A, 1P	35	36	20A, 1P	SPARE	
	SPARE	20A, 1P	37	38	20A, 1P	SPARE	
	SPACE		39	40		SPACE	
	SPACE		41	42		SPACE	

## NEW PANEL "046 PP B2-5"

208/120V, 3PH, 4-WIRE  
225A MAINS  
RECESS MOUNTED  
10 KAIC

LOAD	DESCRIPTION	BKR	CCT	CCT	BKR	DESCRIPTION	LOAD
	RECEPTACLES RM. 212, 214	15A, 1P	1	2	15A, 1P	RECEPTACLES RM. 213	
	RECEPTACLES RM. 211	15A, 1P	3	4	15A, 1P	RECEPTACLES RM. 210, 210A	
	RECEPTACLES RM. C206	20A, 1P	5	6	15A, 1P	RECEPTACLES RM. 202, 203	
	RECEPTACLES RM. 204, 205	15A, 1P	7	8	15A, 1P	RECEPTACLES RM. 206, 207	
	RECEPTACLES RM. 208, 209	15A, 1P	9	10	15A, 1P	SBF-213	
	SBF-204	15A, 1P	11	12	15A, 1P	SBF-205	
	SBF-207	15A, 1P	13	14	15A, 1P	SBF-211	
	SBF-210	15A, 1P	15	16	15A, 1P	SBF-208	
	SBF-209	15A, 1P	17	18	15A, 1P	RECEPTACLES RM. 215	
	RECEPTACLES RM. WR201, 201	15A, 1P	19	20	15A, 1P	SPARE	
	RECEPTACLES RM. WR201	15A, 1P	21	22	15A, 1P	SPARE	
	WATER FOUNTAIN RM. C206	15A, 1P	23	24	15A, 1P	AUTOMATIC SINKS RM. WR201	
	SPARE	15A, 1P	25	26	15A, 1P	SPARE	
	SPARE	15A, 1P	27	28	15A, 1P	SPARE	
	SPARE	15A, 1P	29	30	15A, 1P	SPARE	
	SPARE	20A, 1P	31	32	20A, 1P	SPARE	
	SPACE		33	34	20A, 1P	SPACE	
	SPACE		35	36		SPACE	
	SPACE		37	38		SPACE	
	SPACE		39	40		SPACE	
	SPACE		41	42		SPACE	

## NEW LIGHTING PANEL "046 PP B2-6"

208/120V, 3PH, 4-WIRE  
225A MAINS  
RECESS MOUNTED  
14 KAIC

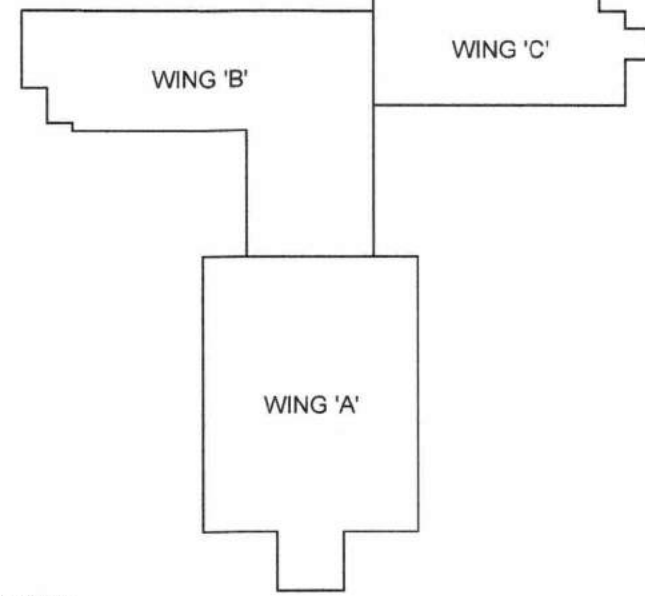
LOAD	DESCRIPTION	BKR	CCT	CCT	BKR	DESCRIPTION	LOAD
	LEVEL 1 LTG (143, 145, 145A, 147, 149)	15A, 1P	1	2	15A, 1P	LEVEL 1 LTG (132, 134, 136, 136B, 138C)	
	LEVEL 1 LTG (131, 133, 135, 137, 139, 141)	15A, 1P	3	4	15A, 1P	LEVEL 1 LTG (124, 126A, 126B, 126C, 126D, 128, 130)	
	LEVEL 1 LTG (125, 125A, 127, 127A, 129)	15A, 1P	5	6	15A, 1P	LEVEL 1 LTG (123, 123A, 123B, 123C, 123D, 123E, 123F)	
	LEVEL 1 CORR LTG (C104, C105, C106, C107, C108, ST101A, 138)	15A, 1P	7	8	15A, 1P	LEVEL 1 LTG / EF-35 (116, WR116)	
	LEVEL 1 CORR LTG (C102, C103, 119, 121)	15A, 1P	9	10	15A, 1P	SPARE	
	SPARE	15A, 1P	11	12	15A, 1P	SPARE	
	LEVEL 2 LTG (233, 235, 235A, 237, 239)	15A, 1P	13	14	15A, 1P	LEVEL 2 LTG (224, 224A, 226, 228, 228A, 230, 232)	
	LEVEL 2 LTG (219, 221, 223, 225, 227, 229, 231)	15A, 1P	15	16	15A, 1P	LEVEL 2 LTG (215, 216, 218, 220, 222)	
	LEVEL 2 LTG (217, 217A)	15A, 1P	17	18	15A, 1P	LEVEL 2 LTG (210, 210A, 211, 212, 213, 214)	
	LEVEL 1 CORR LTG (C104, C105, C106, C107, C108, ST101A)	15A, 1P	19	20	15A, 1P	LEVEL 2 LTG (202, 203, 204, 205, 206, 207, 208, 209)	
	LEVEL 1 CORR LTG (C102, C103)	15A, 1P	21	22	15A, 1P	LEVEL 2 LTG / EF-43 (201, WR201)	
	LEVEL 2 LTG (ST102, C100)	15A, 1P	23	24	20A, 1P	EXTERIOR LIGHTING WING B / TIME CLOCK	
	PENTHOUSE LTG.	15A, 1P	25	26	20A, 1P	EXTERIOR LIGHTING WING B / TIME CLOCK	
	SPARE	15A, 1P	27	28	15A, 1P	SPARE	
	SPACE		29	30	15A, 1P	SPARE	
	SPACE		31	32		SPACE	
	SPACE		33	34		SPACE	
	SPACE		35	36		SPACE	
	SPACE		37	38		SPACE	
	SPACE		39	40		SPACE	
	SPACE		41	42		SPACE	

## GENERAL NOTES:

- A. KA RATINGS FOR PANELS ARE INDICATIVE. FINAL KA RATINGS SHALL BE VERIFIED AS PER ARC FLASH COORDINATION REPORT.

## DRAWING NOTES

- ① CIRCUIT TO BE CONTROLLED VIA RELAY PANEL



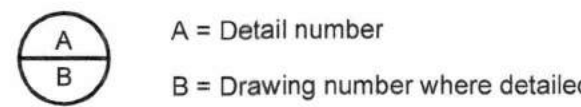
Key Plan

## DO NOT SCALE DRAWINGS:

Contractors must check and verify all site conditions. Notify the Owner's Representative in writing before proceeding with the work if discrepancies are evident between the drawings and the site condition. No extras to the contract will be allowed if discrepancies were evident prior to start of work.

## UNEXPECTED DISCOVERY OF ASBESTOS:

Where a friable material is discovered during construction, renovations and/or demolition, and it is suspected to contain asbestos, the Contractor must stop all work that may disturb the material. The Contractor shall advise the Owner of the discovery and await instructions from the owner.



0 ISSUED FOR PERMIT &amp; TENDER TA NOV 2, 2018

NO. ISSUED BY DATE

Orientation

Seal



Seal

UNIVERSITY  
OF GUELPH

Design, Engineering & Construction  
Physical Resources  
Guelph, Ontario. N1G 2W1

Consultant

www.jrichards.ca

J.R. J.L. Richards  
ENGINEERS - ARCHITECTS - PLANNERS

Project

BUILDING #046  
RENOVATIONS

Drawing Title

ELECTRICAL  
PANEL SCHEDULES - 1 OF 4

Project No.

504034

Location

UNIVERSITY OF GUELPH  
BUILDING #046

Scale

N.T.S.

Date

NOV 2, 2018

Drawn by

SO

Drawing No.

Checked By

HM

Approved By

HM

JLR #

27915

of 170

Cad File No. ----



## NEW PANEL "046 PP B2-7"

208/120V, 3PH, 4-WIRE  
225A MAINS  
RECESS MOUNTED  
10 KAIC

LOAD	DESCRIPTION	BKR	CCT	CCT	BKR	DESCRIPTION	LOAD
	RECEPTACLES RM. 219, CORRIDOR	15A, 1P	1	2	15A, 1P	RECEPTACLES RM. 227	
	RECEPTACLES RM. 225	15A, 1P	3	4	15A, 1P	RECEPTACLES RM. 223	
	RECEPTACLES RM. 221	15A, 1P	5	6	20A, 1P	RECEPTACLES RM. 217	
	RECEPTACLES RM. 217	20A, 1P	7	8	15A, 1P	RECEPTACLES RM. 217	
	RECEPTACLES RM. 217	15A, 1P	9	10	15A, 1P	RECEPTACLES RM. 217	
	RECEPTACLES RM. 217	15A, 1P	11	12	15A, 1P	RECEPTACLES RM. 228A	
	RECEPTACLES RM. 217	15A, 1P	13	14	15A, 1P	RECEPTACLES RM. 217	
	SBF-215	15A, 1P	15	16	15A, 1P	EF-42	
	SPARE	15A, 1P	17	18	15A, 1P	SBF-203	
	SBF-202	15A, 1P	19	20	15A, 1P	RECEPTACLES RM. 224	
	RECEPTACLES RM. C201	20A, 1P	21	22	15A, 1P	RECEPTACLES RM. 216, 218, 220	
	RECEPTACLES RM. 222, 224A	15A, 1P	23	24	15A, 1P	RECEPTACLES RM. 215	
	RECEPTACLES RM. 222	15A, 1P	25	26	15A, 1P	VAV BOXES	
	SF-220	15A, 1P	27	28	15A, 1P	SBF-224	
	SBF-216	15A, 1P	29	30	15A, 1P	EF-40	
	SPARE	15A, 1P	31	32	15A, 1P	FC-3	
	SPARE	15A, 1P	33	34	15A, 1P	SPARE	
	SPARE	15A, 1P	35	36	15A, 1P	SPARE	
	SPARE	20A, 1P	37	38	20A, 1P	SPARE	
	SPACE		39	40		SPACE	
	SPACE		41	42		SPACE	

TOTAL CONNECTED LOAD: 0 WATTS

PHASE LOAD TO BE FILLED IN BY CONTRACTOR:

LOAD PHASE A: \_\_\_\_\_ LOAD PHASE B: \_\_\_\_\_ LOAD PHASE C: \_\_\_\_\_

## REMARKS

1. ALL LOADS ARE IN WATTS, UNLESS OTHERWISE NOTED.

2. ↑ DEDICATED NEUTRAL

3. \* GFI

4. ■ LOCKED

## NEW PANEL "046 PP B2-8"

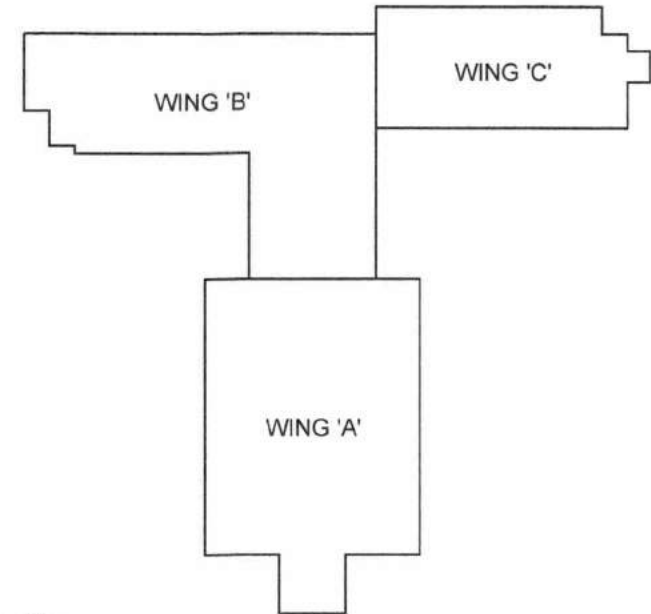
208/120V, 3PH, 4-WIRE  
225A MAINS  
RECESS MOUNTED  
10 KAIC

LOAD	DESCRIPTION	BKR	CCT	CCT	BKR	DESCRIPTION	LOAD
	ELEVATOR CAB RECEPTACLE	15A, 1P	1	2	15A, 1P	RECEPTACLES RM. 239	
	RECEPTACLES RM. 237	15A, 1P	3	4	15A, 1P	RECEPTACLES RM. 235, 235A	
	RECEPTACLES RM. 235	15A, 1P	5	6	15A, 1P	RECEPTACLES RM. 236	
	RECEPTACLES RM. C201	20A, 1P	7	8	15A, 1P	RECEPTACLES RM. 233	
	RECEPTACLES RM. 233	15A, 1P	9	10	15A, 1P	RECEPTACLES RM. 229	
	RECEPTACLES RM. 231	15A, 1P	11	12	15A, 1P	RECEPTACLES RM. 230	
	RECEPTACLES RM. 230	15A, 1P	13	14	15A, 1P	RECEPTACLES RM. 228, 230	
	RECEPTACLES RM. 226, 232	15A, 1P	15	16	15A, 1P	VAV BOXES	
	FC-4	15A, 1P	17	18	15A, 1P	SPARE	
	SBF-228	15A, 1P	19	20	15A, 1P	FC-6	
	FC-5	15A, 1P	21	22	15A, 1P	WATER FOUNTAIN RM. 236	
	RECEPTACLES RM. WR234	15A, 1P	23	24	20A, 1P	ELEVATOR SHAFT RECEPTACLES	
	SPARE	15A, 1P	25	26	15A, 1P	AUTOMATIC SINKS RM. WR234	
	SPARE	15A, 1P	27	28	15A, 1P	SPARE	
	SPARE	15A, 1P	29	30	15A, 1P	SPARE	
	SPARE	20A, 1P	31	32	20A, 1P	SPARE	
	SPARE	20A, 1P	33	34	20A, 1P	SPARE	
	SPACE		35	36		SPACE	
	SPACE		37	38		SPACE	
	SPACE		39	40		SPACE	
	SPACE		41	42		SPACE	

## NEW PANEL "046 PP BP-9"

208/120V, 3PH, 4-WIRE  
225A MAINS  
SURFACE MOUNTED  
10 KAIC

LOAD	DESCRIPTION	BKR	CCT	CCT	BKR	DESCRIPTION	LOAD
	RECEPTACLES RM. 302	20A, 1P	1	2	20A, 1P	RECEPTACLES RM. 302	
	EF-33	15A, 1P	3	4	15A, 1P	EF-34	
	EF-41	15A, 1P	5	6	20A, 1P	RECEPTACLES - ROOF	
	EF-32	15A, 1P	7	8	15A, 1P	UH-2	
	SPARE	15A, 1P	9	10	15A, 1P	SPARE	
	SPARE	15A, 1P	11	12	15A, 1P	SPARE	
	SPARE	20A, 1P	13	14	20A, 1P	SPARE	
	SPARE	20A, 1P	15	16	20A, 1P	SPARE	
	SPACE		17	18		SPACE	
	SPACE		19	20		SPACE	
	SPACE		21	22		SPACE	
	SPACE		23	24		SPACE	
	SPACE		25	26		SPACE	
	SPACE		27	28		SPACE	
	SPACE		29	30		SPACE	



Key Plan

## DO NOT SCALE DRAWINGS:

Contractors must check and verify all site conditions. Notify the Owner's Representative in writing before proceeding with the work if discrepancies are evident between the drawings and the site condition. No extras to the contract will be allowed if discrepancies were evident prior to start of work.

## UNEXPECTED DISCOVERY OF ASBESTOS:

Where a friable material is discovered during construction, renovations and/or demolition, and it is suspected to contain asbestos, the Contractor must stop all work that may disturb the material. The Contractor shall advise the Owner of the discovery and await instructions from the owner.

A = Detail number  
B = Drawing number where detailed

0 ISSUED FOR PERMIT &amp; TENDER TA NOV 2, 2018

NO. ISSUED BY DATE

Orientation

Seal



Seal

**UNIVERSITY OF GUELPH**  
Design, Engineering & Construction  
Physical Resources  
Guelph, Ontario, N1G 2W1

Consultant www.jrichards.ca

**J.R. J.L. Richards**  
ENGINEERS - ARCHITECTS - PLANNERS

Project  
**BUILDING #046 RENOVATIONS**

Drawing Title  
**ELECTRICAL  
PANEL SCHEDULES - 2 OF 4**

Project No.  
**504034**

Location  
**UNIVERSITY OF GUELPH  
BUILDING #046**

Scale N.T.S.	Date NOV 2, 2018
Drawn by SO	Drawing No.
Checked By HM	<b>E34</b>
Approved By HM	
JLR # 27915	

Cad File No. ----

## GENERAL NOTES:

A. KA RATINGS FOR PANELS ARE INDICATIVE. FINAL KA RATINGS SHALL BE VERIFIED AS PER ARC FLASH COORDINATION REPORT.



## NEW PANEL "046 PP C1-1"

208/120V, 3PH, 4-WIRE  
225A MAINS  
SURFACE MOUNTED  
10 KAIC

LOAD	DESCRIPTION	BKR	CCT	CCT	BKR	DESCRIPTION	LOAD
	LEVEL 1 CORR. LTG. (C101, 101A)	15A, 1P	1	2	15A, 1P	LEVEL 1 LTG. (113, 113A, 114, 114A, 115)	
	LEVEL 1 LTG. (101, 102)	15A, 1P	3	4	15A, 1P	LEVEL 1 LTG. (110, 111)	
	LEVEL 1 LTG. (103, 103A)	15A, 1P	5	6	15A, 1P	LEVEL 1 LTG. (109, 109A, 109B)	
	LEVEL 1 LTG. (106, 106A, 106B, 107, 108)	15A, 1P	7	8	20A, 1P	EXTERIOR LIGHTING WING C / TIME CLOCK	
	SPARE	15A, 1P	9	10	15A, 1P		
	SPARE	15A, 1P	11	12	15A, 1P		
	SPARE	15A, 1P	13	14	15A, 1P	SPARE	
	SPARE	15A, 1P	15	16	15A, 1P	SPARE	
	SPARE	15A, 1P	17	18	15A, 1P	SPARE	
	SPARE		19	20	SPARE		
	SPARE		21	22	SPARE		
	SPARE		23	24	SPARE		
	SPARE		25	26	SPARE		
	SPARE		27	28	SPARE		
	SPARE		29	30	SPARE		
	SPARE		31	32	SPARE		
	SPARE		33	34	SPARE		
	SPARE		35	36	SPARE		
	SPARE		37	38	SPARE		
	SPARE		39	40	SPARE		
	SPARE		41	42	SPARE		

TOTAL CONNECTED LOAD: 0 WATTS

PHASE LOAD TO BE FILLED IN BY CONTRACTOR:

LOAD PHASE A: \_\_\_\_\_ LOAD PHASE B: \_\_\_\_\_ LOAD PHASE C: \_\_\_\_\_

## REMARKS

- ALL LOADS ARE IN WATTS, UNLESS OTHERWISE NOTED.
- ↑ DEDICATED NEUTRAL
- ★ GFI
- LOCKED

## NEW PANEL "046 PP C1-2"

208/120V, 3PH, 4-WIRE  
225A MAINS  
RECESS MOUNTED  
10 KAIC

LOAD	DESCRIPTION	BKR	CCT	CCT	BKR	DESCRIPTION	LOAD
	RECEPTACLES RM. 101, 102	15A, 1P	1	2	15A, 1P	RECEPTACLES RM. 102	
	RECEPTACLES RM. 115	20A, 1P	3	4	15A, 1P	RECEPTACLES RM. 114, 115	
	RECEPTACLES RM. 114	15A, 1P	5	6	15A, 1P	RECEPTACLES RM. 114	
	RECEPTACLES RM. 113A	15A, 1P	7	8	15A, 1P	RECEPTACLES RM. 112, 113	
	RECEPTACLES RM. 111	15A, 1P	9	10	15A, 1P	EF-44	
	EF-45	15A, 1P	11	12	15A, 1P	RECEPTACLES RM. 106A, 108	
	RECEPTACLES RM. 103, 103A	15A, 1P	13	14	20A, 1P	RECEPTACLES RM. C101	
	RECEPTACLES RM. 106B, 107	15A, 1P	15	16	15A, 1P	RECEPTACLES RM. 110	
	RECEPTACLES RM. 110, 110A	15A, 1P	17	18	15A, 1P	RECEPTACLES RM. 109, 109A	
	RECEPTACLES RM. 109A, 109B	15A, 1P	19	20	15A, 1P	CEILING JUNCTION BOX RM. 103	
	VAV BOXES	15A, 1P	21	22	15A, 1P	WATER FOUNTAIN RM. C101	
	CEILING JUNCTION BOX RM. 101	15A, 1P	23	24	15A, 1P	AUTOMATIC SINKS RM. WR104, WR104A	
	CEILING JUNCTION BOX RM. 101	15A, 1P	25	26	15A, 1P	CEILING JUNCTION BOX RM. 103	
	CEILING JUNCTION BOX RM. 101	15A, 1P	27	28	15A, 1P	CEILING JUNCTION BOX RM. 103	
	CEILING JUNCTION BOX RM. 111	15A, 1P	29	30	15A, 1P	SPARE	
	CEILING JUNCTION BOX RM. 111	15A, 1P	31	32	15A, 1P	SPARE	
	CEILING JUNCTION BOX RM. 111	15A, 1P	33	34	15A, 1P	SPARE	
	SPARE		35	36	15A, 1P	SPARE	
	SPARE		37	38	15A, 1P	SPARE	
	SPARE		39	40	20A, 1P	SPARE	
	SPARE		41	42	20A, 1P	SPARE	

## NEW PANEL "046 PP C1-1X"

208/120V, 3PH, 4-WIRE  
225A MAINS  
RECESS MOUNTED  
10 KAIC

LOAD	DESCRIPTION	BKR	CCT	CCT	BKR	DESCRIPTION	LOAD
	DOOR OPERATOR RM. WR104, C101A	15A, 1P	1	2	15A, 1P	LEVEL 1 CORR. LTG. (C101, C101A, 105)	
	EMERGENCY CALL STATION	15A, 1P	3	4	15A, 1P	EXIT LIGHTING (ALL EGRESS LEVEL 1 WING C)	
	SPARE	15A, 1P	5	6	15A, 1P	LEVEL 1 LTG. (101, 102, 103, 106)	
	SPARE	15A, 1P	7	8	15A, 1P	LEVEL 1 LTG. (109, 110, 111, 113A, 114)	
	SPARE	20A, 1P	9	10	15A, 1P	LEVEL 1 LTG & EF-46 (WR104)	
	SPARE	20A, 1P	11	12	15A, 1P	LEVEL 1 LTG & EF-47 (WR104A)	
	SPARE	20A, 1P	13	14	15A, 1P	EXTERIOR CANOPY LIGHTING / TIME CLOCK	
	SPARE	20A, 1P	15	16	15A, 1P	SPACE	
	SPARE		17	18	SPACE		
	SPARE		19	20	SPACE		
	SPARE		21	22	SPACE		
	SPARE		23	24	SPACE		
	SPARE		25	26	SPACE		
	SPARE		27	28	SPACE		
	SPARE		29	30	SPACE		

## NEW PANEL "046 DP-2X"

120/208V, 3PH, 4-WIRE  
400A MAINS  
SURFACE MOUNTED  
10 KAIC

LOAD	DESCRIPTION	BKR	CCT	CCT	BKR	DESCRIPTION	LOAD
	B1-1X	150A, 3P	1	2	150A, 3P	C1-1X	
			3	4			
			5	6			
			7	8	77A, 2P	FIRE ALARM PANEL ■	②
			9	10			
			11	12		SPACE	
			13	14		SPACE	
			15	16		SPACE	
			17	18		SPACE	
			19	20		SPACE	
			21	22		SPACE	
			23	24		SPACE	
			25	26		SPACE	
			27	28		SPACE	
			29	30		SPACE	
			31	32		SPACE	
			33	34		SPACE	
			35	36		SPACE	
			37	38		SPACE	
			39	40		SPACE	
			41	42		SPACE	

## NEW PANEL "046 DP-1E"

600V, 3PH, 3-WIRE  
225A MAINS  
SURFACE MOUNTED  
35 KAIC

LOAD	DESCRIPTION	BKR	CCT	CCT	BKR	DESCRIPTION	LOAD
75 kVA	DP-2E VIA TX-1E	90A, 3P	1	2	20A, 3P	AC-1	
			3	4			
			5	6			
			7	8			
	AC-2	40A, 3P	9	10	40A, 3P	AC-6	
			11	12			
			13	14			
	RF-1	15A, 3P	15	16	15A, 3P	RF-2	
			17	18			
			19	20			
			21	22	15A, 3P	P-2A	
			23	24			
			25	26			
			27	28	15A, 3P	P-5	
			29	30			
	P-1	15A, 3P	31	32			
			33	34	15A, 3P	P-6	
			35	36			
			37	38			
			39	40	20A, 3P	P-7	
			41	42			
①	ELEVATOR	35A, 3P	43	44	60A, 3P	SPD	③
			45	46			
			47	48			
			49	50		SPACE	
			51	52		SPACE	
			53	54		SPACE	
			55	56		SPACE	
			57	58		SPACE	
			59	60		SPACE	

## NEW PANEL "046 DP-2E"

120/208V, 3PH, 4-WIRE  
400A MAINS  
SURFACE MOUNTED  
22 KAIC

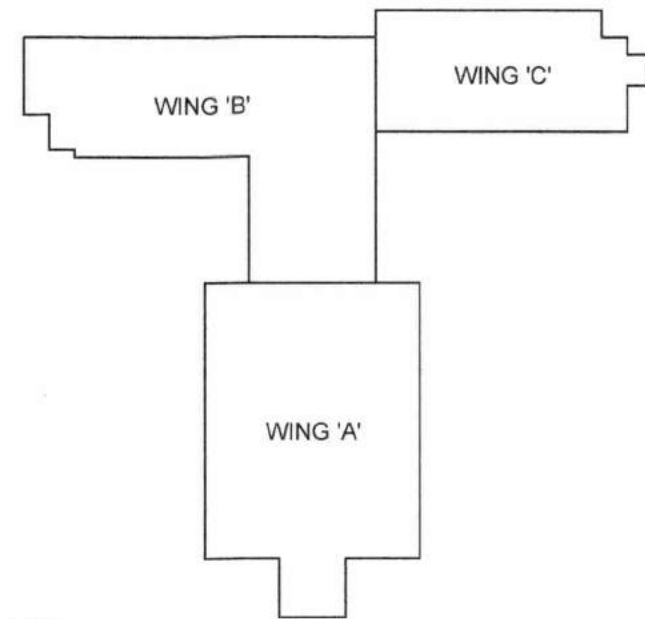
LOAD	DESCRIPTION	BKR	CCT	CCT	BKR	DESCRIPTION	LOAD
	PANEL U	100A, 3P	1	2	100A, 3P	PANEL BB	
			3	4			
			5	6			
			7	8			
	PANEL X	100A, 3P	9	10	100A, 3P	PANEL EX4	
			11	12			
			13	14	15A, 1P	FC-1	
	PANEL Y	100A, 3P	15	16	60A, 3P	SPD	③
			17	18			
			19	20			
	SPACE		21	22			
	SPACE		23	24		SPACE	
	SPACE		25	26		SPACE	
	SPACE		27	28		SPACE	
	SPACE		29	30		SPACE	
	SPACE		31	32		SPACE	
	SPACE		33	34		SPACE	
	SPACE		35	36		SPACE	
	SPACE		37	38		SPACE	
	SPACE		39	40		SPACE	
	SPACE		41	42		SPACE	

## GENERAL NOTES:

- A. KA RATINGS FOR PANELS ARE INDICATIVE. FINAL KA RATINGS SHALL BE VERIFIED AS PER ARC FLASH COORDINATION REPORT.

## DRAWING NOTES

- COORDINATE BREAKER SIZE WITH ELEVATOR SHOP DRAWINGS.
- COORDINATE BREAKER SIZE WITH EXISTING FIRE ALARM PANEL REQUIREMENTS. BREAKER TO BE LOCKABLE AND PAINTED RED.
- COORDINATE BREAKER SIZE WITH SPD MANUFACTURER.
- STARTERS FOR MECHANICAL EQUIPMENT FOLLOWING DEMOLITION OF MCC-1 TO BE FED BY PANEL DP-2X. CONTRACTOR TO COORDINATE BREAKER SIZE REQUIREMENTS WITH EQUIPMENT ON SITE.



Key Plan

## DO NOT SCALE DRAWINGS:

Contractors must check and verify all site conditions. Notify the Owner's Representative in writing before proceeding with the work if discrepancies are evident between the drawings and the site condition. No extras to the contract will be allowed if discrepancies were evident prior to start of work.

## UNEXPECTED DISCOVERY OF ASBESTOS:

Where a friable material is discovered during construction, renovations and/or demolition, and it is suspected to contain asbestos, the Contractor must stop all work that may disturb the material. The Contractor shall advise the Owner of the discovery and await instructions from the owner.

A = Detail number  
B = Drawing number where detailed

0 ISSUED FOR PERMIT &amp; TENDER TA NOV 2, 2018

NO. ISSUED BY DATE

Orientation

Seal Seal



**UNIVERSITY OF GUELPH**  
Design, Engineering & Construction  
Physical Resources  
Guelph, Ontario, N1G 2W1

Consultant www.jrichards.ca

**J.L. Richards**  
ENGINEERS · ARCHITECTS · PLANNERS

Project  
**BUILDING #046 RENOVATIONS**

Drawing Title  
**ELECTRICAL  
PANEL SCHEDULES - 3 OF 4**

Project No.  
**504034**

Location  
**UNIVERSITY OF GUELPH  
BUILDING #046**

Scale AS INDICATED	Date NOV 2, 2018
Drawn by SO	Drawing No.
Checked By HM	<b>E35</b>
Approved By HM	
JLR # 27915	

Cad File No. ----

of 170



GENERAL NOTES

1. CIRCUITS SHOWN IN EXISTING PANELS ARE BASED ON EXISTING PHYSICAL PANEL SCHEDULES FOUND ON SITE. CONTRACTOR VERIFY EXISTING LOADS PRIOR TO START OF WORK.

PANEL "046 PP A0-2"  
OLD PANEL "R"  
208/120V, 3PH, 4-WIRE  
225A MAINS  
SURFACE MOUNTED

LOAD	DESCRIPTION	BKR	CCT	CCT	BKR	DESCRIPTION	LOAD
	LIGHTS C5	20A, 1P	1	2	20A, 1P	RECEPTACLE	
	LIGHTS	20A, 1P	3	4	30A, 1P	RECEPTACLE	
	LIGHTS D4, D5	20A, 1P	5	6	20A, 1P	RECEPTACLE	
	LIGHTS C3, C4	20A, 1P	7	8	20A, 1P	RECEPTACLE	
	LIGHTS C2, D3	20A, 1P	9	10	20A, 1P	RECEPTACLE	
	LIGHTS C1, D2	20A, 1P	11	12	30A, 1P	RECEPTACLE	
	LIGHTS E6, E7	20A, 1P	13	14	20A, 1P	RECEPTACLE	
	LIGHTS	20A, 1P	15	16	20A, 1P	RECEPTACLE	
	LIGHTS	20A, 1P	17	18	20A, 1P	RECEPTACLE	
	LIGHTS H4	20A, 1P	19	20	20A, 1P	RECEPTACLE	
	LIGHTS E4, E5	20A, 1P	21	22	20A, 1P	RECEPTACLE	
	LIGHTS H3	20A, 1P	23	24	20A, 1P	RECEPTACLE	
	LIGHTS H2	20A, 1P	25	26	20A, 1P	RECEPTACLE	
	LIGHTS E1	20A, 1P	27	28	20A, 1P	RECEPTACLE	
	LIGHTS H1	20A, 1P	29	30	15A, 1P	RECEPTACLE	
	RECEPT STERILIZER	20A, 1P	31	32			
	2 & 1 RECEPT	20A, 1P	33	34	20A, 2P	RECEPTACLE	
	RECEPTACLES	20A, 1P	35	36	20A, 1P	RECEPTACLE	
	RECEPTACLES H2	20A, 1P	37	38			
	RECEPTACLES H1	20A, 1P	39	40	30A, 2P	OUTLET FOR DRYER	
	LIGHTS D1	20A, 1P	41	42	20A, 1P	LIGHTS E2, E3	

PANEL "046 PP A0-1E"  
OLD PANEL "U"  
208/120V, 3PH, 4-WIRE  
225A MAINS

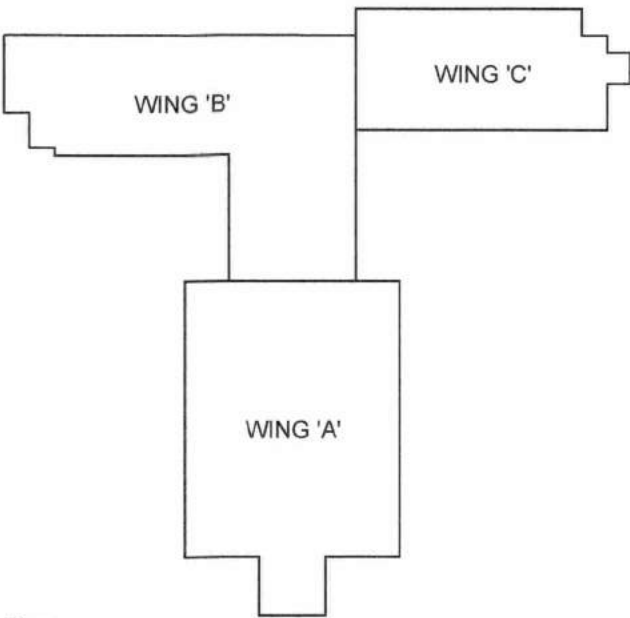
LOAD	DESCRIPTION	BKR	CCT	CCT	BKR	DESCRIPTION	LOAD
???		15A, 1P	1	2	15A, 1P	???	
???		20A, 1P	3	4	15A, 1P	LIGHTS	
???		15A, 1P	5	6	20A, 1P	CORR 174 BIO ROOMS	
BIO ROOMS		20A, 1P	7	8	15A, 1P	LIGHTS	
???		20A, 1P	9	10	15A, 1P	LIGHTS	
E6 HALL		20A, 1P	11	12	15A, 1P	LIGHTS / RECEPT	
LIGHTS		20A, 1P	13	14	15A, 1P	LIGHTS	
LIGHTS		15A, 1P	15	16	15A, 1P	LIGHTS	
LIGHTS		20A, 1P	17	18	20A, 1P	SEWAGE ROOM	
CORRIDOR		15A, 1P	19	20	15A, 1P	FANS HORSEFALL 2	
LIGHTS		15A, 1P	21	22	15A, 1P	RECS HORSEFALL 2	
LIGHTS		15A, 1P	23	24	15A, 1P	RECS HORSEFALL 2	
???		30A, 3P	25	26	15A, 1P	RECS	
			27	28	15A, 1P	HORSEFALL #1 BOOSTER FAN	
			29	30	20A, 1P	CORR 153 AND BIO ROOMS	

PANEL "046 PP A0-1"  
OLD PANEL "P"  
208/120V, 3PH, 4-WIRE  
225A MAINS  
SURFACE MOUNTED

LOAD	DESCRIPTION	BKR	CCT	CCT	BKR	DESCRIPTION	LOAD
	LIGHTS, UNIT HEATER	20A, 1P	1	2	20A, 1P	LIGHTS A4	
	LIGHTS A5	20A, 1P	3	4	20A, 1P	LIGHTS B5, B6	
	LIGHTS B7, 8	20A, 1P	5	6	20A, 1P	LIGHTS A2, A3	
	LIGHTS B1	20A, 1P	7	8	20A, 1P	LIGHTS	
	LIGHTS	20A, 1P	9	10	20A, 1P	LIGHTS FEED KITCHEN	
	LIGHTS	20A, 1P	11	12	20A, 1P	LIGHTS B2	
	3 RECEPTACLES	20A, 1P	13	14	20A, 1P	RECEPTACLE	
	RECEPTACLE	20A, 1P	15	16	20A, 1P	RECEPTACLE B2	
	RECEPTACLE B7	20A, 1P	17	18	20A, 1P	4 RECEPTACLES B1	
	RECEPTACLE	20A, 1P	19	20	20A, 1P	87 RECEPTACLE C6	
	RECEPTACLE B5	20A, 1P	21	22	20A, 1P	RECEPTACLE C5	
	RECEPTACLE	20A, 1P	23	24	20A, 1P	RECEPTACLE	
	3 RECEPTACLES	20A, 1P	25	26	20A, 1P	C3 RECEPTACLE	
	3 RECEPTACLES	20A, 1P	27	28	20A, 1P	RECEPTACLE	
	3 RECEPTACLES	20A, 1P	29	30	20A, 1P	RECEPTACLE	
	ENTRANCE HEATER	20A, 1P	31	32	20A, 1P	2 RECEPTACLE	
	RECEPTACLE	20A, 1P	33	34	20A, 1P	2 RECEPTACLE	
	3 RECEPTACLES	20A, 1P	35	36	20A, 1P	2 RECEPTACLE	
	RECEPTACLE	20A, 1P	37	38	15A, 1P	AERCO WATER WIZARD	
	KITCHEN	20A, 1P	39	40	15A, 1P	RECEPT COMPRESSOR ROOM	
	3 UNIT HEATERS	20A, 1P	41	42	20A, 1P	2 RECEPT. FANS	

PANEL "046 PP A0-3"  
OLD PANEL "T"  
208/120V, 3PH, 4-WIRE  
225A MAINS  
SURFACE MOUNTED

LOAD	DESCRIPTION	BKR	CCT	CCT	BKR	DESCRIPTION	LOAD
	FEED FOR FAN CONTROL PANEL	15A, 1P	1	2	15A, 1P	E WING CORRIDOR 4 RECEPTACLES	
	SPARE	15A, 1P	3	4	15A, 1P	CLEAN CORRIDOR A ROOMS RECEPTACLES	
	SPARE	15A, 1P	5	6	15A, 1P	CLEAN CORRIDOR B1 RECEPTACLES	
	SPARE	15A, 1P	7	8	15A, 1P	2 RECEPTACLES	
	SPARE	15A, 1P	9	10	15A, 1P	LADIES CHANGE ROOM / STORAGE ROOM	
	3 RECEPTACLES	15A, 1P	11	12	15A, 1P	SECURITY ACCESS CONTROL	
	SPARE	15A, 1P	13	14	15A, 1P	LIGHTS	
	RECEPTACLE	15A, 1P	15	16	15A, 1P	LIGHTS	
	SPARE	15A, 1P	17	18	15A, 1P	LIGHTS	
	RECEPTACLE	15A, 1P	19	20	15A, 1P	WALL LIGHTS	
	JOHNSON CONTROL	15A, 1P	21	22	15A, 1P	LIGHTS	
	COOLING TOWER FAN	15A, 1P	23	24	15A, 1P	LIGHTS	
	LIGHTS	15A, 1P	25	26	15A, 1P	3 UNIT HEATERS	
	LIGHTS	15A, 1P	27	28	15A, 1P	3 UNIT HEATERS	
	LIGHTS	15A, 1P	29	30			
	POWER CONTROL	15A, 1P	31	32	40A, 2P	SPARE	
	SPARE	40A, 2P	33	34	15A, 1P	RECEPT	
			35	36	15A, 1P	RECEPT	
			37	38	15A, 1P	RECEPT	
	RM 133	15A, 3P	39	40			
			41	42	20A, 2P	TIME CLOCK	



Key Plan

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A = Detail number  
B = Drawing number where detailed


0	ISSUED FOR PERMIT & TENDER	TA	NOV 2, 2018
NO.	ISSUED	BY	DATE

Orientation	

Seal	Seal

UNIVERSITY  
OF GUELPH  
Design, Engineering & Construction  
Physical Resources  
Guelph, Ontario. N1G 2W1

Consultant  
  
J.L. Richards  
ENGINEERS - ARCHITECTS - PLANNERS

Project  
BUILDING #046  
RENOVATIONS

Drawing Title  
ELECTRICAL  
PANEL SCHEDULES - 4 OF 4

Project No.  
504034

Location  
UNIVERSITY OF GUELPH  
BUILDING #046

Scale N.T.S.	Date NOV 2, 2018
Drawn by SO	Drawing No.
Checked By HM	E36
Approved By HM	
JLR # 27915	
Cad File No. ----	of 170

GENERAL NOTES

- A. PANEL SCHEDULES HAVE BEEN PRODUCED FROM SITE PHOTOS. CONTRACTOR TO CONFIRM BREAKER REQUIREMENTS WHEN REPLACING EXISTING PANELS.
- B. CONTRACTOR TO PROVIDE LAMACOID LABELS ON NEW PANELS INDICATED OLD AND NEW PANEL NAMES.
- C. KA RATINGS FOR PANELS ARE INDICATIVE. FINAL KA RATINGS SHALL BE VERIFIED AS PER ARC FLASH COORDINATION REPORT.