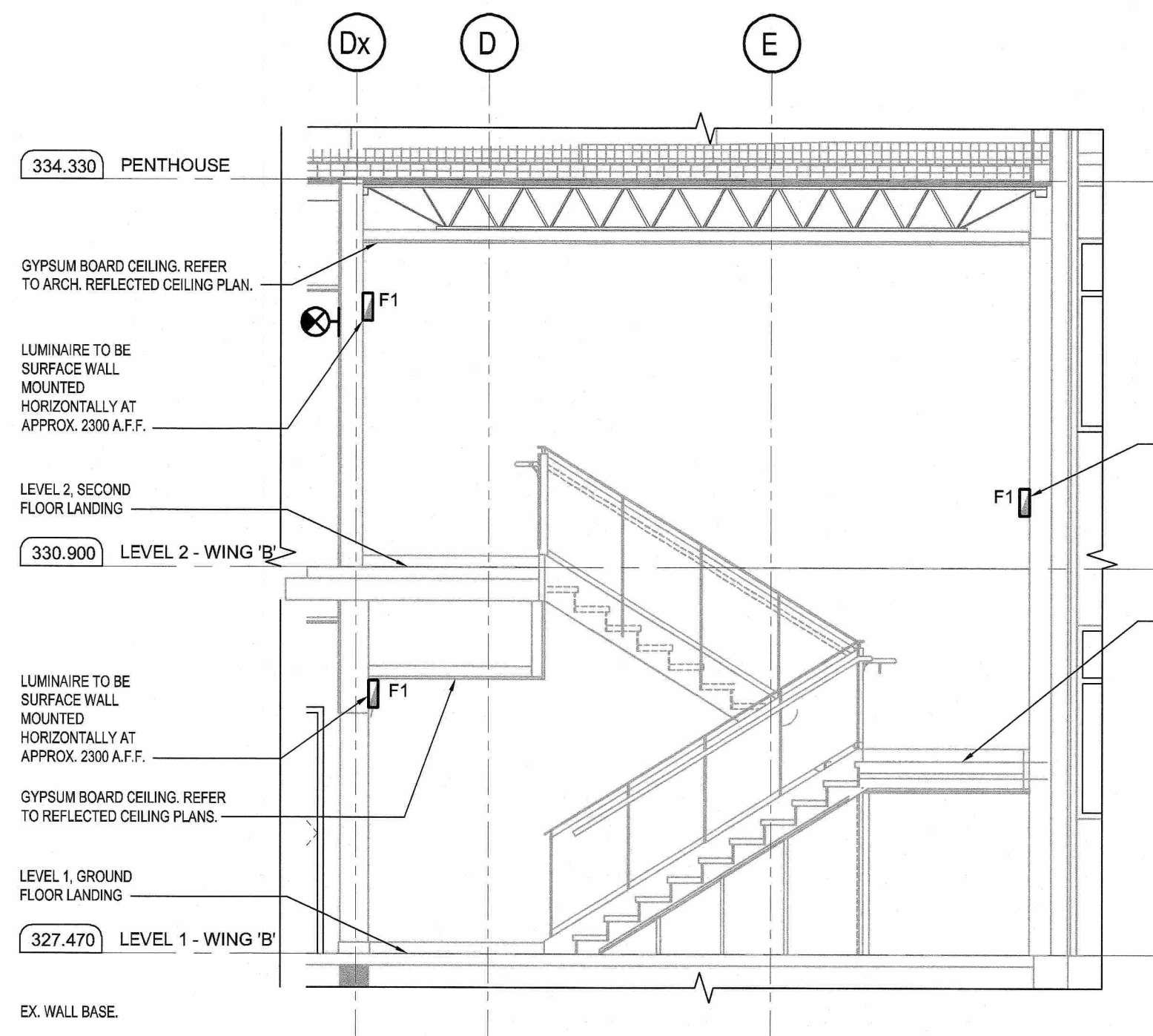
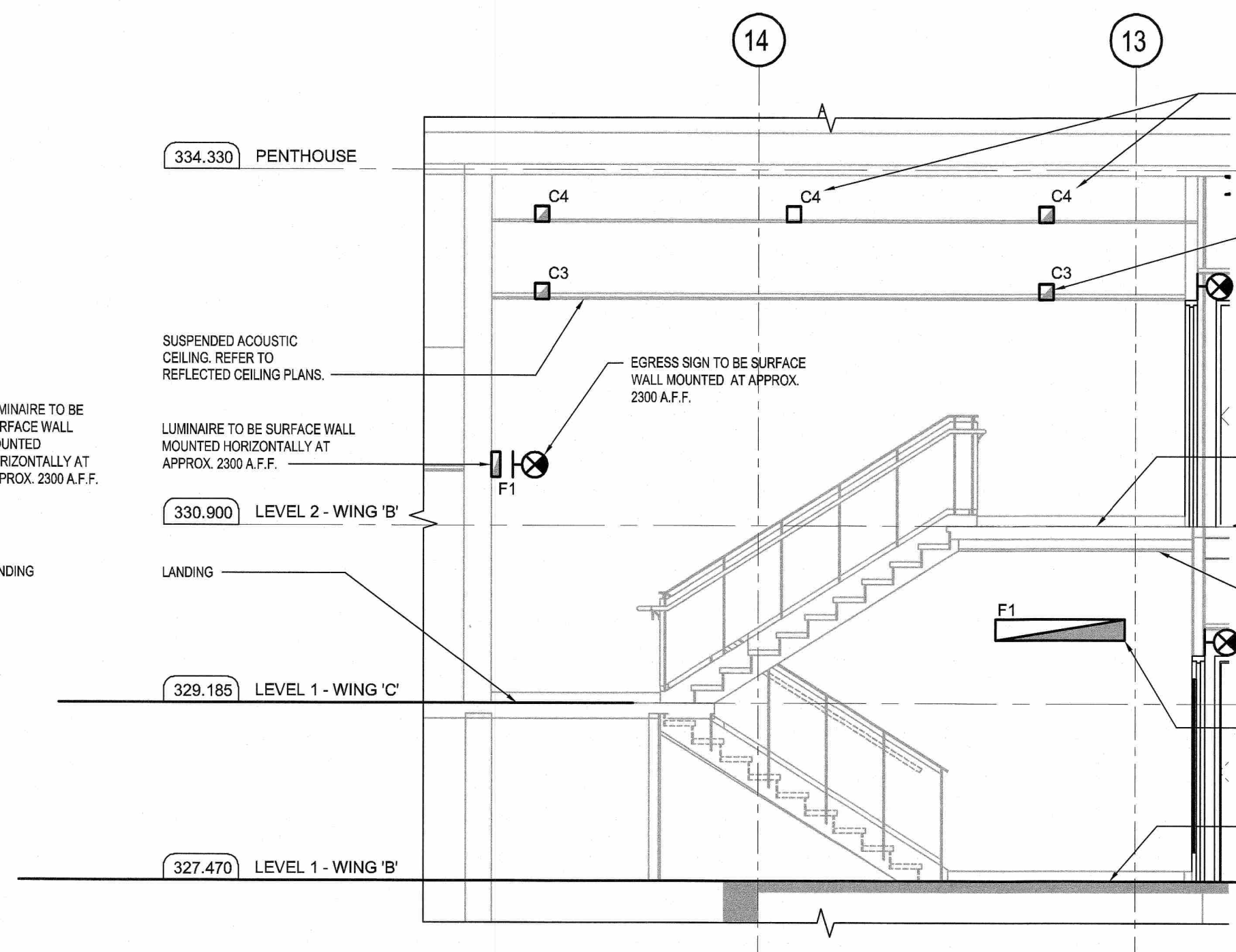


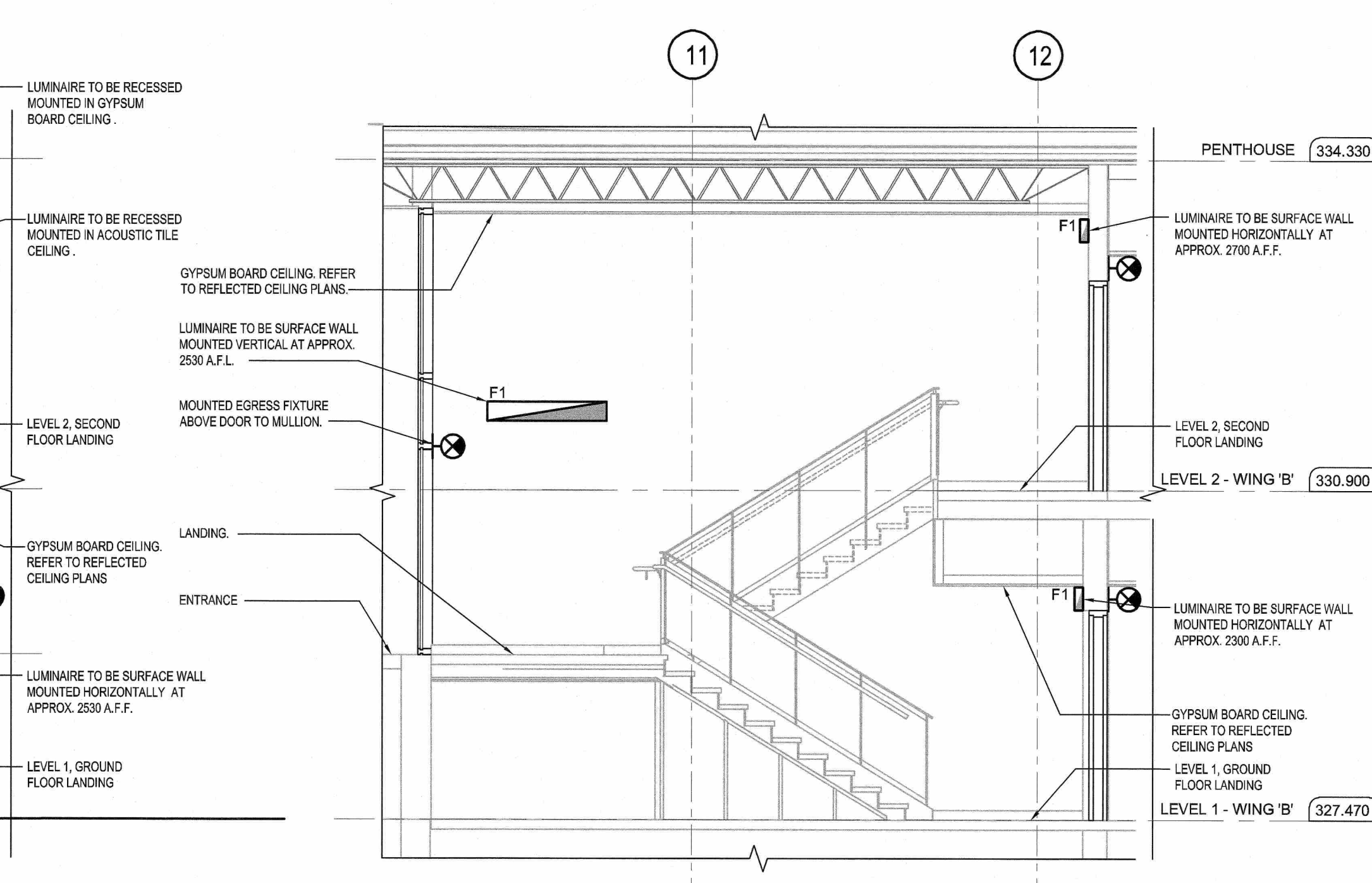
 <p>Design, Engineering & Construction Physical Resources Guelph, Ontario. N1G 2W1</p>	
<p>Consultant www.jrichards.ca</p>	
 <p>J.L.Richards ENGINEERS - ARCHITECTS - PLANNERS</p>	
<p>Project</p> <p>BUILDING #406</p> <p>RENOVATIONS</p>	
<p>Drawing Title</p> <p>ELECTRICAL</p> <p>ELECTRICAL COVER SHEET</p> <p>AND LUMINAIRE SCHEDULE</p> <p>Project No.</p> <p>504034</p>	
<p>Location</p> <p>UNIVERSITY OF GUELPH</p> <p>BUILDING #406</p>	
<p>Scale</p> <p>NTS</p>	<p>Date</p> <p>NOV 2, 2018</p>
<p>Drawn by</p> <p>AM</p>	<p>Drawing No.</p> <p>E01</p>
<p>Checked By</p> <p>HM</p>	
<p>Approved By</p> <p>HM</p>	
<p>JLR #</p> <p>27915</p>	
<p>Cad File No. -----</p>	



1 STAIR SECTION - STAIRWELL ST101
E09
SCALE = 1:50

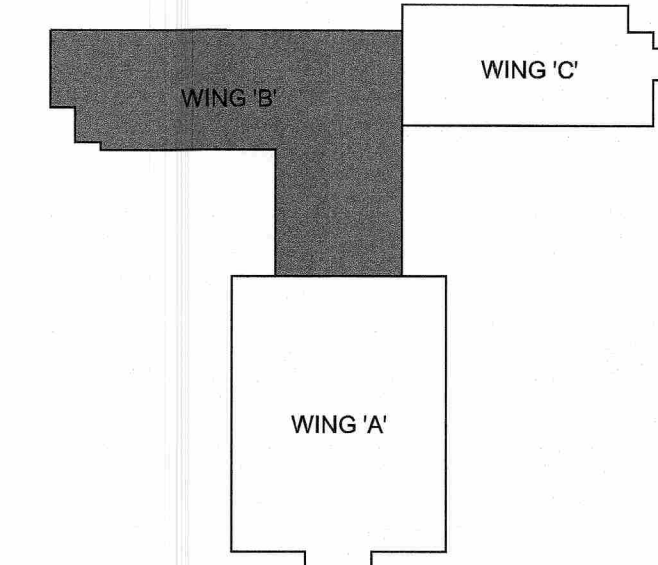


2 STAIR SECTION - STAIRWELL ST102
E09
SCALE = 1:50



3 STAIR SECTION - STAIRWELL ST103
E09
SCALE = 1:50

H1 SERIES LUMINAIRE SCHEDULE				
TYPE	LAMP	DESCRIPTION	MANUFACTURER (MODEL NUMBER)	
H1-A RM. 143				
H1-B RM. 143	LED 3500K	LED LINEAR LUMINAIRE RECESSED IN WOOD FEATURE CEILING, SHAPE LINEAR LENGTH APPROX 2286mm LONG AS SHOWN ON DRAWINGS, 120V, 0-10V DIMMING.	NEO-RAY DEFINE 3 SERIES -	S123DR-S-560D-835-FES- (NOTE TRIMLESS INSTALLATION, WOOD PANEL CEILING SYSTEM APPROX. 2286mm LONG, VERIFY LENGTH WITH ARCH. WOOD FEATURE CEILING SYSTEM)-1-U-DD-F-W
H1-C RM. C108	LED 3500K	LED LINEAR LUMINAIRE RECESSED IN WOOD FEATURE CEILING, SHAPE L, LENGTH APPROX 863mm & 1143mm LONG AS SHOWN ON DRAWINGS, 120V, 0-10V DIMMING.	NEO-RAY DEFINE 3 SERIES -	S123DR-S-560D-835-FES- (JOIN KIT, CORNER KIT/ NOTE TRIMLESS INSTALLATION, WOOD PANEL CEILING SYSTEM SHAPE L, LENGTH APPROX 863mm X 1143mm LONG, VERIFY LENGTH WITH ARCH. WOOD FEATURE CEILING SYSTEM)-1-U-DD-F-W
H1-D RM. C106	LED 3500K	LED LINEAR LUMINAIRE RECESSED IN WOOD FEATURE CEILING, SHAPE LINEAR LENGTH APPROX 7645mm LONG AS SHOWN ON DRAWINGS, 120V, 0-10V DIMMING.	NEO-RAY DEFINE 3 SERIES -	S123DR-S-560D-835-FES- (NOTE TRIMLESS INSTALLATION, WOOD PANEL CEILING SYSTEM APPROX. 7645mm LONG, VERIFY LENGTH WITH ARCH. WOOD FEATURE CEILING SYSTEM)-1-U-DD-F-W
H1-E RM. C104	LED 3500K	LED LINEAR LUMINAIRE RECESSED IN WOOD FEATURE CEILING, SHAPE LINEAR LENGTH APPROX 7340mm LONG AS SHOWN ON DRAWINGS, 120V, 0-10V DIMMING.	NEO-RAY DEFINE 3 SERIES -	S123DR-S-560D-835-FES- (NOTE TRIMLESS INSTALLATION, WOOD PANEL CEILING SYSTEM APPROX. 7340mm LONG, VERIFY LENGTH WITH ARCH. WOOD FEATURE CEILING SYSTEM)-1-U-DD-F-W
H1-F RM. 236				
H1-G RM. C202	LED 3500K	LED LINEAR LUMINAIRE RECESSED IN WOOD FEATURE CEILING, SHAPE LINEAR LENGTH APPROX 3530mm LONG AS SHOWN ON DRAWINGS, 120V, 0-10V DIMMING.	NEO-RAY DEFINE 3 SERIES -	S123DR-S-560D-835-FES- (NOTE TRIMLESS INSTALLATION, WOOD PANEL CEILING SYSTEM APPROX. 3530mm LONG, VERIFY LENGTH WITH ARCH. WOOD FEATURE CEILING SYSTEM)-1-U-DD-F-W
H1-H RM. C201	LED 3500K	LED LINEAR LUMINAIRE RECESSED IN WOOD FEATURE CEILING, SHAPE LINEAR LENGTH APPROX 6350mm LONG AS SHOWN ON DRAWINGS, 120V, 0-10V DIMMING.	NEO-RAY DEFINE 3 SERIES -	S123DR-S-560D-835-FES- (NOTE TRIMLESS INSTALLATION, WOOD PANEL CEILING SYSTEM APPROX. 6350mm LONG, VERIFY LENGTH WITH ARCH. WOOD FEATURE CEILING SYSTEM)-1-U-DD-F-W
H1-I RM. C201	LED 3500K	LED LINEAR LUMINAIRE RECESSED IN WOOD FEATURE CEILING, SHAPE LINEAR LENGTH APPROX 5334mm LONG AS SHOWN ON DRAWINGS, 120V, 0-10V DIMMING.	NEO-RAY DEFINE 3 SERIES -	S123DR-S-560D-835-FES- (NOTE TRIMLESS INSTALLATION, WOOD PANEL CEILING SYSTEM APPROX. 5334mm LONG, VERIFY LENGTH WITH ARCH. WOOD FEATURE CEILING SYSTEM)-1-U-DD-F-W
H1-K RM. C206	LED 3500K	LED LINEAR LUMINAIRE RECESSED IN WOOD FEATURE CEILING, SHAPE LINEAR LENGTH APPROX 4877mm LONG AS SHOWN ON DRAWINGS, 120V, 0-10V DIMMING.	NEO-RAY DEFINE 3 SERIES -	S123DR-S-560D-835-FES- (NOTE TRIMLESS INSTALLATION, WOOD PANEL CEILING SYSTEM APPROX. 4877mm LONG, VERIFY LENGTH WITH ARCH. WOOD FEATURE CEILING SYSTEM)-1-U-DD-F-W
H1-L RM. 217	LED 3500K	LED LINEAR LUMINAIRE RECESSED IN WOOD FEATURE CEILING, SHAPE L, LENGTH APPROX 1194mm & 2413mm LONG AS SHOWN ON DRAWINGS, 120V, 0-10V DIMMING.	NEO-RAY DEFINE 3 SERIES -	S123DR-S-560D-835-FES- (JOIN KIT, CORNER KIT/ NOTE TRIMLESS INSTALLATION, WOOD PANEL CEILING SYSTEM SHAPE L, LENGTH APPROX 1194 X 2413mm LONG, VERIFY LENGTH WITH ARCH. WOOD FEATURE CEILING SYSTEM)-1-U-DD-F-W
H1-M RM. 217	LED 3500K	LED LINEAR LUMINAIRE RECESSED IN WOOD FEATURE CEILING, SHAPE LINEAR LENGTH APPROX 1701mm LONG AS SHOWN ON DRAWINGS, 120V, 0-10V DIMMING.	NEO-RAY DEFINE 3 SERIES -	S123DR-S-560D-835-FES- (NOTE TRIMLESS INSTALLATION, WOOD PANEL CEILING SYSTEM APPROX. 1701mm LONG, VERIFY LENGTH WITH ARCH. WOOD FEATURE CEILING SYSTEM)-1-U-DD-F-W



Key Plan

DO NOT SCALE DRAWINGS:

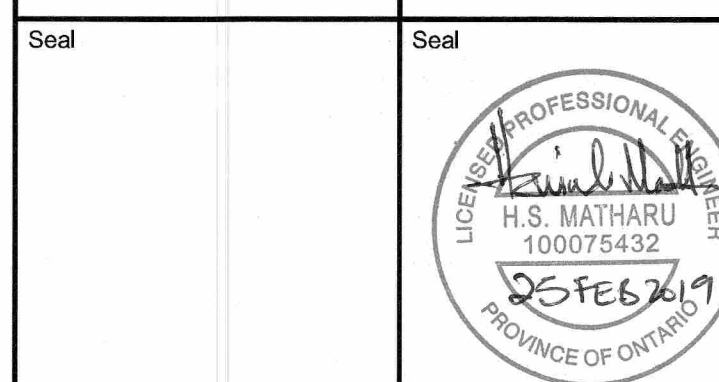
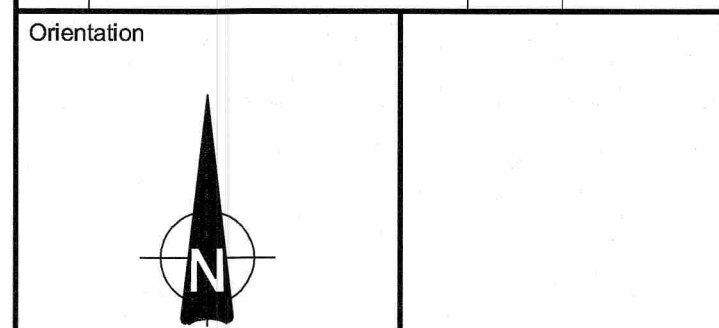
Contractors must check and verify all site conditions. Notify the Owner's Representative in writing before proceeding with the work if discrepancies are evident between the drawings and the site condition. No extras to the contract will be allowed if discrepancies were evident prior to start of work.

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

POST-TENDER ADDENDUM NO.1 TA FEB 26, 2019
0 ISSUED FOR PERMIT & TENDER TA NOV 2, 2018
NO. ISSUED BY DATE



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

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Project
BUILDING #046 RENOVATIONS

Drawing Title
ELECTRICAL STAIR SECTIONS WING B

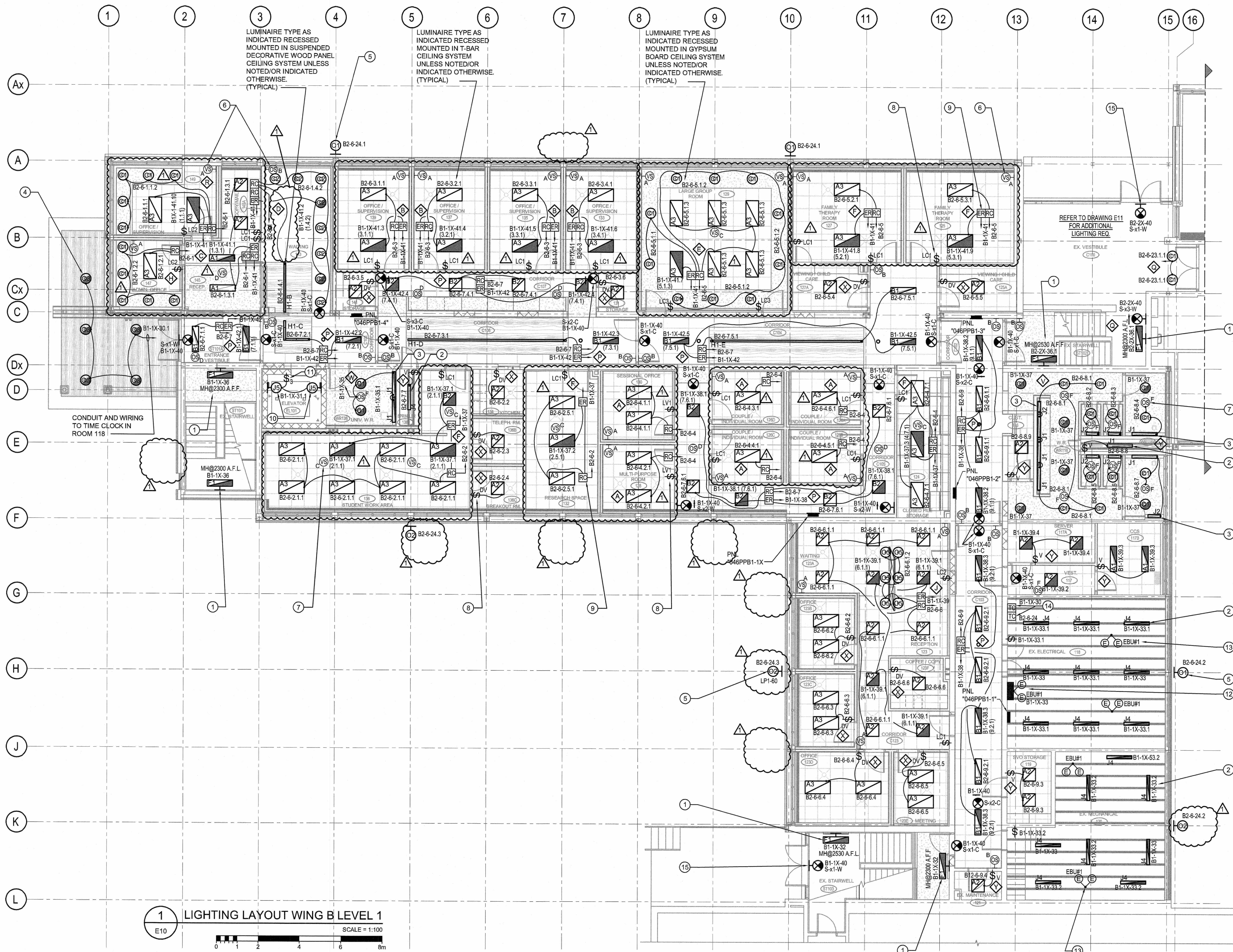
Project No.
504034

Location
UNIVERSITY OF GUELPH BUILDING #046

Scale
N.T.S.
Date
NOV 2, 2018
Drawn by
M.C.D.
Drawing No.
E09
Checked By
H.M.
Approved By
H.M.
JLR #
27915
of 173
Cad File No. ----

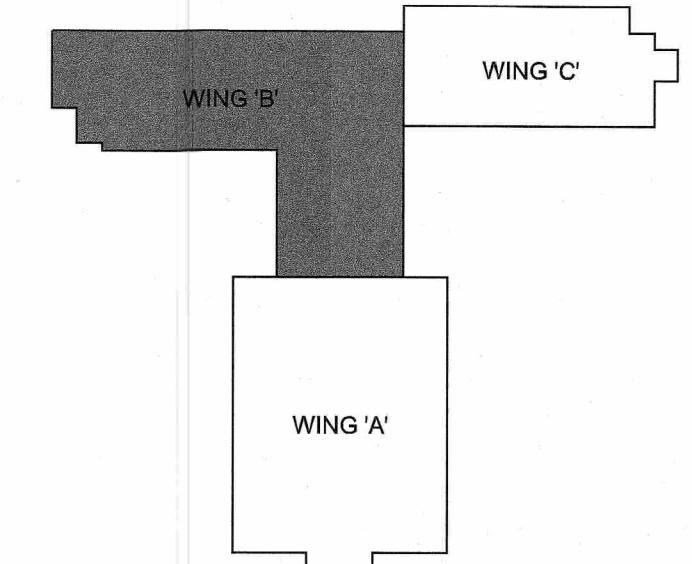
GENERAL NOTES

- 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 THAT 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 LAMACOD 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 SPACE (SEPARATED BY A STUD) AND PREFERABLY ISOLATED BY 600mm APART WHERE POSSIBLE FOR WALL ERATED STC 45 OR HIGHER. REFER TO DETAIL 3E20 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 "B2-6-2.1X-30.1" 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 (OWSJ) C/W AC90 WIRING FROM JS 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

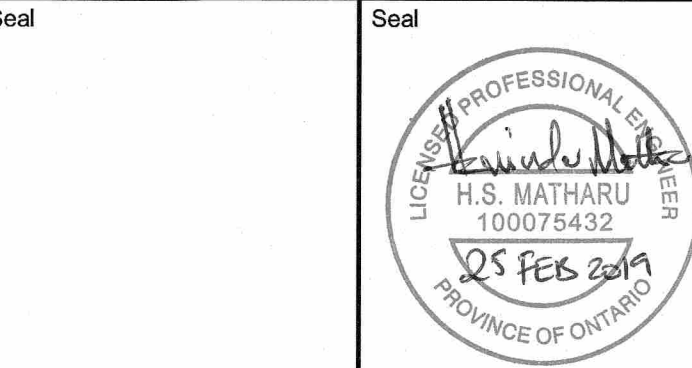
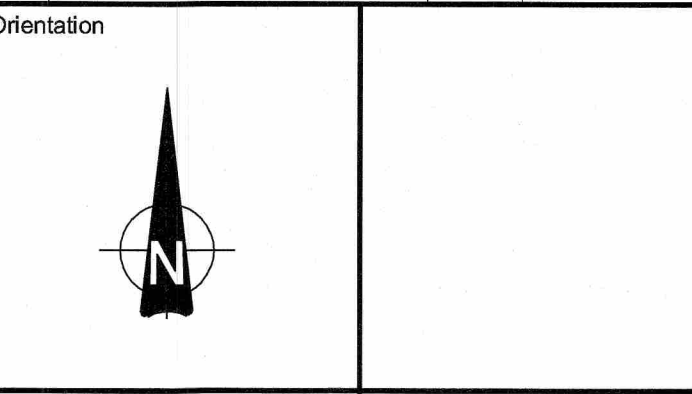
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UNIVERSITY OF GUELPH
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Guelph, Ontario. N1G 2W1

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Project
BUILDING #046 RENOVATIONS

Drawing Title
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Project No.
504034

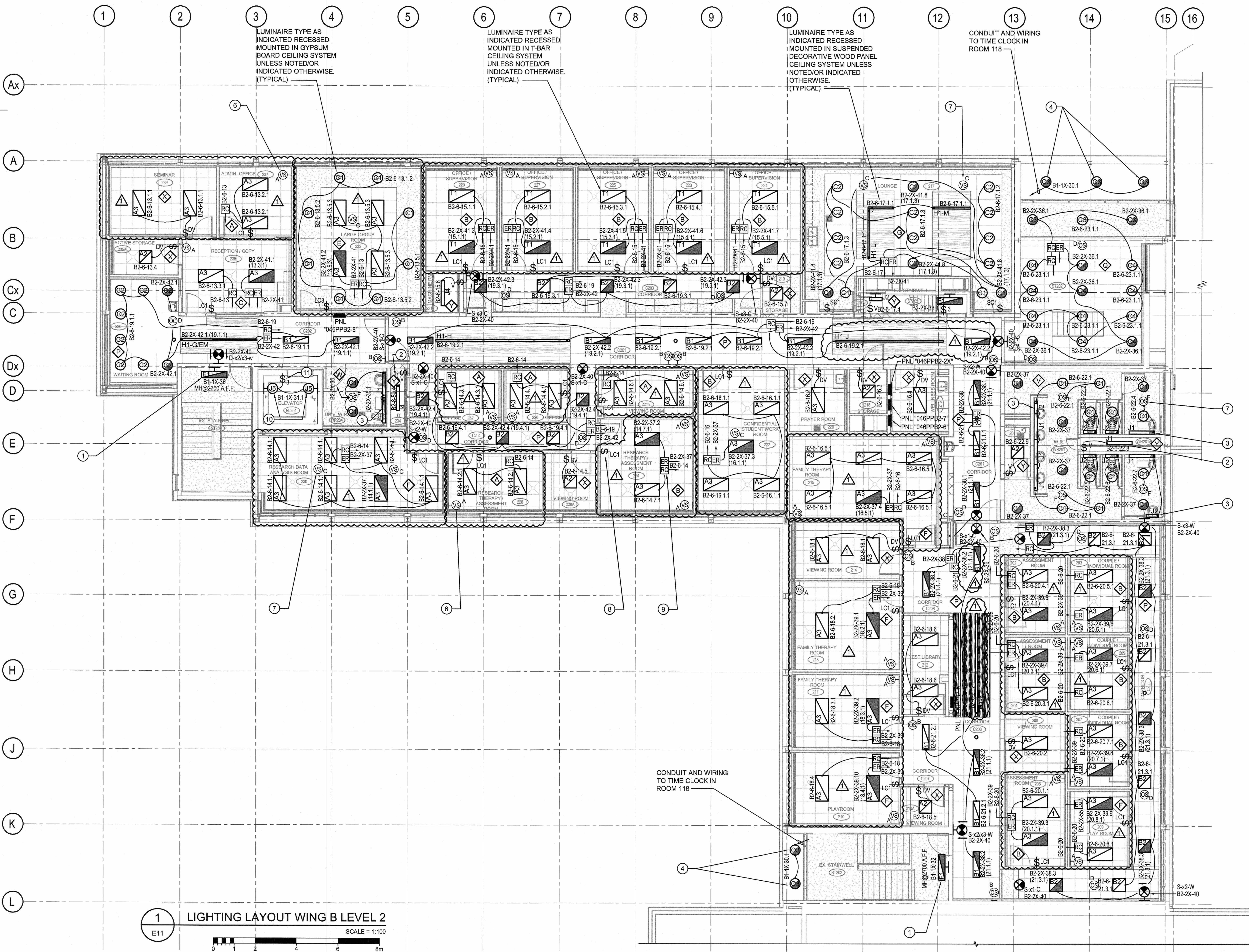
Location
UNIVERSITY OF GUELPH BUILDING #046

Scale AS INDICATED	Date NOV 2, 2018
Drawn by AM	Drawing No. E10
Checked By HM	
Approved By HM	
JLR # 27915	of 173

Cad File No. ----

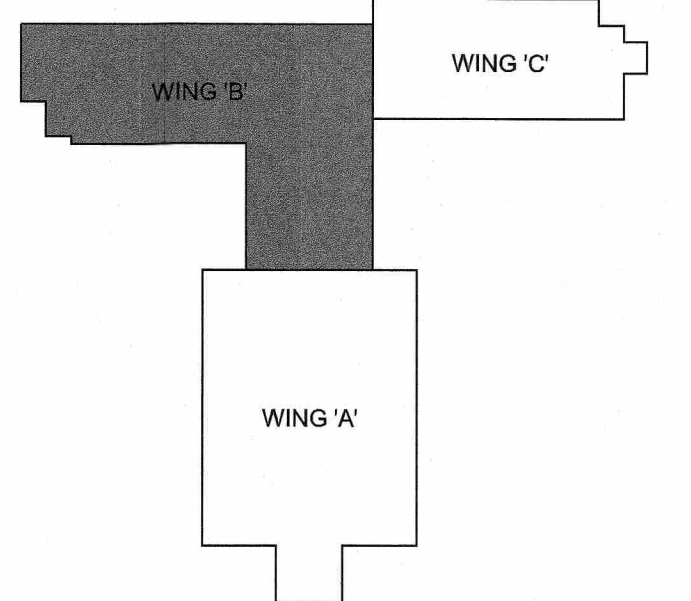
GENERAL NOTES

- 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 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. 3E20 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 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/SOFFT. 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 before 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

POST-TENDER ADDENDUM NO.1	TA	FEB 26, 2019
ISSUED FOR PERMIT & TENDER	TA	NOV 2, 2018
NO. ISSUED	BY	DATE

Orientation

Seal

Seal

PROFESSIONAL ENGINEER
H.S. MATHARU
1000754332
FEB 2019
PROVINCE OF ONTARIO

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 LAYOUT WING B
LEVEL 2

Project No.

504034

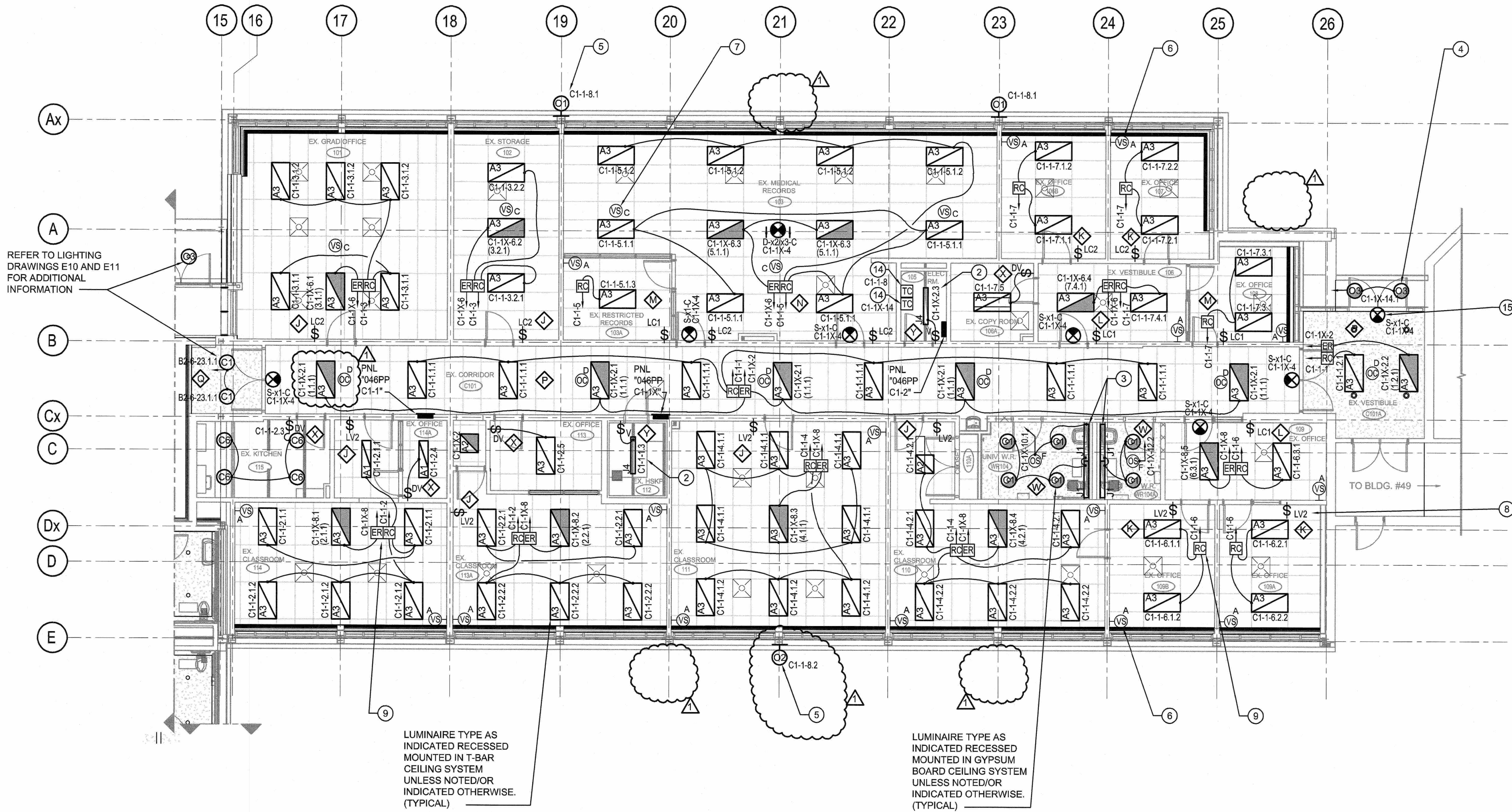
Location

UNIVERSITY OF GUELPH
BUILDING #046

Scale	AS INDICATED	Date	NOV 2, 2018
Drawn by	AM	Drawing No.	E11
Checked By	HM		
Approved By	HM		
JLR #	27915		of 173
Cad File No.	----		

GENERAL NOTES

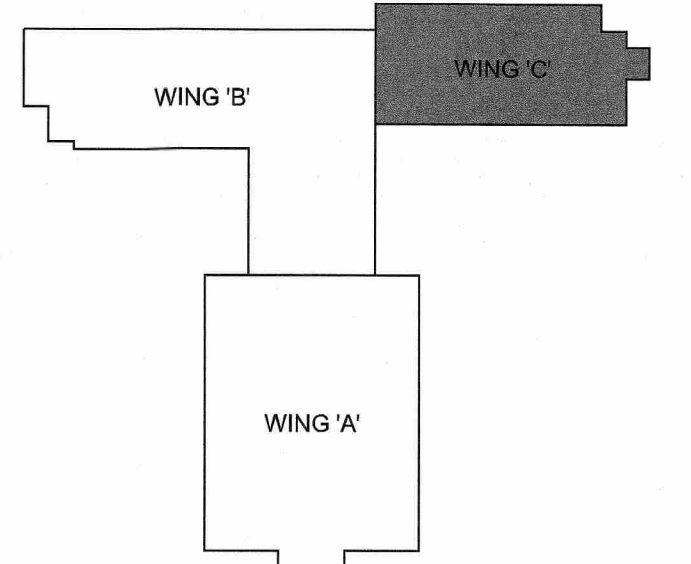
- A. CAREFULLY COORDINATE ALL ELECTRICAL WORK WITH ALL OTHER TRADES ON SITE TO ENSURE NO CONFLICTS OR INTERFERENCES OCCUR.
- B. PROVIDE ALL FASTENERS, FITTINGS, JUNCTION, OUTLET, BACKBOXES, CONDUIT, WIRING AND HARDWARE REQUIRED TO ENSURE A COMPLETE AND OPERATIONAL SYSTEM. REFER TO SPECIFICATIONS.
- C. 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 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



1 LIGHTING LAYOUT WING C LEVEL 1
E12
SCALE = 1:100
0 1 2 4 6 8m

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

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.

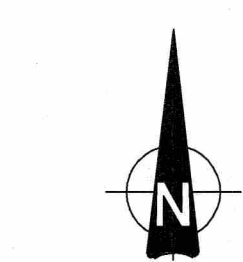
UNEXPECTED DISCOVERY OF ASBESTOS:

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A = Detail number
B = Drawing number where detailed

POST-TENDER ADDENDUM NO.1	TA	FEB 26, 2019
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

www.jrichards.ca



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

Approved By

HM

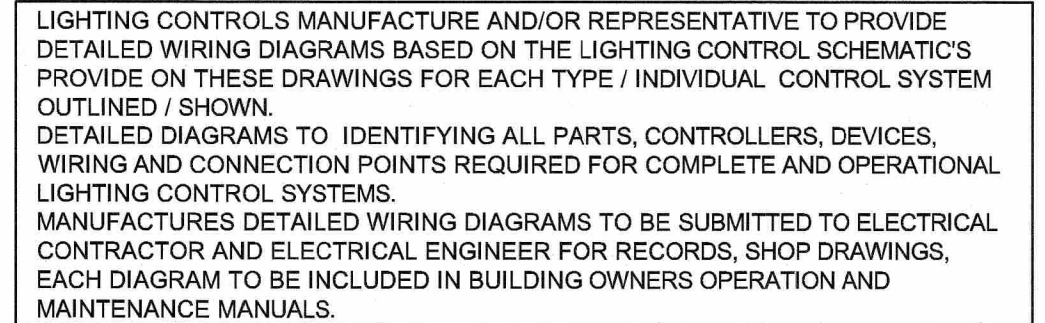
JLR #

27915

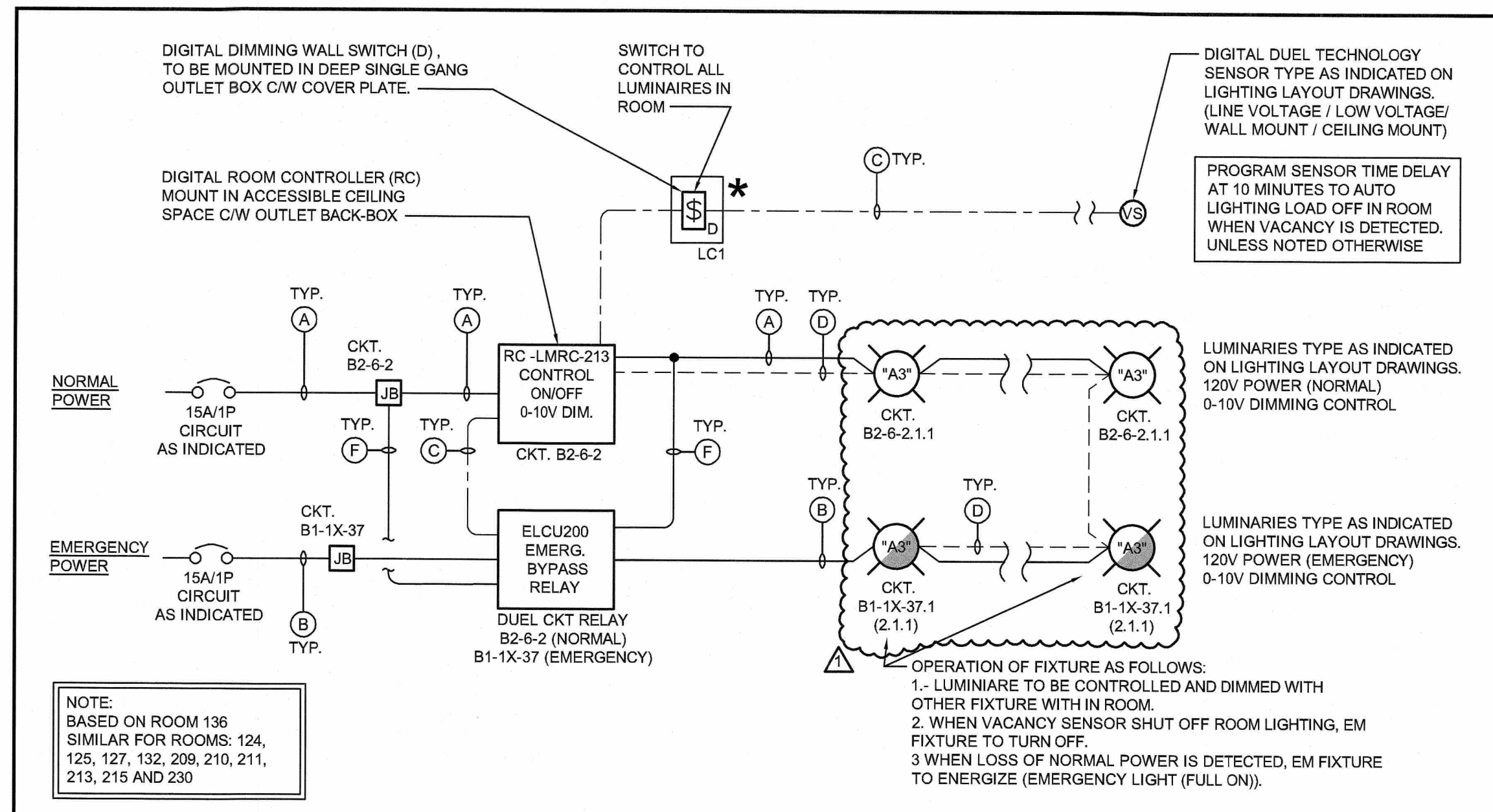
E12

of 173

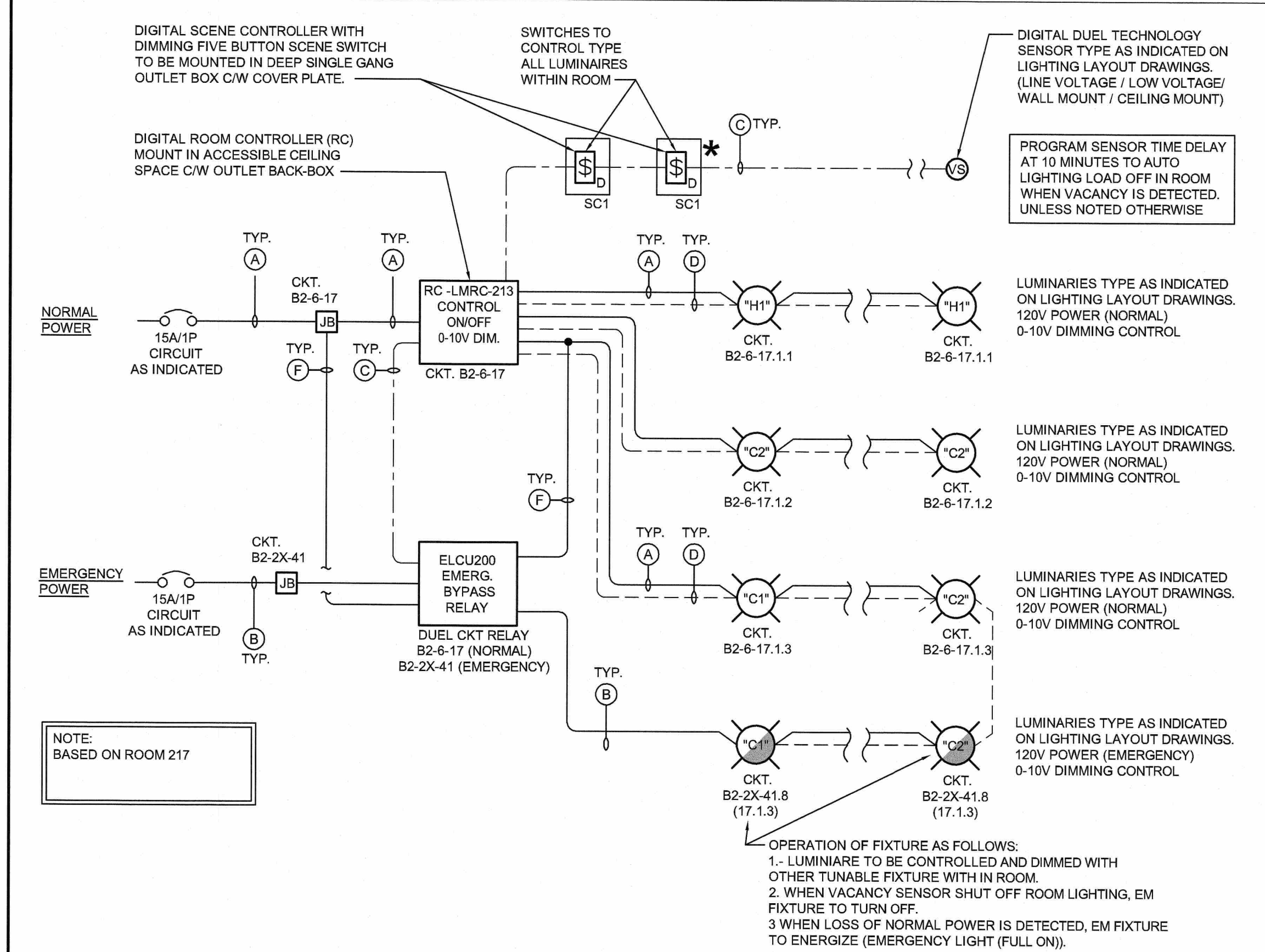
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Scale N.T.S.	Date NOV 2, 2018
Drawn by M.C.D.	Drawing No. <div style="font-size: 48pt; text-align: center;">E15</div>
Checked By H.M.	
Approved By H.M.	
JLR #	
27915	
of 173	

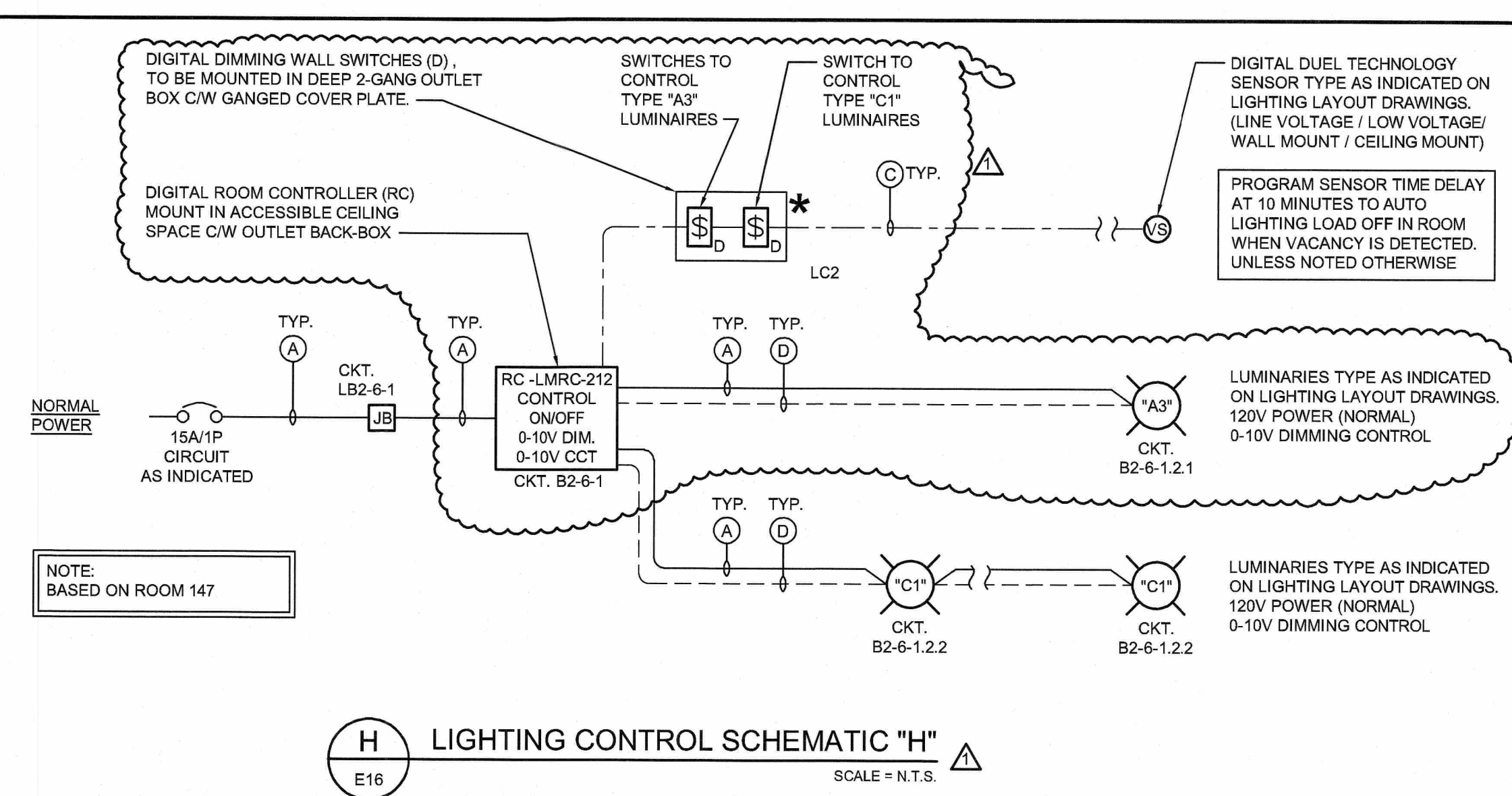


F LIGHTING CONTROL SCHEMATIC "F"
E16 SCALE = N.T.S.

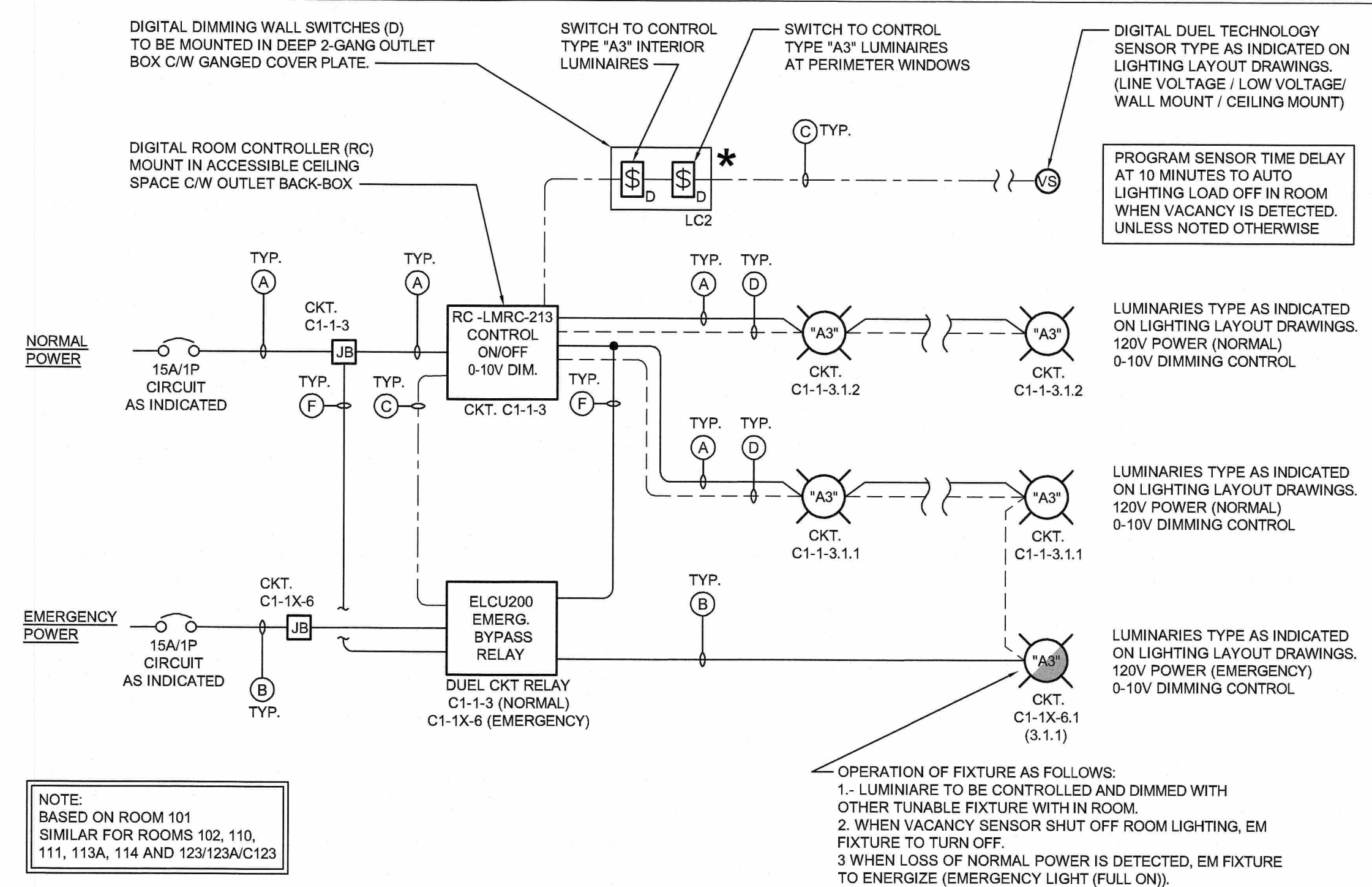


G LIGHTING CONTROL SCHEMATIC "G"
E16 SCALE = N.T.S.

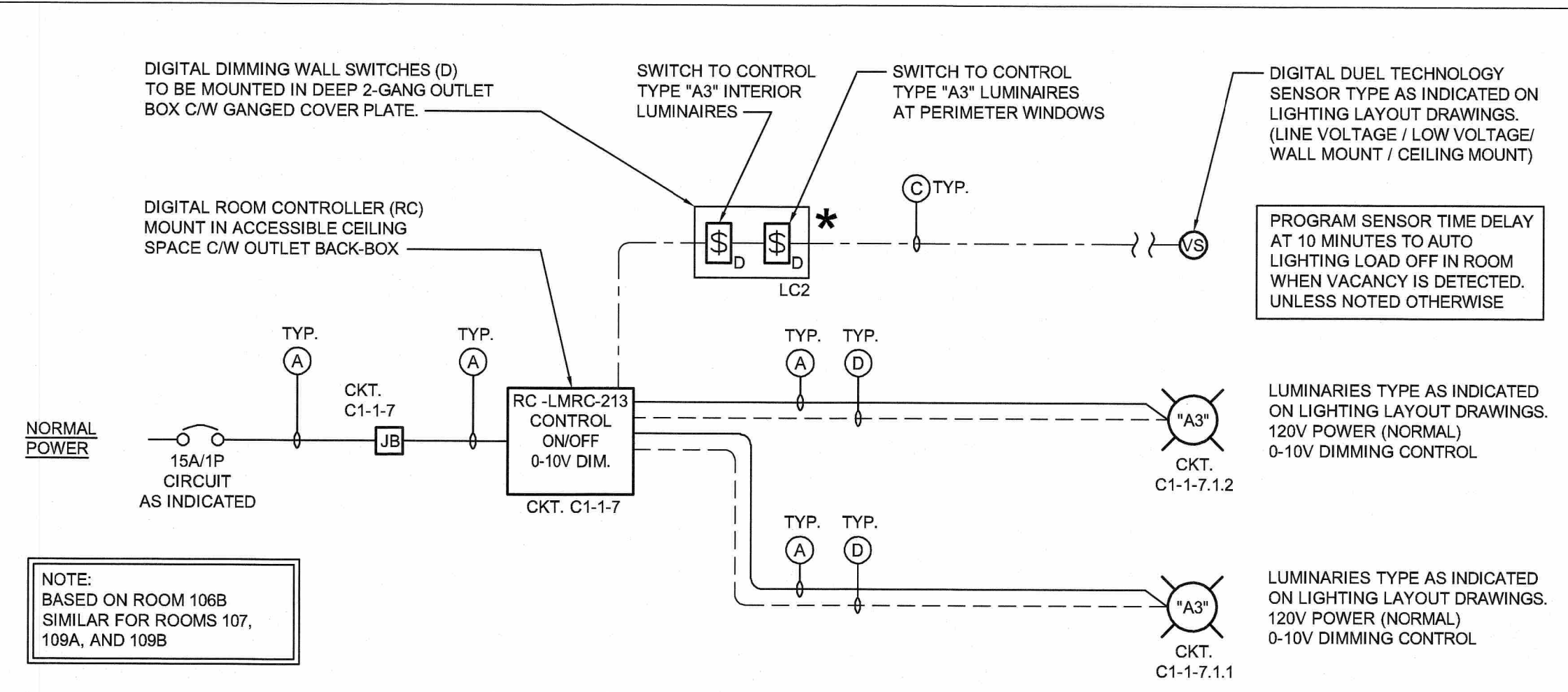
LIGHTING CONTROLS MANUFACTURE AND/OR REPRESENTATIVE TO PROVIDE DETAILED WIRING DIAGRAMS BASED ON THE LIGHTING CONTROL SCHEMATIC'S PROVIDED ON THESE DRAWINGS FOR EACH TYPE / INDIVIDUAL CONTROL SYSTEM OUTLINED / SHOWN.
DETAILED DIAGRAMS TO IDENTIFYING ALL PARTS, CONTROLLERS, DEVICES, WIRING AND CONNECTION POINTS REQUIRED FOR COMPLETE AND OPERATIONAL LIGHTING CONTROL SYSTEMS.
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:

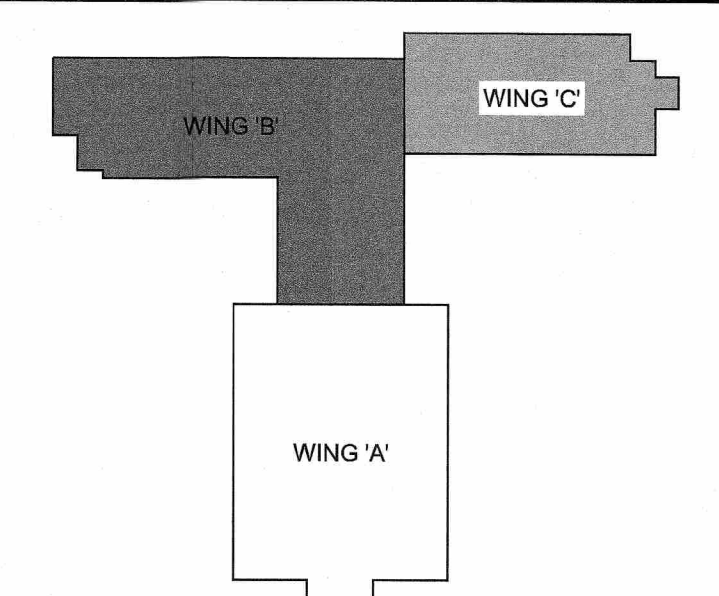
SC1	5-BUTTON MULTI SCENE CONTROLLER 4 SCENE BUTTONS AND DIMMER BUTTON (LOW VOLTAGE LMRJ CABLE CONNECTION) - WATTSTOPPER - MODEL # LMSW-105-W - ONE COMMON WHITE COVER PLATE
LC1	SINGLE (2) GANG ON / OFF / DIMMER WALL SWITCH WITH VISUAL LED BAR GRAPH INDICATING RELATIVE LIGHTING LEVEL (LOW VOLTAGE LMRJ CABLE CONNECTION) - WATTSTOPPER - MODEL # LMDM101-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 - ONE (1) 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-W - ONE (1) 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 CAT'S PLENUM RATED LIGHTING SYSTEM CONTROL CABLING C/W JUNCTION BOX, CONDUIT RACEWAY SYSTEM. NOTE WITHIN SAME ROOM BETWEEN CONTROLLERS CAT'S 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. LIGHTING CIRCUIT (CKT) AS INDICATED ON LIGHTING LAYOUT DRAWINGS.
- PROVIDE NEW 0-10V TUNABLE WHITE (CCT) CONTROL WIRING C/W NEW JUNCTION BOX CONDUIT AND WIRING SYSTEM. LIGHTING CIRCUIT (CKT) AS INDICATED ON LIGHTING LAYOUT DRAWINGS.
- 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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A = Detail number
B = Drawing number where detailed

POST-TENDER ADDENDUM NO.1 TA FEB 26, 2019

ISSUED FOR PERMIT & TENDER TA NOV 2, 2018

NO. ISSUED BY DATE

Orientation

Seal

Seal

LICENCE PROFESSIONNELLE
H.S. MATHARU
100075432
25 FEB 2019
PROVINCE OF ONTARIO

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

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.

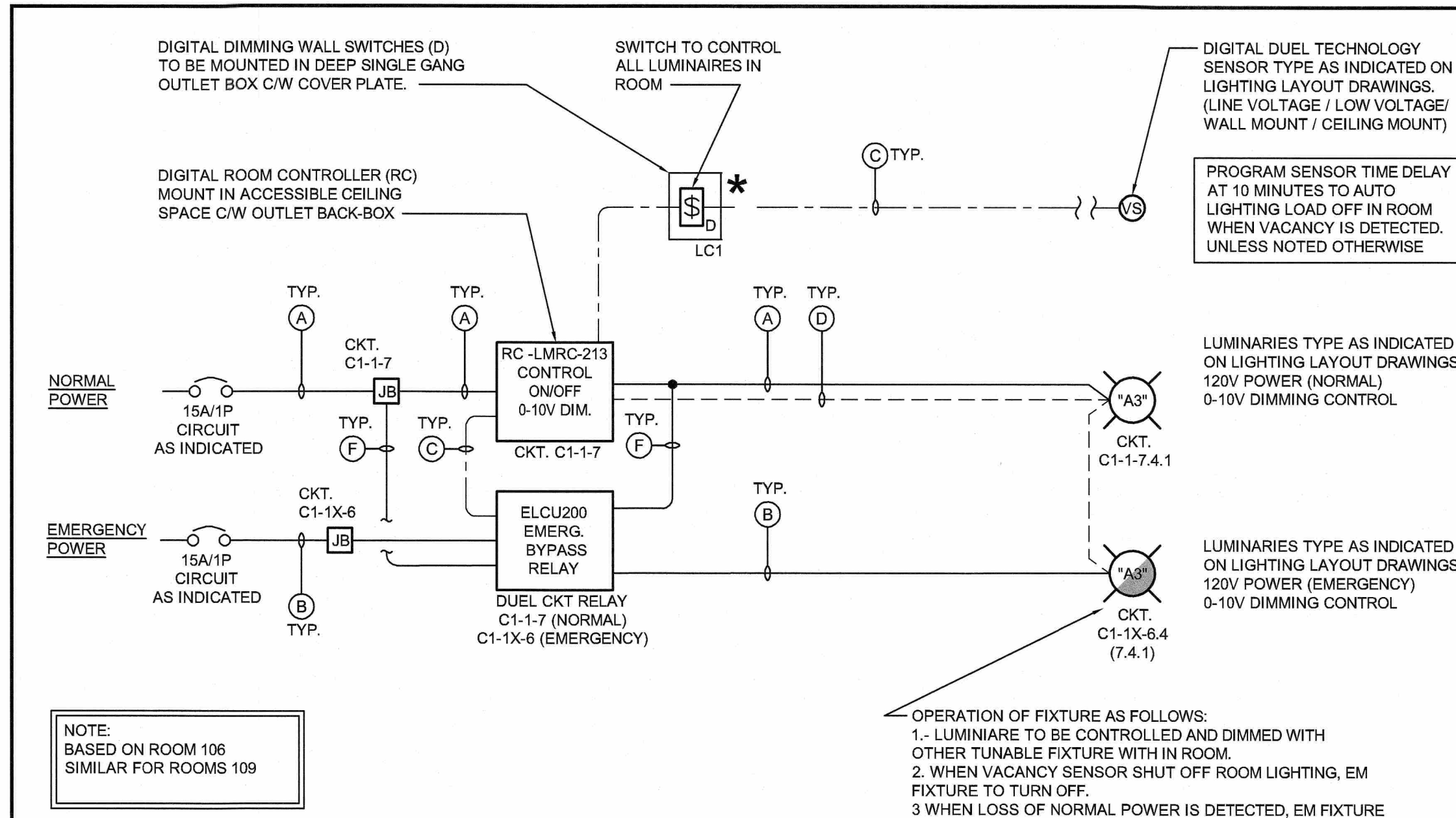
JLR #

27915

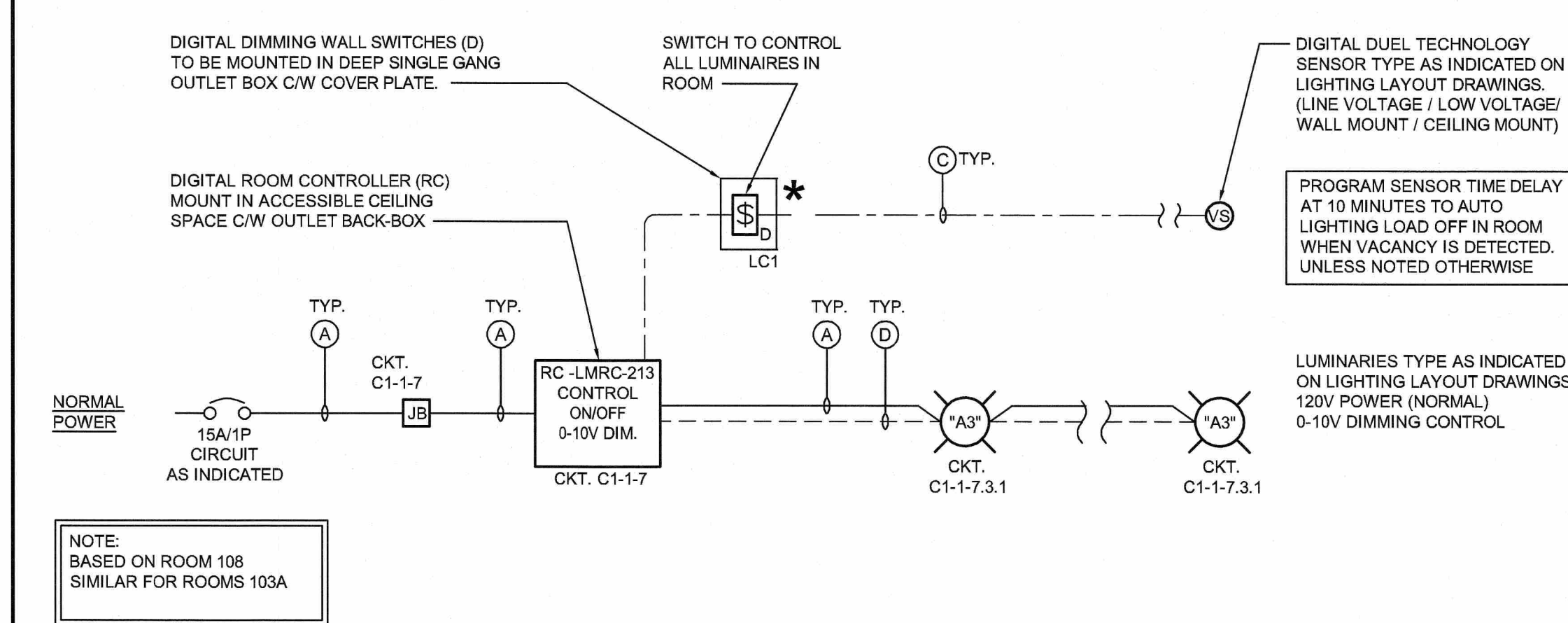
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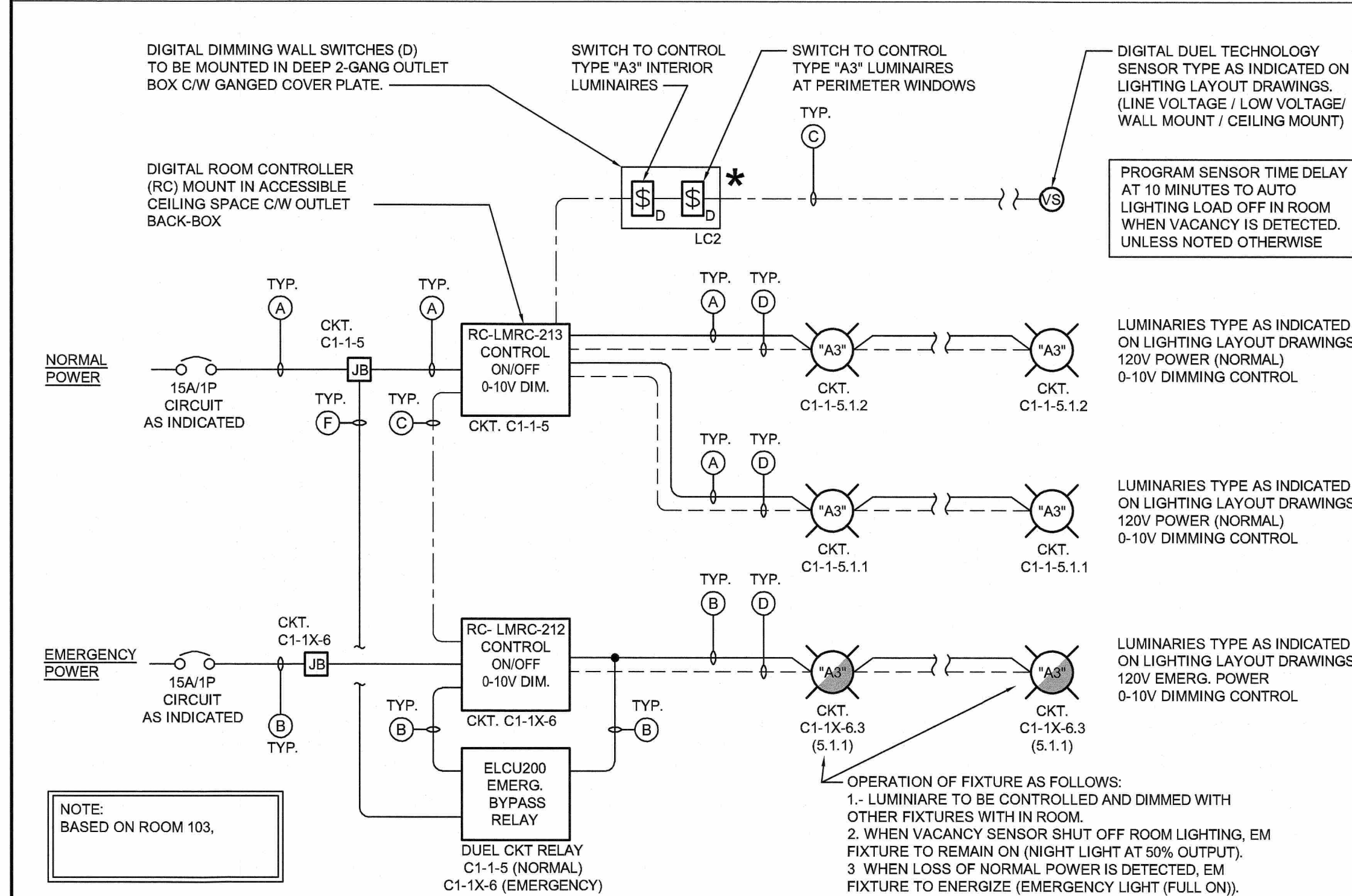
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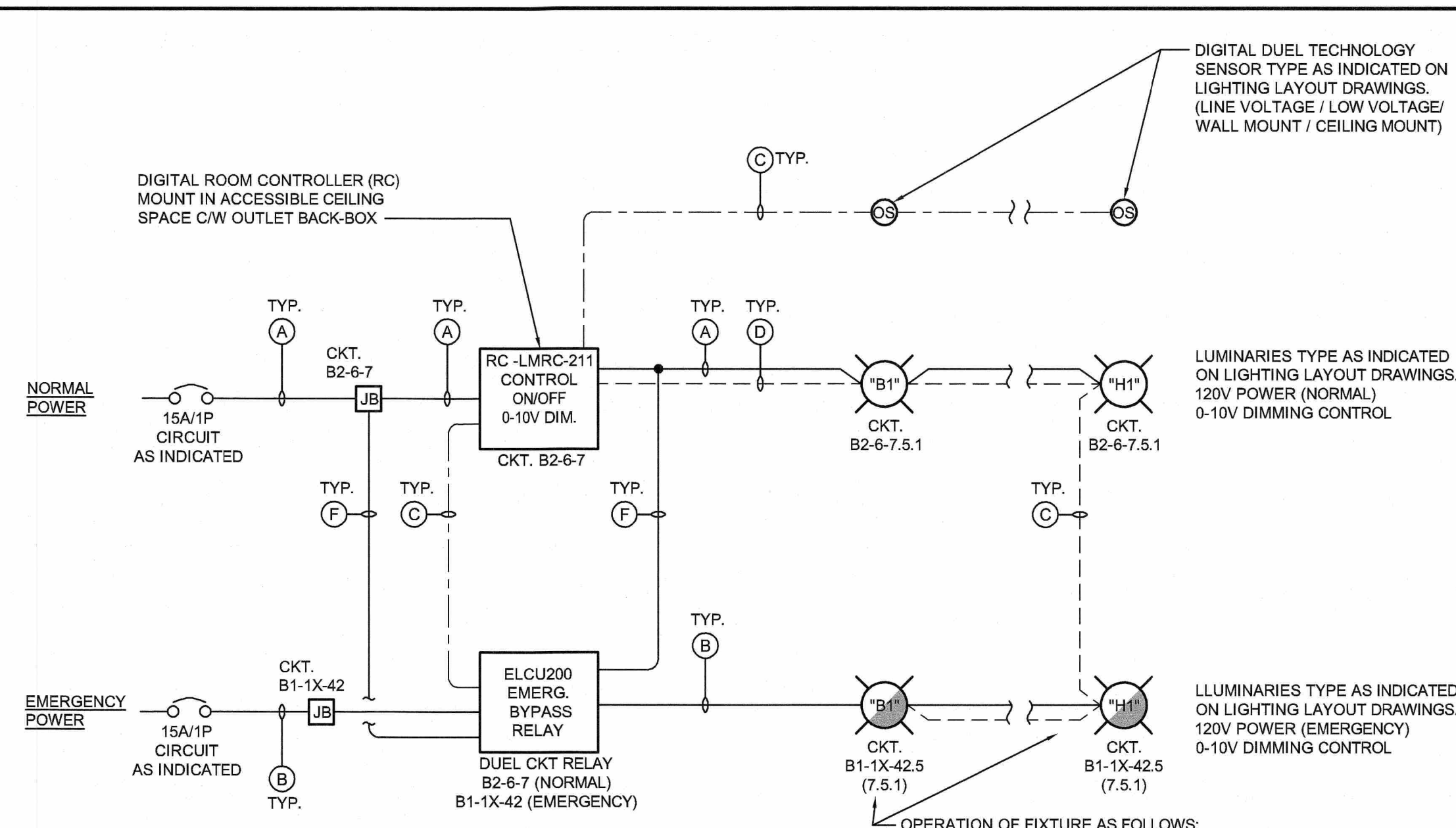
L LIGHTING CONTROL SCHEMATIC "L"
E17 SCALE = N.T.S.



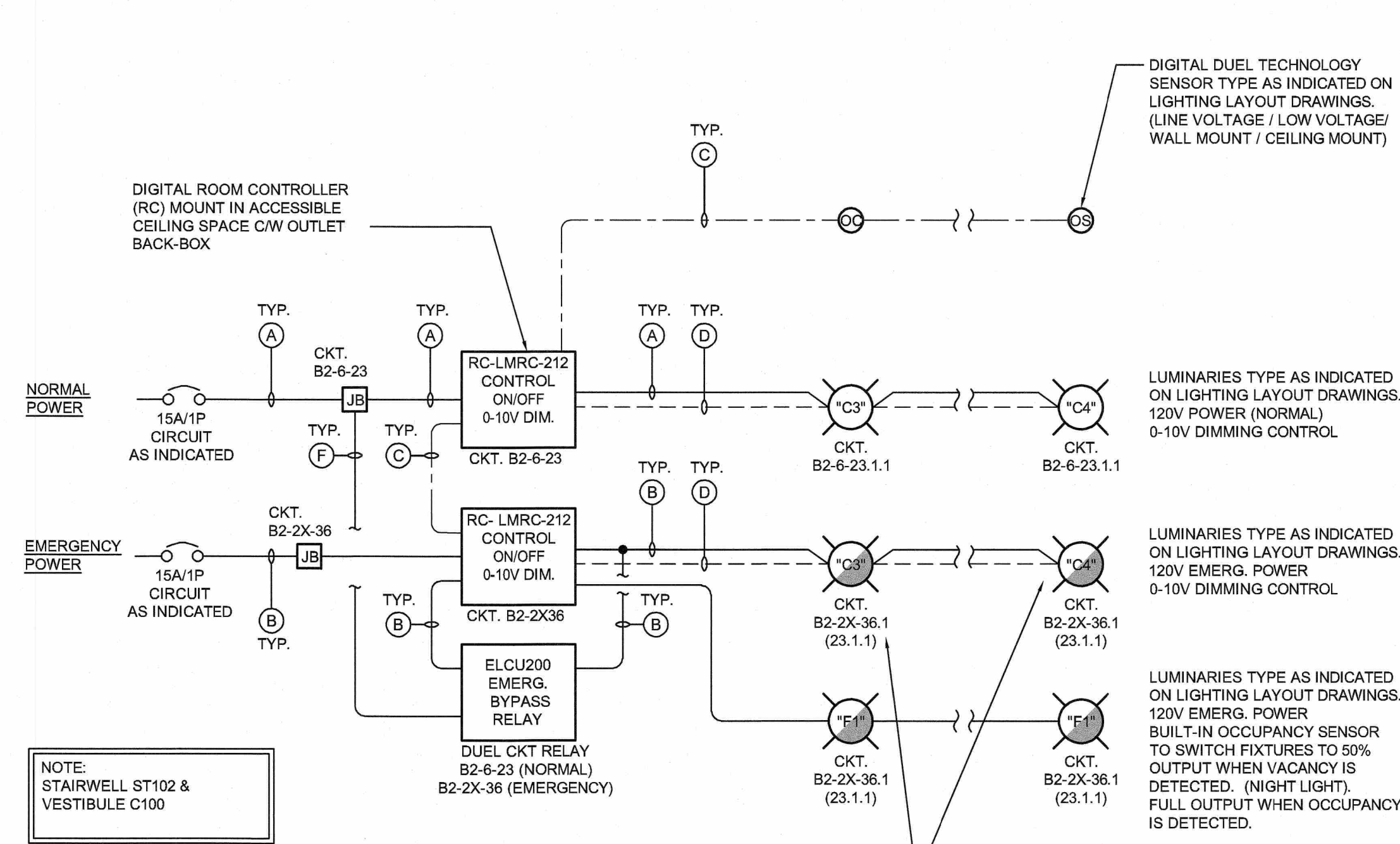
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E17 SCALE = N.T.S.



N LIGHTING CONTROL SCHEMATIC "N"
E17 SCALE = N.T.S.



P LIGHTING CONTROL SCHEMATIC "P"
E17 SCALE = N.T.S.



Q LIGHTING CONTROL SCHEMATIC "Q"
E17 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.

LIGHTING CONTROL DEVICES:	
SC1	5-BUTTON MULTI SCENE CONTROLLER 4 SCENE BUTTONS AND DIMMER BUTTON (LOW VOLTAGE / LMRJ CABLE CONNECTION) WATTSTOPPER - MODEL # LMDM101-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) SWITCH 1: WATTSTOPPER - MODEL # LMDM101-W - SWITCH 2: WATTSTOPPER - MODEL # LMDM101-W - TWO (2) SWITCHES / 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 # LMDM101-W - SWITCH 2: WATTSTOPPER - MODEL # LMDM101-W - THREE (3) 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 # LMDM101-W - SWITCH 2: WATTSTOPPER - MODEL # LMDM101-W - SWITCH 3: WATTSTOPPER - MODEL # LMDM101-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 # LMDM101-W - SWITCH 2: WATTSTOPPER - MODEL # LMDM101-W - TWO (2) SWITCHES / ONE COMMON WHITE COVER PLATE
LC5	ONE (1) SWITCH REQUIRED FOR CONTROL OF DIMMING LUMINAIRES SWITCH 1: WATTSTOPPER - MODEL # LMDM101-G - ONE (2) SWITCH REQUIRED FOR CONTROL OF TUNABLE WHITE (CCT) CORRELATED COLOR TEMPERATURE LEVEL WITHIN LUMINAIRES BEING CONTROLLED VIA SWITCH 1. SWITCH 2: WATTSTOPPER - MODEL # LMDM101-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 (MANUAL 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 (MANUAL 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.
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 - 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 SCHEDULED 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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A	A = Detail number
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POST-TENDER ADDENDUM No.1	TA	FEB 26, 2019
ISSUED FOR PERMIT & TENDER	TA	NOV 2, 2018

NO.	ISSUED	BY	DATE
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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 LIGHTING CONTROL SCHEMATICS SHEET No.3

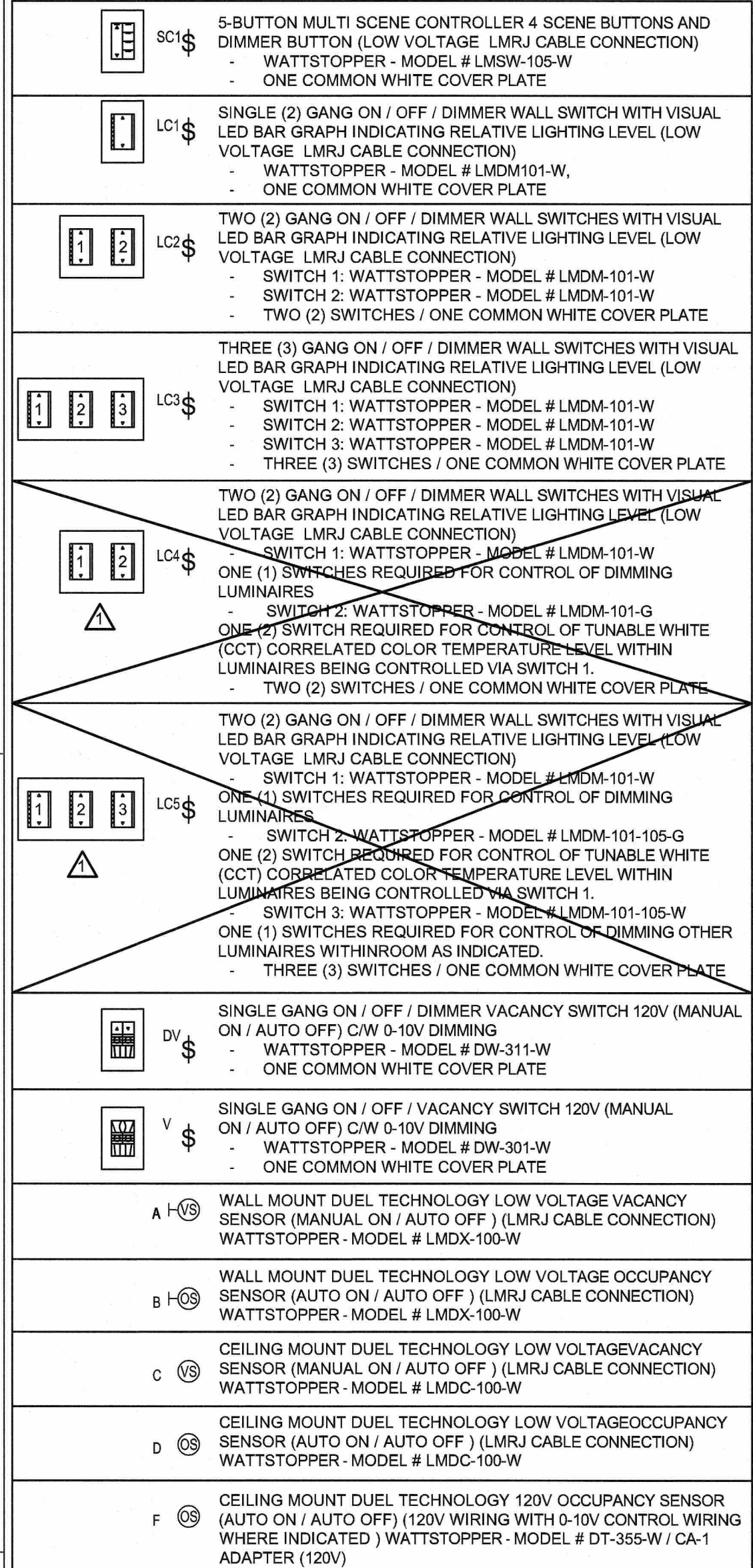
Project No.

504034

Location

UNIVERSITY OF GUELPH BUILDING #046

Scale	N.T.S.	Date	NOV 2, 2018
Drawn by	M.C.D.	Drawing No.	E17
Checked by	H.M.		
Approved By	H.M.		
JLR #	27915		of 173
Cad File No.	----		



- GENERAL NOTES:

- A. REFER TO LIGHTING LAYOUT DRAWINGS FOR ROOM CONTROLLER RC TYPES EI "A" DENOTES LIGHTING CONTROL SCHEMATIC "A" CONTROL PACKAGE.
- B. REFER TO LIGHTING LAYOUT DRAWINGS FOR QUANTITY AND TYPE OF LUMINAIRES AND CONTROL DEVICES IN EACH ROOM C/W LIGHTING CIRCUIT (CKT) NUMBERS.
- C. REFER TO LIGHTING LAYOUT DRAWINGS FOR QUANTITY AND TYPE OF LUMINAIRES AND CONTROL DEVICES IN EACH ROOM C/W LIGHTING CIRCUIT (CKT) NUMBERS.
- D. REFER TO LUMINAIRE SCHEDULE FOR LIGHTING FIXTURE TYPE DESCRIPTION, MANUFACTURER, CAT# AND MOUNTING INFORMATION.
- E. GANG ALL LIGHT SWITCHES TOGETHER WHERE POSSIBLE UNDER ONE (1) COMMON COVER PLATE.
- F. 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.
- G. ALL LIGHTING FIXTURES NORMAL / EMERGENCY, EXIT LIGHTING TO BE CONNECTED AND SWITCHED AS INDICATED VIA A JUNCTION BOX, CONDUIT AND WIRING SYSTEM AS SPECIFIED.
- H. 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.
- I. COORDINATE WITH LUMINAIRE MANUFACTURE AND LIGHTING CONTROLS MANUFACTURER 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.

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- (D) 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.
- ~~(E) 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.~~
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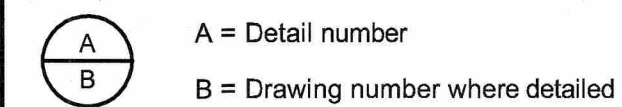



DO NOT SCALE DRAWINGS:

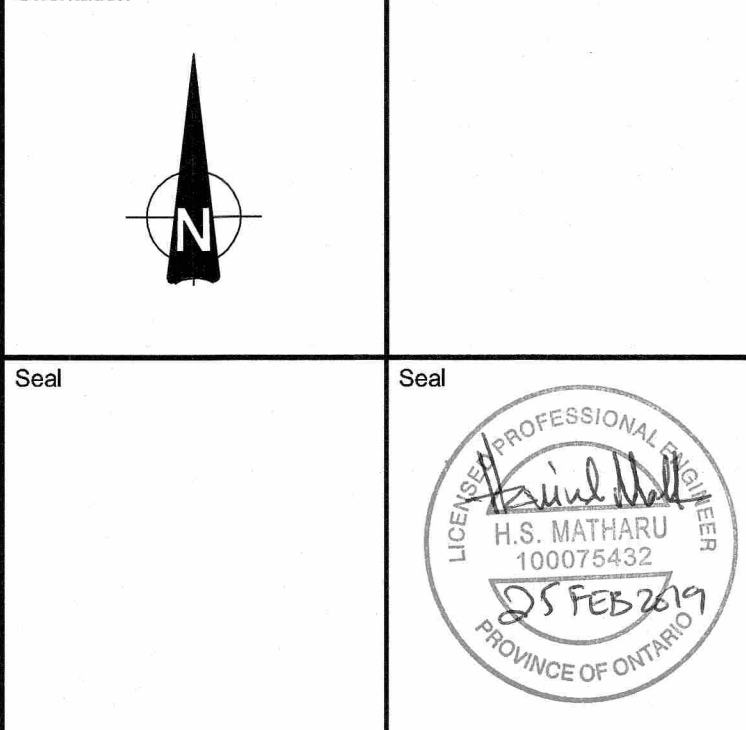
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0	ISSUED FOR PERMIT & TENDER	TA	NOV 2, 2018
NO.	ISSUED	BY	DATE



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

Consultant www.ilrichards.ca

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	Date
N.T.S.	NOV 2, 2018

Drawn by

M.C.E
Checked By

H.M

Approved E	
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H.M.
U.B.4

JLR # 27915

Qad. File: M

Date
NOV 2, 2018

Drawing No.

L

F

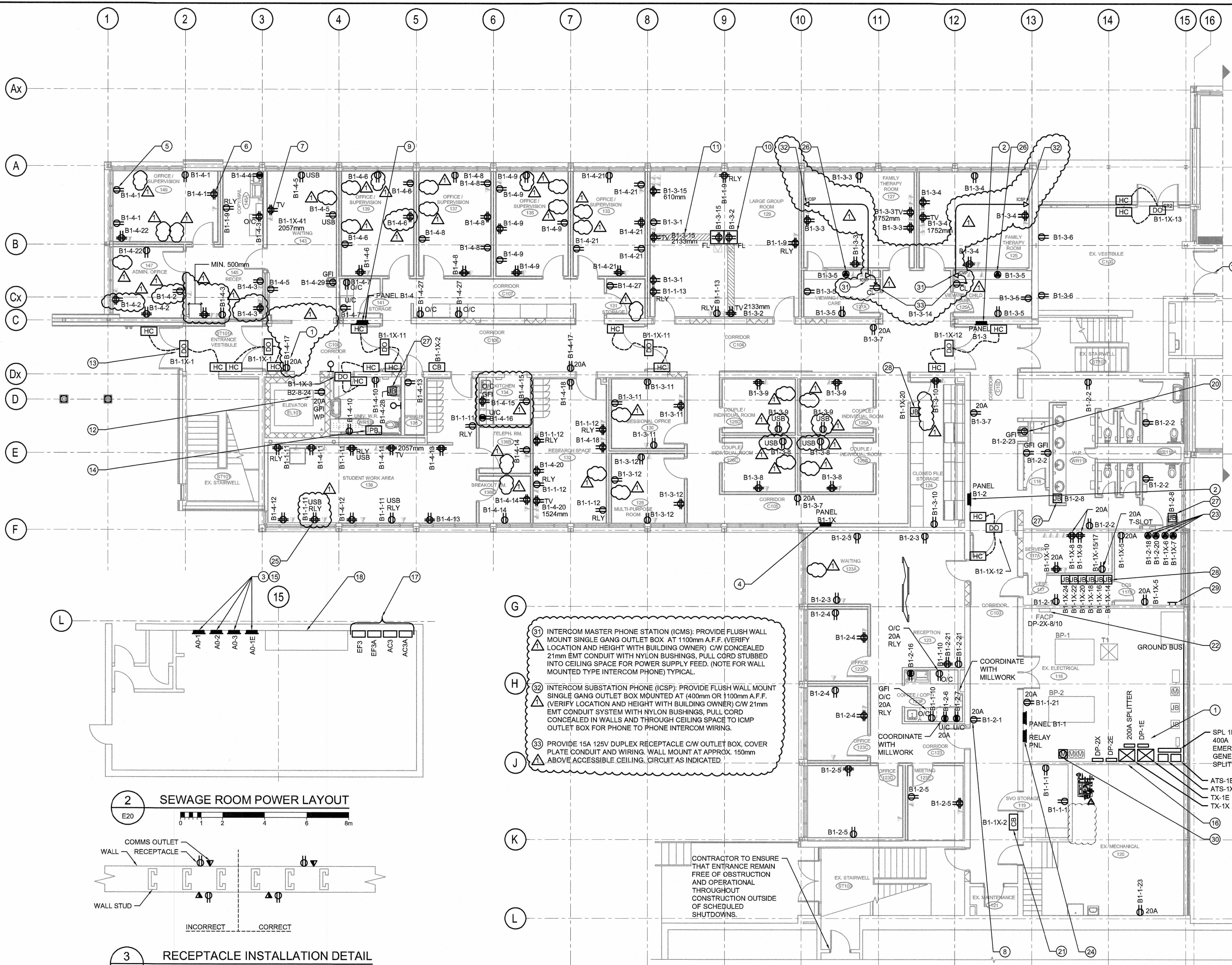
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GENERAL NOTES

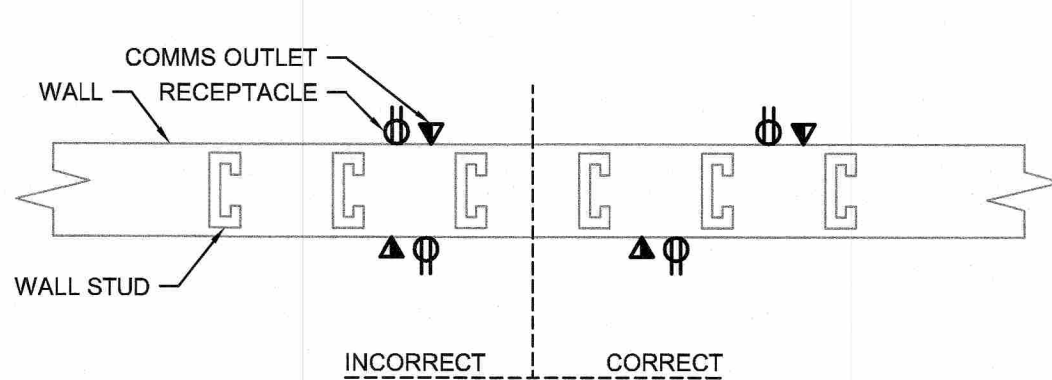
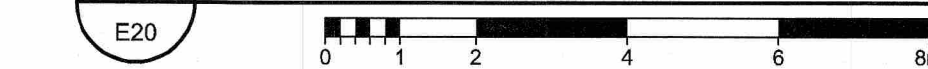
- CAREFULLY COORDINATE ALL ELECTRICAL WORK WITH ALL OTHER TRADES ON SITE TO ENSURE NO CONFLICTS OR INTERFERENCES OCCUR.
- PROVIDE ALL FASTENERS, FITTINGS, JUNCTION, OUTLET, BACKBOXES, CONDUIT, WIRING AND HARDWARE REQUIRED TO ENSURE A COMPLETE AND OPERATIONAL SYSTEM. REFER TO SPECIFICATIONS.
- WHERE CONDUIT 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 BUILDING OWNER'S AV CONSULTANT DRAWINGS, AND EQUIPMENT REQUIREMENTS.
- MOUNTING HEIGHT OF OUTLETS, DEVICES, SWITCHES, CONTROLS IS FROM FINISHED FLOOR TO CENTERLINE 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.
- SEAL ALL THROUGH WALL, FLOOR SLAB PENETRATIONS WITH APPROVED FIRE STOP SEALANT.
- PROVIDE LAMACOID NAMEPLATE AND P-TOUCH CIRCUIT IDENTIFICATION ON EQUIPMENT, COVER PLATES, JUNCTION BOXES. REFER TO SPECIFICATION FOR ADDITIONAL INFORMATION.
- 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 3E20 ON DRAWINGS.
- EXPOSED ELECTRICAL BOXES IN WALLS RATED STC 50 AND HIGHER TO BE SEALED
- CONTRACTOR SHALL COORDINATE AND PROVIDE CUT / CHASE IN EXISTING WALL WHERE REQUIRED TO RECESS CONDUIT INSTALLATION FOR DEVICES INDICATED.

DRAWING NOTES

- 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.
- 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.
- INSTALL NEW PANEL BOARD SURFACE MOUNTED TO WALL, IN SAME LOCATION AS PREVIOUSLY DEMOLISHED PANEL.
- INSTALL NEW PANEL BOARD RECESSED MOUNTED, IN WALL.
- PROVIDE NEW RECESSED MOUNTED 15A, 125V DUPLEX RECEPTACLE C/W OUTLET BOX, COVER PLATE CONDUIT AND WIRING. CCT AS INDICATED, (TYPICAL)
- PROVIDE NEW RECESSED MOUNTED 15A, 125V DOUBLE DUPLEX RECEPTACLE C/W OUTLET BOX, COVER PLATE CONDUIT AND WIRING. CCT AS INDICATED, (TYPICAL)
- 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)
- PROVIDE NEW RECESSED MOUNTED 15/20A, 125V DUPLEX RECEPTACLE C/W OUTLET BOX, COVER PLATE CONDUIT AND WIRING. CCT AS INDICATED, (TYPICAL)
- COORDINATE LOCATION OF ELECTRICAL PANEL WITH DRINKING FOUNTAIN AND DOOR OPERATOR PADDLE, INFILL WALL AS REQUIRED, REFER TO ARCHITECTURAL.
- 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 AND BETTS # 665-C1 OR EQUIVALENT. (TYPICAL)
- 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)
- 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.
- 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)
- 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 3E30 FOR DETAILS. (TYPICAL)
- 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.
- ALL NEW EMERGENCY POWER EQUIPMENT (SPLITTER, DP-1E, DP-1X, TX-1E, 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.
- 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.
- MCC-1 TO BE REMOVED AS OUTLINED IN DEMOLITION DRAWING DE10.
- RETAIN ALL EXISTING ELECTRICAL SYSTEMS SERVING DOOR. SYSTEMS TO BE REINSTATED TO DOOR FOLLOWING REPLACEMENT AND RECONNECTED AS NECESSARY.
- 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 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. CONTRACTOR TO PROVIDE MODEL CODE BLUE CB-4-S SIGNATURE CALL BOX WITH HARDWIRE POWER CONNECTION. (TYPICAL)



2 SEWAGE ROOM POWER LAYOUT

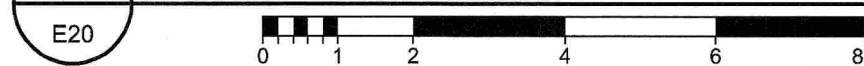


3 RECEPTACLE INSTALLATION DETAIL

SCALE = N.T.S.

- EXISTING FIRE ALARM PANEL FED FROM DEMOLISHED PANEL X. CONTRACTOR TO VERIFY EXISTING BREAKER SIZE AND REFEED FIRE ALARM PANEL FROM NEW BREAKER AS INDICATED.
- PROVIDE NEW RECESS MOUNTED NEMA L6-20 TWIST LOCK RECEPTACLE AS INDICATED FOR I.T. RACKS. COORDINATE EXACT LOCATION OF RECEPTABLES ON SITE WITH I.T. CONTRACTOR.
- PROVIDE NEW SURFACE MOUNTED 120V RELAY PANEL C/W TIME CLOCK FOR CONTROLLED RECEPTABLES. RELAY PANEL TO CONTROL INDICATED RECEPTACLE CIRCUITS FROM PANEL B1-1. RECEPTABLES CONTROLLED FROM PANEL B1-1 AND RELAY PANEL TO BE CLEARLY LABELLED AS CONTROLLED RECEPTACLE. COORDINATE PROGRAMMING OF TIMER WITH OWNER.
- RECEPTABLES MARKED "RLY" TO BE CONTROLLED VIA RELAY PANEL IN ELECTRICAL ROOM 118. (TYPICAL)
- 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.
- 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.
- 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. (TYPICAL OF 7)
- PROVIDE NEW WALL MOUNTED GROUND BUS C/W STANDOFF BUSHINGS TIED BACK TO MAIN GROUND BUS IN ELECTRICAL ROOM 118. ALL I.T. EQUIPMENT TO BE BONDED TO NEW GROUND BUS. COORDINATE EXACT LOCATION WITH I.T. EQUIPMENT.
- PROVIDE NEW METER TYPE SCHNEIDER ION8240 C/W CT/PTs AND ENCLOSURE TIED INTO EMERGENCY FEEDER CIRCUIT AND NETWORKED INTO UNIVERSITY NETWORK.

1 POWER LAYOUT WING B LEVEL 1



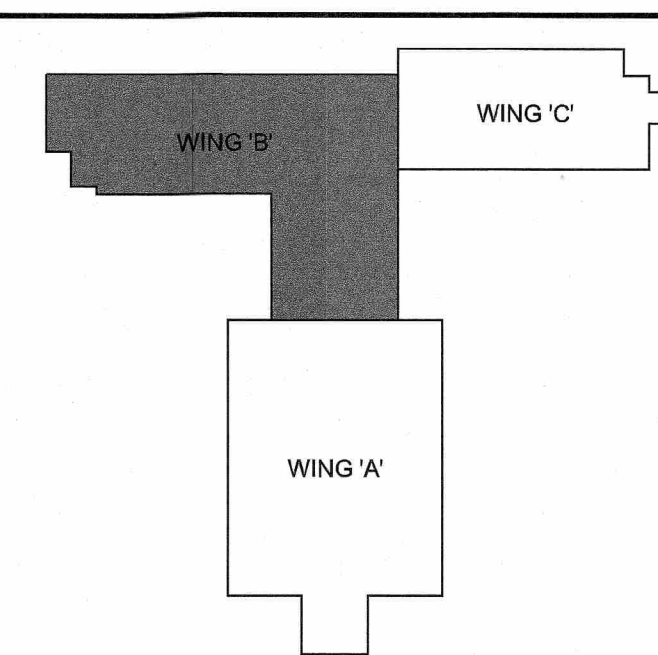
DEMOLITION NOTES

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).

CONTRACTOR TO COORDINATE ON SITE EXACT LOCATIONS WITH BUILDING OWNER, BUILDING OWNERS FURNITURE SYSTEM LAYOUTS AND ALL MILLWORK PRIOR TO START OF WORK AND INSTALLATION OF ANY POWER AND/OR TELECOM DATA OUTLETS IN ALL ROOMS.

- 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 ESSENTIAL, 120/208V NON-ESSENTIAL).
- COORDINATE WITH UNIVERSITY AND WING 'A' TENANTS TO SHUT DOWN PANELS EX, X, Y, U, AND BB. 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. INSTALL 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 BPP-1. DISCONNECT EXISTING EMERGENCY FEED TO PANEL BPP-1. DEMOLISH THE EXISTING MANUAL TRANSFER SWITCH.



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.

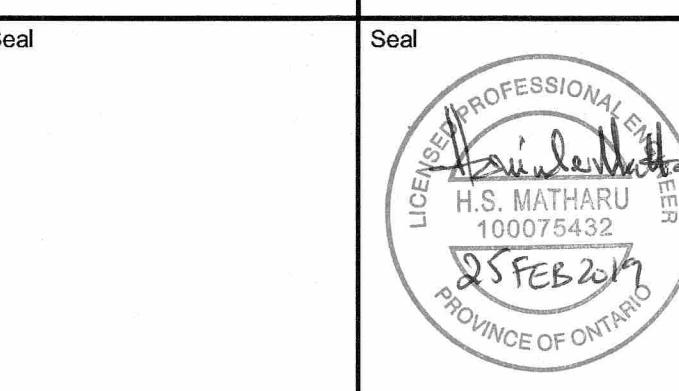
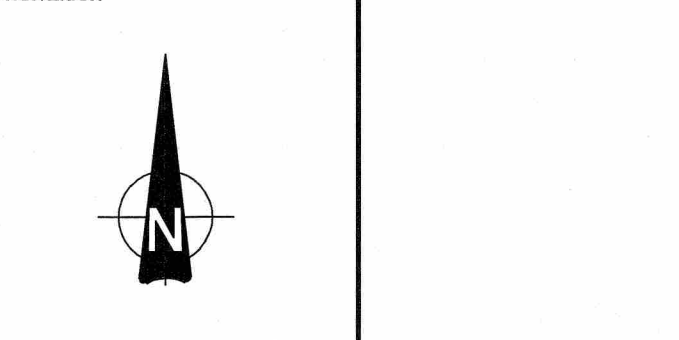
UNEXPECTED DISCOVERY OF ASBESTOS

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

POST-TENDER ADDENDUM NO.1	TA	FEB 26, 2019
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 POWER LAYOUT WING B LEVEL 1

Project No.
504034

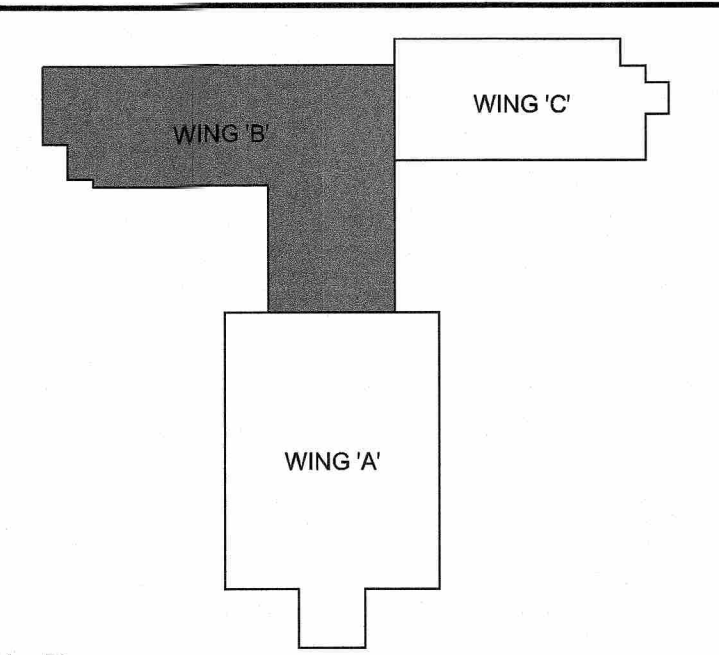
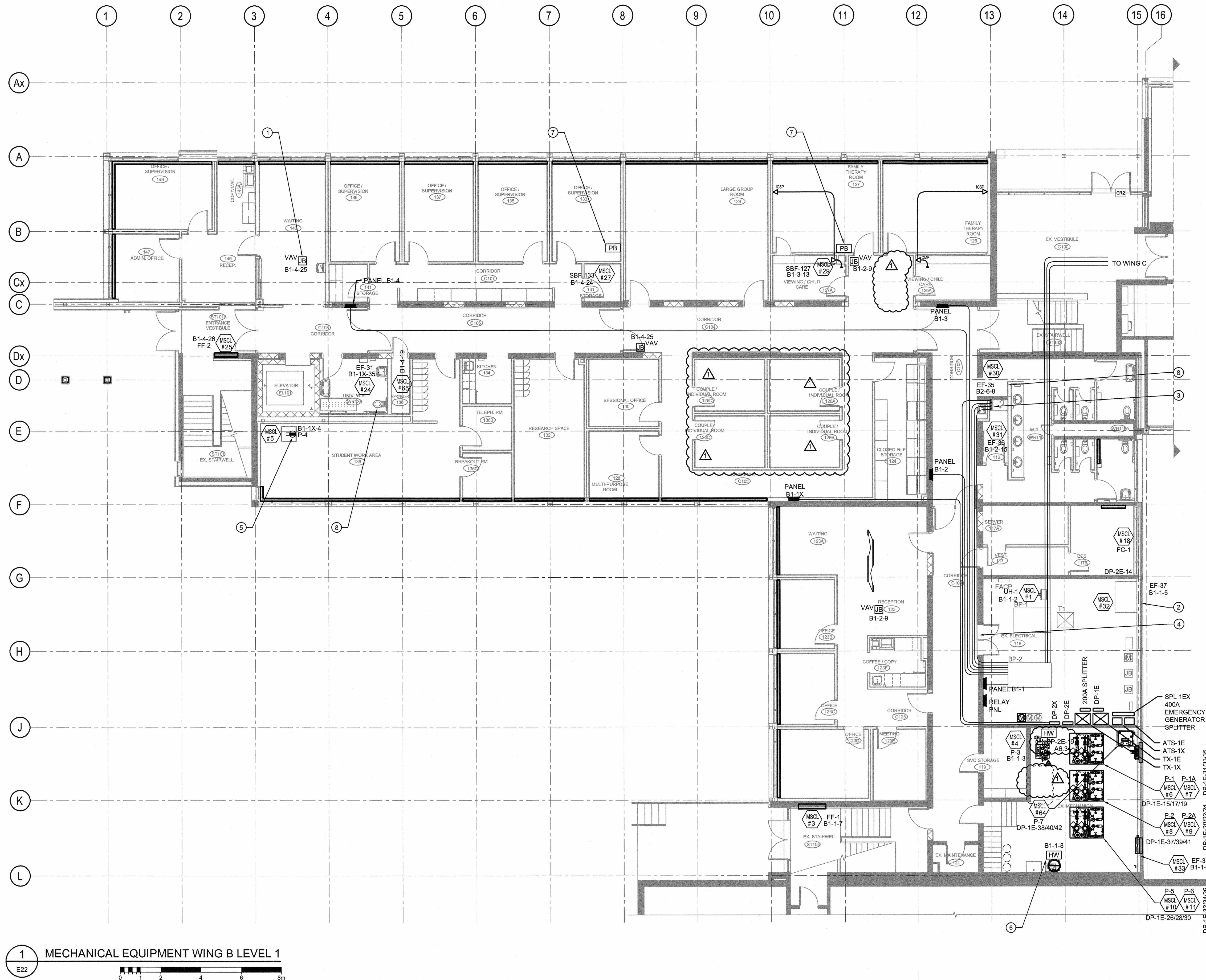
Location
UNIVERSITY OF GUELPH BUILDING #046

Scale AS INDICATED	Date NOV 2, 2018
Drawn by AM	Drawing No. E20
Checked by HM	
Approved By HM	
JLR # 27915	of 173
Cad File No. -----	

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.


- 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 ONE NEUTRAL 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)



DO NOT SCALE DRAWINGS:

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

1	POST-TENDER ADDENDUM NO.1	TA	FEB 26, 2019
2	ISSUED FOR PERMIT & TENDER	TA	NOV 2, 2018
3	ISSUED	BY	DATE

Seal

The seal is circular with the text "PROFESSIONAL ENGINEER" at the top and "PROVINCE OF ONTARIO" at the bottom. In the center, it reads "H.S. MATHARU" and "100075432". A date stamp "25 FEB 2019" is overlaid on the seal. A signature is written across the top half of the seal.

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

Consultant www.jlrichards.ca

J.L. Richards
ENGINEERS • ARCHITECTS • PLANNERS

Project BUILDING #046 RENOVATIONS

Drawing Title

**ELECTRICAL
MECHANICAL EQUIPMENT
DRAWING B LEVEL 1**

Project No.
504034

UNIVERSITY OF GUELPH
BUILDING #046

Scale AS INDICATED	Date NOV 2, 2018
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Drawn by	Drawing No.
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Checked By			

HM

Approved By
HM

LR #

DATE	BY

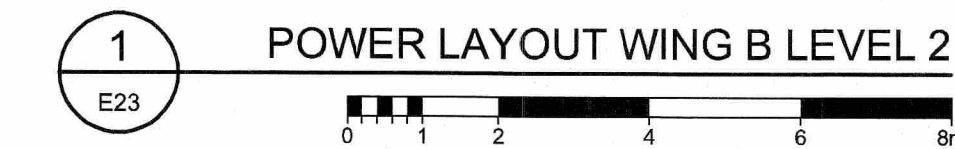
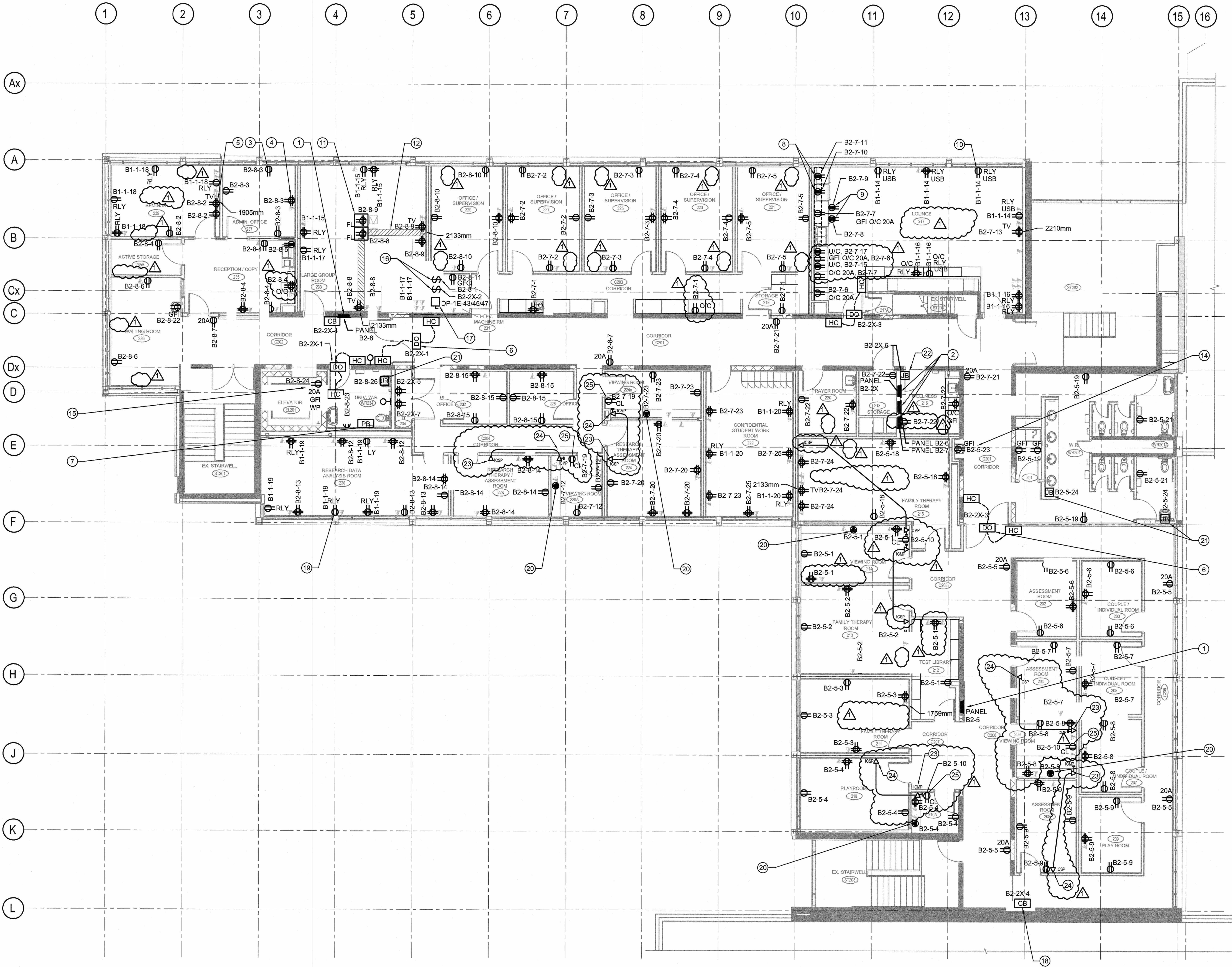
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GENERAL NOTES

- 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 BUILDING OWNER'S AV 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. COT 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. CONTRACTOR TO PROVIDE MODEL CODE BLUE CB-4-S SIGNATURE CALL BOX WITH HARDWIRE POWER CONNECTION. (TYPICAL)
19. RECEPTACLES MARKED "RLY" TO BE CONTROLLED VIA RELAY PANEL IN ELECTRICAL ROOM 118. (TYPICAL)



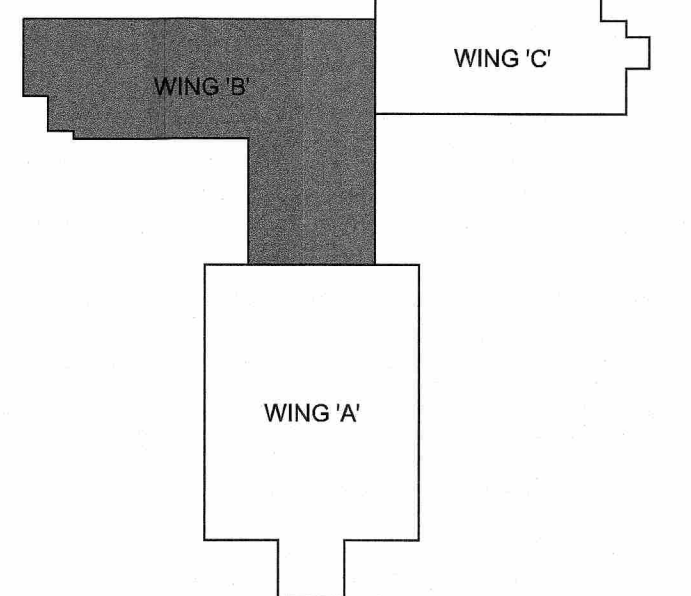
CONTRACTOR TO COORDINATE ON SITE EXACT LOCATIONS WITH BUILDING OWNER, BUILDING OWNERS FURNITURE SYSTEM LAYOUTS AND ALL MILLWORK PRIOR TO START OF WORK AND INSTALLATION OF ANY POWER AND/OR TELECOM DATA OUTLETS IN ALL ROOMS.

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.

23. INTERCOM MASTER PHONE STATION (ICMS): PROVIDE FLUSH WALL MOUNT SINGLE GANG OUTLET BOX AT 1100mm A.F.F. VERIFY LOCATION AND HEIGHT WITH BUILDING OWNER) C/W CONCEALED 21mm EMT CONDUIT WITH NYLON BUSHINGS. PULL CORD STUBBED INTO CEILING SPACE FOR POWER SUPPLY FEED. (NOTE FOR WALL MOUNTED TYPE INTERCOM PHONE) TYPICAL.

24. INTERCOM SUBSTATION PHONE (ICSP): PROVIDE FLUSH WALL MOUNT SINGLE GANG OUTLET BOX MOUNTED AT (400mm OR 1100mm A.F.F. (VERIFY LOCATION AND HEIGHT WITH BUILDING OWNER) C/W 21mm EMT CONDUIT SYSTEM WITH NYLON BUSHINGS. PULL CORD CONCEALED IN WALLS AND THROUGH CEILING SPACE TO ICMP OUTLET BOX FOR PHONE TO PHONE INTERCOM WIRING.

25. PROVIDE 15A 125V DUPLEX RECEPTACLE C/W OUTLET BOX, COVER PLATE CONDUIT AND WIRING. WALL MOUNT AT APPROX. 150mm ABOVE ACCESSIBLE CEILING. CIRCUIT AS INDICATED



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.

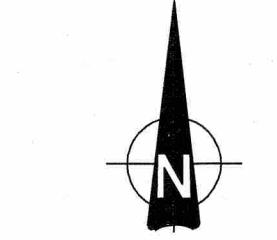
UNEXPECTED DISCOVERY OF ASBESTOS:

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

POST-TENDER ADDENDUM NO.1	TA	FEB 26, 2019
ISSUED FOR PERMIT & TENDER	TA	NOV 2, 2018
NO. ISSUED	BY	DATE

Orientation



Seal

Seal



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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

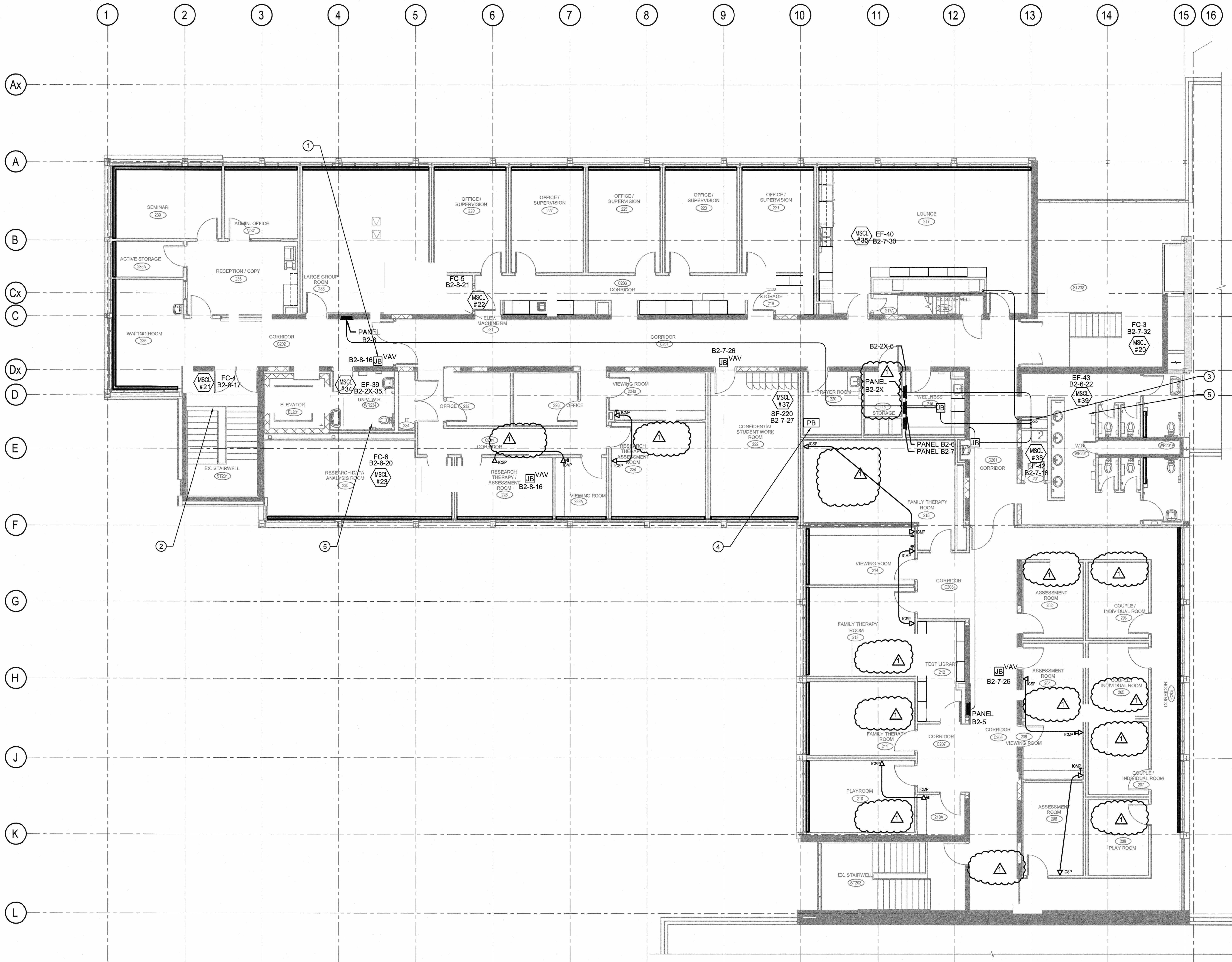
Scale AS INDICATED	Date NOV 2, 2018
Drawn by AM	Drawing No. E23
Checked By HM	
Approved By HM	
JLR # 27915	of 173
Cad File No. -----	

GENERAL NOTES:

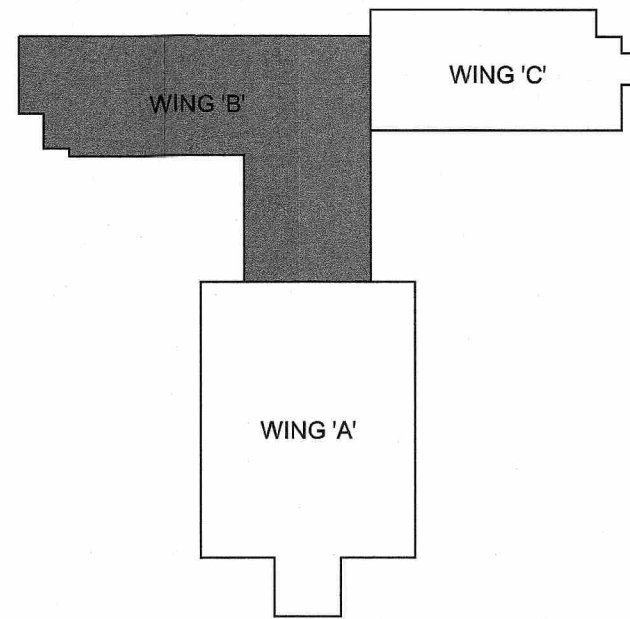
- A. COORDINATE WIRING TO MECHANICAL EQUIPMENT AS PER MOTOR STARTER AND CONTROL LIST REQUIREMENTS ON DRAWING E31.
- B. COORDINATE WITH MECHANICAL EQUIPMENT PROVIDER TO TEST AND COMMISSION EQUIPMENT.

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 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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A = Detail number
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	POST-TENDER ADDENDUM NO.1	TA	FEB 26, 2019
0	ISSUED FOR PERMIT & TENDER	TA	NOV 2, 2018
NO.	ISSUED	BY	DATE

Orientation



Seal

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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.

E25

Checked By

HM

Approved By

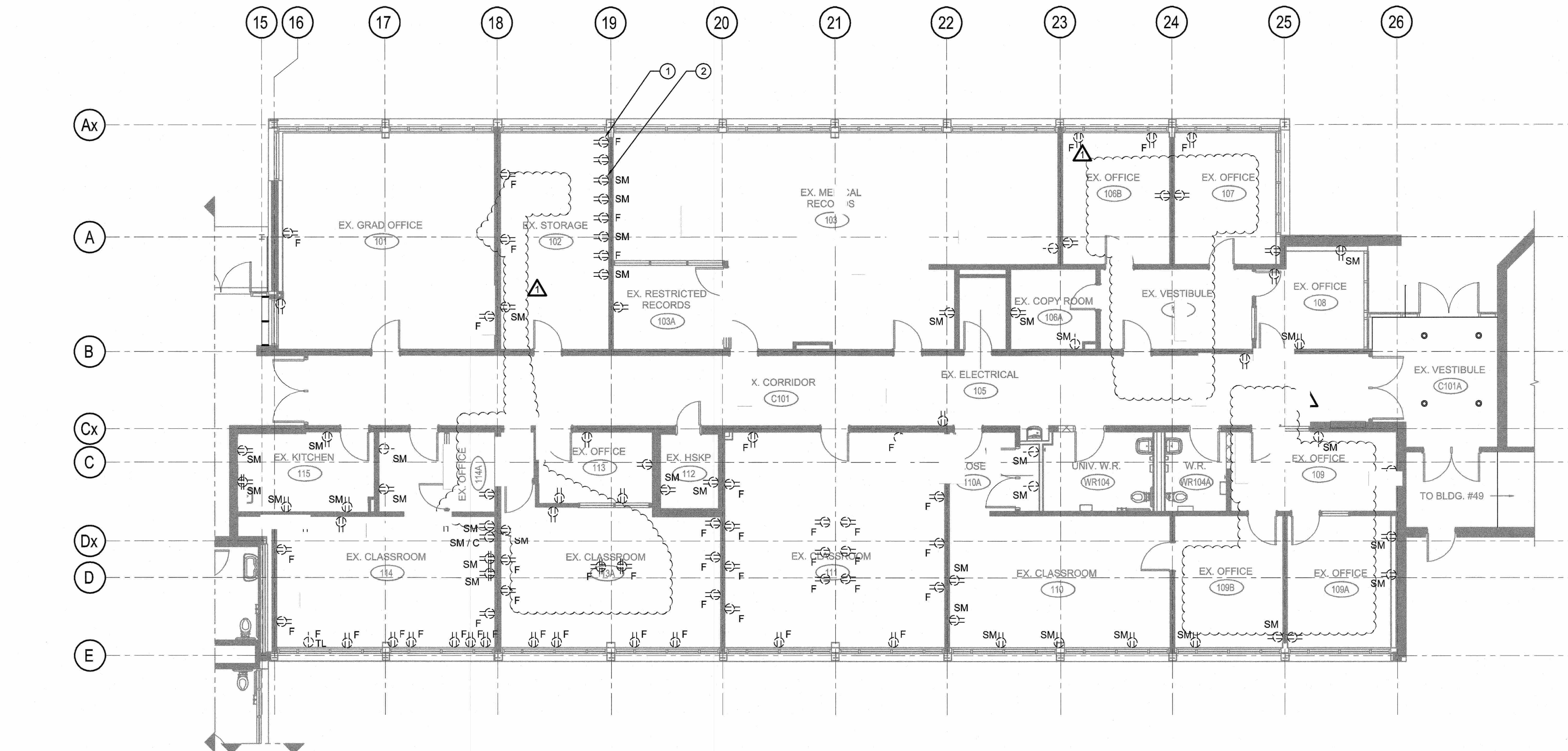
HM

JLR #

27915

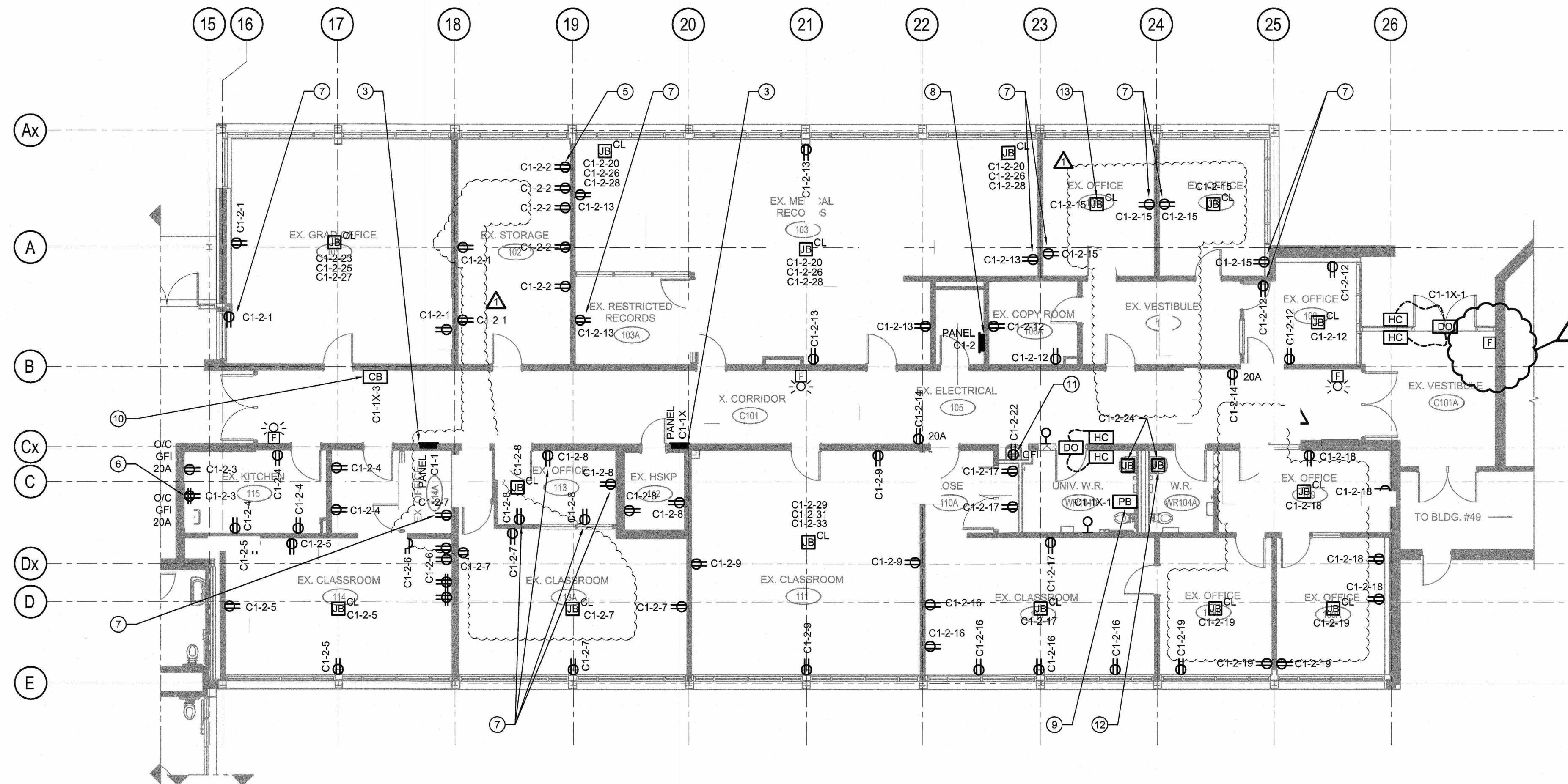
of 173

Cad File No.



1 POWER DEMOLITION LAYOUT WING C

CONTRACTOR TO COORDINATE ON SITE EXACT LOCATIONS WITH BUILDING OWNER, BUILDING OWNERS FURNITURE SYSTEM LAYOUTS AND ALL MILLWORK PRIOR TO START OF WORK AND INSTALLATION OF ANY POWER AND/OR TELECOM DATA OUTLETS IN ALL ROOMS.



2 NEW POWER LAYOUT WING C

CONTRACTOR TO COORDINATE ON SITE EXACT LOCATIONS WITH BUILDING OWNER, BUILDING OWNERS FURNITURE SYSTEM LAYOUTS AND ALL MILLWORK PRIOR TO START OF WORK AND INSTALLATION OF ANY POWER AND/OR TELECOM DATA OUTLETS IN ALL ROOMS.

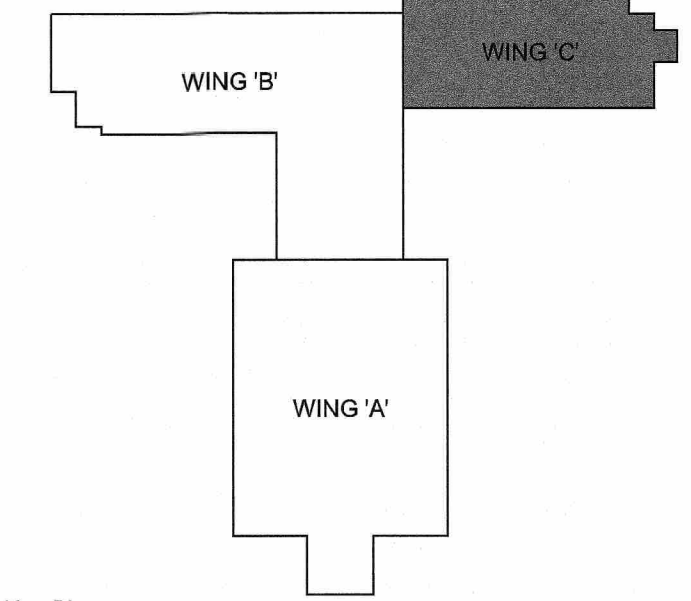
GENERAL NOTES

- 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 AL3300 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 3/E30 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. CONTRACTOR TO PROVIDE MODEL CODE BLUE CB-4-S SIGNATURE CALL BOX WITH HARDWARE POWER CONNECTION. (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	- - - - -



Key Plan

DO NOT SCALE DRAWINGS:

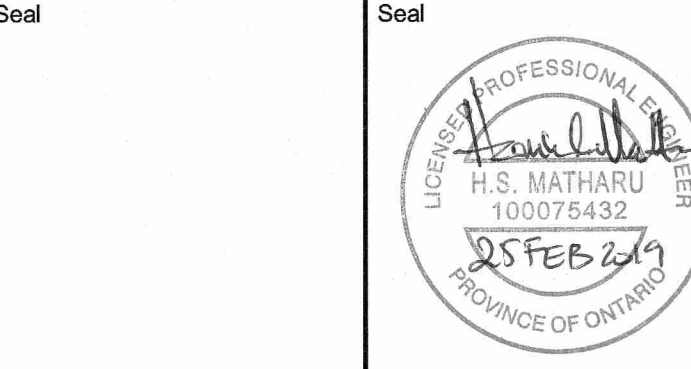
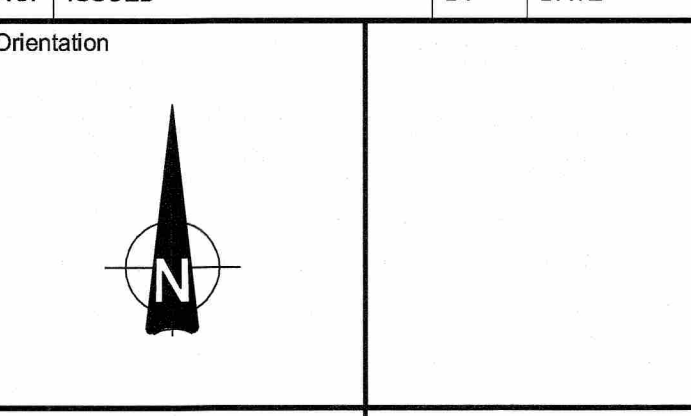
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B	B = Drawing number where detailed

NO.	ISSUED	BY	DATE
1	REISSUED FOR PERMIT AND ADDENDUM 5	TA	DEC 7, 2018
0	ISSUED FOR PERMIT & TENDER	TA	NOV 2, 2018



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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

Date
NOV 2, 2018

Drawn by
SO

Checked By
HM

Approved By
HM

JLR #
27915

E27

Cad File No. ---- of 173

1




DO NOT SCALE DRAWINGS:

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Project

BUILDING #046

RENOVATIONS

Drawing Title

**ELECTRICAL
MOTOR STARTER AND
CONTROL LIST**

Project No.
504034

UNIVERSITY OF GUELPH
BUILDING #046

Scale N.T.S.	Date NOV 2, 2018
Drawn by AM	<div style="text-align: center;"> <h1>E31</h1> </div>
Checked By HM	
Approved By HM	
JLR # 27915	
	of 173

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	①
	CONTROLLED RECEPTACLES RM. 136	15A, 1P	11	12	15A, 1P	CONTROLLED RECEPTACLES RM. 132	①
	CONTROLLED RECEPTACLES RM. 129	15A, 1P	13	14	15A, 1P	CONTROLLED RECEPTACLES RM. 217	①
	CONTROLLED RECEPTACLES RM. 233	15A, 1P	15	16	15A, 1P	CONTROLLED RECEPTACLES RM. 217	①
	CONTROLLED RECEPTACLES RM. 233	15A, 1P	17	18	15A, 1P	CONTROLLED RECEPTACLES RM. 239	①
	CONTROLLED RECEPTACLES RM. 230	15A, 1P	19	20	15A, 1P	CONTROLLED RECEPTACLES RM. 222	①
	RECEPTACLE RM. 118	20A, 1P	21	22	15A, 1P	SPARE	A6.37
	RECEPTACLE RM. 120	20A, 1P	23	24	15A, 1P	SPARE	A6.37
	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
- * GF
- 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	SPARE	
	SPARE	15A, 1P	11	12	15A, 1P	SPARE	
	SPARE	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. 126A, 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	CEIL SPACE RECEPTACLES RM. 125A, 127A	⚠
	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	CEIL SPACE RECEPTACLES RM. 206, 210A, 214	⚠
	SPARE	15A, 1P	11	12	15A, 1P	SPARE	⚠
	SPARE	15A, 1P	13	14	15A, 1P	SPARE	⚠
	SPARE	15A, 1P	15	16	15A, 1P	SPARE	⚠
	SPARE	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

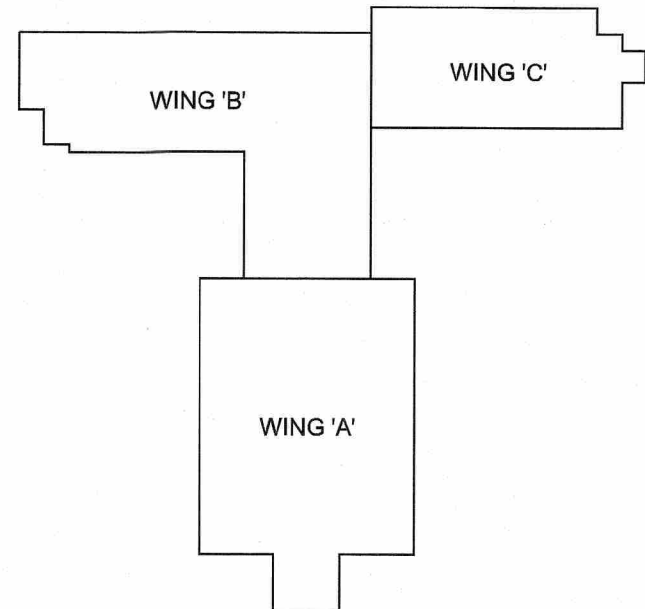
LOAD	DESCRIPTION	BKR	CCT	CCT	BKR	DESCRIPTION	LOAD
	LEVEL 1 LTG (143, 145, 145A, 147, 149)	15A, 1P	1	2	15A, 1P	LEVEL 1 LTG (132, 134, 136, 136B, 136C)	
	LEVEL 1 LTG (131, 133, 135, 137, 139, 141)	15A, 1P	3	4	15A, 1P	LEVEL 1 LTG (124, 126A, 126B, 126C, 126D, 128, 130)	
	LEVEL 1 LTG (125, 125A, 127, 127A, 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	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

- 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.

A = Detail number
B = Drawing number where detailed

POST-TENDER ADDENDUM NO.1 TA FEB 26, 2019

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

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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 173

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	RECEPTACLE RM. 217	
	RECEPTACLE RM. 217	15A, 1P	9	10	15A, 1P	RECEPTACLE RM. 217	
	RECEPTACLE RM. 217	15A, 1P	11	12	15A, 1P	RECEPTACLES RM. 228A	
	RECEPTACLES RM. 217	15A, 1P	13	14	15A, 1P	RECEPTACLES RM. 217	
▲	RECEPTACLE RM. 217 (DISHWASHER)	15A, 1P	15	16	15A, 1P	EF-42	
▲	RECEPTACLE RM. 217 (DISHWASHER)	15A, 1P	17	18	15A, 1P	SPARE	
▲	CEIL SPACE RECEPTACLES 224A, 228A	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	SPARE	▲
	SPARE	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

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

NEW PANEL "046 PP B1-1X"

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

LOAD	DESCRIPTION	BKR	CCT	CCT	BKR	DESCRIPTION	LOAD
	DOOR OPERATORS RM. ST101A	15A, 1P	1	2	15A, 1P	EMERGENCY CALL STATION	
	DOOR OPERATORS RM. WR138, 143	15A, 1P	3	4	25A, 1P	P-4	★
	RECEPTACLES RM. 117B	20A, 1P	5	6	20A, 1P	RECEPTACLES RM. 117B	
	RECEPTACLES RM. 117B	20A, 1P	7	8	20A, 1P	RECEPTACLES RM. 117A	
	RECEPTACLES RM. 117A	20A, 1P	9	10	20A, 1P	RECEPTACLES RM. 117A	
	DOOR OPERATORS RM. C106	15A, 1P	11	12	15A, 1P	DOOR OPERATORS RM. C103, C104	
	DOOR OPERATORS RM. C100	15A, 1P	13	14	15A, 1P	ACCESS CONTROL POWER SUPPLY	
	RECEPTACLE RM. 117A	20A, 2P	15	16	15A, 1P	ACCESS CONTROL POWER SUPPLY	
			17	18	15A, 1P	ACCESS CONTROL POWER SUPPLY	
	SPARE	15A, 1P	19	20	15A, 1P	ACCESS CONTROL POWER SUPPLY	
	SPARE	15A, 1P	21	22	15A, 1P	ACCESS CONTROL POWER SUPPLY	
	SPARE	20A, 1P	23	24	15A, 1P	ACCESS CONTROL POWER SUPPLY	
	SPARE	20A, 1P	25	26	20A, 1P	SPARE	
	SPARE	15A, 1P	27	28	15A, 1P	SPARE	
	SPARE	15A, 1P	29	30	15A, 1P	EXTERIOR CANOPY / PATHWAY LTG. & TIME CLOCK	
	ELEVATOR SHAFT LIGHTING (EL101, EL201)	15A, 1P	31	32	15A, 1P	STAIRWELL LIGHTING LEVEL 1 & 2 (ST101)	
	LEVEL 1 LTG / EBU#1 (118, 120)	15A, 1P	33	34	15A, 1P	SPARE	
	LEVEL 1 LTG & EF-31 (WR138)	15A, 1P	35	36	15A, 1P	STAIRWELL LIGHTING LEVEL 1 & 2 (ST101)	
	LEVEL 1 LTG (124, 132, 136, WR116)	15A, 1P	37	38	15A, 1P	LEVEL 1 CORR. LTG. (C102, C103, C105)	
	LEVEL 1 LTG (117, 117A, 117B, 123, 123A, 123C)	15A, 1P	39	40	15A, 1P	EXIT LIGHTING (ALL EGRESS LEVEL 1 WING B)	■
	LEVEL 1 LTG (125, 127, 129, 133, 135, 137, 139, 143, 145)	15A, 1P	41	42	15A, 1P	LEVEL 1 CORR. LTG (C104, C106, C107, C108, ST101A)	

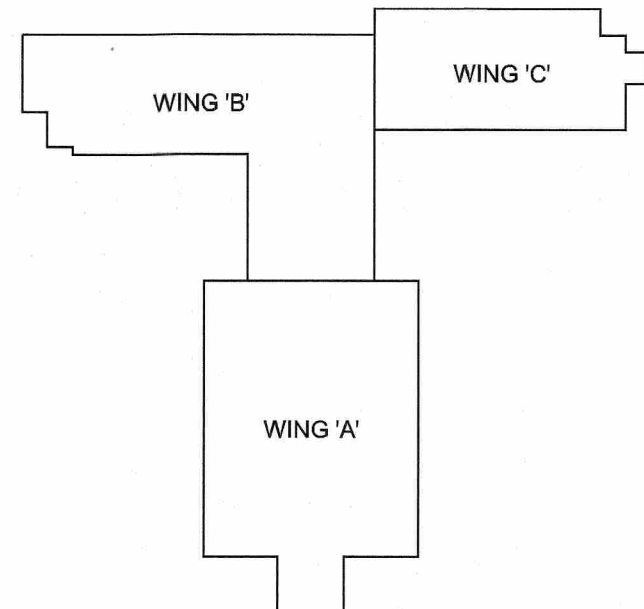
NEW PANEL "046 PP B2-2X"

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

LOAD	DESCRIPTION	BKR	CCT	CCT	BKR	DESCRIPTION	LOAD
	DOOR OPERATORS	15A, 1P	1	2	15A, 1P	ELEVATOR CAB LIGHTING & VENTILATION	
	DOOR OPERATORS	15A, 1P	3	4	15A, 1P	EMERGENCY CALL STATION	
	RECEPTACLE RM. 234	20A, 1P	5	6	15A, 1P	ACCESS CONTROL POWER SUPPLY	
	RECEPTACLE RM. 234	20A, 1P	7	8	15A, 1P	SPARE	
	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	
	SPARE	15A, 1P	27	28	15A, 1P	SPARE	
	SPARE	15A, 1P	29	30	15A, 1P	SPARE	
	SPARE	15A, 1P	31	32	15A, 1P	SPARE	
	LEVEL 3 PENTHOUSE EBU#2	15A, 1P	33	34	15A, 1P	SPARE	
	LEVEL 2 LTG & EF-39 (WR234)	15A, 1P	35	36	15A, 1P	STAIRWELL LIGHTING LEVEL 1 & 2 (ST102, C100)	
	LEVEL 2 LTG (215, 222, 224, 230, WR201)	15A, 1P	37	38	15A, 1P	LEVEL 2 CORR. LTG. (C201, C205, C206)	
	LEVEL 2 LTG (202, 203, 204, 205, 207, 208, 209, 211, 213)	15A, 1P	39	40	15A, 1P	EXIT LIGHTING (ALL EGRESS LEVEL 2 & 3 WING B)	■
	LEVEL 2 LTG (217, 221, 223, 225, 227, 228, 233, 235)	15A, 1P	41	42	15A, 1P	LEVEL 2 CORR. LTG (C201, C203, C204, C202, 236)	

GENERAL NOTES:

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



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:

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A = Detail number
B = Drawing number where detailed

▲	POST-TENDER ADDENDUM NO.1	TA	FEB 26, 2019
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: www.jrichards.ca

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. E34
Checked By HM	
Approved By HM	
JLR # 27915	

Cad File No. ----

of 173

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. (108, 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-46	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	??A, 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			
	RF-6	15A, 3P	21	22	15A, 3P	P-2A	
			23	24			
			25	26			
	P-1	15A, 3P	27	28	15A, 3P	P-5	
			29	30			
			31	32			
	P-1A	15A, 3P	33	34	15A, 3P	P-6	
			35	36			
			37	38			
	P-2	15A, 3P	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			

NEW PANEL "046 DP-2E"

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

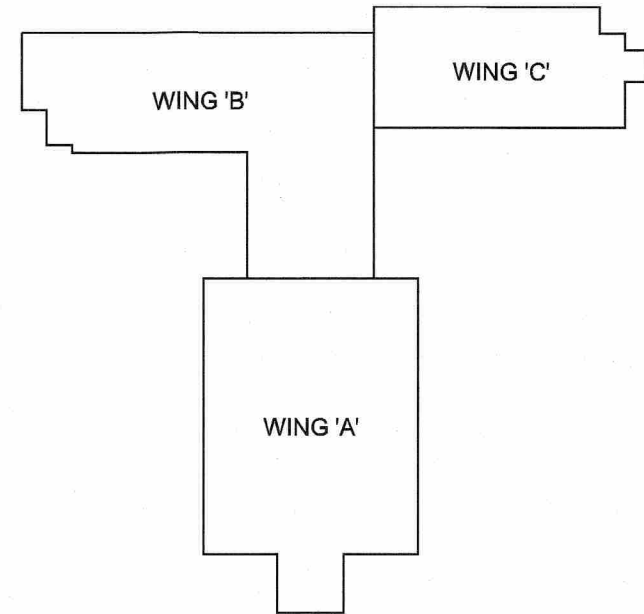
LOAD	DESCRIPTION	BKR	CCT	CCT	BKR	DESCRIPTION	LOAD
	PANEL U	100A, 3P	1	2	100A, 3P	PANEL BB	
			3	4			
			5	6			
			7	8			
	PANEL X	100A, 3P	9	10	100A, 3P	PANEL EX4	
			11	12			
			13	14	15A, 1P	FC-1	
	PANEL Y	100A, 3P	15	16			
			17	18	60A, 3P	SPD	③
	HEAT EXCHANGER	15A, 1P	19	20			
	SPACE		21	22			
	SPACE		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

POST-TENDER ADDENDUM NO.1	TA	FEB 26, 2019
ISSUED FOR PERMIT & TENDER	TA	NOV 2, 2018

NO. ISSUED BY DATE

Orientation

Seal

Seal

LICENSED PROFESSIONAL ENGINEER
H.S. MATHARU
100075432
FEB 2019
PROVINCE OF ONTARIO

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 - 3 OF 4

Project No.
504034

Location
UNIVERSITY OF GUELPH
BUILDING #046

Scale AS INDICATED	Date NOV 2, 2018
Drawn by SO	Drawing No. E35
Checked By HM	
Approved By HM	
JLR # 27915	of 173

Cad File No. ----