ISSUED FOR TENDER FEBRUARY 02, 2018

Government of Canada

Gouvernement du Canada

LAB CONVERSION

ARCHITECT OTTAWA, ONTARIO

PETER J. KINDREE

(613) 860-1530

Canada

Ottawa K1Y 0Z7

LIST OF DRAWINGS

ARCHITECTURAL

A001 COVER PAGE; DRAWING LIST, ASSEMBLY & DOOR SCHEDULES

A111 PLANS

A201 TYPICAL MILLWORK ELEVATIONS & DETAILS

A202 TYPICAL ELEVATIONS & DETAILS

MECHANICAL

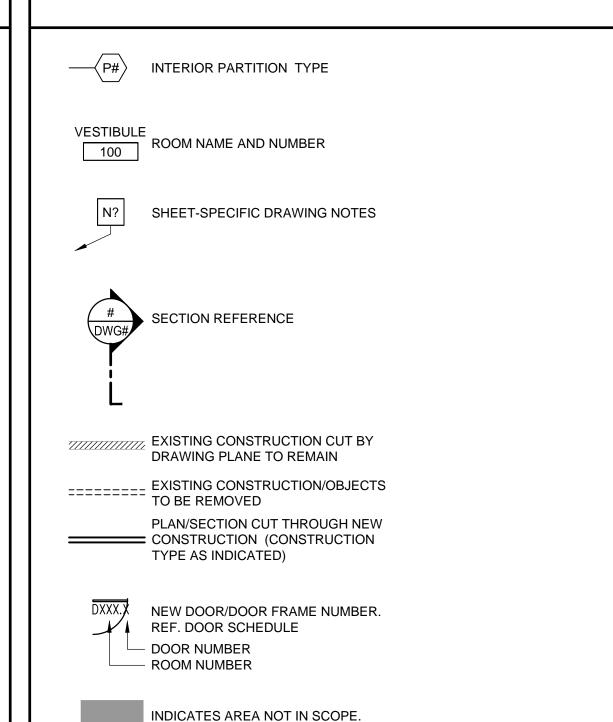
MECHANICAL LEGENDS, GENERAL NOTES, SPECIFICATIONS & DRAWING LIST

M2 MECHANICAL NEW AND DEMOLITION WORK

ELECTRICAL

ELECTRICAL LEGENDS, SPECIFICATIONS & DRAWING LIST

ELECTRICAL NEW AND DEMOLITION WORK



DRAWING LEGEND

ASSEMBLY SCHEDULE

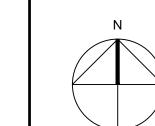
ABBREVIATIONS: HM - HOLLOW METAL FW - FLUSH WOOD

INTERIOR PARTITION WALL CONSTRUCTION FLOOR TO U/S OF ACOUSTIC TILE CEILING. REFER TO DETAIL1/A202 -16 mm GYPSUM BOARD BOTH SIDES

-92 mm STEEL STUDS @ 400mm O.C.

INTERIOR PARTITION WALL CONSTRUCTION FLOOR TO U/S OF WAFFLE SLAB

ZERO HOUR (NON RATED) FIRE RATING EQUIVALENT TO ULC W407 REFER TO DETAIL 2/A202 -16 mm TYPE X GYPSUM BOARD BOTH SIDES -92 mm STEEL STUDS @ MAX. 400mm O.C.

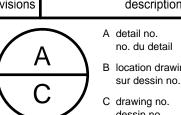


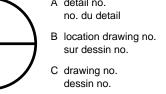


L'ENTREPRENEUR DEVRA VÉRIFIER TOUTES LES DIMENSIONS ET LES CONDITIONS SUR LE CHANTIER ET AVISER SANS DÉLAI LE REPRÉSENTANT DU MINISTÈRE DE TOUTE ANOMALIE.

Contractor to verify all dimensions and conditions on site and immediately notify the Departmental Representative of all discrepancies.

2	ISSUED FOR TENDER	2018/02/02
1	ISSUED FOR 66% REVIEW	2018/01/12
visions	description	date
	A detail or	





LAB CONVERSION

OTTAWA, ONTARIO

COVER PAGE, DRAWING LIST, **ASSEMBLY &** DOOR SCHEDULE

Designed By	PK/RR	Conçu par
Date	JAN 2017	(yyyy/mm/dd)
Drawn By	RR/PM	Dessiné par
Date	JAN 2017	(yyyy/mm/dd)
Reviewed By	PK	Examiné par
Date	JAN 2017	(yyyy/mm/dd)
Approved By	PK	Approuvé par
Date	JAN 2017	(yyyy/mm/dd)
Tender		Soumission
	SHELLY LAIDLAW	

Project Manager

PTS 4753

Administrateur de projets

A001

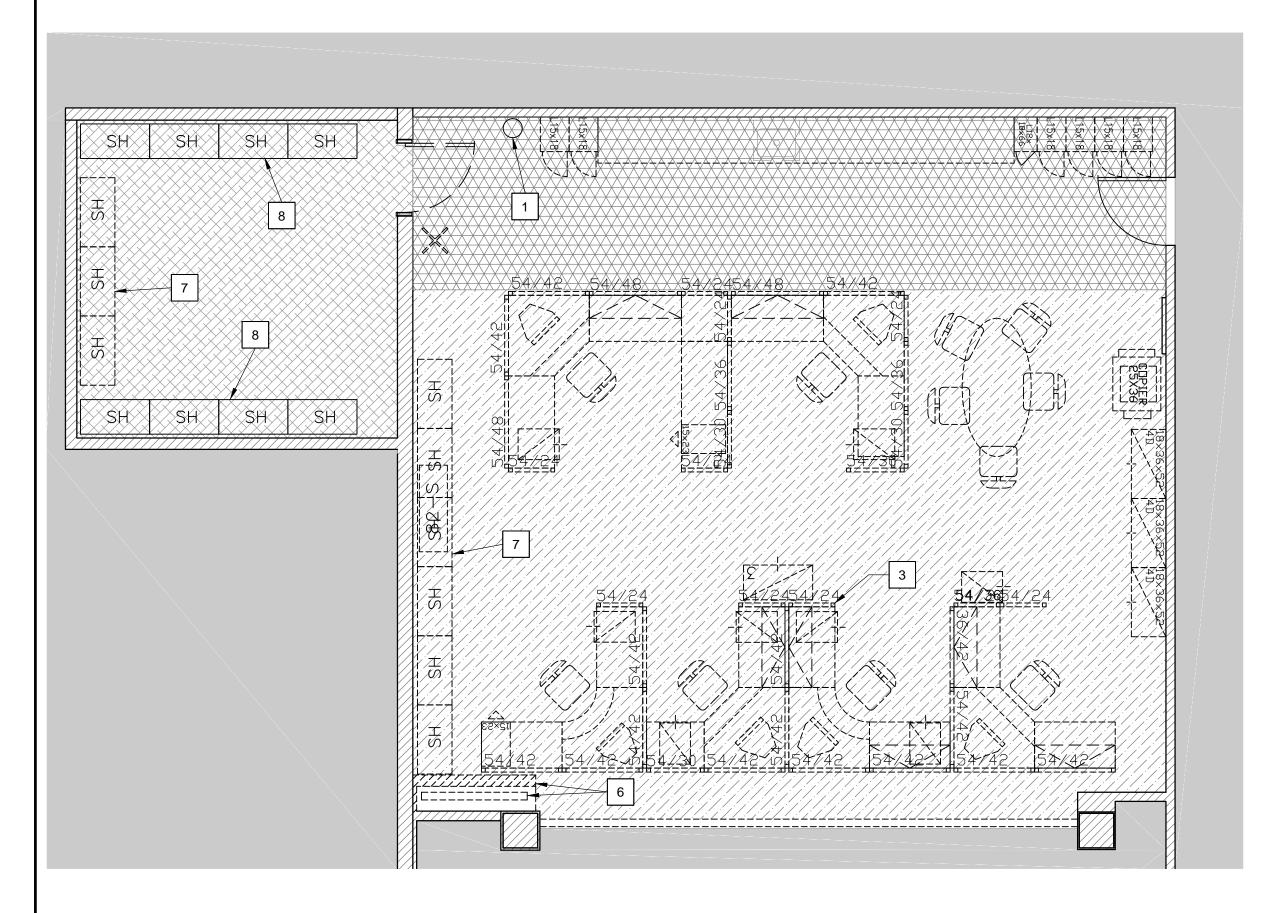
DOOR	FROM	то				DOOR				FRAME		HAND	FIRE RATING	REMARKS
NO.			TYPE	WIDTH	HEIGHT	THICK	MATERIAL	FINISH	TYPE	MATERIAL	FINISH		(HR)	
D82	COR.	82-1	EXIST	TING DOO	OR TO RE	MAIN	FW	VARN.		NG HM FRAME) REMAIN	PAINT	RH		TYPE D SECURITY DOOR
D82A	82-2	82-4	В	965	2135	44	НМ	PAINT	1	НМ	PAINT	RHR		TYPE D SECURITY DOOR
D82B	82-1	82-2	А	965	2135	44	FW	PAINT	1	НМ	PAINT	RH		FLUSH WOOD DOOR
D82C	82-2	82-3	А	965	2135	44	FW	PAINT	1	НМ	PAINT	LHR		FLUSH WOOD DOOR

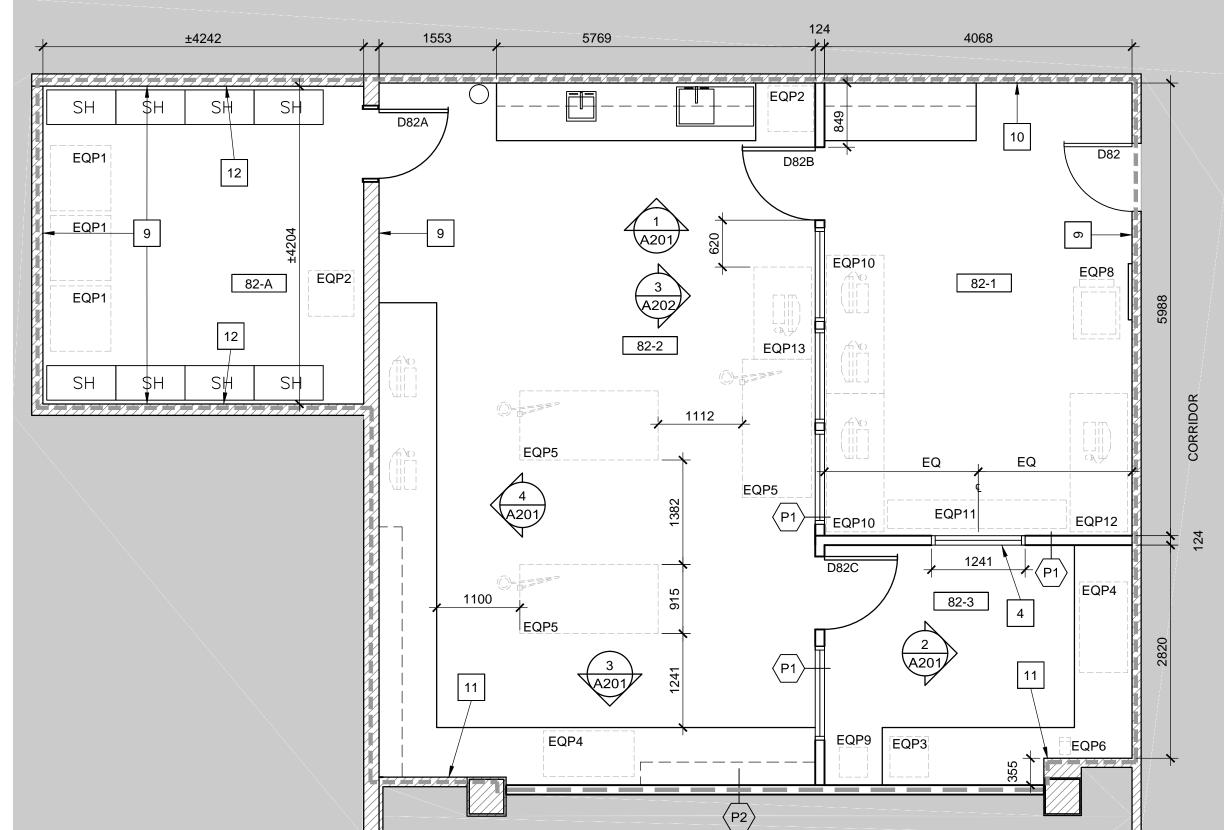


	SCALE	N/A	
ITEM No.	QTY	NAME	DIMENSIONS
1	3	UPRIGHT FREEZER	860W X 800D X 1720H
2	1	GEN. PURP. FRIDGE/FREEZE	UNKNOWN
3	1	SAMPLE PREP FREEZER/MILL	500L X 533W X 650H
4	2	FUME HOOD	1220W X 635D X 1040H
5	3	ADJUSTABLE HEIGHT TABLE	1830W X 915D
6	1	LAB BALANCE	N/A
7	3	MAGNIFIER LIGHT	N/A
8	1	PRINTER/COPIER	790W X 615D
9	1	LIQUID NITROGEN DEWAR	395W X 373H X 577D
10	2	DESK	1830W X 760D
11	1	BOOKSHELF	N/A
12	1	SIT-STAND DESK	1830W X 760D
13	1	SIT-STAND DESK	1220W X 760D

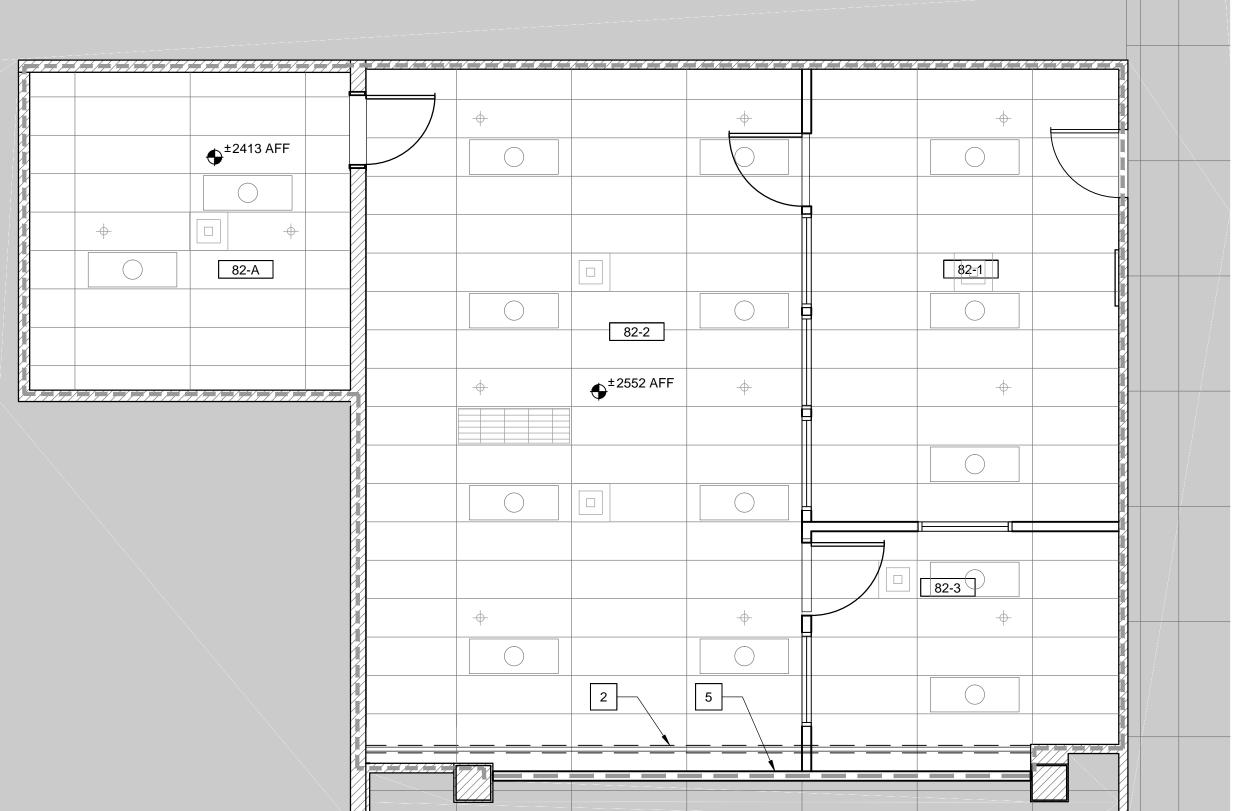
PWGSC B1 (1000 x 707)

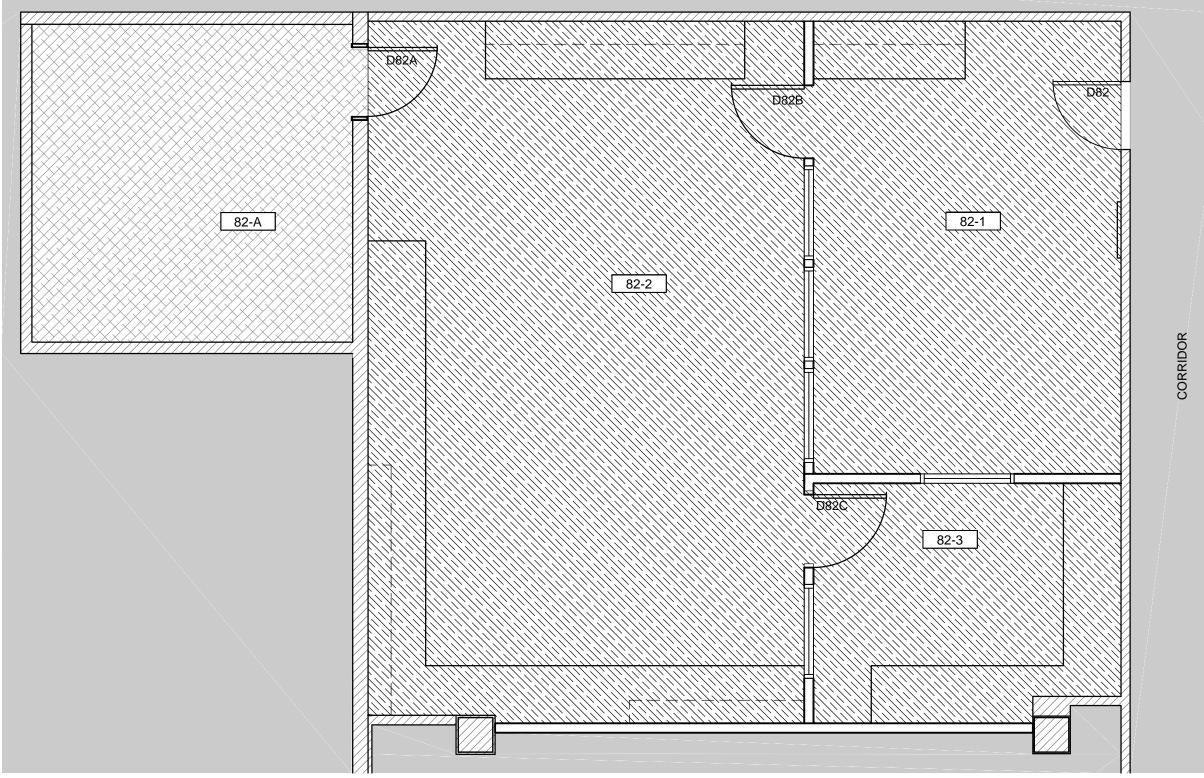
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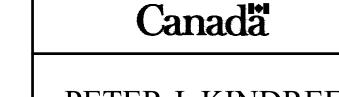


GENERAL NOTES, A111

- A. REPAINT ALL EXISTING INTERIOR SURFACES.
- B. COMPUTER TERMINALS SUPPLIED BY CLIENT AND SHOWN FOR REFERENCE ONLY. NOT IN CONTRACT.
- C. ASSUME CONDITION OF EXISTING PARTITIONS PAINT FINISH TO BE DSD LEVEL 2 AS DESIGNATED BY MASTER PAINTERS INSTITUTE (MPI).

DRAWING NOTES, A111

- 1. EXISTING EYE WASH STATION TO REMAIN.
- 2. REMOVE EXISTING TRACK AND SUPPORT FOR FOLDING PARTITION. REPAIR CEILING GRID AND REPLACE TILES AS REQUIRED.
- 3. EXISTING FURNITURE TO BE REMOVED BY DEPARTMENTAL REPRESENTATIVE.
- 4. HOLLOW METAL GLAZING UNIT.
- 5. REMOVE AND REPLACE CEILING GRID AND TILES AS REQUIRED TO ACCOMMODATE CONSTRUCTION OF NEW FLOOR TO SLAB PARTITION AND REMOVAL OF FOLDING PARTITION TRACK. IF REMOVAL OR ALTERATION OF CEILING SUPPORT ELEMENTS IS REQUIRED (I.E. MAIN TEES), NOTIFY DEPARTMENTAL REPRESENTATIVE PRIOR TO WORK, AND PROVIDE ENGINEERED SHOP DRAWINGS AS WELL AS ENGINEER POST-INSTALLATION FIELD REVIEW OF CEILING REINSTATEMENT.
- 6. REMOVE EXISTING FOLDING PARTITION POCKET AND FOLDING PARTITION.
- 7. REMOVE EXISTING WALL MOUNTED METAL SHELVING AND TURN OVER TO DEPARTMENTAL REPRESENTATIVE. PATCH AND REPAIR DAMAGE TO GYPSUM BOARD INCURRED BY REMOVAL.
- 8. EXISTING WALL MOUNTED SHELVING TO REMAIN. REMOVE AS NEEDED TO REPAIR AND PAINT GYPSUM AND REINSTATE.
- 9. EXISTING PARTITION TO REMAIN CONCRETE BLOCK SLAB TO SLAB WITH GYPSUM BOARD ON FURRING TO ABOVE CEILING.
- 10. EXISTING PARTITION TO REMAIN METAL STUDS WITH GYPSUM BOARD BOTH SIDES, FLOOR TO SLAB.
- 11. EXISTING PARTITION TO REMAIN METAL STUDS WITH GYPSUM BOARD BOTH SIDES, FLOOR TO ±100mm ABOVE CEILING. PROVIDE FRAMING AND GYPSUM BOARD TO EXTEND TO UNDERSIDE OF SLAB TO CREATE NON-RATED FIRE SEPARATION.
- 12. PROVIDE INFILL BLOCK AND/OR FIRESTOP TO MAINTAIN INTEGRITY OF NON RATED SEPARATION ABOVE CEILING.



Government of Canada

PETER J. KINDREE ARCHITECT

79 Hinton Avenue N. (613) 860-1530 Ottawa K1Y 0Z7



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2	ISSUED FOR TENDER	2018/02/02
1	ISSUED FOR 66% REVIEW	2018/01/12
visions	description	date
	A detail no.	/

B location drawing no sur dessin no. C drawing no.

LAB **CONVERSION**

OTTAWA, ONTARIO

PLANS

Designed By	PK/RR	Conçu par
Date	NOV 2017	(yyyy/mm/dd)
Drawn By	RR/PM	Dessiné par
Date	NOV 2017	(yyyy/mm/dd)
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Approved By	PK	Approuvé par
Date	NOV 2017	(yyyy/mm/dd)
Tender		Soumission
	OUELLY LAIDLAW	

SHELLY LAIDLAW Administrateur de projets

> PTS 4753 No. du dessin

FINISH PLANS INDICATES AREA & EXTENT OF EXISTING CARPET AND BASE TO BE REMOVED.

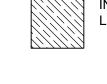
LEGEND CONSTRUCTION /

INDICATES AREA & EXTENT OF EXISTING VCT OR SHEET VINYL TO BE REMOVED.

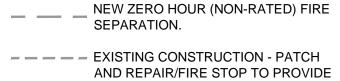


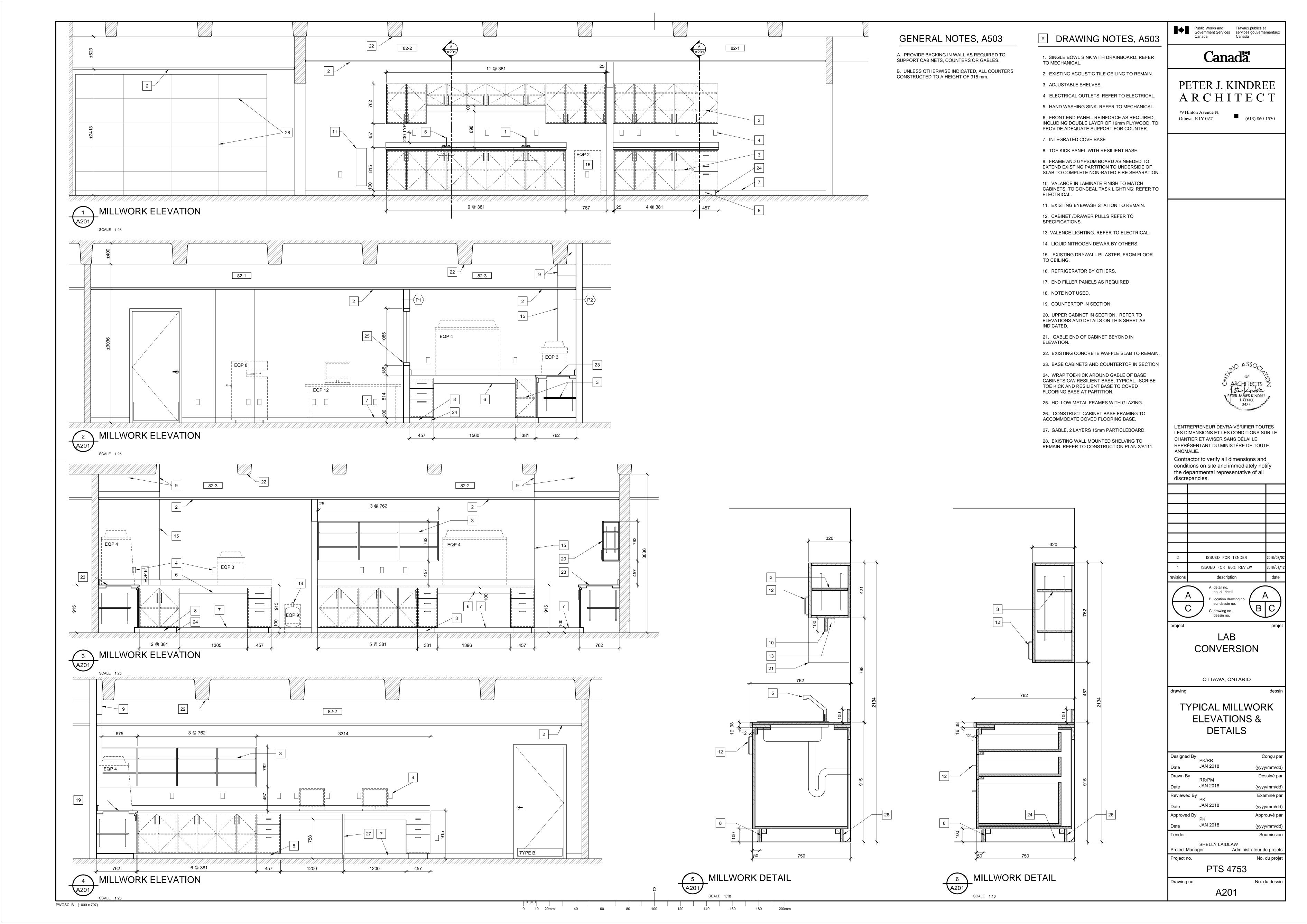
INDICATES AREA & EXTENT OF NEW LINOLEUM AND BASE TO BE INSTALLED.

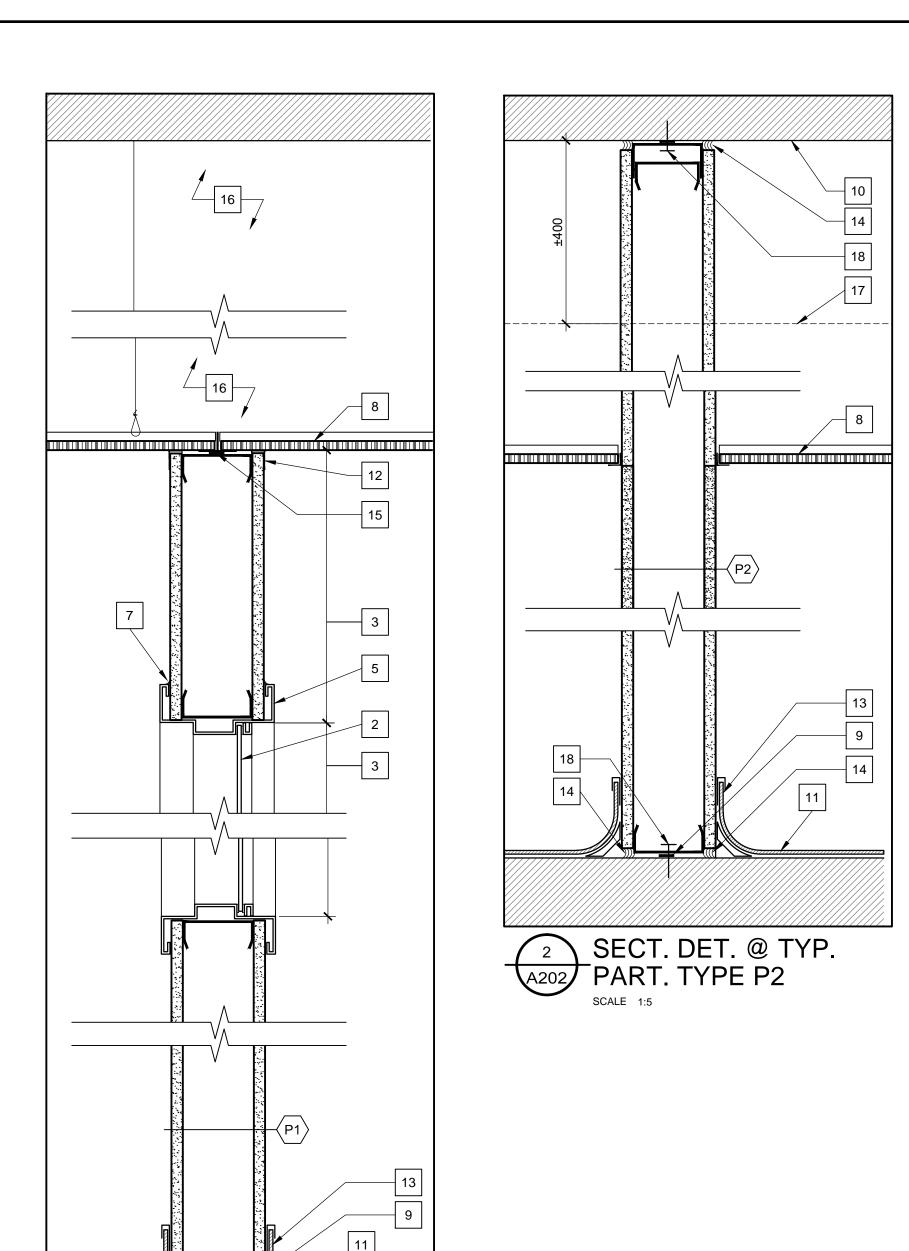
ZERO HOUR RATED FIRE SEPARATION



NEW ZERO HOUR (NON-RATED) FIRE

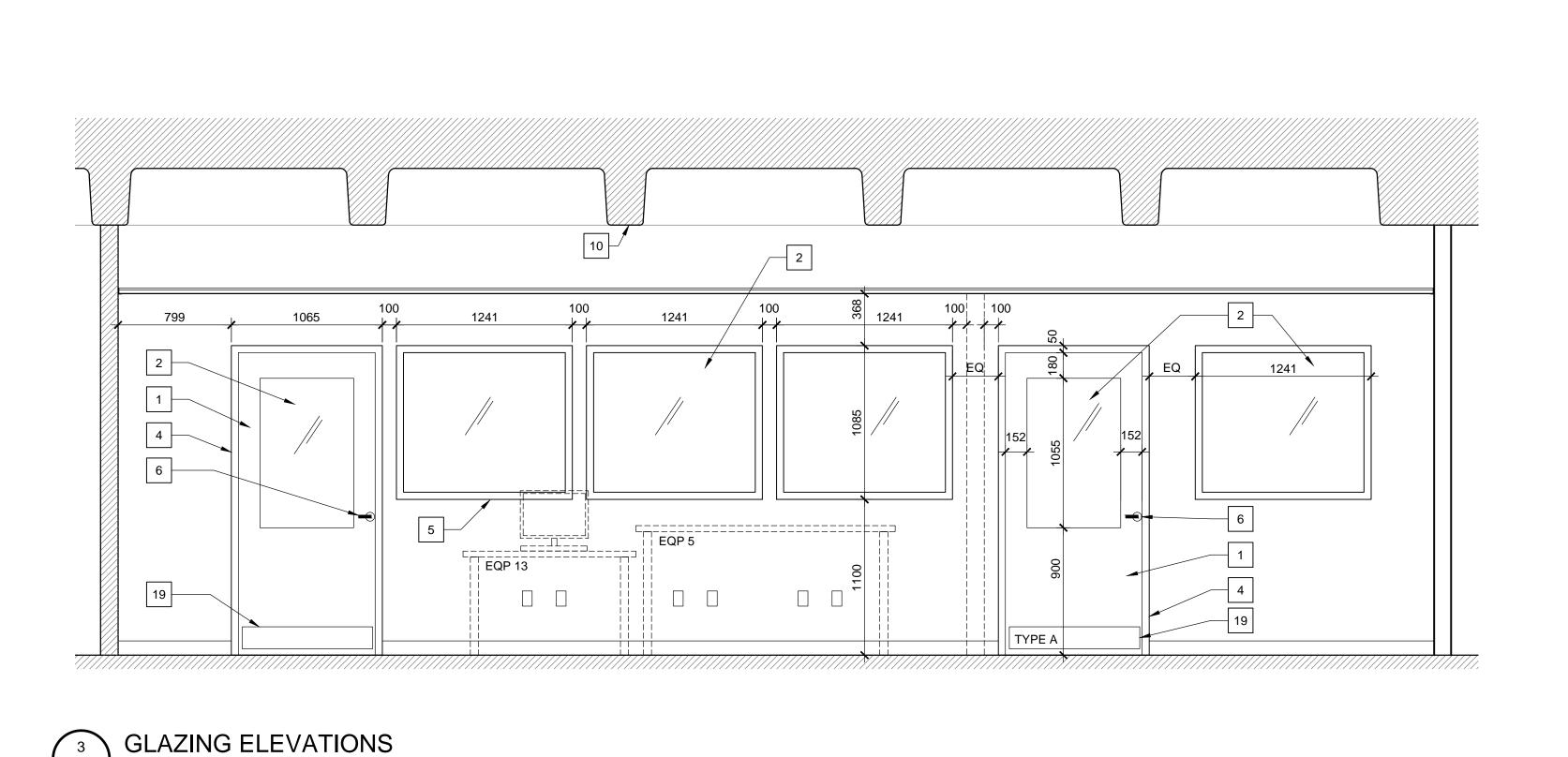






SECT. DET. @ TYP.
PART. TYPE P1

PWGSC B1 (1000 x 707)



GENERAL NOTES, A202

A SITE VERIFY FLOOR TO CEILING HEIGHT

DRAWING NOTES, A202

1. DOOR: REFER TO DOOR SCHEDULES FOR

DIMENSIONS AND MATERIAL.

2. 6mm CLEAR TEMPERED GLAZING IN FRAME OR DOOR AS INDICATED

3. REFER TO ELEVATION DETAILS ON THIS SHEET

FOR GLAZING DIMENSIONS. 4. DOOR FRAME. REFER TO DOOR SCHEDULE FOR

5. HOLLOW METAL FRAME.

6. DOOR HARDWARE. REFER TO SPECIFICATIONS.

DIMENSIONS AND MATERIAL.

7. PROVIDE CONTINUOUS SEALANT @ FRAME/DRYWALL JUNCTION.

8. EXISTING SUSPENDED LAY-IN ACOUSTICAL TILE CEILING SYSTEM TO REMAIN. CUT AND REPAIR AS NEEDED TO ACCEPT NEW WORK.

9. PROVIDE NOISE STOP FOAM SEAL CONTINUOUS UNDER BOTTOM TRACK. MINIMUM 12MM THICK & 19MM WIDE.

10. EXISTING WAFFLE SLAB ABOVE TO REMAIN.

11. FLOOR FINISH.

12. PROVIDE CONTINUOUS PAPER-FACED "J" SHAPE METAL TRIM AT TOP OF DRYWALL, FINISH WITH JOINT COMPOUND; PROVIDE CONTINUOUS 3mm GAP BETWEEN TOP OF DRYWALL AND UNDERSIDE OF CEILING.

13. INTEGRAL COVE BASE.

14. FIRE STOPPING AT ALL PERIMETER JUNCTIONS BETWEEN EXISTING SLAB AND PARTITION, AND AT ALL PENETRATIONS THROUGH SLAB-TO-SLAB PARTITION.

15. 45mm X 3mm NOISE STOP FOAM SEAL BETWEEN CEILING GRID AND CEILING TRACK

16. PROVIDE FASTENING BETWEEN BELOW-CEILING PARTITION COMPONENTS AND ABOVE-CEILING LATERAL BRACING FOR PARTITION ASSEMBLY AS REQUIRED BY ENGINEERED PARTITION FRAMING SHOP DRAWINGS AND IN COORDINATION WITH RELATED ARCH/MECH/ELEC WORK AND EXISTING CONDITIONS. DO NOT FASTEN TO SUSPENDED CEILING FOR LATERAL SUPPORT.

17. FRAME AS REQUIRED TO ACCOMMODATE WAFFLE SLAB PROFILE.

18. FASTEN TRACK TO SLAB WITH FASTENERS 600mm O.C. POWDER ACTUATED FASTENERS ARE NOT ACCEPTABLE.

19. KICKPLATE



Public Works and Government Services Services Ganada

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Canadä

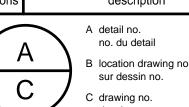
PETER J. KINDREE



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sur dessin no. C drawing no. dessin no.

LAB CONVERSION

OTTAWA, ONTARIO

TYPICAL ELEVATIONS, **DETAILS**

Designed By	PK/RR	Conçu par
Date	JAN/18	(yyyy/mm/dd)
Drawn By	RR/PM	Dessiné par
Date	JAN/18	(yyyy/mm/dd)
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Approved By	PK	Approuvé par
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Tender		Soumission
Proiect Mana	SHELLY LAIDL	AW Administrateur de proiets

PTS 4753

LAB CONVERSION

OTTAWA, ONTARIO MECHANICAL

	GENERAL LEGEND
SYMBOL	DESCRIPTION
- <u></u> -	EXISTING PIPING/DUCTWORK/EQUIPMENT
	EXISTING PIPING/DUCTWORK/EQUIPMENT TO BE REMOVED/RELOCATED
	NEW/RELOCATED PIPING/DUCTWORK/EQUIPMENT
	EXISTING PIPING/DUCTWORK/EQUIPMENT BELOW SLAB
	NEW PIPING/DUCTWORK/EQUIPMENT BELOW SLAB
(R)	DENOTES RELOCATED EQUIPMENT
(N)	DENOTES NEW EQUIPMENT
(X)	DENOTES EQUIPMENT TO BE REMOVED

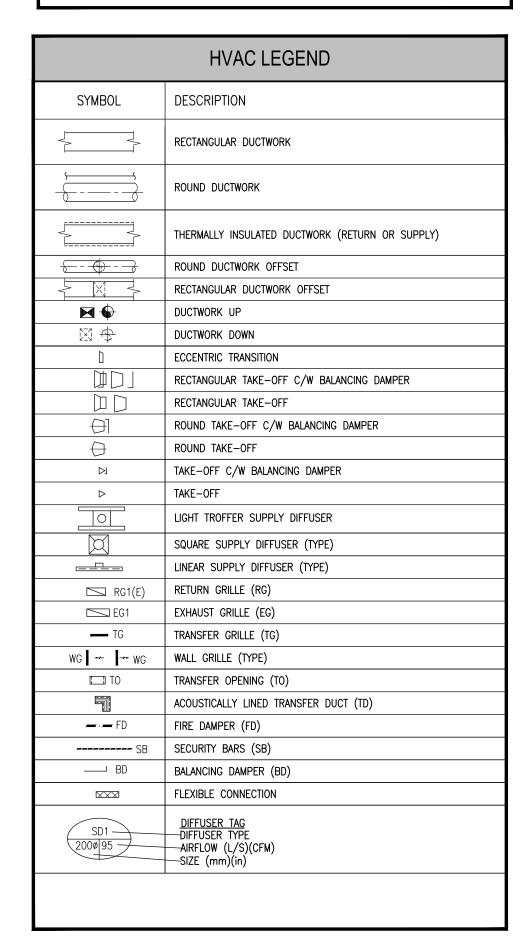
		FAN POWERED TERMINAL UNIT SCHEDULE								
I		MAX. PRIMARY		MAX. PRIMARY MIN. PRIMARY		INLET DIAMETER	ELECTRICAL DATA			
	TAG	LOCATION	AIR (L/s)	AIR (L/s)	FLOW (L/s)	(mmø)	MOTOR SIZE (HP)	V/PH/Hz	BASIS OF DESIGN	REMARKS
	FPB01	ROOM 82	720	180	880	300	3/4	120/1/60	EH PRICE FDC-50-D12	REBALANCE TO AIRFLOWS INDICATED IN THIS SCHEDULE

DRAWING LIST
DESCRIPTION
MECHANICAL DRAWING LIST, LEGENDS, GENERAL NOTES AND SPEC.
MECHANICAL PLUMBING, AND HVAC REMOVALS AND NEW WORK

TAG	DOMESTIC COLD WATER (ømm)	DOMESTIC HOT WATER (ømm)	SANITARY (ømm)	DESCRIPTION	BASIS OF DESIGN	NOTES
LAV1	13	13	40	SINGLE BOWL COUNTERTOP MOUNT SINK, 18GA, 304 STAINLESS STEEL—SELF-RIMMING-BACKLEDGE, FULLY UNDERCOATED TO REDUCED CONDENSATION AND RESONANCE-FACTORY APPLIED RIM SEAL-89mm CRUMB CUP WASTE ASSEMBLY WITH 38mm TAILPIPE. 384mm WIDE x 392mm LONG x 152mm HIGH.	BASIN: FRANK ALBS1306P-1/1 FAUCET: CHICAGO FAUCET 2302-ABCP	
S1	13	13	40	SINGLE BOWL COUNTERTOP MOUNT SINK, 20GA, 316 STAINLESS STEEL—SELF—RIMMING—BACKLEDGE, RIGHT—HAND SLOPED DRAINBOARD FULLY UNDERCOATED TO REDUCED CONDENSATION AND RESONANCE—89mm CRUMB CUP WASTE ASSEMBLY WITH 38mm TAILPIPE. 1016mm WIDE x 522mm LONG x 254mm HIGH. SINK INTERCEPTOR: EPOXY COATED, CAST IRON BODY, GASKETED COVER, PERFORATED STAINLESS STEEL BASKET, BOTTOM ACCESS, IPS THREADED CONNECTIONS.	BASIN: FRANK LBSDBR6810/316-1/3 FAUCET: CHICAGO FAUCET 786-GN8BVBE7CP INTERCEPTOR: WATTS S1:762	INSTALL INTERCEPTOR DOWN STREAM OF SINK TRAP C/W UNION FITTINGS ON BOTH SIDES

SYMBOL	DESCRIPTION
	PIPING BELOW GRADE/SLAB
—— DCW ——	DOMESTIC COLD WATER PIPING
—— DHW ——	DOMESTIC HOT WATER PIPING
— DHWR —	DOMESTIC HOT WATER RECIRCULATION PIPING
—— SAN ——	SANITARY PIPING
———	PIPING OFFSET
	BRANCH PIPING DOWN
— ∋	PIPING DOWN
— o	PIPING UP
>	REDUCER
—	FLOW DIRECTION
5	PIPE BREAK
Г	CAP
	RUNNING P-TRAP
J	P-TRAP
Q	DRAIN ASSEMBLY
——ICO	CLEAN OUT
— <u></u> 000	WALL CLEAN OUT
—© CO	FLOOR CLEAN OUT
M J	ISOLATION VALVES
∑	SOLENOID VALVE
	MOTORIZED VALVE
ګ⊄	CHECK VALVE
b≪l	FLEXIBLE CONNECTION
ı ı	UNION
⊳₩	DRAIN VALVE C/W CAP & CHAIN

	PIPING BELOW GRADE/ SLAB		Helen
_	DOMESTIC COLD WATER PIPING		Using
_	DOMESTIC HOT WATER PIPING		Moun
_	DOMESTIC HOT WATER RECIRCULATION PIPING		13
_	SANITARY PIPING		
	PIPING OFFSET		
	BRANCH PIPING DOWN		
	PIPING DOWN		
	PIPING UP		12,90,000
	REDUCER		Ang 1 3/8
	FLOW DIRECTION		
	PIPE BREAK	1.	DUCT
	CAP	2.	THRO
	RUNNING P-TRAP		THAN
	P-TRAP	3.	. CONS AROU
	DRAIN ASSEMBLY	4. 5.	
	CLEAN OUT		FASTE
	WALL CLEAN OUT	6.	OPEN
	FLOOR CLEAN OUT	7. 8.	
	ISOLATION VALVES	9.	. CONTI
	SOLENOID VALVE		01 20
	MOTORIZED VALVE		
	CHECK VALVE	4	1
	FLEXIBLE CONNECTION		M1
	UNION		



Gypsum Board —	<u> </u>	Steel Stud Track 7
Steel Stud Track 600T200-43		3/4" (19mm) 3 Sides
Secure to Slab Using Mechanical Fasteners	Steel Stud 600 S200-43	
Mounting Bracket 1 3/8" X 1 3/8"	Duct Sleeve	
	Security Bar Ø3/8" (10mm)	
Angled Frame	Prote Stud Framing under	ection Material Utra-Grip Rivet Fender Washer

2. VENT TO MEET NBC REQUIREMENTS, VENTING THROUGH SLOPED ROOFS NOT PERMITTED.

3. MANUFACTURER NAME & MODEL NUMBER REPRESENT ACCEPTABLE QUALITY STANDARD ONLY.

- T SLEEVE TO BE AT LEAST THE SAME THICKNESS AS DUCT PASSING
- OVERALL DIMENSION OF THE SLEEVE MUST BE SLIGHTLY GREATER

NOTES: 1. COORDINATE EXACT PIPING LOCATIONS ON SITE.

- STRUCT FRAMES OF 1-3/8" x 1-3/8" x 1/8" ANGLE STEEL WELDED UND DUCT SLEEVE (CEILING MOUNT BRACKETS ARE RECOMMENDED). ACE 3/8"ø STEEL BARS AT 6" O.C. AND WELD TO THE FRAME.
- JRE THE DUCT SLEEVE TO THE STRUCTURAL CEILING WITH MECHANICAL
- PROTECTION MATERIAL 3/4" MAX FROM THE EDGE OF THE DUCT LY FIRE—RATED CAULKING BETWEEN DUCT SLEEVE AND FINISHED WALL.
- AIR INSULATION AS REQUIRED.
- TRACTOR TO SUBMIT A SHOP DRAWING OF PROPOSED INSTALLATION CIFIC TO THE EXISTING WALL CONSTRUCTION.



GENERAL NOTES:

- ALL WORK SHOWN OR IMPLIED ON THESE DRAWINGS SHALL BE CARRIED OUT IN ACCORDANCE WITH: A. ALL CODES AND LAWS APPLICABLE (NBC) INSTRUCTIONS TO BIDDERS
- IN ACCORDANCE WITH SMACNA-LATEST EDITION (DUCTWORK) IN ACCORDANCE WITH ULC STANDARDS
- PRIOR TO SUBMITTING TENDERS, EACH TRADE SHALL EXAMINE THE SITE TO DETERMINE THE CONDITIONS WHICH MAY AFFECT THE PROPOSED WORK. NO CLAIM FOR EXTRA PAYMENT WILL BE CONSIDERED BECAUSE OF FAILURE TO FULFILL THIS CONDITION. START OF WORK WILL BE DEEMED EVIDENCE OF ACCEPTANCE OF, AND SATISFACTION WITH, EXISTING
- 3. THE DRAWINGS SHALL BE CONSIDERED TO SHOW THE GENERAL CHARACTER AND SCOPE OF THE WORK AND NOT THE EXACT DETAILS OF THE INSTALLATION. THE INSTALLATION SHALL BE COMPLETE WITH ALL

ACCESSORIES REQUIRED FOR A COMPLETE AND OPERATIVE INSTALLATION.

- MECHANICAL CONTRACTOR IS RESPONSIBLE TO FIELD MEASURE LOCATION OF NEW OR RELOCATED EQUIPMENT TO VERIFY CLEARANCES WITH THE MANUFACTURER PRIOR TO ORDERING
- 5. THESE MECHANICAL DRAWINGS MUST BE READ IN CONJUNCTION WITH THE ARCHITECTURAL AND ELECTRICAL DRAWINGS AND SPECIFICATIONS. 6. THE WORD "PROVIDE" SHALL DENOTE "SUPPLY AND INSTALL". THE WORD "TAB" SHALL DENOTE "TESTING, ADJUSTING, AND BALANCING".
- 7. CONTRACTOR SHALL FOLLOW THE BIDDING DOCUMENT PROJECT SCHEDULE. UPON AWARD, CONTRACTOR SHALL SUBMIT WORK SCHEDULE TO THE DEPARTMENTAL REPRESENTATIVE FOR APPROVAL
- 8. THE MECHANICAL CONTRACTOR SHALL COORDINATE THE WORK WITH ALL OTHER TRADES AND THE DEPARTMENTAL REPRESENTATIVE. THE CONTRACTOR IS RESPONSIBLE FOR COMMUNICATING SAFETY REQUIREMENTS TO ITS EMPLOYEES AND COMPLYING WITH OCCUPATIONAL HEALTH AND
- CONTRACTOR TO PROVIDE, PRIOR TO COMMENCEMENT OF WORK, ONTARIO MINISTRY OF LABOUR CONTRACTOR REGISTRATION FORM AS WELL AS A CURRENT SIGNED AND DATED CORPORATE HEALTH AND SAFETY POLICY.
- 10. CONTRACTOR TO PROVIDE FOR THE USE OF HIS WORK FORCE A FIRST AID KIT ACCEPTABLE TO WSIB AND MOL.
- 11. PAY ALL REQUIRED FEES AND PERMITS. 12. WORKMANSHIP AND MATERIALS SHALL MATCH OR EXCEED THAT OF THE EXISTING AS PRESENTED BY THE DEPARTMENTAL REPRESENTATIVE
- 13. ALL WORK TO BE CONDUCTED DURING HOURS SPECIFIED BY THE DEPARTMENTAL REPRESENTATIVE
- 14. ALL CHANGES AND CONNECTIONS TO EXISTING SERVICES. REQUIRING THE SHUTDOWN OF THAT SERVICE SHALL BE DONE AT THE TIME DESIGNATED BY THE DEPARTMENTAL REPRESENTATIVE, UNLESS OTHERWISE STATED.
- 15. THE CONTRACTOR SHALL AT ALL TIMES KEEP PREMISES FREE FROM THE ACCUMULATION OF WASTE MATERIAL TO THE SATISFACTION OF THE DEPARTMENTAL REPRESENTATIVE. THE CLEANING OF THE AFFECTED AREA SHALL BE CONTINUOUS. PLACE DUST PROTECTION IN THE FORM OF COVER SHEETS OVER EQUIPMENT AND FURNITURE TO ENSURE NO DUST
- 16. EQUIPMENT REQUIRING CONNECTION TO AN ELECTRICAL POWER SOURCE SHALL BE CSA OR ULC APPROVED FOR USE AT LOCATION OF
- 17. COORDINATE MATERIAL STORAGE WITH THE DEPARTMENTAL REPRESENTATIVE AND OTHER TRADES.
- 18. MANUFACTURER'S INSTRUCTIONS REGARDING THE HANDLING, INSTALLATION AND TESTING OF FOUIPMENT SPECIFIED HERFIN SHALL BE CONSIDERED PART OF THIS SPECIFICATION. ALL EQUIPMENT AND ACCESSORIES SHALL RE INSTALLED IN A MANNER SLICH THAT THEY ARE FASILY ACCESSIBLE FOR OPERATION AND MAINTENANCE, AS APPROPRIATE AND IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- 19. SUPPLY TOOLS, EQUIPMENT AND PERSONNEL TO DEMONSTRATE AND INSTRUCT OPERATING AND MAINTENANCE PERSONNEL IN OPERATING, CONTROLLING, ADJUSTING, TROUBLESHOOTING AND SERVICING OF AL SYSTEMS AND EQUIPMENT DURING REGULAR WORK HOURS, PRIOR TO
- 20. ALL EQUIPMENT, PIPING, DUCTWORK AND WIRING SHALL BE SUSPENDED FROM THE BUILDING STRUCTURE.
- 21. PROVIDE BLACK WITH WHITE WRITING LAMACOID PLATE ON ALL NEW EQUIPMENT. LABEL UNIT AS SHOWN ON DRAWINGS. LETTERING SIZE TO BE MINIMUM 25MM HIGH. MOUNT NEAR CONTROL SECTION OF THE UNIT.
- 22. PIPING LAYOUT ILLUSTRATED ON DRAWINGS INDICATES GENERAL ROUTING OF PIPE WORK AND DOES NOT SHOW ALL FITTINGS AND OFFSETS REQUIRED FOR COMPLETE INSTALLATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PIPING FITTINGS & OFFSETS REQUIRED FOR COORDINATED INSTALLATION WITH OTHER SYSTEMS (DUCTWORK, PIPING,
- 23. CONTRACTOR SHALL BE RESPONSIBLE FOR DEACTIVATION. DRAINING AND REFILLING OF DOMESTIC WATER SYSTEMS TO ALLOW PLUMBING FIXTURE REPLACEMENTS.

CONDUITS, LIGHTS, ETC.)

- 24. ALLOW FOR 1500 MM OF ADJUSTMENT FOR EXACT LOCATION OF AIR HANDLING UNITS, PUMPS, DUCTS, PIPING, ETC. AT NO EXTRA COST OR
- 25. PRIOR TO CLOSING OF CEILINGS, MECHANICAL CONTRACTOR SHALL NOTIFY THE DEPARTMENTAL REPRESENTATIVE THAT AN INSPECTION IS REQUIRED
- 26. CONTRACTOR TO NOTIFY DEPARTMENTAL REPRESENTATIVE 3 DAYS BEFORE SCHEDULED SUBSTANTIAL COMPLETION TO ARRANGE INTERIM INSPECTION AND EQUIPMENT COMMISSIONING. NOTIFY DEPARTMENTAL REPRESENTATIVE IN WRITING OF ANY CHANGES IN SCHEDULE.
- 27. WARRANTY PERIOD SHALL BE FOR TWELVE (12) MONTHS AFTER THE DATE OF SUBSTANTIAL COMPLETION AS DETERMINED BY DEPARTMENTAL
- 28. SUBMITTALS: .1 SUBMIT ONE(1) COPY OF SHOP DRAWINGS AND PRODUCT DATA IN ELECTRONIC PDF FORMAT FOR DEPARTMENTAL REPRESENTATIVE 'S REVIEW PRIOR TO PURCHASING AND ORDERING. HARD COPY SHOP DRAWINGS WILL NOT BE ACCEPTED. REVIEWED ELECTRONIC SHOP DRAWINGS WILL BE RE-DISTRIBUTED AS PER DEPARTMENTAL REPRESENTATIVE'S INSTRUCTIONS. SHOP DRAWINGS SHALL INCLUDE ALL SPECIFIED EQUIPMENT & SYSTEMS. 2 PROVIDE SUBMITTALS IN ACCORDANCE WITH APPLICABLE CODES REQUIRED FOR OCCUPANCY INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
 - .1 SEISMIC CERTIFICATION LETTER SUBMITTED. 3 MECHANICAL SCOPE OF WORK CONSIDERED COMPLETE WHEN THE FOLLOWING ITEMS HAVE BEEN RECEIVED AND REVIEWED BY
 - DEPARTMENTAL REPRESENTATIVE: .1 ALL SHOP DRAWINGS LISTED IN THIS SPECIFICATION. .2 BALANCING REPORT IN ACCORDANCE WITH TAB SECTION IN
 - .3 AS-BUILT DRAWINGS SHOWING AS-BUILT CONDITIONS COMPLETE WITH RED LINED MARKUPS TO DEPARTMENTAL REPRESENTATIVE WITH CONTRACTOR'S SIGNATURE.
 - .4 THREE (3) COPIES OF OPERATIONS AND MAINTENANCE MANUALS CONTAINING ALL ITEMS PREVIOUSLY REVIEWED BY DEPARTMENTAL REPRESENTATIVE IN A THREE RING BINDER AND DIVIDERS ORGANIZING ALL SUBMISSIONS BY EACH MECHANICAL TRADE OPERATIONS MANUAL TO ALSO INCLUDE THE FOLLOWING BUT SHALL NOT BE LIMITED TO:
 - .1 LIST OF TRADES INVOLVED AND CONTACT INFORMATION. .2 CONTRACTOR'S LETTER OF WARRANTY. .3 ALL LETTERS REQUIRED FOR WORKPLACE CONFORMANCE.

MECHANICAL SPECIFICATIONS:

- SEISMIC RESTRAINT: I PROVIDE COMPLETE SEISMIC RESTRAINT SYSTEM FOR ALL MECHANICAL SYSTEMS AS PER ONTARIO BUILDING CODE LATEST EDITION & NFPA13 .2 SEISMIC RESTRAINT DESIGN AND SUPERVISION SHALL BE CONDUCTED AND STAMPED BY A PROFESSIONAL SEISMIC ENGINEER LICENSED IN
- COMPLETION. .3 THE FINAL CERTIFICATION LETTER SHALL BE FORMATTED TO IDENTIFY THE FOLLOWING WITHIN THE BODY OF THE LETTER: .1 THE DATE OF THE FINAL INSPECTION .2 A STATEMENT THAT LISTS ALL CONTRACT DOCUMENTS WHICH WERE REVIEWED INCLUDING BUT NOT LIMITED TO THE

THE PROVINCE OF ONTARIO. SUBMIT LETTER AND CALCULATION FOR

DEPARTMENTAL REPRESENTATIVE 'S REVIEW PRIOR TO SUBSTANTIAL

MECHANICAL DRAWINGS, PROJECT CHANGE ORDERS, SITE

.3 A STATEMENT WHICH CLEARLY IDENTIFIES ANY EXCLUSIONS OF SCOPE OF SERVICE, AND .4 A STATEMENT THAT CERTIFIES THE COMPLETE MECHANICAL SEISMIC INSTALLATION MEETS THE LATEST VERSION OF NBC &

APPLICABLE CODES & STANDARDS. 2. INSTALLATION OF PIPEWORK:

- .1 CLEARANCES: .1 PROVIDE CLEARANCES AROUND SYSTEMS, EQUIPMENT AND COMPONENTS FOR OBSERVATION OF OPERATION, INSPECTION, SERVICING, MAINTENANCE AND AS RECOMMENDED BY MANUFACTURER.
- .1 INSTALL DRAIN VALVE AT LOW POINTS IN PIPING SYSTEMS AND AT THE BASE OF ALL RISERS. .2 DRAIN VALVE: NPS 3/4 FULL PORT BALL VALVES UNLESS INDICATED OTHERWISE, WITH HOSE MALE THREAD, CAP AND
- .3 PIPE WORK INSTALLATION: 1 SCREWED FITTINGS TO BE JOINTED WITH TEFLON TAPE. 2 PROTECT OPENINGS AGAINST ENTRY OF FOREIGN MATERIAL.
- .3 ASSEMBLE PIPING USING FITTINGS MANUFACTURED TO ANSI .4 EXCEPT WHERE INDICATED OTHERWISE, SLOPE PIPING IN DIRECTION OF FLOW FOR POSITIVE DRAINAGE AND VENTING. .5 EXCEPT WHERE INDICATED, INSTALL SO AS TO PERMIT SEPARATE THERMAL INSULATION OF EACH PIPE. .6 GROUP PIPING WHEREVER POSSIBLE AND AS INDICATED. .7 USE ECCENTRIC REDUCERS AT PIPE SIZE CHANGES TO ENSURE
- POSITIVE DRAINAGE AND VENTING. .4 SLEEVES: .1 INSTALL WHERE PIPES PASS THROUGH CONCRETE STRUCTURES AND FIRE RATED ASSEMBLIES. .2 MATERIAL: SCHEDULE 40 BLACK STEEL PIPE .3 PROVIDE SPACE FOR FIRE STOPPING. MAINTAIN FIRE RATING INTEGRITY. ENSURE NO CONTACT BETWEEN COPPER PIPE OR

TUBE AND SLEEVE. DOMESTIC HOT & COLD WATER PIPING:

.1 COPPER TUBE, HARD DRAWN, TYPE "L .2 WROUGHT COPPER FITTINGS. .3 LEAD FREE SOLDER, BRAZE OR SILVER SOLDER (SILFOS 5, 5% SILVER) .1 NPS 2" AND UNDER, SCREWED OR SOLDERED: .1 CLASS 150. .2 BRONZE BODY, STAINLESS STEEL BALL, PTFE TEFLON ADJUSTABLE PACKING, BRASS GLAND AND PTFE TEFLON SEAT, STEEL LEVER HANDLE.

.3 ACCEPTABLE MATERIAL: CRANE OR EQUAL.

PLUMBING CODE AND LOCAL AUTHORITY HAVING JURISDICTION.

4. DRAINAGE, WASTE & VENT PIPING: .1 COPPER TYPE DWV ABOVE GRADE; SOLDER: 95:5, 50:50 TO ASTM .2 SLOPE SANITARY DRAIN ACCORDING TO CODE. .3 INSTALL IN ACCORDANCE WITH CANADIAN PLUMBING CODE, PROVINCIAL

THERMAL INSULATION FOR PIPING:

- .1 ALL COMPONENTS OF INSULATION SYSTEM TO HAVE MAXIMUM FLAME SPREAD RATING OF 25 AND MAXIMUM SMOKE DEVELOPED RATING OF 50 IN ACCORDANCE WITH CAN4-S102. .2 TIAC CODE A-1 FORMED MINERAL FIBRE WITHOUT VAPOUR BARRIER: 1 APPLICATION: FOR PIPING, VALVES AND FITTINGS ON:
- 1 DOMESTIC HOT WATER PIPING SYSTEMS. .1 MINERAL FIBRE: TO CAN/CGSB-51.9-92. .2 MAXIMUM "K" FACTOR: TO CAN/CGSB-51.9-92.
- 3 THICKNESS: 25MM .3 TIAC CODE A-3 FORMED MINERAL FIBRE WITH FACTORY APPLIED VAPOUR RETARDER JACKET: .1 APPLICATION: FOR PIPING, VALVES AND FITTINGS ON: .1 DOMESTIC COLD WATER PIPING SYSTEMS. .2 MATERIAL:
- .1 MINERAL FIBRE: TO CAN/CGSB-51.9-92. .2 JACKET: TO CGSB 51-GP-52MA. 3 MAXIMUM "K" FACTOR: TO CAN/CGSB-51.9-92. 3 THICKNESS: 25MM .4 FASTENINGS:
- .1 FOR INSULATION SYSTEMS TIAC CODE A-1: .1 TAPE: SELF-ADHESIVE, ALUMINUM, REINFORCED, 50MM WIDE MINIMUM. 2 CONTACT ADHESIVE: QUICK SETTING. 3 TIE WIRE: 1.5MM DIAMETER STAINLESS STEEL.
- .4 BANDS: STAINLESS STEEL, 19MM WIDE, 0.5MM THICK. .5 THERMAL INSULATING AND FINISHING CEMENT: TO CAN/CGSB-51.12-95. .6 VAPOUR RETARDER LAP ADHESIVE: WATER BASED, FIRE RETARDANT TYPE, COMPATIBLE WITH INSULATION. 7 INDOOR VAPOUR RETARDER FINISH: VINYL EMULSION TYPE ACRYLIC. COMPATIBLE WITH INSULATION.
- .2 FOR INSULATION SYSTEMS TIAC CODE: A-3. .1 SECUREMENTS: TAPE AT 300 MM OC. .2 SEALS: VR LAP SEAL ADHESIVE, VR LAGGING ADHESIVE. .3 INSTALLATION: TIAC CODE: 1501-C. .5 JACKETS:
- .1 PVC: .1 ONTARIO BUILDING CODE COMPLIANT FOR 25/50 FLAME SPREAD AND SMOKE DEVELOPED. MINIMUM THICKNESS 0.015 MIL. .3 COLOUR WHITE UNLESS OTHERWISE SPECIFIED. .4 NON YELLOWING UV STABILIZED. .5 MINIMUM SERVICE TEMPERATURES: -20°C
- 7 MOISTURE VAPOUR TRANSMISSION: 0.02 PERM. .8 FASTENINGS: .1 USE SOLVENT WELD ADHESIVE COMPATIBLE WITH INSULATION TO SEAL LAPS AND JOINTS. 3 PRESSURE SENSITIVE VINYL TAPE OF MATCHING

.6 MAXIMUM SERVICE TEMPERATURE: 65°C.

.1 BALL VALVES:

- .1 BODY AND CAP: CAST HIGH TENSILE BRONZE TO ASTM B62 OR BRASS TO ASTM B16/B16M C36000. 2 STEM: TAMPERPROOF BALL DRIVE. 3 STEM PACKING NUT: EXTERNAL TO BODY. .4 BALL AND SEAT: REPLACEABLE CHROME PLATED BRASS SOLID FULL PORT BALL AND TEFLON SEATS. .5 STEM SEAL: TFE WITH EXTERNAL PACKING NUT. 6 OPERATOR: REMOVABLE LEVER HANDLE.
- .7 ACCEPTABLE MATERIAL: CRANE, JENKINS, TOYO, VICTAULIC, KITZ. 7. PIPE TESTING AND CLEANING (DOMESTIC WATER): .1 PRESSURE TEST ENTIRE DOMESTIC WATER SYSTEM (COLD AND HOT)
- FOR A PERIOD OF EIGHT(8) HOURS AT 1.5 TIMES THE OPERATING PRESSURE OR 150 PSI, WHICHEVER IS GREATER. PRIOR TO TEST ISOLATE EQUIPMENT AND OTHER PARTS WHICH ARE NOT DESIGNED TO WITHSTAND TEST PRESSURE OR MEDIA. BEAR COSTS FOR REPAIRS OR REPLACEMENT, RETESTING, AND MAKING GOOD. DEPARTMENTAL REPRESENTATIVE TO DETERMINE WHETHER REPAIR OR REPLACEMENT IS .2 CLEANING AND FLUSHING OF NEW PIPING TO BE DONE PRIOR TO
- MAKING FINAL CONNECTION TO EXISTING SYSTEM. 8. PIPE IDENTIFICATION: .1 PVC MARKERS, CONTINUOUS OPERATING TEMPERATURE OF 212F, 2" HIGH LETTERING FOR PIPING 3" OR LARGER, 3/4" HIGH LETTERING FOR 2 1/2" OR SMALLER. MATCH EXISTING BASE BUILDING STANDARD
- OR AS FOLLOWS:
- DOMESTIC HOT WATER SUPPLY GREEN DOMESTIC COLD WATER SUPPLY GREEN 9. PLUMBING SPECIALTIES AND ACCESSORIES:

.1 CLEANOUT PLUGS: HEAVY CAST IRON MALE FERRULE WITH BRASS SCREWS AND THREADED BRASS OR BRONZE PLUG. SEALING-CAULKED LEAD SEAT OR NEOPRENE GASKET. .1 ACCEPTABLE MATERIAL: ANCON, ENPOCO, J.R. SMITH &

10. PLUMBING FIXTURE AND TRIM: .1 HOT AND COLD WATER SUPPLIES TO EACH FIXTURE: .1 STOPS SUPPLIES SHALL BE ALL BRASS WITH FULL TURN

.1 CLEANOUTS:

SHALL BE IPS INLET X COMPRESSION OD OUTLET TO FIXTURE. ALL FIXTURE STOP VALVES SHALL BE SCREW .2 CHROME PLATED IN ALL EXPOSED PLACES. .1 CAST BRASS ADJUSTABLE STYLE P-TRAP WITH CLEANOUT ON EACH FIXTURE NOT HAVING INTEGRAL TRAP. 2 CHROME PLATED IN ALL EXPOSED PLACES.

BRASS SEAMS AND REPLACEABLE WASHER ATTACHMENT

3 SINK AND LAVATORY HEAVY GAUGE P-TRAPS SHALL BE

CAST BRASS ADJUSTABLE STYLE WITH 17 GA. SEAMLESS

BRASS WALL BEND. ATTACHMENT NUTS SHALL BE BRASS, NO ZINC ALLOWED. P-TRAPS TO BE REMOVABLE/UNION TYPE OR TO INCLUDE CLEANOUT. .4 LAVATORY STRAINERS SHALL BE CHROME PLATED CAST BRASS WITH 17 GA. SEAMLESS BRASS TAILPIECE.

- 1 MANUFACTURE IN ACCORDANCE WITH CSA B45. .2 ALL PRODUCTS, WHERE APPLICABLE, SHALL BE MARKED WITH MANUFACTURER'S NAME OR PRODUCT #. .3 TRIM, FITTINGS: MANUFACTURE IN ACCORDANCE WITH CSA B125. .4 NUMBER, LOCATIONS: ARCHITECTURAL DRAWINGS TO GOVERN.
- .5 FIXTURES IN ANY ONE LOCATION TO BE PRODUCT OF ONE MANUFACTURER AND OF SAME TYPE .6 TRIM IN ANY ONE LOCATION TO BE PRODUCT OF ONE MANUFACTURER
- AND OF SAME TYPE UNLESS OTHERWISE INDICATED. .7 ROUGHING-IN OF FIXTURES: ROUGH-IN FOR EQUIPMENT SUPPLIED BY OTHER TO BE COMPLETE WITH VALVED SUPPLIES, WASTES AND VENTS, CAPPED AND ASSOCIATED FITTING PIPING & REDUCERS. .8 CONTRACTOR IS RESPONSIBLE TO ENSURE PROPER OPERATION OF FIXTURES UP TO 80 PSI (550 KPA). .9 PLUMBING FIXTURES: REFERENCE FIXTURE SCHEDULE ON DRAWINGS.

11. DUCTWORK:

- 1 GENERAL .1 DETAILS, CONSTRUCTION AND MATERIALS HEREIN SHALL BE AS PER SMACNA STANDARDS .2 ALL MATERIALS SHALL CONFORM TO SMOKE AND FLAME SPREAD RATING LIMITATIONS STIPULATED IN THE PROVINCIAL BUILDING
- CODE OR AS SPECIFIED HEREIN. .3 ALL GALVANIZED DUCTWORK INDICATED TO BE FABRICATE FROM 0.2% COPPER CONTENT GALVANIZED SHEET STEEL WITH 1-1/4 CLASS ZINC COATING. 4 RECTANGULAR AND FITTINGS: GALVANIZED SHEET STEEL NOT
- LESS THAN THE FOLLOWING THICKNESS: 24 GA. 750MM (30") WIDE SMALLER. .5 ROUND & OVAL DUCT AND FITTINGS SHALL BE SPIRAL GALVANIZED STEEL MEETING THE ASTM A-527-71 & NOT LESS THAN THE FOLLOWING THICKNESS: 26 GA. - 75MM TO 350MM (3" TO 14")DIA. 24 GA. – 350MM (14") DIA. & LARGER.
- .6 SEAL CLASSIFICATION: SMACNA SEAL CLASS A. .7 FLEXIBLE DUCTWORK SHALL BE ALUMINUM WITH TRIPLE LOCK MECHANICAL JOINTS WITH CIRCUMFERENTIAL CORRUGATIONS WITH FACTORY APPLIED, 25MM (1") THICK FLEXIBLE GLASS FIBRE THERMAL INSULATION WITH VAPOUR BARRIER AND VINYL JACKET. MATERIAL SHALL MEET NFPA BULLETIN 90A, PARAGRAPH 113 AND UL-181 CLASS-1. DUCT SHALL WITHSTAND A PRESSURE OF 2.5 KPA (10" W.C.). MAXIMUM LENGTH OF FLEXIBLE DUCTWORK SHALL BE 1.5M (5') FROM DIFFUSER.

.1 ACCEPTABLE MATERIAL: FLEXMASTER T/L-T

12. THERMAL INSULATION FOR DUCTING: 1 FLAME AND SMOKE:

.1 IN ACCORDANCE WITH CAN/ULC S102: .1 MAXIMUM FLAME SPREAD RATING: 25. .2 MAXIMUM SMOKE DEVELOPED RATING: 50.

- 2 INSULATION: 1 MINERAL FIBRE AS SPECIFIED HEREIN INCLUDES GLASS FIBRE, ROCK WOOL, SLAG WOOL. .2 THERMAL CONDUCTIVITY ("K" FACTOR) NOT TO EXCEED SPECIFIED VALUES AT 24°C MEAN TEMPERATURE WHEN TESTED IN ACCORDANCE WITH ASTM C335/C335M.
- .3 RIGID MINERAL FIBRE BOARD TO CAN/CGSB-51.10, WITH FACTORY APPLIED VAPOUR RETARDER JACKET TO CGSB 51-GP-52MA. .4 MINERAL FIBRE BLANKET TO CAN/CGSB-51.11 FACED WITH FACTORY APPLIED VAPOUR RETARDER JACKET TO CGSB 51-GP-52MA.
- .1 MINERAL FIBRE: TO CAN/CGSB-51.11. .2 JACKET: TO CGSB 51-GP-52MA. .3 MAXIMUM "K" FACTOR: TO CAN/CGSB-51.11. .4 DENSITY: 24 KG/M3. .3 DUCTWORK INSULATION SCHEDULE: .1 INSULATION TYPES AND THICKNESSES: CONFORM TO FOLLOWING

DUCT TYPE: SUPPLY AIR ACOUSTICALLY LINED

13. DAMPERS - BALANCING:

- 1 INSTALLATION .1 DAMPERS ARE TO BE LOCATED IN EACH SUPPLY AIR BRANCH 2 EACH GRILLE, REGISTER AND DIFFUSER CONNECTION TO HAVE
- BALANCING DAMPER LOCATED AS CLOSE AS POSSIBLE TO MAIN .2 SINGLE BLADE DAMPERS: .1 OF SAME MATERIAL AS DUCT, BUT ONE SHEET METAL THICKNESS HEAVIER. V-GROOVE STIFFENED. .2 SIZE AND CONFIGURATION TO RECOMMENDATIONS OF SMACNA, EXCEPT MAXIMUM HEIGHT 100MM. .3 LOCKING WITH SHAFT EXTENSION TO ACCOMMODATE INSULATION .4 INSIDE AND OUTSIDE NYLON OR BRONZE END BEARINGS.

14. IDENTIFICATION DUCTWORK SYSTEMS:

COMPLETE WITH ANGLE STOP.

.1 2" HIGH STENCILLED LETTERS AND DIRECTIONAL ARROWS 6" LONG X .2 COLOURS: BLACK, OR CO-ORDINATED WITH BASE COLOUR TO ENSURE STRONG CONTRAST.

.5 CHANNEL FRAME OF SAME MATERIAL AS ADJACENT DUCT,

15. DDC CONTROLS:

- .1 ALL 24VDC (LOW VOLTAGE) CONTROLS BY CONTROLS CONTRACTOR. .2 PROVIDE EMT CONDUIT C/W STEEL COUPLINGS AND FITTINGS FOR CONTROL WIRING IN EXPOSED OR EXTERIOR LOCATIONS. REFER TO ELECTRICAL SPECIFICATIONS FOR INSTALLATION DETAILS. .3 PROVIDE FT-6 FIRE RATED CABLE FOR CONTROL WIRING IN CONCEALED .4 PROVIDE DDC CONTROLLER FOR 2 WAY MODULATING CONTROL VALVES.
- .5 THE DDC & HVAC MECHANICAL EQUIPMENT CONTROLLERS SHALL RESIDE ON THE BUILDING LEVEL NETWORK. .6 DDC & HVAC MECHANICAL EQUIPMENT CONTROLLERS SHALL USE THE SAME PROGRAMMING LANGUAGE AND TOOLS. DDC & HVAC MECHANICAL EQUIPMENT CONTROLLERS WHICH REQUIRE DIFFERENT PROGRAMMING LANGUAGE OR TOOLS ON A NETWORK ARE NOT ACCEPTABLE. .7 ALL CONTROLS SHALL MATCH BASE BUILDING STANDARDS.

16. TESTING, ADJUSTING AND BALANCING (TAB): .1 GENERAL:

.8 ACCEPTABLE MATERIAL: VCI CONTROLS

- .1 TAB MEANS TO TEST, ADJUST AND BALANCE TO PERFORM IN ACCORDANCE WITH REQUIREMENTS OF CONTRACT DOCUMENTS AND TO DO ALL OTHER WORK AS SPECIFIED IN THIS SECTION. .1 DO TAB TO FOLLOWING TOLERANCES OF DESIGN VALUES:
- .1 HVAC SYSTEMS: PLUS OR MINUS 5%. .2 ADJUST OR REPLACE SHEAVES AS REQUIRED TO MEET DESIGN PERFORMANCE .3 DO TAB OF COMPLETE MECHANICAL SYSTEMS OVER ENTIRE OPERATING RANGE IN ACCORDANCE WITH MOST STRINGENT CONDITIONS OF AABC (ASSOCIATED AIR BALANCE COUNCIL) &
- NBC (NATIONAL BALANCING COUNCIL). .3 TAB REPORT: .1 FORMAT TO BE IN ACCORDANCE WITH ASSOCIATED AIR BALANCING COUNCIL (AABC/CAABC). .4 SYSTEMS:
- .1 AIR SYSTEMS: .1 INCLUDE BOTH SPECIFIED AND MEASURED DATA: .1 MINIMUM & MAXIMUM PRIMARY & SECONDARY .2 OPERATING PRESSURES .3 DUCT SIZE & TRANSVERSE READINGS .2 FOR THE FOLLOWING EQUIPMENT:

.3 EXISTING FPB .5 VERIFICATION: .1 ALL REPORTED RESULTS SUBJECT TO VERIFICATION BY

.1 SUPPLY DUCTWORK

.2 DIFFUSERS/GRILLES

- DEPARTMENTAL REPRESENTATIVE 2 PROVIDE MANPOWER AND INSTRUMENTATION TO VERIFY UP TO 30% OF ALL REPORTED RESULTS. .3 NUMBER AND LOCATION OF VERIFIED RESULTS TO BE AT DISCRETION OF DEPARTMENTAL REPRESENTATIVE .4 BEAR COSTS TO REPEAT TAB AS REQUIRED TO SATISFACTION OF DEPARTMENTAL REPRESENTATIVE
- .5 PRODUCE "AS-BUILT" FULL SYSTEM SCHEMATICS. USE AS-BUILT DRAWINGS FOR REFERENCE. .6 TAB TO BE CONSIDERED COMPLETE ONLY WHEN FINAL TAB REPORT RECEIVED AND APPROVED BY DEPARTMENTAL REPRESENTATIVE

Canadä

Government of Canada

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ARCHITECT

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L'ENTREPRENEUR DEVRA VÉRIFIER TOUTES LES DIMENSIONS ET LES CONDITIONS SUR LE CHANTIER ET AVISER SANS DÉLAI LE REPRÉSENTANT DU MINISTÈRE DE TOUTE ANOMALIE.

Contractor to verify all dimensions and

conditions on site and immediately notify

the Departmental Representative of all

aiscr	epancies.	
3	ISSUED FOR TENDER	2018-02-02
2	ISSUED FOR 66% REVIEW	2018-01-1
1	ISSUED FOR COORDINATION	2017-12-2

3	ISSUED FOR TENDER	2018-0
2	ISSUED FOR 66% REVIEW	2018-0
1	ISSUED FOR COORDINATION	2017–1
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CONVERSION

OTTAWA, ONTARIO

MECHANICAL LEGENDS, GENERAL

NOTES SPEC &

DRAWING LIST

Designed By	R.L.	Conçu pa
Date	JAN 2018	(yyyy/mm/do
Drawn By	R.L.	Dessiné pa
Date	JAN 2018	(yyyy/mm/dd
Reviewed By	R.L.	Examiné pa
Date	JAN 2018	(yyyy/mm/dd
Approved By		Approuvé pa
Date		(yyyy/mm/dd
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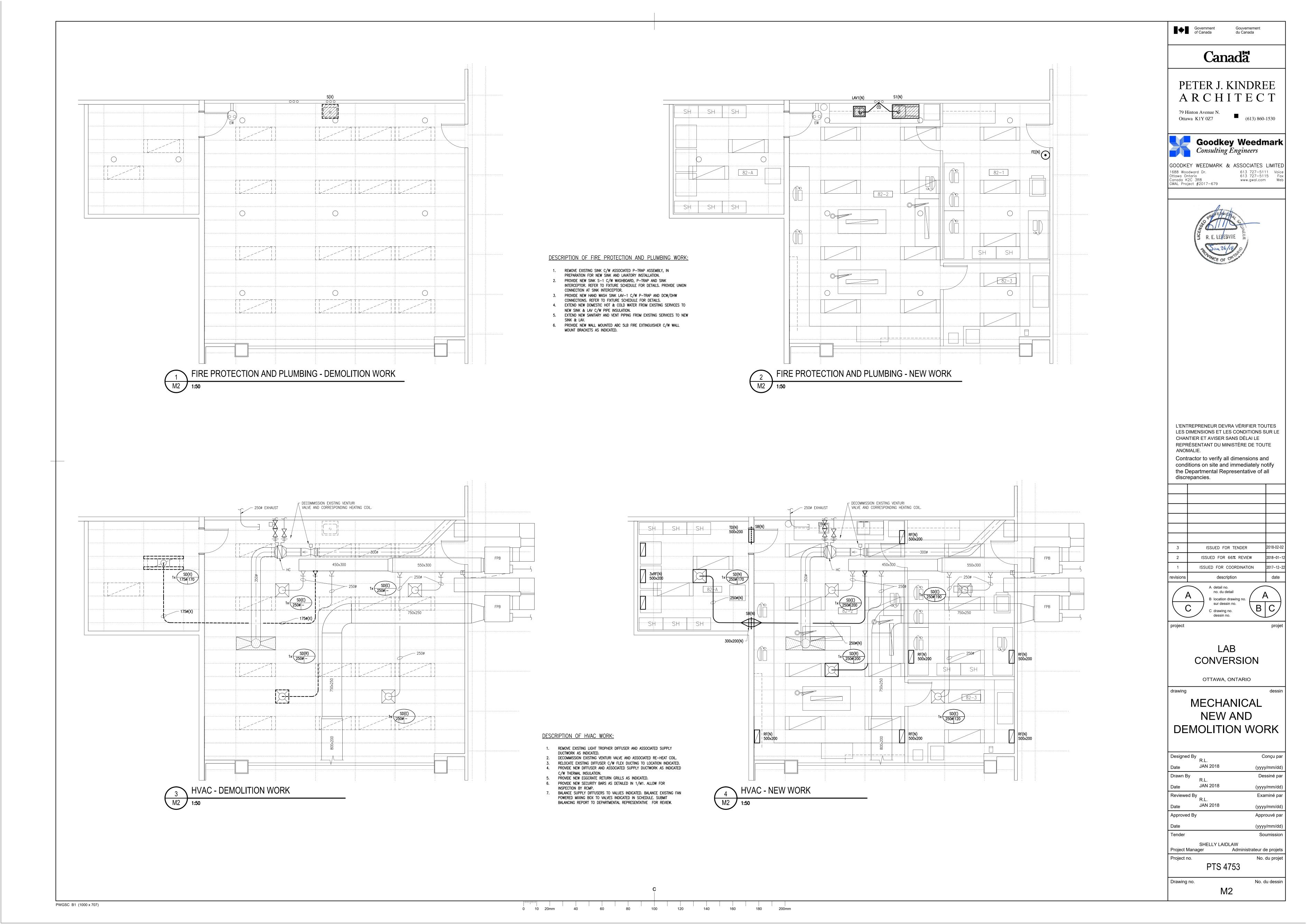
Project Manager Administrateur de projets Project no. PTS 4753

Drawing no.

No. du projet

No. du dessin

PWGSC B1 (1000 x 707)



LAB CONVERSION

OTTAWA, ONTARIO **ELECTRICAL**

LI	GHTING & FIRE ALARM LEGEND
SYMBOL	DESCRIPTION
	FLUORESCENT BASEBUILDING LIGHT FIXTURE
	LIGHT FIXTURE CONNECTED TO UNSWITCHED EMERGENCY CIRCUIT
B	RECESSED DOWN LIGHT FIXTURE, TYPE AS INDICATED
⊘ _B	RECESSED DOWN LIGHT FIXTURE, UNSWITCHED EMERGENCY CIRCUIT
\$	WALL MOUNTED LIGHT SWITCH
\$	DIMMER LIGHT SWITCH
\$ ^{os}	WALL OCCUPANCY SENSOR
\$	LOW VOLTAGE LIGHT SWITCH
8	CEILING OCCUPANCY SENSOR
F	FIRE ALARM SPEAKER, CEILING MOUNTED
Ē	FIRE ALARM COMBINATION SPEAKER/STROBE, CEILING MOUNTED
Ð	FIRE ALARM STROBE LIGHT
V	FIRE FIGHTER PHONE
F	FIRE ALARM PULL STATION
	SMOKE DETECTOR
Ø-1111	DUCT SMOKE DETECTOR
Al	DUCT SMOKE DETECTOR ALARM INDICATOR
\otimes \otimes	CEILING MOUNTED EXIT LIGHT WITH DIRECTIONAL ARROWS AS INDICATED
	WALL MOUNTED EXIT LIGHT WITH DIRECTIONAL ARROWS AS INDICATED
ELC	EMERGENCY LIGHTING CONTROL UNIT
	END OF LINE RESISTOR

CANDO	POWER & SYSTEMS LEGEND
SYMBOL	DESCRIPTION
	15A, 120V WALL MOUNTED DUPLEX RECEPTACLE
	15A, 120V DEDICATED DUPLEX RECEPTACLE
	15A, 120V DUPLEX RECEPTACLE – INSTALLED OVER COUNTER
D -	20A, 120V, RA RECEPTACLE – INSTALLED OVER COUNTER
	20A, 120V, RA RECEPTACLE
	SPECIAL RECEPTACLE, TYPE AS INDICATED
ф	RECESSED CLOCK TYPE RECEPTACLE
٧+	HARDWIRE CONNECTION
(JUNCTION BOX
\boxtimes	FURNITURE POLE
S	SERVICE POLE
FM	FLOOR MONUMENT
l	FLEXIBLE CONDUIT CONNECTION
	MANUAL MOTOR STARTER — CSA CERTIFIED AS A DISCONNECTING MEANS AND LOCKABLE IN THE "OFF" POSITION.
9	SINGLE PHASE ELECTRIC MOTOR
	DISCONNECT SWITCH
(IIII)	SURFACE MOUNTED ELECTRICAL PANEL
***	TRANSFORMER
V	VOICE AND/OR DATA OUTLET BOX
RTE	REQUEST TO EXIT
CR	CARD READER
ES	ELECTRIC STRIKE
DC	DOOR CONTACT
DR	DOOR RELEASE
РВ	PANIC BUTTON
)\(\)(\)(\)	BARRIER-FREE DOOR OPERATOR C/W PUSHBUTTONS
Ó	HOT WATER TANK
(SS)	SPEED SWITCH

	ABBREVIATION LEGEND
SYMBOL	DESCRIPTION
В	BLANK WALL PLATE
С	CEILING MOUNTED
E	EXISTING, TO REMAIN
EN	EXISTING, SHOWN IN NEW LOCATION
ER	EXISTING, TO BE RELOCATED
GFI	GROUND FAULT INTERRUPTER
R	EXISTING, TO BE DISCONNECTED AND REMOVED
ОС	INSTALLED OVER COUNTER TOP
F	FLOOR MOUNTED
N	NEW

	LINETYPE LEGEND
SYMBOL	DESCRIPTION
	NEW WORK
	EXISTING
	DEMOLITION
	CEILING GRID

	DRAWING LIST
DWG No.	DESCRIPTION
E1	ELECTRICAL LEGENDS, SPECIFICATIONS & DRAWING LIST
E2	ELECTRICAL NEW AND DEMOLITION LAYOUT

ELECTRICAL SPECIFICATIONS:

1. COMPLY WITH THE REQUIREMENTS OF THE INSTRUCTIONS TO BIDDERS, THE GENERAL CONDITIONS OF THE CONTRACT AND THE SUPPLEMENTARY GENERAL CONDITIONS INCLUDED IN THE TENDER DOCUMENTS. CONTRACTOR SHALL FOLLOW THE BIDDING DOCUMENT PROJECT SCHEDULE. UPON

AWARD, CONTRACTOR SHALL SUBMIT WORK SCHEDULE AND EQUIPMENT DELIVERY

SCHEDULE TO DEPARTMENTAL REPRESENTATIVE & ENGINEER FOR REVIEW AND

ALL WORK TO BE CONDUCTED DURING HOURS SPECIFIED BY THE DEPARTMENTAL

ALL INSTALLATIONS SHALL BE IN ACCORDANCE WITH ALL APPLICABLE CODES AND BY-LAWS AND BE INSTALLED BY LICENSED WORKMEN SKILLED IN THAT PARTICULAR PORTION OF THE CONTRACT

ANY CONFLICT OR QUESTIONS THAT ARISE IN RELATION TO THE DESIGN DOCUMENTS DURING THE TENDER PERIOD SHALL BE BROUGHT TO THE ATTENTION OF THE DEPARTMENTAL REPRESENTATIVE. IF THIS PROCEDURE IS NOT FOLLOWED, REROUTING AND MODIFICATION AS REQUIRED TO COMPLETE THE WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

GIVE ALL NOTICES, OBTAIN ALL NECESSARY PERMITS AND PAY ALL APPLICABLE FEES AND INSPECTION COSTS AND DELIVER TO DEPARTMENTAL REPRESENTATIVE ALL NECESSARY FINAL CERTIFICATES OF INSPECTION AND APPROVAL WHICH MAY BE REQUIRED BY AUTHORITIES HAVING JURISDICTION OVER WORK. AS EVIDENCE THAT WORK INSTALLED CONFORMS WITH LAWS AND REGULATIONS OF ALL GOVERNING AUTHORITIES, BEFORE FINAL CERTIFICATE OF PAYMENT MAY BE CONSIDERED DUE. FURNISH COPIES OF ALL DRAWINGS AS MAY BE REQUIRED TO COMPLY WITH ABOVE. NOTIFY INSPECTION AUTHORITIES IN SUFFICIENT TIME FOR

EXAMINE SITE AND LOCAL CONDITIONS AFFECTING WORK UNDER THIS DIVISION TO ENSURE THAT WORK UNDER THIS DIVISION CAN BE SATISFACTORILY CARRIED OUT WITHOUT CHANGES TO DRAWINGS. NO ALLOWANCE WILL BE MADE LATER FOR ANY EXPENSE INCURRED THROUGH FAILURE TO MAKE THIS EXAMINATION. START OF WORK WILL BE DEEMED EVIDENCE OF ACCEPTANCE OF, AND SATISFACTION WITH,

GUARANTEE ALL WORK FOR 12 MONTHS FROM THE DATE OF ACCEPTANCE. ENSURE THAT ALL PRECAUTIONS ARE TAKEN TO PROTECT ALL PERSONNEL FROM HAZARDS DURING THE WORK. PROTECT ALL EQUIPMENT FROM DAMAGE FROM ANY CAUSE INCLUDING WEATHER.

10. USE ONLY NEW, FULLY CSA AND ULC APPROVED FOR USE AS INSTALLED MATERIALS, AND TO MEET THIS SPECIFICATION IN ALL RESPECTS.

INSPECT ALL EQUIPMENT UPON DELIVERY AND NOTIFY DEPARTMENTAL

REPRESENTATIVE OF ANY DAMAGE OR DEFICIENCIES. 12. COORDINATE MATERIAL STORAGE WITH THE SITE SUPERINTENDENT AND OTHER

13. CONTRACTOR TO NOTIFY DEPARTMENTAL REPRESENTATIVE IN WRITING MINIMUM OF FIVE (5) WORKING DAYS BEFORE SCHEDULED SUBSTANTIAL COMPLETION TO ARRANGE INTERIM INSPECTION AND EQUIPMENT COMMISSIONING. NOTIFY DEPARTMENTAL REPRESENTATIVE IN WRITING OF ANY CHANGES IN SCHEDULE.

14. DURING THE COURSE OF CONSTRUCTION AND UPON COMPLETION, REMOVE ALL RUBBISH AND WASTE RESULTING FROM THIS WORK, TO THE SATISFACTION OF THE DEPARTMENTAL REPRESENTATIVE. CHECK, CLEAN AND REPAINT WHERE NECESSARY, ALL ELECTRICAL EQUIPMENT AND LEAVE IN A FIRST CLASS CONDITION.

15. THE WORK AS COVERED BY THESE SPECIFICATIONS AND PLANS IS INTENDED TO COMPLY EXACTLY WITH THE LATEST RULES AND REGULATIONS OF THE INSPECTION AUTHORITIES. AND THESE RULES ARE TO BE CONSIDERED AN INTEGRAL PART OF THESE SPECIFICATIONS. IN CASE OF CONFLICT, ANY RULING BY THE INSPECTION AUTHORITY SHALL BE FINAL. ALL CHANGES AND ALTERATIONS TO THE CONTRACTOR'S WORK REQUIRED BY AN AUTHORIZED INSPECTOR OR ANY AUTHORITY HAVING JURISDICTION DUE TO THE CONTRACTORS WORK SHALL BE CARRIED OUT AT NO EXPENSE TO THE DEPARTMENTAL REPRESENTATIVE.

16. MANUFACTURER'S INSTRUCTIONS REGARDING THE HANDLING, INSTALLATION AND TESTING OF EQUIPMENT SPECIFIED HEREIN SHALL BE CONSIDERED PART OF THIS

17. PROVIDE ELECTRONIC COPY (PDF FORMAT) OF SHOP DRAWINGS FOR ALL SYSTEMS AND EQUIPMENT FOR REVIEW. SHOP DRAWINGS SHALL INCLUDE BUT NOT BE LIMITED TO, THE FOLLOWING INFORMATION: FLOOR ANCHORING METHOD AND FOUNDATION TEMPLATE DIMENSIONED CABLE ENTRY AND EXIT LOCATIONS.

DIMENSIONED POSITION AND SIZE OF BUS. OVERALL WEIGHT, LENGTH, HEIGHT AND DEPTH, GAUGE AND TYPE OF MATERIALS. DIMENSIONED LAYOUT OF INTERNAL AND FRONT PANEL. MOUNTED COMPONENTS ELECTRICAL CHARACTERISTICS AND PERFORMANCE DATA.

WIRING DIAGRAMS. NAME OF CONTRACTOR C/W SIGNED REVIEW STAMP. NAME OF COMPONENT, SERVICE OR SYSTEM.

NUMBER OF PAGES FOR EACH TYPED PAGE (IE. PG 1 OF 5). 18. SUBMIT ELECTRONIC (PDF FORMAT) COPY OF OPERATION & MAINTENANCE (0&M) MANUALS FOR APPROVAL. PROVIDE A COPY OF THE FOLLOWING IN THE MANUALS: b. ELECTRICAL SAFETY AUTHORITY (ESA) INSPECTION CERTIFICATE.

. CITY INSPECTION REPORT d. FIRE ALARM VERIFICATION REPORT e. UPDATED PANEL SCHEDULES, C/W ELECTRICAL COMPANY'S NAME AND DATED f. SHOP DRAWINGS AS BUILTS

LOAD BALANCING REPORT. MECHANICAL EQUIPMENT START UP REPORTS. LIST OF SUPPLIERS C/W ADDRESS AND PHONE NUMBERS. SEISMIC REVIEW LETTER EMERGENCY LIGHTING LETTER.

19. SUPPLY ALL NECESSARY TOOLS, EQUIPMENT AND PERSONNEL AND PROVIDE DEMONSTRATION AND TRAINING TO OPERATING AND MAINTENANCE PERSONNEL IN OPERATING, CONTROLLING, ADJUSTING, TROUBLESHOOTING AND SERVICING OF ALL SYSTEMS AND EQUIPMENT DURING REGULAR WORK HOURS, PRIOR TO ACCEPTANCE

20. AFTER AWARD OF CONTRACT, SUBMIT A DETAILED COST BREAKDOWN INDICATING MATERIAL AND LABOUR COSTS FOR EACH PORTION OF THE WORK, INCLUDING DEMOLITION, LIGHTING, POWER DISTRIBUTION, COMMUNICATIONS, FIRE ALARM, ETC. TO BE APPROVED BY THE DEPARTMENTAL REPRESENTATIVE. 21. EXISTING ELECTRICAL SYSTEMS HAVE BEEN ONLY PARTIALLY INDICATED. REGARD

INFORMATION RELATED TO EXISTING INSTALLATION AS A GUIDE ONLY. DETERMINE STATUS, QUANTITIES AND LOCATION OF EQUIPMENT AND SYSTEMS, ON SITE, PRIOR TO COMMENCEMENT OF REMOVAL AND/OR EXTENSION OF SAME. 22. THE DRAWINGS SHALL BE CONSIDERED TO SHOW THE GENERAL CHARACTER AND SCOPE OF THE WORK AND NOT THE EXACT DETAILS OF THE INSTALLATION. THE

INSTALLATION SHALL BE COMPLETE WITH ALL ACCESSORIES REQUIRED FOR A

COMPLETE AND OPERATIVE INSTALLATION. 23. THESE ELECTRICAL DRAWINGS AND SPECIFICATIONS MUST BE READ IN CONJUNCTION WITH THE ARCHITECTURAL AND MECHANICAL DRAWINGS AND

24. THE WORD "PROVIDE" SHALL DENOTE "SUPPLY, INSTALL, CONNECT AND TEST".

a. FOR ALL NEW, RELOCATED AND EXISTING-TO-REMAIN ELECTRICAL DEVICES WITHIN THE CONTRACT AREA, PROVIDE CLEAR "BROTHER P-TOUCH" LABELS INDICATING CIRCUIT AND PANEL AT ALL EQUIPMENT, DEVICES, RECEPTACLES AND JUNCTION BOXES. FOR DEDICATED RECEPTACLE, INCLUDE THE WORD "DED" C/W CIRCUIT NUMBER. FOR EXIT LIGHTS, PROVIDE BLACK LETTERING ON RED BACKGROUND. b. PROVIDE LAMACOID LABELS ON DISCONNECT SWITCHES, MOTOR STARTERS, TRANSFORMERS AND PANELS. CLEARLY INDICATE EQUIPMENT CONTROLLED OR AREA SERVICED AS WELL AS FEEDER SOURCE INDICATE FUSE SIZE AND TYPE ON

FUSED DISCONNECTS SWITCHES. LETTERING TO BE BLACK ON WHITE BACKGROUND, MINIMUM 25mm HIGH. c. TRACE EXISTING CIRCUITS AND UPDATE PANEL SCHEDULES. 26. PROVIDE CUTTING, PATCHING AND CORING OF ALL WALLS, CEILINGS AND OTHER SURFACES REQUIRED TO FIT THE ELECTRICAL EQUIPMENT. CHECK WITH SLAB, REGARDING BUILDING REQUIREMENTS AND POLICIES. PRIOR TO SLAB CUTTING OR CORING, FIRST SCAN THE SLAB AND COORDINATE DRILLING TO

DEPARTMENTAL REPRESENTATIVE PRIOR TO CORE DRILLING AND CUTTING OF FLOOR MINIMIZE CUTTING OF THE REINFORCING STEEL. FIRE STOP ALL NEW FIRE RATED PENETRATIONS. THE CONTRACTOR IS TO INCLUDE IN TENDER PRICE ALL WORK ASSOCIATED WITH CORE DRILLING AFTER NORMAL WORKING HOURS, OBTAIN WRITTEN VERIFICATION OF THE LOCATIONS FROM THE DEPARTMENTAL REPRESENTATIVE PRIOR TO DRILLING. CUTTING TORCHES SHALL NOT BE USED FOR MAKING HOLES. PATCH ALL HOLES THROUGH SLAB WITH FIRE-STOP CAULKING (ULC LISTED). PATCHED SURFACES ARE TO BE PRIME FINISHED, READY FOR FINAL COVERING BY OTHERS.

27. <u>SEISMIC RESTRAINT SYSTEM (SRS):</u>

a. <u>GENERAL:</u> a.a. PROVIDE DESIGN, SUPPLY AND INSTALLATION OF COMPLETE SRS FOR ALL SYSTEMS FOLIPMENT SPECIFIED FOR INSTALLATION ON THIS PROJECT AS PER ONTARIO BUILDING CODE (2012) [NATIONAL BUILDING CODE 2015], CSA S832-06(R.2011). a.b. DESIGN TO BE BY PROFESSIONAL ENGINEER SPECIALIZING IN DESIGN OF SRS AND REGISTERED IN PROVINCE OF ONTARIO. INCLUDE ALL COSTS ASSOCIATED WITH THIS WORK AS IT RELATES TO DIVISION 26, 27 & 28 INSTALLATIONS. SUBMIT DESIGN SKETCHES C/W PROFESSIONAL STAMP PRIOR TO START OF

INSTALLATIONS, C/W INSTALLATION REQUIREMENTS. a.c. SUBMITTALS TO INCLUDE FULL DETAILS OF DESIGN CRITERIA. a.d. INSTALL VIBRATION ISOLATION EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND ADJUST MOUNTINGS TO LEVEL EQUIPMENT, ENSURE PIPE, DUCT AND ELECTRICAL CONNECTIONS TO ISOLATED EQUIPMENT DO NOT REDUCE SYSTEM FLEXIBILITY. ENSURE THAT PIPE, CONDUIT AND DUCT PASSING THROUGH WALLS AND FLOORS DO NOT TRANSMIT VIBRATIONS.

ELECTRICAL EQUIPMENT, FIXTURES, CABLE TRAY, CONDUIT AND CABLING IS TO BE SECURELY ANCHORED OR FASTENED TO THE BUILDING STRUCTURE USING DRILLED FOR RECESSED OR SURFACE MOUNTED LIGHTING IN SUSPENDED CEILING INSTALLATIONS, SUPPORT LUMINAIRES INDEPENDENTLY FROM CEILING, BY MEANS OF A MINIMUM OF TWO CHAIN HANGERS BOLTED TO DIAGONAL CORNERS OF THE FIXTURE BODY AND SECURED TO BUILDING STRUCTURE IN ACCORDANCE WITH ESA, AND SEISMIC RESTRAINT SYSTEMS (SRS). FOR GYMNASIUM OR OTHER TYPE OF HIGH-BAY LIGHT FIXTURES, PROVIDE A SAFETY CABLE BETWEEN FIXTURE HOUSING AND LENS OR REFRACTOR.

OF FASTENING DEVICES ARE NOT TO BE USED.

HOLE WEDGE ANCHORS FOR CONCRETE STRUCTURES OR STEEL CLAMPS FOR

a.a. AIR, FUEL OR POWDER ACTUATED DEVICES OR ANY OTHER EQUIVALENT TYPE

REQUIREMENTS, ANCHORING METHODS TO COMPLY WITH SEISMIC RESTRAINT

WHERE ANCHORING METHOD FORMS PART OF SEISMIC RESTRAINT

STEEL STRUCTURES.

SYSTEMS (SRS).

PROVIDE GROUNDING AND BONDING OF ALL EQUIPMENT WITH APPROVED FITTINGS AND CONDUCTORS OF AMPLE CAPACITY IN ACCORDANCE WITH ONTARIO ELECTRICAL SAFETY CODE. ALL CONDUCTORS SHALL HAVE GREEN INSULATION OR BE COLOUR CODED WITH PERMANENTLY ATTACHED GREEN TAPE 21MM WIDE AT EACH END. PROVIDE INSULATED GROUND/BONDING CONDUCTOR IN EACH CONDUIT.

a. ALL INTERIOR WIRING SHALL BE COPPER RW90 #12 CONDUCTOR MINIMUM. b. AC-90 (BX) MAY BE USED IN REMOVABLE CEILINGS AND METAL PARTITION WALLS, MAXIMUM LENGTH 3 METERS. ALL NEW RACEWAYS SHALL BE THIN WALL ELECTRICAL METALLIC TUBING (EMT) UNLESS OTHERWISE INDICATED. CONDUITS TO BE COMPLETE WITH STEEL SET-SCREW COUPLINGS AND CONNECTORS AND NYLON BUSHING. USE LIQUID TIGHT FLEXIBLE METAL CONDUIT FOR CONNECTION TO MOTORS.

USE LIQUID TIGHT FLEXIBLE METAL CONDUIT FOR CONNECTION TO EQUIPMENT IN

SURFACE CONDUIT TO RUN PARALLEL OR PERPENDICULAR TO BUILDING LINES. ALL CONDUITS AND JUNCTION BOXES TO BE ANCHORED TO THE BUILDING PROVIDE A POLYPROPYLENE PULL STRING IN ALL EMPTY CONDUITS. EXISTING FEEDERS RELOCATED UNDER THIS CONTRACT TO BE REWIRED: SPLICE NEW WIRE TO EXISTING WIRE FROM JUNCTION BOX TO JUNCTION BOX, OR FROM JUNCTION BOX TO FXISTING FQUIPMENT.

DAMP. WET OR CORROSIVE LOCATIONS.

SUITABLE FOR RE-USE WITH NEW OR RELOCATED RUNS. REMOVE AND DISPOSE OF ANY REDUNDANT EXISTING WIRING. I. 120V CIRCUITS OF LENGTH GREATER THAN 25m TO BE #10 AWG MINIMUM OR AS REQUIRED TO LIMIT VOLTAGE DROP WITHIN CODE SPECIFIED VALUE. m. MINIMUM SIZE CONDUIT TO BE 21mm UNLESS SPECIFIED OTHERWISE.

CONTRACTOR MAY RE-USE EXISTING CONDUIT AND/OR GRID PULL BOXES WHERE

31. ALL NEW SURFACE MOUNTED EQUIPMENT IS TO BE SPRINKLERPROOF, EEMAC TYPE 2, IN SPRINKLERED AREAS. 32. <u>DEVICES:</u> SWITCHES AND RECEPTACLES TO BE SPECIFICATION GRADE WITH COVER PLATES AND COLOUR AS SPECIFIED. INSTALL & MOUNT TO CODES AND STANDARDS. COORDINATE EXACT LOCATIONS WITH ARCHITECTURAL AND/OR INTERIOR DESIGNER'S DRAWINGS.

WIRING DEVICES COLOUR CODING: STANDARD RECEPTACLE ISOLATED GROUND RECEPT. LIGHT SWITCH STAINLESS STEEL 33. MOUNTING HEIGHTS:

UNLESS NOTED OTHERWISE. MOUNTING HEIGHT FOR ALL ELECTRICAL DEVICES SHALL MEET 'BARRIER-FREE' CODE REQUIREMENTS:

400mm A.F.F. FOR RECEPTACLES, VOICE/DATA OUTLETS, ETC. 1100mm A.F.F. FOR LIGHT SWITCHES, ETC. 200mm ABOVE TOP OF COUNTERS OR COUNTER BACK SPLASHES 1200mm A.F.F. FOR PULL STATIONS, THERMOSTATS e. 2100mm A.F.F. FOR WALL MOUNTED PA SPEAKERS, SCHOOL BELLS, CLOCKS, ETC. WALL MOUNTED FIRE ALARM AUDIRLE AND VISUAL SIGNAL DEVICES: MINIMUM 2300MM AND MAXIMUM 2400MM TO TOP OF DEVICE, OR 150MM BELOW CEILING WHERE CEILING HEIGHTS DO NOT ALLOW. ALL IN ACCORDANCE WITH CAN/ULC

a. PROVIDE LIGHTING FIXTURES, COMPLETE WITH LAMPS, AS INDICATED IN LIGHT b. FLUORESCENT FIXTURE BALLAST TO BE INSTANT ELECTRONIC TYPE, LESS THAN 10% T.H.D., MINIMUM OPERATING AT GREATER THAN 20 kHZ UNLESS NOTED OTHERWISE. c. EACH 347V FLUORESCENT LUMINAIRE SHALL HAVE INTEGRAL DISCONNECTING MEANS AS PER THE CANADIAN ELECTRICAL CODE.

35. FLUORESCENT LAMPS: ALL NEW FLUORESCENT LAMPS SHALL HAVE LOW MERCURY CONTENT AND BE T.C.L.P. COMPLIANT, PHILIPS 'ALTO' SERIES OR EQUIVALENT. COLOUR TEMPERATURE TO MATCH EXISTING IN THE AREA OF WORK.

36. FIXTURE INSTALLATION: DO NOT MOUNT FIXTURES ABOVE PIPES, DUCTS OR EQUIPMENT. CHECK LAYOUTS OF WORK BY OTHER TRADES ON PROJECTS AND PLAN COOPERATIVELY WITH OTHERS TO AVOID CONFLICT. PROVIDE LONGER HANGERS TO CLEAR OBSTRUCTIONS, IN EVENT OF UNAVOIDABLY TIGHT LOCATIONS. PROVIDE CHAIN HANGERS FOR ALL FIXTURES IN T-BAR CEILINGS.

TO CSA C22.2 NO.141-10 AND CSA C860. HOUSING: BRUSHED ALUMINUM CANOPY, WHITE EDGE LIT FACE. FACE AND BACK PLATES: EXTRUDED ALUMINUM. LAMPS: EDGE LIT, LED WITH 25-YEAR RATED LIFE.
LETTERS: 150 MM HIGH WITH 19 MM THICK STROKE, ALUMINUM STENCIL WITH LETTERING, READING EXIT AND SORTIE. b. SUITABLE FOR 347V OR 120V NORMAL SUPPLY AND 12VDC EMERGENCY SUPPLY. c. DIE CAST MOUNTING BRACKET FOR WALL, CEILING, OR END MOUNTING AS

d. PROVIDE CIRCUIT LABELS AT ALL EXIT SIGNS. 38. FIRE ALARM: a. EXISTING FIRE ALARM SYSTEM IS TWO STAGE EDWARDS EST3.

37. <u>EXIT LIGHTS:</u>

MATCH EXISTING. FIRE ALARM MAINTENANCE CONTRACTOR IS CHUBB. d. ALL NEW DEVICES TO BE LABELED WITH CORRECT IDENTIFICATION, INCLUDING THE LOOP AND THE DEVICE NUMBER, ON THE BASE OF THE DEVICE IN ACCORDANCE WITH BUILDING STANDARD. LABELING OF THE DEVICE MUST BE VISIBLE ON THE OUTSIDE FOR FASY IDENTIFICATION BY MAINTENANCE PERSONNEL e. ALL NEW DEVICES TO BE VERIFIED BY MANUFACTURER & FIRE ALARM AGENCY

b. ALL NEW FIRE ALARM SYSTEM COMPONENTS TO BE CAN/ULC APPROVED AND

RESPONSIBLE FOR MAINTENANCE OF THE SYSTEM. THE GRAPHICS/SOFTWARE AND THE FIRE ALARM ADDRESSABLE DEVICE LEGEND MUST BE UPDATED IMMEDIATELY TO ADD NEW DEVICES AND TO REMOVE ANY DEVICES THAT HAVE BEEN FLIMINATED AS A RESULT OF THE PROJECT. AT THE COMPLETION OF THE PROJECT AN UPDATED FIRE ALARM ADDRESSABLE DEVICE LEGEND FOR THE BUILDING MUST BE SUBMITTED TO THE DEPARTMENTAL g. THE SEQUENCE OF OPERATIONS OF FIRE SAFETY SYSTEMS MUST BE PROVIDED TO

THE DEPARTMENTAL REPRESENTATIVE (ie. DOOR HOLDERS, EPO SHUTDOWNS, FAN SHUTDOWNS, DAMPER OPERATION, AC SHUTDOWNS ETC.) h. ALL WORK BEING CARRIED OUT ON THE FIRE SAFETY SYSTEMS MUST BE RECORDED IN THE LOGBOOK EVERY DAY, IN ADDITION TO THE REQUIREMENT OF A SIGNED WORK PERMIT. i. IF THE CONTRACTOR DOING WORK ON THE FIRE ALARM SYSTEM IS NOT THE "MAINTENANCE" CONTRACTOR, THE MAINTENANCE CONTRACTOR MUST BE ADVISED IN

ADVANCE AND BE PRESENT AT ALL OR PART OF THE VERIFICATION FOR THE PURPOSES OF ACCEPTING THE WORK THAT WAS CARRIED OUT BY THE PROJECT CONTRACTOR. A MINIMUM OF FOUR (4) HOURS SHALL BE CARRIED FOR THE MAINTENANCE CONTRACTOR. NOTIFY AND DEMONSTRATE THE COMPLETE SYSTEM TO DEPARTMENTAL REPRESENTATIVE ONLY AFTER TESTING AND VERIFICATION PERFORMANCES HAVE BEEN COMPLETED AND ALL DEFICIENCIES RECTIFIED. IN THEIR PRESENCE, DEMONSTRATE THE PROPER FUNCTIONING OF THE SYSTEM. HAVE SYSTEM MANUFACTURER'S CERTIFIED TECHNICIAN PRESENT.

39. SERVICE POLES TO BE 75mm SQUARE, BRUSHED ALUMINUM SEPARATE CHANNELS FOR VOICE AND DATA, C/W FOUR (4) RECEPTACLES AND TWO (2) VOICE/DATA KNOCKOUTS. CONFIRM EXACT POLE LENGTH ON SITE.

40. MECHANICAL EQUIPMENT WIRING: PROVIDE ALL WIRING TO MECHANICAL EQUIPMENT, OBTAIN MECHANICAL SHOP DRAWINGS AND RECONFIRM FEEDER AND BREAKER REQUIREMENTS PRIOR TO INSTALLATION.

41. MOLDED CASE CIRCUIT BREAKERS:

a. BOLT-ON MOLDED CASE CIRCUIT BREAKER: QUICK-MAKE, QUICK-BREAK TYPE, FOR MANUAL AND AUTOMATIC OPERATION WITH TEMPERATURE COMPENSATION FOR 40 C COMMON-TRIP BREAKERS: WITH SINGLE HANDLE FOR MULTI-POLE APPLICATIONS. c. CIRCUIT BREAKERS WITH INTERCHANGEABLE TRIPS AS INDICATED. MOLDED CASE CIRCUIT BREAKER TO OPERATE AUTOMATICALLY BY MEANS OF THERMAL AND MAGNETIC TRIPPING DEVICES TO PROVIDE INVERSE TIME CURRENT TRIPPING AND INSTANTANEOUS TRIPPING FOR SHORT CIRCUIT PROTECTION.

42. <u>FIELD QUALITY CONTROL</u>
a. CONDUCT AND PAY FOR THE FOLLOWING TESTS: a.a. 600V AND 120V POWER DISTRIBUTION INCLUDING PHASING, VOLTAGE, GROUNDING AND LOAD BALANCING.

MOTORS, HEATERS AND ASSOCIATED CONTROL EQUIPMENT a.d. INSULATION INTEGRITY TESTING a.e. HOT SPOT TESTING BY INFRARED SCANNER SYSTEMS: FIRE ALARM, COMMUNICATION, ACCESS CONTROL AND SECURITY.

b. SUBMIT TEST PROCEDURES AND INFORM ENGINEER AT LEAST 7 DAYS BEFORE

SCHEDULED TESTS. ENGINEER TO WITNESS TESTS AT HIS DISCRETION.

a.b. LIGHTING AND CONTROLS

DEMOLITION NOTES:

1. UNLESS OTHERWISE NOTED, MATERIALS FOR REMOVAL BECOME THE CONTRACTOR'S PROPERTY AND SHALL BE TAKEN FROM SITE AND DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE CODES, STANDARDS AND REGULATIONS. 2. DISCONNECT AND MAKE SAFE ALL SYSTEMS TO BE DEMOLISHED INCLUDING PANELS, FEEDERS, BRANCH CIRCUITS AND EQUIPMENT BY OTHER DIVISIONS. COORDINATE WITH OTHER

3. MAINTAIN EXISTING REMAINING CIRCUITS, SYSTEMS, ETC., WHICH PASS THROUGH AREA OF CONSTRUCTION AND IN CLOSE PROXIMITY. PROVIDE NECESSARY COMPONENTS TO MAINTAIN SYSTEMS. ENSURE COMPONENTS WILL BE CONCEALED WHEN CONSTRUCTION IS COMPLETE. 4. REINSTATE IMMEDIATELY ANY REMAINING EXISTING SYSTEMS IN-ADVERTENTLY INTERRUPTED DURING CONSTRUCTION. 5. THE DRAWINGS INDICATE KNOWN CONDITIONS AND MAY NOT INDICATE ALL DEMOLITION REQUIREMENTS, ELECTRICAL CONTRACTOR SHALL VISIT THE SITE PRIOR TO TENDER

6. REMOVE REDUNDANT CONDUIT AND WIRING BACK TO SOURCE UNLESS OTHERWISE NOTED, 7. DEVICES FROM DEMOLITION ARE NOT TO BE REUSED UNLESS NOTED OTHERWISE. NEW DEVICES SHALL BE SUPPLIED WHERE NECESSARY. 8. ALL FIRE ALARM DEVICES TO REMAIN IN OPERATION. PROTECT SMOKE DETECTORS FROM DUST EXPOSURE DURING CONSTRUCTION. 9. ENSURE FIRE ALARM SYSTEM IS OPERATIONAL AT THE END OF EACH SHIFT. 10. AFTER DEMOLITION WORK IS COMPLETE AND MINIMUM THREE (3) WORKING DAYS PRIOR TO

PROCEEDING WITH NEW WORK, NOTIFY ENGINEER FOR INSPECTION.

SUBMISSION AND VERIFY REQUIREMENTS AND INCLUDE ALL COSTS IN TENDER.

ELECTRICAL WORK TO BE DONE IN ACCORDANCE WITH THE ELECTRICAL SAFETY CODE OF ONTARIO, AND WITH NEW ARCHITECTURAL LAYOUT (LOCATION/MOUNTING HEIGHTS). CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS, PAY ALL APPLICABLE FEES AND INSPECTION COSTS. 2. COORDINATE WORK WITH ALL OTHER TRADES TO AVOID INTERFERENCE.

3. ENSURE ELECTRICAL COMPONENTS (IE. WIRING, CONDUIT, ETC.) RELATING TO THE AREA OF WORK ARE INDEPENDENTLY SECURED TO COMPLY WITH CODE REQUIREMENTS. IT IS NOT ACCEPTABLE TO SECURE THE COMPONENTS TO DUCTWORK, DUCT WORK TO CONDUIT, OR ANY OTHER SYSTEMS. 4. ENSURE ALL EXISTING CEILING MOUNTED BOXES ARE CLOSED PRIOR TO COMPLETION OF PROJECT. PROVIDE LABELLED AND COLOUR CODED COVER PLATES (IE. PANEL NAME AND

CIRCUIT NUMBER) AS REQUIRED. 5. MINIMUM THREE (3) WORKING DAYS PRIOR TO CLOSING CEILING, NOTIFY THE DEPARTMENTAL REPRESENTATIVE FOR CEILING INSPECTION.

CLEAN LAMPS, LENSES, INTERIOR AND VISIBLE SURFACES OF LUMINAIRES. REPLACE DEFECTIVE LAMPS, BALLAST AND DAMAGED LENSES. 2. LUMINAIRES IN CONSTRUCTION AREA ARE TO BE INDEPENDENTLY SUPPORTED, INCLUDING EXISTING TO REMAIN, RELOCATED AND NEW, TO COMPLY WITH CODE REQUIREMENTS. ADD, RELOCATE AND CONNECT LIGHT FIXTURES TO SUIT INDICATED LAYOUT, EXTEND CONDUIT AND WIRING AS NECESSARY AND CONNECT LUMINAIRES TO EXISTING CIRCUITS. TURN OVER SURPLUS FIXTURES TO DEPARTMENTAL REPRESENTATIVE. . WHERE AIR SUPPLY TROFFER ARE BEING RELOCATED BY MECHANICAL CONTRACTOR TO EXISTING LIGHT FIXTURE, ELECTRICAL CONTRACTOR TO COORDINATE DISCONNECTION AND

RECONNECTION AS REQUIRED. 5. MODIFY ALL AFFECTED (RELOCATED OR REWIRED) 347V LIGHT FIXTURES TO PROVIDE BALLAST DISCONNECTS AS PER OESC.

CONNECT EXIT LIGHTS TO AC AND DC SUPPLIES. 2. ADD/REMOVE DIRECTIONAL ARROWS TO SUIT FLOOR PLAN LAYOUT.

3. IN OPEN AREA ENSURE THE DEVICE HAS 610mm CLEARANCE FROM ANY SPRINKLER HEAD.

PROVIDE NEW CIRCUITS AS REQUIRED FOR AUDIBLE AND ALARM CIRCUITS.

2. ADJUST FIRE ALARM SPEAKER TAP SETTING TO MEET APPLICABLE CODES FOR SOUND LEVELS WITHIN THE AFFECTED SPACE. ADVISE ENGINEER OF ANY ISSUES WHICH ARISE FROM CONFLICT WITH THE CODES PRIOR TO COMMENCING THE WORK. 3. TEST FINAL INSTALLATION AND PROVIDE VERIFICATION OF FIRE ALARM SYSTEMS IN ACCORDANCE WITH CAN/ULC S537 LATEST EDITION. VERIFICATION REPORT SHALL INCLUDE MEASURED dB LEVELS.

. ENSURE EXISTING REMAINING OUTLETS IN AFFECTED AREA ARE FUNCTIONAL 2. DO NOT MOUNT WALL OUTLETS BACK TO BACK. LEAVE MINIMUM 300mm SPACE BETWEEN OUTLETS. STAGGER OUTLETS WITHIN ALTERNATE STUD CAVITIES. DO NOT ANCHOR BACK TO BACK OUTLETS TO THE SAME STUD.

<u>COMMUNICATION NOTES:</u>

. REMOVAL OF TELECOMMUNICATION CABLING IS BY DEPARTMENTAL REPRESENTATIVE, UNLESS OTHERWISE NOTED. 2. UNLESS OTHERWISE NOTED PROVIDE PLASTER RINGS FOR OUTLETS WITH OUTLET BOXES 108mm SQUARE X 63mm DEEP EACH WITH 21mm EMPTY CONDUIT TO CEILING SPACE C/W BUSHING AND PULL STRINGS. NEW TEL AND/OR DATA CABLES, TERMINAL DEVICES AND COVER PLATES WILL BE SUPPLIED AND INSTALLED BY OTHERS.

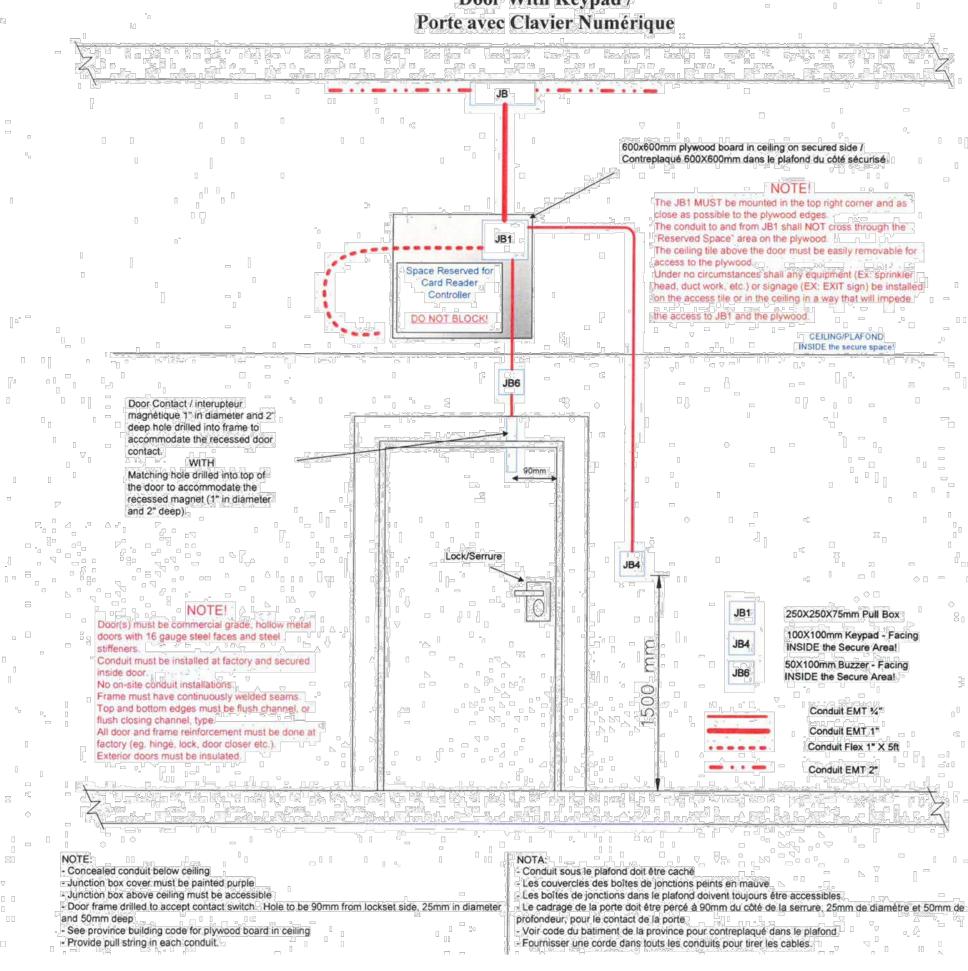
APPLICABLE TO NEW OR RELOCATED WORK UNLESS OTHERWISE NOTED. TO CONFORM TO CLIENT'S BUILDING CODING SYSTEM. COLOUR CODE CONDUITS AND BOXES.

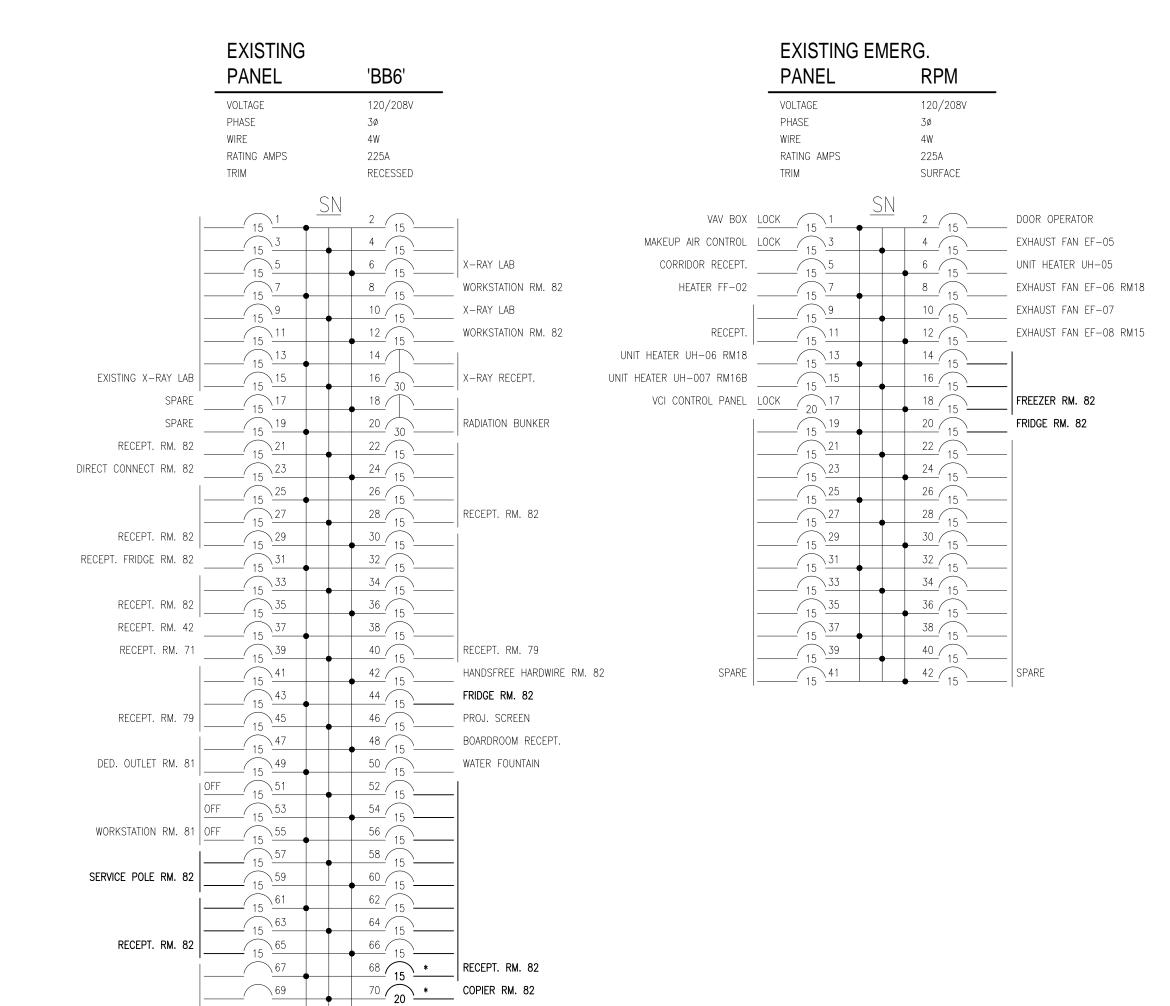
3. CODE WITH PLASTIC TAPE OR PAINT WHERE CONDUITS ENTER WALLS, CEILING, OR FLOOR AND AT 15 METER INTERVALS. 4. COLOURS: 25mm WIDE PRIME COLOUR AND 20mm WIDE AUXILIARY COLOUR.

PRIME COLOUR AUXILIARY COLOUR UP TO 600V YELLOW TELECOMMUNICATION GREEN EMERGENCY VOICE

SECURITY SYSTEM

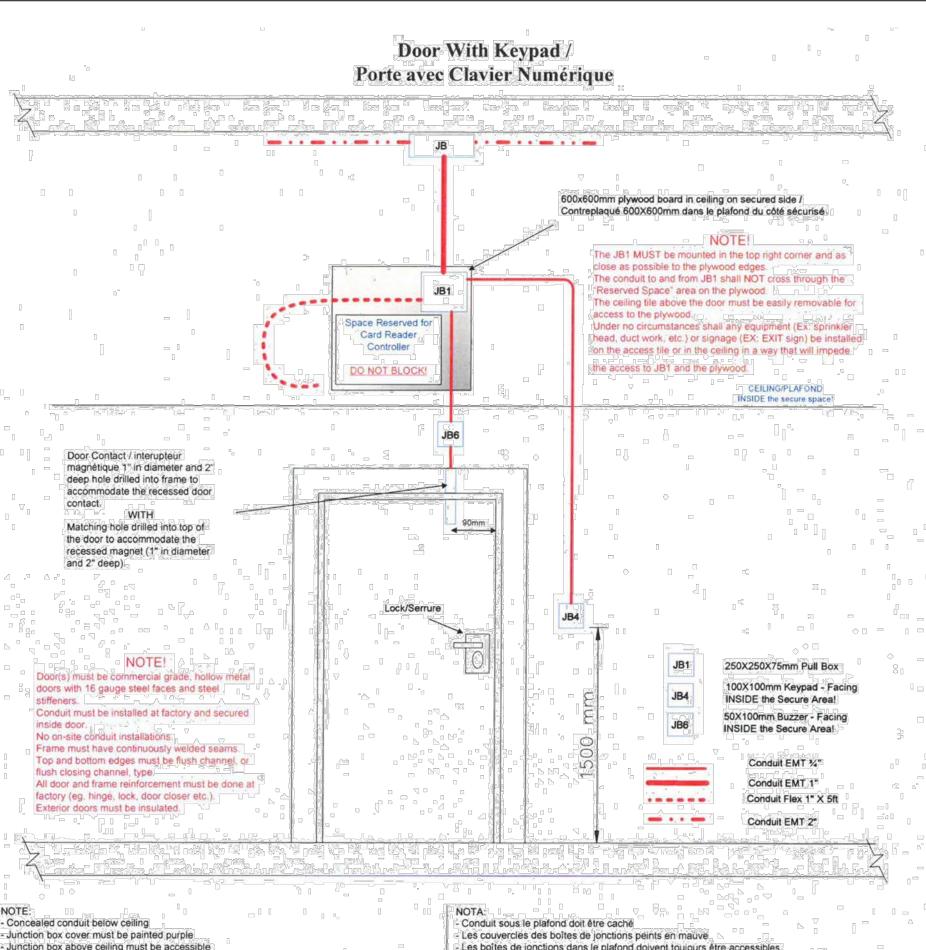
EXACT LOCATION AND MOUNTING HEIGHTS OF OUTLETS TO BE COORDINATED WITH ARCHITECTURAL DRAWINGS PRIOR TO ROUGH IN. REFER TO ARCHITECTURAL/DESIGNER DRAWINGS FOR MILLWORK 2. BRING TO THE ATTENTION OF THE DEPARTMENTAL REPRESENTATIVE ANY CONFLICTS OR REQUIRED 3. FAILING TO COORDINATE, THE CONTRACTOR WILL MODIFY THE INSTALLATION AT HIS EXPENSE, IF





71 72

* PROVIDE NEW BREAKER TO MATCH EXISTING



L'ENTREPRENEUR DEVRA VÉRIFIER TOUTES LES DIMENSIONS ET LES CONDITIONS SUR LE CHANTIER ET AVISER SANS DÉLAI LE REPRÉSENTANT DU MINISTÈRE DE TOUTE ANOMALIE. Contractor to verify all dimensions and conditions on site and immediately notify the Departmental Representative of all discrepancies.

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ISSUED FOR TENDER ISSUED FOR 66% REVIEW ISSUED FOR COORDINATION description no. du detai

3 location drawing no sur dessin no. C drawing no. project

CONVERSION

OTTAWA, ONTARIO

ELECTRICAL LEGENDS SPECIFICATIONS & DRAWING LIST

Conçu par DEC 2017 (yyyy/mm/dd Drawn By Dessiné par DEC. 2017 Date (yyyy/mm/dd) Reviewed By R.B. Examiné par DEC. 2017 (yyyy/mm/dd) Approved By Approuvé par Date (yyyy/mm/dd) Tender Soumission SHELLY LAIDLAW Project Manager Administrateur de projets

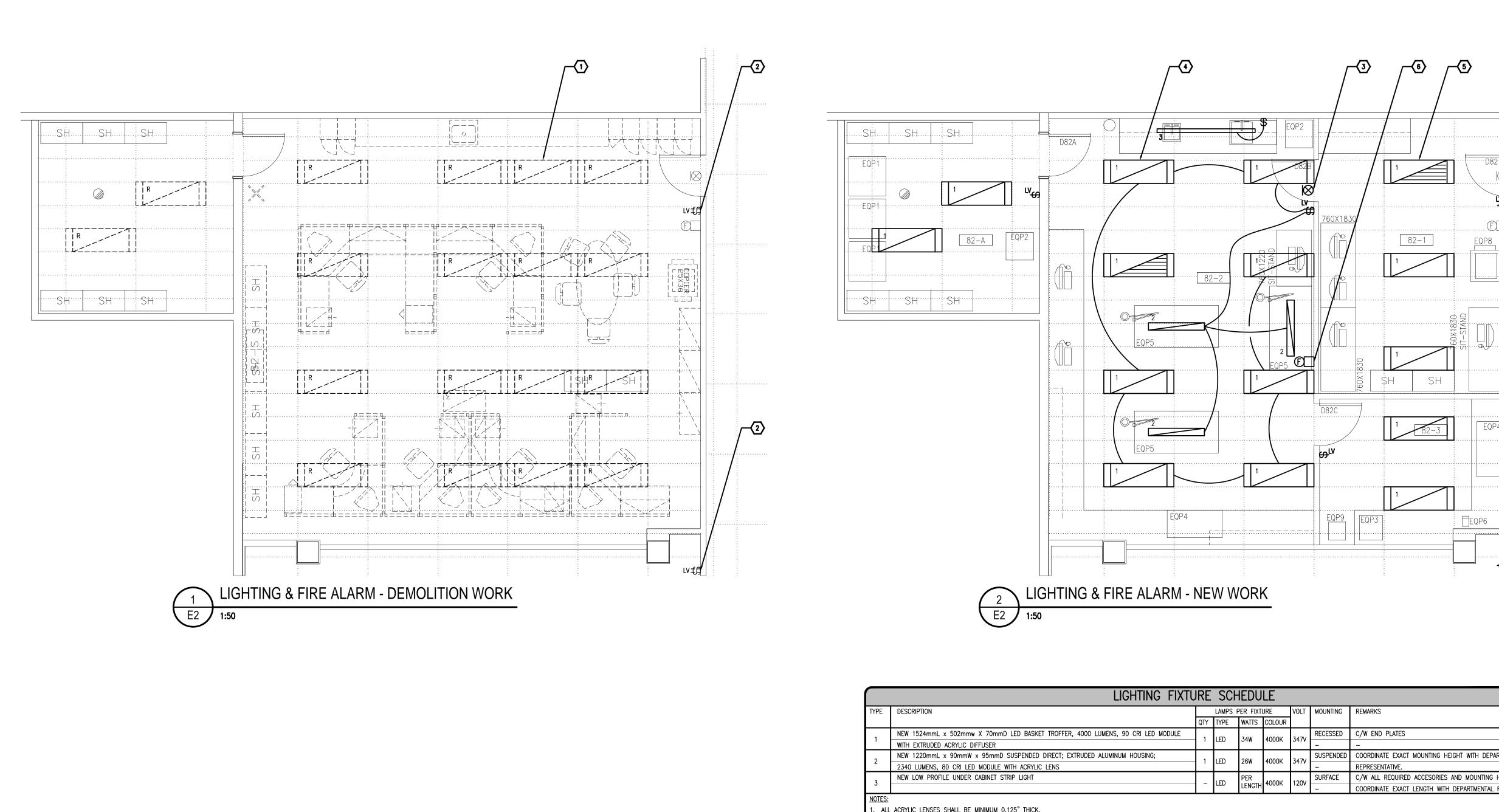
PTS 4753 Drawing no.

No. du dessin

No. du projet

PWGSC B1 (1000 x 707)

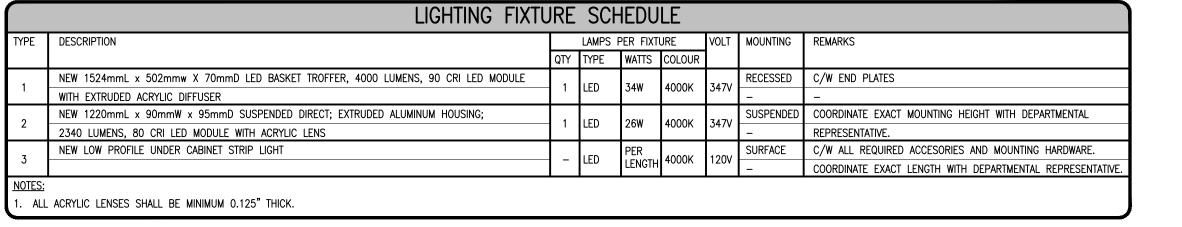
0 10 20mm 40 60 80 100 120 140 160 180 200mm

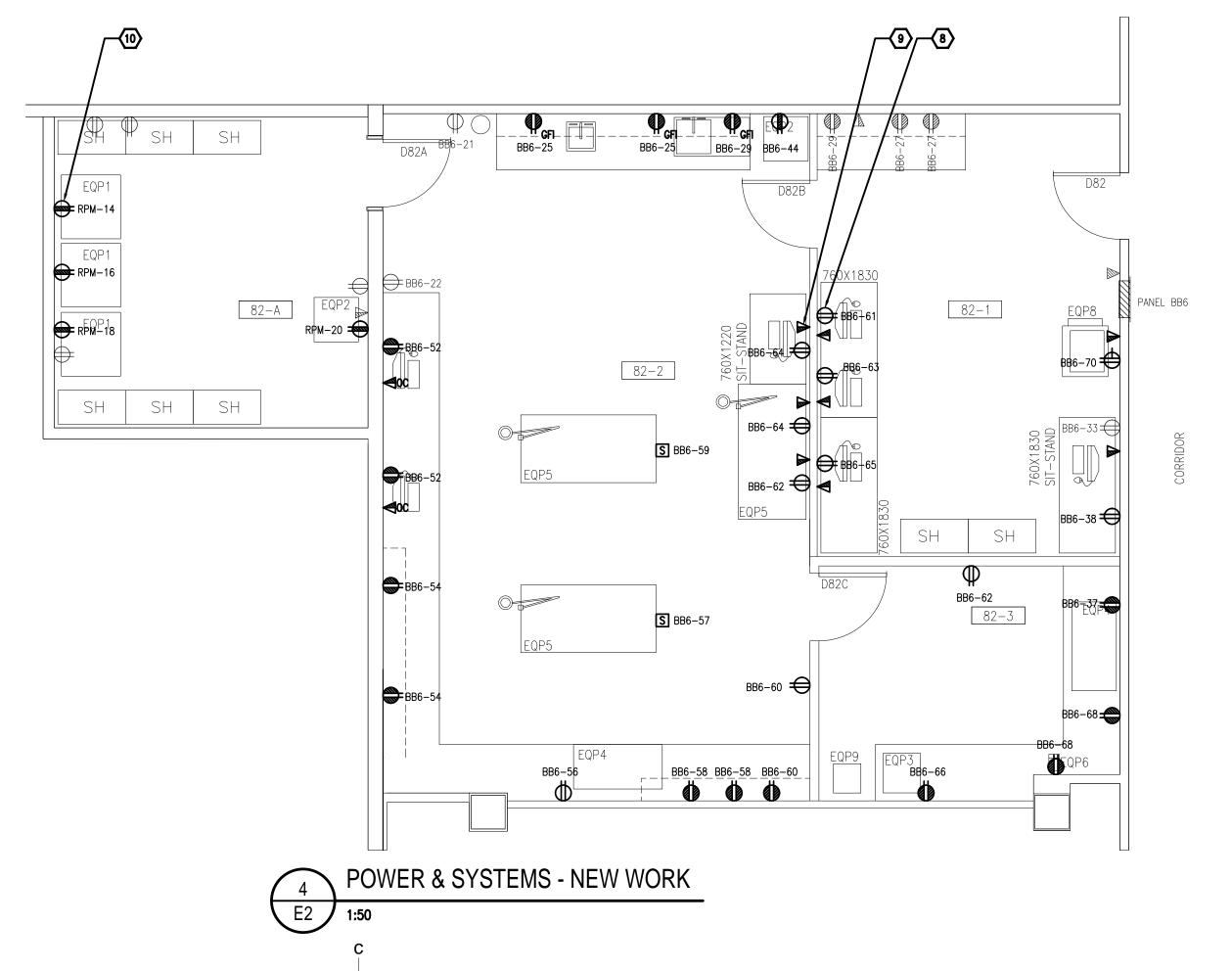


PANEL BB6

BB6-37€∋

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DRAWING NOTES

- TYPICAL:
 DISCONNECT AND REMOVE EXISTING LIGHT FIXTURE. REMOVE CONDUIT AND WIRING BACK TO NEAREST JUNCTION BOX AND MAKE SAFE. RETAIN CIRCUIT FOR RE-USE IN NEW LAYOUT.
- DISCONNECT AND REMOVE EXISTING DUAL GANG LIGHT SWITCH.
 REMOVE CONTROL TO LIGHTS IN ADJACENT ROOM. PROVIDE NEW
 SINGLE GANG SWITCH TO SOLELY CONTROL LIGHTS WITHIN ROOM 82-1. PERFORM SAME PROCEDURE IN ADJACENT ROOM. PROVIDE SINGLE GANG LIGHT SWITCH TO SOLELY CONTROL LIGHTS WITHIN THAT ROOM.
- PROVIDE NEW EDGE LIT "EXIT SORTIE" EXIT SIGN. CONNECT TO EXISTING EXIT LIGHTING CIRCUIT. EXTEND CONDUIT AND WIRING AS REQUIRED.
- TYPICAL:
 PROVIDE NEW LIGHT FIXTURE AS SHOWN. COORDINATE EXACT LOCATION WITH ARCHITECTURAL TRADES. REFER TO LIGHTING FIXTURE SCHEDULE ON THIS DRAWING FOR ADDITIONAL INFORMATION.
- 5) TYPICAL: CONNECT FIXTURE TO NEAREST UN-SWITCHED EMERGENCY
- PROVIDE NEW FIRE ALARM BELL AS SHOWN. CONNECT TO EXISTING FIRE ALARM SIGNALING CIRCUIT.

LIGHTING CIRCUIT.

- TYPICAL:
 DISCONNECT AND REMOVE EXISTING ELECTRICAL DEVICE. REMOVE
 CONDUIT AND WIRING BACK TO NEAREST JUNCTION BOX AND
 MAKE SAFE. RETAIN CIRCUIT FOR RE-USE IN NEW LAYOUT.
- TYPICAL:
 PROVIDE NEW ELECTRICAL DEVICE AS SHOWN. COORDINATE EXACT LOCATION WITH DEPARTMENTAL REPRESENTATIVE PRIOR TO ROUGH-IN. CONNECT TO INDICATED CIRCUIT.
- TYPICAL:
 PROVIDE BACK BOX AND 21mm CONDUIT C/W PULL STRING UP
 TO CORRIDOR CEILING SPACE FOR NEW DATA OUTLETS SUPPLIED AND INSTALLED BY COMMUNICATIONS CONTRACTOR. COORDINATE EXACT LOCATION ON SITE.
- TYPICAL: PROVIDE ORANGE DEVICES FOR RECEPTACLE CONNECTED TO EMERGENCY PANEL 'RPM'.

GENERAL NOTES

ENSURE ALL PENETRATIONS ON PERIMETER WALLS ARE SEALED/FIRESTOPPED FOR OHR RATING.

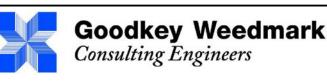


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ARCHITECT

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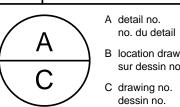
GOODKEY WEEDMARK & ASSOCIATES LIMITED 613 727-5111 Voice 613 727-5115 Fax 1688 Woodward Dr. Ottawa Ontario Canada K2C 3R8 GWAL Project #2017-679 www.gwal.com We



L'ENTREPRENEUR DEVRA VÉRIFIER TOUTES LES DIMENSIONS ET LES CONDITIONS SUR LE CHANTIER ET AVISER SANS DÉLAI LE REPRÉSENTANT DU MINISTÈRE DE TOUTE ANOMALIE.

Contractor to verify all dimensions and conditions on site and immediately notify the Departmental Representative of all discrepancies.

	3	ISSUED FOR TENDER	2018-02-02
2		ISSUED FOR 66% REVIEW	2018-01-12
		ISSUED FOR COORDINATION	2017–12–22
revisions description		description	date



B location drawing no sur dessin no. C drawing no.

LAB

CONVERSION

OTTAWA, ONTARIO

ELECTRICAL **NEW AND DEMOLITION WORK**

esigned By	R.B.	Conçu par			
Date	DEC 2017	(yyyy/mm/dd)			
rawn By	R.B.	Dessiné par			
Date	DEC. 2017	(yyyy/mm/dd)			
Reviewed By	R.B.	Examiné par			
Date	DEC. 2017	(yyyy/mm/dd)			
pproved By		Approuvé par			
Date		(yyyy/mm/dd)			
ender		Soumission			
	SHELLY LAIDLAV	v			
roject Manager Administrateur de projet					
Project no.		No. du projet			
PTS 4753					

Drawing no.

No. du dessin E2

PWGSC B1 (1000 x 707)

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POWER & SYSTEMS - DEMOLITION WORK