LIST OF DRAWINGS - PROJECT #26-1013

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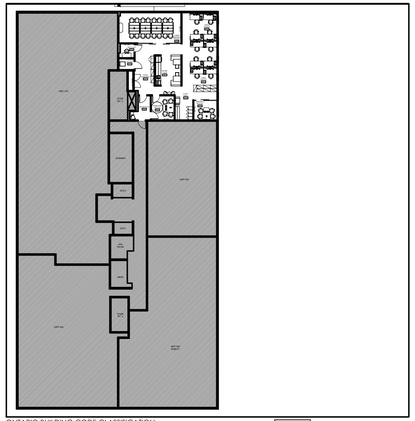
KEY PLAN (N.T.S)



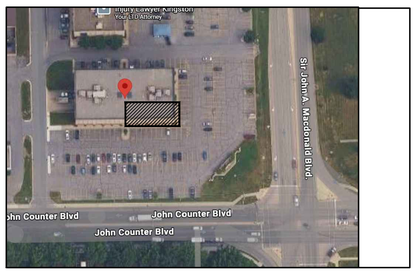
ONTARIO BUILDING CODE CLASSIFICATION
2024 O.B.C. 3.2.2
GROUP D
NON SPRINKLERED

AREA OF RENOVATIONS
PART GROUND FLOOR, 2760 SQ. FT.

AREAS OF RENOVATION

N.I.C

SITE PLAN (N.T.S)



CONTRACT NOTES

1. DEFINITIONS:

a. IN ALL PLANS AND OTHER DOCUMENTS, THE TERM "LANDLORD" REFERS TO BOB MARTIN CONSTRUCTION CO. LTD AND ITS DESIGNATED REPRESENTATIVES.

b. IN ALL PLANS AND OTHER DOCUMENTS ISSUED BY BENNETT DESIGN ASSOCIATES INC., THE TERM "TENANT/CLIENT" IS TO MEAN MUNICIPAL PROPERTY ASSESSMENT CORPORATION (MPAC) AND/OR ANY DESIGNATED REPRESENTATIVE OF MUNICIPAL PROPERTY ASSESSMENT CORPORATION (MPAC).

c. THE TERM "CONTRACTOR" IS TO MEAN ANY PERSON, FIRM OR CORPORATION NAMED AS SUCH IN THE CONSTRUCTION CONTRACT HEREIN.

d. THE TERM "DESIGNER" IS TO MEAN BENNETT DESIGN ASSOCIATES INC., AND ITS DESIGNATED PERSONNEL AS REPRESENTATIVE OF BENNETT DESIGN ASSOCIATES INC.

e. THE TERM "ENGINEERS" IS TO MEAN MECHANICAL AND ELECTRICAL.

f. THE TERM "PROJECT MANAGER" IS TO MEAN ANY PERSON, FIRM OR CORPORATION NAMED AS SUCH IN THE CONSTRUCTION CONTRACT HEREIN.

2. CONTRACT DOCUMENTS:

a. WHERE DISCREPANCIES OR OMISSIONS ARE BROUGHT TO THE CLIENT'S ATTENTION AFTER CLOSING, THE CLIENT IS TO DETERMINE WHETHER THE MATTER COULD HAVE AND SHOULD HAVE BEEN BROUGHT TO THE CLIENT'S ATTENTION PRIOR TO CLOSING, AND WHETHER A CLAIM FOR ADJUSTMENTS IS TO BE ALLOWED.

b. IN THE EVENT OF WORK BEING CARRIED OUT OR COMPLETED BEFORE THE CLIENT IS INFORMED OR AWARE OF A DISCREPANCY OR OMISSION INVOLVED, PARAGRAPH (A) ABOVE APPLIES AND MUST DETERMINE THE EXTENT OF CORRECTION, ETC. REQUIRED.

c. THE WORK IS INTENDED TO BE WHOLE AND COMPLETE IN EVERY ASPECT. ABIDE BY AND COMPLY WITH THE TRUE INTENT AND MEANING OF THE CONTRACT DOCUMENTS TAKEN AS A WHOLE.

3. INSPECTION OF WORK:

a. THE PROJECT MANAGER IS TO HAVE ACCESS, FOR INSPECTION, OF ALL WORK AT EACH STAGE OF PROGRESS.

b. THE CLIENT IS TO HAVE ACCESS, FOR INSPECTION, OF ALL WORK AT EACH STAGE OF PROGRESS.

4. CO-ORDINATION:

a. CO-ORDINATION OF THE WORK IS TO ENSURE MAXIMUM EFFICIENCY AND SMOOTH PROGRESS BY THE CONTRACTOR, DESIGNER, CLIENT AND PROJECT MANAGERS.

b. THE PROJECT MANAGER AND THE CONTRACTOR ARE TO CHECK AND VERIFY DIMENSIONS OF ALL WORK AT EACH STAGE OF PROGRESS.

5. SUBSTANTIAL COMPLETION:

a. SUBSTANTIAL COMPLETION TO BE DATED WHEN CERTIFIED BY THE PROJECT MANAGER WITH EXCEPTION TO ANY CORRECTIONS OF DEFICIENCIES.

6. CLEAN UP:

a. THE CONTRACTOR IS TO KEEP THE PREMISES FREE FROM ACCUMULATION OF WASTE MATERIAL AT ALL TIMES. THE CONTRACTOR IS TO BE RESPONSIBLE FOR ALL RUBBISH CAUSED BY HIS EMPLOYEES AND THEIR WORK ON A DAY-TO-DAY BASIS AND MUST LEAVE THE PREMISES CLEAN TO THE SATISFACTION OF THE DESIGNER AND CLIENT.

b. INCLUDE FOR FINAL CLEANING TO FLOORS, WALLS, WINDOWS AND CEILING, READY FOR CLIENT'S OCCUPANCY.

7. DAMAGES AND MUTUAL RESPONSIBILITIES:

a. ANY DAMAGE CAUSED BY THE CONTRACTOR OR ANY OF HIS/HER SUB-CONTRACTORS OR SUPPLIERS OF CONTRACT MATERIAL, ETC., IS TO BE RECTIFIED BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER.

8. PROTECTION OF WORK AND PROPERTY:

a. THE CONTRACTOR IS TO MAINTAIN CONTINUAL AND ADEQUATE PROTECTION OF ALL HIS/HER WORK AND IS TO TAKE REASONABLE PRECAUTIONS TO PROTECT THE LANDLORD'S PROPERTY FROM ANY DAMAGE ARISING IN CONNECTION WITH THE CONTRACT.

9. REJECTED WORK:

a. THE CONTRACTOR IS TO PROMPTLY REMOVE ANY AND ALL DEFECTIVE WORK OR EQUIPMENT FROM THE PREMISES CAUSED BY POOR WORKMANSHIP, USE OF DEFECTIVE MATERIALS, DAMAGE THROUGH CARELESSNESS, CONCEALED DAMAGE OR OTHER ACTS BY THE CONTRACTOR WHICH HAVE BEEN CONDEMNED BY THE DESIGNER OR OWNER AS FAILING TO CONFORM WITH THE CONTRACT DOCUMENTS, WHETHER INCORPORATED IN THE CONTRACT OR NOT.

b. THE CONTRACTOR IS TO PROMPTLY REPLACE AND RE-EXECUTE HIS OWN WORK IN ACCORDANCE WITH THE CONTRACT AND WITHOUT EXPENSE TO THE OWNER, WHILE BEARING THE EXPENSE TO FIX ALL WORK OF OTHER CONTRACTOR'S DESTROYED OR DAMAGED BY SUCH REMOVAL OR REPLACEMENT.

10. CORRECTION AFTER COMPLETION:

a. THE CONTRACTOR IS TO CORRECT ANY DEFECTS CAUSED BY FAULTY MATERIALS OR WORKMANSHIP THAT APPEAR WITHIN A PERIOD OF ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION OF THEIR WORK. IN ADDITION, THE CONTRACTOR IS TO PAY FOR ANY DAMAGE TO OTHER WORK RESULTING THERE FROM WHICH APPEARS WITHIN SUCH PERIOD. FINAL PAYMENT DOES NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY.

11. GUARANTEE:

a. SUBMISSION OF THE CONTRACT TO BE THIS CONTRACTOR'S GUARANTEE THAT MATERIAL AND WORKMANSHIP OF THE WORK ARE FIRST CLASS IN EVERY ASPECT AND THAT THE FINISHED PRODUCT WILL PROPERLY PERFORM ITS FUNCTION.

SPECIFIC PROJECT NOTES

ITEM	DESCRIPTION
SPN-01	SPECIFIC PROJECT NOTE - ITEM 1 CONTRACTOR TO PROVIDE SEPARATE PRICING TO EXPEDITED LAN ROOM COMPLETION.
SPN-02	SPECIFIC PROJECT NOTE - ITEM 2 CONTRACTOR TO PROVIDE SEPARATE PRICING TO REPLACE EXISTING LIGHT FIXTURES WITH NEW FIXTURES. COORDINATE WITH ENGINEERS' DRAWINGS. QUANTITY - 31
SPN-03	SPECIFIC PROJECT NOTE - ITEM 3 CONTRACTOR TO PROVIDE SEPARATE PRICING TO PAINT EXISTING T-BAR GRID TO MATCH EXISTING CEILING TILES.
SPN-04	SPECIFIC PROJECT NOTE - ITEM 4 CONTRACTOR TO PROVIDE SEPARATE PRICING FOR GLAZING FILM. REFER TO I-407 FOR DETAILS.

GENERAL NOTES

1. ALL GENERAL NOTES TO BE READ IN CONJUNCTION WITH ALL DESIGN DOCUMENTS.
2. SHOULD ANY DISCREPANCIES RESULT WITHIN THESE DOCUMENTS OR BETWEEN THESE DRAWINGS AND OTHER CONSULTANTS DRAWINGS, THE CONTRACTOR SHALL REQUEST CLARIFICATION FROM DESIGNER IN WRITING. IF THE ASSUMPTION/BID IS BASED ON A DISCREPANCY ITEM, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ADDITIONAL COST RESULTING FROM SAID ITEM(S).
3. GENERAL CONTRACTOR TO OBTAIN TENANT MANUAL PRIOR TO SUBMITTING QUOTATION. GENERAL CONTRACTOR SHALL COMPLY WITH ALL BASE BUILDING WORK PROCEDURES AND REGULATIONS. PROTECT ALL EXISTING BASE BUILDING SYSTEMS AND EQUIPMENT DURING CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR THE REPAIRS OF ANY DAMAGES TO THE BASE BUILDING CAUSED BY THE CONTRACTOR AND/OR BY HIS OR HER SUB-CONTRACTORS.
4. BENNETT DESIGN ASSOCIATES SHALL OBTAIN BUILDING PERMIT ON BEHALF OF CLIENT. PRIOR TO COMMENCEMENT OF WORK, THE GENERAL CONTRACTOR SHALL PROVIDE COPY OF PERMIT AND DRAWINGS TO CLIENT/OWNER AND LANDLORD.
5. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL TRADES AND SUB-TRADES WITH COPIES OF ALL DRAWINGS PART OF THIS CONTRACT. NO PARTIAL DRAWINGS WILL BE DISTRIBUTED WITHOUT DIRECTION FROM THE DESIGNER. ANY DISCREPANCIES RESULTING FROM THIS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE GOOD AT HIS EXPENSE.
6. ALL WORK IN THIS CONTRACT SHALL CONFORM TO LOCAL BUILDING CODES, INCLUDING ALL AMENDMENTS AND REVISIONS.
7. THE CONTRACT DOCUMENTS CONVEY DESIGN INTENT AND THE CONTRACTOR SHALL FURNISH ALL NECESSARY LABOR AND MATERIALS TO COMPLETE THE WORK. MEANS AND METHODS ARE THE RESPONSIBILITY OF THE CONTRACTOR.
8. THE CONTRACTOR IS TO STORE ALL MATERIALS AND/OR EQUIPMENT IN A SECURE AREA PROVIDED BY THE LANDLORD/TENANT.
9. THE CONTRACTOR IS TO BE RESPONSIBLE FOR ALL DAMAGES TO SURFACES, FINISHES AND MATERIALS DUE TO WORK UNDER THIS CONTRACT AND BEAR ALL COSTS INCURRED TO MAKE GOOD, REPAIR OR REPLACE TO THE PROJECT MANAGER'S SATISFACTION.
10. ARRANGEMENTS FOR THE REMOVAL OF ALL GARBAGE AND DEBRIS TO BE MADE BY THE CONTRACTOR TO THE SATISFACTION OF THE LANDLORD. THE CONTRACTOR IS TO ENFORCE DUST CONTROL MEASURES.
11. ALL ELEVATOR COSTS AND COSTS INVOLVED IN MATERIAL DELIVERY OR DEBRIS REMOVAL TO BE THE RESPONSIBILITY OF THE CONTRACTOR.
12. THE CONTRACTOR IS TO VISIT THE SITE, COMPARE THE DRAWINGS AND SPECIFICATIONS AND INFORM THEMSELVES OF ALL CONDITIONS PERTAINING TO THE WORK PRIOR TO SUBMITTING QUOTATION.
13. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND EXISTING SITE AND BUILDING CONDITIONS ARE TO BE BROUGHT TO THE ATTENTION OF THE PROJECT MANAGER/DESIGNER DURING THE TIME OF TENDERING IN SUFFICIENT TIME TO PERMIT ISSUANCE OF ADDENDUM.
14. FAILURE TO REPORT DISCREPANCIES WILL NOT RELIEVE THE CONTRACTOR FROM PERFORMING THE WORK AS INTENDED AND AT NO ADDITIONAL COST TO THE CLIENT.
15. THE CONTRACTOR IS TO VERIFY ALL JOB DIMENSIONS, DRAWINGS AND SPECIFICATIONS PRIOR TO PROCEEDING WITH THE WORK. ANY DISCREPANCIES ARE TO BE BROUGHT TO THE ATTENTION OF THE PROJECT MANAGER IMMEDIATELY.
16. ALL DIMENSIONS ON DRAWINGS TO GOVERN. DRAWINGS ARE NOT TO BE SCALED.
17. ALL JOB SITE DIMENSIONS ARE TO BE VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF RELATED WORK.
18. SHOULD CONTRACTOR WISH TO CHANGE:
    - SIZES, DETAILS OR METHOD OF CONSTRUCTION,
    - MANUFACTURER, TYPE OF MATERIALS OR SPECIFICATIONS, THE CONTRACTOR MUST HAVE APPROVAL BY THE PROJECT MANAGER PRIOR TO PURCHASE AND INSTALLATION.
19. ALL MATERIALS FOR INSTALLATION AND FINISHING TO BE AS PER MANUFACTURER'S INSTRUCTIONS, RECOMMENDATIONS AND SPECIFICATIONS FOR THE APPLICATION.
20. ALL MATERIALS ARE TO HAVE A FLAME SPREAD RATING AS REQUIRED BY THE LOCAL BUILDING CODE. CONTRACTOR TO PROVIDE FLAME SPREAD RATINGS FOR ANY ALTERNATIVE MATERIALS.
21. THE CONTRACTOR IS TO CONFIRM ALL FINISHES AND COLORS OF MATERIALS, FITTINGS, FIXTURES AND ACCESSORIES WITH THE DESIGNER PRIOR TO PURCHASE AND INSTALLATION.
22. SHOULD IT APPEAR THAT ANY PART OF THE WORK IS NOT SUFFICIENTLY DETAILED ON THE DRAWINGS, THE CONTRACTOR TO CONSULT WITH THE DESIGNER FOR FURTHER INFORMATION OR CLARIFICATION.
23. SHOULD ANY QUESTIONS, DISPUTE OR DIFFERENCE OF OPINION ARISE AS TO THE MEANING OR INTERPRETATION OF THE DRAWINGS, IT IS TO BE UNDERSTOOD THAT THE DECISION OF THE PROJECT MANAGER/DESIGNER WILL BE FINAL.
24. THE CONTRACTOR IS TO REFER TO CONSULTING ENGINEER'S DRAWINGS AND SPECIFICATIONS FOR ALL TECHNICAL INFORMATION WITH RESPECT TO MECHANICAL AND ELECTRICAL FITTINGS, FIXTURES, EQUIPMENT, CIRCUITRY, ETC.
25. THE CONTRACTOR IS TO REFER TO THE DESIGN DRAWINGS FOR LOCATION OF ALL ELECTRICAL FIXTURES AND OUTLETS.
26. WHERE IT IS OBVIOUS THAT THE DRAWING ILLUSTRATES ONLY PART OF THE PROPOSED WORK OR NUMBER OF ITEMS, THE REMAINDER OF THE PROPOSED WORK NOT ILLUSTRATED ON THE DRAWINGS SHALL BE INCLUDED IN THE SCOPE OF WORK.
27. ALL COMMUNICATIONS BETWEEN THE CLIENT, PROJECT MANAGER, DESIGNER AND CONTRACTOR TO BE BY MEANS OF NUMBERED ADDENDA WHICH ARE TO BECOME PART OF THE CONTRACT DOCUMENT, PRIOR TO TENDER SUBMISSION OR CONTRACT AWARD.
28. CONTRACTOR TO ALLOW FOR CUTTING IN EXISTING CEILINGS, NON-STRUCTURAL WALLS AND ANY CONSTRUCTION NECESSARY TO FACILITATE THE INSTALLATION OF MECHANICAL AND ELECTRICAL EQUIPMENT. PROVIDE UNIT PRICE FOR THIS WORK.
29. CUTTING OR DRILLING IN CONCRETE SLAB AND OTHER STRUCTURAL ELEMENTS TO BE APPROVED BY STRUCTURAL ENGINEER PRIOR TO PROCEEDING WITH INSTALLATION.
30. ALL X-RAY AND OTHER RELATED PROCEDURES PERTAINING TO ABOVE TO FORM PART OF THIS CONTRACT.
31. CONTRACTOR TO PROVIDE A LIST OF SUB-CONTRACTORS, WHOSE COSTS ARE REFLECTED IN THE TENDER DOCUMENT.
32. CONTRACTOR GUARANTEES ALL WORK TO BE FREE FROM ALL INHERENT DEFECTS IN WORKMANSHIP OR MATERIALS AND TO GIVE PROPER AND CONTINUOUS SERVICE UNDER ALL CONDITIONS OF SERVICE REQUIRED AND CONTRACTOR TO REPLACE PROMPTLY AND AT HIS/HER WORK PROVING DEFECTIVE WITHIN ONE (1) YEAR FROM DATE OF INSTALLATION.
33. DESIGNER TO APPROVE LOCATION OF ANY ACCESS PANELS IN GWB SURFACES ON SITE PRIOR TO INSTALLATION.
34. CONTRACTOR TO INSTALL ALL PRE-MANUFACTURED COMPONENTS OF CONSTRUCTION AS PER MANUFACTURER'S INSTRUCTIONS.
35. EXTENDED WARRANTIES:

    THE GENERAL CONTRACTOR SHALL OBTAIN ALL EQUIPMENT GUARANTEES AND WARRANTEES AND SUBMIT TO CLIENT/OWNER UPON PROJECT COMPLETION. THE FOLLOWING IS A COMPILATION OF WARRANTIES WHICH EXTEND BEYOND THE TWELVE (12) MONTHS REQUIRED UNDER THE GENERAL CONDITIONS OF THIS CONTRACT OR WHICH HAVE SPECIAL CONDITIONS ATTACHED TO THEM.

    THIS LIST IS GIVEN FOR CONVENIENCE ONLY AND MAY NOT BE COMPLETE. THERE MAY EXIST WARRANTIES IN THE SPECIFICATIONS OR ELSEWHERE IN THE CONTRACT DOCUMENTS OR WARRANTIES MAY BE AVAILABLE FOR THE PRODUCTIONS SPECIFIED FOR THE WORK WITHOUT SAID WARRANTIES BEING STIPULATED IN THE CONTRACT DOCUMENTS.

    THE CONTRACTOR IS TO PROVIDE CLIENT WITH MAINTENANCE AND GUARANTEE FOR ALL MATERIALS AND EQUIPMENT INSTALLED UNDER THIS CONTRACT PRIOR TO FINAL CERTIFICATE FOR PAYMENT.

    ALL WARRANTIES ARE APPLICABLE AND IN FORCE WHETHER LISTED IN THIS SUMMARY OR NOT.

DESCRIPTION:	EXTENSION OF WARRANTY:
CARPENTRY	3 YEARS
MILLWORK	3 YEARS
FINISH HARDWARE	3 YEARS

36. ALL MATERIALS AND SERVICES FURNISHED BY THE CONTRACTOR TO BE SUBJECT TO INSPECTION AND APPROVAL BY THE DESIGNER, ACTING AS THE CLIENT'S REPRESENTATIVE WITH THE RIGHT TO REJECT MATERIALS AND/OR REQUIRE ADDITIONAL SERVICES TO CORRECT THE DEFECTIVE WORK. THE ABOVE WILL BE AT THE CONTRACTOR'S EXPENSE.
37. GENERAL CONTRACTOR TO INCLUDE FOR CO-ORDINATION AND SCHEDULING OF SUB-TRADES WITHIN THE GENERAL CONTRACT AND THOSE HIRED BY THE LANDLORD/OWNER.
38. WHERE NOTED, GENERAL CONTRACTOR TO ONLY USE PRE-APPROVED VENDORS TO BID ON PARTICULAR PORTIONS OF THE WORK AS STIPULATED BY LANDLORD/OWNER.
39. LANDLORD TO INVESTIGATE CAUSE OF ANY WATER LEAKS/STAINING WITHIN THE BUILDING AND RECTIFY.
40. IT IS THE RESPONSIBILITY OF THE ELECTRICAL ENGINEER FOR CALCULATING AND SPECIFYING THE APPROPRIATE LIGHT LEVELS FOR THE DESIGN OF THE SPACE IN ACCORDANCE WITH THE LOCAL BUILDING CODE.
41. GENERAL CONTRACTOR SHALL SUBMIT ANY AND ALL SHOP DRAWINGS AND SUBMITTALS TO THE DESIGNER/ENGINEERS FOR APPROVAL PRIOR TO FABRICATION AND/OR COMMENCEMENT OF WORK. DRAWINGS INCLUDED BUT NOT LIMITED TO INCLUDE:
    - MILLWORK
    - GLAZING/GLASS
    - DOOR ASSEMBLIES & HARDWARE
    - FLOOR FINISHES
    - WALL FINISHES
    - LIGHTING
    - PLUMBING
    - MECHANICAL/ELECTRICAL EQUIPMENT AS NOTED ON ENGINEERING DRAWINGS
    - ANY/ALL SPECIALTY ITEMS
42. CONTRACTOR TO PROVIDE MATERIALS AND EQUIPMENT AS SPECIFIED WITHIN THESE CONTRACTOR DOCUMENTS. THE GENERAL CONTRACTOR SHALL OBTAIN DESIGNER APPROVAL PRIOR TO PURCHASE AND INSTALLATION OF ANY CHANGES OR SUBSTITUTIONS TO:
    - SIZES, DETAILS OR METHOD OF CONSTRUCTION
    - MANUFACTURER OR TYPE OF MATERIALS
    - PERFORMANCE AND/OR FLAME SPREAD RATINGS AS ORIGINALLY SPECIFIED
43. GENERAL CONTRACTOR TO COORDINATE WORKING HOURS AS PER TENANT MANUAL AND CONFIRM WITH LANDLORD/OWNER. CONTRACTOR TO PERFORM WORK DURING REGULAR BUSINESS HOURS (OR AFTER HOURS AND ON WEEKENDS IF REQUIRED BY CLIENT/OWNER).
44. FIRE PROTECTION DOCUMENTS SHALL BE PROVIDED AS A DEFERRED SUBMITTAL BY THE CONTRACTOR. REFER TO MECHANICAL DRAWINGS FOR DETAILS.
45. THE ISSUANCE OF DRAWINGS/PERMITS DOES NOT RELIEVE THE OWNER FROM THE REQUIREMENT TO COMPLY WITH ANY OTHER APPLICABLE LEGISLATION, REGULATIONS, AND STANDARDS INCLUDED, BUT NOT LIMITED TO, THE ARCHITECTS ACT, ONTARIO HUMAN RIGHTS CODE, ACCESSIBILITY FOR ONTARIOANS WITH DISABILITIES AND AND INTEGRATED ACCESSIBILITY STANDARDS REGULATION.

ABBREVIATIONS

ABV	ABOVE
ADJ	ADJUSTABLE
AFF	ABOVE FINISH FLOOR
ALT	ALTERNATE
CLG	CEILING
CLR	CLEAR
CONT	CONTINUOUS
CT	CERAMIC TILE
CTR	CENTER
DBL	DOUBLE
DET	DETAIL
DIA	DIAMETER
DIM	DIMENSION
DR	DOOR
DWG	DRAWING
E	EAST
EA	EACH
ELEC	ELECTRIC
EQ	EQUAL
EQUIP	EQUIPMENT
EX	EXISTING
FIN	FINISH
FLR	FLOOR
FLUOR	FLUORESCENT
FT	FEET (FOOT)
GAL	GALLON
GALV	GALVANIZED
GL	GLASS
GND	GROUND
GWB	GYPSUM WALL BOARD
HT	HEIGHT
MAX	MAXIMUM
MECH	MECHANICAL
MIN	MINIMUM
MISC	MISCELLANEOUS
MTL	METAL
N	NORTH
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OC	ON CENTER
P	PAINT
PLAM	PLASTIC LAMINATE
PR	PAIR
PTD	PAINTED
QTY	QUANTITY
REQD	REQUIRED
RM	ROOM
S	SOUTH
SCHED	SCHEDULE
SECT	SECTION
SF	SQUARE FEET
SPEC	SPECIFICATION
SQ	SQUARE
SS	STAINLESS STEEL
STD	STANDARD
STOR	STORAGE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL
W	WEST
W/	WITH
W/O	WITHOUT
WC	WATERCLOSET
WD	WOOD
WT	WEIGHT
YD	YARD

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GENERAL NOTES

- THIS DRAWING IS THE PROPERTY OF BENNETT DESIGN ASSOCIATES INC. AND CANNOT BE REPRODUCED WITHOUT WRITTEN PERMISSION.
- ALL MEASUREMENTS MUST BE VERIFIED ON SITE BY CONTRACTOR AND REPORT ANY DISCREPANCIES TO BENNETT DESIGN ASSOCIATES INC. BEFORE PROCEEDING WITH THE WORK.
- DO NOT SCALE DRAWINGS.

CLIENT

no.	date	by	description

REVISIONS

no.	date	by	description
03	23JAN26	SDK	ISSUED FOR PERMIT/TENDER
02	14JAN26	SDK	ISSUED FOR 90% REVIEW
01	17DEC25	SDK	ISSUED FOR 50% REVIEW

ISSUED

ARIDO SAKSHI DIXIT KAPOOR Association of Registered Interior Designers of Ontario

mpac

project title
MPAC KINGSTON
1471 JOHN COUNTER BLVD, STE 412
KINGSTON, ON
K7M 8S8

drawing title
GENERAL NOTES

date: 17DEC25	project no.: 26-1013
drawn by: SDK	cad file: 26-1013_I-000
checked by: AH	drawing no.: I-000
scale: AS NOTED	

N

MPAC
1471 JOHN COUNTER BLVD, SUITE 412
KINGSTON, ON
K7M 8S8

ISSUED FOR PERMIT/TENDER: 23JAN2026

Item	ONTARIO BUILDING CODE DATA MATRIX PARTS 3 & 9			OBC REFERENCE References are to division B unless noted [A] for division A or [C] for division C	
1	Project Description: MPAC KINGSTON - 1471 JOHN COUNTER BLVD, PROJECT AREA: 2090 SQ.FT. (194.1 m²)	☐ New ☐ Addition ☐ Change of Use	■ Part 11 ■ Alteration	■ Part 3	☐ Part 9 2.1.1 9.10.1.3
2	Major Occupancy(s) GROUP "D"			3.1.2.1 (1)	9.10.2.
3	Building Area(m²) Existing 1412 New 0 Total 1412			1.1.3.2[A] & 1.4.1.2.[A]	1.1.3.2[A] & 1.4.1.2.[A]
4	Gross Floor Area Existing No Change New 0 Total No Change			1.1.3.2[A] & 1.4.1.2.[A]	1.1.3.2[A] & 1.4.1.2.[A]
5	Number of Storeys Above Grade 4 Below Grade 0			3.2.1.1.[A] & 1.1.3.2	2.1.1.3
6	Height of Building (m) 12				2.1.1.3
7	Number of Streets / Fire Fighter Access 2			3.2.2.10. & 3.2.5.5	2.1.1.3
8	Building Classification 3.2.2.49 (GROUP D, UP TO 4 STOREYS, NON SPRINKLERED)			3.2.2.20-.83	9.10.4
9	Sprinkler System Proposed	■ existing ☐ basement only ☐ in lieu of roof rating ☐ not required		3.2.2.20-.83 3.2.1.5. 3.2.2.17.	9.10.8.
10	Standpipe required	☐ Yes ☐ No ■ Existing/No Change		3.2.9	
11	Fire Alarm required	☐ Yes ☐ No ■ Existing/No Change		3.2.4	9.10.7.2
12	Water Service / Supply is Adequate	☐ Yes ☐ No ■ Existing/No Change		3.2.5.7.	
13	High Building	☐ Yes ■ No		3.2.6.	
14	Permitted Construction ☐ Combustible ■ Non-combustible Actual Construction ☐ Combustible ■ Non-combustible			3.2.2.20-.83	9.10.6.
15	Mezzanine(s) Area m² N/A			3.2.1.1.(3)-(8)	9.10.4.1
16	Occupant load based on ■ m²/ person ☐ Design of building PART GROUND FL - UNIT 3 Occupancy 9.3 Load 21 Persons			3.1.17.1	9.9.1.3
17	Barrier-free Design	■ Yes ☐ No (Explain)		3.8.	9.5.2.
18	Hazardous Substances	☐ Yes ■ No		3.3.1.2.(1) & 3.3.1.19.(1)	9.10.1.3
19	Required Fire Resistance Rating (FRR)	Horizontal Assemblies FRR (Hours)	Listed Design No. or Description (SG-2)	3.2.2.20-.83 & 3.2.1.4	9.10.8 9.10.9
		Floors EXISTING Hours	EXISTING TO REMAIN		
		Roof EXISTING Hours	EXISTING TO REMAIN		
		FRR of Supporting Members	Listed Design No. or Description (SG-2)		
		Floors EXISTING Hours	EXISTING TO REMAIN		
		Roof EXISTING Hours	EXISTING TO REMAIN		
20	Plumbing Fixture Requirements				
	Ratio M:F = 50:50 Except as otherwise noted Floor Level/Area: 194.1 sq.m. — Occupant Load: 21 (11M/10F) — OBC Reference: 3.7.4.7. — WCs Required: 2 — WCs Provided: 2			3.7.4., 11.3.4., 11.3.5., 11.4.2.4., and 11.4.2.5.	

Item	ONTARIO BUILDING CODE DATA MATRIX - PART 11 - RENOVATION OF EXISTING BUILDING		OBC REFERENCE
11.1	Existing Building classification:	Describe Existing Use: GROUP D Construction Index: 4 (NO CHANGE TO EXISTING) Hazard Index: 3 (NO CHANGE TO EXISTING)	11.2.1 T 11.2.1.1A T 11.2.1.1B to N
11.2	Alteration to Existing Building is:	Basic Renovation ■ Extensive Renovation ☐	11.3.3.1 11.3.3.2
11.3	Reduction in Performance Level:	Structural: ■ No ☐ Yes By Increase in occupant load: ■ No ☐ Yes By change of major occupancy: ■ No ☐ Yes Plumbing: ■ No ☐ Yes Sewage-system: ■ No ☐ Yes	11.4.2 11.4.2.1 11.4.2.2 11.4.2.3 11.4.2.4 11.4.2.5
11.4	Compensating Construction:	Structural: ■ No ☐ Yes (Explain) Increase in occupant load: ■ No ☐ Yes (Explain) Change of major occupancy: ■ No ☐ Yes (Explain) Plumbing: ■ No ☐ Yes (Explain) Sewage system: ■ No ☐ Yes (Explain)	11.4.3 11.4.3.2 11.4.3.3 11.4.3.4 11.4.3.5 11.4.3.6
11.5	Compensating Construction:	■ No ☐ Yes (Give number(s))	11.5.1
11.6	Alternative Measures Proposed:	■ No ☐ Yes (Give number(s))	11.5.2

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- DO NOT SCALE DRAWINGS.

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REVISIONS

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01	23JAN26	SDK	ISSUED FOR PERMIT/TENDER

ISSUED

ARIDO
SAKSHI DIXIT KAPOOR
Association of Registered Interior Designers of Ontario

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project title

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drawing title

OBC MATRIX

N

date: 17DEC25	project no.: 26-1013
drawn by: SDK	cad file: 26-1013_I-000
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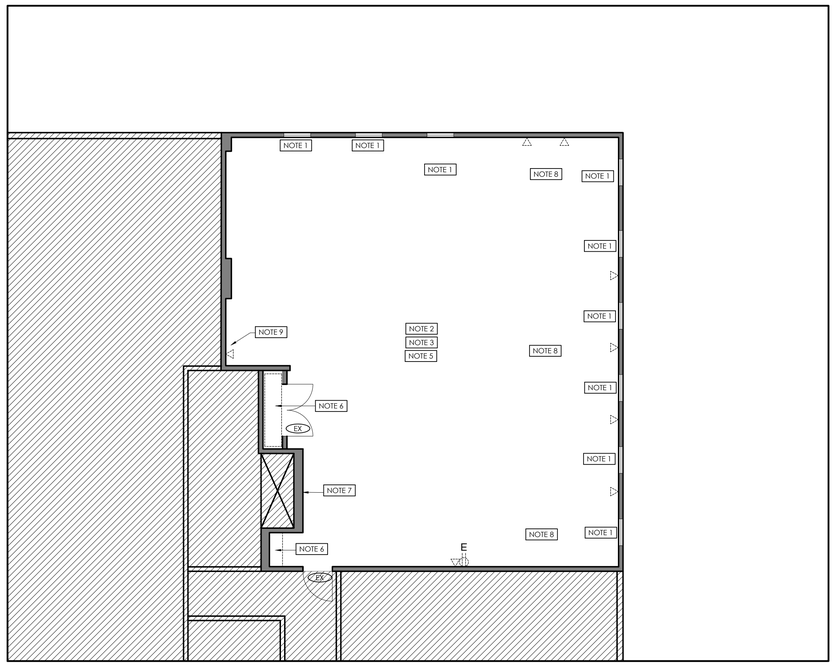

DEMOLITION LEGEND

SYMBOL	DESCRIPTION
	DENOTES EXISTING PARTITION TO REMAIN
E	DENOTES EXISTING WALL MOUNTED DUPLEX OUTLET TO REMAIN
EX	DENOTES EXISTING DOOR AND FRAME TO REMAIN
E	DENOTES EXISTING WALL MOUNTED DATA OUTLET TO REMAIN
	DENOTES EXISTING WALL MOUNTED DUPLEX OUTLET TO BE REMOVED OR RELOCATED.
	DENOTES EXISTING WALL MOUNTED DATA TO BE REMOVED.
	AREA NOT IN CONTRACT (NIC)

DRAWING NOTES

SYMBOL	DESCRIPTION
NOTE 1	FILL, REPAIR AND REFINISH ANY HOLES WHERE EXISTING BLINDS HAVE BEEN REMOVED.
NOTE 2	EXISTING CRACKS, HOLES, DENTS, ETC. ON EXISTING PARTITIONS TO REMAIN TO BE PATCHED, PRIMED AND PAINTED LIKE NEW. REFER TO I-405 WALL FINISH PLAN.
NOTE 3	FLOOR TO BE MADE READY TO RECEIVE NEW FINISH. REFER TO I-404 FLOOR FINISH PLAN.
NOTE 4	REFER TO I-402 REFLECTED CEILING PLAN FOR CEILING GRID AND FIXTURE DEMOLITION.
NOTE 5	EXISTING PARTITIONS TO BE PATCHED, PRIMED AND PAINTED LIKE NEW, REFER TO I-405 WALL FINISH PLAN.
NOTE 6	EXISTING MILLWORK TO BE REMOVED. PARTITION TO BE PATCHED, PRIMED AND PAINTED LIKE NEW. REFER TO I-405 WALL FINISH PLAN.
NOTE 7	EXISTING WALL PANEL AND EDGES TO BE PATCHED, PRIMED AND PAINTED LIKE NEW, REFER TO I-405 WALL FINISH PLAN.
NOTE 8	PROVIDE AND INSTALL A COVER PLATE AT ALL LOCATIONS WHERE EXISTING POWER AND DATA OUTLETS ARE BEING DEMOLISHED TO ENSURE A CLEAN AND SAFE FINISH.
NOTE 9	EXISTING OUTLET TO BE RELOCATED AT 42". REFER TO I-402 POWER AND COMMS DRAWING FOR REFERENCE.

DEMOLITION NOTES

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2. THE ENTIRE DRAWING PACKAGE TO BE REFERENCED AND REVIEWED AS A WHOLE.
3. THIS DRAWING TO BE READ IN CONJUNCTION WITH MECHANICAL AND ELECTRICAL ENGINEER'S DRAWINGS AND SPECIFICATIONS.
4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL CONSTRUCTION SPECIFICATIONS AND DOCUMENTS.
5. ALL PARTITIONS DESIGNATED TO BE DEMOLISHED SHALL BE REMOVED FROM SLAB TO SLAB UNLESS NOTED OTHERWISE.
6. WHERE DEMOLISHED PARTITIONS PENETRATED SUSPENDED T-BAR CEILING GRID, REPAIRS SHALL BE MADE TO MAKE GOOD A CONTINUOUS CEILING GRID.
7. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAKE GOOD ALL AREAS AFFECTED BY DEMOLITION.
8. DISCONNECT AND CAP ALL PLUMBING WHICH IS TO BE REMOVED.
9. DEMOLITION AND NEW CONSTRUCTION SHALL BE DONE IN PHASES AS REQUIRED, DURING EACH PHASE, THE AREA UNDER CONSTRUCTION SHALL BE COMPLETELY SEALED OFF, MAINTAINING EXITS WITHIN ACCORDANCE WITH BUILDING CODE.
10. THE CONTRACTOR SHALL SALVAGE ALL ELEMENTS OF THE BASE BUILDING, SUCH AS (BUT NOT LIMITED TO) CEILING COMPONENTS, LIGHT FIXTURES, SPEAKERS, ETC. ALL ELEMENTS REMAIN THE PROPERTY OF AND SHALL BE TURNED OVER TO THE LANDLORD/CLIENT AND STORED WHERE DIRECTED UNLESS SCHEDULED FOR REUSE AND/OR SHOWN TO BE REMOVED AND RELOCATED UNDER THIS CONTRACT.
11. ALL DEBRIS AND MATERIALS RESULTING FROM THE DEMOLITION AND NOT CLAIMED BY THE OWNER SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE PREMISES AND BE LEGALLY DISPOSED OF.
12. THE CONTRACTOR SHALL COORDINATE THE LIFTING AND REMOVAL OF ALL EXISTING FLOOR COVERING AND BASE FINISHES, WITHIN THE CONTRACT AREA, WITH THE FLOOR COVERING CONTRACTOR.
13. CONTRACTOR TO REMOVE ALL FLOORING AND BASE, UNLESS NOTED OTHERWISE. MAKE GOOD ALL FLOORS, BASE, WALLS, COLUMNS AND CEILING AFTER DEMOLITION SUITABLE FOR APPLICATION OF NEW FINISH. REFER TO FLOOR AND WALL FINISH PLANS, NOTES AND LEGENDS I-404 AND I-405.
14. ANY WIRING ETC. WITHIN PARTITIONS SLATED FOR DEMOLITION IS TO BE REMOVED AND/OR TERMINATED AND IS TO CONFORM TO ALL APPLICABLE STANDARDS AND BY-LAWS.
15. DISCONNECT ALL ELECTRICAL SERVICES FROM PARTITIONS TO BE DEMOLISHED AND CAP ABOVE CEILING HEIGHT.
16. IN PARTITIONS BEING REMOVED, ELECTRICAL OUTLETS, CONDUIT, ETC. ARE TO BE REMOVED BACK TO FIRST JUNCTION BOX AND TERMINATED, OR AS DIRECTED BY ELECTRICAL DRAWINGS/SPECIFICATIONS. REFER TO CONSULTANT ENGINEERS' DRAWINGS.
17. CONFIRM THAT DEMOLITION DRAWINGS ACCURATELY REFLECT THE EXTENT OF ABOVE CEILING GWB BAFFLING TO BE REMOVED AND REMOVE ANY REDUNDANT BAFFLES ABOVE THE CEILING.
18. THE CONTRACTOR IS TO BE RESPONSIBLE FOR ALL DAMAGES TO FINISHES, SURFACES, MATERIALS ETC., DUE TO WORK PERFORMED UNDER THIS CONTRACT AND BEARS ALL COSTS INCURRED TO MAKE GOOD, REPAIR OR REPLACE SAME TO DESIGNER'S SATISFACTION.
19. THROUGHOUT THE ENTIRE CONSTRUCTION PERIOD, PROPER AND SAFE MEANS OF FIRE EXIT SHALL BE PROVIDED FROM ALL ZONES OF THE BUILDING AT ALL TIMES TO THE APPROVAL OF THE AUTHORITIES HAVING JURISDICTION.
20. INCLUDE TO PATCH AND REPAIR WALLS WHERE FIXTURES, ACCESSORIES, MILLWORK, HAVE BEEN REMOVED. PATCH AND REPAIR TO INCLUDE ANY HOLES, SCRAPES, OR IMPERFECTIONS. WALLS TO BE REPAIRED TO LEVEL 5 FINISH.

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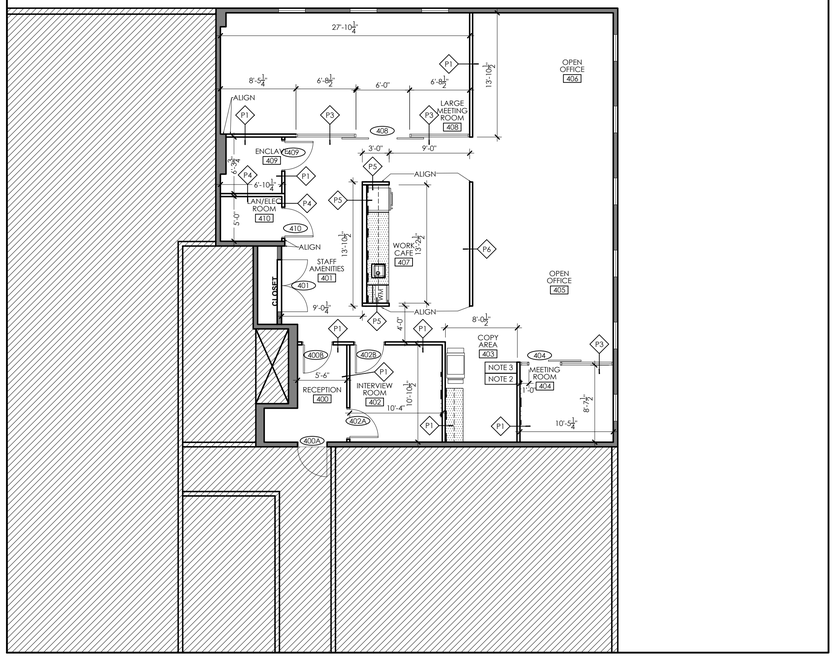

PARTITION LEGEND

SYMBOL	DETAIL	DESCRIPTION
		DENOTES EXISTING PARTITION TO REMAIN
P1	1 / I-401.1	NEW PARTITION ASSEMBLY "P1" - 3 5/8" METAL STUDS AT 16" O.C. - ONE LAYER 1/2" BOTH SIDES - SOUND ATTENUATION BLANKET - SLAB TO U/S OF T-BAR CEILING - FOIL BACKED (BOTH SIDES) RIGID INSULATION ABOVE CEILING TO **U/S OF DECK** (CERTAPRO THERMAL FOIL FACED BATTS BY CERTAINTEED CORP. OR EQUAL)
P2	2 / I-401.1	NEW PARTITION ASSEMBLY "P2" - 3 5/8" METAL STUDS AT 16" O.C. - ONE LAYER 1/2" BOTH SIDES - SOUND ATTENUATION BLANKET - CAVITY TO BE FRICTION FIT WITH SINGLE LAYER OF FIRE-RATED PLYWOOD ON ROOM 410 ELEC/LAN ROOM SIDE, FLOOR TO U/S OF DRYWALL CEILING (~12'-0") - 3.5" SOUND BATT INSULATION REFER TO PARTITION DETAIL 8/I-101.1 FOR FURTHER DETAILS
P3	3 / I-401.1	NEW PARTITION ASSEMBLY "P3" GLAZING WALL SYSTEMS (PC350 OR EQUAL) GLAZING SYSTEM - GLAZING SYSTEM: FULL GLAZING WITH TRANSOM - 13MM THICKNESS - FRAME FINISH: ANODIZED ALUMINUM - **SLAB TO U/S OF CEILING (+/- 8'-11" AFF)** - CONTRACTOR TO ALLOW FOR FILM ON GLAZING PER OBC, REFER TO WALL FINISHES PLAN I-405 AND DOOR SCHEDULE ELEVATIONS I-407. BULKHEAD - 3 5/8" METAL STUD BULKHEAD - SOUND ATTENUATION BLANKET - ONE LAYER 1/2" BOTH SIDES - **TOP OF GLAZING SYSTEM TO SLAB**
P4	4 / I-401.1	NEW PARTITION ASSEMBLY "P4" - 3 5/8" METAL STUDS AT 16" O.C. - ONE LAYER 1/2" BOTH SIDES - SOUND ATTENUATION BLANKET (3.5" ROXUL SAFE & SOUND) - SINGLE LAYER OF SECURITY MESH (CLARK DIETRICH BARRIER MESH BM10) C/W BARRIER MESH CLIPS - SLAB TO U/S OF DECK
P5	5 / I-401.1	PARTITION ASSEMBLY "P5" NEW PARTITION TO U/S OF CEILING: - 3 5/8" METAL STUDS AT 16" O.C., - ONE LAYER 1/2" DRYWALL EACH SIDE (1/2" MOISTURE RESISTANT CEMENT BOARD AT SINK). - SLAB TO U/S OF T-BAR CEILING
P6	6 / I-401.1	PARTITION ASSEMBLY "P6" NEW PARTITION - 4'-0" HEIGHT GWB W/ GLAZING ABOVE IN "U" CHANNEL - 2 1/2" METAL STUDS AT 16" O.C. - ONE LAYER 1/2" GWB, BOTH SIDES - 4'-0" HEIGHT - METAL "U" CHANNEL WITH GLAZING ABOVE TO FINISHED CEILING - PROVIDE BLOCKING AS REQUIRED
P7	7 / I-401.1	PARTITION ASSEMBLY "P7" FINISHING OF EXISTING DEMISING WALL - ONE LAYER 1/2" GWB, ONE SIDE - SOUND ATTENUATION BLANKET - NEW SMOKE SEAL AROUND PERIMETER OF PARTITION, BOTH SIDES. REFER TO PARTITION DETAIL 7/I-401.1 FOR FURTHER DETAILS
P8	8 / I-401.1	PARTITION ASSEMBLY "P8" NEW PARTITION ALT - ELEC/LAN ROOM - 3 5/8" METAL STUDS AT 16" O.C. - ONE LAYER 1/2" BOTH SIDES - SOUND ATTENUATION BLANKET - CAVITY TO BE FRICTION FIT WITH SINGLE LAYER OF FIRE-RATED PLYWOOD ON ROOM ELEC/LAN ROOM SIDE, FLOOR TO U/S OF DRYWALL CEILING (~12'-0") - 3.5" SOUND BATT INSULATION REFER TO PARTITION DETAIL 8/I-401.1 FOR FURTHER DETAILS
AH		NEW MILLWORK REFER TO MILLWORK DRAWINGS AS INDICATED ON PLANS CONTRACTOR TO PROVIDE BLOCKING, AS REQUIRED.
<###>		NEW/EXISTING DOOR & FRAME REFER TO DOOR SCHEDULE I-407 PROVIDE DOOR HEADERS AS REQUIRED FOR ALL DOORS NOT FULL HEIGHT
		DENOTES BLOCKING FOR NEW WALL MOUNTED TVS, MILLWORK, GRAB BARS.
JSM		JOB SITE MEASUREMENT
AFF		ABOVE FINISHED FLOOR
CCD		CRITICAL CLEAR DIMENSION
		AREA NOT IN CONTRACT (NIC)

REFER TO FURNITURE PLAN I-406 FOR LOCATION WHITEBOARDS, TV'S ETC.

DRAWING NOTES

SYMBOL	DESCRIPTION
NOTE 1	INCLUDE TO FINISH WALLS WHERE PARTITIONS DEMOLISHED, INCLUDING CORNER GUARDS AS REQUIRED. PATCH AND MAKE GOOD TO LEVEL 5 FINISH TO RECEIVE NEW FINISHES. WHERE CARPET AND BASE REMOVAL SCARS, INCLUDE TO PATCH AND REPAIR TO MATCH. COORDINATE WITH I-404 FLOOR FINISHES PLAN AND I-405 WALL FINISHES PLAN.
NOTE 2	GC TO SUPPLY & INSTALL WALL MOUNTED KEY CABINET; KEYED LOCK WITH MINIMUM 50 KEY CAPACITY, LIGHT GREY (OR SIMILAR) COLOUR. SUGGESTED SPECIFICATION: BARSKA CB13234. APPROXIMATE DIMENSIONS (9-1/2" W x 11-3/4" H x 3" D). CABINET MOUNTED 60" A.F.F., O.C.
NOTE 3	GC TO SUPPLY & INSTALL WALL MOUNTED LOCKBOX WITH 4-DIGIT RESETTABLE COMBINATION LOCK. MINIMUM 5 KEY CAPACITY. MOUNTED AT 60" A.F.F., O.C.

PARTITION NOTES

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3. THIS DRAWING TO BE READ IN CONJUNCTION WITH MECHANICAL AND ELECTRICAL ENGINEER'S DRAWINGS AND SPECIFICATIONS.
4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL CONSTRUCTION SPECIFICATIONS AND DOCUMENTS.
5. THE CONTRACTOR IS TO READ REFLECTED CEILING PLAN I-402 IN CONJUNCTION WITH PARTITION PLAN TO ESTABLISH EXACT LOCATION OF PARTITIONS.
6. REFER TO ELECTRICAL AND MECHANICAL ENGINEER'S DRAWINGS FOR FURTHER SPECIFICATIONS. DISCREPANCIES BETWEEN THE DESIGNERS' AND ENGINEERS' DRAWINGS ARE TO BE REPORTED TO THE DESIGNER IN WRITING.
7. SHOULD SEPARATE PRICE FOR GENERAL CONTRACTOR TO UNDERTAKE CABLING NOT TO BE INCLUDED IN SCOPE, THE CONTRACTOR IS TO COORDINATE WITH THE TENANT'S CABLING CONSULTANTS.
8. THE CONTRACTOR IS TO CHECK ALL SITE CONDITIONS PRIOR TO SUBMITTING QUOTATION.
9. THE CONTRACTOR IS TO VERIFY ALL JOB DIMENSIONS, ALL DRAWING DETAILS, ALL SPECIFICATIONS, AND REPORT ANY DISCREPANCIES IN WRITING TO THE DESIGNER PRIOR TO INSTALLATION.
10. ALL TEMPORARY BUILDING SHUTDOWNS ARE TO BE COORDINATED BY THE CONTRACTOR WITH LANDLORD.
11. FINAL CLEANING SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR, INCLUDING CLEANING OF FLOORS, WALLS, CONVECTORS, BLINDS, ALL GLAZING AND CEILING, PROFESSIONALLY STEAM CLEAN OF CARPET AND WAXING OF HARD SURFACES.
12. PRIOR TO FABRICATION AND ORDERING OF MATERIALS, THE CONTRACTOR IS TO SUBMIT SHOP DRAWINGS TO THE DESIGNER FOR APPROVAL OF ALL MILLWORK ITEMS, DOOR ASSEMBLIES & HARDWARE AND WASHROOM FIXTURES & ACCESSORIES.
13. THE CONTRACTOR IS TO PROVIDE FLOORING PROTECTION DURING CONSTRUCTION PERIOD.
14. ALL PARTITIONS TO BE MARKED ON THE FLOOR AND APPROVED BY DESIGNER PRIOR TO INSTALLATION OF STUDS.
15. THE CONTRACTOR IS TO MAKE GOOD ALL FLOORS, BASES, WALLS, CORE PARTITIONS, COLUMNS AND CEILINGS SUITABLE TO ACCEPT NEW FINISHES OR MATERIALS. THE CONTRACTOR IS TO VISIT SITE TO EVALUATE EXTENT OF WORK PRIOR TO BID SUBMISSION.
16. WHERE NEW WORK CONNECTS WITH EXISTING AND/OR WHERE EXISTING WORK IS ALTERED; ENSURE NECESSARY CUTTING, FITTING AND TIE-INS REQUIRED TO BE SATISFACTORY AND PERFORMED UNDER THIS CONTRACT.
17. PROVIDE WOOD BLOCKING WHERE NECESSARY WITHIN PARTITIONS AND WITHIN CEILING SPACE WHEREVER SHELVING, CABINETS, TV'S, WHITEBOARDS, EQUIPMENT, GLAZING SYSTEMS OR WALL AND CEILING FIXTURES AND ACCESSORIES MAY GO.
18. THE CONTRACTOR IS TO CONSULT WITH MECHANICAL CONSULTANT TO ENSURE READY ACCESS FOR MAINTENANCE TO ALL MECHANICAL UNITS BEFORE NEW PARTITIONS AND CEILINGS ARE ERECTED AND INSTALLED.
19. SOUND ATTENUATION BLANKET IN PARTITIONS TO BE CONTINUOUS BEHIND ALL POWER AND COMMUNICATION WALL OUTLETS AND ACROSS DOOR/WINDOW HEADERS WITHOUT INTERRUPTION TO PREVENT SOUND TRANSFER.
20. COMPLETE INSTALLATION TO BE SMOOTH, LEVEL OR PLUMB, FREE FROM WAVES AND OTHER DEFECTS AND READY TO ACCEPT SPECIFIED FINISH.
21. ALL EXPOSED EDGES OF GWB TO BE TRIMMED WITH J-MOULD OR CORNER BEAD OR AS OTHERWISE DETAILED.
22. DO NOT APPLY GWB UNTIL BUCKS, ANCHORS AND BLOCKING, ELECTRICAL AND MECHANICAL WORK HAVE BEEN INSPECTED AND APPROVED BY DESIGNER.
23. MAINTAIN REQUIRED FIRE RATING AROUND MECHANICAL AND ELECTRICAL EQUIPMENT AND OTHER PENETRATIONS AT ALL TIMES.
24. ERECT ACCESSORIES STRAIGHT, PLUMB OR LEVEL, RIGID AND AT THE PROPER PLANE.
25. PARTITIONS NOT DIMENSIONED ARE TO BE TYPICALLY LOCATED ON THE CENTER OF THE CEILING GRID.
26. DIMENSIONS FOR NEW PARTITIONS ARE TO BE ESTABLISHED FROM THE CENTERLINE OR FINISHED FACE, UNLESS OTHERWISE NOTED.
27. ENSURE THAT ALL OPENINGS FOR GLAZING ARE SQUARE AND SOLID FOR RECEIVING GLASS OR GLAZING FRAMES. REFER TO DOOR & SCREEN SCHEDULE FOR DETAILS.
28. WHERE MULTIPLE GLAZING PANELS ARE SHOWN, ALL SECTIONS TO BE EQUAL, UNLESS NOTED OTHERWISE. REFER TO DOOR & SCREEN SCHEDULE FOR DETAILS.
29. UNLESS NOTED OTHERWISE, PARTITIONS SHOWN ON WINDOW MULLIONS TO BE INSTALLED CENTERED ON WINDOW MULLIONS. CAULKING FOR SOUND ATTENUATION TO BE PROVIDED FROM FLOOR TO CEILING.
30. WHERE NEW PARTITIONS MEET A WINDOW MULLION, CLEANLY BUILD USING LANDLORD APPROVED FINISH DETAILS.
31. FILLER PANELS TO BE PROVIDED BETWEEN COLUMNS AND MULLIONS AS REQUIRED.
32. WHERE EXISTING PARTITIONS ARE TO BE PAINTED AND/OR RECEIVE NEW WALLCOVERING, REMOVE EXISTING WALL FINISH, FILL AND SAND AS REQUIRED.
33. PROVIDE DOUBLE SIDED FOAM ACOUSTICAL TAPE OR GASKET WHERE PARTITIONS MEET WITH CORE WALLS, COLUMNS, CONVECTORS, COVERS, SLAB AND CEILING.
34. ALL DOORS TO BE 6" AWAY FROM PARTITIONS ON HINGED SIDE OF DOOR UNLESS NOTED OTHERWISE.
35. UNDERCUT DOORS TO ALLOW FOR 1/8" CLEARANCE ABOVE FINISHED FLOOR WHERE REQUIRED.
36. WHERE STRUCTURAL MEMBERS PENETRATE FULL HEIGHT PARTITIONS, PROVIDE ACOUSTICAL SEAL AND FINISH OPENING TO BE APPROVED BY LANDLORD/OWNER.
37. PLUMBING FIXTURES TO BE AS SPECIFIED WITH THE REQUIRED SUPPORT, ACCESSORIES AND ALL DRAINAGE, VENT AND WATER CONNECTIONS AS REQUIRED. REFER TO ENGINEERING DRAWINGS.
38. REFER TO POWER & COMMUNICATIONS DRAWING I-403 FOR LOCATIONS OF NEW OUTLETS AND CONDUITS. ALLOW FOR CUTTING AND PATCHING OF ON EXISTING PERIMETER WALLS.
39. DESIGNER TO APPROVE ACCESS PANEL LOCATION(S) PRIOR IN INSTALLATION.
40. REFER TO I-404 FOR WALL BASE DETAILS.

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drawing title

PARTITION PLAN

date	17DEC25
project no.	26-1013
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cad file	26-1013_I-401
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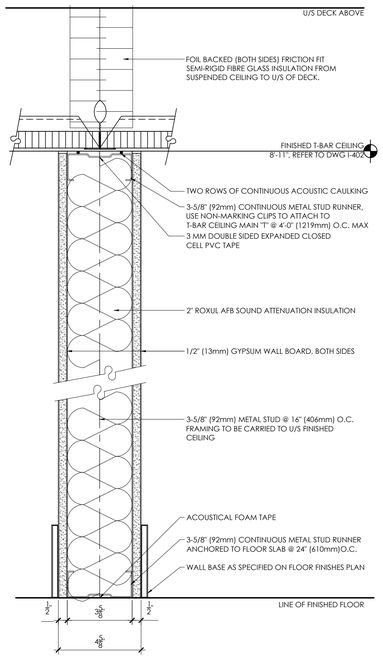
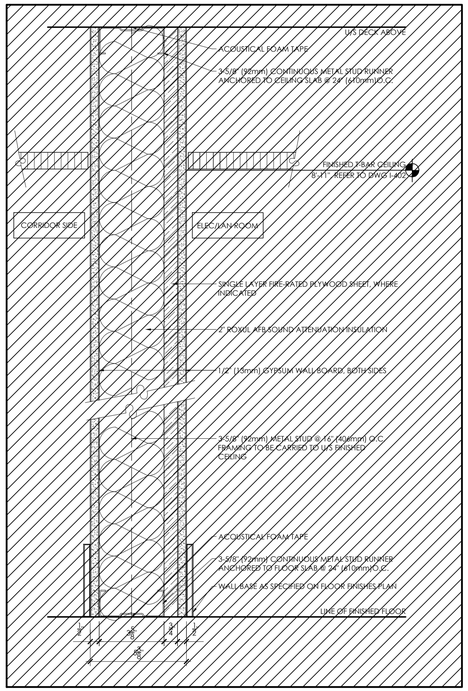


1 I-401.1 PARTITION TYPE 'P1'
3" = 1'-0"



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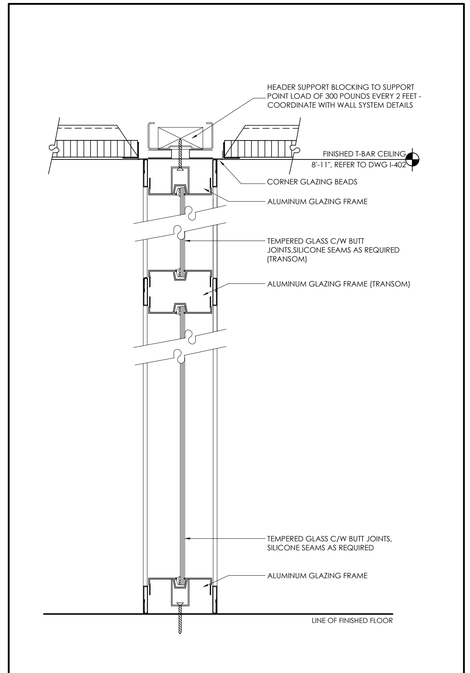

3 I-401.1 PARTITION TYPE 'P3'
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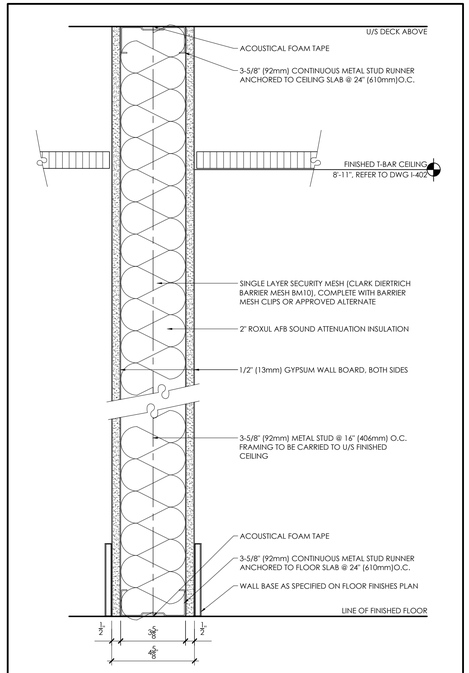

4 I-401.1 PARTITION TYPE 'P4'
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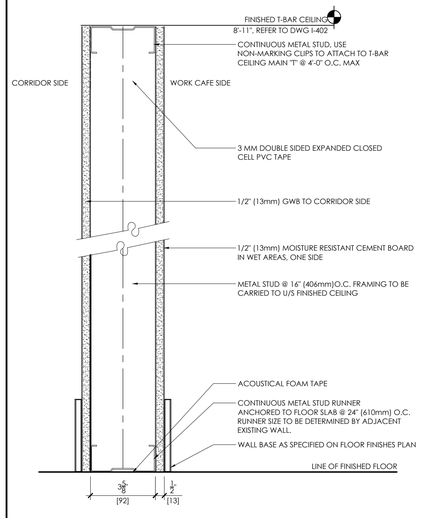

5 I-401.1 PARTITION TYPE 'P5'
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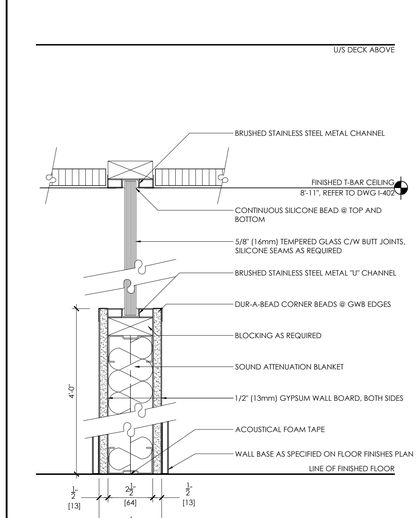

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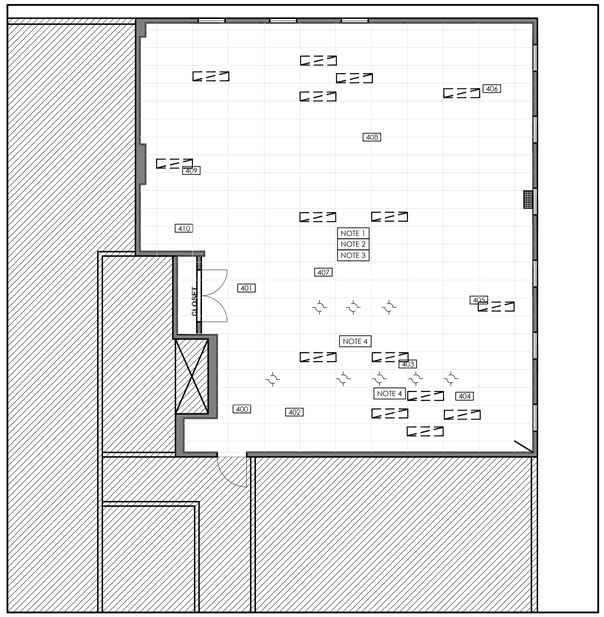
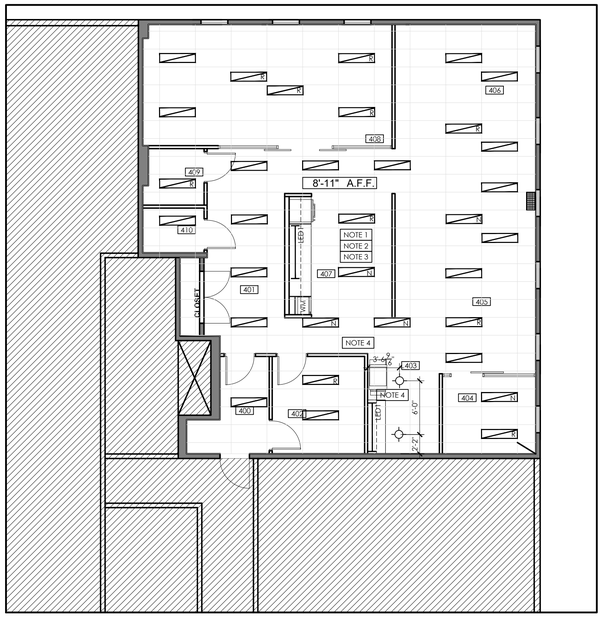
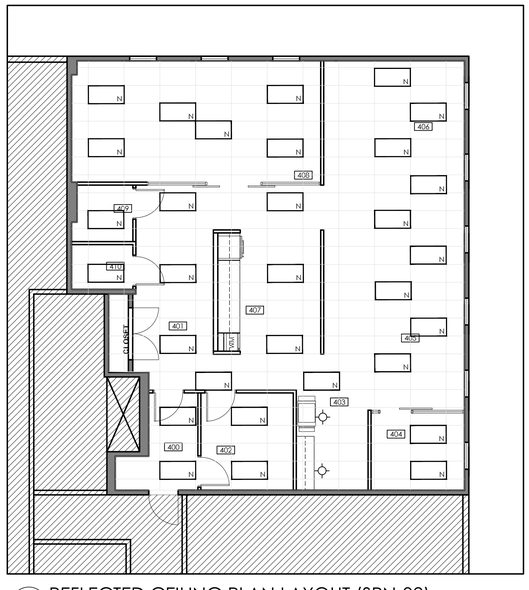
checked by: AH	drawing no.: I-401.1
scale: 3"=1'-0"	



1 I-402 REFLECTED CEILING DEMOLITION PLAN
1/8" = 1'-0"



2 I-402 REFLECTED CEILING PLAN
1/8" = 1'-0"



3 I-402 REFLECTED CEILING PLAN LAYOUT (SPN-02)
1/8" = 1'-0"

LIGHTING LEGEND

SYMBOL	DESCRIPTION
	DENOTES EXISTING PARTITION TO REMAIN
	DENOTES NEW PARTITION
	DENOTES EXISTING BASE BUILDING STANDARD 1X4 LUMINAIRE TO BE REMOVED OR RELOCATED.
	DENOTES EXISTING RECESSED LIGHT FIXTURE TO BE REMOVED.
E	DENOTES EXISTING BASE BUILDING STANDARD 1X4 LUMINAIRE IN RELOCATED POSITION. ALL FIXTURES TO RECEIVE NEW OPAQUE WHITE LENS. QUANTITY - 11
N	DENOTES NEW BASE BUILDING STANDARD 1X4 LUMINAIRE. REFER TO ELECTRICAL ENGINEER'S DRAWINGS FOR DETAILS. QUANTITY - 5
SPN-02 N	NEW DIMMABLE LED 2X4 LUMINAIRE GC TO PROVIDE SEPARATE PRICING FOR ALTERNATE FIXTURE OPTION AT SAME LOCATIONS USING 1X4 FIXTURE. ENGINEERS TO PROVIDE SPEC. ENSURE NEW FIXTURES HAVE OPAQUE WHITE LENS. QUANTITY - 31
LED 1	NEW LED STRIP LIGHTING UNDER MILLWORK MANUFACTURER: SGI LED FLEX LIGHT BASIC BRIGHT DRIVER: SGI - LED 60 WATT, 12VDC DIMMABLE DRIVER TRACK: SGI LED TRACK - ANGLED 2618 QUANTITY - 2 REFER TO MILLWORK DRAWING I-408 AND COORDINATE WITH ELECTRICAL ENGINEER'S DRAWINGS
	NEW RECESSED LED DOWN LIGHT LUMINA SALES TYPE: LED FLAT FRAME RECESSED LUMINAIRE, DIMMABLE SIZE: 4" QUANTITY: 2
	AREA NOT IN CONTRACT (NIC)

CEILING LEGEND

SYMBOL	DESCRIPTION
	EXISTING T-BAR GRID & CEILING TILES TO REMAIN 24" x 48" T-BAR CEILING GRID TO REMAIN HEIGHT: 8'-11" A.F.F.

DRAWING NOTES

SYMBOL	DESCRIPTION
NOTE 1	EXISTING CEILING GRID TO BE MAINTAINED THROUGHOUT. AT CEILING TRANSITIONS WHERE WALLS REMOVED, INCLUDE TO REPAIR T-BAR GRID. INCLUDE TO PATCH AND REPAIR GRID/HEADERS TO MATCH EXISTING CONDITIONS. COORDINATE WITH ENGINEER'S DRAWINGS AND CEILING DETAILS.
NOTE 2	PROVIDE SEPARATE PRICING TO PAINT EXISTING T-BAR GRID. TO BE PAINTED TO MATCH EXISTING CEILING TILES.
NOTE 3	PROVIDE SEPARATE PRICING TO REPLACE EXISTING LIGHT FIXTURES WITH NEW FIXTURES. COORDINATE WITH ENGINEER'S DRAWINGS.
NOTE 4	PROVIDE NEW CEILING TILE TO MATCH EXISTING WHERE RECESSED LIGHTS ARE REMOVED.
NOTE 5	GC TO ALLOW FOR ALLOWANCE TO SUPPLY AND INSTALL 20% NEW CEILING TILES THROUGHOUT TO MATCH EXISTING.

REFLECTED CEILING NOTES

1. THIS DRAWINGS & NOTES TO BE READ IN CONJUNCTION WITH GENERAL NOTES. REFER TO DRAWING #I-000.
2. THE ENTIRE DRAWING PACKAGE TO BE REFERENCED AND REVIEWED AS A WHOLE.
3. THIS DRAWING TO BE READ IN CONJUNCTION WITH MECHANICAL AND ELECTRICAL ENGINEER'S DRAWINGS AND SPECIFICATIONS.
4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL CONSTRUCTION SPECIFICATIONS AND DOCUMENTS.
5. REFER TO POWER AND COMMUNICATION LEGEND AND NOTES.
6. CEILING HEIGHT: 8'-11" A.F.F., UNLESS NOTED OTHERWISE.
7. CONTINUE CEILING AS REQUIRED WHERE PARTITIONS HAVE BEEN REMOVED.
8. MECHANICAL AND ELECTRICAL CONSULTANTS TO EXAMINE SITE BEFORE PROCEEDING WITH THE NECESSARY DRAWINGS.
9. ELECTRICAL ENGINEERING CONSULTANT IS RESPONSIBLE FOR CALCULATING AND SPECIFYING THE APPROPRIATE LIGHT LEVELS FOR THE DESIGN OF THE SPACE IN ACCORDANCE WITH THE LOCAL BUILDING CODE.
10. THE CONTRACTOR SHALL USE THIS DRAWING FOR THE LOCATION OF FIXTURES AND FITTINGS AND INCLUDE ITEMS AS MECHANICAL CONSULTANT DRAWINGS AND SPECIFICATIONS FOR TECHNICAL INFORMATION INCLUDING: CIRCUITRY, POWER REQUIREMENTS, NIGHT LIGHTS, EMERGENCY LIGHTING AND FIRE PROTECTION EQUIPMENT AS REQUIRED BY THE LOCAL BUILDING CODE.
11. EXCEPT FOR LOCATION OF FIXTURES, SUCH AS LIGHTING, POWER AND COMMUNICATION OUTLETS, ELECTRICAL AND MECHANICAL CONSULTANT'S PLANS SHALL GOVERN.
12. THE CONSULTING ENGINEER AND CONTRACTOR SHALL INCLUDE ITEMS OR FIXTURES AS CALLED FOR BY NAME, NUMBER AND MANUFACTURER ON THE BDA DRAWINGS. APPROVAL IS REQUIRED BY THE DESIGNER BEFORE PROCEEDING WITH A CHANGE IN SPECIFICATION.
13. THE CONTRACTOR SHALL INCLUDE CUTTING AND REPAIRING OF CEILING TILES AND GWB TO ALLOW FOR DESIGNATED MECHANICAL OR ELECTRICAL WORK.
14. ALL DAMAGED TILES AND T-BAR SHALL BE REPLACED. CONTRACTOR SHALL VERIFY QUANTITY AND ESTIMATE IN CONTRACT TO SUPPLY NEW AS REQUIRED TO MATCH EXISTING, IN STYLE, COLOUR AND FINISH.
15. ALL DISCOLOURED TILES TO BE SEGREGATED IN SPECIFIC AREAS TO ACHIEVE AN EVEN COLOUR WITHIN ONE AREA.
16. CONTRACTOR TO SUPPLY ADDITIONAL NEW CEILING TILES AS REQUIRED TO MATCH EXISTING.
17. WHERE EXISTING T-BAR CEILING HAS BEEN ALTERED; ALL NECESSARY CUTTING AND FITTING REQUIRED TO MAKE SATISFACTORY SHALL BE PERFORMED UNDER THIS CONTRACT.
18. THE CONTRACTOR IS TO CONFIRM WITH MECHANICAL CONSULTANT TO ENSURE READY ACCESS FOR MAINTENANCE OF EXISTING AND/OR NEW MECHANICAL UNITS BEFORE NEW PARTITIONS AND CEILINGS ARE INSTALLED.
19. THE CONTRACTOR SHALL REUSE EXISTING FIXTURES, DIFFUSERS, SPRINKLER HEADS ETC. WHERE APPLICATION PERMITS.
20. ALL LOCATIONS OF SPRINKLERS, SPEAKERS, DIFFUSERS, RETURN AIR GRILLES AND ACCESS PANELS TO BE REVIEWED AND APPROVED BY THE DESIGNER BEFORE INSTALLATION.
21. CONTRACTOR TO INCLUDE FIRE DAMPERS FOR ALL RELOCATED AND/OR NEW LIGHT FIXTURES, DIFFUSERS AND RETURN AIR GRILLES TO CONFORM WITH ALL FIRE AND LOCAL BUILDING CODES (FOR PROJECTS WHERE APPLICABLE).
22. WHERE FIXTURES PENETRATE A FIRE RATED CEILING, THEY SHALL BE ENCLOSED WITH A SUITABLE FIRE RATED ENCLOSURE ABOVE THE CEILING AND MATCH THE FIRE RATED ASSEMBLY REQUIRED BY THE LOCAL BUILDING CODE REQUIREMENTS.
23. CONTRACTOR TO CLEAN AND INSPECT ALL EXISTING LIGHT FIXTURES, INCLUDING ONES DENOTED TO BE REMOVED AND/OR RELOCATED, FOR PROPER OPERATION AND REPAIRED AND RE-LAMP AS NECESSARY TO MAKE FULLY FUNCTIONAL PRIOR TO BEING PUT BACK INTO SERVICE. REPLACE ALL DAMAGED LENSES AS NECESSARY.
24. THE CONTRACTOR IS TO PROVIDE EMERGENCY AND EXIT LIGHTS AS REQUIRED BY THE LOCAL BUILDING CODE REQUIREMENTS. REFER TO ELECTRICAL CONSULTANT DRAWINGS FOR LOCATION AND SPECIFICATIONS.
25. THE GENERAL CONTRACTOR IS TO INCLUDE ALL ELECTRICAL REQUIREMENTS FOR ALL MECHANICAL WORK.
26. FOR CEILING HUNG WINDOW TREATMENTS, BULKHEADS, PROJECTION SCREEN ETC., CONTRACTOR SHALL PROVIDE ADEQUATE STRUCTURAL BLOCKING AND FRAMING WITHIN THE CEILING CAVITY TO ENSURE SAFETY AND STABILITY OF INSTALLED ITEM.
27. UNLESS OTHERWISE SPECIFIED AS SWITCHES WITH INDIVIDUAL CONTROL SWITCHES AND CIRCUITS, ALL LIGHT FIXTURES SHALL BE CONTROLLED FROM BASE BUILDING ZONED SWITCHES.
28. ALL SWITCHES INDICATE LOCATION ONLY. REFER TO ELECTRICAL CONSULTANT'S DRAWINGS FOR CIRCUITRY OF SWITCHES AND RELATED SPECIFICATIONS.
29. ALL SWITCHES TO BE LOCATED 900mm-1100mm AFF.
30. THE CONTRACTOR IS TO ARRANGE AND COORDINATE ALL TEMPORARY SHUTDOWNS AS REQUIRED WITH THE LANDLORD AND/OR TENANT.
31. THE CONTRACTOR IS TO PROVIDE ZONE CONDUIT IN THE CEILINGS AND WALLS FOR POWER AND COMMUNICATION CABLES IN ACCORDANCE WITH THE LOCAL BUILDING CODE REQUIREMENTS.
32. ELECTRICAL CONSULTANT TO SPECIFY A MINIMUM QUANTITY AND SIZE FOR ALL ACCESS PANELS.
33. ANY DISCREPANCIES BETWEEN DESIGN AND ENGINEERING DRAWINGS TO BE REPORTED TO DESIGNER IMMEDIATELY.
34. CONTRACTOR TO REFER TO WALL FINISH PLAN I-405 FOR PAINT FINISHES.
35. CONTRACTOR TO LEAVE EXISTING CEILING-MOUNTED GLASS BREAK SENSORS IN.

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- DO NOT SCALE DRAWINGS.

no.	date	by	description

REVISIONS

03	23JAN26	SDK	ISSUED FOR PERMIT/TENDER
02	14JAN26	SDK	ISSUED FOR 90% REVIEW
01	17DEC25	SDK	ISSUED FOR 50% REVIEW

no.	date	by	description

ISSUED

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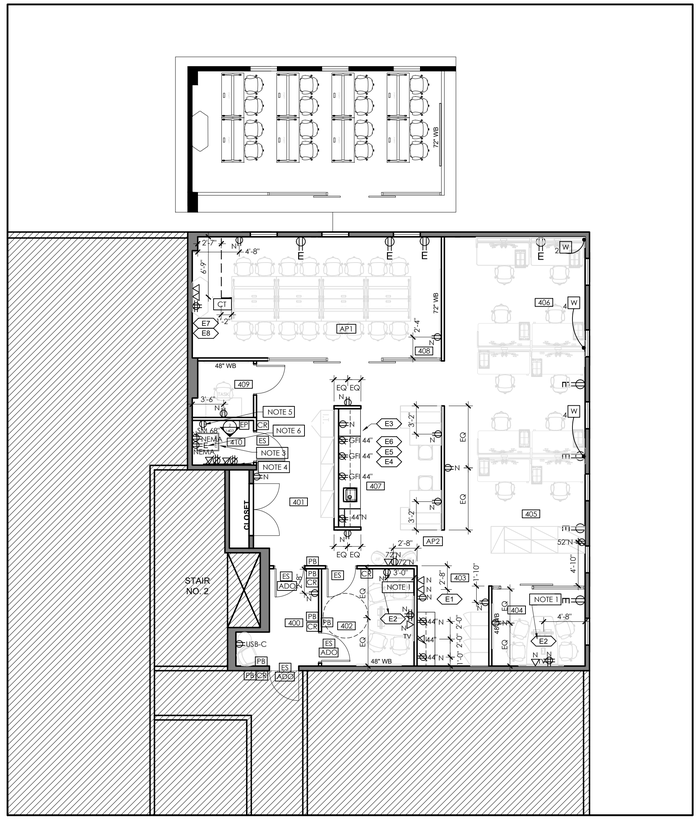
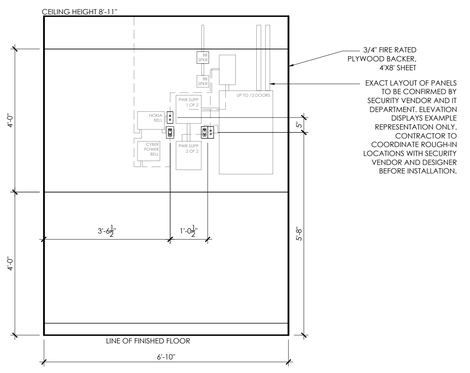
drawing title

REFLECTED CEILING PLAN & DEMOLITION PLAN

date: 14JAN26	project no.: 26-1013
drawn by: SDK	cad file: 26-1013_I-402
checked by: AH	drawing no.: I-402
scale: 1/8"=1'-0"	



1 POWER & COMMUNICATIONS PLAN
I-403 1/8" = 1'-0"



2 LAN ROOM BACKER PANEL
I-403 1/2" = 1'-0"

POWER & COMMUNICATION LEGEND

SYMBOL	DESCRIPTION
	DENOTES EXISTING PARTITION TO REMAIN
	DENOTES NEW PARTITION
E	EXISTING WALL MOUNTED DUPLEX RECEPTACLE
USB	NEW WALL MOUNTED DUPLEX RECEPTACLE WITH USB-C CONNECTION (TO MATCH EXISTING HEIGHT OR 16" AFF)
N	NEW WALL MOUNTED DUPLEX RECEPTACLE (TO MATCH EXISTING HEIGHT OR 16" AFF)
R	EXISTING WALL MOUNTED DUPLEX RECEPTACLE IN RELOCATED POSITION
#GFI	WALL MOUNTED GROUND FAULT INTERRUPTERS (GFI) DUPLEX RECEPTACLE AT 44" ABOVE FINISHED FLOOR
	WALL MOUNTED QUAD RECEPTACLE (TO MATCH EXISTING HEIGHT OR 16" AFF)
#	WALL MOUNTED QUAD RECEPTACLE AT #" ABOVE FINISHED FLOOR
	WALL MOUNTED DATA CABLE OUTLET FOR VDT, PC, ETC., (TO MATCH EXISTING OR 16" AFF)
#	WALL MOUNTED DATA OUTLET AT #" ABOVE FINISHED FLOOR
CT	CONNECTRAC MODEL: EXPRESS (UNDER CARPET TILES RACEWAY) COLOUR: DARK GREY RECEPTACLE DEVICE NOTES: ALLOW FOR 2x POWER PER SEAT. COORDINATE WITH I-406 FURNITURE PLAN AND REFER TO ENGINEERING DRAWINGS FOR FULL SPECIFICATION. EXACT LOCATION TO BE COORDINATED ONSITE PRIOR TO INSTALLATION.
W#	WALL MOUNTED FEED FOR POWER, FROM WALL INTO FURNITURE SYSTEM FOR DIRECT CONNECTION AND CABLING INTO FURNITURE SYSTEM HARNESS TO BE SUPPLIED BY FURNITURE DEALER HARDWIRE CONNECTION BY ELECTRICAL CONTRACTOR # INDICATES NUMBER OF STATIONS TO BE SUPPLIED EACH WORKSTATION TO RECEIVE: (2) DUPLEX RECEPTACLES
ES	ELECTRIC STRIKE - MOUNTED AT 42" A.F.F., O.C. COORDINATE WITH ELECTRICAL ENGINEER'S DRAWINGS. ELECTRIC STRIKE TO BE PROVIDED AND INSTALLED BY GC. SECURITY VENDOR TO PROVIDE CONNECTION.
ADO	AUTOMATIC DOOR OPERATOR
PB	PUSH BUTTON MOUNTED AT 42" A.F.F., O.C. COORDINATE WITH ELECTRICAL ENGINEER'S DRAWINGS
AP1	WIRELESS ACCESS POINT 1 REFER TO ELECTRICAL ENGINEER DRAWINGS.
AP2	WIRELESS ACCESS POINT 2 REFER TO ELECTRICAL ENGINEER DRAWINGS.
EA	EMERGENCY CALL SYSTEM TO INCLUDE SIGNAGE, EMERGENCY CALL BUTTON, VISUAL AND AUDIBLE SIGNALS. REFER TO ELECTRICAL ENGINEER DRAWINGS AND I-409 FOR ELEVATION VIEW.
E	DENOTES EXISTING ELECTRICAL
N	DENOTES NEW ELECTRICAL
AFF	ABOVE FINISHED FLOOR
EP	ELECTRICAL PANEL
	AREA NOT IN CONTRACT (NIC)

EQUIPMENT LEGEND

SYMBOL	DESCRIPTION
E1	COPIER (SUPPLY AND INSTALL BY MPAC) MANUFACTURER: RICOH MULTIFUNCTION COLOUR MODEL: MP C4503 SIZE: 23.1" W x 27" D x 37.9" H
E2	MEDIA TABLE (SUPPLY AND INSTALL BY MPAC) NOTES: QUANTITIES AND SIZES TO BE CONFIRMED BY MPAC. MPAC TO PROVIDE ALL A/V REQUIREMENTS AS NECESSARY. AT EACH TELEVISION LOCATION, GC TO ENSURE MINIMUM 1x QUAD RECEPTACLE, 1x DATA DROP FOR TELEVISION CONNECTION(S).
E3	REFRIGERATOR (SUPPLY AND INSTALL BY MPAC) MANUFACTURER: SAMSUNG MODEL: 30" 22.1 CU. FT. FRENCH-DOOR REFRIGERATOR RF22A4221SR/AA (STAINLESS STEEL) SIZE: 29.9" W x 34.9" D x 66.75" H NOTES: GC TO PROVIDE PLUMBING SERVICE AND WATER LINE FOR REFRIGERATOR. MPAC VENDOR TO FACILITATE WATER LINE HOOKUP ONSITE AT TIME OF INSTALLATION. COORDINATE WITH MECHANICAL DRAWINGS.
E4	MICROWAVE (SUPPLY AND INSTALL BY MPAC) MANUFACTURER: WHIRLPOOL MODEL: 1.6 CUBIC FT COUNTERTOP MICROWAVE, YWMC30516HW SIZE: 21.75" W x 17.25" D x 13" H
E5	COFFEE MAKER (SUPPLY AND INSTALL BY MPAC) MANUFACTURER: MULDOON'S MODEL: CX3 TOUCH SIZE: 20" W x 18" D x 18" H NOTES: MPAC VENDOR TO COORDINATE SUPPLY AND INSTALL OF COFFEE MAKER.
E6	KETTLE (SUPPLY AND INSTALL BY MPAC)
E7	MOBILE TV CART (SUPPLY AND INSTALL BY MPAC)
E8	MEDIA SCREEN (SUPPLY AND INSTALL BY MPAC) REQUIRED (1) DUPLEX AND (1) DATA AT 72" A.F.F. NOTES: DISPLAY COMPLETE WITH "APPLE TV" CONNECTION. SIZE TO BE CONFIRMED BY MPAC. MPAC TO PROVIDE ALL A/V REQUIREMENTS AS NECESSARY.

SPECIFIC PROJECT NOTES

ITEM	DESCRIPTION
SPN-01	CONTRACTOR TO PROVIDE EXPEDITED COMPLETION OF LAN ROOM 410. ROOM TO BE COMPLETELY DUST-FREE INCLUDING: PAINTED PARTITIONS, INSTALLED FLOORING, INSTALLED AND SECURED DOOR. INSTALLED 3/4" CANPLY EXTERIOR GRADE FIRE-RATED PLYWOOD BACKBOARD, ALL REQUIRED DATA AND POWER (REFER TO ELECTRICAL ENGINEER DRAWINGS), ACTIVE AIR CONDITIONING/HVAC. LAN ROOM 410 TO BE COMPLETED WITH THE REQUIREMENTS DESCRIBED BY **XXX.**

POWER & COMMUNICATION NOTES

1. THIS DRAWINGS & NOTES TO BE READ IN CONJUNCTION WITH GENERAL NOTES, REFER TO DRAWING #I-000.
2. THE ENTIRE DRAWING PACKAGE TO BE REFERENCED AND REVIEWED AS A WHOLE.
3. THIS DRAWING TO BE READ IN CONJUNCTION WITH MECHANICAL AND ELECTRICAL ENGINEER'S DRAWINGS AND SPECIFICATIONS.
4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL CONSTRUCTION SPECIFICATIONS AND DOCUMENTS.
5. REFER TO I-402 FOR LOCATION OF LIGHT FIXTURES. COORDINATE WITH ENGINEER'S DRAWINGS FOR SWITCHING.
6. REFER TO ELECTRICAL AND MECHANICAL CONSULTANT'S DRAWINGS FOR SPECIAL CONDITIONS, CIRCUITRY, THERMOSTATS AND FIRE PROTECTION EQUIPMENT.
7. NOTE TO CONSULTING ENGINEERS: LOCATIONS FOR THERMOSTATS, DIFFUSERS, OUTLETS, HEATERS, ACCESS PANELS, ENUNCIATOR PANELS AND FIRE BELLS MUST BE VERIFIED WITH THE DESIGNER.
8. ANY DISCREPANCIES OR DEVIATIONS MUST BE REPORTED TO THE DESIGNER IN WRITING PRIOR TO INSTALLATION.
9. LOCATIONS OF POWER AND COMMUNICATION OUTLETS FOR GENERAL PURPOSES ARE INDICATED ON THIS DRAWING. REFER TO ELECTRICAL ENGINEERING DRAWINGS FOR ALL CIRCUITRY AND SPECIAL OUTLET CONDITIONS, ETC.
10. FINAL LOCATION FOR ALL ELECTRICAL OUTLETS TO BE CONFIRMED ON SITE BY DESIGNER PRIOR TO INSTALLATION.
11. WHERE BASE-POWER-IN IS LOCATED ON THIS DRAWING, ALL TELEPHONE AND COMMUNICATIONS WILL BE INSTALLED THROUGH FURNITURE SYSTEM AND THEREFORE REQUIRES EXTRA LENGTH OF CABLE.
12. BASE-POWER-IN SUPPLIED BY FURNITURE SUPPLIER, HARD WIRE CONNECTION AND ANY SPECIAL COVER PLATES BY ELECTRICAL CONTRACTOR.
13. ANY WIRING (SWITCH, THERMOSTAT, TELEPHONE, ELECTRICAL OUTLET, ETC.) IN EXISTING WALLS THAT ARE DESIGNATED TO BE DEMOLISHED, ARE TO BE REMOVED OR TERMINATED IN ACCORDANCE WITH THE LOCAL BUILDING ELECTRICAL CODES. REFER TO DEMOLITION PLAN I-100.
14. OUTLETS SHALL BE GANGED TOGETHER WHEREVER POSSIBLE. PROVIDE MULTI-GANG FACE PLATES. IF NOT POSSIBLE, SPACING BETWEEN COVER PLATES SHALL BE 1".
15. ALL OUTLETS ABOVE MILLWORK TO BE MOUNTED TO MATCH EXISTING.
16. THE CONTRACTOR SHALL SUPPLY 8-WIRE SERVICE TO ALL BASE-POWER-IN LOCATIONS INDICATED ON THIS DRAWING.
17. REPLACE ALL EXISTING COVER PLATES WITH JOB STANDARD COVER PLATE.

    COVER PLATE SPEC:
    MANUFACTURER: DECORA
    COLOUR/FINISH: WHITE
18. REPLACE ALL EXISTING WALL RECEPTACLES, SWITCHES, ETC., TO MATCH NEW SPECIFICATION IN TYPE AND FINISH.
19. EXISTING WALL OUTLETS TO REMAIN WHEREVER POSSIBLE, UNLESS NOTED OTHERWISE.
20. ALL OUTLETS, SWITCH PLATES AND COVER PLATES TO BE INSTALLED STRAIGHT AND LEVEL AND TO MATCH IN HEIGHT AND APPEARANCE TO THOSE IN THE EXISTING SPACE.
21. ALL NEW OUTLETS TO BE MOUNTED AT 12" AFF, UNLESS NOTED OTHERWISE.
22. ALL DIMENSIONS ARE TO THE CENTER LINE OF AN OUTLET OR GROUP OF OUTLETS.
23. ALL DIMENSIONS ARE TAKEN FROM THE FACE OF FINISHED SURFACES UNLESS NOTED OTHERWISE.
24. DO NOT INSTALL WALL MOUNTED OUTLETS BACK TO BACK, STAGGER AS REQUIRED TO PREVENT SOUND TRANSFER.
25. ELECTRICAL ENGINEER TO CONFIRM WITH CLIENT, POWER AND DATA REQUIREMENTS OF ALL SPECIAL EQUIPMENT AND LOCATE ALL CONNECTING LINES ON ELECTRICAL DRAWINGS.
26. CONTRACTOR SHALL ARRANGE AND COORDINATE ALL TEMPORARY POWER SHUT DOWNS WITH BUILDING OWNER.
27. CONTRACTOR TO REFER TO SECURITY DRAWING FOR ALL SECURITY REQUIREMENTS (CAMERA LOCATIONS, ETC.)
28. CONTRACTOR TO INCLUDE DATA CABLING IN SCOPE. CONTRACTOR TO COORDINATE WITH CLIENT AND RELATED GROUPS FOR:

    A. SOUND SYSTEM
    B. SECURITY SYSTEM

36. BASE POWER-IN TO BE SUPPLIED BY: FURNITURE DEALER
37. ELECTRICAL CONTRACTOR TO VACUUM AND REMOVE ALL DIRT AND GARBAGE FROM THE HEADER DUCTS AND SEE THAT ALL HOLD-DOWN SCREWS ARE REPLACED.
38. ELECTRICAL CONTRACTOR TO COMPLETE HARDWIRE CONNECTIONS FOR POWER POLES/BASE-POWER-IN TO SYSTEMS FURNITURE IN TANDEM WITH FURNITURE INSTALLATION. REFER TO NOTE #11.
39. MPAC FURNITURE VENDOR TO UNDERTAKE DISCONNECT OF ANY EXISTING FURNITURE TO BE REUSED FROM EXISTING SITE, AND INSTALL AND CONNECTION OF RELOCATED FURNITURE AT NEW SITE.
40. MPAC SECURITY VENDOR WILL BE RESPONSIBLE FOR TERMINATING ANY CABLING RELATED TO SECURITY. IF THEY ARE UNABLE TO TERMINATE AT THE TIME OF CABLE INSTALLATION, IT WILL BE COILED AND LEFT IN CEILING UNTIL THEY CAN RETURN TO TERMINATE. **NO SECURITY CABLING OR TERMINATION WILL FALL TO THE CONTRACTOR.**

DRAWING NOTES

SYMBOL	DESCRIPTION
NOTE 1	WHERE MEDIA TABLES ARE INSTALLED, INCLUDE MINIMUM 1x QUAD RECEPTACLE AND 1x DATA DROP WHERE NECESSARY.
NOTE 2	GC TO ALLOW FOR 2x WAP CONNECTIONS THROUGHOUT SPACE. INCLUDE FOR ~15'-0" OF ADDITIONAL CABLE, COILED IN CEILING PLENUM, FOR FUTURE FLEXIBILITY AS NECESSARY. COORDINATE WITH ENGINEER'S DRAWINGS.
NOTE 3	SERVER RACK (+/- 24" W x 30" D) TO BE SUPPLIED AND INSTALLED BY MPAC.
NOTE 4	INCLUDE TO SUPPLY AND INSTALL MINIMUM ONE SHEET OF ¾" CANPLY EXTERIOR-GRADE FIRE-RATED PLYWOOD BACKBOARD. REFER TO ELEVATION 2/I-403 FOR BACKBOARD SIZE AND POWER/DATA LOCATIONS.
NOTE 5	DENOTES NEW DEDICATED OUTLET FOR SOUND MASKING. MPAC TO CONFIRM HEIGHT AND LOCATION IN ROOM RELATIVE TO ELECTRICAL PANEL AND NEW EQUIPMENT. COORDINATE WITH ENGINEER'S DRAWINGS.
NOTE 6	GC TO ENSURE EXITING OUTLET COMPLY WITH NEMA REQUIREMENT.

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- DO NOT SCALE DRAWINGS.

no.	date	by	description

REVISIONS

03	23JAN26	SDK	ISSUED FOR TENDER
02	14JAN26	SDK	ISSUED FOR 90% REVIEW
01	17DEC25	SDK	ISSUED FOR 50% REVIEW

no.	date	by	description

ISSUED

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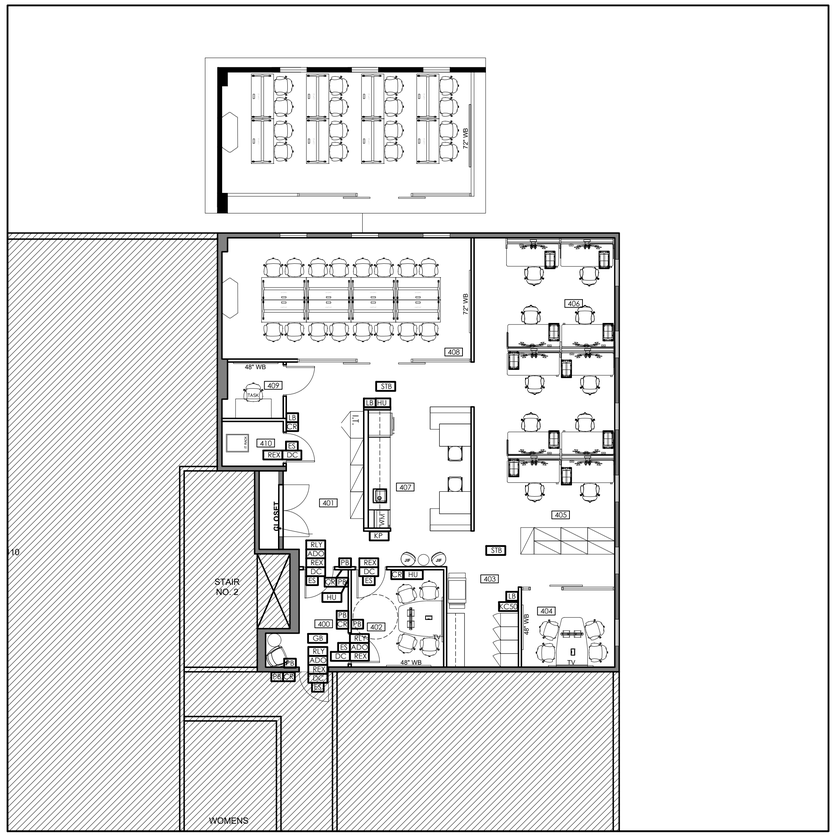
POWER & COMMUNICATIONS PLAN

date	17DEC25
project no.	26-1013
drawn by	SDK
cad file:	26-1013_I-103
checked by	AH
drawing no.	I-403
scale	1/8"=1'-0"



1 SECURITY PLAN
I-403.1 1/8" = 1'-0"

SECURITY LEGEND

(SECURITY VENDOR AND GC TO READ AND ENSURE RESPONSIBILITIES OUTLINED ON THIS DRAWING ARE CLEARLY UNDERSTOOD AND COORDINATED.)

SYMBOL	DESCRIPTION
	DENOTES EXISTING PARTITION TO REMAIN
	DENOTES NEW PARTITION
STB	NEW CEILING MOUNTED BLUE STROBE. LOCATION FOR COORDINATION ONLY. SECURITY CONSULTANT TO INSTALL
HU	NEW HOLD UP BUTTON. LOCATION FOR COORDINATION ONLY. SECURITY CONSULTANT TO INSTALL MOUNTED AT 44" A.F.F. + A MINIMUM OF 12" FROM OTHER SECURITY COMPONENTS (I.E. CARD READERS).
DC	NEW RECESSED DOOR CONTACT. LOCATION FOR COORDINATION ONLY. SECURITY CONSULTANT TO RECESS IN DOOR + FRAME (⅝" DIA. HOLE BY SECURITY CONSULTANT). USE EXISTING HOLE IN FRAME IF PRESENT. IF NEW HOLE IS DRILLED, IT SHALL BE 3" FROM THE TOP OF THE FRAME ON THE STRIKE-SIDE.
REX	NEW REQUEST TO EXIT SENSOR. LOCATION FOR COORDINATION ONLY. SECURITY CONSULTANT TO MOUNT ON WALL @ STRIKE-SIDE ABOVE DOOR FRAME. OR, WHEN ADO IS SPECIFIED, MOUNT ON CEILING, CENTERED ON DOOR, 12" FROM WALL.
GB	NEW CEILING MOUNTED GLASS BREAK/MOTION SENSOR. GLASS BREAK AND MOTION SENSOR FEATURES SHALL BE WIRED IN PARALLEL TO TRIGGER ALARM ONLY IF BOTH GLASS BREAK AND MOTION ARE DETECTED. LOCATION FOR COORDINATION ONLY. SECURITY CONSULTANT TO INSTALL (NOT PART OF GC'S SCOPE OF WORK)
RLY	NEW ADO RELAY. LOCATION FOR COORDINATION ONLY. SECURITY CONSULTANT TO INSTALL.
KP	NEW KEYPAD LOCATION BY SECURITY VENDOR MOUNTED AT 42" A.F.F.
CR	CARD READER - MOUNTED AT 42" A.F.F., O.C. LOCATION FOR COORDINATION ONLY. SECURITY CONSULTANT TO INSTALL 6" FROM DOOR FRAME.
ES	ELECTRIC STRIKE BY GC - MOUNTED AT 42" A.F.F., O.C. COORDINATE WITH ELECTRICAL ENGINEER'S DRAWINGS.
ADO	AUTOMATIC DOOR OPERATOR
PB	PUSH BUTTON MOUNTED AT 42" A.F.F., O.C. COORDINATE WITH ELECTRICAL ENGINEER'S DRAWINGS
KC-50	GC TO SUPPLY & INSTALL WALL MOUNTED KEY CABINET: KEYED LOCK WITH MINIMUM 50 KEY CAPACITY, LIGHT GREY (OR SIMILAR) COLOUR. SUGGESTED SPECIFICATION: BARSKA CB13234. APPROXIMATE DIMENSIONS (9-1/2" W x 11-3/4" H x 3" D). CABINET MOUNTED 60" A.F.F., O.C. REFER TO PARTITION PLAN FOR DETAILS.
LB	GC TO SUPPLY & INSTALL WALL MOUNTED LOCKBOX WITH 4-DIGIT RESETTABLE COMBINATION LOCK. MINIMUM 5 KEY CAPACITY. MOUNTED AT 60" A.F.F., O.C. REFER TO PARTITION PLAN FOR DETAILS.
	AREA NOT IN CONTRACT (NIC)

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REVISIONS

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03	23JAN26	SDK	ISSUED FOR TENDER
02	14JAN26	SDK	ISSUED FOR 90% REVIEW
01	17DEC25	SDK	ISSUED FOR 50% REVIEW

ISSUED

ARIDO
SAKSHI DIXIT KAPOOR
Association of Registered Interior Designers of Ontario

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SECURITY PLAN

	date: 14JAN26	project no.: 26-1013
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	checked by: AH	drawing no.: I-403.1
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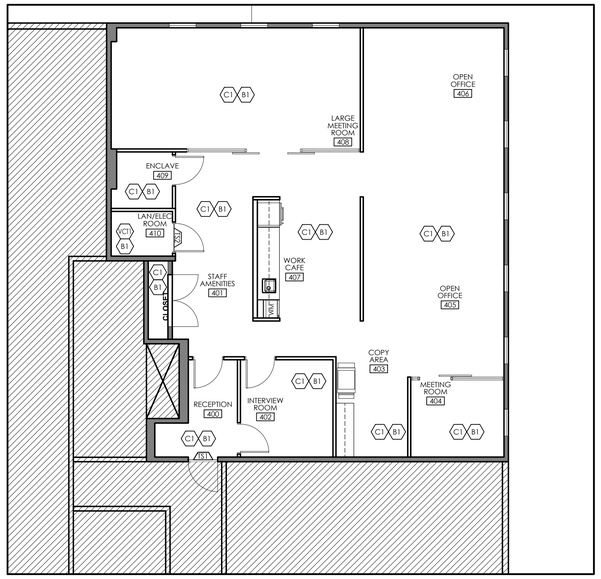

FLOOR FINISH LEGEND

SYMBOL	DESCRIPTION
	DENOTES EXISTING PARTITION TO REMAIN
	DENOTES NEW PARTITION
C1	CARPET TILE - GENERAL; C1 (ASHLAR INSTALL) MANUFACTURER: SHAW SERIES: BASALT II COLOUR: SLATE 98481 SIZE: 9" x 36"
VCT1	VINYL COMPOSITE TILE: VCT1 MANUFACTURER: TARKETT SERIES: VCT II COLOUR: 522 STEEL WORKS SIZE: 12" x 12" NOTES: TO BE CLEANED AND POLISHED PER MANUFACTURER'S SPECIFICATIONS.
	AREA NOT IN CONTRACT (NIC)

BASE TYPE LEGEND

SYMBOL	DESCRIPTION
B1	VINYL WALL BASE: B1 MANUFACTURER: JOHNSONITE SERIES: TRADITIONAL VINYL 1/8" (TYPE TV) COLOUR: 63 BURNT UMBER SIZE: 4.5" SUPPLIER/TEL: VICTORIA KITELEY@TARKETT.COM

TRANSITION STRIP LEGEND

SYMBOL	DESCRIPTION
TS1	TRANSITION STRIP: TS1 (CORRIDOR FINISH -> NEW CARPET) MANUFACTURER: JOHNSONITE SERIES: CTA OR APPROVED ALTERNATE COLOUR: CHARCOAL 30 WG
TS2	TRANSITION STRIP: TS2 (NEW CARPET -> EXISTING VCT) MANUFACTURER: JOHNSONITE SERIES: CTA OR APPROVED ALTERNATE COLOUR: CHARCOAL 30 WG

NOTE: INSTALLER TO VERIFY TRANSITION WITH DESIGNER PRIOR TO ORDERING.

FLOOR FINISH NOTES

1. THIS DRAWINGS & NOTES TO BE READ IN CONJUNCTION WITH GENERAL NOTES, REFER TO DRAWING #I-000.
2. THE ENTIRE DRAWING PACKAGE TO BE REFERENCED AND REVIEWED AS A WHOLE.
3. THIS DRAWING TO BE READ IN CONJUNCTION WITH MECHANICAL AND ELECTRICAL ENGINEER'S DRAWINGS AND SPECIFICATIONS.
4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL CONSTRUCTION SPECIFICATIONS AND DOCUMENTS.
5. THE CONTRACTOR IS TO MAKE GOOD ALL AREAS TO RECEIVE NEW FLOOR FINISHES.
6. ALL MATERIALS SPECIFIED ARE TO BE SUPPLIED BY THE GENERAL CONTRACTOR UNLESS NOTED OTHERWISE.
7. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL FLOOR FINISH SPECIFICATIONS, EXECUTION AND INSTALLATION GUIDES PROVIDED IN MANUFACTURER'S DOCUMENTATION.
8. CONCRETE SLAB TO BE CLEAN, SOUND AND LEVEL PRIOR TO INSTALLATION OF FLOOR FINISHES - CRACKS TO BE FILLED, OLD GLUE TO BE REMOVED. THE CONTRACTOR IS TO LIFT AND DISPOSE OF OLD CARPET AND BASE AND DISPOSE OF RESPONSIBLY. REFER TO DEMOLITION PLAN I-100.
9. SURFACES TO RECEIVE NEW CARPET SHALL BE DRY, CLEAN AND FREE OF RIDGES AND DUST. THE CONTRACTOR IS TO ENSURE THAT THE NEW CARPET IS VACUUMED UPON COMPLETION OF INSTALLATION.
10. INSTALL CARPET AFTER ALL FINISHING TRADES HAVE COMPLETED THEIR WORK, EXCEPT WHERE CARPET EXTENDS UNDER PARTITIONS.
11. WHERE CARPET IS JOINED OR TERMINATED AT DOORWAYS, LOCATE THE SEAM OR TERMINATION UNDER DOORS IN ITS CLOSED POSITION. PROVIDE SEAMING PLAN INDICATING SEAM LOCATIONS (AWAY FROM HIGH TRAFFIC AREAS) PRIOR TO ORDERING OF GOODS FOR DESIGNER'S APPROVAL. DIRECTION OF GRAIN TO BE CONSISTENT. NO CROSS SEAMS. SEAMS TO BE AS CONCEALED AS POSSIBLE
12. PROVIDE ALL SEAM WELDS AS REQUIRED TO COMPLETE THE WORK AS INDICATED ON DRAWINGS AND FINISH SCHEDULE IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
13. THE CONTRACTOR IS TO INSTALL ALL FLOOR FINISHES AS SPECIFIED AND AS PER MANUFACTURER'S INSTRUCTIONS AND SPECIFICATIONS. OR CONTRACTOR WILL BE HELD RESPONSIBLE FOR FAULTY APPLICATION.
14. THE CONTRACTOR IS TO COORDINATE INSTALLATION OF CARPET WITH INSTALLATION OF OTHER FLOOR AND BASE MATERIALS.
15. ALL MATERIALS TO BE AS SPECIFIED OR EQUAL - ANY ALTERNATIVES ARE SUBJECT TO APPROVAL BY DESIGNER/CLIENT.
16. INSTALLER TO ENSURE SMOOTH LEVEL TRANSITION BETWEEN DIFFERENT FLOORING.
17. TILES TO BE LAID IN ONE DIRECTION TO OBTAIN UNIFORM EFFECT. ABRUPT VARIATION WILL NOT BE ACCEPTABLE.
18. CONTRACTOR TO MOCK UP ALL FLOOR FINISH PATTERNS FOR DESIGNER'S/CLIENTS REVIEW/APPROVAL PRIOR TO PERMANENT INSTALLATION.
19. INSTALL EDGE STRIPS AT UNPROTECTED OR EXPOSED EDGES WHERE FLOORING TERMINATES.
20. FLOOR FINISHES SHALL EXTEND UNDER ALL RADIATORS/CONVECTORS AND NEW MILLWORK UNITS.
21. THE CONTRACTOR SHALL FEATHER FLOOR SLABS WHERE TILE AND CARPET MEET TO MAKE A SMOOTH LEVEL TRANSITION.
22. PROTECT CARPET DURING CONSTRUCTION WITH 6 MIL POLYETHYLENE SHEETS, TAPED AT ALL SEAMS.
23. CARPET CONTRACTOR TO NOTIFY DESIGNER IMMEDIATELY UPON FINDING ANY FLAWS OR DEFECTS IN CARPET OR ANY OTHER FLOOR FINISHES.
24. ALL MATERIALS TO HAVE FLAME SPREAD RATING IN ACCORDANCE WITH THE BUILDING CODE.
25. THE CONTRACTOR IS TO ENSURE SAME DYE LOT WHEN ORDERING SPECIFIED FINISHES TO AVOID COLOR VARIANCE.
26. CARPET CONTRACTOR IS TO PROVIDE BINDER BAR WHERE CARPET BUTTS VINYL TILE OR OTHER FLOORING. FINISH TO MATCH EXISTING.
27. CARPET CONTRACTOR IS TO FOLLOW RECOMMENDED MANUFACTURER'S DIRECTIONS AND MATERIALS WHERE CARPET TILES WITH RELEASE GLUE ARE BEING USED.
28. COORDINATE WITH THE CARPET MANUFACTURER AND THE OWNER FOR FINAL QUANTITY REQUIREMENTS AND DELIVERY OF FLOOR FINISHES TO COMPLY WITH THE CONSTRUCTION SCHEDULE.
29. CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGES TO SURFACES, FINISHES AND MATERIALS DUE TO THE WORK UNDER THIS CONTRACT AND WILL BEAR ALL COSTS INCURRED TO MAKE GOOD, REPAIR OR REPLACE SAME TO DESIGNER'S SATISFACTION.
30. SUBMIT SAMPLES OF EACH TYPE OF FLOOR FINISH FOR DESIGNER'S REVIEW.
31. REMOVE EXCESS ADHESIVE FROM VINYL FLOOR, BASE AND WALL SURFACE WITHOUT DAMAGE. CLEAN, SEAL, WAX FLOOR AND BASE SURFACES TO FLOORING MANUFACTURER'S INSTRUCTION.
32. INTERIOR FINISHES TO COMPLY WITH MAXIMUM THICKNESS, FLAME SPREAD RATINGS AND SMOKE DEVELOPED CLASSIFICATIONS AS IDENTIFIED IN SUBSECTIONS 3.1.5., 3.1.12. AND 3.1.13 OF DIVISION B OF 2012 OBC, INCLUDING BEING BASED ON TRIPLICATE TESTING TO CAN/ULC S102 OR CAN/ULC S102.2 AS APPLICABLE. SUBMIT DOCUMENTATION TO BUILDING INSPECTOR UPON REQUEST.

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02	14JAN26	SDK	ISSUED FOR 90% REVIEW
01	17DEC25	SDK	ISSUED FOR 50% REVIEW

ISSUED

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FLOOR FINISH PLAN

	date: 14JAN26	project no.: 26-1013
	drawn by: SDK	cad file: 26-1013_I-404
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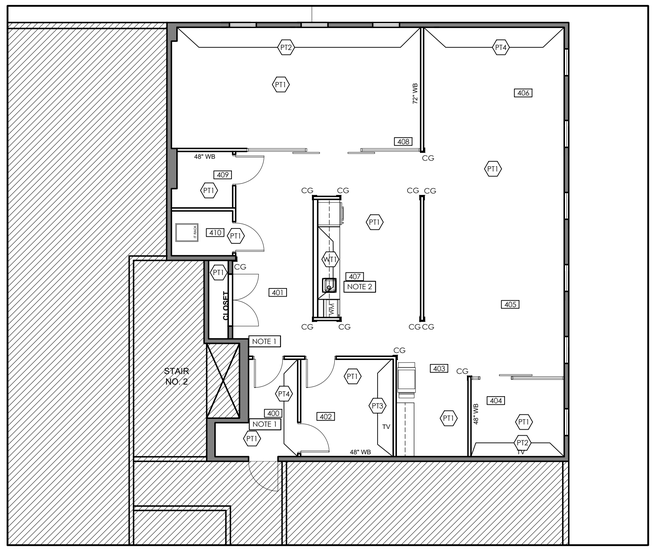

WALL FINISH LEGEND

SYMBOL	DESCRIPTION
	DENOTES EXISTING PARTITION TO REMAIN
	DENOTES NEW PARTITION
PT1	FIELD PAINT: PT1 (WHITE) MANUFACTURER: BENJAMIN MOORE COLOUR: OC-68 DISTANT GRAY FINISH: EGGSHELL
PT2	ACCENT PAINT: PT2 (BERRY) MANUFACTURER: BENJAMIN MOORE COLOUR: 2078-10 ROSEATE FINISH: EGGSHELL NOTE: MINIMUM 3 TOP COATS
PT3	ACCENT PAINT: PT3 (BLUE) MANUFACTURER: BENJAMIN MOORE COLOUR: CC-844 WINTER'S EVE FINISH: EGGSHELL NOTE: MINIMUM 3 TOP COATS
PT4	ACCENT PAINT: PT4 (DARK BLUE) MANUFACTURER: BENJAMIN MOORE COLOUR: 2129-30 BLUE NOTE FINISH: EGGSHELL NOTE: MINIMUM 3 TOP COATS
PT5	CEILING PAINT (GWB CEILING/BULKHEADS UNLESS NOTED OTHERWISE): PT5 (WHITE) MANUFACTURER: BENJAMIN MOORE COLOUR: OC-68 DISTANT GRAY FINISH: FLAT
PT6	DOORS AND FRAME PAINT: PT6 (GRAY) MANUFACTURER: BENJAMIN MOORE COLOUR: 2134-40 WHALE GRAY FINISH: SEMI-GLOSS
WT1	WALL TILE: WT1 - WORK CAFE 407 MANUFACTURER: OLYMPIATILE SERIES: COLOUR & DIMENSION COLOUR: ARCTIC WHITE SIZE: 4" x 8" FINISH: BRIGHT/GLOSSY GROUT: 1/8" EPOXY GROUT, COLOUR TO MATCH ARDEX - 35 BRILLIANT WHITE TRIM: SCHLUTER JOLLY, BRIGHT WHITE INSTALL METHOD: VERTICAL STACKED SUPPLIER/TEL: ROBIN ZANDI, r.zandi@olympiatile.com NOTE: REFER TO I-408 MILLWORK DRAWINGS FOR EXTENT OF TILE.
WT1	PLAM 01 - CHIC GRAY (MS09-05) MANUFACTURER: 3M SERIES: DI-NOC DIGITAL PRINTING INSTALL ON SUITE SIDE. COORDINATE WITH I-407 FOR INSTALLATION
FL2 SP-04	FILM: FL2 - ALL GLAZING MANUFACTURER: 3M SERIES: FASARA, CLOUD - SH2FGC INSTALL ON SUITE SIDE. COORDINATE WITH I-407 FOR INSTALLATION ON GLAZED DOORS AND PARTITIONS
CG	DENOTES 1" X 1" X 48" H, 90 DEGREE STAINLESS STEEL CORNER GUARD BY BOBRICK OR EQUAL. CORNER GUARDS TO BE INSTALLED ABOVE WALL BASE.
RB1	ROLLER BLINDS 1 (NEW MANUAL PERIMETER BLINDS) MANUFACTURER: ARGON STYLE NAME/NO: ALTEX ELEMENTS COLLECTION COLOUR/FINISH: MATTE WHITE/PEARL GREY MOUNT: INSIDE MOUNT OPERATION: MANUAL, CHAIN
PT1 (2)	BULKHEADS TO BE PAINTED AS PER WALL FINISH PLAN
	AREA NOT IN CONTRACT (NIC)

DRAWING NOTES

SYMBOL	DESCRIPTION
NOTE 1	EXISTING CORNER EDGES TO BE PAINTED TO MATCH EXISTING WALL COLOR.
NOTE 2	REFER TO MILLWORK DRAWING I-408 TO VERIFY EXTENT OF WT-1.

WALL FINISH NOTES

1. CEILING HEIGHT: 8'-11" UNLESS OTHERWISE NOTED
   BASE HEIGHT: 4"
2. THIS DRAWINGS & NOTES TO BE READ IN CONJUNCTION WITH GENERAL NOTES, REFER TO DRAWING #I-000.
3. THE ENTIRE DRAWING PACKAGE TO BE REFERENCED AND REVIEWED AS A WHOLE.
4. THIS DRAWING TO BE READ IN CONJUNCTION WITH MECHANICAL AND ELECTRICAL ENGINEER'S DRAWINGS AND SPECIFICATIONS.
5. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL CONSTRUCTION SPECIFICATIONS AND DOCUMENTS.
6. THE CONTRACTOR IS TO PROVIDE ALL MATERIALS, LABOUR, EQUIPMENT AND SERVICES AS NECESSARY FOR A SOLID INSTALLATION TO COMPLETE WORK AS INDICATED ON PLANS.
7. STORE ALL MATERIALS ON SITE IN A SPACE DESIGNATED BY THE LANDLORD. SUCH STORAGE SPACE TO BE KEPT CLEAN. REMOVE ANY OIL RAGS, WASTE ETC. FROM THE BUILDING EVERY NIGHT TO TAKE EVERY PRECAUTION TO AVOID THE DANGER OF FIRE. IN NO CASE SHALL AMOUNT OF MATERIALS EXCEED THAT PERMITTED BY LOCAL LAW.
8. ALL MATERIALS ARE TO BE AS SPECIFIED OR EQUAL, ANY ALTERNATIVES TO HAVE A FLAME SPREAD RATING AS REQUIRED BY LOCAL BUILDING CODE AND ARE SUBJECT TO APPROVAL BY DESIGNER/CLIENT.
9. THE CONTRACTOR IS TO CONFIRM ALL COLOURS, FINISHES AND MATERIALS SPECIFIED.
10. SUBMIT DRAW DOWN SAMPLES OF EACH PAINT SPECIFIED FOR DESIGNER'S APPROVAL PRIOR TO APPLICATION.
11. CONTRACTOR TO REMOVE ALL EXISTING APPLIED SIGNS, COVER PLATES, ETC., BEFORE PREPARING SURFACE FOR APPLICATION OF NEW FINISHES. REINSTALL SAME AS REQUIRED.
12. ALL SURFACES TO BE SANDED, FILLED AND PREPARED AS REQUIRED TO ACCEPT NEW FINISH.
13. IF PATCHING OF GWB OCCURS, ENTIRE WALL TO RECEIVE NEW SPECIFIED FINISH.
14. FINISHED WORK TO BE UNIFORM, OF APPROVED COLOUR, SMOOTH AND FREE FROM RUNS, SAGS, CLOGGING AND EXCESS FLOODING. MAKE EDGE OF PAINT ADJOINING OTHER COLORS OR MATERIALS SHARP AND CLEAN WITH NO OVERLAPPING. WHERE GLASS ENAMEL IS USED, LIGHTLY SAND UNDERCOAT TO OBTAIN A SMOOTH FINISH.
15. AT COMPLETION CONTRACTOR TO PROVIDE TOUCH UP, RESTORE SURFACES WHERE DAMAGED AND LEAVE FINISHED SURFACES IN GOOD CONDITION.
16. WHEN ONE WALL FINISH IS INDICATED WITHIN ENCLOSED AREA, THIS FINISH MUST BE APPLIED TO ALL WALLS, INCLUDING VERTICAL BULKHEADS, PERIMETER WALLS AND COLUMNS, UNLESS NOTED OTHERWISE.
17. ALL WALLS TO BE PT1, EGGSHELL FINISH, UNLESS NOTED OTHERWISE.
18. THE CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGES TO SURFACES, FINISHES AND MATERIALS DUE TO THE WORK UNDER THIS CONTRACT, AND WILL BEAR ALL COSTS INCURRED TO MAKE GOOD, REPAIR OR REPLACE SAME TO DESIGNER'S SATISFACTION.
19. THE CONTRACTOR IS TO INCLUDE PAINTING OF METAL DOORS AND FRAMES. REFER TO DOOR SCHEDULE FOR SPECIFICATIONS.
20. PERIMETER CONVECTOR COVERS AND LINEAR DIFFUSER SURROUNDS TO BE PAINTED TO MATCH PT1 FINISH UNLESS OTHERWISE NOTED.
21. ALL FIRE HOSE CABINET DOORS TO BE PAINTED TO MATCH SURROUNDING WALLS. INCLUDE TO SUPPLY AND INSTALL FILM ON ALL FIRE HOSE CABINETS PER MPAC STANDARDS, COORDINATE WITH ELEVATIONS AND DOOR SCHEDULE I-407.
34. INTERIOR FINISHES TO COMPLY WITH MAXIMUM THICKNESS, FLAME SPREAD RATINGS AND SMOKE DEVELOPED CLASSIFICATIONS AS IDENTIFIED IN SUBSECTIONS 3.1.5., 3.1.12. AND 3.1.13 OF DIVISION B OF 2012 OBC, INCLUDING BEING BASED ON TRIPLICATE TESTING TO CAN/ULC S102 OR CAN/ULC S102.2 AS APPLICABLE. SUBMIT DOCUMENTATION TO BUILDING INSPECTOR UPON REQUEST.

PAINT:

1. DELIVER ALL PAINT TO SITE IN THE MANUFACTURER'S LABELED AND SEALED CONTAINERS, LABELS ARE TO GIVE THE MANUFACTURER'S NAME BRAND, BATCH NUMBER, COLOUR OF PAINT WITH PRINTED INSTRUCTIONS FOR REPRODUCING. THIN PAINT ONLY IN ACCORDANCE WITH PRINTED INSTRUCTIONS FROM MANUFACTURER.
2. ALL NEW SURFACES TO BE CLEAN, SMOOTH AND DRY. ALL WALLS TO RECEIVE MINIMUM ONE (1) COAT OF PRIMER AND TWO (2) COATS OF PAINT. MEDIUM AND/OR DARK COLOURED WALLS TO RECEIVE MINIMUM (1) COAT OF PRIMER AND FOUR (4)COATS OF PAINT. CONTRACTOR TO ALLOW FOR PROPER DRYING TIME FOR ALL COATS OF PAINT BEFORE APPLYING NEXT COAT OF PAINT.

   ALL GWB SURFACES: EGGSHELL FINISH
   PAINT TYPE: LATEX
   UNLESS NOTED OTHERWISE.

   ALL WOOD AND METAL SURFACES: SEMI-GLOSS FINISH
   PAINT TYPE: LATEX
3. GENERAL CONTRACTOR TO ENSURE:
   A. ALL CLOSETS, INCLUDING SHELVES TO BE "P1" UNLESS NOTED OTHERWISE.
   B. ALL CONVECTORS TO BE PAINTED (SPRAYED) WITH AN OIL BASED PAINT AS PER WALL FINISH PLAN. CONVECTOR UNIT COVERS TO BE REMOVED PRIOR TO PAINTING.
   C. ALL BASE BUILDING FIRE HOSE CABINETS, ELECTRICAL PANELS ETC., TO BE PAINTED TO MATCH THE WALL FINISH ON WHICH THEY OCCUR.
   D. ALL EXPOSED WALL GRILLES, PLATES, CONDUIT, ETC., TO BE PAINTED TO MATCH THE WALL FINISH ON WHICH IT OCCURS.
   E. ALL REVEALS TO BE PAINTED AS PER WALL FINISH PLAN.
   F. ALL NEW PRESSED STEEL FRAMES AND HOLLOW METAL DOORS TO BE PAINTED AS NOTED IN DOOR SCHEDULE.
   G. ALL DOORS WITH TIMELY PRE-FINISHED FRAMES TO BE PAINTED AS NOTED IN DOOR SCHEDULE.
   H. ALLOW FOR PAINT TOUCH-UPS AFTER MILLWORK AND FURNITURE INSTALLATION.

GREEN INITIATIVES:

30. ALL ADHESIVE AND SEALANTS MUST COMPLY WITH VOC LIMITS (AS PER SCAQMP RULE 1168).
31. ALL PAINTS AND COATINGS USED ON SITE AND WITHIN BUILDING MUST COMPLY WITH VOC LIMITS AS PER SCAQMD RULE 1113 AND GREEN SEAL STANDARDS GS-11 & GS-03.

    SUGGESTED ZERO VOC LINES:

    BENJAMIN MOORE - AURA, ben
    SHERWIN WILLIAMS- PROMAR 200 ZERO VOC, HARMONY, ECOSELECT ZERO VOC
    DULUX - ULTRA ZERO VOC
    BEHR - PREMIUM PLUS LOW VOC
    CIL - PREMIUM
    OLYMPIC - PREMIUM
    SICO - PRO ZERO VOC
    PARA - PREMIUM ZERO
    PITTSBURGH - PURE PERFORMANCE ZERO VOC

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ARIDO SAKSHI DIXIT KAPOOR Member Association of Registered Interior Designers of Ontario

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drawing title

WALL FINISH PLAN

date: 14JAN26		project no.: 26-1013
drawn by: SDK		cad file: 26-1013_I-405
checked by: AH		drawing no.: I-405
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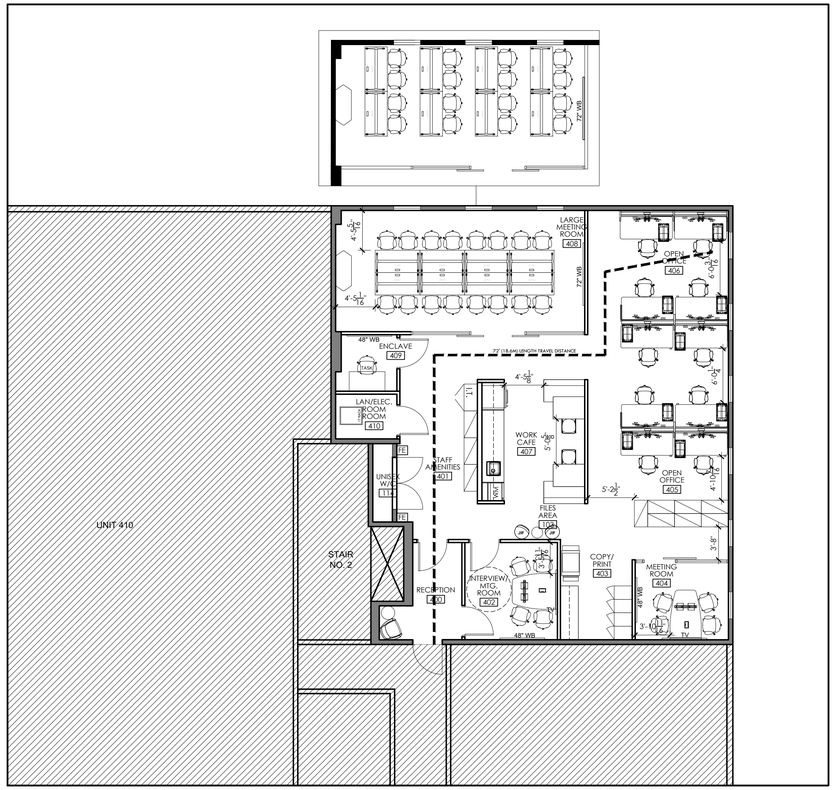

FURNITURE LEGEND

SYMBOL	DESCRIPTION
▬▬	DENOTES EXISTING PARTITION TO REMAIN
═══	DENOTES NEW PARTITION
WB	DENOTES WHITEBOARD, SUPPLIED AND INSTALLED BY CLIENT.
FE	DENOTES FIRE EXTINGUISHER. REFER TO ENGINEER'S DRAWINGS

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ARIDO SAKSHI DIXIT KAPOOR Association of Registered Interior Designers of Ontario

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drawing title

FURNITURE &
LIFE SAFETY PLAN

	date: 17DEC25		project no.: 26-1013
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	checked by: AH		drawing no.: I-406
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DOOR SCHEDULE

DOOR #	TYPE	SIZE	LOCATION	SPECIFICATION	HARDWARE	SECURITY	KEYWAY	FINISH	FILM	FRAME
400A	EX	EX	PRIMARY SUITE ENTRY DOOR	EXISTING SUITE ENTRY DOOR TO REMAIN. EXISTING HARDWARE TO BE REMOVED AND DISPOSED. GC TO INCLUDE TO SUPPLY AND INSTALL NEW HARDWARE AS SPECIFIED	BUTT HINGES: EXISTING TO REMAIN DOOR STOP: GSH 209 26D LEVER LOCKSET: STOREROOM FUNCTION, SARGENT 7 LINE SERIES (OR APPROVED EQUAL - GRADE 1 HARDWARE TO SUIT, RESTRICTED KEYWAY. GC TO RECOMMEND. MPAC TO CONFIRM. POST-TENDER), FINISH TO MATCH EXISTING DOOR, STYLE OF HARDWARE TO BE CONSISTENT WITH OTHERS ADD: ASSA ABLOY BESAM SW100, INCLUDE RELAY AT ALL INSTALL LOCATIONS RELAY: CAMDEN CX-12 PLUS DOOR INTERFACE RELAY WAVE TOP OPEN: CAMDEN SURE WAVE 324 ELECTRIC STRIKE: HES4500C, INCLUDE HES SMART PAC AT ALL INSTALL LOCATIONS. FAIL SECURE TO SUIT DOOR/FRAME STYLE. FINISH TO MATCH OTHER DOOR HARDWARE **GC TO SUPPLY, INSTALL AND PROVIDE WAVE TO OPEN AND POWER TO THE ELECTRIC STRIKE AND AUTOMATIC DOOR OPENER PRIOR TO SECURITY HARDWARE INSTALLATION.** **SECURITY VENDOR TO SUPPLY RELAY.**	SECURITY VENDOR TO PROVIDE INTEGRATION OF SECURITY HARDWARE INCLUDING: - CARD READER WITH KEYPAD - DOOR CONTACTS - REX MOTION SENSOR - ADD RELAY **GC & SECURITY VENDOR TO COORDINATE AS REQUIRED**	SUB-MASTER KEYED ALIKE WITH OTHER SUB-MASTER KEYS. KEY SYSTEM TO BE MEDECO (ASSA V TWIN ALTERNATE ACCEPTABLE)	PT6 (SUITE SIDE ONLY)	N/A	EXISTING, PT6 (SUITE SIDE ONLY)
400B	A	3'-2" X +/- 7'-0" X 1-3/4"	RECEPTION TO OFFICE DOOR	NEW SINGLE METAL DOOR C/W VISION PANEL AND HARDWARE AS SPECIFIED	BUTT HINGES: EXISTING TO REMAIN DOOR STOP: GSH 209 26D LEVER LOCKSET: STOREROOM FUNCTION, SARGENT 7 LINE SERIES (OR APPROVED EQUAL - GRADE 1 HARDWARE TO SUIT, RESTRICTED KEYWAY. GC TO RECOMMEND. MPAC TO CONFIRM. POST-TENDER), FINISH TO MATCH EXISTING DOOR, STYLE OF HARDWARE TO BE CONSISTENT WITH OTHERS ADD: ASSA ABLOY BESAM SW100, INCLUDE RELAY AT ALL INSTALL LOCATIONS RELAY: CAMDEN CX-12 PLUS DOOR INTERFACE RELAY WAVE TOP OPEN: CAMDEN SURE WAVE 324 ELECTRIC STRIKE: HES4500C, INCLUDE HES SMART PAC AT ALL INSTALL LOCATIONS. FAIL SECURE TO SUIT DOOR/FRAME STYLE. FINISH TO MATCH OTHER DOOR HARDWARE **GC TO SUPPLY, INSTALL AND PROVIDE WAVE TO OPEN AND POWER TO THE ELECTRIC STRIKE AND AUTOMATIC DOOR OPENER PRIOR TO SECURITY HARDWARE INSTALLATION.** **SECURITY VENDOR TO SUPPLY RELAY.**	SECURITY VENDOR TO PROVIDE INTEGRATION OF SECURITY HARDWARE INCLUDING: - CARD READER WITH KEYPAD - DOOR CONTACTS - REX MOTION SENSOR - ADD RELAY **GC & SECURITY VENDOR TO COORDINATE AS REQUIRED**	SUB-MASTER KEYED ALIKE WITH OTHER SUB-MASTER KEYS. KEY SYSTEM TO BE MEDECO (ASSA V TWIN ALTERNATE ACCEPTABLE)	PT6	SPN-04 FL2	F1
401	EX	EX	CLOSET	EXISTING CLOSET DOORS TO REMAIN. PATCH AND PAINT AS REQUIRED WITH NEW HARDWARE SETS AS SPECIFIED (2x, ONE PER DOOR)	BUTT HINGES: MCKINNEY MPB 79 BRUSHED S/S OR EQUAL LEVER LOCKSET: PASSAGE FUNCTION, SATIN CHROME, STYLE OF HARDWARE TO BE CONSISTENT WITH OTHERS KICKPLATE: CBH 900 OR EQUAL, BRUSHED CHROME	N/A	N/A	PT6	N/A	EXISTING, PT6
402A	B	3'-2" X +/- 7'-0" X 1-3/4"	RECEPTION TO INTERVIEW ROOM DOOR	NEW SINGLE METAL DOOR AND HARDWARE AS SPECIFIED	BUTT HINGES: MCKINNEY MPB 79 BRUSHED S/S OR EQUAL DOOR STOP: GSH 209 26D LEVER LOCKSET: STOREROOM FUNCTION, SARGENT 7 LINE SERIES (OR APPROVED EQUAL - GRADE 2 HARDWARE TO SUIT, RESTRICTED KEYWAY. GC TO RECOMMEND. MPAC TO CONFIRM POST-TENDER), SATIN CHROME, STYLE OF HARDWARE TO BE CONSISTENT WITH OTHERS ADD: ASSA ABLOY BESAM SW100, INCLUDE RELAY AT ALL INSTALL LOCATIONS RELAY: CAMDEN CX-12 PLUS DOOR INTERFACE RELAY WAVE TO OPEN: CAMDEN SURE WAVE 324 PUSH BUTTON: TO BE HARDWIRED WITH BUTTON-STYLE ELECTRIC STRIKE: HES4500C, INCLUDE HES SMART PAC AT ALL INSTALL LOCATIONS. FAIL SECURE TO SUIT DOOR/FRAME STYLE. FINISH TO MATCH OTHER DOOR HARDWARE, TO BE 12V. KICKPLATE: CBH 900 OR EQUAL, BRUSHED CHROME **GC TO SUPPLY, INSTALL AND PROVIDE WAVE TO OPEN AND POWER TO THE ELECTRIC STRIKE AND AUTOMATIC DOOR OPENER PRIOR TO SECURITY HARDWARE INSTALLATION.** **SECURITY VENDOR TO SUPPLY RELAY.**	SECURITY VENDOR TO PROVIDE INTEGRATION OF SECURITY HARDWARE INCLUDING: - CARD READER WITH KEYPAD - DOOR CONTACTS - REX MOTION SENSOR - ADD RELAY **GC & SECURITY VENDOR TO COORDINATE AS REQUIRED**	SUB-MASTER KEYED ALIKE WITH OTHER SUB-MASTER KEYS. KEY SYSTEM TO BE MEDECO (ASSA V TWIN ALTERNATE ACCEPTABLE)	PT6	N/A	F1
402B	A	3'-2" X +/- 7'-0" X 1-3/4"	INTERVIEW ROOM TO OFFICE DOOR	NEW SINGLE METAL DOOR C/W VISION PANEL AND HARDWARE AS SPECIFIED	BUTT HINGES: MCKINNEY MPB 79 BRUSHED S/S OR EQUAL DOOR STOP: GSH 209 26D DOOR CLOSER: LCN MODEL 1461 LEVER LOCKSET: STOREROOM FUNCTION, SARGENT 7 LINE SERIES (OR APPROVED EQUAL - GRADE 2 HARDWARE TO SUIT, RESTRICTED KEYWAY. GC TO RECOMMEND. MPAC TO CONFIRM POST-TENDER), SATIN CHROME, STYLE OF HARDWARE TO BE CONSISTENT WITH OTHERS ELECTRIC STRIKE: HES4500C, INCLUDE HES SMART PAC AT ALL INSTALL LOCATIONS. FAIL SECURE TO SUIT DOOR/FRAME STYLE. FINISH TO MATCH OTHER DOOR HARDWARE, TO BE 12V. KICKPLATE: CBH 900 OR EQUAL, BRUSHED CHROME **GC TO SUPPLY, INSTALL, AND PROVIDE POWER TO THE ELECTRIC STRIKE PRIOR TO SECURITY HARDWARE INSTALLATION**	SECURITY VENDOR TO PROVIDE INTEGRATION OF SECURITY HARDWARE INCLUDING: - CARD READER WITH KEYPAD - DOOR CONTACTS - REX MOTION SENSOR **GC & SECURITY VENDOR TO COORDINATE AS REQUIRED**	SUB-MASTER KEYED ALIKE WITH OTHER SUB-MASTER KEYS. KEY SYSTEM TO BE MEDECO (ASSA V TWIN ALTERNATE ACCEPTABLE)	PT6	SPN-04 FL2	F1
404	F	3'-8" X +/- 7'-0" X 1-3/4"	MEETING ROOM DOOR	NEW SINGLE 1/2" (13mm) TEMPERED GLASS SLIDING DOOR	PULL: RICHELIEU 1-1/2" (38mm DIAMETER BACK TO BACK LADDER HANDLE. PRODUCT # 7054836381 70 (STAINLESS STEEL FINISH), 48" H (OR APPROVED EQUAL) PROVIDE ACOUSTIC SEALS AND SOFT CLOSE MECHANISM AS REQUIRED AT DOOR	N/A	N/A	GLASS	SPN-04 FL2	F2
408	D	2 @ 3'-0" X +/- 7'-0" X 1-3/4"	LARGE MEETING ROOM DOOR	NEW DOUBLE 1/2" (13mm) TEMPERED GLASS SLIDING DOORS	PULL: RICHELIEU 1-1/2" (38mm DIAMETER BACK TO BACK LADDER HANDLE. PRODUCT # 7054836381 70 (STAINLESS STEEL FINISH), 48" H (OR APPROVED EQUAL) PROVIDE ACOUSTIC SEALS AND SOFT CLOSE MECHANISM(S) AS REQUIRED AT DOOR(S)	N/A	N/A	GLASS	SPN-04 FL2	F3
409	C	3'-2" X +/- 7'-0" X 1-3/4"	ENCLAVE DOOR	NEW SINGLE 1/2" (13mm) TEMPERED GLASS SWING DOOR	PULL: RICHELIEU 1-1/2" (38mm DIAMETER BACK TO BACK LADDER HANDLE. PRODUCT # 7054836381 70 (STAINLESS STEEL FINISH), 48" H (OR APPROVED EQUAL) PROVIDE ACOUSTIC SEALS AND SOFT CLOSE MECHANISM AS REQUIRED AT DOOR. BUTT HINGES: MCKINNEY MPB 79 BRUSHED S/S OR EQUAL DOOR STOP: GSH 209 26D	N/A	N/A	GLASS	SPN-04 FL2	F1
410	E	3'-2" X +/- 7'-0" X 1-3/4"	ELEC/LAN ROOM DOOR	NEW SOLID HOLLOW METAL DOOR COMPLETE WITH GRILLE AND HARDWARE AS SPECIFIED	BUTT HINGES: MCKINNEY MPB 79 BRUSHED S/S OR EQUAL DOOR STOP: GSH 209 26D DOOR CLOSER: DOREX 1900 AL, 689 PAINTED ALUMINUM, OR EQUAL LEVER LOCKSET: STOREROOM FUNCTION, SARGENT 7 LINE SERIES, SATIN CHROME ELECTRIC STRIKE: FAIL SECURE TO SUIT DOOR/FRAME STYLE, FINISH TO MATCH OTHER DOOR HARDWARE, ELECTRIC STRIKE TO BE 12V. KICKPLATE: CBH 900 OR EQUAL, BRUSHED CHROME **GC TO SUPPLY, INSTALL AND PROVIDE POWER TO THE ELECTRIC STRIKE PRIOR TO SECURITY HARDWARE INSTALLATION**	SECURITY VENDOR TO PROVIDE INTEGRATION OF SECURITY HARDWARE INCLUDING: - CARD READER WITH KEYPAD - DOOR CONTACTS - REX MOTION SENSOR **GC & SECURITY VENDOR TO COORDINATE AS REQUIRED**	MASTER KEY	PT6 DOOR GRILLE TO BE PAINTED PT6	N/A	F1

NOTE:
- CONTRACTOR SHALL PROVIDE 4 FULL MORTISE BUTT HINGES OF THE 3 BALL BEARING TYPE ON ALL DOORS UNLESS OTHERWISE NOTED
- ALL DOOR HARDWARE AND ACCESSORIES SHALL BE BRUSHED CHROME/STAINLESS STEEL FINISHED U.N.O
- ALL HINGES TO BE BEARING TYPE U.N.O., ALL HARDWARE TO BE LEVERS, HAVING AN OBVIOUS METHOD OF OPERATION UNDER ALL LIGHTING CONDITIONS, THE RELEASING MECHANISM SHALL OPEN THE DOOR WITH NOT MORE THAN ONE RELEASING OPERATION, AS PER LOCAL CODE REQUIREMENTS
- REFER TO I-405 FOR FINISH LEGEND
- KEYWAY SHALL BE A HIGH SECURITY/RESTRICTED KEYWAY; 3 COPIES OF THE MASTER KEY AND 3 COPIES OF THE SUB-MASTER KEY SHALL BE PROVIDED
- KEYED SIDE OF ALL LOCKS SHALL BE ON THE SECURE SIDE OF THE DOOR (SAME SIDE AS THE CARD READERS).

DRAWING NOTES

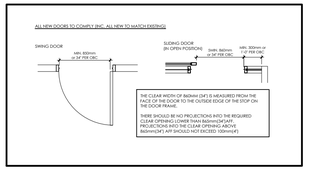
SYMBOL	DESCRIPTION
NOTE 1	CONTRACTOR TO PROVIDE SHOP DRAWING FOR ALL GLASS DOORS / SIDELIGHTS / SCREENS
NOTE 2	QUESTIONS REGARDING SPECIFIC PRODUCTS, LEAD TIMES AND QUANTITIES ARE TO BE DIRECTED TO: SERVICE@TRILLIUM.GROUP.CA

GENERAL NOTES

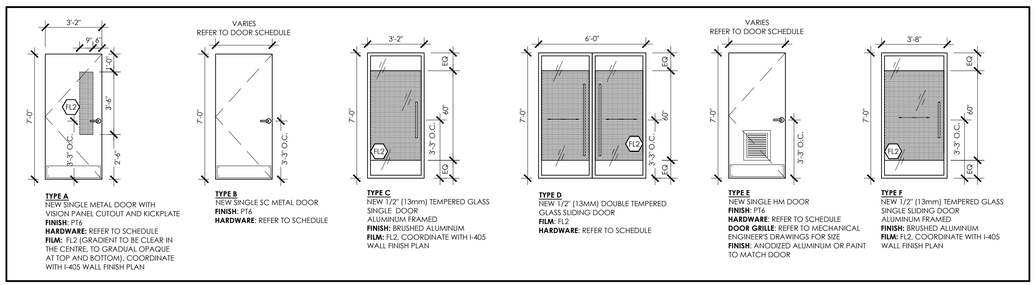
1. THIS DRAWINGS & NOTES TO BE READ IN CONJUNCTION WITH GENERAL NOTES, REFER TO DRAWING #I-000.
2. THE ENTIRE DRAWING PACKAGE TO BE REFERENCED AND REVIEWED AS A WHOLE.
3. THIS DRAWING TO BE READ IN CONJUNCTION WITH MECHANICAL AND ELECTRICAL ENGINEER'S DRAWINGS AND SPECIFICATIONS.
4. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL CONSTRUCTION SPECIFICATIONS AND DOCUMENTS.
5. EXISTING DOORS, GLAZING UNITS, HARDWARE, AND COAT HOOKS, TO BE RELISED WHERE POSSIBLE. ANY EXISTING NOT BEING REUSED SHALL BE DISPOSED OF AS PER CLIENT/ LANDLORD DIRECTION.
6. CONTRACTOR TO SUPPLY AND INSTALL ALL HARDWARE AS PER MANUFACTURER'S SPECIFICATIONS.
7. PROVIDE DOOR SILENCERS FOR ALL WOOD DOORS AND DOOR BUMPERS FOR ALL HOLLOW METAL DOORS.
8. WHERE NEW PAINT FINISH IS REQUIRED ON DOORS, FRAMES AND REVEALS, REFER TO WALL FINISHES PLAN FOR SPECIFICATION.
9. WHERE DOORS AND FRAMES ARE REQUIRED TO BE STAINED, STAIN TO MATCH EXISTING DOORS UNLESS NOTED OTHERWISE.
10. CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR ALL DOOR ASSEMBLIES AND HARDWARE FOR APPROVAL PRIOR TO FABRICATION/ORDERING.

SPECIFIC PROJECT NOTES

ITEM	DESCRIPTION
SPN-04	REFER TO I-000 COVER PAGE FOR DETAILS.



1 / I-407 OBC DOOR REQUIREMENTS
1/4" = 1'-0"



TYPE A
NEW SINGLE METAL DOOR WITH VISION PANEL CUTOUT AND KICKPLATE
FINISH: PT6
HARDWARE: REFER TO SCHEDULE
FILM: FL2 (GRADIENT TO BE CLEAR IN THE CENTRE, TO GRADUAL OPAQUE AT TOP AND BOTTOM), COORDINATE WITH I-405 WALL FINISH PLAN

TYPE B
NEW SINGLE SC METAL DOOR
FINISH: PT6
HARDWARE: REFER TO SCHEDULE

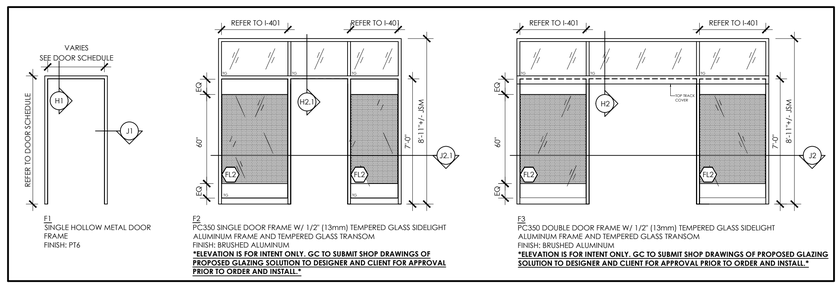
TYPE C
NEW 1/2" (13mm) TEMPERED GLASS SINGLE DOOR
ALUMINUM FRAMED
FINISH: BRUSHED ALUMINUM
FILM: FL2, COORDINATE WITH I-405 WALL FINISH PLAN

TYPE D
NEW 1/2" (13MM) DOUBLE TEMPERED GLASS SLIDING DOOR
FILM: FL2
HARDWARE: REFER TO SCHEDULE

TYPE E
NEW SINGLE HM DOOR
FINISH: PT6
HARDWARE: REFER TO SCHEDULE
DOOR GRILLE: REFER TO MECHANICAL ENGINEER'S DRAWINGS FOR SIZE
FINISH: ANODIZED ALUMINUM OR PAINT TO MATCH DOOR

TYPE F
NEW 1/2" (13mm) TEMPERED GLASS SINGLE SLIDING DOOR
ALUMINUM FRAMED
FINISH: BRUSHED ALUMINUM
FILM: FL2, COORDINATE WITH I-405 WALL FINISH PLAN

2 / I-407 TYPICAL DOORS
1/4" = 1'-0"



F1
SINGLE HOLLOW METAL DOOR FRAME
FINISH: PT6

F2
PC.350 SINGLE DOOR FRAME W/ 1/2" (13mm) TEMPERED GLASS SIDELIGHT
ALUMINUM FRAME AND TEMPERED GLASS TRANSOM
FINISH: BRUSHED ALUMINUM
ELEVATION IS FOR INTENT ONLY. GC TO SUBMIT SHOP DRAWINGS OF PROPOSED GLAZING SOLUTION TO DESIGNER AND CLIENT FOR APPROVAL PRIOR TO ORDER AND INSTALL.

F3
PC.350 DOUBLE DOOR FRAME W/ 1/2" (13mm) TEMPERED GLASS SIDELIGHT
ALUMINUM FRAME AND TEMPERED GLASS TRANSOM
FINISH: BRUSHED ALUMINUM
ELEVATION IS FOR INTENT ONLY. GC TO SUBMIT SHOP DRAWINGS OF PROPOSED GLAZING SOLUTION TO DESIGNER AND CLIENT FOR APPROVAL PRIOR TO ORDER AND INSTALL.

3 / I-407 TYPICAL FRAMES
1/4" = 1'-0"

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- DO NOT SCALE DRAWINGS.

no.	date	by	description

REVISIONS

no.	date	by	description
03	23JAN26	SDK	ISSUED FOR PERMIT/TENDER
02	14JAN26	SDK	ISSUED FOR 90% REVIEW
01	17DEC25	SDK	ISSUED FOR 50% REVIEW

ISSUED

ARIDO
SAKSHI DIXIT KAPOOR
Association of Registered Interior Designers of Ontario

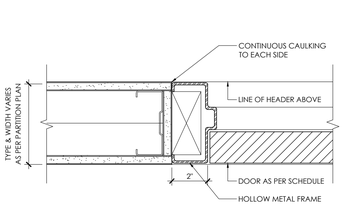
mpac

project title
MPAC KINGSTON
1471 JOHN COUNTER BLVD., STE 412
KINGSTON, ON
K7M 8S8

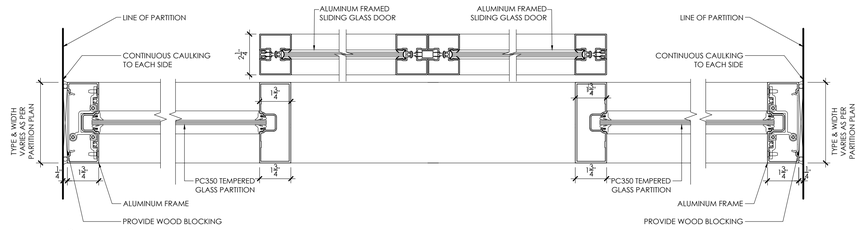
drawing title
DOOR SCHEDULE

date	17DEC25
project no.	26-1013
drawn by	SDK
cad file:	26-1013_I-407
checked by	AH
drawing no.	I-407
scale	AS NOTED

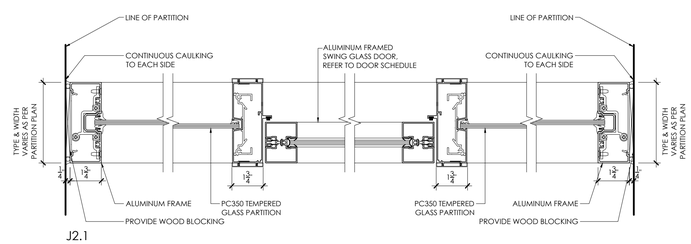
N



H1/J1



J2



J2.1

1 / I-407.1 TYPICAL HEADER & JAMB DETAILS

3" = 1'-0"

H2

H2

2 / I-407.1 TYPICAL HEADER & JAMB DETAILS

3" = 1'-0"

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ISSUED

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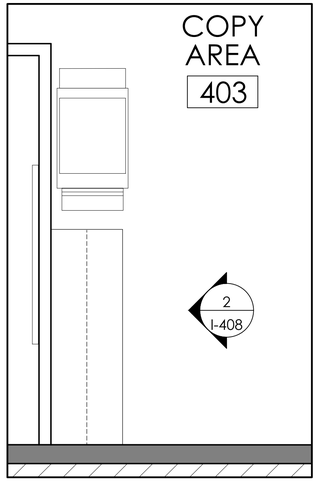
drawing title

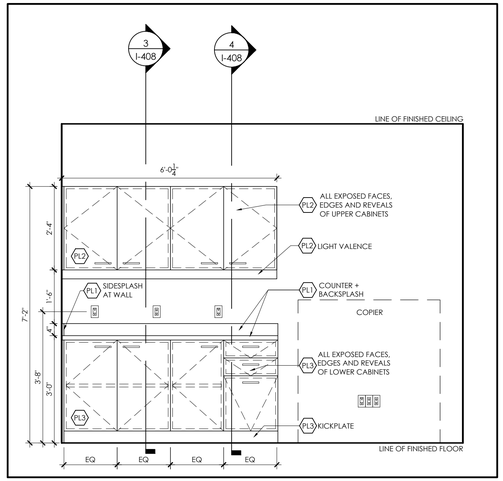
DOOR SCHEDULE

N

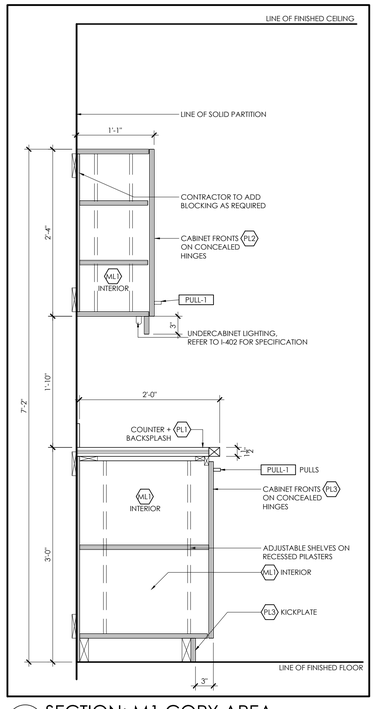
date: 26NOV25	project no.: 26-1013
drawn by: SDK	cad file: 26-1013_I-407
checked by: AH	drawing no.: I-407.1
scale: AS NOTED	



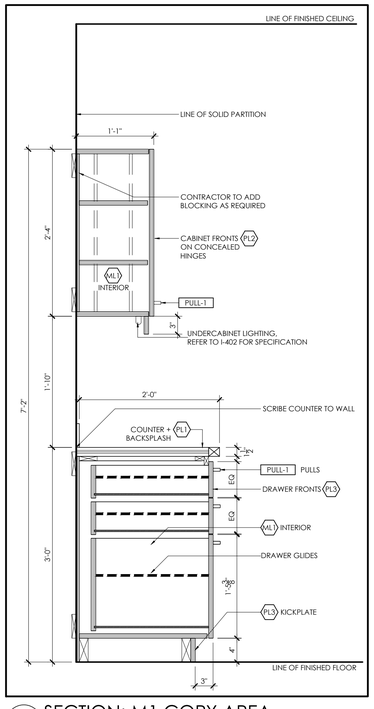
1 / I-408 PLAN: M1 COPY AREA
1/2" = 1'-0"



2 / I-408 ELEVATION: M1 COPY AREA
1/2" = 1'-0"



3 / I-408 SECTION: M1 COPY AREA
1" = 1'-0"



4 / I-408 SECTION: M1 COPY AREA
1" = 1'-0"

MILLWORK NOTES

1. THE CONTRACTOR SHALL CONFIRM ALL COLOURS, FINISHES, HARDWARE AND MATERIALS REQUIRED TO PERFORM THE WORK AS SPECIFIED.
2. PRIOR TO FABRICATION OF MILLWORK THE CONTRACTOR MUST SUBMIT MILLWORK SHOP DRAWINGS FOR APPROVAL BY DESIGNER.
3. LOCATION OF LAMINATE SEAMS ON WORK SURFACES SHALL BE INSPECTED AND APPROVED BY DESIGNER.
4. ALL MILLWORK TO BE CONSTRUCTED OF 3/4" PLYWOOD WITH PLASTIC LAMINATE FINISH ON ALL EXPOSED FACES UNLESS NOTED OTHERWISE.
5. MILLWORK CONTRACTOR SHALL COORDINATE INSTALLATION OF MILLWORK THROUGH THE GENERAL CONTRACTOR TO ENSURE THAT ALL REQUIRED BLOCKING IS PROVIDED IN DESIGNATED WALLS TO ACCOMMODATE LIVE WEIGHT REQUIREMENTS OF ALL MILLWORK COMPONENTS AND EQUIPMENT.
6. AT COMPLETION, MILLWORK CONTRACTOR SHALL TOUCH-UP AND RESTORE SURFACES WHERE DAMAGED AND LEAVE FINISHED SURFACES IN GOOD CONDITION.

PLUMBING NOTES

1. PROVIDE FIXTURE AS SPECIFIED. ANY SUBSTITUTION IS TO BE EQUAL IN QUALITY AND WARRANTY AND MUST BE APPROVED BY BDA DESIGNER PRIOR TO PURCHASE.
2. PROVIDE SHIELDING FOR ALL SINK TRAPS AS PER ADA STANDARDS.

MILLWORK FINISHES LEGEND

SYMBOL	DESCRIPTION
ML	MELAMINE (CABINET INTERIORS) MANUFACTURER: PANOLAM COLOUR: WHITE
PL1	PLASTIC LAMINATE FINISH #1 (COUNTERS, THROUGHOUT) MANUFACTURER: WILSONART COLUR: D354-60 DESIGNER WHITE FINISH: MATTE
PL2	PLASTIC LAMINATE FINISH #2 (UPPERS THROUGHOUT) MANUFACTURER: WILSONART COLOUR: D92-60 DOVE GREY FINISH: MATTE
PL3	PLASTIC LAMINATE FINISH #3 (LOWERS THROUGHOUT) MANUFACTURER: WILSONART COLOUR: 7971K-12 UPTOWN WALNUT FINISH: SOFT GRAIN, PREMIUM LAMINATE NOTE: GRAIN TO RUN VERTICALLY
WT1	WALL TILE: WT1 - WORK CAFE 407 MANUFACTURER: OLYMPIATILE SERIES: COLOUR & DIMENSION COLOUR: ARCTIC WHITE SIZE: 4" x 8" FINISH: BRIGHT/GLOSSY GROUT: ARDEX GROUTS, COLOUR: 35 - BRILLIANT WHITE TRIM: SCHLUTER JOLLY, BRIGHT WHITE INSTALL METHOD: VERTICAL STACKED SUPPLIER/TEL: ROBIN ZANDI, r.zandi@olympiatile.com

MILLWORK HARDWARE LEGEND

SYMBOL	DESCRIPTION
	HINGES MANUFACTURER: HAFELE MODEL: FULL OVERLAY 120 DEGREE HINGE, 329.03.503 MATERIAL: STEEL, NICKEL-PLATE NOTES: BLACK TRIM CAPS, RICHELIEU ALTERNATE ACCEPTABLE
	GLIDES MANUFACTURER: RICHELIEU MODEL: 38325C
	ADJUSTABLE SHELF PILASTERS AND CLIPS MANUFACTURER: HAFELE MODEL: STANDARD RECESSED SUPPORTS FINISH: ALUMINUM, SILVER ANODIZED NOTES: RICHELIEU ALTERNATE ACCEPTABLE
PULL-1	DOOR PULL #1 MANUFACTURER: RICHELIEU MODEL: FUNCTIONAL ALUMINUM PULL - 1076CV FINISH: CHROME

MECHANICAL SPECIFICATIONS LEGEND

SYMBOL	DESCRIPTION
S-1	SINK #1 MANUFACTURER: ELKAY MODEL: PSRADQ191955L FINISH: STAINLESS STEEL
F-1	FAUCET #1 MANUFACTURER: FRANKE MODEL: FFP3350 FINISH: STAINLESS STEEL

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REVISIONS

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02	14JAN26	SDK	ISSUED FOR 90% REVIEW
01	17DEC25	SDK	ISSUED FOR 50% REVIEW

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1471 JOHN COUNTER BLVD, STE 412
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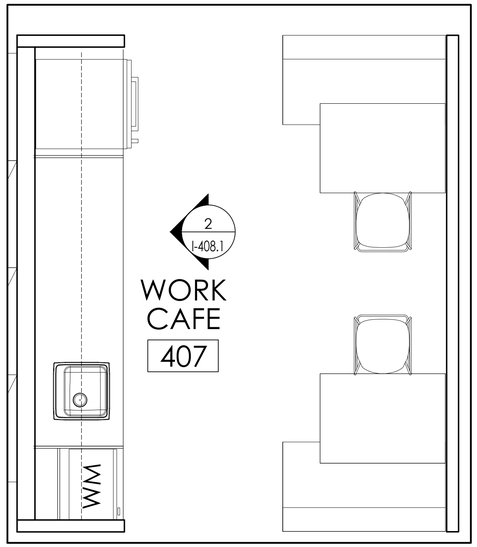
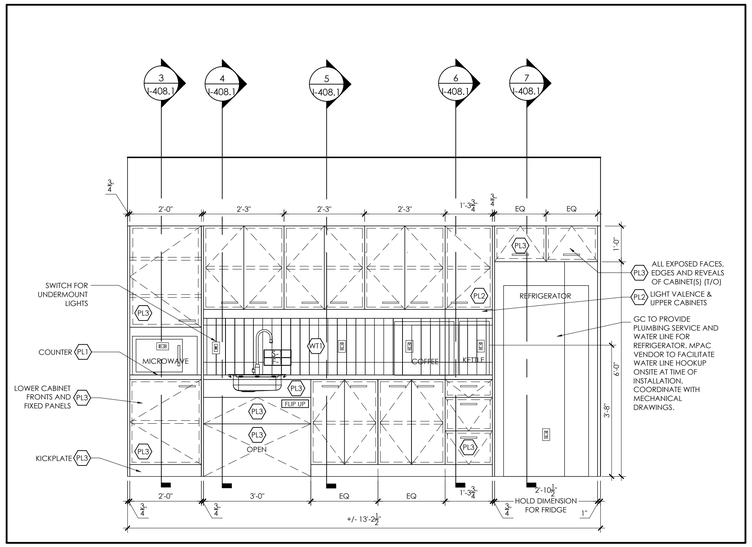
drawing title

MILLWORK DETAILS

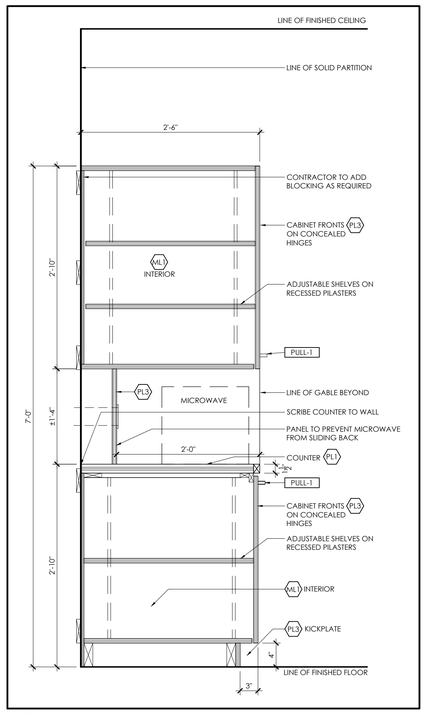
date: 17DEC25	project no.: 26-1013
drawn by: SDK	cad file: 26-1013_I-408
checked by: AH	drawing no.: I-408
scale: AS NOTED	



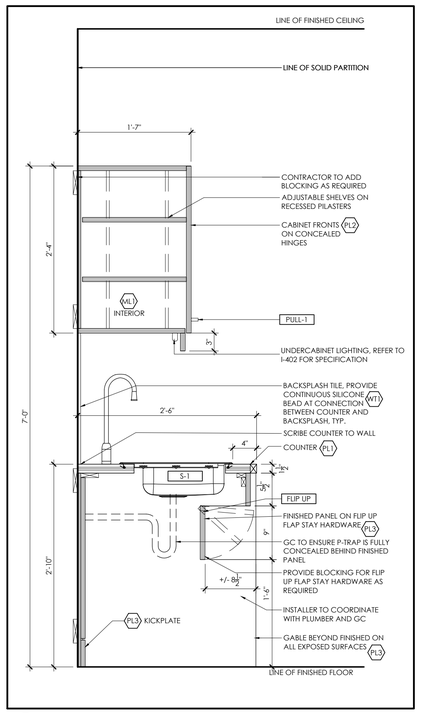
1 I-408.1 PLAN: M2 WORK CAFE
1/2" = 1'-0"



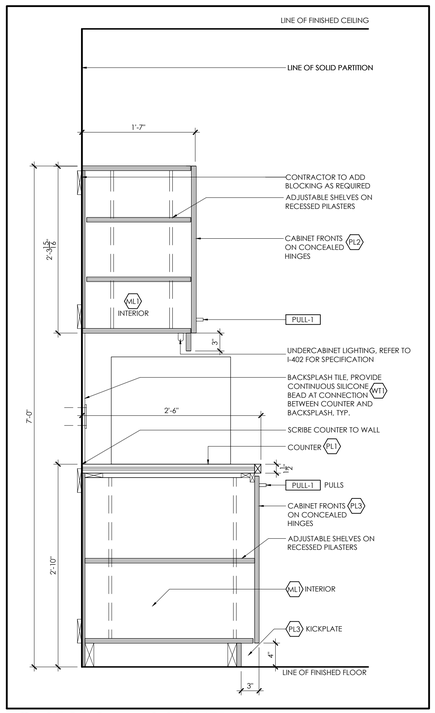
2 I-408.1 ELEVATION: M2 WORK CAFE
1/2" = 1'-0"



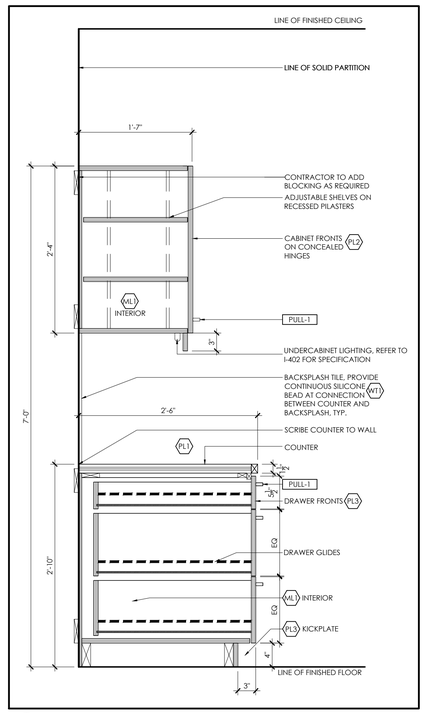
3 I-408.1 SECTION: M2 SERVERY
1" = 1'-0"



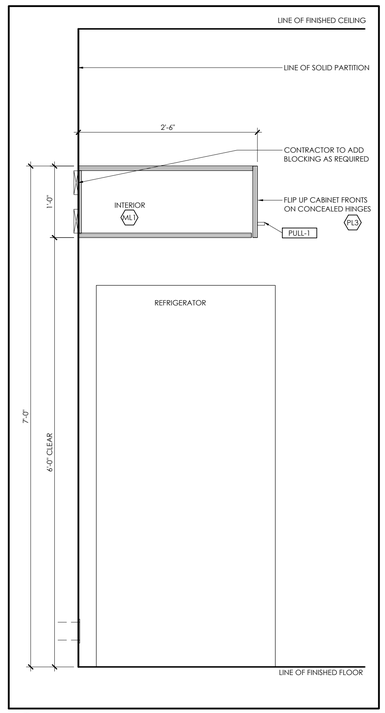
4 I-408.1 SECTION: M2 SERVERY
1" = 1'-0"



5 I-408.1 SECTION: M2 SERVERY
1" = 1'-0"



6 I-408.1 SECTION: M2 SERVERY
1" = 1'-0"



7 I-408.1 SECTION: M2 SERVERY
1" = 1'-0"

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BENNETT DESIGN
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- DO NOT SCALE DRAWINGS.

no.	date	by	description
03	23JAN26	SDK	ISSUED FOR TENDER
02	14JAN26	SDK	ISSUED FOR 90% REVIEW
01	17DEC25	SDK	ISSUED FOR 50% REVIEW

REVISIONS

ISSUED

ARIDO SAKSHI DIXIT KAPOOR Member Association of Registered Interior Designers of Ontario

mpac

project title

MPAC KINGSTON
1471 JOHN COUNTER BLVD, STE 412
KINGSTON, ON

drawing title

MILLWORK DETAILS

date	14JAN26
project no.	26-1013
drawn by	SDK
cad file:	26-1013_I-408
checked by	AH
drawing no.	I-408.1
scale	AS NOTED

MPAC KINGSTON
1471 JOHN COUNTER BLVD,
SUITE 412,
KINGSTON, ON
K7M 8S8

ELECTRICAL DRAWINGS LIST	
E0.0	COVER PAGE
E1.0	ELECTRICAL LEGEND
E1.1-4	ELECTRICAL SPECIFICATIONS (#1 TO #4)
E2.1	PROPOSED LIGHTING LAYOUT
E3.1	PROPOSED POWER & SYSTEMS LAYOUT
E4.1	EQUIPMENT SCHEDULES
E4.2	PANEL SCHEDULES & SINGLE LINE DIAGRAM
ED5.1	DEMOLITION LIGHTING LAYOUT
ED5.2	DEMOLITION POWER & SYSTEMS LAYOUT
E6.1	NETWORKING LAYOUT
E7.1	ELECTRICAL DETAILS

GENERAL

—o	DENOTES CONDUIT TURNING UP IN PLAN VIEW
—o	DENOTES CONDUIT TURNING DOWN IN PLAN VIEW
———	LIGHT LINE INDICATES NEW WORK/EQUIPMENT
— —	DASHED LINE INDICATES EXISTING WORK/EQUIPMENT TO BE REMOVED OR RE-LOCATED
—·—	WIRE-MOLD TO SUPPLY SERVICES TO SYSTEMS FURNITURE.
- - - - -	DENOTES RACEWAY
X	KEY NOTE REFERENCE ('X' DENOTES KEY NOTE NUMBER)
X / E0.00	DETAIL REFERENCE ('X' DENOTES DETAIL NUMBER AND 'E0.00' DENOTES DRAWING NUMBER WHERE DETAIL CAN BE FOUND.)
X / E0.00	SECTION REFERENCE ('X' DENOTES SECTION NUMBER AND 'E0.00' DENOTES DRAWING NUMBER WHERE SECTION CAN BE FOUND.)
XX	REVISION REFERENCE ('XX' DENOTES REVISION NUMBER)

ABBREVIATIONS

AFFL	ABOVE FINISHED FLOOR LEVEL
BOF	BOTTOM OF FIXTURE
C	CONDUIT
CCT	CIRCUIT
CLG	CEILING
C/W	COMPLETE WITH
BU	EMERGENCY LIGHTING BATTERY UNIT
EC	EMPTY CONDUIT
ELEC	ELECTRICAL
EM	EMERGENCY LIGHTING FIXTURE
FA	FIRE ALARM
FAA	FIRE ALARM ANNUMNCIATOR
FACP	FIRE ALARM CONTROL PANEL
GRN	GROUND
JB	JUNCTION BOX
N	NEW DEVICE
NL	NIGHT LIGHT
NTS	NOT TO SCALE
R	EQUIPMENT TO BE REMOVED
R/R	TO BE REMOVED & REINSTALLED
ER	EXISTING EQUIPMENT TO BE RELOCATED
FPR	FIRE PROTECTION ROOM
FUT	FUTURE
EX	EXISTING TO REMAIN
RP	ITEM IN RELOCATED POSITION
HK	HOUSE KEEPING
HL	DEVICE MOUNTED AT HIGH LEVEL
TC	DIGITAL ASTRONOMICAL TIME CLOCK
TYP	TYPICAL FOR ALL
WG	WIRE GUARD
WP	DEVICE TO BE WEATHER PROOF

LIGHTING & SIGNAGE

	HATCHED LUMINAIRE DENOTES CONNECTION TO EMERGENCY OR NIGHT LIGHT CIRCUIT. MODIFY LUMINAIRE AS REQUIRED FOR HARDWIRE CONNECTIONS.
	SINGLE OR DOUBLE WALL MOUNTED EMERGENCY LIGHTING REMOTE HEADS, 'BU-X' INDICATES BATTERY UNIT FED FROM
	SINGLE OR DOUBLE CEILING MOUNTED EMERGENCY REMOTE HEAD. 'BU-X' INDICATES BATTERY UNIT FED FROM
BU-X	EMERGENCY LIGHTING BATTERY UNIT C/W DUPLEX RECEPTACLE AND DOUBLE REMOTE HEADS. BATTERY UNIT 'BU-X' AS SPECIFIED.
INV-X	EMERGENCY LIGHTING INVERTER 'INV-X' AS SPECIFIED.
X1 X2	WALL MOUNTED SINGLE/DOUBLE FACED EXIT SIGN AND DIRECTIONAL ARROWS AS INDICATED. SHADED AREAS DENOTE DIRECTION OF FACES OF EXIT SIGN
X1 X2	CEILING MOUNTED SINGLE/DOUBLE FACED EXIT SIGN AND DIRECTIONAL ARROWS AS INDICATED. SHADED AREAS DENOTE DIRECTION OF FACES OF EXIT SIGN
X3/R2	WALL MOUNTED SINGLE FACED EXIT SIGN WITH REMOTE HEADS AND DIRECTIONAL ARROWS AS INDICATED. SHADED AREA DENOTES DIRECTION OF FACE OF EXIT SIGN
$X	120V, 20A SWITCH ('3' DENOTES 3-WAY SWITCH; 'OC' DENOTES OCCUPANCY SENSING; 'M' DENOTES MASTER SWITCH; 'B' DENOTES MOTORIZED BLINDS SWITCH.)
$DX	120V, 20A SWITCH ('DV' DENOTES 0-10V DIMMING; 'DLV' DENOTES REVERSE PHASE DIMMING; 'DL' DENOTES DALI DIMMING; 'DT' DENOTES TRIAC DIMMING)
$X	347V, 20A SWITCH ('3' DENOTES 3-WAY SWITCH; 'OC' DENOTES OCCUPANCY SENSING; 'M' DENOTES MASTER SWITCH; 'B' DENOTES MOTORIZED BLINDS SWITCH.)
$D	347V, 20A DIMMABLE SWITCH.
	SWITCH BANK
OS	AUTOMATIC CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR, C/W DUAL OUTPUT RELAY AND POWER PACK
P	DAYLIGHT PHOTOSENSOR
TC	PROGRAMMABLE TIME CLOCK, TYPE AS SPECIFIED

POWER SYSTEM & DISTRIBTUTION

	WALL MOUNTED 120V, 15A GROUNDED SIMPLEX RECEPTACLE. / ABOVE COUNTER OR HIGH LEVEL RECEPTACLE.
	WALL MOUNTED 120V, 15A GROUNDED DUPLEX RECEPTACLE. / ABOVE COUNTER OR HIGH LEVEL RECEPTACLE.
	WALL MOUNTED 120V, 15A GROUNDED QUADPLEX RECEPTACLE. / ABOVE COUNTER OR HIGH LEVEL RECEPTACLE.
	WALL MOUNTED 120V, 15A DUPLEX RECEPTACLE ON DEDICATED CIRCUIT. EACH DEDICATED CIRCUIT TO HAVE A SEPARATE NEUTRAL RUN DIRECTLY TO PANEL.
	WALL MOUNTED 120V, 15A GROUNDED DUPLEX RECEPTACLE WITH ISOLATED GROUND.
X	CEILING MOUNTED 120V GROUNDED DUPLEX RECEPTACLE 'X' DENOTES AMPERAGE, DEFAULT 15A IF NOT INDICATED.
	WALL MOUNTED 120V, 15A GROUNDED SPLIT DUPLEX RECEPTACLE, C/W SEPARATE CIRCUITS ABOVE COUNTER OR HIGH LEVEL.
VD	DUPLEX RECEPTACLE & COMMUNICATIONS OUTLET MOUNTED IN FURNITURE OR MILLWORK.
	WALL MOUNTED 120V, 20A T-SLOT GROUNDED DUPLEX RECEPTACLE. / ABOVE COUNTER OR HIGH LEVEL RECEPTACLE. (NEMA 5-20)
	WALL MOUNTED 120V, 20A T-SLOT GROUNDED QUADPLEX RECEPTACLE. / ABOVE COUNTER OR HIGH LEVEL RECEPTACLE. (NEMA 5-20)
GFI	WALL MOUNTED 120V, 20A GROUNDED GFI DUPLEX RECEPTACLE. / ABOVE COUNTER OR HIGH LEVEL RECEPTACLE.
GFI	WALL MOUNTED 120V, 20A GROUNDED GFI DOUBLE DUPLEX RECEPTACLE. / ABOVE COUNTER OR HIGH LEVEL RECEPTACLE.
	120V/347 SINGLE PHASE DIRECT CONNECTION AS NOTED ('MD' DENOTES MOTORIZED DAMPER; 'EF' DENOTES EXHAUST FAN).
	208V SINGLE PHASE DIRECT CONNECTION AS NOTED ('HWT' DENOTES HOT WATER TANK).
	208/600V THREE PHASE DIRECT CONNECTION AS NOTED.
A X	POWER & COMMUNICATIONS MONUMENT: (1) 120V, 15A DUPLEX RECEPTACLE, 'X' DENOTES QUANTITY OF DATA OUTLETS.
B X	POWER & COMMUNICATIONS MONUMENT: (2) 120V, 15A DUPLEX RECEPTACLE, 'X' DENOTES QUANTITY OF DATA OUTLETS.
C X	FLUSH-MOUNTED POWER & COMMUNICATIONS MONUMENT: (1) 120V, 15A DUPLEX RECEPTACLES, 'X' DENOTES QUANTITY OF DATA OUTLETS.
D X	FLUSH-MOUNTED POWER & COMMUNICATIONS MONUMENT: (2) 120V, 15A DUPLEX RECEPTACLES, 'X' DENOTES QUANTITY OF DATA OUTLETS.
E X	4" LEGRAND/HUBBELL FIRE RATED POKE THROUGH FLOOR MONUMENT C/W (1) 120V, 15A DUPLEX RECEPTACLE, 'X' DENOTES QUANTITY OF DATA OUTLETS.
F X	6" LEGRAND/HUBBELL FIRE RATED POKE THROUGH FLOOR MONUMENT C/W (2) 120V, 15A DUPLEX RECEPTACLES, 'X' DENOTES QUANTITY OF DATA OUTLETS.
	ELECTRICAL FLOOR BOX COMPLETE WITH TWO (2) 15A, 120V DUPLEX RECEPTACLE.
P/C	WALL MOUNTED HARD WIRE CONNECTION FOR SYSTEM FURNITURE. 'X' DENOTES QUANTITY OF DATA DROPS.
P/C	FLOOR MOUNTED HARD WIRE CONNECTION FOR SYSTEM FURNITURE. 'X' DENOTES QUANTITY OF DATA DROPS.
P.C	WALL FEED FOR POWER AND COMMUNICATIONS IN MILL WORK.
PP	POWER POLE
C	CONTACTOR
JB	JUNCTION BOX COMPLETE WITH COVER PLATE
M	ENERGY METER
	FUSED DISCONNECT SWITCH
	UNFUSED DISCONNECT SWITCH. 'W' DENOTES WEATHER PROOF.
X	SURFACE MOUNTED ELECTRICAL PANEL. 'X' DENOTES PANEL NAME.
X	FLUSH MOUNTED ELECTRICAL PANEL. 'X' DENOTES PANEL NAME.
	TRANSFORMER

COMMUNICATION

WAP	WIRELESS ACCESS POINT
	WALL MOUNTED TELEPHONE OUTLET
	WALL MOUNTED DATA OUTLET
	WALL MOUNTED TEL./DATA OUTLET
	CEILING MOUNTED DATA OUTLET
	FLOOR MOUNTED DATA OUTLET
TBG	WALL MOUNTED TELECOMMUNICATIONS GROUND BAR
	WALL MOUNTED COAXIAL TV CABLE OUTLET C/W PULL STRING TO TELECOM./SERVER ROOM
HD	HDMI CABLE
AV	AV OUTLET
PA	CEILING MOUNTED AUDIO SPEAKER
MC	CEILING MOUNTED MICROPHONE
CH	DOOR CHIME
DB	DOOR BUZZER BUTTON
	WALL MOUNTED DATA OUTLET / ABOVE COUNTER OR HIGH LEVEL

SECURITY

CR	CARD READER. PROVIDE 3/4" CONDUIT HOME RUN TO SECURITY PANEL
DC	DOOR CONTACT. PROVIDE 3/4" CONDUIT HOME RUN TO SECURITY PANEL
ES	ELECTRIC STRIKE. PROVIDE 3/4" CONDUIT HOME RUN TO SECURITY PANEL
ML	MAGLOCK. PROVIDE 3/4" CONDUIT HOME RUN TO SECURITY PANEL. MAGLOCK TO DE-ENERGIZE UPON ACTIVATION OF FIRE ALARM SYSTEM.
RTE	REQUEST TO EXIT. PROVIDE 3/4" CONDUIT HOME RUN TO SECURITY PANEL
KP	KEYPAD. PROVIDE 3/4" CONDUIT HOME RUN TO SECURITY PANEL
MD	MOTION DETECTOR. PROVIDE 3/4" CONDUIT HOME RUN TO SECURITY PANEL
GB	GLASS BREAK DETECTOR. PROVIDE 3/4" CONDUIT HOME RUN TO SECURITY PANEL
HU	HOLD UP BUTTON. PROVIDE 3/4" CONDUIT HOME RUN TO SECURITY PANEL
SB	CEILING MOUNTED BLUE STROBE SECURITY LIGHT. PROVIDE 3/4" CONDUIT HOME RUN TO SECURITY PANEL
	SECURITY CAMERA. PROVIDE 1 DATA DROP PER LOCATION

MISCELLANEOUS

HB	HANDICAP PUSH BUTTON FOR AUTOMATIC DOOR OPERATOR.
PB	PUSH BUTTON
PL	PUSH TO LOCK
WTO	WAVE TO OPEN
WTL	WAVE TO LOCK
EB	EMERGENCY BUTTON
OL	OCCUPANCY LIGHT
	FLASHING LIGHT ALARM
T	WALL MOUNTED THERMOSTAT
RAT	REVERSE ACTING THERMOSTAT
T	TIMER/TIME CLOCK

FIRE ALARM

	HEAT DETECTOR
	SMOKE DETECTOR
	SMOKE/CO COMBINED ALARM WITH STROBE
S	FIRE ALARM SPEAKER
SS	FIRE ALARM SPEAKER STROBE
S	FIRE ALARM STROBE
	FIRE ALARM HORN
	FIRE ALARM HORN/STROBE
	FIRE ALARM BELL
	MANUAL FIRE ALARM PULL STATION
FACP	FIRE ALARM CONTROL PANEL
FAA	FIRE ALARM ANUNCIATOR PANEL
R	RELAY MODULE
I	ISOLATOR MODULE

ISSUE RECORD:

NO:	ISSUED FOR:	DATE: (MM.DD.YY)
01	50% REVIEW	12.17.25
02	90% COORDINATION	01.13.26
03	90% COORDINATION-2	01.16.26
04	PERMIT / TENDER	01.23.26

REVISION RECORD:

NO:	ISSUED FOR:	DATE: (MM.DD.YY)
01	XXXX	XX.XX.XX

APPROVED BY:

LICENSED PROFESSIONAL ENGINEER
S. SALEH
100176531
01.23.2026
PROVINCE OF ONTARIO

CONSULTANT:

ENGINEER:
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100 ROYAL GROUP CRESCENT, UNIT D
WOODBRIDGE, ON
L4H 1X9
TEL: 905-462-7524

PROJECT:
MPAC KINGSTON
1471 JOHN COUNTER BLVD,
SUITE 412,
KINGSTON, ON
K7M 8S8

PROJECT NO: 25-1095

SCALE:	SHEET SIZE:
N.T.S.	24x36
DRAWN BY: M.H./A.K.	CHECKED BY: S.S.

DRAWING TITLE:
ELECTRICAL LEGEND

DRAWING NO:
E1.0

ELECTRICAL GENERAL REQUIREMENTS
26 05 01

1. GENERAL REQUIREMENTS
1.1. WORK INCLUDED
1.1.1. WORK TO BE DONE UNDER THIS SECTION TO INCLUDE FURNISHING OF LABOUR, MATERIALS AND EQUIPMENT REQUIRED FOR INSTALLATION, TESTING AND PUTTING INTO PROPER OPERATION COMPLETE ELECTRICAL SYSTEMS AS SHOWN, AS SPECIFIED, AS INTENDED, AND AS OTHERWISE REQUIRED. COMPLETE SYSTEMS TO BE LEFT READY FOR CONTINUOUS AND EFFICIENT SATISFACTORY OPERATION.
1.2. DOCUMENT ORGANIZATION
1.2.1. APPLICABLE DIVISIONS FOR ELECTRICAL WORK:
1.2.1.a. DIVISION 26 – ELECTRICAL
1.2.1.b. DIVISION 27 – COMMUNICATIONS
1.2.1.c. DIVISION 28 – ELECTRONIC SAFETY AND SECURITY
1.2.2. DEFINITIONS
1.2.2.a. THE WORDS "INDICATED", "SHOWN", "NOTED", "LISTED" OR SIMILAR WORDS OR PHRASES USED IN THIS SPECIFICATION, MEAN THAT MATERIAL OR ITEM REFERRED TO IS "INDICATED", "SHOWN", "LISTED" OR "NOTED" ON DRAWINGS.
1.2.2.b. THE WORDS "APPROVED", "SATISFACTORY", "AS DIRECTED", "SUBMIT", "PERMITTED", "INSPECTED", OR SIMILAR WORDS OR PHRASES USED IN THIS SPECIFICATION, MEAN THAT MATERIAL OR ITEM REFERRED TO IS TO BE "APPROVED BY", "SATISFACTORY TO", "AS DIRECTED BY", "SUBMITTED TO", "PERMITTED BY", "INSPECTED BY", CONSULTANT.
1.2.2.c. INSTRUCTIONS USING ANY FORM OF WORD "PROVIDE" INVOLVES CONTRACTOR IN FURNISHING LABOUR, MATERIALS AND SERVICES TO SUPPLY AND INSTALL REFERENCED ITEM.
1.3. EXAMINATION
1.3.1. EXAMINE ANY EXISTING BUILDINGS AND SERVICES, LOCAL CONDITIONS, BUILDING SITE, SPECIFICATIONS, AND DRAWINGS AND REPORT ANY CONDITION, DEFECT OR INTERFERENCE THAT WOULD PREVENT EXECUTION OF WORK.
1.3.2. EXAMINE WORK OF OTHER DIVISIONS BEFORE COMMENCING THIS WORK, AND REPORT ANY DEFECT OR INTERFERENCE.
1.3.3. NO ALLOWANCE WILL BE MADE FOR ANY EXPENSE INCURRED THROUGH FAILURE TO MAKE THESE EXAMINATIONS OF SITE AND DOCUMENTS PRIOR TO TENDER OR ON ACCOUNT OF ANY CONDITIONS ON SITE OR ANY GROWTH OR ITEM EXISTING THERE WHICH WAS VISIBLE OR KNOWN TO EXIST AT TIME OF TENDER.
1.3.4. FULLY FAMILIARIZE AND CONFORM TO THE BASE BUILDING STANDARDS AND CONSTRUCTION MANUAL
1.3.5. ALL ELECTRICAL WORK TO BE COMPLETED BY AN ELECTRICAL CONTRACTOR FROM LANDLORDS APPROVED ELECTRICAL CONTRACTOR'S LIST.
1.4. STANDARD OF MATERIAL AND EQUIPMENT
1.4.1. MATERIALS AND EQUIPMENT:
1.4.1.a. NEW AND OF UNIFORM PATTERN THROUGHOUT WORK,
1.4.1.b. OF CANADIAN MANUFACTURE WHERE OBTAINABLE,
1.4.1.c. LABELLED OR LISTED AS BY CODE AND/OR INSPECTION AUTHORITIES CSA CERTIFIED AND CMB LISTED. WHERE THERE IS NO ALTERNATIVE TO SUPPLYING EQUIPMENT WHICH IS NOT CSA CERTIFIED, OBTAIN SPECIAL APPROVAL FROM ELECTRICAL SAFETY AUTHORITY.,
1.4.1.d. STANDARD PRODUCTS OF APPROVED MANUFACTURE.
1.4.1.e. IN COMPLIANCE WITH STANDARDS AND REGULATIONS WITH RESPECT TO; –CHEMICAL AND PHYSICAL PROPERTIES OF MATERIALS, –DESIGN, –PERFORMANCE CHARACTERISTICS, AND –METHODS OF CONSTRUCTION AND INSTALLATION.
1.4.1.f. MATERIALS AND EQUIPMENT ARE DESCRIBED TO ESTABLISH STANDARDS OF CONSTRUCTION AND WORKMANSHIP.
1.4.1.g. WHERE MANUFACTURERS OR MANUFACTURER'S PRODUCTS ARE IDENTIFIED IN LISTS WITH PHRASE "STANDARD OF ACCEPTANCE", THESE ARE MANUFACTURERS AND/OR PRODUCTS WHICH MEET STANDARDS WITH REGARD TO PERFORMANCE, QUALITY OF MATERIAL AND WORKMANSHIP.
1.4.1.h. MANUFACTURERS AND OR PRODUCTS USED ARE TO BE CHOSEN FROM THESE LISTS.
1.4.1.i. INCLUDE ITEMS OF MATERIAL AND EQUIPMENT NOT SPECIFICALLY NOTED ON DRAWINGS OR MENTIONED IN SPECIFICATIONS BUT WHICH ARE REQUIRED TO MAKE AN OPERATING SYSTEM.
1.4.1.j. CONFIRM CAPACITY OR RATINGS OF EQUIPMENT BEING PROVIDED, WHEN BASED ON RATINGS OF EQUIPMENT BEING PROVIDED UNDER OTHER TRADE SECTIONS, BEFORE SUCH ITEMS ARE PURCHASED.
1.4.1.k. FACTORY FABRICATE CONTROL PANELS AND COMPONENT ASSEMBLIES.
1.4.1.l. SELECT MATERIALS AND EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
1.4.1.m. MATERIALS AND EQUIPMENT NOT SATISFYING THESE SELECTION CRITERIA WILL BE CONDEMNED. –REMOVE CONDEMNED MATERIALS FROM JOB SITE AND PROVIDE PROPERLY SELECTED AND APPROVED MATERIALS.
1.5. SUBSTITUTIONS
1.5.1. THE USE OF A SUBSTITUTE ARTICLE OR MATERIAL WHICH THE MANUFACTURER REPRESENTS TO BE OF AT LEAST EQUAL QUALITY AND OF THE REQUIRED CHARACTERISTICS FOR THE PURPOSE INTENDED MAY BE PERMITTED, SUBJECT TO THE FOLLOWING PROVISIONS:
1.5.1.a. A SUBSTITUTION WILL NOT BE CONSIDERED FOR REASONS OF MEETING THE CONSTRUCTION SCHEDULE UNLESS THE CONTRACTOR CAN DEMONSTRATE TO THE SATISFACTION OF THE CONSULTANT THAT ALL REASONABLE EFFORTS TO PROCURE THE SPECIFIED PRODUCT OR MATERIAL IN A TIMELY FASHION,
1.5.1.b. THE MANUFACTURER MUST ADVISE THE CONSULTANT OF THIS INTENTION TO USE AN ALTERNATIVE ARTICLE OR MATERIAL BEFORE DOING SO,
1.5.1.c. THE BURDEN OF PROOF AS TO THE QUALITY AND SUITABILITY OF ALTERNATIVES TO BE UPON THE MANUFACTURER AND THEY SHALL SUPPLY ALL INFORMATION NECESSARY AS REQUIRED BY THE CONSULTANT AT NO ADDITIONAL COSTS TO THE CONTRACT,
1.5.1.d. THE CONSULTANT TO BE THE SOLE JUDGE AS TO THE QUALITY AND SUITABILITY OF ALTERNATIVE MATERIALS AND THEIR DECISION TO BE FINAL,
1.5.1.e. WHERE USE OF AN ALTERNATIVE MATERIAL INVOLVES REDESIGN OR CHANGES TO OTHER PARTS OF THE WORK, THE COSTS AND THE TIME REQUIRED TO EFFECT SUCH REDESIGN OR CHANGES WILL BE CONSIDERED IN EVALUATING THE SUITABILITY OF THE ALTERNATIVE MATERIALS,
1.5.1.f. NO TEST OR ACTION RELATING TO THE APPROVAL OF SUBSTITUTE MATERIALS TO BE MADE UNTIL THE REQUEST FOR SUBSTITUTION HAS BEEN MADE IN WRITING BY THE MANUFACTURER AND HAS BEEN ACCOMPANIED BY COMPLETE DATA AS TO THE QUALITY OF THE MATERIALS PROPOSED. SUCH REQUEST TO BE MADE IN AMPLE TIME TO PERMIT APPROPRIATE REVIEW WITHOUT DELAYING THE WORK, TAKING INTO CONSIDERATION THAT SUCH A SUBSTITUTION REQUEST MAY BE REJECTED AND REQUIRE PROVIDING THE PRODUCT OR MATERIAL AS ORIGINALLY SPECIFIED,
1.5.1.g. WHENEVER CLASSIFICATION, LISTING, OR OTHER CERTIFICATION BY A RECOGNIZED STANDARDS BODY IS A PART OF THE SPECIFICATIONS FOR ANY MATERIAL, PROPOSALS FOR USE OF SUBSTITUTE MATERIALS TO BE ACCOMPANIED BY REPORTS FROM THE EQUIVALENT BODY INDICATING COMPLIANCE WITH THE REQUIREMENTS OF THE SPECIFICATIONS
1.5.1.h. THE COSTS OF ALL TESTING REQUIRED TO PROVE EQUALITY OF THE MATERIAL PROPOSED TO BE BORNE BY THE MANUFACTURER.

2. SUBMITTALS
2.1. SHOP DRAWINGS AND PRODUCT DATA
2.1.1. SUBMIT SHOP DRAWINGS, MANUFACTURERS AND PRODUCT DATA AND SAMPLES;
2.1.1.a. SUBMIT FOR EACH ITEM OF EQUIPMENT SUCH AS TRANSFORMERS, PANELBOARDS, LUMINAIRE CUTS AND SPECIAL SYSTEMS.
2.1.1.b. SUBMIT SHOP DRAWINGS IN THE SAME UNIT OF MEASURE AS ARE USED ON THE DRAWINGS. BOTH METRIC AND IMPERIAL MEASURES MAY BE INCLUDED.
2.1.1.c. SUBMIT SHOP DRAWINGS BY EMAIL TO THE CONSULTANT
2.1.1.d. SUBMITTED SHOP DRAWINGS WILL BE REVIEWED WITHIN 5 BUSINESS DAYS FROM RECEIVING DATE.
2.1.2. INCLUDE SHOP DRAWING COVER SHEET FORM PREPARED FOR THIS PROJECT, FOR EACH SHOP DRAWING, OR INCLUDE THE SAME INFORMATION ON THE CONTRACTORS SUBMITTAL COVER SHEET:
2.1.2.a. INFORMATION REQUIRED ON EACH SUBMISSION: –CLIENT/ARCHITECT NAME
–PROJECT NAME
–TEI PROJECT NUMBER
–DATE
–CONTRACTOR NAME
–CONTRACTOR REFERENCE NO.
–MANUFACTURER NAME
–PRODUCT TYPE
–SPECIFICATION SECTION NUMBER
–CONTRACTOR TRADE: MECHANICAL, ELECTRICAL, ELEVATORS, OR GENERAL TRADES.
–IF A RE–SUBMISSION, THE PREVIOUS SUBMISSION REFERENCE NUMBER
2.1.3. SUBMIT SHOP DRAWINGS IN PDF FORMAT;
2.1.3.a. IF SUBMITTED IN HARDCOPY FORMAT, SUBMIT IN 11 X 17, BLACK AND WHITE ORIGINALS OF GRAPHIC QUALITY SUITABLE FOR PHOTOCOPYING. ALLOW ONE ADDITIONAL WEEK FOR PROCESSING OF SHOP DRAWINGS SUBMITTED IN HARDCOPY FORMAT.
2.1.4. MANUFACTURERS PRINTED PRODUCT DATA SHEETS FOR STANDARD ITEMS ARE ACCEPTABLE IN PLACE OF SHOP DRAWINGS PROVIDING PHYSICAL CHARACTERISTICS ARE IDENTIFIED AND ARE RELATED TO SPECIFICATION REFERENCES.
2.1.5. SUBMIT MANUFACTURERS DATA SHEETS WITH TYPED SCHEDULES LISTING MANUFACTURERS AND SUPPLIERS NAME AND CATALOGUE MODEL NUMBER FOR SUCH ITEMS AS FIRE ALARM SYSTEM COMPONENTS, ETC.
2.1.6. FOR LUMINAIRES, SUBMIT LUMINAIRE CUTS WITH MANUFACTURER ' S NAMES AND CATALOGUE NUMBERS FOR ALL LUMINAIRES TO BE USED ON THE JOB. IDENTIFY AND ARRANGE THE LUMINAIRE CUTS AND CATALOGUE NUMBERS IN THE SAME SEQUENCE AS THE SPECIFICATION LUMINAIRE LIST.
2.1.7. SHOP DRAWINGS AND PRODUCT DATA TO SHOW:
2.1.7.a. CSA OR EQUIVALENT APPROVAL.
2.1.7.b. DIMENSIONED OUTLINES OF EQUIPMENT.
2.1.7.c. DIMENSIONED DETAILS SHOWING SERVICE CONNECTION POINTS.
2.1.8. INDICATE DETAILS OF CONSTRUCTION, DIMENSIONS, CAPACITIES, WEIGHTS AND ELECTRICAL PERFORMANCE CHARACTERISTICS OF EQUIPMENT OR MATERIAL.
2.1.9. WHERE APPLICABLE, INCLUDE WIRING, SINGLE LINE AND SCHEMATIC DIAGRAMS.
2.1.10. INCLUDE WIRING DRAWINGS OR DIAGRAMS SHOWING INTERCONNECTION WITH WORK OF OTHER SECTIONS.
2.1.11. EACH SHOP DRAWING TO BE CHECKED AND STAMPED AS BEING CORRECT, BY TRADE PURCHASING ITEM, BEFORE DRAWING IS SUBMITTED. IF ABOVE REQUIREMENTS ARE NOT COMPLIED WITH, SHOP DRAWINGS WILL BE REJECTED AND RETURNED FORTHWITH.
2.1.12. FOR MANUFACTURER'S DATA AND LIGHTING FIXTURES, SUBMIT FOR APPROVAL, BOUND SETS SHOWING THE FIXTURE CUTS, MANUFACTURER'S NAME AND CATALOGUE NUMBERS. EACH FOLDER OR BINDER TO BE COMPLETE WITH ALL FIXTURES USED ON THE JOB. ARRANGE THE FIXTURE CUTS AND CATALOGUE NUMBERS AND IDENTIFY IN THE SAME SEQUENCE AS THE SPECIFIED FIXTURE LIST.

2.2. OPERATING AND MAINTENANCE DATA
2.2.1. PROVIDE OPERATION AND MAINTENANCE DATA BOUND IN (8½ IN X 11 IN X 2 IN THICK) SIZE, VINYL COVERED, HARD BACK, THREE–RING COVERS.
2.2.1.a. ORGANIZE MATERIAL IN VOLUMES GENERALLY GROUPED BY DIVISION SECTION; SITE SERVICES, POWER, LIGHTING, LOW VOLTAGE SYSTEMS, FIRE ALARM AND SECURITY.
2.2.1.b. TITLE SHEET IN EACH VOLUME TO BE LABELED "OPERATING AND MAINTENANCE MANUAL" AND TO BEAR PROJECT NAME, PROJECT NUMBER, DATE, TRADE SECTION, AND LIST OF CONTENTS.
2.2.1.c. PROVIDE THREE HARD–COPIES TO OWNER.
2.2.2. IN ADDITION, PROVIDE ADOBE PDF FILES FOR EACH DOCUMENT, PRODUCED FROM ORIGINAL DIRECT–TO–DIGITAL FILE CREATIONS,
2.2.2.a. ORGANIZE DOCUMENTS INTO SEPARATE PDF FILES FOR EACH DIVISION SECTION IDENTIFIED ABOVE, AND APPLY ADOBE BOOKMARKS TO CREATE TABLE OF CONTENTS.
2.2.3. INCLUDE IN OPERATIONS AND MAINTENANCE DATA:
2.2.3.a. DETAILS OF DESIGN ELEMENTS, CONSTRUCTION FEATURES, COMPONENT FUNCTION AND MAINTENANCE REQUIREMENTS, TO PERMIT EFFECTIVE START–UP, OPERATION, MAINTENANCE, REPAIR, MODIFICATION, EXTENSION AND EXPANSION OF ANY PORTION OR FEATURE OF INSTALLATION.
2.2.3.b. TECHNICAL DATA, PRODUCT DATA, SUPPLEMENTED BY BULLETINS, COMPONENT ILLUSTRATIONS, EXPLODED VIEWS, TECHNICAL DESCRIPTIONS OF ITEMS, AND PARTS LISTS. ADVERTISING OR SALES LITERATURE NOT ACCEPTABLE.
2.2.3.c. WIRING AND SCHEMATIC DIAGRAMS AND PERFORMANCE CURVES.
2.2.3.d. NAMES AND ADDRESSES OF LOCAL SUPPLIERS FOR ITEMS INCLUDED IN MAINTENANCE MANUALS.
2.2.3.e. COPY OF REVIEWED SHOP DRAWINGS.
2.2.3.f. SPARE PARTS LIST AND AN ITEMIZED COST.
2.2.3.g. NAME AND TELEPHONE NUMBERS OF SERVICE ORGANIZATION AND TECHNICAL STAFF THAT WILL PROVIDE WARRANTY SERVICE ON THE VARIOUS ITEMS OF EQUIPMENT.

2.3. OPERATING AND MAINTENANCE INSTRUCTIONS
2.3.1. SUPPLY SERVICES OF A SKILLED TRADESMAN FOR A MINIMUM OF TWO CONSECUTIVE FULL DAYS TO START EACH SYSTEM IN ITS PROPER SEQUENCE, AND TEST AND CALIBRATE CONTROLS AND SET–UP SYSTEMS.
2.3.2. DURING THIS PROCEDURE THOROUGHLY EXPLAIN THE OPERATION AND MAINTENANCE OF EACH SYSTEM, INCORPORATING SPECIALIZED INSTRUCTION BY MANUFACTURERS AS DESCRIBED UNDER OTHER SECTIONS IN THIS DIVISION.
2.3.3. ARRANGE SUITABLE TIME FOR INSTRUCTIONS WITH OWNER'S OPERATING AND MAINTENANCE PERSONNEL.
2.3.4. KEEP A RECORD OF DATE AND DURATION OF EACH INSTRUCTION PERIOD TOGETHER WITH THE NAMES OF PERSONS ATTENDING. SUBMIT SIGNED RECORDS AT COMPLETION OF INSTRUCTION.

2.4. AS–BUILT DRAWINGS
2.4.1. PRIOR TO TESTING, BALANCING AND ADJUSTING, TRANSFER SITE RECORD DRAWING INFORMATION TO AUTOCAD 2008 (CAD) FILES, TO RECORD FINAL AS–BUILT CONDITION. OBTAIN A CURRENT SET OF CAD FILES FROM THE CONSULTANT.
2.4.1.a. DRAWINGS ARE TO REMAIN SET TO AND TO FOLLOW CONSULTANTS AUTOCAD STANDARDS. DO NOT ALTER DRAWING SCALES, X–REFS, COLOURS, LAYERS OR TEXT STYLES.
2.4.1.b. THE CONSULTANT'S CAD FILES MAY NOT REFLECT ALL OR ANY CONSTRUCTION CHANGES.
2.4.2. WHERE ITEMS HAVE BEEN DELETED, MOVED, RENUMBERED OR OTHERWISE CHANGED FROM CONTRACT DRAWINGS, REVISE THE CAD FILES TO RECORD THESE CHANGES. " BUBBLE " THESE REVISIONS, AND PLACE THESE ANNOTATIONS ON A SEPARATE AND EASILY IDENTIFIED DRAWING LAYER.
2.4.3. AS–BUILT DRAWINGS TO SHOW THE FINAL AS–BUILT CONDITION.
2.4.4. SHOW ON ELECTRICAL AS–BUILT DRAWINGS FINAL LOCATION OF CONDUIT, OUTLETS, PANELS, BRANCH WIRING, SYSTEM WIRING, PULL BOXES, BUS DUCTS, AND EQUIPMENT.
2.4.5. IDENTIFY EACH DRAWING IN LOWER RIGHT HAND CORNER IN LETTERS AT LEAST ½" HIGH AS FOLLOWS "AS–BUILT DRAWINGS. THIS DRAWING HAS BEEN REVISED TO SHOW SYSTEMS AS INSTALLED" (SIGNATURE OF CONTRACTOR) (DATE). THE SITE SERVICES DRAWINGS ARE TO INCLUDE (SIGNATURE AND STAMP OF OLS) ATTACHED TO NOTE.
2.4.6. ONCE " AS BUILT DRAWINGS " WHITE PRINTS ARE REVIEWED, TRANSFER CONSULTANT'S COMMENTS TO THE CAD FILES. RETURN AUTOCAD DRAWINGS MODIFIED TO CONDITION TO CONSULTANTS ON CD OR DVD ROM.
2.4.7. SUBMIT THREE (3) SETS OF WHITE PRINTS AND THREE (3) COPIES OF CAD FILES WITH OPERATING AND MAINTENANCE MANUALS.

3. REFERENCE CODES, STANDARDS, AND REGULATIONS
3.1. CODES AND STANDARDS
3.1.1. DO CONSTRUCTION INSTALLATION IN ACCORDANCE WITH ONTARIO ELECTRICAL SAFETY CODE (OESC) EXCEPT WHERE SPECIFIED OTHERWISE.
3.1.2. DO UNDERGROUND SYSTEMS IN ACCORDANCE WITH CSA C22.3 NO.7–M86 EXCEPT WHERE SPECIFIED OTHERWISE.
3.1.3. ABBREVIATIONS FOR ELECTRICAL TERMS: TO CSA Z85–1983.
3.1.4. COMPLY WITH CSA COMMUNICATION STANDARDS AND ONTARIO ELECTRICAL SAFETY CODE BULLETINS IN FORCE AT TIME OF TENDER SUBMISSION.
3.1.5. WHERE REQUIREMENTS OF THIS SPECIFICATION EXCEED THOSE OF THE ABOVE MENTIONED STANDARDS, THIS SPECIFICATION TO GOVERN.
3.2. PERMITS, FEES AND INSPECTIONS
3.2.1. SUBMIT TO ELECTRICAL SAFETY AUTHORITY NECESSARY NUMBER OF DRAWINGS AND SPECIFICATIONS FOR EXAMINATION AND APPROVAL PRIOR TO COMMENCEMENT OF WORK.
3.2.2. PAY ASSOCIATED FEES.
3.2.3. CONSULTANT WILL PROVIDE DRAWINGS AND SPECIFICATIONS REQUIRED BY ELECTRICAL SAFETY AUTHORITY AT NO COST.
3.2.4. NOTIFY CONSULTANT OF CHANGES REQUIRED BY ELECTRICAL SAFETY AUTHORITY PRIOR TO MAKING CHANGES.
3.2.5. FURNISH CERTIFICATES OF ACCEPTANCE FROM ELECTRICAL SAFETY AUTHORITY AND AUTHORITIES HAVING JURISDICTION ON COMPLETION OF WORK TO CONSULTANT.

4. FIELD QUALITY CONTROL
4.1. TESTING
4.1.1. CONDUCT AND PAY FOR FOLLOWING TESTS:
4.1.1.a. POWER DISTRIBUTION SYSTEM INCLUDING PHASING, VOLTAGE, GROUNDING AND LOAD BALANCING.
4.1.1.b. CIRCUITS ORIGINATING FROM BRANCH DISTRIBUTION PANELS.
4.1.1.c. LIGHTING AND ITS CONTROL.
4.1.1.d. MOTORS, HEATERS AND ASSOCIATED CONTROL EQUIPMENT INCLUDING SEQUENCED OPERATION OF SYSTEMS WHERE APPLICABLE.
SYSTEMS: FIRE ALARM SYSTEM AND COMMUNICATIONS.
4.1.2. FURNISH MANUFACTURER'S CERTIFICATE OR LETTER CONFIRMING THAT ENTIRE INSTALLATION AS IT PERTAINS TO EACH SYSTEM HAS BEEN INSTALLED TO MANUFACTURER'S INSTRUCTIONS.
4.2. LOAD BALANCE
4.2.1. MEASURE PHASE CURRENT TO PANELBOARDS WITH NORMAL LOADS (LIGHTING) OPERATING AT TIME OF ACCEPTANCE. ADJUST BRANCH CIRCUIT CONNECTIONS AS REQUIRED TO OBTAIN BEST BALANCE OF CURRENT BETWEEN PHASES AND RECORD CHANGES.
4.2.2. MEASURE PHASE VOLTAGES AT LOADS AND ADJUST TRANSFORMER TAPS TO WITHIN 2% OF RATED VOLTAGE OF EQUIPMENT.
4.3. CLEANING
4.3.1. DO FINAL CLEANING.
4.3.2. AT TIME OF FINAL CLEANING, CLEAN LIGHTING REFLECTORS, LENSES, AND OTHER LIGHTING SURFACES THAT HAVE BEEN EXPOSED TO CONSTRUCTION DUST AND DIRT, INCLUDING THE TOP SURFACE, WHETHER EXPOSED OR IN THE CEILING SPACE.
4.3.3. CLEAN SWITCH, RECEPTACLE AND COMMUNICATIONS OUTLETS, COVERPLATES, AND EXPOSED SURFACES.
4.3.4. CLEAN ALL OTHER ELECTRICAL EQUIPMENT AND DEVICES INSTALLED AS PART OF THIS PROJECT.

5. EQUIPMENT
5.1. WARNING SIGNS
5.1.1. AS SPECIFIED AND TO MEET REQUIREMENTS OF ELECTRICAL SAFETY AUTHORITY AND CONSULTANT.
5.1.2. PORCELAIN ENAMEL DECAL SIGNS, MINIMUM SIZE 7" X 10".
5.2. PROTECTION
5.2.1. PROTECT EXPOSED LIVE EQUIPMENT DURING CONSTRUCTION FOR PERSONNEL SAFETY.
5.2.2. SHIELD AND MARK LIVE PARTS OVER "LIVE 120 VOLTS", OR WITH APPROPRIATE VOLTAGE.
5.3. SLEEVES AND CURBS
5.3.1. PROVIDE SLEEVES OF GALVANIZED STEEL FOR CONDUIT AND CABLE RUNS PASSING THROUGH CONCRETE WALLS, BEAMS, SLABS AND FLOOR. SLEEVES FOR BUS DUCTS, 1 WIREWAYS AND CABLE TRAYS TO BE MINIMUM " GALVANIZED STEEL. 8
5.3.2. EXTEND SLEEVES THROUGH SLABS FOR CONDUIT RISING THROUGH SLABS 4" MINIMUM ABOVE FINISHED FLOORS. PROVIDE SLEEVES, PASSING THROUGH FLOORS HAVING A WATERPROOF MEMBRANE, WITH AN INTEGRAL FLASHING CLAMP.
5.3.3. WHERE CABLES OR CONDUITS PASS THROUGH FLOORS AND FIRE RATED WALLS, PACK SPACE BETWEEN WIRING AND SLEEVE FULL WITH FIREPROOFING, AND SEAL WITH CAULKING COMPOUND CONFORMING TO CANZ–19.13.
5.4. FIREPROOFING
5.4.1. THE INTEGRITY OF THE FIRE RESISTANCE RATING OF THE FLOORS AND WALLS TO BE MAINTAINED AROUND ELECTRICAL RACEWAYS AND/OR CABLES PASSING THROUGH SUCH FLOORS AND/OR WALLS.
5.4.2. MATERIALS USED TO MAINTAIN FIRE RESISTANCE RATINGS TO HAVE A MINIMUM 2 HOUR ULC OR CUL LISTED RATING.
5.4.3. WIRING MAY PENETRATE A FIRE RESISTANCE RATED ASSEMBLY PROVIDED IT IS ENCLOSED IN NON–COMBUSTIBLE CONDUIT, AND THE PASSAGE OF THE CONDUIT IN TURN IS SUITABLY SEALED TO THE ASSEMBLY WITH FIRE STOP MATERIAL.
5.4.4. WIRING WITH A COMBUSTIBLE COVERING AND NOT ENCLOSED IN NON–COMBUSTIBLE CONDUIT PENETRATING A FIRE RESISTANCE RATED ASSEMBLY SHALL BE GROUPED INTO SEPARATE FIRE SEALED PENETRATIONS TO ENSURE THE OVERALL DIAMETER OF THE COMBINED WIRE(S) IN EACH PENETRATION DOES NOT EXCEED 1", AND THAT THE INTEGRITY OF THE FIRE RATED ASSEMBLY IS NOT COMPROMISED.
5.4.5. SINGLE CONDUCTOR METAL SHEATHED CABLES SHALL BE ARRANGED TO INDIVIDUALLY PENETRATE THE FIRE RATED ASSEMBLY AND BE INDIVIDUALLY FIRE STOPPED.
5.4.6. WHERE WIRING IS INSTALLED IN CABLE TRAYS AND MUST PENETRATE A FIRE RATED ASSEMBLY, STOP AND INDEPENDENTLY SUPPORT THE CABLE TRAY IMMEDIATELY ON EACH SIDE OF THE FIRE RATED ASSEMBLY WHILE ALLOWING SUFFICIENT WORKING ROOM TO PROPERLY INSTALL AND INSPECT THE FIRE RATING MATERIALS AND PENETRATION. STANDARD OF ACCEPTANCE: THOMAS & BETTS – FLAME–SAFE, NELSON/WIELAND (ELECTROVERT) – FLAMESEAL, DOUBLE A/D DISTRIBUTORS LTD. – FIREBARRIER FIRESTOPPING, CANSTRUT – ELASTA–SEAL MBF–KBF SEALBAGS (WHERE OPEN TRAY PASSES THROUGH FLOOR SLAB)
5.5. SPRINKLER PROTECTION
5.5.1. EQUIPMENT IN SPRINKLERED AREAS, EXCEPT FOR WEATHERPROOF EQUIPMENT, MUST BE PROVIDED WITH HOODS OR SHIELDS AND GASKETTED DOORS TO PROVIDE PROTECTION AGAINST SPRINKLER DISCHARGE, AND TO COMPLY WITH THE REQUIREMENTS OF OESC.
5.5.2. VENTILATION OPENINGS TO BE OVERHANGING DRIP–PROOF TYPE
5.5.3. WEATHERPROOF EQUIPMENT, WHERE NOTED IN THE SPECIFICATIONS AND/OR DRAWINGS TO HAVE EEMAC TYPE 3 ENCLOSURES IN ACCORDANCE WITH THE REQUIREMENTS OF CSA C22.2 NO. 94 STANDARD.
5.5.4. SURFACE PANELBOARDS, SWITCHBOARDS AND OTHER ELECTRICAL EQUIPMENT IN SPRINKLERED AREAS TO BE FITTED WITH WATERTIGHT HUBS WITH INSULATED THROAT FOR ALL CONDUIT ENTRANCES. STANDARD OF ACCEPTANCE: THOMAS & BETTS LTD. – SERIES 401, EFCOR OF CANADA LTD. – SERIES 40–508

6. COORDINATION
6.1. GENERAL
6.1.1. CONSULTANT DRAWINGS ARE DIAGRAMMATIC AND ILLUSTRATE THE GENERAL LOCATION OF EQUIPMENT, AND INTENDED ROUTING OF DUCTWORK, PIPING, ETC, AND DO NOT SHOW EVERY STRUCTURAL DETAIL. IN CONGESTED AREAS DRAWINGS AT GREATER SCALE MAY BE PROVIDED TO IMPROVE INTERPRETATION OF THE WORK. WHERE EQUIPMENT OR SYSTEMS ARE SHOWN AS "DOUBLE LINE", THEY ARE DONE SO EITHER TO IMPROVE UNDERSTANDING OF THE WORK, OR MAY AS A RESULT OF THE USE OF A CAD DRAWING TOOL, AND IN EITHER CASE SUCH DRAWINGS ARE NOT REPRESENTED AS FABRICATION OR INSTALLATION DRAWINGS.
6.1.2. LAY OUT AND COORDINATE WORK TO AVOID CONFLICT WITH WORK UNDER OTHER DIVISIONS.
6.1.3. MAKE GOOD DAMAGE TO OWNER'S PROPERTY OR TO OTHER TRADE'S WORK CAUSED BY INACCURATE LAYOUT OR CARELESS PERFORMANCE OF WORK OF THIS DIVISION.
6.1.4. TAKE INFORMATION INVOLVING ACCURATE MEASUREMENTS FROM DIMENSIONED ARCHITECTURAL DRAWINGS OR AT BUILDING.
6.1.5. INSTALL SERVICES AND EQUIPMENT WHICH ARE TO BE CONCEALED, CLOSE TO BUILDING STRUCTURE SO THAT FURRING IS KEPT TO MINIMUM DIMENSIONS.
6.1.6. LOCATION OF CONDUIT, BUS DUCT, RACEWAYS AND EQUIPMENT MAY BE ALTERED WITHOUT EXTRA COST PROVIDED INSTRUCTION IS GIVEN OR APPROVAL IS OBTAINED, IN ADVANCE OF INSTALLATION OF ITEMS INVOLVED. CHANGES WILL BE AUTHORIZED BY SITE INSTRUCTIONS AND ARE TO BE SHOWN ON RECORD DRAWINGS.
6.1.7. INCLUDE INCIDENTAL MATERIAL AND EQUIPMENT NOT SPECIFICALLY NOTED ON DRAWINGS OR MENTIONED IN SPECIFICATIONS BUT WHICH IS NEEDED TO COMPLETE THE WORK AS AN OPERATING INSTALLATION.

6.2. CUTTING AND REMEDIAL WORK
6.2.1. FOR DETAILS OF CUTTING AND PATCHING AND DIVISION OF WORK REFER TO DIVISION 1.
6.2.2. DIVISION 26 CONTRACTOR TO BE RESPONSIBLE FOR ARRANGING AND PAYING FOR ALL CUTTING AND PATCHING AS REQUIRED. BEFORE CUTTING, DRILLING, OR SLEEVING STRUCTURAL LOAD BEARING ELEMENTS, OBTAIN THE OWNER'S APPROVAL OF LOCATION AND METHODS IN WRITING. EMPLOY ORIGINAL INSTALLER OR EXPERT IN THE FINISHING OF MATERIAL REQUIRED TO PERFORM CUTTING OR PATCHING FOR WEATHER EXPOSED OR MOISTURE RESISTANT ELEMENTS OR SIGHT EXPOSED SURFACES.
6.2.3. ALL CORE DRILLING THROUGH FLOOR SLABS TO BE X–RAYED AND VERIFIED WITH OWNER REPRESENTATIVE PRIOR TO CORING. RELOCATE CORE DRILLING LOCATION IF STEEL OR CONDUIT IS FOUND IN THE PROPOSED LOCATION AND REPEAT PROCEDURE. REROUTE ANY CIRCUITS DAMAGED BY CORE DRILLING.

6.3. WORK IN EXISTING BUILDING
6.3.1. DURING THE TENDER PERIOD, THE CONTRACTOR SHALL PERFORM A SITE INSPECTION OF THE PLACE OF WORK AND SURROUNDINGS INCLUDING THE ACCESSIBLE CEILING SPACES AND OTHER AREAS WHERE ACCESS COULD BE CONSIDERED REASONABLE. MAKE A THOROUGH INVESTIGATION OF AS BUILT CONDITIONS TO DETERMINE DIRECTION AND EXTENT OF RENOVATION OR DEMOLITION WORK REQUIRED PRIOR TO SUBMITTING TENDER.
6.3.2. WORK INCLUDES CHANGES TO EXISTING BUILDING AND CHANGES AT JUNCTION OF OLD AND NEW CONSTRUCTION. ROUTE CABLING, DUCTS, CONDUITS AND OTHER SERVICES TO AVOID INTERFERENCE WITH EXISTING INSTALLATION.
6.3.3. RELOCATE EXISTING PIPES, DUCTS, CONDUITS, BUS DUCTS AND ANY OTHER EQUIPMENT OR SERVICES REQUIRED FOR THE PROPER INSTALLATION OF NEW WORK.
6.3.4. MAINTAIN OR RELOCATE EXISTING SERVICES WHICH PASS THROUGH THE AREA OF RENOVATION OR DEMOLITION, BUT WHICH FEED ITEMS LOCATED ELSEWHERE AS REQUIRED. REWIRE DEVICES TO THE ORIGINAL CIRCUITS.
6.3.5. REMOVE EXISTING LIGHTING FIXTURES, WIRING, DEVICES AND EQUIPMENT TO SUIT NEW CONSTRUCTION. CUT BACK AND CAP CONDUITS AND ELECTRICAL OUTLETS, NOT BEING USED, SO THAT FINISHED WORK PRESENTS A NEAT AND CLEAN APPEARANCE. DISCONNECT AT POINT OF ELECTRICAL SUPPLY, REMOVE OBSOLETE WIRING AND CONDUITS, AND MAKE EXISTING SYSTEMS SAFE. BLANK OFF OPENINGS IN PANELS OR BOXES FROM REMOVED CONDUITS OR DUCTS.
UNLESS NOTED TO BE REUSED, REMOVED CONDUIT, WIRING AND DEVICES BECOME THE PROPERTY OF THE CONTRACTOR AND ARE TO BE TAKEN FROM THE SITE AND DISPOSED OF APPROPRIATELY.
6.3.7. REMOVED LIGHTING FIXTURES AND EQUIPMENT SHALL BE REVIEWED AT SITE WITH THE OWNER ' S REPRESENTATIVE, AND IF THE OWNER INSTRUCTS THEY WISH TO KEEP ANY ITEMS, THEY SHALL BE MOVED TO A DESIGNATED LOCATION ON THE SITE. LIGHTING FIXTURES AND EQUIPMENT THAT THE OWNER DOES NOT WANT SHALL BE TAKEN FROM THE SITE AND DISPOSED OF APPROPRIATELY.
6.3.8. PROVIDE JUN

2.1.1. COPPER CONDUCTORS: SIZE AS INDICATED, STRANDED FOR 10 AWG AND LARGER, WITH 1000 V INSULATION FOR 347/600 VOLT SYSTEMS, AND 600 V INSULATION FOR 120/208 V SYSTEMS, OF CHEMICALLY CROSS-LINKED THERMOSETTING POLYETHYLENE MATERIAL RATED RW90 AND/OR RWU90 TO CSA C22.2 NO. 38.
2.1.2. USE RWU90 FOR WIRING INSTALLED UNDERGROUND.
2.1.3. WIRING IN CHANNEL BACK OF LUMINAIRES SHALL BE 600 VOLT TYPE GTF OR TEW, TEMPERATURE RATING AS REQUIRED BY CSA AND/OR MANUFACTURER REQUIREMENTS..
2.1.4. CONDUCTORS SHALL BE COLOUR CODED. CONDUCTORS NO. 10 AWG AND SMALLER SHALL HAVE COLOUR IMPREGNATED INTO INSULATION AT TIME OF MANUFACTURE. CONDUCTORS NO. 8 AWG AND LARGER MAY BE COLOUR CODED WITH ADHESIVE COLOUR CODING TAPE BUT ONLY BLACK INSULATED CONDUCTORS SHALL BE EMPLOYED IN THIS CASE, EXCEPT FOR NEUTRALS WHICH SHALL BE WHITE WHEREVER POSSIBLE.
2.1.5. MINIMUM WIRE SIZE SHALL BE NO. 12 AWG. HOME RUNS TO LIGHTING AND RECEPTACLE PANELS WHICH EXCEED 75' IN LENGTH SHALL BE MINIMUM NO. 10 AWG. HOME RUNS WHICH EXCEED 120' IN LENGTH SHALL BE MINIMUM NO. 8 AWG. HOME RUNS WHICH EXCEED 180' IN LENGTH SHALL BE MINIMUM 6 AWG.
2.1.6. COLOUR CODING SHALL BE AS FOLLOWS: RED – PHASE A, BLACK –PHASE B, BLUE –PHASE C, WHITE – NEUTRAL, GREEN – GROUND, ORANGE – CONTROL. STANDARD OF ACCEPTANCE: AETNA INSULATED WIRE, GENERAL CABLE, NEXANS CANADA INC, PIRELLI CABLES LTD, SOUTHWIRE

2.2. ARMOURED CABLES
2.2.1. CONDUCTORS: RW90 INSULATED COPPER, MINIMUM SIZE #12 PHASE CONDUCTORS COMPLETE WITH #12 GREEN INSULATED GROUND WIRE AND BARE #12 COPPER BONDING WIRE.
2.2.2. AC–90 CAN BE USED FOR DOWDROPS FROM OUTLET TO LUMINAIRES AND IN PARTITIONS UNLESS PROHIBITED BY CODE OR OTHERWISE NOTED. AC–90 SHALL BE RUN MAXIMUM 10'–0" IN CEILING SPACE. ALL AC–90 CABLE AND CONDUIT SHALL BE SUPPORTED AS HIGH AS POSSIBLE ABOVE CEILING TO ALLOW REMOVAL OF ALL CEILING TILES, LUMINAIRES, ETC. CABLES ARE NOT PERMITTED TO REST ON FALSE CEILING.
2.2.3. TYPE: AC90 BX 600V 90C TO CSA C22.2 NO 51 2.2.4. ARMOUR: INTERLOCKING TYPE FABRICATED FROM GALVANIZED STEEL OR ALUMINUM STRIP.

2.3. ARMOURED CABLES TECK
2.3.1. CONDUCTORS, INSULATED COPPER, SIZE AS INDICATED.
2.3.2. TYPE: TECK 90
2.3.3. ARMOUR: INTERLOCKING STEEL FOR MULTICONDUCTOR CABLE, INTERLOCKING ALUMINUM FOR SINGLE CONDUCTOR CABLES.
2.3.4. JACKETS OF CABLE SHALL HAVE FT–4 RATING IDENTIFIED.
2.3.5. CONNECTORS SHALL BE EQUAL TO T&B STAR TECK TYPE. USE NON–MAGNETIC CONNECTORS FOR SINGLE CONDUCTOR CABLES.
2.4. MINERAL INSULATED CABLE
2.4.1. CABLE SHALL HAVE ULC LISTED 2 HOUR FIRE RATING.
2.4.2. CABLE SHALL BE SHIPPED WITH ENDS TEMPORARILY SEALED AND SHALL BE STORED UNDER DRY CONDITIONS.
2.4.3. CABLE SHALL BE OF CAPACITIES AND TYPES NOTED ON DRAWINGS AND SHALL BE TERMINATED USING SUITABLE TERMINATING HARDWARE.
2.4.4. EMBEDDED CABLES SHALL BE COMPLETE WITH A PVC JACKET. STANDARD OF ACCEPTANCE: PYROTENAX

3. EXECUTION
3.1.3.1. GENERAL
3.1.1. PROVIDE GROUNDING/BONDING CONDUCTOR IN ALL

CONDUITS WHETHER METALLIC OR NON–METALLIC, SIZED AS PER ONTARIO ELECTRICAL SAFETY CODE, AND CONNECT TO GROUNDING BUS. ALL RECEPTACLES, LIGHTING FIXTURES, PANELS, TRANSFORMERS, MOTORS, HEATERS, COMMUNICATIONS CONDUITS AND OTHER POWERED DEVICES SHALL GROUNDED VIA GROUND WIRES.
3.1.2. A DEDICATED NEUTRAL CONDUCTOR SHALL BE PROVIDED FOR EACH SINGLE PHASE BRANCH WIRING POWER CIRCUIT.

3.2. INSTALLATION OF BUILDING WIRES
3.2.1. INSTALL WIRING AS FOLLOWS:
3.2.1.A. IN CONDUIT SYSTEMS IN ACCORDANCE WITH SECTION 26 05 33.
3.2.2. NEATLY TRAIN CIRCUIT WIRING IN CABINETS, PANELS, PULLBOXES AND JUNCTION BOXES AND HOLD WITH NYLON CABLE TIES.
3.2.3. SPLICE WIRE, UP TO AND INCLUDING NO. 6 AWG WITH NYLON INSULATED EXPANDABLE SPRING TYPE CONNECTORS. CONNECTOR BODY SHALL BE MOULDED OF THERMOPLASTIC AND SPRING INSERT SHALL BE AN EXPANDABLE SQUARE–EDGED DESIGN. SPLICE LARGER CONDUCTORS USING SPLIT–BOLT OR COMPRESSION TYPE CONNECTIONS WRAPPED WITH PVC TAPE.
3.2.4. WHERE COLOUR CODING TAPE IS UTILIZED, IT SHALL BE APPLIED FOR A MINIMUM OF 2" AT TERMINATIONS, JUNCTION AND PULLBOXES. DO NOT PAINT CONDUCTORS UNDER ANY CONDITIONS. COLOUR CODING SHALL ALSO APPLY TO BUSSING IN PANELS AND BUS DUCT.
3.3. INSTALLATION OF ARMOURED CABLES AC90 ISO–BX
3.3.1. MAY BE USED FOR DROPS TO SURFACE AND RECESSED MOUNTED FLUORESCENT LIGHT FIXTURES.
3.4. INSTALLATION OF ARMOURED CABLES TECK
3.4.1. TERMINATE CABLE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS
3.5. INSTALLATION OF MINERAL INSULATED CABLES
3.5.1. CABLE SHALL BE INSTALLED IN TRAYS OR EXPOSED ON WALLS, BEAMS, PURLINS OR CEILINGS, USING CLAMPS AVAILABLE FROM THE MANUFACTURER. FIRE RATED CIRCUITS SHALL BE SUPPORTED ON CENTRES NOT EXCEEDING 3'. CARE SHALL BE TAKEN WHEN HANDLING THE CABLE TO AVOID CABLE KINKS; IT IS RECOMMENDED THAT CABLE BE UNCOILED FROM SUPPLY REEL BY ROLLING. CABLES SHALL BE BENT USING A SUITABLE HICKEY WITH A MINIMUM BENDING RADIUS OF SIX TIMES THE CABLE DIAMETER.
3.5.2. EMBEDDED CABLES SHALL BE PROTECTED AGAINST PUNCTURES AND MECHANICAL DAMAGE.
3.5.3. SINGLE CONDUCTOR CABLES FORMING PART OF A CIRCUIT SHALL BE RUN IN CONTACT WITH ONE ANOTHER THROUGHOUT THEIR LENGTH.
3.5.4. SINGLE CONDUCTORS IN PARALLEL SHALL BE ARRANGED IN GROUPS AND THE GROUPS SHALL BE AT LEAST TWO CABLE DIAMETERS APART.
3.5.5. CABLES SHALL BE TERMINATED WITH MANUFACTURED GLAND AND SEALS. GLAND AND SEAL ASSEMBLY SHALL BE PREPARED WITH TOOLS SPECIFICALLY DESIGNED FOR THE PURPOSE. UPON COMPLETION OF TERMINATION, THE INSULATION RESISTANCE OF THE CABLE SHALL BE CHECKED WITH AN INSULATION TESTER IN ACCORDANCE WITH VALUES TO BE DETERMINED BY THE CONSULTANT.
3.5.6. CABLES FORMING PART OF CIRCUITS RATED 200 A AND ABOVE SHALL BE TERMINATED AT EACH END ON A SUITABLY SIZED MINIMUM 1/4" THICK BRASS PLATE, INSTALLED BY REMOVING THE STEEL OF THE TERMINATION PANEL. A COPPER BONDING CONDUCTOR, SIZED PER TABLE 16 OF THE SAFETY CODE, SHALL BE CONNECTED TO THE TERMINATION PLATE VIA A BURNDY SERVIT TYPE KC CONNECTOR OR TYPE YA COMPRESSION CONNECTOR, AND EXTENDED TO THE EQUIPMENT GROUND BUS AND TERMINATED WITH A BURNDY YA COMPRESSION CONNECTOR WITH 1/2" STAINLESS STEEL BOLT AND HARDWARE.

3.5.7. THE ENTIRE INSTALLATION SHALL BE MADE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER, WHO SHALL BE RETAINED BY THE CONTRACTOR UNDER THIS SECTION TO INSPECT THE CABLE INSTALLATION AND TERMINATION METHODS.

GROUNDING SECONDARY
26 05 27

1. EXECUTION
1.1. INSTALLATION
1.1.1. INSTALL COMPLETE PERMANENT, CONTINUOUS, SYSTEM AND CIRCUIT, EQUIPMENT, GROUNDING SYSTEMS INCLUDING, ELECTRODES, CONDUCTORS, CONNECTORS, ACCESSORIES, AS INDICATED, TO CONFORM TO REQUIREMENTS OF LOCAL AUTHORITY HAVING JURISDICTION OVER INSTALLATION.
1.1.2. GROUND ELECTRICAL EQUIPMENT AND WIRING IN ACCORDANCE WITH ONTARIO ELECTRICAL SAFETY CODE AND ANSI/IEEE STANDARD 142–1982.
1.1.3. INSTALL CONNECTORS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
1.1.4. PROTECT EXPOSED GROUNDING CONDUCTORS FROM MECHANICAL INJURY.
1.1.5. MAKE BURIED CONNECTIONS, AND CONNECTIONS TO CONDUCTIVE WATER MAIN, ELECTRODES, USING COPPER WELDING BY THERMIT PROCESS.
1.1.6. USE MECHANICAL CONNECTORS FOR GROUNDING CONNECTIONS TO EQUIPMENT PROVIDED WITH LUGS.
1.1.7. SOLDERED JOINTS NOT PERMITTED.
1.1.8. INSTALL BONDING WIRE FOR FLEXIBLE CONDUIT, CONNECTED AT BOTH ENDS TO GROUNDING BUSHING, SOLDERLESS LUG, CLAMP OR CUP WASHER AND SCREW. NEATLY CLEAT BONDING WIRE TO EXTERIOR OF FLEXIBLE CONDUIT.
1.1.9. INSTALL SEPARATE GROUND CONDUCTOR IN ALL CONDUITS. GROUND CONDUCTOR SHALL BE SIZED AS PER TABLE 16 OF CSA C22.1 WITH ONE GROUND CONDUCTOR FOR EVERY THREE HOT CONDUCTORS. MINIMUM SIZE OF GROUND CONDUCTOR SHALL BE #12 AWG COPPER.
1.1.10. MAKE GROUNDING CONNECTIONS IN RADIAL CONFIGURATION ONLY, WITH CONNECTIONS TERMINATING AT SINGLE GROUNDING POINT. AVOID LOOP CONNECTIONS.
1.1.11. INSTALL GROUNDING CONDUCTORS OUTSIDE ELECTRICAL ROOMS AND ELECTRICAL CLOSETS IN CONDUIT AND CONCEAL WHERE POSSIBLE.
1.1.12. PROVIDE SEPARATE GROUND WIRE FOR EVERY FEEDER, SIZED AS PER TABLE 16 OF THE OESC.
1.2. SYSTEM AND CIRCUIT GROUNDING
1.2.1. INSTALL SYSTEM AND CIRCUIT INSULATED COPPER GROUNDING CONNECTIONS TO NEUTRAL OF SECONDARY SYSTEMS AND FOR COMMON GROUNDING CONDUCTORS PER CSA C22.1 TABLE 17.
1.2.2. INSTALL INSULATED COPPER GROUNDING CONDUCTOR FOR SERVICE RACEWAYS AND SERVICE EQUIPMENT PER CSA C22.1 TABLE 18.
1.2.3. INSTALL GROUNDING CONDUCTORS IN CONDUIT.
1.3. EQUIPMENT GROUNDING / BONDING
1.3.1. INSTALL INSULATED COPPER BONDING CONNECTIONS PER CSA C22.1 TABLE 16 TO TYPICAL EQUIPMENT INCLUDING, BUT NOT NECESSARILY LIMITED TO FOLLOWING LIST: SERVICE EQUIPMENT, TRANSFORMERS, FRAMES OF MOTORS, STARTERS, CONTROL PANELS, BUILDING STEEL WORK AND PANELS, OUTDOOR LIGHTING.
1.3.2. INSTALL BONDING CONDUCTORS IN CONDUIT.
1.4. RAISED FLOOR GROUNDING
1.4.1. INSTALL #6 BARE COPPER GROUNDING CONDUCTORS IN A GRID PATTERN ON FOUR FOOT CENTRES IN EACH DIRECTION OF THE FLOOR GRID. INSTALL BURNDY UNIGROUND GROUND CLAMP TO RAISED FLOOR PEDESTALS ON FOUR FOOT CENTRES, AT EACH INTERSECTION OF THE GROUND GRID CONDUCTORS.
1.4.2. BOND EACH ITEM OF EQUIPMENT ON THE RAISED FLOOR TO THE RAISED FLOOR GROUND GRID WITH MINIMUM #6 TINNED COPPER FLAT BRAID EXTRA FLEXIBLE BONDING JUMPER.
1.4.3. EXTEND #1/0 GREEN INSULATED COPPER GROUND CONDUCTOR IN EMT CONDUIT FROM GROUND GRID TO THE BUILDING MAIN GROUNDING SYSTEM. TERMINATE USING NEMA 2 HOLE COMPRESSION CONNECTORS.

FASTENINGS AND SUPPORTS
26 05 29

1. GENERAL
1.1. RELATED WORK 1.1.1. CONCRETE BASES AND HOUSEKEEPING PADS FOR ELECTRICAL EQUIPMENT SHALL BE ARRANGED AND PAID FOR BY DIVISION 26, AND INSTALLED BY TRADE SPECIALISTS UNDER RESPECTIVE CARPENTRY, CONCRETE, AND PAINTING DIVISIONS.

2. PRODUCTS
2.1. INSERTS
2.1.1. INSERTS FOR CONDUITS AND RACEWAY HANGERS, FOR SINGLE, DOUBLE AND MULTIPLE RUNS SHALL BE GALVANIZED. STANDARD OF ACCEPTANCE: UNISTRUT CANADA, BURNDY (CANADA) LTD. – FLEXIBAR, PILGRIM TECHNICAL PRODUCTS LTD. – TUFSTRUT
2.2. HANGERS
2.2.1. HANGERS FOR ELECTRICAL CONDUIT SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION. STANDARD OF ACCEPTANCE: BURNDY CANADA LTD., CANSTRUT, ELECTROVERT LTD., E. MYATT & CO. LTD, STEEL CITY ELECTRIC LTD., PILGRIM TECHNICAL PRODUCTS LTD

3. EXECUTION
3.1. INSTALLATION
3.1.1. SUPPLY AND DELIVER INSERTS TO SITE IN AMPLE TIME TO BE BUILT INTO WORK OF OTHER TRADES. PROVIDE NECESSARY TEMPLATES AND ADEQUATE INSTRUCTIONS TO LOCATE AND INSTALL INSERTS.
3.1.2. SECURE EQUIPMENT TO MASONRY, TILE AND PLASTER SURFACES WITH LEAD ANCHORS.
3.1.3. SECURE EQUIPMENT TO POURED CONCRETE WITH EXPANDABLE INSERTS.
3.1.4. SECURE SURFACE MOUNTED EQUIPMENT WITH T–BAR SUPPORT HANGER FASTENED TO INVERTED T BAR CEILINGS. ENSURE THAT T BARS ARE ADEQUATELY SUPPORTED TO CARRY WEIGHT OF EQUIPMENT SPECIFIED BEFORE INSTALLATION. STANDARD OF ACCEPTANCE: CADDY MODEL NO. 512 C/W BHC CLIP
3.1.5. SUPPORT EQUIPMENT, CONDUIT OR CABLES USING CLIPS, SPRING LOADED BOLTS, CABLE CLAMPS DESIGNED AS ACCESSORIES TO BASIC CHANNEL MEMBERS.
3.1.6. FASTEN EXPOSED CONDUIT OR CABLES TO BUILDING CONSTRUCTION OR SUPPORT SYSTEM USING STRAPS.
3.1.6.a. ONE–HOLE STEEL STRAPS TO SECURE SURFACE CONDUITS AND CABLES 2" AND SMALLER.
3.1.6.b. TWO–HOLE STEEL STRAPS FOR CONDUITS AND CABLES LARGER THAN 2".
3.1.6.c. BEAM CLAMPS TO SECURE CONDUIT TO EXPOSED STEEL WORK.
3.1.7. SUSPENDED SUPPORT SYSTEMS. 3.1.7.A. SUPPORT INDIVIDUAL CABLE OR CONDUIT RUNS WITH ¼" DIA THREADED RODS AND SPRING CLIPS.
3.1.7.B. SUPPORT 2 OR MORE CABLES OR CONDUITS ON CHANNELS SUPPORTED BY ¼" DIA THREADED ROD HANGERS WHERE DIRECT FASTENING TO BUILDING CONSTRUCTION IS IMPRACTICAL.
3.1.8. FOR SURFACE MOUNTING OF TWO OR MORE CONDUITS USE CHANNELS.
3.1.9. PROVIDE GALVANIZED AFTER FABRICATION METAL BRACKETS, FRAMES, HANGERS, CLAMPS AND RELATED TYPES OF SUPPORT STRUCTURES WHERE INDICATED OR AS REQUIRED TO SUPPORT CONDUIT AND CABLE RUNS.
3.1.10. ENSURE ADEQUATE SUPPORT FOR RACEWAYS AND CABLES DROPPED VERTICALLY TO EQUIPMENT WHERE THERE IS NO WALL SUPPORT.
3.1.11. DO NOT USE WIRE LASHING OR PERFORATED STRAP TO SUPPORT OR SECURE RACEWAYS OR CABLES.
3.1.12. DO NOT USE SUPPORTS OR EQUIPMENT INSTALLED FOR OTHER TRADES FOR CONDUIT OR CABLE SUPPORT EXCEPT WITH PERMISSION OF OTHER TRADE AND APPROVAL OF CONSULTANT.
3.1.13. INSTALL FASTENINGS AND SUPPORTS AS REQUIRED FOR EACH TYPE OF EQUIPMENT CABLES AND CONDUITS, AND IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION RECOMMENDATIONS.
3.1.14. SUPPLY AND ERECT SPECIAL STRUCTURAL WORK REQUIRED FOR THE INSTALLATION OF ELECTRICAL EQUIPMENT. PROVIDE ANCHOR BOLTS AND FASTENINGS UNLESS NOTED OTHERWISE. MOUNT EQUIPMENT REQUIRED TO BE SUSPENDED ABOVE FLOOR LEVEL, WHERE DETAILS ARE NOT SHOWN, ON A FRAME OR PLATFORM BRACKETED FROM THE WALL OR SUSPENDED FROM THE CEILING. CARRY SUPPORTS TO EITHER THE CEILING OR THE FLOOR, OR BOTH AS REQUIRED, AT LOCATIONS WHERE, BECAUSE WALL THICKNESS IS INADEQUATE, IT IS NOT PERMITTED TO USE SUCH BRACKETS.
3.1.15. ELECTRICAL PANELS, SWITCHES OR OTHER ELECTRICAL EQUIPMENT SHALL BE COMPLETE WITH SUITABLE BASES OR MOUNTING BRACKETS. INSTALL ANGLE OR CHANNEL IRON SUPPORTS TO BEAR THE EQUIPMENT WHERE IT IS SHOWN IN OR ON STRUCTURAL TILE WALLS, OR WALLS THAT ARE INADEQUATE TO BEAR THE EQUIPMENT.
3.1.16. PROVIDE CHANNEL IRON OR OTHER METAL SUPPORTS WHERE NECESSARY TO ADEQUATELY SUPPORT LIGHTING FIXTURES. DO NOT USE WOOD. LIGHTING FIXTURES SHALL BE SUPPORTED TOTALLY INDEPENDENT OF CEILING AND SUPPORTED FROM STRUCTURE ABOVE.
3.1.17. SUPPORT HANGERS, IN GENERAL, FROM INSERTS IN CONCRETE CONSTRUCTION OR FROM BUILDING STRUCTURAL STEEL BEAMS, USING BEAM CLAMPS. PROVIDE ADDITIONAL ANGLE OR CHANNEL STEEL MEMBERS REQUIRED BETWEEN BEAMS FOR SUPPORTING CONDUITS.
3.1.18. DO NOT USE EXPLOSIVE DRIVE PINS IN ANY SECTION OF WORK WITHOUT OBTAINING PRIOR WRITTEN APPROVAL.
3.1.19. PROVIDE RE–ENFORCED CONCRETE PADS UNDER FLOOR MOUNTED ELECTRICAL EQUIPMENT. PADS ARE TO FORMED WITH CHAMFERED EDGES TO PREVENT CHIPPING. PADS ARE TO BE SEALED AND PAINTED TO PREVENT DUST FROM ENTERING AND INTERFERING WITH ELECTRICAL EQUIPMENT.

SPLITTERS, JUNCTION AND PULL BOXES, CABINETS
26 05 32

4. GENERAL
4.1. SHOP DRAWINGS AND PRODUCT DATA
4.1.1. SUBMIT SHOP DRAWINGS AND PRODUCT DATA FOR CABINETS IN ACCORDANCE WITH SECTION 26 05 01 ELECTRICAL GENERAL REQUIREMENTS.

4.2. PRODUCTS
4.3. SPLITTERS
4.3.1. SHEET METAL ENCLOSURE, WELDED CORNERS AND FORMED HINGED COVER SUITABLE FOR LOCKING IN CLOSED POSITION.
4.3.2. MAIN AND BRANCH LUGS AND CONNECTION BARS TO MATCH REQUIRED SIZE AND NUMBER OF INCOMING AND OUTGOING CONDUCTORS AS INDICATED.
4.3.3. AT LEAST THREE SPARE TERMINALS ON EACH SET OF LUGS IN SPLITTERS.
4.3.4. DISTRIBUTION RISER SPLITTERS SHALL BE OF SPECIAL CONSTRUCTION WITH HINGED ACCESS DOOR, COPPER BUS BARS PREDRILLED TO ACCEPT TWO HOLE COMPRESSION CONNECTORS FOR ALL INCOMING AND OUTGOING CABLES.
4.4. JUNCTION AND PULL BOXES
4.4.1. WELDED STEEL HOT DIPPED GALVANIZED CONSTRUCTION WITH SCREW–ON FLAT COVERS FOR SURFACE MOUNTING.
4.4.2. COVERS WITH 1" MINIMUM EXTENSION ALL AROUND, FOR FLUSH–MOUNTED PULL AND JUNCTION BOXES.

2. EXECUTION
2.1. SPLITTER INSTALLATION
2.1.1. INSTALL SPLITTERS AND MOUNT PLUMB, TRUE AND SQUARE TO THE BUILDING LINES.
2.1.2. EXTEND SPLITTERS FULL LENGTH OF EQUIPMENT ARRANGEMENT EXCEPT WHERE INDICATED OTHERWISE.
2.2. JUNCTION, PULL BOXES AND CABINETS INSTALLATION
2.2.1. INSTALL PULL BOXES IN INCONSPICUOUS BUT ACCESSIBLE LOCATIONS.
2.2.2. MOUNT CABINETS WITH TOP NOT HIGHER THAN 6'–6" ABOVE FINISHED FLOOR.
2.2.3. INSTALL TERMINAL BLOCK AS INDICATED IN TYPE T CABINETS
2.2.4. ONLY MAIN JUNCTION AND PULL BOXES ARE INDICATED. INSTALL PULL BOXES SO AS NOT TO EXCEED 100' OF CONDUIT RUN BETWEEN PULL BOXES.
2.3. IDENTIFICATION
2.3.1. PROVIDE EQUIPMENT IDENTIFICATION IN ACCORDANCE WITH SECTION 26 05 01 –ELECTRICAL – GENERAL REQUIREMENTS.
2.3.2. INSTALL SIZE 2 IDENTIFICATION LABELS INDICATING SYSTEM NAME, VOLTAGE, PHASE AND SOURCE OF POWER.

CONDUITS, FASTENINGS AND FITTINGS
26 05 33

1. GENERAL
1.1. GENERAL REQUIREMENTS
1.1.1. CONFORM TO SECTION 26 05 01, ELECTRICAL GENERAL REQUIREMENTS.
1.2. LOCATION OF CONDUIT
1.2.1. DRAWINGS DO NOT INDICATE ALL CONDUIT RUNS. THOSE INDICATED ARE IN DIAGRAMMATIC FORM ONLY.
1.3. WIRING METHODS
1.3.1. INSTALL WIRING IN SURFACE MOUNTED EMT CONDUIT UNLESS OTHERWISE SPECIFIED. IN FINISHED AREAS, CONCEAL CONDUIT IN WALLS AND CEILING SPACES.
1.3.2. WHERE SHOWN ON DRAWINGS, ARMOURED CABLE SHALL BE TECK 90 TYPE. JACKETS OF CABLE SHALL HAVE FT–4 RATING IDENTIFIED. CONNECTORS SHALL BE EQUAL TO T&B STAR TECK TYPE
1.3.3. RIGID PVC CONDUIT WITH GROUND WIRE AS PER ELECTRICAL SAFETY CODE TABLE 16 SHALL BE USED THROUGHOUT BELOW GRADE AREAS AND MAY BE USED IN OR UNDER SLAB ON GRADE AREAS. IT SHALL NOT BE USED IN ABOVE GRADE SLABS.
1.3.4. EPOXY ENAMEL OR PVC COATED RIGID GALVANIZED STEEL CONDUIT SHALL BE USED THROUGHOUT BASEMENT; IN DAMP LOCATIONS INCLUDING BUT NOT LIMITED TO INTAKE AND EXHAUST SHAFTS AND AIR HANDLING UNITS; FOR RIGID METALLIC CONDUIT UNDERGROUND OR IN FLOOR SLABS; FOR WIRING OUTDOORS OR ON ROOFS OF BUILDINGS; AND WHERE NOTED ON DRAWINGS.
1.3.5. RUNS OF CONDUIT AND CABLES, WHERE SHOWN, ARE INDICATED ONLY BY GENERAL LOCATION AND ROUTING. INSTALL CONDUITS AND CABLES SO AS TO PROVIDE MAXIMUM HEAD ROOM AND TO INTERFERE AS LITTLE AS POSSIBLE WITH FREE USE OF SPACES THROUGH WHICH THEY PASS.
1.3.6. USE EMT CONDUIT FOR BRANCH CIRCUIT AND SIGNAL WIRING IN CEILINGS, FURRED SPACES, AND IN HOLLOW WALLS AND PARTITIONS.
1.3.7. USE RIGID GALVANIZED STEEL CONDUIT FOR WIRING WHERE CONDUITS ARE EXPOSED TO POSSIBLE MECHANICAL DAMAGE.
1.3.8. USE EPOXY COATED RIGID GALVANIZED STEEL CONDUIT FOR WIRING IN POURED CONCRETE.
1.3.9. ALUMINUM CONDUITS SHALL NOT BE USED.
1.3.10. FLEXIBLE CONDUIT AND ARMOURED CABLE WILL BE ACCEPTED IN PARTS OF EXISTING BUILDING, WHERE FURRED SPACES ABOVE CEILINGS ARE TOO CONGESTED TO PERMIT CONDUIT TO BE INSTALLED, BUT ONLY WITH CONSULTANTS WRITTEN PERMISSION. TERMINATE ARMOURED CABLE, WHERE SHOWN, IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
1.3.11. FLEXIBLE STEEL CONDUIT WITH INTEGRAL INSULATED GREEN GROUND WIRE IS PERMITTED FOR THE FINAL CONNECTION TO LUMINAIRES MOUNTED IN SUSPENDED CEILINGS FROM THE BRANCH WIRING JUNCTION BOX ABOVE, WITH FLEXIBLE CONDUIT LENGTH NOT TO EXCEED 10', AND BE NEATLY INSTALLED AND ATTACHED TO LUMINAIRE SUPPORT CHAIN.
1.3.12. FLEXIBLE ARMOURED CONDUIT (OR BX) WITH AN INTEGRAL INSULATED GREEN GROUND WIRE MAY BE USED WHERE CONCEALED IN WALLS FOR WIRING TO RECEPTACLES, AND FOR THE FINAL CONNECTION TO LUMINAIRES. 1.3.13. ARRANGE CONDUITS, INSTALLED IN SUSPENDED CEILINGS, TO PROVIDE MINIMUM INTERFERENCE WITH REMOVAL OF TILES.
1.3.13. VERTICAL RACEWAYS TO BE PROVIDED WITH INSULATED CABLE SUPPORT BUSHINGS OR OTHER APPROVED METHOD OF SUPPORTING THE WEIGHT OF THE CABLE, WHERE VERTICAL RUNS EXCEED THOSE OF TABLE 21 OF THE ELECTRICAL CODE.

2. PRODUCTS
2.1. CONDUITS
2.1.1. RIGID HOT DIPPED GALVANIZED STEEL THREADED CONDUIT
2.1.2. EPOXY COATED RIGID GALVANIZED STEEL CONDUIT: WITH ZINC COATING AND CORROSION RESISTANT EPOXY FINISH INSIDE AND OUTSIDE EQUAL TO COLUMBEX GREEN GUARD II
2.1.3. PVC COATED HOT DIPPED GALVANIZED RIGID STEEL CONDUIT: WITH 40 MIL PVC EXTERIOR COATING, 2 MIL URETHANE INTERIOR AND THREAD COATING EQUAL TO ROB ROY PLASTIBOND REDHOT
2.1.4. ELECTRICAL METALLIC TUBING (EMT), GALVANIZED: WITH COUPLINGS.
2.1.5. RIGID PVC CONDUIT.
2.1.6. FLEXIBLE METAL CONDUIT AND LIQUID–TIGHT FLEXIBLE METAL CONDUIT.
2.1.7. CONDUIT SHALL BE OF SUFFICIENT SIZE TO ALLOW EASY REMOVAL OF CONDUCTORS AT ANY TIME. CONDUIT SIZES, WHERE SHOWN, ARE MINIMUM AND SHALL NOT BE REDUCED.
2.2. CONDUIT FITTINGS
2.2.1. FITTINGS: MANUFACTURED FOR USE WITH CONDUIT SPECIFIED. COATING: SAME AS CONDUIT.
2.2.2. FACTORY "ELLS" WHERE 90° BENDS ARE REQUIRED FOR 1" AND LARGER CONDUITS
2.2.3. INSULATED THROAT STEEL SET SCREW CONNECTORS AND COUPLINGS FOR EMT.
2.2.4. THREADED OR COMPRESSION TYPE RAINTIGHT/CONCRETE TIGHT INSULATED THROAT ZINC PLATED STEEL CONNECTORS AND COUPLINGS FOR RIGID STEEL CONDUIT.
2.2.5. RAINTIGHT INSULATED THROAT STEEL CONNECTORS AT ALL SURFACE PANELBOARDS, SWITCHBOARDS AND OTHER ELECTRICAL EQUIPMENT IN SPRINKLERED AREAS FOR ALL CONDUIT TERMINATIONS.
2.3. EXPANSION FITTINGS
2.3.1. ELECTROGALVANIZED STEEL WITH INTERNAL GROUNDING FOR EMT SUITABLE FOR 100MM LINEAR CONDUIT MOVEMENT. STANDARD OF ACCEPTANCE: COOPER CROUSE HINDS XJG–EMT
2.4. FISH CORD
2.4.1. POLYPROPYLENE
3. EXECUTION
3.1. INSTALLATION
3.1.1. INSTALL CONDUITS TO CONSERVE HEADROOM IN EXPOSED LOCATIONS AND CAUSE MINIMUM INTERFERENCE IN SPACES THROUGH WHICH THEY PASS.
3.1.2. CONCEAL CONDUITS EXCEPT IN MECHANICAL AND ELECTRICAL SERVICE ROOMS AND IN UNFINISHED AREAS.
3.1.3. USE ELECTRICAL METALLIC TUBING (EMT) EXCEPT: IN CAST CONCRETE, UNDERGROUND OR WHERE INSTALLED EXPOSED WITHIN 6'–6" OF FLOOR.
3.1.4. USE RIGID GALVANIZED STEEL CONDUIT WHERE INSTALLED SURFACE MOUNTED WITHIN 6'–6" OF FLOOR.
3.1.5. USE RIGID PVC CONDUIT IN SLAB ON GRADE CAST CONCRETE AND UNDERGROUND. DO NOT USE PVC CONDUITS IN SLABS ABOVE GRADE. ALL CONDUITS SHALL BE SURFACE MOUNTED TO MINIMIZE RISKS OF FUTURE DAMAGE WHEN CORE DRILLING DURING FUTURE RENOVATIONS. WHERE LOCALIZED CONGESTION OR CIRCUMSTANCES FORCES THE USE OF CONDUITS IN THE FLOOR SLABS, THEY SHALL BE EPOXY COATED RIGID GALVANIZED STEEL.
3.1.6. PROVIDE PVC CONDUIT WITH GROUND WIRE AS PER TABLE 16 OF ONTARIO ELECTRICAL SAFETY CODE.
3.1.7. USE LIQUID TIGHT FLEXIBLE METAL CONDUIT FOR CONNECTION TO MOTORS OR VIBRATING EQUIPMENT
3.1.8. INSTALL CONDUIT SEALING FITTINGS IN HAZARDOUS AREAS. FILL WITH COMPOUND.
3.1.9. USE RAINTIGHT CONNECTORS OR HUBS FOR TERMINATING CONDUITS AT ALL SURFACE OR FLOOR MOUNTED PANELBOARDS, SWITCHBOARDS, AND OTHER EQUIPMENT LOCATED IN SPRINKLERED AREAS OR WHERE AT RISK OF EXPOSURE TO DRIPPING LIQUIDS.
3.1.10. INSTALL WIRING IN CONDUIT UNLESS OTHERWISE SPECIFIED.
3.1.11. BEND CONDUIT COLD. REPLACE CONDUIT IF KINKED OR FLATTENED MORE THAN 1/10TH OF ITS ORIGINAL DIAMETER.
3.1.12. MECHANICALLY BEND STEEL CONDUIT OVER 3/4" DIA
3.1.13. FIELD THREADS ON RIGID CONDUIT MUST BE OF SUFFICIENT LENGTH TO DRAW CONDUITS UP TIGHT.
3.1.14. INSTALL FISH CORD IN EMPTY CONDUITS.
3.1.15. RUN TWO 1" SPARE CONDUITS UP TO CEILING SPACE AND TWO 1" SPARE CONDUITS DOWN TO CEILING SPACE FROM EACH FLUSH PANEL. TERMINATE THESE CONDUITS IN 6" X 6" X 4" JUNCTION BOXES IN CEILING SPACE OR IN CASE OF AN EXPOSED CONCRETE SLAB, TERMINATE EACH CONDUIT IN FLUSH CONCRETE TYPE BOX.
3.1.16. INSTALL JUNCTION BOXES OR CABLE ANCHOR BOXES WHEREVER NECESSARY FOR PROPER PULLING OR ANCHORING OF CABLES. INSTALL SO AS TO BE ACCESSIBLE AFTER BUILDING IS COMPLETED AND SET TO COME WITHIN FINISHED LINES OF BUILDING.
3.1.17. WHERE EMT OR RIGID PVC IS USED, RUN GREEN INSULATED GROUND WIRE IN CONDUIT, WITH MINIMUM ONE GROUND CONDUCTOR PER THREE UNGROUNDED CONDUCTORS.
3.1.18. PROVIDE EXPANSION COUPLINGS, WITH BONDING JUMPER AND GROUND CLAMPS WHERE RACEWAYS CROSS BUILDING CONTROL JOINTS.
3.1.19. WHERE CONDUITS OR CABLES ARE INSTALLED UNDER RAISED FLOORS AND ARE REQUIRED TO BE FASTENED IN PLACE, USE TWO HOLE INVERTED " U " STRAPS. NO SHARP EDGES OR CORNERS WILL BE PERMITTED WHICH MAY DAMAGE PVC JACKETS OR CABLES.
3.1.20. RUNS OF CONDUIT AND CABLES, WHERE SHOWN, ARE INDICATED ONLY BY GENERAL LOCATION AND ROUTING. INSTALL CONDUITS AND CABLES SO AS TO PROVIDE MAXIMUM HEAD ROOM AND TO INTERFERE AS LITTLE AS POSSIBLE WITH FREE USE OF SPACES THROUGH WHICH THEY PASS. THEY SHALL BE INSTALLED AS CLOSE TO BUILD

2.4.LOCAL SWITCHES
2.4.1. FINISHED IN WHITE, MOUNTED ON STAINLESS STEEL PLATE AND SUITABLE MOUNTING BRACKET.
2.4.2. ON/OFF LOCAL SWITCHES TO BE ADDRESSABLE TYPE WITH A PROGRAMMABLE UNIQUE DIGITAL ADDRESS AND CAPABLE OF COMMUNICATING OVER A COMMON DATA LOOP.
2.5.SYSTEM START UP SERVICES
2.5.1. MANUFACTURER TO PROVIDE A FACTORY AUTHORIZED TECHNICIAN TO CONFIRM PROPER INSTALLATION AND OPERATION OF ALL SYSTEM COMPONENTS.
2.5.2. MANUFACTURER TO PROVIDE FACTORY AUTHORIZED APPLICATION ENGINEER TO TRAIN OWNER PERSONNEL IN THE OPERATION AND PROGRAMMING OF THE LIGHTING CONTROL SYSTEM.
2.5.3. MANUFACTURER TO PROVIDE SYSTEM DOCUMENTATION INCLUDING:
2.5.3.a. SYSTEM 1-LINE SHOWING ALL PANELS, NUMBER AND TYPE OF SWITCHES AND SENSORS, DATALINE, PROGRAMMABLE SYSTEM SWITCHES, TELEPHONE OVERRIDE MODULES, AND CENTRAL PC.
DRAWINGS FOR EACH PANEL SHOWING HARDWARE CONFIGURATION AND NUMBERING.
2.5.3.c. PANEL WIRING SCHEDULES
2.5.3.d. TYPICAL WIRING DIAGRAMS FOR EACH COMPONENT.
2.5.4. MANUFACTURER TO PROVIDE, INSTALL AND COMMISSION SYSTEM PROGRAMMING INCLUDING:
2.5.4.a. WIRING DOCUMENTATION
2.5.4.b. PROGRAMMABLE PANEL AND SYSTEM SWITCH OPERATION
2.5.4.c. TELEPHONE OVERRIDES
2.5.4.d. OPERATING SCHEDULES.

3. EXECUTION
3.1.2.1. INSTALLATION
3.1.1. PROVIDE INTERNAL 16 GAUGE STEEL BARRIERS IN RELAY SECTION TO SEPARATE DIFFERENT VOLTAGE SOURCES WHERE MORE THAT ONE LIGHTING PANEL IS CONTROLLED BY A GIVEN LOW VOLTAGE RELAY PANEL. PROVIDE WARNING LAMACOIDS TO INDICATE MORE THAN ONE VOLTAGE SOURCE IS PRESENT, AND IDENTIFY PANELS BEING CONTROLLED.
3.1.2. CONNECT LOADS TO CIRCUITS.
3.1.3. PROVIDE LOCAL LOW VOLTAGE SWITCHING OF THE TYPE DESIGNATED IN LOCATIONS AS SHOWN ON THE DRAWINGS.
3.1.4. LOW VOLTAGE WIRING TO LOCAL CONTROL DEVICES TO BE SOLID STEEL ARMOURED CABLE, COTTON BRAID, TWISTED MIN. #18 GAUGE MULTICONDUCTOR AS MANUFACTURED BY CAROL CABLE CO. OR LVT, AND INSTALLED IN CONDUIT.
3.1.5. PROVIDE CONTROL WIRING AND DATA CABLES (2 WIRE SHIELDED TWISTED PAIR) IN CONDUITS BETWEEN CENTRAL CONTROLLER AND RELAY PANELS.
3.1.6. EACH HARD WIRED LOW VOLTAGE SWITCH TO HAVE A SEPARATE RETURN WIRE RUNNING BACK TO RELAY. DO NOT USE A COMMON RETURN WIRE FOR A GROUP OF HARD WIRED SWITCHES.
3.1.7. THE SYSTEM TO BE COMPLETELY PROGRAMMED AND VERIFIED BY THE MANUFACTURER'S TECHNICAL REPRESENTATIVE.
3.1.8. AT A TIME SUITABLE TO THE OWNER, PROVIDE 8 HOUR TRAINING TO THE OWNER'S STAFF IN THE OPERATION, PROGRAMMING AND BASIC MAINTENANCE SUCH AS IDENTIFYING DEFECTIVE COMPONENTS. COST OF THIS SERVICE TO BE INCLUDED IN THE TENDER PRICE.

DRY TYPE TRANSFORMERS UP TO 600 V PRIMARY
26 22 13

1. PRODUCTS
1.1.GENERAL
1.1.1. TRANSFORMERS TO HAVE VOLTAGE AND KVA RATING INDICATED
1.1.2. VACUUM IMPREGNATED POLYESTER RESIN CONSTRUCTION.
1.1.3. EFFICIENCY TO MEET OR EXCEED CSA C802.2. TRANSFORMERS TO BEAR THE ENERGY STAR AND ENVIRONMENTAL CHOICE LOGOS. MINIMUM EFFICIENCY TO BE 98%
1.1.4. TRANSFORMER WINDINGS AND ALL CURRENT CARRYING PARTS TO BE COPPER.
1.1.5. TRANSFORMERS TO BE SELF-CONTAINED, FREE STANDING UNITS SUITABLE FOR FLOOR MOUNTING. WHERE SHOWN OR REQUIRED TO BE WALL MOUNTED, NECESSARY MOUNTING HARDWARE TO BE INCLUDED.
1.1.6. TRANSFORMERS TO HAVE PROVISIONS FOR INCOMING AND OUTGOING CONDUCTOR ENTRY SHOWN ON DRAWINGS.
1.1.7. TRANSFORMERS TO HAVE 4-2½% FULL CAPACITY PRIMARY TAPS, TWO ABOVE AND TWO BELOW NOMINAL VOLTAGE.
1.1.8. THREE PHASE TRANSFORMERS TO HAVE DELTA CONNECTED PRIMARY AND 120/208 VOLT GROUNDED WYE SECONDARY UNLESS OTHERWISE NOTED.
1.1.9. TRANSFORMERS TO BE EQUIPPED WITH GROUNDING PROVISION SPECIFIED IN TABLE 3 OF CSA STANDARD C9.
1.2.RATINGS
1.2.1. KVA CAPACITY INDICATED TO BE BASED ON CLASS 220 DEGREE C INSULATION, 130 DEGREE C RISE.
1.2.2. TRANSFORMERS TO BE TYPE ANN.
1.2.3. TRANSFORMERS RATED BELOW 500KVA TO HAVE NOISE LEVEL AS PER TABLE 8 OF CSA STANDARD UNLESS OTHERWISE NOTED.
1.2.4. TRANSFORMERS RATED 300 KVA AND LARGER TO HAVE A NOISE LEVEL 3 DB BELOW THAT SHOWN ON TABLE 8 OF CSA STANDARD.
1.3.SUPPORT AND ISOLATION
1.3.1. SUPPORT TRANSFORMERS CORE AND COIL ASSEMBLY ON IN-SHEAR VIBRATION ISOLATION MOUNTING PADS. INSTALLED MOUNTINGS TO PROVIDE A UNIFORM DEFLECTION UNDER WEIGHT AND WEIGHT DISTRIBUTION OF SUPPORTED EQUIPMENT. PADS TO PROVIDE A MINIMUM OF 1/4" STATIC DEFLECTION.
1.4.ENCLOSURE AND FINISH
1.4.1. ENCLOSURE: TYPE 1 WITH DRIP SHIELD
1.4.2. TRANSFORMER ENCLOSURE TO HAVE PRIMARY METAL TREATMENT AND TO BE FINISHED WITH 2 COATS OF UL50 3R RATED POWDER COAT FINISHING PAINT.
1.4.3. FINISH EQUIPMENT AS FOLLOWS:
1.4.3.a. BASIC RUST-INHIBITING METAL PROCESS
1.4.3.b. INTERIOR IN WHITE
1.4.4. EXTERIOR SHALL BE FINISHED WITH PAINT EQUAL TO SHERWIN WILLIAMS, AS FOLLOWS:
1.4.4.a. NORMAL POWER – ASA 61 GREY
1.4.4.b. EMERGENCY POWER – F65E37 INTERNATIONAL ORANGE
1.4.4.c. UPS – ROYAL BLUE
1.4.5. MANUFACTURER TO PROVIDE QUART OF TOUCH-UP PAINT OR SEVERAL PRESSURIZED SPRAY CANS TO TOUCH-UP SMALL AREAS MARRED DURING INSTALLATION.
1.5.EQUIPMENT IDENTIFICATION
1.5.1. PROVIDE EQUIPMENT IDENTIFICATION IN ACCORDANCE WITH SECTION 26 05 01 -ELECTRICAL GENERAL REQUIREMENTS.
1.5.2. LABEL SIZE: 7. SUBMIT NAMEPLATE WORDING.

2. EXECUTION
2.1.INSTALLATION
2.1.1. MOUNT DRY TYPE TRANSFORMERS UP TO 75 KVA SUSPENDED OR ON FLOOR AS INDICATED.
2.1.2. MOUNT DRY TYPE TRANSFORMERS ABOVE 75 KVA ON FLOOR.
2.1.3. PROVIDE A 4" REINFORCED CONCRETE PAD WITH BEVELLED EDGES FOR ALL FLOOR MOUNTED TRANSFORMERS. SEAL WITH PAINT OR CONCRETE SEALER TO PREVENT CONCRETE DUST FROM ENTERING EQUIPMENT. CONCRETE PADS TO BE PROVIDED UNDER THIS DIVISION.
2.1.4. PROVIDE SUITABLE MOUNTING HARDWARE COMPLETE WITH EXTERNAL VIBRATION ISOLATION PADS FOR BOTH FLOOR MOUNTED (BETWEEN ENCLOSURE AND PAD) AND SUSPENDED (BETWEEN ENCLOSURE AND SUPPORT FRAME) TRANSFORMERS.
2.1.5. INSTALL TRANSFORMERS IN LEVEL UPRIGHT POSITION.
2.1.6. ENSURE ADEQUATE CLEARANCE AROUND TRANSFORMER FOR VENTILATION.
2.1.7. REMOVE SHIPPING BLOCKS/SUPPORTS ONLY AFTER TRANSFORMER IS INSTALLED AND JUST BEFORE PUTTING INTO SERVICE.
2.1.8. LOOSEN ISOLATION PAD BOLTS UNTIL NO COMPRESSION IS VISIBLE.
2.1.9. MAKE FINAL PRIMARY AND SECONDARY CONNECTIONS USING FLEXIBLE STEEL CONDUITS.
2.1.10. MAKE PRIMARY AND SECONDARY CONNECTIONS IN ACCORDANCE WITH WIRING DIAGRAM.
2.1.11. PROVIDE GREEN INSULATED COPPER GROUND CONDUCTOR IN CONDUIT, SIZED AS FOLLOWS, FROM TRANSFORMER GROUND BUS TO THE BUILDING GROUNDING SYSTEM, IN ACCORDANCE WITH TABLE 16 OF THE ELECTRICAL CODE: UP TO 30 KVA TRANSFORMER: #8 AWG IN ½" CONDUIT; 30 KVA TRANSFORMER: #8 AWG IN 1/2 "CONDUIT; UP TO 45 KVA TRANSFORMER:#6 AWG IN 3/4" CONDUIT; UP TO 75 KVA: #4 AWG IN 3/4" CONDUIT: UP TO 112.5 KVA:
#3 AWG IN 1" CONDUIT; OVER 112.5 KVA: REFER TO DRAWINGS.
2.1.12. ENERGIZE TRANSFORMERS AFTER INSTALLATION IS COMPLETE.
2.1.13. ADJUST TRANSFORMER TAPS AS REQUIRED TO ACHIEVE SUITABLE SECONDARY VOLTAGE AT LOADS.

POWER PANELS
26 27 15

1. SHOP DRAWINGS
1.0.1. DRAWINGS TO INCLUDE ELECTRICAL DETAIL OF PANEL, BRANCH BREAKER TYPE, QUANTITY, AMPACITY AND ENCLOSURE DIMENSION.
1.1.PLANT ASSEMBLY
1.1.1. INSTALL CIRCUIT BREAKERS IN PANELBOARDS BEFORE SHIPMENT.
1.1.2. IN ADDITION TO CSA REQUIREMENTS MANUFACTURER'S NAMEPLATE MUST SHOW FAULT CURRENT THAT PANEL INCLUDING BREAKERS HAS BEEN BUILT TO WITHSTAND.
1.2.IDENTIFICATION
1.2.1. PANELS SHALL BE IDENTIFIED WITH LAMACOID PLATE WITH SHALL INCLUDE PANEL DESIGNATION (½" LETTERING), VOLTAGE AND PHASE (¼" LETTERING) AND WHERE PANEL IS FED FROM (¼" LETTERING).
1.3.OPERATION AND MAINTENANCE DATA
1.3.1. PROVIDE OPERATION AND MAINTENANCE DATA FOR INCORPORATION INTO MANUAL SPECIFIED IN SECTION 26 05 01 ELECTRICAL GENERAL REQUIREMENTS.
2. PRODUCTS
2.1.POWER PANELS
2.1.1. PANELBOARDS TO BE FACTORY ASSEMBLED TYPE CDP, UNLESS OTHERWISE SPECIFIED.
2.1.2. ALL POWER PANELS 400A OR LARGER TO BE IN OVERSIZED TUB WITH BUS BAR EXTENSIONS DRILLED TO ACCEPT A LONG BARREL TWO HOLE COMPRESSION CONNECTOR ON MAIN INCOMING FEEDER.
2.1.3. COPPER BUS WITH NEUTRAL OF SAME AMPERE RATING AS MAINS.
2.1.4. PANELS TO BE FREESTANDING SURFACE MOUNTED TYPE, AS SHOWN.
2.1.5. PANELS TO BE DEAD FRONT TYPE IN CODE GAUGE STEEL ENCLOSURE.
2.1.6. EACH PANEL SHALL BE COMPLETE WITH A TYPEWRITTEN DIRECTORY WHICH SHALL BE MOUNTED INSIDE DOOR WITH CLEAR PLASTIC COVER.
2.1.7. COMPUTER ROOM PANELS SHALL BE COMPLETE WITH A TOP AND BOTTOM SKIRT FROM T-BAR CEILING TO UNDERSIDE OF RAISED FLOOR TO CONCEAL INCOMING CONDUITS AT THE TOP, AND LIQUID TIGHT FLEXIBLE STEEL OUTPUT FEEDER CONDUITS AT THE BOTTOM. STANDARD OF ACCEPTANCE: CUTLER HAMMER, SIEMENS, SQUARE D
2.2.CONSTRUCTION FEATURES
2.2.1. FREE-STANDING, RIGID, DEAD FRONT ENCLOSURE
2.2.2. HINGED AND FORMED FRONT DOORS
2.2.3. COMPLETELY FRONT ACCESSIBLE WITH ALL BOLTED CONNECTIONS, LUGS FOR CABLE CONNECTIONS, TERMINATIONS FOR CONTROL WIRING AND ANY OTHER ITEMS REQUIRING TORQUING, INFRA-RED SCANNING AND MAINTENANCE AND REPLACEMENT ALL VISIBLE AND ACCESSIBLE FROM THE FRONT, WHEN FRONT TRIM IS REMOVED.
2.2.4. INDOOR SPRINKLER PROOF CONSTRUCTION OF NON WALK-IN TYPE CONFORMING WITH CSA ENCLOSURE 2. DOOR(S) SHALL BE GASKETTED, WITH OVERHANGING DRIP SHIELD.
2.2.5. TWO CHANNELS ACROSS BOTTOM OF EACH SECTION TO PERMIT ROLLING, JACKING AND LEVELLING.
2.2.6. FINISH BASIC RUST INHIBITING METAL PROCESS
2.2.7. PANELS SHALL BE FINISHED WITH TWO COATS OF GREY ASA NO. 61 FOR NORMAL PANELS, INTERNATIONAL ORANGE FOR EMERGENCY POWER AND ROYAL BLUE FOR UPS PANELS.
2.2.8. PANEL LOCKS SHALL BE COMMON TO ONE KEY THROUGHOUT PROJECT.
2.2.9. GROUND BUS EXTENDING THROUGH ALL SECTIONS COMPLETE WITH COPPER LUGS FOR NUMBER OF INCOMING AND OUTGOING FEEDERS.
2.2.10. MAIN INCOMING BUS AND MAIN CIRCUIT BREAKERS TO BE IN A SEPARATE COMPARTMENTALIZED STEEL ENCLOSURE ACCESSIBLE FROM THE FRONT OF THE SWITCHBOARD.
2.2.11. ALL BUSES SHALL BE COPPER AND BRACED TO MATCH MAIN BREAKERS.
2.2.12. ALL BRANCH CIRCUIT BREAKERS SHALL BE MOLDED CASE TYPE SUITABLE FOR 50,000 AMPS INTERRUPTING CAPACITY AT 600 VOLTS.
2.2.13. EQUIPMENT AND TOTAL ASSEMBLY SHALL BE CSA APPROVED.
2.2.14. WARNING LABELS INDICATING LIVE COMPONENTS FROM 2 SOURCES WHERE REQUIRED BY HYDRO INSPECTION.
2.3.BREAKERS GENERAL
2.3.1. BOLT-ON MOULDED CASE CIRCUIT BREAKER: QUICK-MAKE, QUICK-BREAK TYPE, FOR MANUAL AND AUTOMATIC OPERATION.
2.3.2. BREAKERS SHALL HAVE BOLTED TYPE CONNECTIONS.
2.3.3. COMMON-TRIP BREAKERS: WITH SINGLE HANDLE FOR MULTI-POLE APPLICATIONS.
2.3.4. MAGNETIC INSTANTANEOUS TRIP ELEMENTS IN CIRCUIT BREAKERS TO OPERATE ONLY WHEN VALUE OF CURRENT REACHES SETTING. TRIP SETTINGS ON BREAKERS WITH ADJUSTABLE TRIPS TO RANGE FROM 5 – 10 TIMES CURRENT RATING.
2.3.5. CIRCUIT BREAKERS WITH INTERCHANGEABLE TRIPS OVER 150 A.
2.3.6. INCLUDE:
2.3.6.a ON-OFF LOCKING DEVICE.
2.3.6.b. HANDLE MECHANISM.
2.3.7. 22,000 AMPS SYMMETRICAL INTERRUPTING RATING AT 120/208 VOLTS
2.3.8. 22,000 AMPS SYMMETRICAL INTERRUPTING RATING AT 347/600 VOLTS.
2.4.EQUIPMENT IDENTIFICATION
2.4.1. PROVIDE EQUIPMENT IDENTIFICATION IN ACCORDANCE WITH SECTION 26 05 01 -ELECTRICAL GENERAL REQUIREMENTS.
2.4.2. NAMEPLATE FOR EACH POWER PANEL SIZE 4 ENGRAVED, SUBMIT NAMEPLATE WORDING.
2.4.3. COMPLETE CIRCUIT DIRECTORY WITH TYPEWRITTEN LEGEND SHOWING LOCATION AND LOAD OF EACH CIRCUIT. COVER DIRECTORY WITH A 1/32" THICK CLEAR PLASTIC SHEET.
2.4.4. NAMEPLATES FOR ELECTRICAL PANELS SHALL INDICATE PANEL DESIGNATION AND MAINS VOLTAGE, I.E. 600V, 3 Φ, 4 W AND PANEL AND CIRCUIT NUMBER FROM WHICH THIS PANEL IS FED.
3. EXECUTION
3.1.INSTALLATION
3.1.1. LOCATE PANEL BOARDS AS INDICATED AND MOUNT SECURELY, PLUMB, TRUE AND SQUARE, TO ADJOINING SURFACES.
3.1.2. INSTALL SURFACE MOUNTED PANELBOARDS ON PLYWOOD BACKBOARDS. WHERE PRACTICAL, GROUP PANELBOARDS ON COMMON BACKBOARD.
3.1.3. PROVIDE A 4" REINFORCED CONCRETE PAD WITH BEVELLED EDGES FOR ALL FLOOR MOUNTED PANELBOARDS. SEAL WITH PAINT OR CONCRETE SEALER TO PREVENT CONCRETE DUST FROM ENTERING EQUIPMENT. PADS TO BE PROVIDED UNDER THIS DIVISION.
3.1.4. MOUNT PANELBOARDS TO HEIGHT SPECIFIED IN SECTION 26 05 01 – ELECTRICAL GENERAL REQUIREMENTS, OR WITH TOP OF TRIM AT UNIFORM HEIGHT OF 6' -6" OR TO MATCH DOOR HEADS OR TO SUIT TILE LAYOUT, OR AS INDICATED.
3.1.5. DELIVER FIVE (5) DUPLICATE KEYS FOR PANEL LOCKS TO OWNER.
3.1.6. CONNECT LOADS TO CIRCUITS.
3.1.7. CONNECT NEUTRAL CONDUCTORS TO COMMON NEUTRAL BUS WITH RESPECTIVE NEUTRAL IDENTIFIED.
3.1.8. PROVIDE MINIMUM #6AWG GREEN INSULATED COPPER BONDING CONDUCTOR IN CONDUIT TO INTERCONNECT NORMAL AND EMERGENCY POWER PANELS SERVING COMMON PATIENT CARE AREAS.
3.1.9. CONNECT GROUND CONDUCTORS TO COMMON GROUND BUS.

LIGHTING & RECEPTACLE PANELS
26 27 16

1. SHOP DRAWINGS
1.0.1. DRAWINGS TO INCLUDE ELECTRICAL DETAIL OF PANEL, BRANCH BREAKER TYPE, QUANTITY, AMPACITY AND ENCLOSURE DIMENSION.
1.0.2. NAMEPLATES SHALL BE IN ACCORDANCE WITH ARTICLE "EQUIPMENT IDENTIFICATION".
1.1.OPERATION AND MAINTENANCE DATA
1.2.PLANT ASSEMBLY
1.2.1. INSTALL CIRCUIT BREAKERS IN PANELBOARDS BEFORE SHIPMENT.
1.2.2. IN ADDITION TO CSA REQUIREMENTS MANUFACTURER'S NAMEPLATE MUST SHOW FAULT CURRENT THAT PANEL INCLUDING BREAKERS HAS BEEN BUILT TO WITHSTAND.
1.3.IDENTIFICATION
1.3.1. PANELS SHALL BE IDENTIFIED WITH LAMACOID PLATE WITH SHALL INCLUDE PANEL DESIGNATION ½" LETTERING, VOLTAGE AND PHASE ¼" LETTERING AND WHERE PANEL IS FED FROM ¼" LETTERING.
2. PRODUCTS
2.1.PANELBOARDS
2.1.1. PRODUCT OF ONE MANUFACTURER.
2.1.2. SEQUENCE PHASE BUSSING WITH ODD NUMBERED BREAKERS ON LEFT AND EVEN ON RIGHT, WITH EACH BREAKER IDENTIFIED BY PERMANENT NUMBER IDENTIFICATION AS TO CIRCUIT NUMBER AND PHASE. WHEN NUMBERING BREAKERS, NUMBER FROM TOP TO BOTTOM AND FROM LEFT TO RIGHT.
2.1.3. PANELBOARDS: MAINS, NUMBER OF CIRCUITS, AND NUMBER AND SIZE OF BRANCH CIRCUIT BREAKERS AS INDICATED.
2.1.4. TWO KEYS FOR EACH PANELBOARD AND KEY PANELBOARDS ALIKE.
2.1.5. COPPER BUS WITH NEUTRAL OF SAME AMPERE RATING AS MAINS.
2.1.6. PANELS SHALL BE CONSTRUCTED AND FINISHED IN ACCORDANCE WITH DETAILS SPECIFIED IN SECTION 26 27 18 "PANEL TRIM".
2.1.7. PANELS SHALL BE SURFACE OR FLUSH MOUNTED TYPE, AS SHOWN.
2.1.8. PANELS SHALL BE DEAD FRONT TYPE IN CODE GAUGE STEEL ENCLOSURE.
2.1.9. EACH PANEL SHALL BE COMPLETE WITH A TYPEWRITTEN DIRECTORY WHICH SHALL BE MOUNTED INSIDE DOOR WITH CLEAR PLASTIC COVER.
2.1.10. PANELS SHALL HAVE MAINS OF VOLTAGE AND CAPACITY, AND MAIN AND BRANCH BREAKERS AND CONTACTORS, AS SHOWN ON THE "LIGHTING AND RECEPTACLE PANEL SCHEDULE". SPACES SHALL INCLUDE THE NECESSARY BUS WORK SUCH THAT OWNERS, AT A LATER DATE, NEED BUY ONLY THE BREAKERS.
2.1.11. WHERE PANELS EXCEED 42 CIRCUITS, USE MULTI-SECTION PANEL WITH MAIN CROSS-OVER SOLID BUS BARS (UNLESS NOTED OTHERWISE). MAIN BUS CAPACITY OF EACH SECTION SHALL BE FULL SIZE TO MATCH CROSS-OVER BUS. CROSS-OVER BUS SHALL BE CONCEALED BY PANEL TRIM. SEPARATE COVERS ARE NOT ACCEPTABLE.
2.1.12. BREAKERS SHALL HAVE BOLTED TYPE CONNECTIONS.
2.1.13. PANELS FOR 120/208 VOLTS, THREE PHASE, FOUR WIRE SYSTEMS SHALL BE COMPLETE WITH FULL SIZE BREAKERS, HAVING A SYMMETRICAL INTERRUPTING RATING OF AT LEAST 10,000 A.
2.1.14. WHERE INDICATED BREAKERS SHALL HAVE A GROUND FAULT INTERRUPTER.
2.1.15. PANELS FOR 600 VOLT, 3 PHASE, 3 WIRE OR 4 WIRE SYSTEMS SHALL BE COMPLETE WITH BREAKERS HAVING A SYMMETRICAL INTERRUPTING RATING OF 25,000 AMPS MINIMUM. STANDARD OF ACCEPTANCE: CUTLER HAMMER, FEDERAL PIONEER, SIEMENS, SQUARE D
2.2.BREAKERS GENERAL
2.2.1. BOLT-ON MOULDED CASE CIRCUIT BREAKER: QUICK-MAKE, QUICK-BREAK TYPE, FOR MANUAL AND AUTOMATIC OPERATION.
2.2.2. COMMON-TRIP BREAKERS: WITH SINGLE HANDLE FOR MULTI-POLE APPLICATIONS.
2.2.3. LOCK-ON DEVICES FOR CLOCK OUTLET, FIRE ALARM, SECURITY SYSTEMS, BATTERY CHARGERS, DOOR SUPERVISORY, INTERCOM, STAIRWAY, EXIT AND NIGHT LIGHT CIRCUITS.
2.3.TRIM
2.3.1. FRONT PANEL TRIM SHALL BE OVERALL HINGED TYPE, DOOR WITHIN DOOR CONSTRUCTION. TRIM ASSEMBLY SHALL PROVIDE HINGED ACCESS TO THE INTERNAL TUB AND WIRING CHANNELS FOR ACCESS TO WIRING AND BREAKER TERMINALS WITHOUT REMOVAL OF THE TRIM ASSEMBLY. WITH OVERALL TRIM ASSEMBLY CLOSED AND SECURED, A SECOND INTEGRAL HINGED DOOR FORMING PART OF THE TRIM ASSEMBLY SHALL PROVIDE ACCESS TO THE CIRCUIT BREAKERS ONLY FOR OPENING AND CLOSING PURPOSES
2.3.2. PANELS SHALL BE GIVEN A RUST-RESISTANT TREATMENT TO BOTH TUB AND TRIM. LOCKS SHALL BE CHROME PLATED.
2.3.3. FLUSH PANELS SHALL HAVE CONCEALED HINGES AND FLUSH DOOR COMBINATION LOCK LATCH. DOORS SHALL OPEN MINIMUM 135 DEGREES. TRIMS SHALL HAVE FASTENERS CONCEALED AND SHALL BE PRIME COATED TO RECEIVE ROOM FINISH PAINT.
2.3.4. SURFACE MOUNTED PANELS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CSA TYPE 2 ENCLOSURES WITH OVERALL DOOR ASSEMBLY PROTECTING ALL CIRCUIT BREAKERS. DOOR(S) SHALL BE GASKETTED, WITH OVERHANGING DRIP SHIELD.
2.3.5. PANELS SHALL BE FINISHED WITH TWO COATS OF GREY ASA NO. 61 FOR NORMAL PANELS, INTERNATIONAL ORANGE FOR EMERGENCY POWER AND ROYAL BLUE FOR UPS PANELS.
2.3.6. PANEL LOCKS SHALL BE COMMON TO ONE KEY THROUGHOUT PROJECT.
2.4.EQUIPMENT IDENTIFICATION
2.4.1. PROVIDE EQUIPMENT IDENTIFICATION IN ACCORDANCE WITH SECTION 26 05 01 -ELECTRICAL GENERAL REQUIREMENTS.
2.4.2. NAMEPLATE FOR EACH PANELBOARD SIZE 4 ENGRAVED, SUBMIT NAMEPLATE WORDING.
2.4.3. COMPLETE CIRCUIT DIRECTORY WITH TYPEWRITTEN LEGEND SHOWING LOCATION AND LOAD OF EACH CIRCUIT. COVER DIRECTORY WITH A 1/32" THICK CLEAR PLASTIC SHEET.
2.4.4. NAMEPLATES FOR ELECTRICAL PANELS SHALL INDICATE PANEL DESIGNATION AND MAINS VOLTAGE, I.E. 120/208 V, 3 Φ, 4 W AND PANEL AND CIRCUIT NUMBER FROM WHICH THIS PANEL IS FED.
3. EXECUTION
3.1.INSTALLATION
3.1.1. LOCATE PANEL BOARDS AS INDICATED AND MOUNT SECURELY, PLUMB, TRUE AND SQUARE, TO ADJOINING SURFACES.
3.1.2. INSTALL SURFACE MOUNTED PANELBOARDS ON PLYWOOD BACKBOARDS. WHERE PRACTICAL, GROUP PANELBOARDS ON COMMON BACKBOARD.
3.1.3. MOUNT PANELBOARDS TO HEIGHT SPECIFIED IN SECTION 26 05 01 – ELECTRICAL GENERAL REQUIREMENTS, OR WITH TOP OF TRIM AT UNIFORM HEIGHT OF 6' -6" OR TO MATCH DOOR HEADS OR TO SUIT TILE LAYOUT, OR AS INDICATED.
3.1.4. DELIVER FIVE (5) DUPLICATE KEYS FOR PANEL LOCKS TO OWNER.
3.1.5. CONNECT LOADS TO CIRCUITS.

3.1.6. CONNECT NEUTRAL CONDUCTORS TO COMMON NEUTRAL BUS WITH RESPECTIVE NEUTRAL IDENTIFIED

WIRING DEVICES
26 27 26

4. SHOP DRAWINGS AND PRODUCT DATA
4.0.1. SUBMIT SHOP DRAWINGS AND PRODUCT DATA IN ACCORDANCE WITH 26 05 01 ELECTRICAL GENERAL REQUIREMENTS.
4.1.IDENTIFICATION
4.1.1. ALL NEW, EXISTING OR RELOCATED RECEPTACLES SHALL HAVE CIRCUIT IDENTIFICATION.
4.1.2. PROFESSIONAL GRADE, DURABLE LAMINATED LABELS SHALL BE SECURED TO THE RECEPTACLE OR COVERPLATE AND SHALL BE LABELLED WITH PANEL NAME AND CIRCUIT NUMBER FROM WHICH THE RECEPTACLE IS FED. LETTERING SHALL BE MINIMUM ¼ HIGH AND AS FOLLOWS:
4.1.2.a. NORMAL POWER: BLACK LETTERING ON WHITE BACKGROUND.
4.1.2.b. EMERGENCY POWER: RED LETTERING ON A WHITE BACKGROUND.
5. PRODUCTS
5.1.SWITCHES
5.1.1. 20 A, 120 V, SILENT, AC TYPE, CSA LISTED, SINGLE POLE, DOUBLE POLE, THREE-WAY, FOUR-WAY SWITCHES AS INDICATED.
5.1.2. MANUALLY-OPERATED GENERAL PURPOSE AC SWITCHES WITH FOLLOWING FEATURES:
5.1.2.a. TERMINAL HOLES APPROVED FOR NO. 10 AWG WIRE.
5.1.2.b. SILVER ALLOY CONTACTS.
5.1.2.c. SUITABLE FOR BACK AND SIDE WIRING.
5.1.2.d. ROCKER TYPE FINISHED IN WHITE (CONFIRM COLOUR WITH INTERIOR DESIGNER).
5.1.3. ROCKER OPERATED FULLY RATED FOR TUNGSTEN FILAMENT AND FLUORESCENT LAMPS, AND UP TO 80% OF RATED CAPACITY OF MOTOR LOADS.
5.1.4. SWITCHES OF ONE MANUFACTURER THROUGHOUT PROJECT. ALL SWITCHES SHALL BE DECORA TYPE UNLESS NOTED OTHERWISE.
5.1.5. CATALOGUE NUMBERS LISTED BELOW HAVE BEEN USED FOR CONVENIENCE ONLY TO INDICATE QUALITY STANDARDS:

TYPE	APPROVED CATALOGUE NUMBERS .		HUBBELL (120 VOLT)	HUBBELL (347 VOLT)
	(TOGGLE) / (DECORA)	(TOGGLE) / (DECORA)		
SINGLE POLE	1221 / DS120	18201/2121347		
DOUBLE POLE	1222 / DS220	18202/2122347		
THREE-WAY	1223 / DS320	18203/2123347		
FOUR-WAY	1224 / DS420	18204/2124347		

5.2.DIMMER SWITCHES
5.2.1. DIMMERS SHALL BE EQUAL TO LUTRON MAESTRO WIRELESS SERIES FINISHED IN WHITE, SIZED TO SUIT LIGHTING LOADS AND LIGHTING TYPES (FLUORESCENT, LOW VOLTAGE, MAGNETIC, LOW VOLTAGE ELECTRONIC, INCANDESCENT, PHASE CONTROL LED, 3 WIRE PHASE CONTROL OF LED WHEN LUTRON " A " SERIES DRIVER IN FIXTURE, ETC). DIMMER SHALL BE COMPATIBLE WITH LOAD AND BALLAST. PROVIDE ALL NECESSARY WIRING FOR A COMPLETE AND OPERATIONAL DIMMING SYSTEM.
5.2.2. DIMMERS CONTROLLING 347V LOADS SHALL BE EQUAL TO LUTRON PICO WIRELESS DIMMER.
5.2.3. LINEAR FLUORESCENT LUMINAIRES DIMMED AT 347V SHALL BE COMPLETE WITH COMPATIBLE INTEGRAL LUTRON " H " SERIES BALLAST AND EXTERNAL LUTRON " POWPACK " MOUNTED IN ACCESSIBLE CEILING SPACE.
5.2.4. MAXIMUM DISTANCE BETWEEN " POWPACK " AND WIRELESS DEVICES (I.E. DIMMERS, SENSORS ETC) SHALL NOT EXCEED 25 FEET SO AS TO MAINTAIN RF RANGE. COORDINATE WITH MANUFACTURER PRIOR TO ANY ROUGH-INS OR INSTALLATIONS.
5.2.5. DIMMERS CONTROLLING 0-10V DIMMING DRIVERS SHALL BE EQUAL TO LUTRON NOVA T SERIES #NTF-7V COMPLETE WITH 120V OR 347V POWER PACK OR APPROVED EQUAL. PROVIDE WIRING AS PER MANUFACTURER ' S RECOMMENDATIONS.
5.2.6. ALL DIMMING CIRCUITS ARE TO HAVE SEPARATE NEUTRAL CONDUCTOR.
5.2.7. PROVIDE LUTRON #LDC-21C LAMP DEBUZZING COIL WHEN DIMMING ALL INCANDESCENT AND LOW VOLTAGE LAMPS.
5.2.8. MATCHING SWITCHES SHALL BE USED ADJACENT TO DIMMERS.
5.2.9. ASSOCIATED SINGLE OR TWO LAMP BALLASTS OF FLUORESCENT LUMINAIRES OR BALLASTS FOR COMPACT FLUORESCENTS LUMINAIRES RATED AT 120V BEING DIMMED SHALL BE EQUAL TO LUTRON COMPATIBLE ECOSYSTEM SERIES FLUORESCENT DIMMING BALLASTS.
5.2.10. FOR ALL DIMMERS, COORDINATE AND INSTALL ASSOCIATED WIRING AND COMPONENTS IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER FOR A COMPLETE, OPERATIONAL AND COMPATIBLE DIMMING SYSTEM.
5.2.11. WHERE DIMMERS ARE SHOWN TO BE REMOTELY CONTROLLED, CONTROLLERS, CONTROL RELAYS AND CONTACTORS SHALL CONFORM TO ARRANGEMENT AS SHOWN.
5.2.12. INSTALL LINE VOLTAGE AND LOW VOLTAGE WIRING IN SEPARATE CONDUITS.
5.3.RECEPTACLES
5.3.1. RECEPTACLES TO BE COMPLETE WITH FOLLOWING FEATURES:
5.3.1.a. UREA MOULDED HOUSING.
5.3.1.b. SUITABLE FOR BACK AND SIDE WIRING.
5.3.1.c. BREAK-OFF LINKS FOR USE AS SPLIT RECEPTACLES.
5.3.1.d. EIGHT BACK WIRED ENTRANCES, FOUR SIDE WIRING SCREWS.
5.3.1.e. TRIPLE WIPE CONTACTS AND RIVETTED GROUNDING CONTACTS.
5.3.1.f. HEAVY DUTY SPECIFICATION GRADE TYPE
5.3.2. RECEPTACLES OF ONE MANUFACTURER THROUGHOUT PROJECT. ALL RECEPTACLES SHALL BE DECORA TYPE UNLESS NOTED OTHERWISE.
5.3.3. RECEPTACLES SHALL BE COLOUR CODED AS FOLLOWS:
5.3.3.a. NORMAL POWER: WHITE
5.3.3.b. EMERGENCY POWER: RED
5.3.4. RECEPTACLES SHALL BE AS SHOWN AND AS SPECIFIED. FOR CONVENIENCE, ONLY ONE OR TWO CATALOGUE NUMBERS OF MANUFACTURERS HAVE BEEN SHOWN. STANDARD OF ACCEPTANCE: PASS & SEYMOUR, HARVEY HUBBELL OF CANADA LTD., BRYANT ELECTRIC, COOPER WIRING DEVICES, LEVITON
5.3.5. THE RECEPTACLES LISTED BELOW REPRESENT THE MOST COMM

LUTRON – POWPACK

2.2.2. COMPACT FLUORESCENT DIMMING BALLASTS:

2.2.2.a. NOTE: NEW FLUORESCENT LAMPS SHALL BE OPERATED FOR 100 HOURS AT FULL OUTPUT (SEASONED) TO ACCEPT PROPER DIMMING PERFORMANCE AND AVERAGE RATED LAMP LIFE.

2.2.2.b. COORDINATE AND INSTALL ASSOCIATED WIRING AND COMPONENTS IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER FOR A COMPLETE, OPERATIONAL AND COMPATIBLE DIMMING SYSTEM. STANDARD OF ACCEPTANCE: LUTRON – COMPATIBLE ECOSYSTEM SERIES

2.3. LAMPS

2.3.1. T–8 FLUORESCENT LAMPS

2.3.1.a. FLUORESCENT LAMPS SHALL BE RAPID START 32 WATT 4'–0" T–8 BIPIN WITH 3000 INITIAL LUMENS OR 25 WATT 3'–0" T–8 BIPIN WITH 2270 INITIAL LUMENS, 3500 K WITH A CRI OF 85 OR BETTER. LAMPS SHALL BE OF LENGTHS SPECIFIED IN THE LUMINAIRE SCHEDULE. VERIFY COLOUR OF LAMPS BEFORE ORDERING.

2.3.1.b. LAMP LIFE TO BE 24,000 + HOURS.

2.3.1.c. WARRANTY: 3 YEARS. STANDARD OF ACCEPTANCE: GENERAL ELECTRIC STAR COAT SXL ECOLUX, OSRAM/SYLVANIA OCTRON XP ECOLOGIC , PHILIPS ALTO – PLUS

2.3.2. T–8 FLUORESCENT LAMPS (ENERGY SAVING)

2.3.2.a. FLUORESCENT LAMPS SHALL BE 28 WATT 4'–0" T–8 BIPIN WITH 2725 INITIAL LUMENS OR 25 WATT 3'–0" T–8 BIPIN WITH 2175 INITIAL LUMENS, 3500K WITH A CRI OF 85 OR BETTER. LAMPS SHALL BE OF LENGTHS SPECIFIED IN THE LUMINAIRE SCHEDULE.

2.3.2.b. LAMP LIFE TO BE 26,000 + HOURS AVERAGE (12 HR START).

2.3.2.c. WARRANTY: 3 YEARS. STANDARD OF ACCEPTANCE: GENERAL ELECTRIC T8 ULTRA F28T8 – ULTRA MAX. /SPX SERIES (3'–0"), OSRAM/SYLVANIA OCTRON F028XP /F025XP/EC (3'–0"), PHILIPS ALTO – PLUS

2.3.3. T–5 FLUORESCENT LAMPS

2.3.3.a. FLUORESCENT LAMPS SHALL BE RAPID START 2'–0" 40 WATT TWIN TUBE T–5 FOUR PIN WITH 3150 INITIAL LUMENS, 3500'K WITH A CRI OF 80 OR BETTER. LAMPS SHALL BE OF LENGTHS SPECIFIED IN THE LUMINAIRE SCHEDULE.

2.3.3.b. LAMP LIFE TO BE 20,000 + HOURS.

2.3.3.c. WARRANTY: 2 YEARS.

2.4. COMPACT FLUORESCENT LAMPS

2.4.1. RAPID START MINIATURE SINGLE ENDED FLUORESCENT LAMP WITH FOUR PIN FOR ELECTRONIC BALLAST.

2.4.2. THE LAMP SHALL HAVE A HIGH COLOUR RENDERING INDEX OF 82+ WITH A KELVIN TEMPERATURE OF 3500'K. VERIFY COLOUR OF LAMPS BEFORE ORDERING.

2.4.3. LAMP LIFE TO BE 10,000 HOURS.

2.5. INCANDESCENT LAMPS

2.5.1. INCANDESCENT LAMPS SHALL BE INSIDE FROSTED, 130 VOLT, 2500 HOURS EXTENDED SERVICE TYPE.

2.5.2. ALL LINE VOLTAGE HALOGEN PAR LAMPS SHALL BE DIODE–FREE, 130 VOLT, WITH A MINIMUM LAMP LIFE OF 2000 HOURS.

2.5.3. ALL 50 WATT LOW VOLTAGE 12 VOLT MR–16 LAMPS SHALL BE THE "CONSTANT COLOUR" OR TRU–AIM IR VARIETY AND HAVE A MINIMUM LAMP LIFE OF 6,000 HOURS UNLESS OTHERWISE SPECIFIED.

2.6. SPARE LAMPS

2.6.1. PROVIDE SPARE LAMPS OF EACH TYPE AS FOLLOWS:

2.6.1.a. INCANDESCENT – 15%

2.6.1.b. FLUORESCENT & HID – 5%

2.7. FLUORESCENT LENS 1

2.7.1. FLUORESCENT K12 DISTRIBUTION ACRYLIC LENSES, 1/8" THICK, SHALL HAVE A RECESSED PRISMATIC PATTERN OF 3/16" SQUARE BASED FEMALE CONES RUNNING 45° TO THE PARALLEL AND PERPENDICULAR AXIS TO THE PANEL.

PANEL SHALL BE MADE OF ULTRAVIOLET INHIBITED INJECTION MOULDED CLEAR VIRGIN ACRYLIC.

2.7.2. PANELS SHALL BE STRAIN–FREE AND UNIFORM IN PRODUCTION. THERE SHALL BE NO FADE–OUTS OR STREAKS TO DETRACT FROM JOB PERFORMANCE.

2.7.3. LENSES SHALL BE LOW BRIGHTNESS, SPARKLING CRYSTAL PANEL THAT PROVIDES MAXIMUM EFFICIENCY AND GOOD BRIGHTNESS CONTROL IN THE DIRECT GLARE ZONE. STANDARD OF ACCEPTANCE: A.L.P. LIGHTING AND CEILING PRODUCTS, I.C.I. ACRYLICS CANADA INC., HOLOPHANE CANADA INC.

3. EXECUTION

3.1. INSTALLATION

3.1.1. LOCATE AND INSTALL LUMINAIRES AS INDICATED.

3.1.2. LOCATE HANGERS ON TILE CENTRES OR INTERSECTIONS. MOUNT RECESSED INCANDESCENTS, TROFFERS AND SURFACE MOUNTED LUMINAIRES IN OR ON FULL TILES.

3.1.3. VERIFY QUANTITY OF LUMINAIRES BEFORE PLACING ORDERS.

3.1.4. VERIFY CEILING TYPES WITH THE LATEST REVISED ARCHITECTURAL DRAWINGS AND ORDER LUMINAIRES TO SUIT THE CORRECT CEILING.

3.1.5. CHECK LIGHTING LUMINAIRES AND MOUNTINGS FOR THEIR ELECTRICAL AND PHYSICAL CHARACTERISTICS IN RELATION TO CONDITIONS DUE TO BUILDING CONSTRUCTION AND MECHANICAL EQUIPMENT. MAKE NECESSARY ADJUSTMENTS TO LUMINAIRES OR HANGING ARRANGEMENT WITHOUT EXPENSE TO OWNERS. GIVE NOTIFICATION AT TIME OF SHOP DRAWINGS AND BEFORE CONSTRUCTION IF DECISION ON NECESSARY CHANGES IS REQUIRED.

3.1.6. CO–OPERATE WITH OTHER TRADES TO ENSURE PROPER INSTALLATION OF LIGHTING LUMINAIRES.

3.1.7. CAREFULLY ALIGN LUMINAIRES, SHOWN IN CONTINUOUS LINES OR ROWS, SO THAT ROWS APPEAR AS STRAIGHT LINES.

3.1.8. MOUNT LUMINAIRES PERFECTLY LEVEL OR PLUMB. LUMINAIRES SHALL FIT TIGHTLY TO CEILING WITHOUT SHOWING A SPACE OR LIGHT LEAK BETWEEN FRAME AND CEILING.

3.1.9. TAKE DOWN ANY IMPROPERLY INSTALLED LUMINAIRES AND RE–INSTALL WITHOUT EXPENSE TO OWNER.

3.1.10. STANDARD OCTAGONAL BOXES MAY BE SUPPLIED WHERE CONDUITS FEEDING LUMINAIRES IN FINISHED AREAS ARE EXPOSED ON CEILING IF HANGER CANOPIES ENTIRELY COVER OUTLET BOXES AND ARE NEATLY NOTCHED FOR CONDUIT. OTHERWISE, PROVIDE CAST CONDUIT OUTLET BOXES WITH A DIAMETER LARGER THAN CANOPIES.

3.1.11. ATTACH BOXES OR HANGERS DIRECTLY TO POURED CONCRETE WITH ¼" MINIMUM DIAMETER BOLTS AND LEAD EXPANSION ANCHORS WHERE LUMINAIRES ARE SUSPENDED DIRECTLY FROM CONCRETE SLABS. USE 5/16" MINIMUM BOLTS THROUGH PRECAST SLABS, WELDED TO 4" X 4" MINIMUM, 10 GAUGE PLATE ABOVE SLABS.

3.1.12. DO NOT MOUNT LUMINAIRES ABOVE PIPES, DUCTS OR EQUIPMENT. IN EVENT OF UNAVOIDABLY TIGHT LOCATIONS, PROVIDE HANGERS TO CLEAR OBSTRUCTIONS. CHECK LAYOUTS OF OTHER TRADES ON JOB AND PLAN CO–OPERATIVELY. LUMINAIRES IN ANY ROOM SHALL HANG AT ONE HEIGHT. OBTAIN APPROVAL BEFORE ANY CHANGES ARE MADE TO LAYOUTS SHOWN

3.1.13. ALL LUMINAIRES MOUNTED IN OR ON CEILINGS SHALL BE SUPPORTED INDEPENDENTLY OF CEILING BY MEANS OF CHAINS.

3.1.14. PROVIDE CONTINUOUS ½" X 1⅛" CHANNEL ABOVE THE CEILING, WHERE LUMINAIRES ARE SUSPENDED OR MOUNTED ON FURRED CEILINGS. FASTEN LUMINAIRES TO CHANNEL WITH TWO ¼" MINIMUM DIAMETER STUDS WITH MINIMUM 4'– 0" ON CENTRE.

3.1.15. LUMINAIRES INSTALLED IN OR ON "T" BAR CEILINGS SHALL BE EQUIPPED WITH SAFETY CHAINS ANCHORED IN AN APPROVED MANNER TO THE FLOOR SLAB OR ROOF STRUCTURE ABOVE. FLUORESCENT LUMINAIRES SHALL HAVE TWO CHAINS, EACH SUPPORTING TWO CORNERS OF

THE LUMINAIRE. CHAIN SHALL BE #10 TENSILE JACK CHAIN, INSTALLED AS NOTED BELOW.

3.1.16. CHAIN SHALL BE NO. 10 TENSILE JACK CHAIN, BRIGHT ZINC COATED, WITH A STRENGTH OF 180 KG (400 LBS.) WHERE LUMINAIRES ARE INDICATED TO BE CHAIN HUNG. ATTACHMENTS SHALL BE MADE USING A NO. 10 "S" HOOK. CADDY FASTENERS MAY BE USED WHERE APPLICABLE. "S" HOOKS MUST BE CLOSED AFTER INSTALLATION.

3.1.17. INDUSTRIAL LUMINAIRES WHERE SUSPENDED SHALL BE ½" CONDUIT HANGERS AND ARB BALL ALIGNERS. LENGTH AND LOCATION SHALL CLEAR EQUIPMENT, DUCTS AND PIPES. METAL STRUT (FLEXIBAR OR EQUAL) MAY BE USED FOR MOUNTING OF LUMINAIRES IN MECHANICAL AREAS AND ELECTRICAL ROOMS.

3.2. LIGHTING LUMINAIRES

3.2.1. PROVIDE LIGHTING LUMINAIRES EXACTLY AS SHOWN AND AS SPECIFIED IN THE FOLLOWING SCHEDULE. LUMINAIRES SHALL BE COMPLETE WITH NECESSARY ACCESSORIES AND LAMPS AT TIME OF ACCEPTANCE.

3.2.2. ALL LUMINAIRES SHALL BE ULC OR CSA CERTIFIED.

3.2.3. EACH FLUORESCENT LUMINAIRE INSTALLED ON BRANCH CIRCUITS WITH VOLTAGE EXCEEDING 150 VOLTS–TO–GROUND SHALL BE PROVIDED WITH A DISCONNECTING MEANS INTEGRAL TO THE LUMINAIRE THAT SIMULTANEOUSLY OPENS ALL CIRCUIT CONDUCTORS BETWEEN THE BRANCH CIRCUIT CONDUCTORS AND THE SUPPLYING BALLAST(S) AND MARKED IN A CONSPICUOUS, LEGIBLE AND PERMANENT, MANNER ADJACENT TO THE DISCONNECTING MEANS, IDENTIFYING THE SPECIFIC PURPOSE IN ACCORDANCE WITH THE CANADIAN ELECTRICAL CODE PART 1 RULE 30–308(4).

UNIT EQUIPMENT FOR EMERGENCY LIGHTING
26 52 00

1. WARRANTY

1.0.1. FOR BATTERIES, THE 12 MONTHS WARRANTY PERIOD IS EXTENDED TO 120 MONTHS, WITH A NO–CHARGE REPLACEMENT DURING THE FIRST 60 MONTHS AND A PRO–RATE CHARGE ON THE SECOND 60 MONTHS.

2. PRODUCTS

2.1. EQUIPMENT

2.1.1. SUPPLY VOLTAGE: 120 V OR 347V (AS SHOWN ON DRAWINGS), AC.

2.1.2. OUTPUT VOLTAGE: 12 V DC FOR INDOOR UNITS, 24 V DC FOR OUTDOOR UNITS AND IN PARKING GARAGES.

2.1.3. OPERATING TIME:

2.1.3.a. 12V OR 24V – 120 MINUTES.

2.1.4. BATTERY: SEALED, MAINTENANCE FREE, LEAD ACID OR LEAD CALCIUM.

2.1.5. CHARGER: SOLID STATE, MULTI–RATE, VOLTAGE/CURRENT REGULATED, INVERSE TEMPERATURE COMPENSATED, SHORT CIRCUIT PROTECTED. UNIT SHALL HAVE EXTERNALLY ACCESSIBLE MEANS FOR TESTING OF UNIT AND SHALL HAVE TWO LAMPS INDICATING A.C. ON, AND HIGH CHARGE. UNIT SHALL INCLUDE A LOW VOLTAGE CUT–OFF PROTECTION CIRCUIT AND SELF DIAGNOSTIC AUTO TEST.

2.1.5.a. SOLID STATE TRANSFER.

2.1.6. LAMP HEADS: LED, INTEGRAL ON UNIT AND REMOTE, 360 ° HORIZONTAL AND 180 ° VERTICAL ADJUSTMENT.

2.1.7. LAMP TYPE (INTEGRAL AND REMOTE):

2.1.7.a. FINISHED AREAS: MR16 LED, REMOTE HEAD(S), LOW PROFILE COMPACT DESIGN, GLARE FREE ADJUSTABLE TYPE HEADS AND STEM: 9W, 12VDC OR 24VDC TO SUITE BATTERY, IMPACT RESISTANT, FULLY ADJUSTABLE FOR AISLE OR AREA DISTRIBUTION. FINISHED IN WHITE.

2.1.7.b. UNFINISHED AREAS, ELECTRICAL, MECHANICAL AND EQUIPMENT ROOMS: HALOGEN 20 W, 12 VDC 12VDC OR 24VDC TO SUITE BATTERY, IMPACT RESISTANT, FULLY ADJUSTABLE FOR AISLE OR AREA DISTRIBUTION.

2.1.7.c. CABINET: SUITABLE FOR DIRECT OR SHELF MOUNTING TO WALL AND C/W KNOCKOUTS FOR CONDUIT. REMOVABLE OR HINGED FRONT PANEL FOR EASY ACCESS TO BATTERIES.
CABINET FINISH: CORROSION RESISTANT, WHITE

2.2. WIRING OF REMOTE HEADS

2.2.1. CONDUIT: TYPE EMT, TO SECTION 26 05 33 – CONDUITS FASTENINGS AND FITTINGS.

2.2.2. RFI SUPPRESSORS.

2.2.3. CONDUCTORS: RW90 TYPE TO SECTION 26 05 19 – WIRES & CABLES 0–1000 VOLTS, SIZED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. STANDARD OF ACCEPTANCE: EMERGI–LITE, LUMACELL INC., BEGHELLI

3. EXECUTION

3.1. INSTALLATION

3.1.1. PROVIDE COMPLETE EMERGENCY BATTERY LIGHTING SYSTEM AS SHOWN AND SPECIFIED.

3.1.2. UNLESS OTHERWISE NOTED, MOUNT UNITS ON THE WALL 96" ABOVE FLOOR. UNIT SHALL BE HARDWIRED TO SOURCE. PROVIDE LOCK–ON DEVICES ON BREAKERS.

3.1.3. CONNECT EXIT LIGHTS TO UNIT EQUIPMENT WHERE INDICATED.

3.1.4. WHERE HEADS ARE SHOWN REMOTE FROM UNIT, PROVIDE SUITABLE OUTLET BOX AT 96" AND INSTALL HEAD. CONNECT WITH CONDUIT TO BATTERY AND CHARGER UNIT. WIRE SIZE TO SUIT MANUFACTURER'S RECOMMENDATIONS, BUT NOT LESS THAN #10 GAUGE, AND FOR A MINIMUM OF 3% VOLTAGE DROP AT REMOTE HEADS. ENSURE REMOTE HEAD WIRING LENGTHS ARE REVIEWED WITH MANUFACTURER PRIOR TO INSTALLATION. VOLTAGE DROPS WILL BE TESTED BY ENGINEER AND BUILDING INSPECTOR. REPLACE ANY WIRING NOT PASSING THE 3% VOLTAGE DROP TEST WITH NEW SIZE AND RETEST.

3.1.5. DIRECT HEADS AS INDICATED.

TELEPHONE & DATA RACEWAYS
27 05 28

1. GENERAL

1.1. SYSTEM DESCRIPTION

1.1.1. EMPTY RACEWAYS SYSTEMS SHALL CONSIST OF OUTLET BOXES, COVER PLATES, CONDUITS, PULL BOXES, FISH WIRES AND SERVICE POLES.

1.1.2. EMPTY CONDUIT SYSTEMS BEING INSTALLED SHALL BE FOR INSTALLATION OF WIRING INSTALLED AT A LATER DATE BY COMMUNICATIONS CONTRACTOR:

2. PRODUCTS

2.1. MATERIAL

2.1.1. CONDUITS: EMT TYPE, TO SECTION 26 05 33 – CONDUITS FASTENINGS AND FITTINGS.

2.1.2. JUNCTION BOXES AND PULL BOXES TO SECTION 26 05 32 – SPLITTERS, JUNCTION AND PULL BOXES, CABINETS.

2.1.3. OUTLET BOXES, AND FITTINGS: TO SECTION 26 05 35 – OUTLET BOXES, CONDUIT BOXES AND FITTINGS.

2.1.4. COVER PLATES: TO SECTION 26 27 26 – WIRING DEVICES.

2.1.5. FISH WIRE: POLYPROPYLENE TYPE

3. EXECUTION

3.1. INSTALLATION

3.1.1. INSTALL EMPTY RACEWAY SYSTEM, INCLUDING FISH WIRE, OUTLET BOXES, PULL BOXES, COVER PLATES, CONDUIT, SERVICE POLES, MISCELLANEOUS AND POSITIONING MATERIAL TO CONSTITUTE COMPLETE SYSTEM. NOTE THAT COVER PLATES TO BE CARRIED AND INSTALLED BY ELECTRICAL CONTRACTOR. COORDINATE THIS WORK WITH COMMUNICATIONS CONTRACTOR.

3.1.2. VERIFY EXACT LOCATION OF OUTLETS TO SUIT FURNITURE LAYOUT.

3.1.3. FISH CONDUIT, CLEAR BLOCKAGES AND OUTLET AND CLEAN OUT PULL BOXES AT COMPLETION OF INSTALLATION. LEAVE CONDUIT FREE OF WATER OR EXCESS MOISTURE. 1 INSTALL POLYPROPYLENE PULL CORD CONTINUOUSLY FROM OUTLET TO OUTLET, THROUGH " 8 CONDUIT AND FASTEN AT EACH BOX.

3.1.4. CONDUIT BENDS SHALL HAVE A BENDING RADIUS OF NOT LESS THAN TEN TIMES CONDUIT DIAMETER. REAM OUT CONDUITS AND IDENTIFY END WITH GREEN PAINT.

3.1.5. PROVIDE BUSHINGS ON ALL CONDUITS.

3.1.6. INSTALL ADDITIONAL STEEL PULL BOXES IN SUCH A MANNER THAT, THROUGHOUT ENTIRE SYSTEM, THERE SHALL BE NOT MORE THAN TWO 90 DEGREE OR EQUIVALENT BENDS OR MORE THAN 100' IN EACH RUN, SO THAT WIRE OR CABLES MAY BE PULLED IN OR WITHDRAWN WITH REASONABLE EASE. PULL BOXES SHALL NOT BE USED AS 90 DEGREE BENDS.

3.1.7. MINIMUM SPACE REQUIREMENTS IN PULL BOXES, HAVING ONE CONDUIT EACH IN OPPOSITE ENDS OF BOX, SHALL BE AS FOLLOWS:

MAXIMUM SIZE OF CONDUIT, INCHES	SIZE OF BOX WIDTH	SIZE OF BOX LENGTH	SIZE OF BOX DEPTH	FOR EACH ADDITIONAL CONDUIT, INCHES IN INCHES	CONDUIT IN INCHES
3/4"	4"	12"	3"	2"	
1"	4"	16"	3"	2"	
1–1/4"	6"	20"	3"	3"	
1–1/2"	8"	27"	4"	4"	
2"	8"	3"	4"	5"	

3.1.8. MINIMUM SPACE REQUIREMENTS IN PULL BOXES FOR 90 DEGREE PULLS, SHALL BE AS FOLLOWS:

MAXIMUM SIZE OF CONDUIT, INCHES	SIZE OF BOX WIDTH	SIZE OF BOX LENGTH	SIZE OF BOX DEPTH	FOR EACH ADDITIONAL CONDUIT, INCHES IN INCHES	CONDUIT IN INCHES
3/4"	6"	12"	4"	2"	
1"	8"	16"	6"	2"	
1–1/4"	10"	18"	8"	3"	
1–1/2"	12"	24"	10"	4"	
2"	14"	30"	12"	5"	

3.1.9. MAINTAIN SEPARATION OF COMMUNICATIONS CONDUITS TO SOURCES OF ELECTROMAGNETIC INTERFERENCE AS FOLLOWS:

ITEM	MINIMUM CLEARANCE
FLUORESCENT BALLAST	6"
CONDUIT & CABLES USED FOR ELECTRICAL DISTRIBUTION < 1KV	12"
CONDUIT & CABLES USED FOR ELECTRICAL DISTRIBUTION >=1KV	36"
MOTOR	48"
TRANSFORMER	48"

3.1.10. THE ABOVE TABLES PROVIDES A GUIDELINE AND AT ALL TIMES THE CONSULTANT MAY ADVISE GREATER CLEARANCES IF THE CURRENTS BEING CARRIED THROUGH THESE DEVICES ARE PARTICULARLY LIKELY TO CAUSE INTERFERENCE.

3.1.11. INTERFERENCES SHALL BE MINIMIZED BY ENSURING THAT, WHEREVER POSSIBLE, COMMUNICATIONS CONDUCTORS CROSS SOURCES OF INTERFERENCE AT RIGHT ANGLES.

3.1.12. INSTALL CABLES, CONDUIT AND CABLE TRAY, ETC. ALONG OR AT RIGHT ANGLES TO BUILDING LINES UNLESS IMPRACTICAL TO DO SO. VERIFY SPECIFIC CASES OF DEVIATION IN ADVANCE WITH CONSULTANT.

EXISTING FIRE ALARM SYSTEM
28 31 16

1. GENERAL

1.1. GENERAL REQUIREMENTS

1.1.1. CONFORM TO SECTIONS OF DIVISION 1 AS APPLICABLE.

1.1.2. CONFORM TO SECTION 26 05 01, ELECTRICAL GENERAL REQUIREMENTS.

1.2. REQUIREMENTS REGULATORY AGENCIES – CURRENT EDITION OF

1.2.1. ONTARIO BUILDING CODE 1.2.2. ONTARIO ELECTRICAL SAFETY CODE C22.1

1.2.3. SYSTEM COMPONENTS: LISTED BY ULC AND CSA AND COMPLYING WITH APPLICABLE PROVISIONS OF ONTARIO BUILDING CODE, AND MEETING REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION.

1.3. OPERATION AND MAINTENANCE DATA

1.3.1. INCLUDE:

1.3.1.a. COPY OF VERIFICATION CERTIFICATE, VERIFICATION REPORT AND WARRANTY CERTIFICATES SUCH AS FOR FIRE ALARM SYSTEM, BATTERIES, ANCILLARY DEVICES, DOOR HOLDERS, OTHER SIMILAR ITEMS.

1.3.1.b. NAME, ADDRESS AND TELEPHONE NUMBER OF SERVICE REPRESENTATIVE OF MANUFACTURER TO BE CONTACTED DURING WARRANTY PERIOD.

1.4. MAINTENANCE

1.4.1. PROVIDE ONE YEAR'S FREE MAINTENANCE WITH TWO INSPECTIONS BY MANUFACTURER DURING YEAR. INSPECTION TESTS TO CONFORM TO ULC–S536. SUBMIT INSPECTION REPORT TO ENGINEER.

1.5. WORK INCLUDED

1.5.1. NOT TO BE DONE UNDER THIS SECTION SHALL INCLUDE FURNISHING OF LABOUR, MATERIALS, AND EQUIPMENT REQUIRED FOR INSTALLATION, TESTING AND PUTTING INTO PROPER OPERATION COMPLETE ELECTRICAL SYSTEMS AS SHOWN, AS SPECIFIED AND AS OTHERWISE REQUIRED. COMPLETE SYSTEMS SHALL BE LEFT READY FOR CONTINUOUS AND EFFICIENT SATISFACTORY OPERATION.

1.6. SCOPE OF WORK

1.6.1. WIRE UP DOOR HOLDERS RELEASE AND THE MAGNETIC LOCKS. PROVIDE DIRECT CONNECTION BETWEEN PULL STATION AND THE ADJACENT MAGNETIC LOCK AT ALL MAGNETIC LOCK LOCATIONS. PROVIDE PULL STATIONS ADJACENT TO THE DOOR AS REQUIRED BY CODE AND INCLUDE THE SIGNAGE AS REQUIRED BY THE CONTACT BUILDING CODE.

1.6.2. THE SMOKE DETECTORS IN CORRIDORS SHALL BE IONIZATION TYPE AND PHOTOELECTRIC TYPE INSTALLED IN ALTERNATE POSITION. (UNLESS COMBINATION IONIZATION/ PHOTOELECTRIC DETECTORS ARE USED). ALL SMOKE DETECTORS SHALL BE INTELLIGENT TYPE.

1.6.3. AT THE COMPLETION OF THE CONTRACT, THE BUILDING SHALL BE LEFT WITH A COMPLETE FIRE ALARM AND VOICE COMMUNICATION SYSTEM ACCEPTED BY THE LOCAL AUTHORITIES AND MEETING ALL APPLICABLE CODES.

1.7. SYSTEM OVERVIEW

1.7.1. EACH DEVICE SHALL BE INDIVIDUALLY ADDRESSABLE AND PROVIDE ACCURATE IDENTIFICATION OF ALARM LOCATION.

1.7.2. ALL STANDARD FIRE ALARM INPUT AND OUTPUT DEVICES SHALL BE HARDWIRED OR MULTIPLEXED TO REMOTE SATELLITE CONTROL PANELS (SCP) USING REMOTE DATA ACQUISITION AND CONTROL OR TRUE DISTRIBUTED PROCESSING TECHNIQUES.

1.7.3. ALL EMERGENCY VOICE AND COMMUNICATION CIRCUITS SHALL ALSO BE CONNECTED TO LOCAL REMOTE AUDIO UNIT (RAU) WHICH WILL HOUSE THE NECESSARY AMPLIFIERS AND CONTROL CIRCUITS TO OPERATE THE VOICE COMMUNICATION SYSTEM.

2. PRODUCTS

2.1. INPUT (ALARM INITIATING) CIRCUITS

2.1.1. PROVIDE ALARM RECEIVING CIRCUITS, ADDRESSABLE LINE CARDS FOR ALARM INITIATING DEVICES SUCH AS MANUAL PULL STATIONS, SMOKE DETECTORS, COMBINATION SMOKE DETECTORS/ HEAT DETECTORS (INTELLIGENT TYPE), HEAT DETECTORS, AND WATER FLOW SWITCHES AS INDICATED ON DRAWINGS.

2.1.2. ALL ALARM RECEIVING CIRCUITS SHALL BE SUPERVISED FOR OPEN, SHORT OR GROUND FAULT CONDITIONS.

2.2. OUTPUT ALARM CIRCUITS

2.2.1. PROVIDE ALARM OUTPUT CIRCUITS FOR POLARIZED AUDIBLE SIGNALS SUCH AS SPEAKERS, HORNS AND VISUAL INDICATORS AS INDICATED.

2.2.2. ALL ALARM OUTPUT CIRCUITS SHALL BE SUPERVISED FOR OPEN, SHORT OR GROUND FAULT CONDITIONS BY THE USE OF AN END OF LINE RESISTOR.

2.3. AUXILIARY CIRCUITS

2.3.1. PROVIDE CONTACTS, CONTROL MODULES, MONITOR MODULES, ADDRESSABLE DOUBLE VOLTAGE RELAYS FOR

FAN SHUT–DOWN AND STATUS INDICATION AS INDICATED ON DRAWINGS AND AS REQUIRED TO MAKE THE SYSTEM OPERATE AS SPECIFIED.

2.3.2. PROVIDE CONTACTS FOR MAGNETIC DOOR LOCKS AND DOOR HOLDERS. THEY SHALL BE ARRANGED TO RELEASE THE DOORS UPON ACTUATION OF FIRE ALARM SYSTEM.

2.3.3. PROVIDE CONTACTS FOR SMOKE VENTS, WHERE APPLICABLE. THEY SHALL BE OF THE NORMALLY CLOSED TYPE AND SHALL RELEASE ALL SMOKE DAMPERS UPON ACTUATION OF FIRE ALARM SYSTEM. BY–PASS SWITCHES SHALL BE PROVIDED.

2.3.4. PROVIDE AUXILIARY CONTACTS WITH 120 V AC/24 V DC, 2.5 A @ 0.5 POWER FACTOR RATING.

2.4. VOICE COMMUNICATION CIRCUITS

2.4.1. PROVIDE COMMUNICATION CIRCUITS FOR BOTH ONE WAY EMERGENCY VOICE ANNOUNCEMENT SYSTEM AND TWO WAY FIREFIGHTER'S TELEPHONE SYSTEM VOICE COMMUNICATION SYSTEMS AS REQUIRED.

2.4.2. ALL COMMUNICATION CIRCUITS SHALL BE SUPERVISED FOR OPEN, SHORT OR GROUND FAULT CONDITIONS.

2.5. ADDRESSABLE MANUAL FIRE ALARM STATIONS

2.5.1. MANUAL PULL STATIONS SHALL BE METAL CONSTRUCTION, OPEN CIRCUIT, PULL LEVER TYPE AND FINISHED IN RED ENAMEL. THEY SHALL BE MOUNTED IN A 4 IN SQUARE RECESSED BOX WITH PLASTER RING IN FINISHED AREAS AND SURFACE MOUNTED IN UNFINISHED AREAS.

2.5.2. MANUAL STATIONS SHALL BE SUITABLE FOR INSERTION OF AN EVACUATION KEY.

2.5.3. MANUAL STATIONS SHALL CREATE AN ADDRESS ON IDENTIFIABLE LOOP.

2.5.4. EACH PULL STATION SHALL BE PROVIDED WITH AN ADDITIONAL AUXILIARY CONTACT(S) TO ALLOW DIRECT CONNECTION TO FUTURE MAGNETIC LOCKS.

2.5.5. PULL STATION(S) SHALL BE MOUNTED NOT MORE THAN 600 MM (23") FROM THE ACTIVE DOOR.

2.6. AUTOMATIC FIRE DETECTORS (HEAT DETECTORS)

2.6.1. AUTOMATIC DETECTORS SHALL BE OF THE FOLLOWING TYPES:

2.6.1.a. 135 ° F. FIXED TEMPERATURE AND 15 ° F PER MINUTE, RATE OF RISE

2.6.1.b. DETECTORS SHALL HAVE SUITABLE MOUNTING PLATES WITH FINISH RING.

2.7. END OF LINE RESISTORS

2.7.1. WHERE CLASS B WIRING IS SPECIFIED OR PERMITTED, THE END OF LINE RESISTORS SHALL BE LOCATED IN OUTLET BOX WITH STAINLESS STEEL COVER PLATE. WHITE COVERPLATE WHEN INSTALLED IN T–BAR CEILING.

2.8. SMOKE DETECTORS (IONIZATION TYPE, PHOTOELECTRIC SMOKE OR COMBINATION SMOKE DETECTORS)

2.8.1. THE IONIZATION TYPE SMOKE DETECTORS SHALL BE CONSTRUCTED OF SOLID STATE COMPONENTS AND OPERATE ON IONIZATION PRINCIPLE TO DETECT VISIBLE AND/OR INVISIBLE PRODUCTS OF COMBUSTION.

2.8.2. IT SHALL BE POSSIBLE TO CHECK AND CHANGE SENSITIVITY OF DETECTORS. SMOKE DETECTORS SHALL BE SET FOR APPROVED SENSITIVITY. DETECTORS SHALL PROVIDE ENVIRONMENTAL COMPENSATION COMPLETE WITH " DIRTY " AND " EXCESSIVELY DIRTY " MESSAGES.

2.8.3. THE PHOTOELECTRIC SMOKE DETECTORS SHALL OPERATE ON THE PHOTOELECTRIC (LIGHT SCATTERING) PRINCIPLE OF OPERATION AND BE ACTIVATED BY VISIBLE OR INVISIBLE PRODUCTS OF COMBUSTION. DETECTORS SHALL BE CONSTRUCTED OF SOLID STATE COMPONENTS WITH THE INFRARED LIGHT SOURCE FOR THE PHOTOELECTRIC SENSOR EMITTED FROM A SEMICONDUCTOR DIODE.

2.8.4. WHERE A HEAT DETECTOR COMPONENT IS SUPPLIED AS PART OF THE DETECTION DEVICE, THE HEAT DETECTOR COMPONENT OF THE DETECTOR SHALL BE RESTORABLE AND SET AT 135°F. FIXED TEMPERATURE.

2.8.5. DETECTORS SHALL BE ULC LISTED.

2.8.6. SMOKE DETECTORS SHALL OPERATE ON 24 VOLTS DC AND BE PROTECTED AGAINST ELECTRICAL TRANSIENTS AND ELECTROMAGNETIC INTERFERENCE.

2.8.7. DETECTORS SHALL BE EQUIPPED WITH NO/NC CONTACTS TO OPERATE ANCILLARY DEVICES. WHERE APPLICABLE.

2.8.8. DETECTORS SHALL BE EQUIPPED WITH A FINE MESH BUG SCREEN TO PREVENT CONTAMINATION OF THE DETECTION CHAMBER BY INSECTS.

2.8.9. RECESSED SMOKE DETECTOR SHALL BE COMPLETE WITH NECESSARY SHROUD AND FLUSH MOUNTING HARDWARE.

2.8.10. PROTECT AUTOMATIC SMOKE DETECTORS DURING CONSTRUCTION WITH A DUST–BAG OR APPROVED PLASTIC COVERS, WHICH SHALL BE REMOVED AT THE TIME OF VERIFICATION.

2.8.11. SMOKE DETECTORS MOUNTED IN STAIRS SHALL BE IONIZATION TYPE.

2.8.12. PROVIDE STANDARD TYPE NON ADDRESSABLE DEVICES IN UNHEATED AREAS WITH AN INDIVIDUAL CONTROL MODULES MOUNTED IN A HEATED PART OF THE BUILDING.

2.9. DUCT MOUNTED SMOKE DETECTORS

2.9.1. DUCT–MOUNTED SMOKE DETECTORS SHALL CONSIST OF AN IONIZATION TYPE SMOKE DETECTOR AS DESCRIBED ABOVE, AND AN AIR TIGHT HOUSING ASSEMBLY, MOUNTED ON THE SIDE OF THE DUCT COMPLETE WITH SAMPLING TUBES AND SUPPORTING FRAMEWORK.

2.9.2. WHILE FANS ARE RUNNING, A CONTINUOUS CROSS–SECTIONAL SAMPLING OF THE AIR FLOWS FROM THE VENTILATION DUCT, THROUGH THE DETECTOR, AND THEN RETURNED TO THE DUCT. AIR STREAM VELOCITY RANGE FROM 2.5 M/SEC MINIMUM TO 18 M/SEC MAXIMUM TO BE MADE TO MONITOR, TEST AND RESET THE DETECTORS UNDER ACTUAL AIR FLOW CONDITIONS. UNIT SHALL BE EQUIPPED WITH A TEST KEY SWITCH AND A RESET KEY SWITCH.

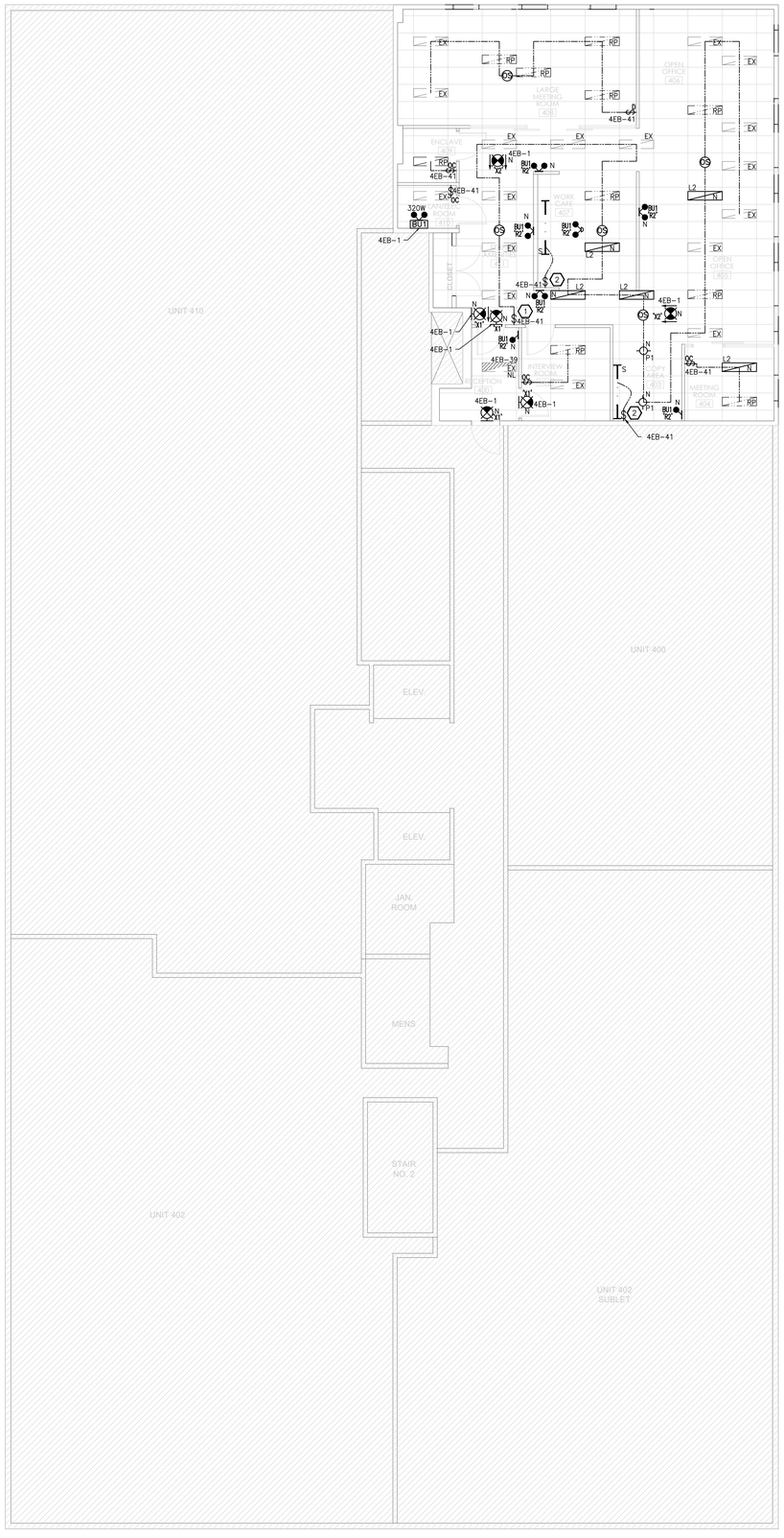
2.9.3. REMOTE ALARM LAMPS OR LED SHALL INDICATE THE SIGNAL OPERATION OF THE DETECTOR. INSTALL REMOTE LED IN AN EASILY VISIBLE LOCATION TO SOMEONE STANDING ON THE FLOOR WITHOUT REQUIRING THE USE OF LADDERS TO SEE IT.

2.9.4. PROTECT AUTOMATIC SMOKE DETECTORS DURING CONSTRUCTION WITH A DUST–BAG, WHICH WILL BE REMOVED AT THE TIME OF VERIFICATION.

2.9.5. MANUFACTURER SHALL INCLUDE SITE VISITS TO DIRECT DETAILED LOCATIONS OF DUCT–MOUNTED SMOKE DETECTORS.

2.10. ADDRESSABLE BASES

2.10.1. BASES FOR ALL STATIONS SHALL



GENERAL LIGHTING NOTES:

1. A SITE VISIT IS MANDATORY FOR ALL ELECTRICAL CONTRACTORS BIDDING ON THIS PROJECT TO DETERMINE THE PROPOSED SCOPE OF WORK.
2. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH MECHANICAL AND INTERIOR DESIGN DRAWINGS.
3. ALL SERVICE PENETRATIONS THROUGH FIRE SEPARATIONS SHALL BE PROTECTED AT THE PENETRATIONS BY TIGHT-FITTING OR FIRE STOP MATERIAL OF SAME DEGREE OF FIRE RESISTANCE RATING AS THE FIRE SEPARATION ITSELF.
4. THE ELECTRICAL CONTRACTOR TO MEASURE THE ILLUMINATION OF THE FLOOR AT NIGHT WITH EMERGENCY LIGHTING ON ONLY, AND SEND A DRAWING SHOWING THE MAXIMUM AND MINIMUM LEVEL OF ILLUMINATION, TO THE CONSULTING ENGINEER, FOR REVIEW.
5. CONTRACTOR TO CONFIRM POWER REQUIREMENTS FOR ALL LIGHT FIXTURES PRIOR TO ANY ROUGH IN OR INSTALLATION, BALANCE THE LIGHTING LOADS TO ENSURE THAT LOAD IS BELOW 80% OF BREAKER CAPACITY.
6. REWORK EXISTING CIRCUITS FOUND IN CEILING SPACE FOR ALL NEW LIGHTING FIXTURES UNLESS OTHERWISE NOTED. CONTRACTOR SHALL PROVIDE ADDITIONAL CIRCUITS WHERE REQUIRED. PROVIDE FOR ADDITIONAL SUPPLY AND INSTALL OF (2) 20A, 120V BREAKERS AND ASSOCIATED BRANCH WIRING. ALL NORMAL POWER LIGHTING CIRCUITS WITHIN THE TENANT SUITE SHALL BE ON A SEPARATE LIGHTING ZONE AND SHALL BE CONTROLLED BY THE EXISTING LIGHTING CONTROL SYSTEM. PROVIDE ALL NECESSARY RELAYS, CONTACTORS, RELAY PANELS AND DRY INTERFACES TO ACHIEVE THIS.
7. ALL NEW AND/OR RELOCATED SUSPENDED, OR RECESSED LUMINAIRES SHALL BE CHAIN HUNG AND SUPPORTED FROM THE SLAB ABOVE. PROVIDE LETTER TO BE INCLUDED AS PART OF CLOSE OUT DOCUMENTS.
8. ALL LIGHTING WORK SHALL COMPLY WITH THE LATEST EDITION OF THE ONTARIO ELECTRICAL SAFETY CODE (OESC) AND SHALL BE SUBJECT TO INSPECTION AND APPROVAL BY THE ELECTRICAL SAFETY AUTHORITY (ESA).
9. CONTRACTOR SHALL VERIFY ALL LIGHTING-RELATED EXISTING CONDITIONS ON SITE PRIOR TO COMMENCEMENT OF WORK. ANY DISCREPANCIES BETWEEN THE DRAWINGS AND SITE CONDITIONS SHALL BE REPORTED TO THE CONSULTANT FOR REVIEW.
10. CONTRACTOR SHALL MAINTAIN RED-LINE AS-BUILT DRAWINGS SHOWING LIGHTING CIRCUITING AND CONTROL SYSTEMS THROUGHOUT CONSTRUCTION. FINAL AS-BUILT DRAWINGS AND UPDATED PANEL SCHEDULES SHALL BE SUBMITTED AT PROJECT CLOSEOUT.
11. CONTRACTOR SHALL TEST AND VERIFY THAT ALL EXISTING AND NEW EMERGENCY BATTERY UNITS ARE OPERATIONAL, CODE-COMPLIANT, AND RATED FOR A MINIMUM OF 2 HOURS OF EMERGENCY OPERATION IN ACCORDANCE WITH THE ONTARIO BUILDING CODE AND CSA C22.2
12. CONTRACTOR SHALL ENSURE THAT EACH BATTERY UNIT HAS SUFFICIENT CAPACITY TO SUPPORT ALL CONNECTED REMOTE HEADS AND INTEGRAL EMERGENCY LIGHTING LOADS, INCLUDING NEWLY ADDED DEVICES. LOAD CALCULATIONS MUST BE COMPLETED AND VERIFIED ON SITE.IF EXISTING BATTERY UNITS ARE FOUND TO BE UNDERSIZED OR IN POOR CONDITION, CONTRACTOR SHALL SUPPLY AND INSTALL NEW BATTERY UNITS AS REQUIRED TO MEET THE EMERGENCY LOAD DEMAND.
13. A COMPLETE TEST REPORT, CONFIRMING BATTERY UNIT PERFORMANCE AND CAPACITY, SHALL BE SUBMITTED AS PART OF THE AS-BUILT DOCUMENTATION

KEY NOTES:

1. PROVIDE RELAYS AND POWER PACKS FOR LARGE GROUPINGS OF LIGHTING FIXTURES AS REQUIRED IN ORDER TO ACHIEVE THE INTENDED CONTROL DESIGN SHOWN IN THE DRAWINGS. TYPICAL FOR ALL GROUPINGS OF LIGHT FIXTURES.
2. TOGGLE SWITCH FOR UNDERCABINET LIGHTING SHALL BE MOUNTED WITHIN MILLWORK BACKSPLASH. EXACT LOCATION OF SWITCH TO BE APPROVED BY DESIGNER ON SITE PRIOR TO ROUGH-IN AND INSTALLATION.

SEPARATE PRICING:

1. ELECTRICAL CONTRACTOR TO PROVIDE SEPARATE PRICE FOR THE REMOVAL OF ALL EXISTING 1'X4' TROFFER LIGHT FIXTURES AND THE SUPPLY & INSTALL FOR ALL NEW 2'X4' TROFFER FIXTURES THROUGHOUT THE SPACE. AS PART OF THIS WORK ENSURE TO SUPPLY NEW PHOTOMETRICS ANALYSIS TO TIGRIS ENGINEERING FOR REVIEW. REFER TO INTERIOR DESIGN SEPARATE PRICE CEILING PLAN DETAIL TO CONFIRM QUANTITY (3/1-402).
   BASIS OF DESIGN:
   LIGHT FIXTURE: LITHONIA LIGHTING STACK SWITCH LED LAY-IN 2'X4', CCT TO MATCH EXISTING LIGHT FIXTURE SPECIFICATION.
   CONTACT: EDWIN MOK, 416-460-7517, EMAIL: EDWIN.MOK@ACUITYBRANDS.COM

ISSUE RECORD:

NO:	ISSUED FOR:	DATE: (MM.DD.YY)
01	50% REVIEW	12.17.25
02	90% COORDINATION	01.13.26
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04	PERMIT / TENDER	01.23.26

REVISION RECORD:

NO:	ISSUED FOR:	DATE: (MM.DD.YY)
01	XXXX	XX.XX.XX

APPROVED BY:

LICENSED PROFESSIONAL ENGINEER
S. SALEH
100176531
01.23.2026
PROVINCE OF ONTARIO

CONSULTANT:

ENGINEER:

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100 ROYAL GROUP CRESCENT, UNIT D
WOODBRIDGE, ON
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PROJECT:

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SUITE 412,
KINGSTON, ON
K7M 8S8

PROJECT NO: 25-1095

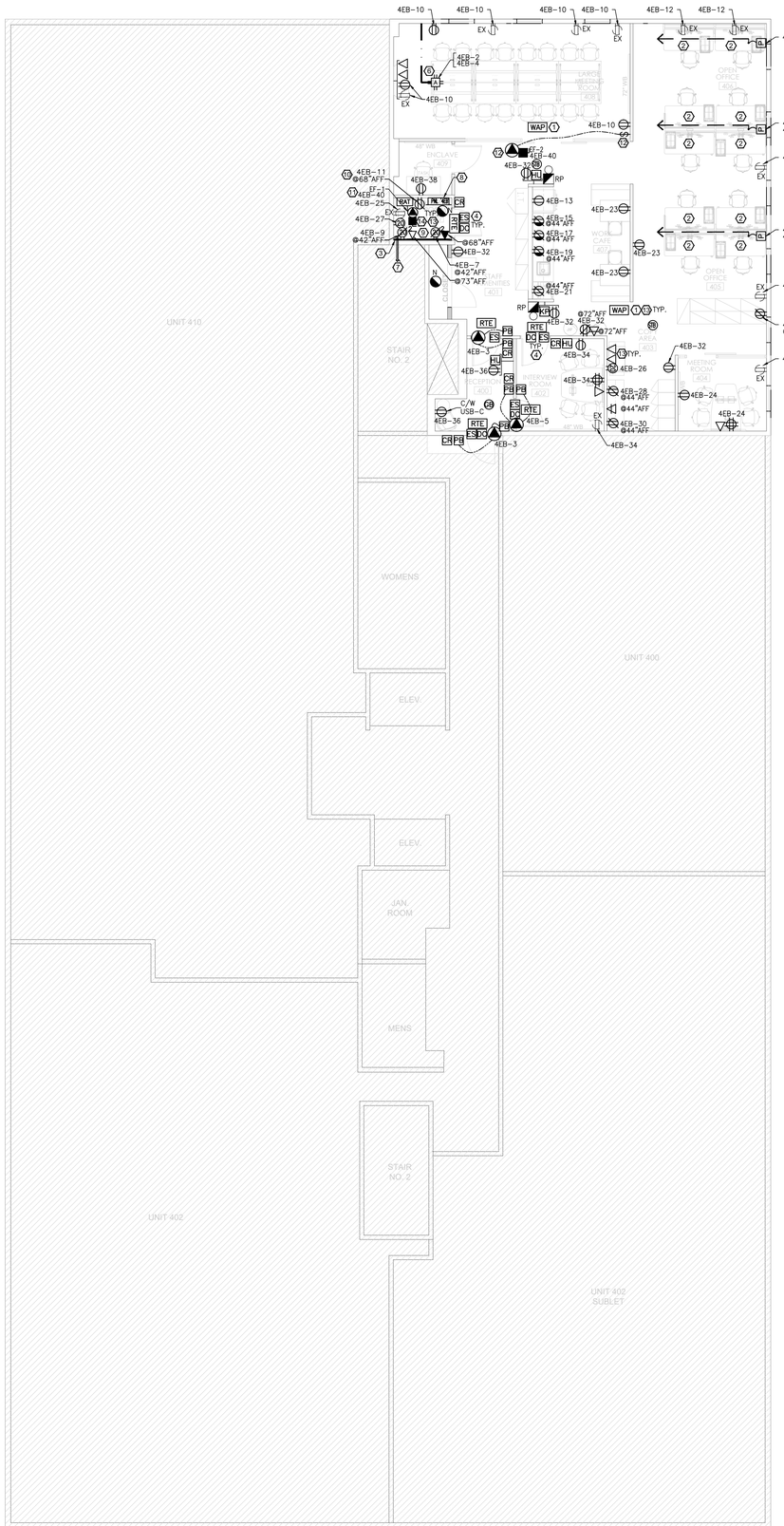
SCALE:	SHEET SIZE:
1/8" = 1' - 0"	24x36
DRAWN BY: M.H./A.K.	CHECKED BY: S.S.

DRAWING TITLE:

PROPOSED LIGHTING LAYOUT

DRAWING NO:

E2.1



GENERAL POWER NOTES:

1. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH MECHANICAL, INTERIOR DESIGN AND ARCHITECTURAL DRAWINGS.
2. ALL SERVICE PENETRATIONS THROUGH FIRE SEPARATIONS SHALL BE PROTECTED AT THE PENETRATIONS BY TIGHT–FITTING OR FIRE STOP MATERIAL OF SAME DEGREE OF FIRE RESISTANCE RATING AS THE FIRE SEPARATION ITSELF.
3. FOR MOUNTING HEIGHTS OF ALL ELECTRICAL AND COMMUNICATIONS DEVICES, ELECTRICAL CONTRACTOR SHALL REFER TO INTERIOR DESIGN DRAWINGS AND ELEVATION DETAILS, THE ELECTRICAL DRAWINGS ARE FOR CIRCUITING REQUIREMENTS AND GENERAL LOCATIONS ONLY.
4. MOUNT ALL WALL MOUNTED GROUPS OF POWER, DATA AND TELEPHONE OUTLETS IN MULTI–GANG OUTLET BOXES COMPLETE WITH BARRIERS. DETERMINE EXACT WALL PLATE COVER FINISH WITH INTERIOR DESIGNER PRIOR TO PROCUREMENT.
5. ELECTRICAL PANELS SHALL BE MOUNTED ON PLYWOOD ON AN INTERIOR FIRE–RATED DRYWALL PARTITION(S) OR EXTERIOR WALL ASSEMBLY.
6. ELECTRICAL CONTRACTOR SHALL VERIFY POWER REQUIREMENTS FOR ALL EQUIPMENT PRIOR TO ROUGH IN AND INSTALLATION. REPORT ANY DISCREPANCIES TO THE ENGINEER.
7. ELECTRICAL CONTRACTOR SHALL PROVIDE A MINIMUM EMT CONDUIT SIZE OF 3/4" FOR ALL DATA ROUGH INS.
8. ALL POWER AND COMMUNICATION OUTLETS AND CONDUITS SHALL BE RECESSED/CONCEALED. WHERE THESE METHODS ARE NOT PRACTICAL ELECTRICAL CONTRACTOR SHALL PROVIDE SURFACE MOUNTED EMT CONDUITS.
9. THE ELECTRICAL CONTRACTOR SHALL SUPPLY AND INSTALL SUITABLE LABELS ON ALL RECEPTACLES AND SYSTEM FURNITURE FEEDS. LABELS TO INCLUDE BOTH PANEL AND CIRCUIT DESIGNATION. REVIEW LABEL SIZE AND TYPE WITH CONSULTANT PRIOR TO INSTALLATION.
10. ENSURE THAT THE NEW/EXISTING PANEL BOARDS ARE PROVIDED WITH THE BEST BALANCE OF CURRENT BETWEEN PHASES; NO MORE THAN 10% UNBALANCE THE LOAD AND SUBMIT A REPORT IN THE OPERATIONS MANUAL. RE–BALANCE LOAD AS REQUIRED.
11. FOR PRICING PURPOSES THE ELECTRICAL CONTRACTOR SHALL TAKE THE WORST CASE SCENARIO WHEN ESTIMATING THE BRANCH WIRING REQUIRED TO ACCOMPLISH THE CIRCUITING SHOWN.
12. ALL FINISHES ARE TO BE COORDINATED WITH INTERIOR DESIGNER DRAWINGS.
13. ALL POWER CIRCUITS SERVING THIS FLOOR SHALL BE FED FROM THE ELECTRICAL PANEL LOCATED ON THE SAME FLOOR. ANY EXISTING POWER CIRCUITS ORIGINATING FROM OTHER FLOORS (SUCH AS THE BASEMENT OR SECOND FLOOR) SHALL BE REWORKED AND CONNECTED TO THE APPROPRIATE FLOOR PANEL. CONTRACTOR MUST CONFIRM PANEL LOCATIONS AND LOAD CAPACITIES BEFORE PROCEEDING.
14. ALL POWER PANELS SHALL BE CLEARLY AND NEATLY RE–LABELLED TO REFLECT UPDATED CIRCUITING. ALL NEW CIRCUIT LABELS MUST BE ENGRAVED LAMACOID NAMEPLATES. HANDWRITTEN OR TAPE LABELS ARE NOT PERMITTED.
15. CONTRACTOR SHALL COORDINATE ALL POWER SHUTDOWNS WITH THE BUILDING OWNER AND AFFECTED TENANTS. A MINIMUM OF 48 HOURS' WRITTEN NOTICE IS REQUIRED FOR ANY SCHEDULED POWER OUTAGE. TEMPORARY POWER SHALL BE PROVIDED AND OPERATIONAL PRIOR TO DISCONNECTING ANY EXISTING POWER SYSTEMS OR CIRCUITS.
16. ALL POWER–RELATED ELECTRICAL WORK SHALL COMPLY WITH THE LATEST EDITION OF THE ONTARIO ELECTRICAL SAFETY CODE (OESC) AND SHALL BE INSPECTED AND APPROVED BY THE ELECTRICAL SAFETY AUTHORITY (ESA).
17. ALL PENETRATIONS OF FIRE–RATED FLOORS, WALLS, AND CEILINGS RELATED TO POWER WIRING SHALL BE SEALED USING ULC–LISTED FIRESTOP SYSTEMS, INSTALLED IN ACCORDANCE WITH MANUFACTURER INSTRUCTIONS AND CODE.
18. CONTRACTOR SHALL MAINTAIN RED–LINE AS–BUILT POWER DRAWINGS AND PANEL SCHEDULES THROUGHOUT THE PROJECT. FINAL AS–BUILTS AND UPDATED SINGLE LINE DIAGRAMS SHALL BE SUBMITTED AT CLOSEOUT.
19. PROPERLY LABEL ALL BREAKER PANELS, CLEARLY INDICATING ALL INFORMATION INCLUDING CIRCUIT NUMBERS. CIRCUITING SHOWN ON DRAWING IS DIAGRAMMATIC INTENSION TO SHOW GENERAL CIRCUIT ARRANGEMENT AND PANEL DESIGNATION. RE–ARRANGE EXISTING BREAKERS IN EXISTING AND NEW PANELS AS REQUIRED. SHOW FINAL ARRANGEMENT ON AS–BUILT DRAWINGS.
20. BE RESPONSIBLE FOR ALL EXISTING ELECTRICAL DEVICES TO REMAIN, CONNECT TO EXISTING CIRCUIT OR REWORK AND CONNECT TO NEW CIRCUIT AS SHOWN ON DRAWINGS.
21. ALL EXPOSED WIRING IN ANY DISHWASHING/WASHING AREA SHALL BE SEAL–TIGHT FLEX.
22. ELECTRICAL CONTRACTOR SHALL VERIFY ALL POWER REQUIREMENTS WITH KITCHEN EQUIPMENT CUTSHEETS PRIOR TO ROUGH IN AND INSTALLATION OF ANY RECEPTACLES, CONNECTIONS ETC.
23. ELECTRICAL CONTRACTOR TO OBTAIN APPROVAL FROM THE LANDLORD BEFORE CUTTING ANY STRUCTURAL WALLS OR FLOORS. CUTTING AND DRILLING SHALL ONLY BE AT TIMES ALLOWED BY THE LANDLORD. CHECK AND VERIFY THE LOCATION OF EXISTING MECHANICAL AND ELECTRICAL SERVICES IN WALLS AND BELOW THE FLOOR SLAB IN ALL AREAS REQUIRING CORE DRILLING AND CUTTING. PROTECT ALL TENANT AREAS WHERE CORE DRILLING OCCURS. PROVIDE X–RAY STUDY BEFORE DRILLING OR CUTTING WHERE REQUIRED BY THE LANDLORD. LOCATION OF ALL FLOOR PENETRATIONS, INCLUDING CORE DRILL, SAW CUTTING AND X–RAYING SHALL BE APPROVED ON–SITE BY DESIGNER/ARCHITECT, BUILDING OWNER, AND STRUCTURAL ENGINEER. OBTAIN NECESSARY APPROVALS PRIOR TO X–RAY AND DRILLING.
24. FURNITURE CONNECTIONS: CONNECT FURNITURE "BASE POWER–IN" CONNECTORS TO ELECTRICAL OUTLETS AND POWER/COMMUNICATIONS DISTRIBUTION POLES AFTER THE INSTALLATION OF FURNITURE. COORDINATE WITH THE FURNITURE EQUIPMENT INSTALLATION.
25. FOR THE VOICE AND DATA CABLE FROM OUTLETS/POLES TO SYSTEMS FURNITURE, PROVIDE A LIQUID–TIGHT FLEX CABLE C/W CENTERLINE UNLESS OTHERWISE NOTED.

KEY NOTES:

1. PROVIDE 20FT OF COILED CAT6 CABLE FOR WIRELESS ACCESS POINT
2. RECEPTACLES SHOWN ON SYSTEMS FURNITURE ARE SHOWN ONLY FOR CIRCUITING AND REFERENCE ONLY. RECEPTACLES IN SYSTEMS FURNITURE SHALL BE FED FROM WALL FEED SHOWN IN DRAWINGS.
3. DIV.26 TO PROVIDE FIRE RATED PLYWOOD. DIMENSIONS TO BE COORDINATED ON SITE WITH IT EQUIPMENT PRIOR TO ROUGH–IN AND INSTALLATION.
4. PROVIDE BACK BOXES AS REQUIRED FOR ANY NEW SECURITY DEVICES WITHIN SCOPE OF WORK. CONTRACTOR SHALL REFER TO SECURITY LAYOUT FOUND IN THE DESIGNER DRAWINGS FOR THE LOCATIONS AND QUANTITIES OF SECURITY DEVICES. REFER TO DETAIL #6 OF DRAWING E7.1 FOR SECURITY DOOR INSTALLATION.
5. ALL SECURITY DEVICES SHOWN ON DRAWING SHALL BE ROUGH IN ONLY. ELECTRIC STRIKE BY GENERAL CONTRACTOR. ELECTRICAL CONTRACTOR TO COORDINATE WITH SECURITY VENDOR AND SECURITY DRAWINGS FOR EXACT REQUIREMENTS.
6. PROVIDE RACEWAY C/W SYSTEM FURNITURE FEED AS SHOWN. COORDINATE ALL ACCESSORIES REQUIRED AND EXACT LOCATION OF SURFACE MOUNT BOX ON SITE AND WITH CLIENT AND DESIGNER AS REQUIRED. FLOOR BOX SHALL HAVE TWO 20A T–SLOT DUPLEX RECEPTACLES EACH WITH THEIR OWN DEDICATED CIRCUIT. CONTRACTOR SHALL PROVIDE ALL ACCESSORIES FOR CONNECTRAC AS PER MANUFACTURER'S RECOMMENDATION TO BE MEET CLIENT'S INTENDED DESIGN AND FUNCTION FOR THE CONNECTRAC.
7. DIV.26 TO PROVIDE (1) RUN OF 1" EMT CONDUIT C/W PULL STRING FOR COMMUNICATIONS CABLING FROM LAN ROOM [410] TO THE BUILDING EXISTING FIBER OPTIC DEMARCATION POINT TO AN AREA NEXT TO THE NEW ELECTRICAL PANEL FOR TENANT'S FIBER OPTIC SERVICE PROVIDER. EXACT LOCATION, REQUIREMENTS AND LENGTHS TO BE COORDINATED PRIOR TO ROUGH–IN AND INSTALLATION.
8. DIV.26 TO PROVIDE NEW ELECTRICAL PANEL '4EB.' EXACT LOCATION TO BE COORDINATED ON SITE PRIOR TO ROUGH–IN AND INSTALLATION. REFER TO DETAIL 1/E4.2 – PROPOSED SINGLE LINE DIAGRAM FOR ADDITIONAL DETAILS.
9. COORDINATE EXACT LOCATIONS AND MOUNTING HEIGHTS OF DATA OUTLETS AND RECEPTACLES FOR TELECOM EQUIPMENT IN THE LAN ROOM [410]. EXACT MOUNTING HEIGHTS AND LOCATIONS SHALL BE COORDINATED ON SITE AND WITH CLIENT'S IT TEAM. REFER TO DRAWING E6.1 FOR FURTHER INFORMATION REGARDING THE DATA OUTLETS IN THE ELEC/LAN ROOM.
10. DIV.26 TO PROVIDE DEDICATED OUTLET FOR SOUND MASKING. COORDINATE EXACT MOUNTING HEIGHT AND LOCATION RELATIVE TO NEW ELECTRICAL PANEL AND NEW EQUIPMENT WITH CLIENT ON SITE PRIOR TO ROUGH–IN AND INSTALLATION.
11. EXHAUST FAN TO BE CONTROLLED THROUGH REVERSE ACTING THERMOSTAT. ENSURE THERMOSTAT IS RATED FOR EXHAUST FAN. COORDINATE EXACT REQUIREMENTS ON SITE WITH MECHANICAL DRAWINGS AND CONTRACTOR PRIOR TO ROUGH–IN AND INSTALLATION.
12. EXHAUST FAN TO BE CONTROLLED THROUGH WALL MOUNTED TIMER SWITCH. COORDINATE EXACT REQUIREMENTS ON SITE WITH MECHANICAL DRAWINGS AND CONTRACTOR PRIOR TO ROUGH–IN AND INSTALLATION.
13. TYPICAL: DATA DROPS AND TELEPHONE OUTLETS TO BE TERMINATED AT CLIENTS IT RACK. EXACT REQUIREMENTS TO BE COORDINATED ON SITE AND WITH THE CLIENT'S IT TEAM PRIOR TO ROUGH–IN AND INSTALLATION. REFER TO E6.1 – NETWORKING LAYOUT FOR ADDITIONAL DETAILS.
14. CONTRACTOR TO ENSURE NEMA RATED OUTLETS ARE PROVIDED WITHIN LAN/ELEC ROOM [410]

FIRE ALARM NOTES:

1. PROVIDE ADDITIONAL DEVICES AS SHOWN. ALL DEVICES SHALL BE COMPATIBLE WITH EXISTING FIRE ALARM SYSTEM. CONNECT NEW FIRE ALARM DEVICES TO EXISTING FIRE ALARM SYSTEM. VERIFY EXACT LOCATION WITH THE GENERAL CONTRACTOR PRIOR TO ROUGH–IN AND INSTALLATION. VERIFY AND PROVIDE CERTIFICATE OF VERIFICATION FOR ALL NEW AND MODIFIED FIRE ALARM DEVICES AS PER THE LATEST ISSUE OF ULC S537 STANDARD.
2. NEW FIRE ALARM DEVICES TO MATCH EXISTING IN THE SPACE.
3. INSTALL THE FIRE ALARM SYSTEM IN ACCORDANCE WITH THE LATEST ISSUE OF CAN–S524 AND THE ONTARIO ELECTRICAL SAFETY CODE SECTION 32.
4. COORDINATE ALL CONNECTIONS TO EXISTING FIRE ALARM PANEL WITH THE OWNER.
5. ELECTRICAL CONTRACTOR SHALL RETAIN LANDLORD APPROVED FIRE ALARM VENDOR.
6. CONTRACTOR SHALL ADJUST SETTINGS OF FIRE ALARM SPEAKERS AS REQUIRED TO ACCOMMODATE DEFICIENCIES NOTED IN THE FIRE ALARM REPORT. PROVIDE FOR THE RE–TESTING OF FIRE ALARM SPEAKERS WITH THE ADJUSTED SETTINGS.
7. FIRE ALARM CONTRACTOR SHALL PROVIDE ALLOWANCE FOR THE SUPPLY AND INSTALL OF ADDITIONAL FIRE ALARM DEVICES AS PER ITEMIZED PRICING SCHEDULE. AS PART OF THIS ALLOWANCE PROVIDE FOR THE RE–TESTING OF ANY NEWLY ADDED DEVICES.
8. WHEN FIRE PROTECTION AND LIFE SAFETY SYSTEMS, ALONG WITH SYSTEMS THAT HAVE FIRE PROTECTION AND LIFE SAFETY FUNCTIONS, ARE INTEGRATED, THEY MUST BE TESTED AS A WHOLE IN ACCORDANCE WITH CAN/ULC–S1001, "INTEGRATED SYSTEMS TESTING OF FIRE PROTECTION AND LIFE SAFETY SYSTEMS." TO VERIFY PROPER INTEGRATION. THE EC OR GC SHALL RETAIN AN INTEGRATED SYSTEMS COORDINATOR FOR THE PROJECT AS REQUIRED.

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03	90% COORDINATION-2	01.16.26
04	PERMIT / TENDER	01.23.26

REVISION RECORD:

NO:	ISSUED FOR:	DATE: (MM.DD.YY)
01	XXXX	XX.XX.XX

APPROVED BY:

LICENSED PROFESSIONAL ENGINEER
S. SALEH
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01.23.2026
PROVINCE OF ONTARIO

CONSULTANT:

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PROJECT:

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1471 JOHN COUNTER BLVD,
SUITE 412,
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K7M 8S8

PROJECT NO:

25-1095

SCALE:	SHEET SIZE:
1/8" = 1' - 0"	24x36
DRAWN BY: M.H./A.K.	CHECKED BY: S.S.

DRAWING TITLE:

PROPOSED POWER & SYSTEMS LAYOUT

DRAWING NO:

E3.1

INTERIOR LIGHTING FIXTURE SCHEDULE

TAG	SYMBOL	LOCATION	MANUFACTURER/ CATALOGUE NUMBER	DESCRIPTION	LAMP(S)	DIMMING	VOLTAGE	COMMENTS
'P1'		COPY AREA 403	LUMINA SALES / LED FLAT FRAME RECESSED LUMINAIRE 4"	LED FLAT FRAME RECESSED LUMINAIRE 4", DIMMABLE	–	0–10V	120V	
'L2'		AS INDICATED	LUMINAIRE TO MATCH EXISTING 1X4 FIXTURES INSTALLED ON SITE.	DIMMABLE LED 1X4 LUMINAIRE	–	0–10V	120V	
'S'		WORK CAFE 407/ COPY AREA 403	SGI LED FLEX LIGHT BASIC BRIGHT | DRIVER: SGI – LED 60WATT, 12VDC DIMMABLE DRIVER | TRACK: SGI LED TRACK – ANGLED 2618	LED STRIP LIGHTING UNDER MILLWORK	–	0–10V	120V	

NOTES:

1. EQUIVALENTS WILL ONLY BE CONSIDERED AT TIGRIS ENGINEERING PRIOR TO TENDER CLOSE.
2. CARRY COST TO PROVIDE SPECIAL FINISHES ON FIXTURES WITHOUT FINISHES LISTED.
3. COORDINATE EXACT LIGHT FIXTURE SPECIFICATION REQUIRED WITH INTERIOR DESIGNER AND ARCHITECTURAL DRAWINGS AND SCHEDULES FOR PRICING AND PROCUREMENT.
4. ELECTRICAL CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL LIGHT FIXTURES UNLESS DENOTED OTHERWISE AS PART OF THE BASE ELECTRICAL CONTRACT.
5. LED'S AND DRIVERS TO HAVE THE LATEST TECHNOLOGY AT TIME OF PURCHASE.
6. VERIFY EXISTING VOLTAGE OF EXISTING LIGHTING FIXTURES ON SITE. THE ELECTRICAL CONTRACTOR IS TO MATCH THE EXISTING VOLTAGE. NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN VOLTAGES PRIOR TO PROCUREMENT OF FIXTURES.
7. ELECTRICAL CONTRACTOR TO ENSURE DIMMER SWITCH CONTROLLING LIGHT FIXTURE IS COMPATIBLE WITH THE LIGHT FIXTURE DIMMING DRIVER.

MECHANICAL EQUIPMENT SCHEDULE

TAG	NAME	SUPPLIER CODE	LOCATION	HP	KW	VOLT	PHASE	STARTERS	CONTROL	INTERLOCK	COMMENTS
EF–1	EXHAUST FAN	2	CEILING SPACE	–	0.156	120	1	–	REVERSE ACTING THERMOSTAT	–	– REVERSE ACTING THERMOSTAT SHALL BE SUPPLIED, INSTALLED AND WIRED BY ELECTRICAL CONTRACTOR.
EF–2	EXHAUST FAN	2	CEILING SPACE	–	0.156	120	1	–	TIMER SWITCH	–	– TIMER SWITCH SHALL BE SUPPLIED, INSTALLED AND WIRED BY ELECTRICAL CONTRACTOR.

CODES

1. SUPPLIED, INSTALLED AND WIRED BY DIV. 15
2. SUPPLIED AND INSTALLED BY DIV. 15. WIRED BY DIV. 16.
3. SUPPLIED BY DIV. 15. INSTALLED AND WIRED BY DIV. 16.
4. SUPPLIED, INSTALLED AND WIRED BY DIV. 16.
5. SUPPLIED BY OTHERS. INSTALLED AND WIRED BY DIV. 15.
6. SUPPLIED BY OTHERS. INSTALLED BY DIV. 15. WIRED BY DIV. 16.
7. SUPPLIED BY OTHERS. INSTALLED AND WIRED BY DIV. 16.

EMERGENCY BATTERY / REMOTE HEAD SCHEDULES

'X1'

TYPE: SINGLE OR DOUBLE FACE EMERGENCY PICTOGRAM RUNNING MAN SIGN. RECESSED MOUNT ABOVE DOOR OPENING OR ON FINISHED CEILING AS REQUIRED. HOUSING CONSTRUCTED FROM DURABLE 20 GAUGE STEEL. INDICATORS SHALL BE SELECTED TO SUIT LIGHTING LAYOUT.

MANUFACTURER	MODEL	LAMP	COMMENTS
BEGHELLI CANADA CORPORATION	SL–RM–SP–L–U–OLR–M	LED	
STANPRO LIGHTING SYSTEMS	RMS–0–WH–IB	LED	
LITHONIA LIGHTING	TCE RM EL	LED	LED (120 MIN SELF–POWERED)

'X2'

TYPE: SINGLE OR DOUBLE FACE EDGE LIT EMERGENCY PICTOGRAM RUNNING MAN SIGN SUSPENDED FROM CEILING STRUCTURE AT 7'–6" AFF OR TO MATCH EXISTING HEIGHTS. HOUSING TO HAVE DIECAST ALUMINUM BEVELLED TRIM PLATE, WITH BRUSHED FINISH. INDICATORS SHALL BE SELECTED TO SUIT LIGHTING LAYOUT.

MANUFACTURER	MODEL	LAMP	COMMENTS
BEGHELLI CANADA CORPORATION	GD–RM–SP–L–XX–2–OLR–AT	LED	LED (120 MIN SELF–POWERED)
STANPRO LIGHTING SYSTEMS	RMEA–2–WH–IB	LED	LED (120 MIN SELF–POWERED)
LITHONIA LIGHTING	EDGRM–W–EL	LED	

'X1/R2'

TYPE: SINGLE FACE EMERGENCY PICTOGRAM RUNNING MAN SIGN RECESSED MOUNTED ABOVE DOOR OPENING OR ON FINISHED CEILING AS REQUIRED C/W DUAL REMOTE HEAD. HOUSING CONSTRUCTED FROM DURABLE 20 GAUGE STEEL. INDICATORS SHALL BE SELECTED TO SUIT LIGHTING LAYOUT.

MANUFACTURER	MODEL	LAMP	COMMENTS
BEGHELLI CANADA CORPORATION	SL–RM–12–36–L–U–OLR–M–2BTMR	LED / 2 X 7W	
STANPRO LIGHTING SYSTEMS	PRMS12–2L	LED / 2 X 7W	
LITHONIA LIGHTING	TCE RM EHO	LED / 2 X 6.6W	

'BUX/R2'

TYPE: EMERGENCY REMOTE LIGHT DOUBLE HEAD BATTERY COMBINATION UNIT. SUSPEND FROM CEILING OR WALL MOUNTED AT 7'–6" AFF

MANUFACTURER	MODEL	LAMP	COMMENTS
BEGHELLI CANADA CORPORATION	NV–24V–360W–BTMR2–LED–MR16–7W	360W; 2X7W, 24V LED–MR16	
STANPRO LIGHTING SYSTEMS	SLC–24360–2M–7WLA	360W; 2X7W, 24V LED–MR16	
LITHONIA LIGHTING	EM4L–UVOLT	2X6.6W, 120–347V	STANDALONE UNIT

'R1'

TYPE: EMERGENCY REMOTE LIGHT SINGLE HEAD CEILING MOUNTED OR WALL MOUNTED AS PER ELECTRICAL SPECIFICAITONS

MANUFACTURER	MODEL	LAMP	COMMENTS
BEGHELLI CANADA CORPORATION	BTMR1–LED–MR16–24V–7W	LED / 1 X 7W	
STANPRO LIGHTING SYSTEMS	M1–12–24–7W–LA	LED / 1 X 7W	
LITHONIA LIGHTING	EM2L–UVOLT	6.6W, 120–347V	STANDALONE UNIT

'R2'

TYPE: EMERGENCY REMOTE LIGHT DUAL HEAD CEILING MOUNTED OR WALL MOUNTED AS PER ELECTRICAL SPECIFICATIONS

MANUFACTURER	MODEL	LAMP	COMMENTS
BEGHELLI CANADA CORPORATION	BTMR2–LED–MR16–24V–7W	LED / 2 X 7W	
STANPRO LIGHTING SYSTEMS	M2–12–24–7W–LA	LED / 2 X 7W	
LITHONIA LIGHTING	EM4L–UVOLT	2X6.6W, 120–347V	STANDALONE UNIT

INV–X

TYPE: COMMERCIAL STEEL MINI–INVERTER EMERGENCY LIGHTING POWER SUPPLY FOR USE WITH LIGHT FIXTURES. TO BE SERVED BY 15A LOCK TYPE BREAKER ON MAIN ELECTRICAL PANEL.

MANUFACTURER	MODEL	LAMP	COMMENTS
–	–	–	–
STANPRO LIGHTING SYSTEMS	SLC–MIV–X–1440–WH/AT	N/A	BATTERY SIZE: 1440W; 120V IN/OUT
ACUITY			

IMPORTANT NOTES:

1. QUANTITY OF EMERGENCY LIGHTING FIXTURES SHOWN IS THE MINIMUM REQUIRED. ADDITIONAL FIXTURES MAY BE REQUIRED BY LOCAL AUTHORITIES. INCLUDE IN THIS CONTRACT FOR SUPPLY WIRING AND INSTALLATION OF ADDITIONAL THREE(3) EXIT LIGHTS AND FOUR(4) DUAL REMOTE HEADS.
2. WIRING FOR DC CIRCUITS SHALL BE MIN. #10 AWG. FOR DISTANCES GREATER THAN 120', RUN #8 AWG.
3. CONFIRM VOLTAGE DROP AT THE END OF EACH DC BRANCH CIRCUIT AND ENSURE IT DOES NOT EXCEED MAX. 5% ALLOWABLE DROP. ADEQUATELLY DISTRIBUTE LOAD ON EACH BRANCH DC CIRCUIT TO ACHIEVE THIS REQUIREMENT.

ITEMIZED PRICING SCHEDULE

NO.	SYMBOL	DESCRTIPTION	COMMENTS	QTY
01		FIRE ALARM ANNUNCIATING DEVICE	SHALL BE COMPLETE WITH BRANCH WIRING TO NEAREST EMERGENCY CIRCUIT	
02		HEAT DETECTOR	SHALL BE COMPLETE WITH BRANCH WIRING TO NEAREST EMERGENCY CIRCUIT	
03		SMOKE DETECTOR	SHALL BE COMPLETE WITH BRANCH WIRING TO NEAREST EMERGENCY CIRCUIT	
04		EMERGENCY REMOTE HEAD	SHALL BE COMPLETE WITH BRANCH WIRING TO NEAREST EMERGENCY LIGHTING CIRCUIT	
05		UNIVERSAL FACE RUNNING MAN EXIT SIGN	SHALL BE COMPLETE WITH BRANCH WIRING TO NEAREST EMERGENCY LIGHTING CIRCUIT	
06		15A CIRCUIT BREAKER	SHALL BE COMPLETE WITH BRANCH WIRING TO NEAREST ELECTRICAL PANEL	
07		20A CIRCUIT BREAKER	SHALL BE COMPLETE WITH BRANCH WIRING TO NEAREST ELECTRICAL PANEL	
08				
09				
10				
11				
12				

NOTES:

1. ELECTRICAL CONTRACTOR SHALL CARRY SUPPLY AND INSTALL FOR ALL THE ITEMS ABOVE AS A SPARE AND SHALL INSTALL AS DIRECTED ON SITE AND AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION (AHJ).
2. ITEMIZED COSTS SHALL BE SEPARATED FROM THE BASE PRICE AND SHALL BE CREDITED TO THE OWNER AT PROJECT COMPLETION SHALL THE WORK NOT BE CARRIED OUT.

ISSUE RECORD:

NO:	ISSUED FOR:	DATE: (MM.DD.YY)
01	50% REVIEW	12.17.25
02	90% COORDINATION	01.13.26
03	90% COORDINATION-2	01.16.26
04	PERMIT / TENDER	01.23.26

REVISION RECORD:

NO:	ISSUED FOR:	DATE: (MM.DD.YY)
01	XXXX	XX.XX.XX

APPROVED BY:

LICENCED PROFESSIONAL ENGINEER
S. SALEH
100176531
01.23.2026
PROVINCE OF ONTARIO

CONSULTANT:

ENGINEER:

TIGRIS Engineering Inc
100 ROYAL GROUP CRESCENT, UNIT D
WOODBRIDGE, ON
L4H 1X9
TEL: 905-462-7524

PROJECT:

MPAC KINGSTON
1471 JOHN COUNTER BLVD,
SUITE 412,
KINGSTON, ON
K7M 8S8

PROJECT NO: 25-1095

SCALE:	SHEET SIZE:
N.T.S.	24x36
DRAWN BY: M.H./A.K.	CHECKED BY: S.S.

DRAWING TITLE:

EQUIPMENT SCHEDULES

DRAWING NO:

E4.1

PANEL SCHEDULE — EXISTING PANEL '4E'

LOCATION: ELEC ROOM (4TH FLOOR)	VOLTAGE: 120V/208V,3ø,4W		
FED FROM: MAIN ELEC ROOM (BASEMENT)	MAINS: 225A		
MOUNTING: SURFACE	MAIN BREAKER:		

LOAD(VA)	ITEM DESCRIPTION	PROT.	CKT	PHASE A	PHASE B	PHASE C	CKT	PROT.	ITEM DESCRIPTION	LOAD(VA)
1000	EXISTING CIRCUIT	15A/1P	1	2000			2	15A/1P	EXISTING CIRCUIT	1000
0	SPARE	20A/1P	3		1000		4	15A/1P	EXISTING CIRCUIT	1000
0	SPARE	20A/1P	5			1000	6	15A/1P	EXISTING CIRCUIT	1000
1000	EXISTING CIRCUIT	15A/1P	7	2000			8	15A/1P	EXISTING CIRCUIT	1000
1000	EXISTING CIRCUIT	15A/1P	9		2000		10	15A/1P	EXISTING CIRCUIT	1000
1000	EXISTING CIRCUIT	15A/1P	11			2000	12	15A/1P	EXISTING CIRCUIT	1000
1000	EXISTING CIRCUIT	15A/1P	13	2000			14	15A/1P	EXISTING CIRCUIT	1000
0	EXISTING CIRCUIT	15A/1P	15		2496		16	30A/2P	EXISTING CIRCUIT	2496
1000	EXISTING CIRCUIT	15A/1P	17			3496	18	30A/2P	–	2496
1000	EXISTING CIRCUIT	15A/1P	19	2000			20	15A/1P	EXISTING CIRCUIT	1000
0	SPARE	15A/1P	21		7000		22	100A/3P	EXISTING CIRCUIT	7000
1000	EXISTING CIRCUIT	15A/1P	23			8000	24	100A/3P	–	7000
1000	EXISTING CIRCUIT	15A/1P	25	8000			26	100A/3P	–	7000
0	EXISTING CIRCUIT	15A/1P	27		1000		28	15A/1P	EXISTING CIRCUIT	1000
0	EXISTING CIRCUIT	15A/1P	29			250	30	15A/1P	EXISTING CIRCUIT	250
0	EXISTING CIRCUIT	15A/1P	31	4000			32	60A/3P	EXISTING CIRCUIT (SUITE 400)	4000
0	EXISTING CIRCUIT	15A/1P	33		4000		34	60A/3P	–	4000
0	EXISTING CIRCUIT	15A/1P	35			4000	36	60A/3P	–	4000
12457	ELECTRICAL PANEL – 4EB	80A/3P	37	13457			38	15A/1P	EXISTING CIRCUIT	1000
12457	–	80A/3P	39		13457		40	15A/2P	EXISTING CIRCUIT	1000
12457	–	80A/3P	41			13457	42	15A/2P	EXISTING CIRCUIT	1000

LOAD CALCULATIONS

LOAD DESCRIPTION	CONNECTED LOAD (VA)	DEMAND FACTOR	CALCULATED LOAD (VA)	LOAD SUMMARY	
PHASE A	33457	60%	20074	TOTAL CONNECTED LOAD:	96613
PHASE B	30953	60%	18572	TOTAL CALCULATED LOAD:	57968
PHASE C	32203	60%	19322	TOTAL CONNECTED AMPS:	161
				TOTAL AVAILABLE LOAD:	72051
TOTAL	96613		57968	UTILIZED LOAD:	80.5%

(*) CIRCUIT SHALL BE CONNECTED TO GFCI BREAKER; (**) DENOTES LOCK TYPE BREAKER;
(***) DENOTES BREAKER TO BE CONNECTED TO SHUNT TRIP.
(#) CIRCUIT SHALL BE CONNECTED THROUGH TIMER CONTACTORS.

NOTES:
1. PROVIDE PRINTED PANEL DIRECTORY WITH CIRCUIT NUMBER, TYPE AND LOCATION OF ALL LOADS. LABEL ALL SPARE BREAKERS WITH PENCIL FOR FUTURE UPDATE. PROVIDE LABEL INSIDE PANEL COVER STATING YEAR OF INSTALLATION, PANEL SOURCE LOCATION, OVERCURRENT PROTECTION AND FEEDER SIZE.
2. BREAKERS SHOWN ARE ALL NEW AND REQUIRED. ELECTRICAL CONTRACTOR SHALL MAINTAIN ALL EXISTING CIRCUITS.
3. CIRCUITING SHOWN IS FOR REFERENCE ONLY. ELECTRICAL CONTRACTOR SHALL COORDINATE BREAKERS WITH EXISTING PANELS AND SHALL SHARE LOADS BETWEEN PANELS AS REQUIRED.
4. SHUNT TRIP BREAKER *** CONTROLLED BY ANSUL SYSTEM, SHUTDOWN OF POWER ON LOAD SIDE OF BREAKER SHALL OCCUR ON ACTIVATION OF FIRE SUPPRESSION SYSTEM OR UPON MOMENTARY CONTACT OF ELECTRICAL EMERGENCY SHUT DOWN SWITCH.
5. IT IS THE ELECTRICAL CONTRACTORS RESPONSIBILITY TO PROPERLY BALANCE ALL BRANCH CIRCUITS BETWEEN THE PHASES OF THE SYSTEM WITHIN 10% REGARDLESS OF WIRING.

PANEL SCHEDULE — PANEL '4EB'

LOCATION: ELEC ROOM (4TH FLOOR)	VOLTAGE: 120V/208V,3ø,4W		
FED FROM: ELECTRICAL PANEL '4E'	MAINS: 225A		
MOUNTING: SURFACE	MAIN BREAKER: 80A–3P		

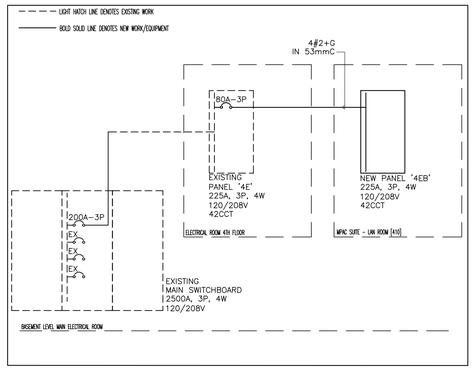
LOAD(VA)	ITEM DESCRIPTION	PROT.	CKT	PHASE A	PHASE B	PHASE C	CKT	PROT.	ITEM DESCRIPTION	LOAD(VA)
300	EXIT SIGNAGE & EMERGENCY LIGHTING	20A/1P**	1	2220			2	20A/1P	FLOOR BOX – 408	1920
500	DOOR OPERATOR – ENTRANCE	20A/1P	3		2420		4	20A/1P	FLOOR BOX – 408	1920
500	DOOR OPERATOR – 402	20A/1P	5			2420	6	20A/1P	FLOOR BOX – 408	1920
1920	IT RECEPTACLE – 410	20A/1P	7	3840			8	20A/1P	FLOOR BOX – 408	1920
1920	IT RECEPTACLE – 410	20A/1P	9		3360		10	15A/1P	RECEPTACLES – 408	1440
1440	RECEPTACLE – SOUND MASKING 410	15A/1P	11			2440	12	15A/1P	GENERAL RECEPTACLES	1000
500	FRIDGE RECEPTACLE – 407	15A/1P	13	1500			14	15A/1P	RECEPTACLES – 406	1000
1440	COUNTER GFI RECEPTACLE – 407	20A/1P	15		2440		16	15A/1P	RECEPTACLES – 406	1000
1440	COUNTER GFI RECEPTACLE – 407	20A/1P	17			2440	18	15A/1P	RECEPTACLES – 406	1000
1440	COUNTER GFI RECEPTACLE – 407	20A/1P	19	2440			20	15A/1P	RECEPTACLES – 405	1000
1440	MICROWAVE RECEPTACLE – 407	15A/1P	21		2440		22	15A/1P	RECEPTACLES – 405	1000
750	RECEPTACLE – 407	15A/1P	23			1250	24	15A/1P	RECEPTACLES – 404	500
1440	IT RACK OUTLET	15A/1P	25	2440			26	20A/1P	PRINTER – COPY/PRINT 403	1000
1440	IT RACK OUTLET	20A/1P	27		2440		28	15A/1P	RECEPTACLES – 403	1000
0	SPACE		29			1000	30	15A/1P	RECEPTACLES – 403	1000
0	SPACE		31	800			32	15A/1P	GENERAL RECEPTACLES	800
0	SPACE		33		750		34	15A/1P	RECEPTACLES – 402	750
0	SPACE		35			250	36	15A/1P	RECEPTACLES – 400	250
0	SPACE		37	250			38	15A/1P	RECEPTACLES – 409	250
100	NIGHT LIGHTING	15A/1P	39		400		40	15A/1P	EXHAUST FAN – EF–1 / EF–2	300
500	LIGHTING	20A/1P	41			500	42	15A/1P	SPACE	0

LOAD CALCULATIONS

LOAD DESCRIPTION	CONNECTED LOAD (VA)	DEMAND FACTOR	CALCULATED LOAD (VA)	LOAD SUMMARY	
PHASE A	13490	60%	8094	TOTAL CONNECTED LOAD:	38040
PHASE B	14250	60%	8550	TOTAL CALCULATED LOAD:	22824
PHASE C	10300	60%	6180	TOTAL CONNECTED AMPS:	63
				TOTAL AVAILABLE LOAD:	28820
TOTAL	38040		22824	UTILIZED LOAD:	79.2%

(*) CIRCUIT SHALL BE CONNECTED TO GFCI BREAKER; (**) DENOTES LOCK TYPE BREAKER;
(***) DENOTES BREAKER TO BE CONNECTED TO SHUNT TRIP.
(#) CIRCUIT SHALL BE CONNECTED THROUGH TIMER CONTACTORS.

NOTES:
1. PROVIDE PRINTED PANEL DIRECTORY WITH CIRCUIT NUMBER, TYPE AND LOCATION OF ALL LOADS. LABEL ALL SPARE BREAKERS WITH PENCIL FOR FUTURE UPDATE. PROVIDE LABEL INSIDE PANEL COVER STATING YEAR OF INSTALLATION, PANEL SOURCE LOCATION, OVERCURRENT PROTECTION AND FEEDER SIZE.
2. BREAKERS SHOWN ARE ALL NEW AND REQUIRED. ELECTRICAL CONTRACTOR SHALL MAINTAIN ALL EXISTING CIRCUITS.
3. CIRCUITING SHOWN IS FOR REFERENCE ONLY. ELECTRICAL CONTRACTOR SHALL COORDINATE BREAKERS WITH EXISTING PANELS AND SHALL SHARE LOADS BETWEEN PANELS AS REQUIRED.
4. SHUNT TRIP BREAKER *** CONTROLLED BY ANSUL SYSTEM, SHUTDOWN OF POWER ON LOAD SIDE OF BREAKER SHALL OCCUR ON ACTIVATION OF FIRE SUPPRESSION SYSTEM OR UPON MOMENTARY CONTACT OF ELECTRICAL EMERGENCY SHUT DOWN SWITCH.
5. IT IS THE ELECTRICAL CONTRACTORS RESPONSIBILITY TO PROPERLY BALANCE ALL BRANCH CIRCUITS BETWEEN THE PHASES OF THE SYSTEM WITHIN 10% REGARDLESS OF WIRING.



1 / E4.2 PROPOSED SINGLE LINE DIAGRAM
SCALE: N.T.S.

ISSUE RECORD:

NO:	ISSUED FOR:	DATE: (MM.DD.YY)
01	50% REVIEW	12.17.25
02	90% COORDINATION	01.13.26
03	90% COORDINATION-2	01.16.26
04	PERMIT / TENDER	01.23.26

REVISION RECORD:

NO:	ISSUED FOR:	DATE: (MM.DD.YY)
01	XXXX	XX.XX.XX

APPROVED BY:

LICENCED PROFESSIONAL ENGINEER
S. SALEH
100176531
01.23.2026
PROVINCE OF ONTARIO

CONSULTANT:

ENGINEER:

TIGRIS Engineering Inc
100 ROYAL GROUP CRESCENT, UNIT D
WOODBRIDGE, ON
L4H 1X9
TEL: 905-462-7524

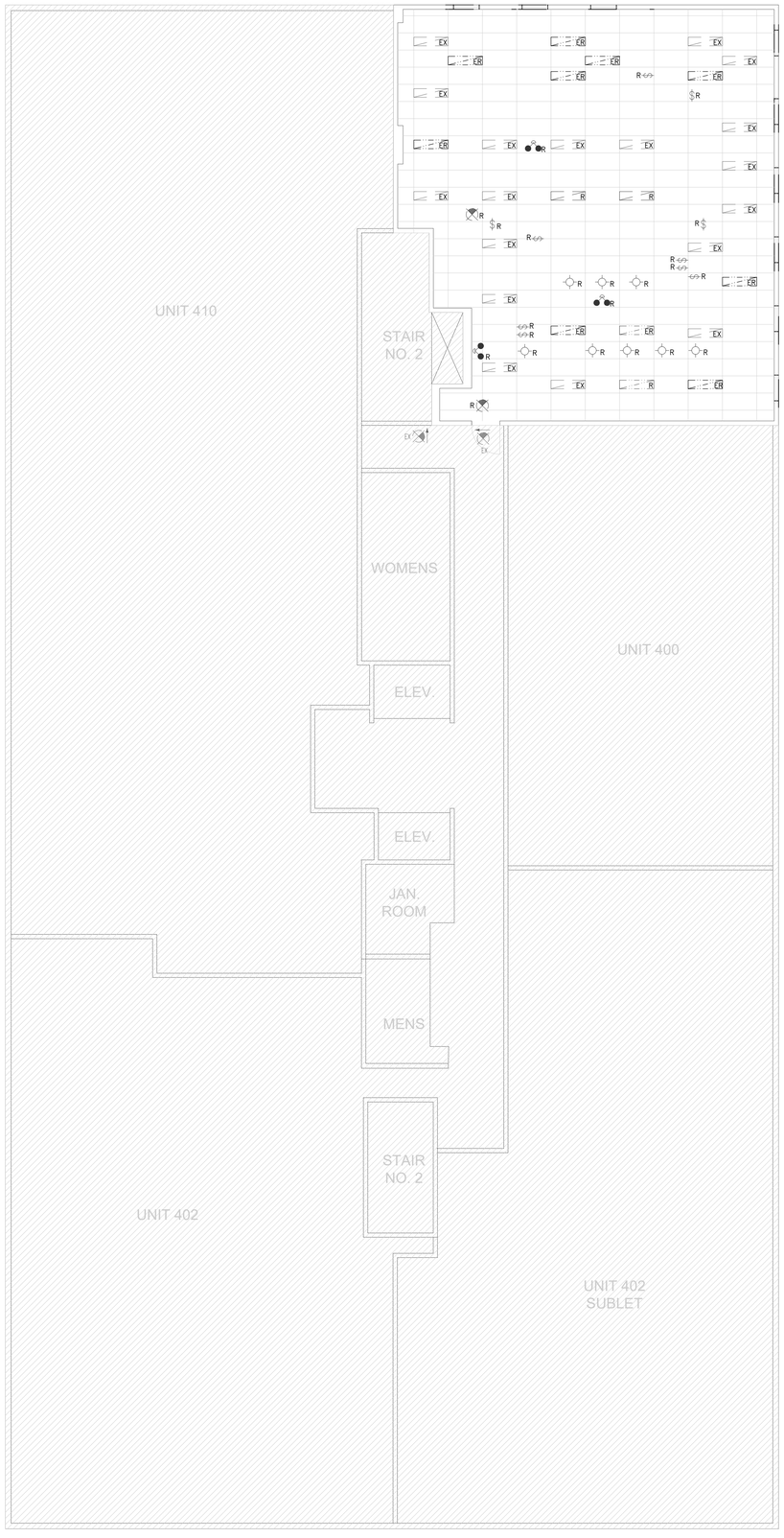
PROJECT:
MPAC KINGSTON
1471 JOHN COUNTER BLVD,
SUITE 412,
KINGSTON, ON
K7M 8S8

PROJECT NO: 25-1095

SCALE:	SHEET SIZE:
N.T.S.	24x36
DRAWN BY: M.H./A.K.	CHECKED BY: S.S.

DRAWING TITLE: PANEL SCHEDULES

DRAWING NO: E4.2



GENERAL LIGHTING DEMOLITION NOTES:

1. A SITE VISIT IS MANDATORY FOR ALL CONTRACTORS BIDDING ON THIS PROJECT. TO DETERMINE THE EXTENT OF DEMOLITION WORK REQUIRED.
2. ALL EXISTING LUMINARIES AND WIRING DEVICES AND CONNECTIONS TO EQUIPMENT THAT ARE ON WALLS AND CEILINGS BEING DEMOLISHED SHALL BE DISCONNECTED AND REMOVED BACK TO SOURCE UNLESS NOTED OTHERWISE. THIS INCLUDES BUT IS NOT LIMITED TO ALL LUMINARIES, EXIT SIGNS, EMERGENCY LIGHTING, CONDUITS, WIRING, BOXES, SWITCHES BACK TO SOURCES. NO CONDUITS OR WIRING SHALL BE LEFT ABANDONED AND MUST BE REMOVED BACK TO SOURCE.
3. REFER TO ARCHITECTURAL DEMOLITION DRAWINGS FOR THE EXTENT OF THE AREA TO BE DEMOLISHED AND VERIFY ON SITE. ELECTRICAL CONTRACTOR TO INSPECT THE SITE PRIOR TO THE SUBMISSION OF BID. SCOPE OF WORK TO INCLUDE THE REMOVAL OF ALL ELECTRICAL DEVICES THAT ARE NOT REQUIRED.
4. CONSULT WITH THE OWNER AND CREATE A LIST OF ANY ITEMS TO BE SAVED AND THE CONDITION THEY ARE IN. REMOVE FROM SITE ALL REMAINING DEMOLISHED ELECTRICAL MATERIALS. WHERE DEVICES ARE TO BE HANDED OVER TO OWNER, STORE IN A LOCATION DIRECTED ON SITE.
5. WHERE DEVICES, ETC., ARE INSTALLED ON SURFACES WHICH WILL UNDERGO ARCHITECTURAL MODIFICATION, REMOVE AND REINSTALL EXISTING DEVICES TO SUIT DESIGN REQUIREMENTS. EXTEND WIRING TO RESTORE LUMINARIES AND DEVICES WHICH MAY HAVE BEEN DISCONNECTED AS A RESULT OF DEMOLITION IN AREA.
6. THE REMOVED BASE BUILDING LUMINARIES THAT ARE NOT REQUIRED SHALL BE TURNED OVER TO THE LANDLORD FOR SELECTION AT A PLACE DESIGNATED BY THE LANDLORD. ALL LUMINAIRES THAT ARE REJECTED BY THE LANDLORD SHALL BE REMOVED FROM THE SITE.
7. ALL EXISTING ELECTRICAL DEVICES, EQUIPMENT AND LIGHTING WITHIN BASE BUILDING ROOMS, STAIRWELLS AND AREAS DEEMED NOT IN SCOPE SHALL REMAIN LIVE AND OPERATIONAL DURING THE CONSTRUCTION CYCLE.

ISSUE RECORD:

NO:	ISSUED FOR:	DATE: (MM.DD.YY)
01	50% REVIEW	12.17.25
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03	90% COORDINATION-2	01.16.26
04	PERMIT / TENDER	01.23.26

REVISION RECORD:

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01	XXXX	XX.XX.XX

APPROVED BY:

LICENCED PROFESSIONAL ENGINEER
S. SALEH
100176531
01.23.2026
PROVINCE OF ONTARIO

CONSULTANT:

ENGINEER:

TIGRIS Engineering Inc
100 ROYAL GROUP CRESCENT, UNIT D
WOODBRIDGE, ON
L4H 1X9
TEL: 905-462-7524

PROJECT:

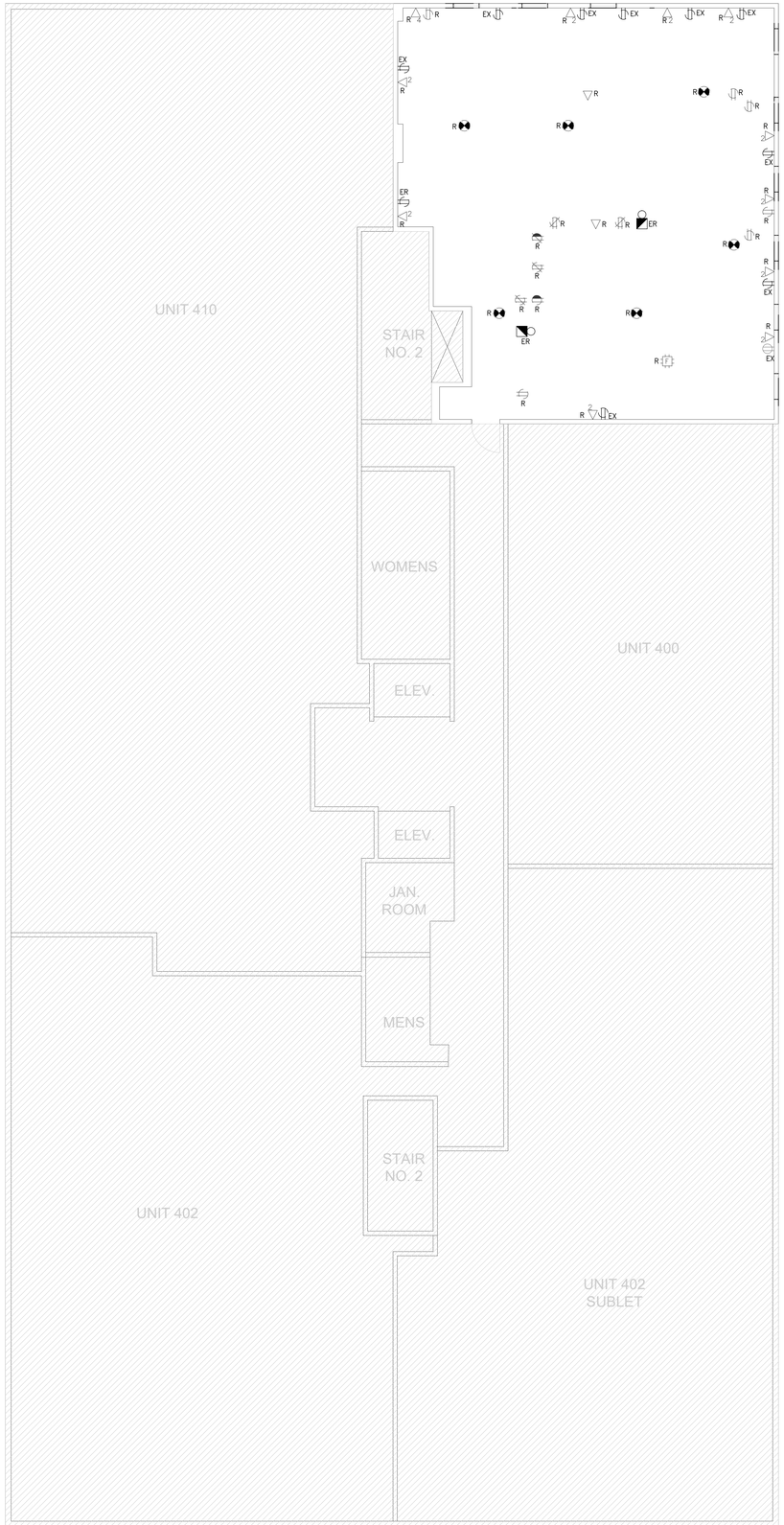
MPAC KINGSTON
1471 JOHN COUNTER BLVD,
SUITE 412,
KINGSTON, ON
K7M 8S8

PROJECT NO: 25-1095

SCALE:	SHEET SIZE:
1/8" = 1' - 0"	24x36
DRAWN BY: M.H./A.K.	CHECKED BY: S.S.

DRAWING TITLE: DEMOLITION LIGHTING LAYOUT

DRAWING NO: ED5.1



GENERAL POWER DEMOLITION NOTES:

1. A SITE VISIT IS MANDATORY FOR ALL CONTRACTORS BIDDING ON THIS PROJECT. TO DETERMINE THE EXTENT OF DEMOLITION WORK REQUIRED.
2. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH MECHANICAL AND INTERIOR DESIGN DRAWINGS.
3. ALL EXISTING WIRING DEVICES AND CONNECTIONS TO EQUIPMENT THAT ARE ON WALLS AND CEILINGS BEING DEMOLISHED SHALL BE DISCONNECTED AND REMOVED BACK TO SOURCE UNLESS NOTED OTHERWISE. THIS INCLUDES BUT IS NOT LIMITED TO ALL LUMINARIES, FIRE ALARM DEVICES AND EQUIPMENT, CONDUITS, WIRING, RECEPTACLES, BOXES, SWITCHES BACK TO SOURCES. NO CONDUITS OR WIRING SHALL BE LEFT ABANDONED AND MUST BE REMOVED BACK TO SOURCE.
4. ALL REDUNDANT CONDUITS, BRANCH WIRING, ARMORED CABLING AND/OR CONTROL WIRING IN THE CEILING SPACE THAT ARE NO LONGER REQUIRED SHALL BE DISCONNECTED AND REMOVED BACK TO SOURCE. NOTHING SHALL BE LEFT ABANDONED IN THE CEILING.
5. ALL EXISTING ELECTRICAL DEVICES, EQUIPMENT AND LIGHTING WITHIN BASE BUILDING ROOMS, STAIRWELLS AND AREAS DEEMED NOT IN SCOPE SHALL REMAIN LIVE AND OPERATIONAL DURING THE CONSTRUCTION CYCLE.
6. CONSULT WITH THE OWNER AND CREATE A LIST OF ANY ITEMS TO BE SAVED AND THE CONDITION THEY ARE IN. REMOVE FROM SITE ALL REMAINING DEMOLISHED ELECTRICAL MATERIALS. WHERE DEVICES ARE TO BE HANDED OVER TO OWNER, STORE IN A LOCATION DIRECTED ON SITE.

ISSUE RECORD:

NO:	ISSUED FOR:	DATE: (MM.DD.YY)
01	50% REVIEW	12.17.25
02	90% COORDINATION	01.13.26
03	90% COORDINATION-2	01.16.26
04	PERMIT / TENDER	01.23.26

REVISION RECORD:

NO:	ISSUED FOR:	DATE: (MM.DD.YY)
01	XXXX	XX.XX.XX

APPROVED BY:

LICENSED PROFESSIONAL ENGINEER
S. SALEH
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01.23.2026
PROVINCE OF ONTARIO

CONSULTANT:

ENGINEER:

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TEL: 905-462-7524

PROJECT:

MPAC KINGSTON
1471 JOHN COUNTER BLVD,
SUITE 412,
KINGSTON, ON
K7M 8S8

PROJECT NO:

25-1095

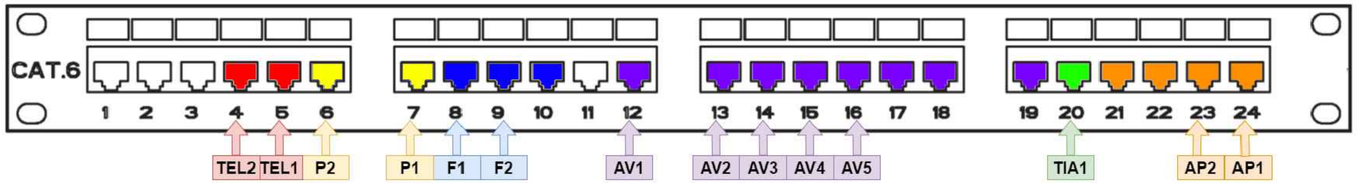
SCALE:	SHEET SIZE:
1/8" = 1' - 0"	24x36
DRAWN BY: M.H./A.K.	CHECKED BY: S.S.

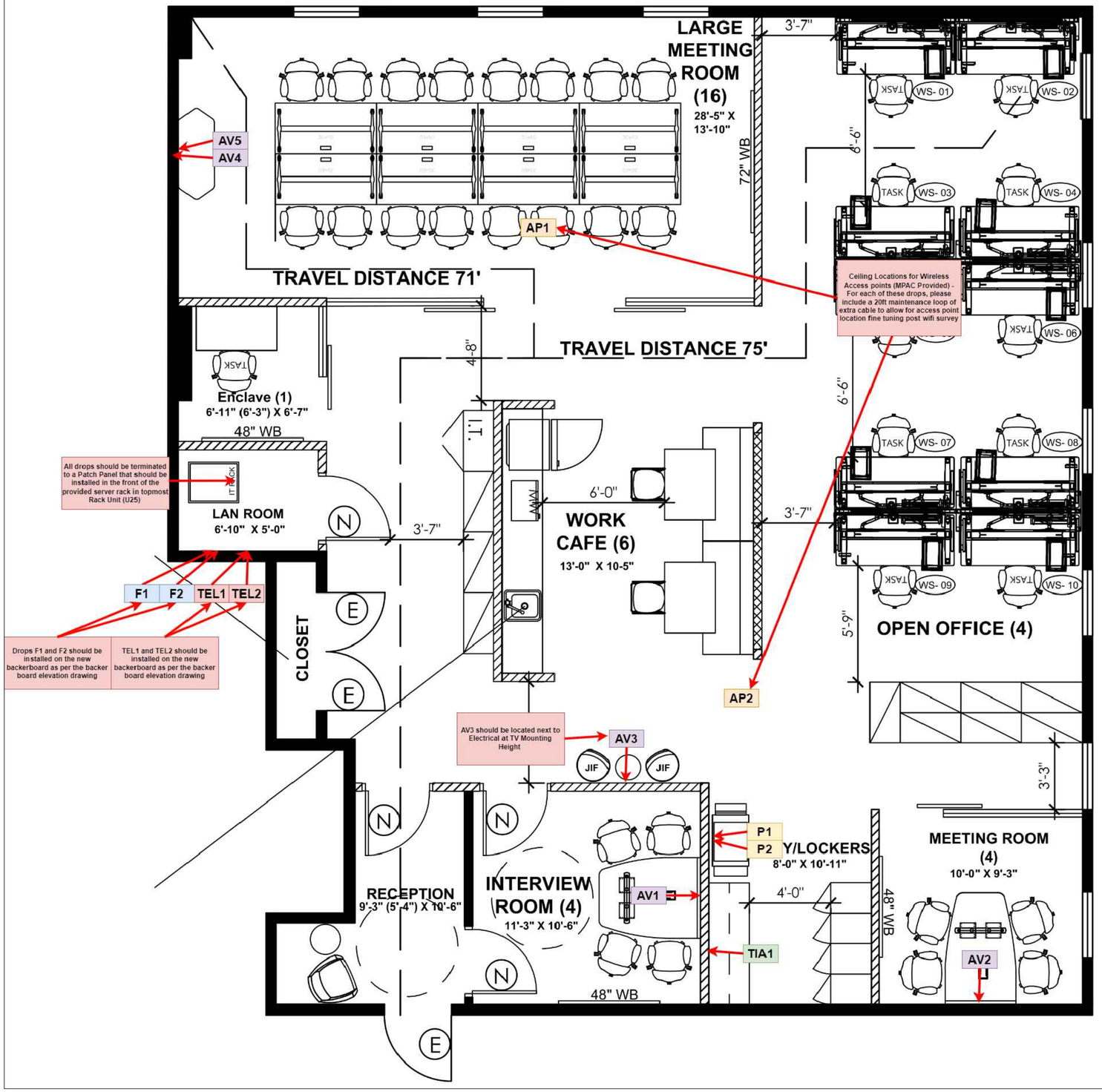
DRAWING TITLE:

DEMOLITION POWER & SYSTEMS LAYOUT

DRAWING NO:

ED5.2





Network Patch Requirements

1* 1U 24 Port Keystone Patch Patch Panel:
Monoprice 24-port Blank Keystone Shielded Patch Panel, 1U, with Wire Support Bar (TAA) - Monoprice.com (or equivalent)

24* Cat6 Keystone Jacks to fully populate the panel (not all jacks will be utilized but the patch panel should be fully populated)
https://www.monoprice.com/product?p_id=15666 (or equivalent)

Additional Requirements:

- Any existing runs to required locations may be reused if feasible however all runs must be terminated into a new patch panel and re-labeled according to this diagram
- Category 6 or greater cable should be used for all drops
- standard keystone wall plates should be used as required
- All Network Drops should be labeled at both ends as per this diagram
- All drops should be terminated into the patch panel as per this diagram
- Each Labeled drop location coresponds to a single patch port, any locations that require multiple ports have multiple labels on the diagram
- any additional pre-existing network drops should be replaced with blank plates
- additional notes marked on diagram should be followed for drops labeled AP1, AP2,F1, and F2

Cooling Requirement Hardware Specs

	Model	Power Supply Rating	Typical Power Draw
Bell Router	ISR4431/K9	250w	65w
Router	ISR4431/K9	250w	65w
Switch 1	WS-C2960X-24PS-L	370W	140w
Switch 2	WS-C2960X-24PS-L	370W	140w
Server	DL160 Gen9	550W	250w
UPS	SMTL1500RM3UC	1500VA UPS Unit	all devices connected to power via UPS

***Note: please allow for an additional 30% cooling overhead above this spec for future gear**

Power Requirement Specs

	Amperage	Voltage	Receptical	Usage
Circuit 1	20amp	120v	Duplex Nema 5-20	Primary Ups Connection
Circuit 2	20amp	120v	Duplex Nema 5-20	Backup UPS Connection

ISSUE RECORD:

NO:	ISSUED FOR:	DATE: (MM.DD.YY)
01	50% REVIEW	12.17.25
02	90% COORDINATION	01.13.26
03	90% COORDINATION-2	01.16.26
04	PERMIT / TENDER	01.23.26

REVISION RECORD:

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01	XXXX	XX.XX.XX

APPROVED BY:

LICENSED PROFESSIONAL ENGINEER
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01.23.2026
PROVINCE OF ONTARIO

CONSULTANT:

ENGINEER:

TIGRIS Engineering Inc
100 ROYAL GROUP CRESCENT, UNIT D
WOODBRIDGE, ON
L4H 1X9
TEL: 905-462-7524

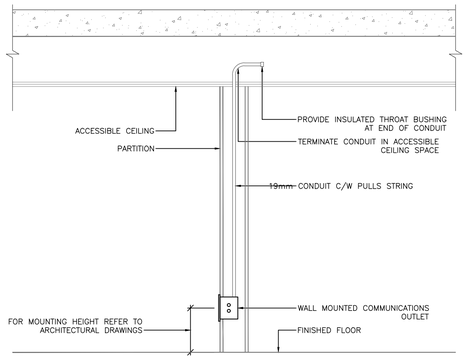
PROJECT:
MPAC KINGSTON
1471 JOHN COUNTER BLVD,
SUITE 412,
KINGSTON, ON
K7M 8S8

PROJECT NO: 25-1095

SCALE: N.T.S.
SHEET SIZE: 24x36
DRAWN BY: M.H./A.K.
CHECKED BY: S.S.

DRAWING TITLE:
NETWORKING LAYOUT

DRAWING NO:
E6.1

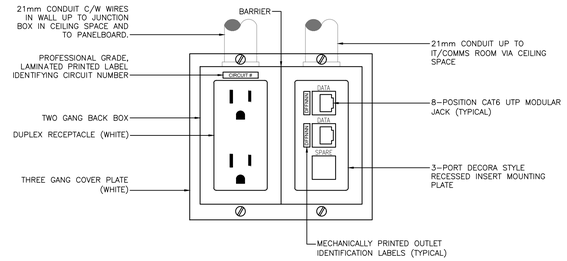


NOTES:

1. ALL CONDUIT SHALL BE COMPLETE WITH PULL STRING.
2. UNLESS OTHERWISE NOTED, PROVIDE 1.25" EC FOR ALL SINGLE GANG AND DOUBLE GANG A/V OUTLETS.

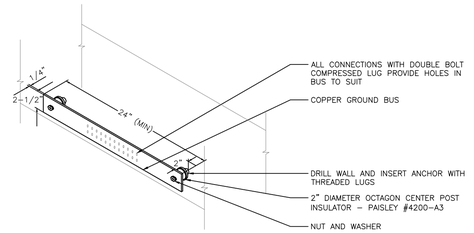
SYMBOLS ON PLAN

3 / E7.1 TYPICAL SECTION OF COMMUNICATION WALL OUTLET IN ROOM WITH ACCESSIBLE CEILING
SCALE: N.T.S.



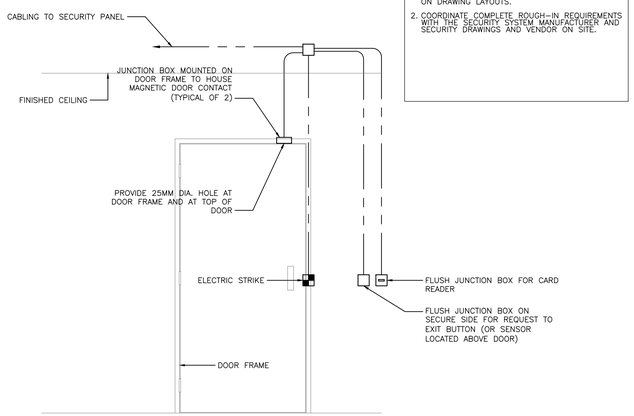
SYMBOLS ON PLAN

2 / E7.1 POWER AND COMMUNICATION WALL GANG OUTLET DETAIL
SCALE: N.T.S.



1 / E7.1 TYPICAL GROUND DETAIL
SCALE: N.T.S.

5 / E7.1 MAIN ELECTRICAL ROOM FIRE ALARM CONTROL PANEL REFERENCE
SCALE: N.T.S.



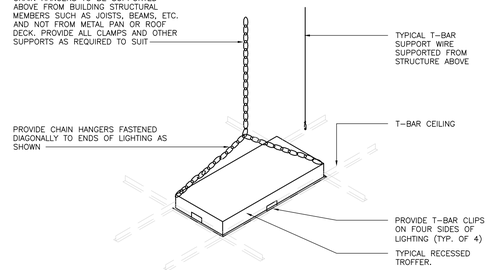
NOTES:

1. COORDINATE EXACT SECURITY DEVICE REQUIREMENTS WITH SECURITY DEVICES SHOWN ON DRAWING LAYOUTS.
2. COORDINATE COMPLETE ROUGH-IN REQUIREMENTS WITH THE SECURITY SYSTEM MANUFACTURER AND SECURITY DRAWINGS AND VENDOR ON SITE.

6 / E7.1 TYPICAL ELECTRIC STRIKE SECURED DOOR DETAIL
SCALE: N.T.S.

NOTES:

1. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL ACCESSORIES FOR SAFELY SUPPORTING T-BAR TROFFER.



5 / E7.1 T BAR MOUNTING FOR TROFFER DETAIL
SCALE: N.T.S.

ISSUE RECORD:

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APPROVED BY:

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K7M 8S8

PROJECT NO: 25-1095

SCALE:	SHEET SIZE:
N.T.S.	24x36
DRAWN BY: M.H./A.K.	CHECKED BY: S.S.

DRAWING TITLE:
ELECTRICAL DETAILS

DRAWING NO:
E7.1

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MECHANICAL DRAWINGS LIST	
M0.0	COVER PAGE
M1.0	MECHANICAL LEGEND
M1.1-4	MECHANICAL SPECIFICATIONS (#1 TO #4)
M2.1	DEMO & PROPOSED MECHANICAL DRAWINGS
M3.1	MECHANICAL DETAILS & SCHEDULES

SPRINKLER LEGEND

SYMBOL	DESCRIPTION
	PENDANT SPRINKLER HEAD
	UP-RIGHT SPRINKLER HEAD
	CONCEALED SPRINKLER HEAD
	SIDE WALL SPRINKLER HEAD
	DRY TYPE SIDE WALL SPRINKLER HEAD
	WINDOW SPRINKLER HEAD
	DRY TYPE PENDENT SPRINKLER HEAD
FHC	FIRE HOSE CABINET

PLUMBING LEGEND

SYMBOL	DESCRIPTION
	ANCHOR
EJ	EXPANSION JOINT
	EXPANSION LOOP
	FLEXIBLE CONNECTOR
OFM	FLOWMETER, ORIFICE
FS	FLOW SWITCH
PS	PRESSURE SWITCH
	PUMP
	STRAINER WITH BLOW OFF VALVE
	COMB. SUCTION GUIDE/STRAINER & DRAIN VALVE
T	THERMOMETER
	NEW DOMESTIC COLD WATER PIPE
	NEW DOMESTIC HOT WATER PIPE
	DOMESTIC H.W. RECIRCULATION
FW	COLD WATER FILTERED
TW	TEMPERED WATER
-SAN B-	NEW UNDERGROUND SANITARY LINE
-SAN B-	EXISTING UNDERGROUND SANITARY LINE
SAN	NEW ABOVE GROUND SANITARY LINE
SAN	EXISTING ABOVE GROUND SANITARY LINE
G	GAS LINE
STM	NEW ABOVE GROUND STORM PIPE
STM	EXISTING ABOVE GROUND STORM PIPE
STM	NEW UNDERGROUND STORM PIPE
STM	EXISTING UNDERGROUND STORM PIPE
V	VENT PIPING
F.D.	FLOOR DRAIN
R.D.	ROOF DRAIN
RD-C	CONTROLLED FLOW ROOF DRAIN
UP DN	PIPE RISER
CO	WALL CLEAN-OUT
CO	FLOOR / CEILING CLEAN-OUT
	SHUT OFF VALVE
BFP	BACK FLOW PREV.
	THERMOMETER
	PRESSURE GAGE
CD	CONDENSATE DRAIN
	BALL VALVE (BV)
	CHECK VALVE (CH.V)
	RELIEF VALVE (RV)
	HOSE BIBB

PLUMBING LEGEND

SYMBOL	DESCRIPTION
S	SHOCK ABSORBER
	STRAINER
	CONNECT TO EXISTING
	P-TRAP
	GREASE INTERCEPTOR
	CIRCUIT BALANCING VALVE
	2 WAY CONTROL VALVE
	THREE WAY CONTROL VALVE(MIXING)
S	SOLENOID VALVE
	CHECK VALVE
P	PRESSURE REDUCING VALVE
WM	WATER METER

HVAC LEGEND

SYMBOL	DESCRIPTION
	LINEAR SUPPLY DIFFUSER
	LINEAR RETURN DIFFUSER
	SQUARE SUPPLY DIFFUSER
	EGG CRATE RETURN GRILLE
F	EXHAUST FAN
	EXHAUST GRILLE
	EXHAUST LOUVER
	INTAKE LOUVER
	BALANCING DAMPER
	SUPPLY DUCT DN.
	RETURN DUCT DN.
	SUPPLY DUCT UP
	RETURN DUCT UP
T	THERMOSTAT
C	CARBON MONOXIDE DETECTOR
	(CTE) CONNECT TO EXISTING
	EXTERNAL DUCT INSULATION
	MAIN SUPPLY DUCT
	BRANCH ROUND DUCT
	FLEX DUCT
	THERMOSTAT WIRE
	SUPPLY LIGHT TROFFER
	TRANSFER DUCT C/W ACOUSTIC LINING
VAV	VAV BOX

SYMBOL	DESCRIPTION
XX	KEY NOTE REFERENCE ("XX" REFERS TO KEY NOTE NUMBER)
M3.2	DETAIL REFERENCE (e.g. DETAIL SHOWN ON DETAIL #1 ON DRAWING M3.2)
1 M3.2	SECTION REFERENCE (e.g. SECTION SHOWN ON DETAIL #1 ON DRAWING M3.2)
#	DENOTES REVISION REFERENCE

ABBREVIATION	DESCRIPTION
AFFL	ABOVE FINISHED FLOOR LEVEL
C/W	COMPLETE WITH
NTS	NOT TO SCALE
ER	EXISTING EQUIPMENT TO BE RELOCATE
EX	EXISTING TO REMAIN
N	NEW
FSP	FIRE STANDPIPE RISER
WC	WATER CLOSET
UR	URINAL
LAV	LAVATORY
S	SINK
HS	HAND SINK
2CS	2 COMPARTMENT SINK
3CS	3 COMPARTMENT SINK
KS	KITCHEN SINK
MOP	MOP SINK
DW	DISHWASHER
DC	DENTAL CHAIR
IW	INSTRUMENT WASHER
EW	EYE WASH STATION
BT	BATH TUB
SH	SHOWER
WM	WASHING MACHINE
TD	TERRACE DRAIN
TRD	TRENCH DRAIN
SD	SCUPPER DRAIN
SLD	SLAB DRAIN
RD	ROOF DRAIN
FD	FLOOR DRAIN
FFD	FUNNEL FLOOR DRAIN
C.O.	CLEANOUT
C.T.E.	CONNECT TO EXISTING
FD-2	UNTRAPPED FLOOR DRAIN W/ HEAVY DUTY GRATING
RD-C	CONTROL FLOW ROOF DRAIN
AD	AREA DRAIN
CB	CATCH BASIN
MH	MANHOLE
RWL	RAIN WATER LEADER
IW	INDIRECT WASTE PIPING
HB	HOSE BIBB
NFHB	NONE-FREEZE HOSE BIBB
BFP	BACKFLOW PREVENTOR
F/D	FIRE DAMPER
V/D OR B.D.	VOLUME DAMPER
S/D	SPLITTER DAMPER
B/D	BACKDRAFT DAMPER
M/D OR M.D.	MOTORIZED DAMPER
S.A.	SUPPLY AIR
R.A.	RETURN AIR
F.A.	FRESH AIR
T.A.	TRANSFER AIR
V.B.	VAPOUR BARRIER
GR.	GRILLE
DIFF.	DIFFUSER
REG.	REGISTER
HP-	HEAT PUMP UNIT
MUA-	MAKE-UP AIR UNIT
EVAP-	EVAPORATOR UNIT
CU-	CONDENSING UNIT
FTH	FINNED TUBE HEATER
EBBH	ELECTRIC BASEBOARD HEATER
HWS	HOT WATER SUPPLY
HWR	HOT WATER RETURN
T.A.	TRANSFER AIR
R.T.U.	ROOF TOP UNIT
R	RELOCATE
	REMOVE

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02	50% REVIEW	12.17.25
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04	90% COORDINATION-2	01.16.26
05	PERMIT / TENDER	01.23.26

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01	XXXX	XX.XX.XX

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PROVINCE OF ONTARIO

CONSULTANT:

ENGINEER:

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PROJECT:

MPAC KINGSTON
1471 JOHN COUNTER BLVD,
SUITE 412,
KINGSTON, ON
K7M 8S8

PROJECT NO:

25-1095

SCALE:	SHEET SIZE:
N.T.S.	24x36
DRAWN BY:	CHECKED BY:
Y.R.	S.S.

DRAWING TITLE:

MECHANICAL LEGEND

DRAWING NO:

M1.0

GENERAL REQUIREMENTS FOR MECHANICAL WORK

1.0 SCOPE OF WORK

1.1 MEET THE REQUIREMENTS OF OWNER'S/LANDLORD'S TENANTS DESIGN CRITERIA, CONSTRUCTION MANUAL AND TENANTS LEASE AGREEMENTS

1.2 CONFORM TO THE APPLICABLE PROVISIONS OF THE GENERAL CONDITIONS OF THE CONTRACT.

1.3 ALL NEW INSTALLATIONS ARE TO MEET OR EXCEED BASE BUILDING STANDARDS.

1.4 THE GENERAL MECHANICAL SPECIFICATION SHALL APPLY TO AND BE PART OF EACH OF THE SECTIONS COVERING THE MECHANICAL TRADES WORK.

1.5 COMPLY WITH THE REQUIREMENTS OF THE CURRENT EDITION OF THE O.B.C., ALL OTHER APPLICABLE CODES, REGULATIONS, BY-LAWS, AND OFFICIAL STANDARDS ACCORDING TO THE REQUIREMENTS AND INTERPRETATIONS OF THE AUTHORITIES HAVING JURISDICTION. THESE CODES & STANDARDS CONSTITUTE AN INTEGRAL PART OF THESE SPECIFICATIONS. IN CASE OF CONFLICT, THE CODES TAKE PRECEDENCE OVER THE CONTRACT DOCUMENTS.

1.6 COMPLY WITH GENERAL CONTRACTOR'S CONSTRUCTION SCHEDULE.

1.7 CONTACT SALEH AL-SAMARRAI (SALEH@TIGRISENGINEERING.COM) AT TIGRIS ENGINEERING INC. 48 HOURS BEFORE REINSTALLATION OF CEILINGS TO PERFORM A FINAL REVIEW.

1.8 ALL MATERIALS IN CEILING SPACE SHALL CONFORM TO ONTARIO BUILDING CODE SECTION§3.6.4.3

1.9 THE RESPONSIBILITY AND SCOPE OF EACH SUB-TRADE RESTS SOLELY WITH THE CONTRACTOR. EXTRAS WILL NOT BE CONSIDERED BASED ON THE GROUNDS OF DIFFERENCE IN INTERPRETATION OF SPECIFICATIONS AND DRAWINGS AS TO WHICH TRADE INVOLVED SHALL PROVIDE CERTAIN SPECIALTIES OR MATERIALS. SHOULD ANY CONFLICTS OCCUR BETWEEN LAYOUTS SHOWN ON DRAWING AND APPLICABLE CODES, THE CODE REQUIREMENTS SHALL BE ADHERED TO.

1.10 CAREFULLY EXAMINE DOCUMENTS AND VISIT SITE TO DETERMINE AND REVIEW EXISTING SITE CONDITIONS THAT WILL OR MAY AFFECT WORK, AND INCLUDE FOR SUCH CONDITIONS IN BID PRICE. DRAWINGS ARE TO BE CONSIDERED DIAGRAMMATICAL ONLY AND DO NOT SHOW ALL THE MECHANICAL, ELECTRICAL, STRUCTURAL AND CONSTRUCTION DETAILS. ALL POINTS OF DISCONNECTION AND RECONNECTION SHOWN ARE FOR GENERAL INTENT ONLY. VERIFY ALL SPACES IN WHICH EQUIPMENT, DUCTWORK, WIRING, AND PIPING ARE TO BE LOCATED. FAILURE TO DO SO WILL NOT BE GROUNDS FOR ADDITIONAL COSTS. UPON FINDING DISCREPANCIES IN, OR OMISSIONS FROM DOCUMENTS, OR HAVING DOUBT AS TO THEIR MEANING OR INTENT, IMMEDIATELY NOTIFY CONSULTANT, IN WRITING, BEFORE SUBMITTING BID.

1.11 BEFORE ANY EQUIPMENT IS ROUGHED IN, DETERMINE ITS INTENDED LOCATION FROM THE DRAWINGS AND COORDINATE IT'S FINAL LOCATION WITH NEW AND EXISTING SERVICES AND STRUCTURAL CONDITIONS. IF IT IS NOT SHOWN ON THE DRAWINGS, VERIFY FINAL LOCATION ON SITE. LOCATIONS OF NEW AND EXISTING SERVICES ARE APPROXIMATE ONLY. ENSURE THAT ALL EQUIPMENT (NEW AND EXISTING) IS FULLY ACCESSIBLE FOR MAINTENANCE – FAILURE TO DO SO WILL NOT BE GROUNDS FOR ADDITIONAL COSTS. CONCEAL ALL SERVICES IN WALLS, CEILING SPACE, AND FLOOR SPACE UNLESS OTHERWISE STATED.

1.12 IT SHALL BE THIS SUBCONTRACTOR'S RESPONSIBILITY THAT MATERIAL AND EQUIPMENT BE BROUGHT INTO THE BUILDING IN SUCH ASSEMBLIES AND SIZES AS TO ENTER INTO THE SPACES WHERE THEY ARE TO BE LOCATED AND TO BE SMALL ENOUGH TO BE HOISTED INTO THE BUILDING WITHOUT DIFFICULTY. ANY CUTTING, PATCHING, ETC., INVOLVED IN GETTING LARGE ASSEMBLIES INTO PLACE, SHALL BE THE RESPONSIBILITY OF THIS SUBCONTRACTOR.

1.13 IDENTIFY ALL EQUIPMENT, DUCTS, VALVES, PIPES, ETC. TO BASE BUILDING STANDARD

1.14 WHEN DISCREPANCY EXISTS WITHIN DRAWINGS AND/OR SPECIFICATION, INCLUDE MOST COSTLY ARRANGEMENT TO TAKE PRECEDENCE

1.15 SUPPLY ALL LABOUR, MATERIAL, TOOLS SERVICES, EQUIPMENT, TRANSPORTATION, AND TESTING REQUIRED FOR THE SUPPLY AND INSTALLATION TO COMPLETE THE WORK INDICATED ON THE DRAWINGS AND SPECIFIED HEREIN.

1.16 PROVIDE ALL CUTTING, PATCHING, FLASHING WORK, AND CLEAN UP OF FLOORS, WALLS AND CEILING REQUIRED FOR THE WORK.

1.17 IT IS THE INTENT OF THIS SPECIFICATION AND DRAWINGS TO PROVIDE FOR A COMPLETE AND FULLY OPERATING SYSTEM IN COMPLETE ACCORD WITH ALL APPLICABLE CODES. THESE SPECIFICATIONS MAY NOT COVER EACH AND EVERY ITEM REQUIRED FOR THE COMPLETE MECHANICAL INSTALLATION. THEREFORE, THE CONTRACTOR SHALL MAKE HIS OWN PROVISIONS FOR ALL LABOUR, MATERIALS AND EQUIPMENT DEEMED NECESSARY TO COMPLETE THE MECHANICAL SYSTEM.

1.18 THE SPECIFICATIONS ARE INTEGRAL WITH THE DRAWINGS WHICH ACCOMPANY THEM. NEITHER IS TO BE USED ALONE. ANY ITEM OR SUBJECT OMITTED FROM ONE, BUT IMPLIED ON THE OTHER IS PROPERLY SPECIFIED.

1.19 "NOTES" ARE INCLUDED TO ASSIST THE CONTRACTOR IN UNDERSTANDING THE SCOPE OF WORK. UNLESS NOTED OTHERWISE THE NOTATIONS SHALL APPLY FOR THE ENTIRE FLOOR AREA WITHIN WHICH THE NOTATION IS LOCATED. MULTIPLE NOTES SHALL NOT BE INTERPRETED THAT AN UNNOTED ITEM IS EXCLUDED.

1.20 WHERE STANDARDS OF THE WORK ARE SPECIFIED OR IMPLIED AND THE WORK DOES NOT COMPLY WITH THE PERFORMANCE SPECIFIED OR IMPLIED, SUCH DEFICIENCY SHALL BE CORRECTED AS DIRECTED BY THE MECHANICAL CONSULTANT. ANY SUBSEQUENT TESTING TO VERIFY PERFORMANCE SHALL BE DONE AT THE CONTRACTOR'S EXPENSE. ANY CHARGES FOR THE OWNER'S/LANDLORD'S STAFF, THE MECHANICAL CONSULTANT OR OTHER PERSONNEL RELATED TO SUCH RETESTING, SHALL ALSO BE AT THE CONTRACTOR'S EXPENSE.

1.21 ENSURE THAT THE MANUFACTURER'S INSTALLATION RECOMMENDATIONS AND INSTRUCTIONS ARE FOLLOWED UNLESS OTHERWISE NOTED HEREIN OR ON THE DRAWINGS, UNLESS SUCH INSTRUCTIONS AND RECOMMENDATIONS CONTRADICT GOVERNING CODES AND REGULATIONS.

1.22 INSTALL EQUIPMENT IN LOCATIONS AND ROUTES SHOWN WITH MINIMUM INTERFERENCE WITH OTHER SERVICES OR TRADES. REMOVE AND REPLACE EQUIPMENT IMPROPERLY INSTALLED.

1.23 RETURN ALL REMOVED EQUIPMENT (EXHAUST FANS, DOMESTIC WATER HEATERS, ETC.) TO THE OWNER/LANDLORD OR DISPOSE OF EQUIPMENT AS REQUESTED BY THE OWNER/LANDLORD.

1.24 IN ALL AREAS REQUIRING TRENCHING OR CORE DRILLING THROUGH EXISTING FLOOR SLAB FOR PLUMBING SERVICES, ALLOW FOR ALL NECESSARY RADIOGRAPHY TO LOCATE HIDDEN ELECTRICAL SERVICES, STRUCTURAL REINFORCING, ETC., AND INCLUDE ALL COSTS IN TENDER PRICE. COORDINATE THIS WORK WITH THE OWNER/LANDLORD AND/OR TENANT COORDINATOR REGARDING SCHEDULING, AND ADHERE TO THE OWNER'S/LANDLORD'S REQUIREMENTS. SUBMIT CORE DRILLING PLAN TO BASE BUILDING STRUCTURAL ENGINEER FOR THEIR REVIEW. OBTAIN WRITTEN APPROVAL FROM STRUCTURAL ENGINEER AND LANDLORD BEFORE COMMENCING WORK.

1.25 PROVIDE THE OWNER/LANDLORD A WRITTEN WARRANTY FOR MINIMUM ONE (1) YEAR FOR THE COMPLETE MECHANICAL INSTALLATION FROM DATE OF ACCEPTANCE, INCLUDING ALL LABOUR, MATERIALS, AND EQUIPMENT IN THIS CONTRACT. REPAIR AND/OR REPLACE DEFECTS WHICH APPEAR IN YOUR WORK WITHIN THE WARRANTY PERIOD, ORDINARY WEAR AND TEAR AND WILLFUL DAMAGE BY OR CARELESSNESS OF THE OWNER'S/LANDLORD'S STAFF OR AGENTS EXCEPTED, WITHOUT ADDITIONAL EXPENSE TO THE OWNER/LANDLORD. WHERE SUCH DEFECTS OCCUR, BE RESPONSIBLE FOR ALL COSTS INCURRED IN MAKING DEFECTIVE WORK GOOD, INCLUDING REPAIR OR REPLACEMENT OF BUILDING FINISHES, OTHER MATERIALS, OR DAMAGE TO OTHER EQUIPMENT CAUSED BY SUCH DEFECTS, OR BY SUBSEQUENT REPLACEMENT AND REPAIRS.

1.26 CHANGE NOTICE QUOTATIONS FOR EXTRA OR DELETED WORK SHALL BE SUBMITTED COMPLETE WITH ITEMIZED COST BREAKDOWN OF LABOUR AND MATERIALS. FAILURE TO PROVIDE WILL RESULT IN REJECTION. ALL MECHANICAL CHANGE NOTICES SHALL BE PRICED IN ACCORDANCE WITH "MECHANICAL CONTRACTORS ASSOCIATION" AND "ALL PRICER" LESS DISCOUNT FOR LABOUR AND MATERIAL COST.

1.27 PROVIDE THREE (3) OPERATING AND MAINTENANCE MANUALS (3 HARD COPIES & 1 SOFT COPY) CONTAINING AS-BUILT DRAWINGS , APPROVED SHOP DRAWINGS, AIR AND WATER BALANCING REPORTS, EQUIPMENT DATA SHEETS, WRITTEN WARRANTY, NFPA-13 INSTALLATION CONFORMANCE LETTER, OPERATING INSTRUCTIONS, MAINTENANCE PROCEDURES, FIRE STOPPING COMPLETENESS LETTER, TEST REPORTS, AND CONTACT LIST OF CONTRACTORS AND SUPPLIERS (WITH PHONE NUMBERS) TO THE LANDLORD/OWNER. MANUALS SHALL BE IN A THREE-RING BINDER SEPARATED WITH DIVIDERS IN APPROPRIATE SECTIONS. BEFORE PROVIDING LANDLORD/OWNER WITH BINDERS, SUBMIT ELECTRONIC COPY (PDF) OF COMPLETE PACKAGE TO MECHANICAL CONSULTANT FOR REVIEW. MAKE ALL CORRECTIONS REQUESTED BY MECHANICAL CONSULTANT AND RESUBMIT COMPLETE PACKAGE FOR REVIEW.

1.28 TEMPORARY 1" THICK FILTERS SHALL BE PROVIDED AT ALL BASE BUILDING RETURN AIR OPENINGS WHICH REMAIN OPERATIONAL DURING CONSTRUCTION, AND SHALL BE REPLACED WEEKLY. REMOVE UPON CONSTRUCTION COMPLETION. UPON COMPLETION OF WORK, INFORM BUILDING MAINTENANCE THAT ALL BASE BUILDING HVAC EQUIPMENT ON FLOOR SHOULD HAVE FILTERS REPLACED.

1.29 REMOVE ALL ITEMS PLANNED FOR DEMOLITION INCLUDING ANCILLARY SUPPORTS AND COMPONENTS. REMOVE MECHANICAL COMPONENTS AND ABANDONED COMPONENTS BACK TO SOURCE, CAP ALL DUCTS AND DRAINAGE PIPING, AND CAP AND VALVE ALL PIPING AT CORE RISER.

1.30 PROVIDE INDEPENDENT SUPPORT FOR ALL COMPONENTS OF THE INSTALLATION.

1.31 PROVIDE START-UP SERVICES IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION FOR THE NEW/RELOCATED EQUIPMENT SPECIFIED.

1.32 WHERE REQUIRED, ALL CONTROL WORK, WIRING, DEVICES, ETC., SHALL BE PROVIDED BY THE OWNER'S/LANDLORD'S APPROVED CONTRACTOR AND PAID FOR UNDER THIS CONTRACT.

1.33 PROVIDE ELECTRICAL DEVICES WITH WIRING, STARTERS, DISCONNECT, ETC. VERIFY AND COORDINATE VOLTAGE AND PHASE WITH THE ELECTRICAL CONTRACTOR BEFORE ORDERING EQUIPMENT. ALL STARTERS, CONTACTORS, RELAYS, ETC. SHALL BE SUPPLIED BY THE MECHANICAL CONTRACTOR AND INSTALLED BY THE ELECTRICAL CONTRACTOR. ALL POWER WIRING (LINE VOLTAGE) SHALL BE INSTALLED BY THE ELECTRICAL CONTRACTOR; ALL CONTROL WIRING (LOW VOLTAGE) SHALL BE INSTALLED BY THE MECHANICAL CONTRACTOR.

1.34 FOR THE COMPLIANCE/SUBSTANTIAL COMPLETION LETTER, SUBMIT THE FOLLOWING APPLICABLE ELECTRONIC DOCUMENTS (PDFS) AS ONE COMPLETE PACKAGE: AS-BUILT DRAWINGS, AIR AND WATER BALANCING REPORT, NFPA-13 INSTALLATION CONFORMANCE LETTER, WARRANTY, FIRE STOPPING COMPLETENESS LETTER, FIRE DAMPER TEST REPORT, GAS INSPECTOR'S CERTIFICATE, BACKFLOW DEVICE TEST REPORT, AND PERMIT NUMBER.

1.35 SEPARATE AND RECYCLE WASTE MATERIALS IN ACCORDANCE WITH REQUIREMENTS OF CANADIAN CONSTRUCTION ASSOCIATION STANDARD DOCUMENT CCA 81, A BEST PRACTICES GUIDE TO SOLID WASTE REDUCTION.

2.0 RELATIONSHIP TO OTHER TRADES

2.1 THIS SUBCONTRACTOR SHALL CONFER WITH ALL OTHER CONTRACTORS INSTALLING EQUIPMENT, PLANT PIPING, OTHER WORK, FOUNDATIONS, ETC., WHICH MAY AFFECT HIS INSTALLATION, AND HE SHALL ARRANGE HIS EQUIPMENT, PIPING, ETC., IN PROPER RELATION WITH OTHER APPARATUS, AND WITH THE BUILDING CONSTRUCTION. HE SHALL ALSO CONFIRM THE ELECTRICAL CHARACTERISTICS OF THE PROJECT AND ORDER EQUIPMENT ACCORDINGLY.

2.2 SPECIAL CARE SHALL BE TAKEN IN THE INSTALLATION OF ALL WORK, TO SEE THAT THEY ALL COME WITHIN THE LIMITS ESTABLISHED BY THE FINISH LINES OF ALL WALLS, FLOORS, CEILINGS, ETC.

2.3 THIS SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR AND OTHER SUBCONTRACTORS WHO ARE CONCERNED, OF ALL OPENINGS, FOUNDATION WORK, HANGERS, INSERTS, ANCHORS, OR OTHER PROVISIONS NECESSARY IN THEIR WORK FOR THE INSTALLATION OF HIS WORK, AND HE SHALL FURNISH ALL INFORMATION AND NECESSARY MATERIALS IN AMPLE TIME SO THAT PROPER PROVISIONS CAN BE MADE FOR SAME, AND SHALL SUPPLY AND CORRECTLY AND ACCURATELY PLACE ALL INSERTS, SLEEVES, ANCHORS, ETC.

2.4 FAILURE TO COMPLY WITH THESE REQUIREMENTS ON THE PART OF THIS SUBCONTRACTOR WILL RENDER HIM RESPONSIBLE FOR THE COST OF CUTTING OPENINGS, INSTALLING HANGERS AND OTHER PROVISIONS AT A LATER DATE, AND THE SUBSEQUENT PATCHING, ETC., THEREBY REQUIRED.

2.5 NO CUTTING SHALL BE DONE WITHOUT PERMISSION. ALL SUCH WORK SHALL BE DONE BY TRADESMEN SKILLED IN AND CERTIFIED FOR THIS PARTICULAR TRADE.

2.6 ALL MECHANICAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH ARCHITECTURAL, STRUCTURAL, ELECTRICAL AND SITE SERVICING DRAWINGS.

3.0 RECORD "AS-BUILT" DRAWINGS

3.1 FOR THE PRODUCTION OF AS-BUILT DOCUMENTS, OBTAIN AUTOCAD DRAWING FILES AND TIGRIS ENGINEERING INC. "CTB" FILE (FOR PLOTTING CORRECT LINE THICKNESS). WHEN WORK BEGINS ON SITE, MAINTAIN THE "AS-BUILT" WHITE PRINTS AT THE SITE FOR PERIODIC INSPECTION BY THE MECHANICAL CONSULTANT THROUGHOUT THE DURATION OF THE WORK. PAY PARTICULAR ATTENTION TO ACCURATELY DIMENSIONING THE LOCATION OF ALL CONCEALED SERVICES TERMINATED FOR FUTURE, ALL BURIED WORK AND SERVICES, AND CONCEALED WORK. CLEARLY AND ACCURATELY MARK-UP ALL CHANGES AND DEVIATIONS FROM THE ROUTING OF PIPING AND DUCTWORK AND LOCATIONS OF EQUIPMENT SHOWN ON THE CONTRACT DRAWINGS. CHANGES AND DEVIATIONS INCLUDE THOSE MADE BY ADDENDA, CHANGE ORDERS, AND SITE INSTRUCTIONS. BEFORE APPLYING FOR A CERTIFICATE OF COMPLETION, UPDATE AUTOCAD DISK SET(S) IN ACCORDANCE WITH THE MARKED UP "AS-BUILT" WHITE PRINTS. SUBMIT THE "AS-BUILT" SITE DRAWING WHITE PRINTS, WHITE PRINTS PRODUCED FROM THE DISK SET(S), & DRAWING DISK SET(S) USING TIGRIS ENGINEERING INC "CTB" FILE TO THE MECHANICAL CONSULTANT FOR REVIEW. UPON COMPLETION OF THE WORK, SUBMIT THREE SETS OF THE COMPLETED "AS-BUILT" DRAWINGS (PLOTTED WITH TIGRIS ENGINEERING INC "CTB" FILE FOR CORRECT LINE THICKNESS), TRANSPARENCIES, AUTOCAD FILES, AND BUILDING INSPECTION DEPARTMENT'S FINAL CERTIFICATE OF APPROVAL TO THE MECHANICAL CONSULTANT & OWNER/LANDLORD. "AS-BUILT" DRAWINGS SHALL CONTAIN THE CONTRACTOR'S NAME & DATE. FAILURE TO PLOT DRAWINGS WITH THE CORRECT LINE THICKNESS WILL RESULT IN REJECTION.

4.0 SHOP DRAWINGS

4.1 EACH SUBCONTRACTOR BEFORE FABRICATION OF ANY MATERIALS OR EQUIPMENT, SUBMIT A MINIMUM OF SIX (6) COMPLETE SETS OF DRAWINGS AND DATA SHEETS COVERING ALL ITEMS OF EQUIPMENT FURNISHED AND INTENDED FOR INSTALLATION.

4.2 FOLLOWING IS TO BE READ IN CONJUNCTION WITH WORDING ON CONSULTANT'S SHOP DRAWING REVIEW STAMP APPLIED TO EACH AND EVERY SHOP DRAWING OR PRODUCT DATA SHEET SUBMITTED: "THIS REVIEW BY CONSULTANT IS FOR SOLE PURPOSE OF ASCERTAINING CONFORMANCE WITH GENERAL DESIGN CONCEPT. THIS REVIEW DOES NOT MEAN THAT CONSULTANT APPROVES DETAIL DESIGN INHERENT IN SHOP DRAWINGS, RESPONSIBILITY FOR WHICH REMAINS WITH CONTRACTOR. CONSULTANT'S REVIEW DOES NOT RELIEVE CONTRACTOR OF RESPONSIBILITY FOR ERRORS OR OMISSIONS IN SHOP DRAWINGS OR OF CONTRACTOR'S RESPONSIBILITY FOR MEETING REQUIREMENTS OF CONTRACT DOCUMENTS. BE RESPONSIBLE FOR DIMENSIONS TO BE CONFIRMED AND CORRELATED AT JOB SITE, FOR INFORMATION THAT PERTAINS SOLELY TO FABRICATION PROCESSES OR TO TECHNIQUES OF CONSTRUCTION AND INSTALLATION, AND FOR COORDINATION OF WORK OF SUB-TRADES."

4.3 BEFORE SUBMISSION, THIS SUBCONTRACTOR SHALL CHECK ALL SHOP DRAWINGS FOR ACCURACY OF DETAILS, DIMENSIONS, ETC. AND SHALL BE SATISFIED THAT THE DRAWINGS ARE CORRECT AND THAT THE EQUIPMENT WILL FIT PROPERLY IN THE ALLOTTED SPACE. THE SHOP DRAWINGS SHALL BE STAMPED BY THIS SUBCONTRACTOR WITH THE WORD 'REVIEWED', THE DATE OF APPROVAL, AND THE FIRM'S NAME PRIOR TO SUBMISSION.

4.4 ALLOW ONE (1) WEEK FOR MECHANICAL CONSULTANT'S REVIEW. INCLUDE ONE (1) SET OF APPROVED SHOP DRAWINGS WITH OPERATION AND MAINTENANCE MANUAL (SEE BELOW). APPLICABLE MECHANICAL EQUIPMENT SHALL BE SELECTED TO MEET ENERGY EFFICIENCY REQUIREMENTS OF ANSI/ASHRAE/IES 90.1, ENERGY STANDARDS FOR BUILDINGS. SHOP DRAWINGS/PRODUCT DATA SUBMITTALS FOR SUCH EQUIPMENT MUST INDICATE COMPLIANCE WITH THE STANDARD OR THEY WILL BE RETURNED FOR CORRECTION AND RE-SUBMITTAL.

5.0 REQUIREMENTS OF INSPECTION DEPARTMENTS

5.1 ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH ALL LAWS AND REGULATIONS OF ALL AUTHORITIES HAVING JURISDICTION IN EACH CASE, PARTICULARLY ALL AFFECTED DEPARTMENTS OF THE MUNICIPALITY AND PROVINCE. ELECTRICAL EQUIPMENT SUPPLIED MUST CONFORM TO THE REGULATIONS OF CSA AND THE LOCAL UTILITY. ANYTHING NECESSARY TO MAKE THE WORK COMPLY WITH THESE REQUIREMENTS SHALL BE PROVIDED BY THIS SUBCONTRACTOR WITHOUT ADDITIONAL COST TO THE OWNERS IF IT REASONABLY COULD HAVE BEEN FORESEEN WHEN TENDERING.

5.2 EACH SUBCONTRACTOR SHALL PREPARE DRAWINGS IN ADDITION TO ENGINEER'S DRAWINGS AS MAY BE REQUIRED BY VARIOUS INSPECTION DEPARTMENTS HAVING JURISDICTION, AND OBTAIN THEIR APPROVAL BEFORE PROCEEDING WITH THE WORK.

5.3 IN THE EVENT THAT THE INSPECTION DEPARTMENT'S REQUEST DEVIATES FROM THE ENGINEER'S LAYOUT, SUBCONTRACTOR SHALL CONSULT THE ENGINEER BEFORE PROCEEDING WITH SAME. IT SHALL BE NOTED THAT ENGINEER'S DRAWINGS ARE GENERALLY ACCEPTABLE TO INSPECTION DEPARTMENTS AND MINOR SUPPLEMENTS NEED ONLY BE MADE BY SUBCONTRACTORS.

6.0 INSURANCE

6.1 THE CONTRACTOR MUST HAVE COMPREHENSIVE GENERAL LIABILITY INSURANCE COVERAGE OF NOT LESS THAN SPECIFIED IN THE TENDER DOCUMENTS INCLUDING NON OWNED CAR COVERAGE, CONTRACTUAL LIABILITY AND CONTAINING A CROSS LIABILITY CLAUSE. COVERAGE SHALL INCLUDE LOSS OR DAMAGE CAUSED BY THE CONTRACTOR.

6.2 THE CONTRACTOR SHALL CARRY FULL EMPLOYEE'S LIABILITY INSURANCE IN ACCORDANCE WITH THE WORKER'S COMPENSATION ACT.

7.0 LIABILITY AND RESPONSIBILITY

7.1 EACH SUBCONTRACTOR SHALL SUPERVISE THE LAYING OUT OF THEIR WORK AND SHALL ARRANGE IT IN CO-OPERATION WITH OTHERS WHO MAY BE WORKING ON THE PREMISES WHILE THE WORK OF THIS CONTRACT IS IN PROGRESS. HE SHALL PROTECT FINISHED AND UNFINISHED WORK OF THIS CONTRACT AND/OR WORK OF OTHERS ON THE PREMISES INCLUDING EXISTING FROM DAMAGE DUE TO CARRYING OUT HIS WORK UNTIL THE COMPLETED WORK HAS BEEN ACCEPTED, OF ANY DISCREPANCIES OR INCONSISTENCIES FOUND IN THE DRAWINGS OR SPECIFICATIONS BEFORE SUBMITTING HIS TENDER. HE SHALL ABIDE BY THE DECISION GIVEN HIM IN WRITING WITH REGARD TO SAME. EACH SUBCONTRACTOR IS CAUTIONED THAT THE WORK AS SHOWN IS INTENDED TO BE COMPLETE IN ALL RESPECTS AND THAT FAILURE ON HIS PART TO NOTIFY THE ENGINEER OF ANY DISCREPANCIES WILL NOT RELIEVE HIM OF THE RESPONSIBILITY OF COMPLETING THE WORK AS INTENDED AT THE CONTRACT PRICE.

7.2 VERIFY ALL EXISTING ELEVATIONS, DIMENSIONS, CLEARANCES AND BUILDING FEATURES PRIOR TO COMMENCING INSTALLATION.

8.0 INTERRUPTION OF SERVICES

8.1 WHILE WORK IS IN PROGRESS, CONTINUITY OF SERVICES SHALL BE MAINTAINED TO ALL EXISTING SERVICES. INTERRUPTIONS SHALL BE COORDINATED WITH THE OWNER AS TO TIME AND DURATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY INTERRUPTIONS TO SERVICES AND SHALL REPAIR ANY DAMAGES TO THE EXISTING SYSTEMS CAUSED BY HIS OPERATIONS.

8.2 THE CONTRACTOR SHALL INCLUDE IN HIS PRICE ANY COST FOR PREMIUM TIME OUTSIDE OF NORMAL WORKING HOURS TO COMPLETE THE WORK ON SCHEDULE AND TO MAINTAIN ALL EXISTING SYSTEMS IN OPERATION.

9.0 APPROVALS

9.1 THE PRICE SUBMITTED FOR THIS CONTRACT SHALL BE BASED ON THE USE OF MATERIALS AND EQUIPMENT SPECIFIED. IF THIS CONTRACTOR WISHES TO QUOTE ON EQUIVALENT MATERIALS AND EQUIPMENT, HE MUST QUOTE ON PRODUCTS APPROVED BY THE ENGINEER IN WRITING, AS AN EQUIVALENT TO THE PRODUCT SPECIFIED.

9.2 THIS CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY ADDITIONAL WORK OR MATERIALS REQUIRED BY THE MECHANICAL TRADE OR OTHER CONTRACTORS TO ACCOMMODATE APPROVED EQUIVALENT MATERIALS OR EQUIPMENT. EXTRAS SHALL NOT BE APPROVED TO COVER SUCH WORK.

10.0 CERTIFICATES, PERMITS, FEES

10.1 GIVE ALL NOTICES, OBTAIN ALL PERMITS AND PAY ALL FEES SO THAT THE WORK SPECIFIED MAY BE CARRIED OUT. FURNISH ANY CERTIFICATES AT THE OWNER'S REQUEST AS EVIDENCE THAT WORK INSTALLED CONFORMS TO THE LAWS AND REGULATIONS OF ALL AUTHORITIES HAVING JURISDICTIONS. CERTIFICATES/PERMITS ARE TO BE PROVIDED FOR QUALITY OF WORKMANSHIP AND WORKMAN QUALIFICATIONS.

10.2 INSPECTIONS SHALL BE MADE PROMPTLY. IF ANY WORK IS COVERED UP WITHOUT CONSENT, IT SHALL, IF REQUIRED, BE UNCOVERED FOR EXAMINATION AND MAKE GOOD AT NO EXTRA COST TO OWNER.

10.3 SUBCONTRACTOR SHALL GIVE ALL NECESSARY NOTICES, OBTAIN ALL REQUIRED PERMITS AND PAY ALL FEES INCLUDING PAYMENT FOR STREET CONNECTIONS TO STORM, SANITARY, WATER AND GAS IN ORDER THAT THE WORK HEREIN SPECIFIED MAY BE CARRIED OUT AND HE SHALL FURNISH ANY CERTIFICATES NEEDED AS EVIDENCE THAT THE WORK INSTALLED CONFORMS WITH THE LAWS AND REGULATIONS OF THE MUNICIPALITY AND PROVINCE.

10.4 SUBCONTRACTOR SHALL CONTACT THE LOCAL GAS COMPANY AS SOON AS POSSIBLE AND VERIFY THAT GAS SERVICE IS AVAILABLE AT PRESSURE AND CAPACITY REQUIRED FOR THE PROJECT. HE SHALL INFORM ENGINEER IMMEDIATELY, IF THERE IS ANY PROBLEM WITH GAS SERVICE WHATSOEVER. IT SHALL BE THIS SUBCONTRACTOR'S RESPONSIBILITY TO COORDINATE GAS REQUIREMENTS WITH THE GAS COMPANY BEFORE ANY OF HIS WORK PROCEEDS.

11.0 GUARANTEE

11.1 THIS SUBCONTRACTOR SHALL GUARANTEE ALL MATERIAL AND WORKMANSHIP USED IN THE WORK TO BE IN STRICT ACCORDANCE WITH THE SPECIFICATIONS, OF BEST QUALITY AND TYPE OBTAINABLE TO GIVE FIRST-CLASS CONSTRUCTION AND PROPER AND EFFICIENT OPERATION AND FREE FROM ANY DEFECTS. ANY SUCH DEFECTS WHICH MAY APPEAR IN ANY OF THE WORK WITHIN ONE YEAR AFTER SUBSTANTIAL COMPLETION, SHALL BE REPAIRED AND REPLACED BY THIS SUBCONTRACTOR WITHOUT ADDITIONAL EXPENSE TO THE OWNER. WHERE SUCH DEFECTS OCCUR, THIS SUBCONTRACTOR SHALL BE HELD RESPONSIBLE FOR ALL COSTS INCURRED IN MAKING THE DEFECTIVE WORK GOOD. THIS SHALL NOT OBSOLETE ANY LONGER WARRANTIES ON SPECIFIC ITEMS OF EQUIPMENT.

11.2 ALL INJURIES TO ADJACENT WORK, PARTICULARLY PLASTER, WOOD FINISHES OR OTHER MATERIALS, OR DAMAGE TO OTHER EQUIPMENT, CAUSED BY SUCH DEFECTS OF THIS SUBCONTRACTOR'S WORK OR BY SUBSEQUENT REPLACEMENTS AND REPAIRS, SHALL BE MADE GOOD AT THE EXPENSE OF THIS SUBCONTRACTOR. ALL REPAIR WORK SHALL BE DONE BY THE TRADES RESPONSIBLE FOR THE ORIGINAL WORK.

12.0 DRAWINGS

12.1 THE DRAWINGS SHOW THE APPROXIMATE LOCATION FOR THE SPECIAL APPARATUS AND THE MATERIALS THROUGHOUT THE BUILDING. THE ARRANGEMENT SHOWN ON THE DRAWINGS IS MORE OR LESS DIAGRAMMATIC AND AS SUCH APPROXIMATE ONLY, AND DO NOT SHOW ALL MECHANICAL, ELECTRICAL, STRUCTURAL AND CONSTRUCTION DETAILS, AND MAY BE ALTERED, AS APPROVED BY THE ENGINEER, TO MEET THE REQUIREMENTS OF THE APPARATUS, ETC., AND OF THE BUILDING. EACH SUBCONTRACTOR SHALL BE HELD RESPONSIBLE FOR ALL MEASUREMENTS FOR HIS WORK THROUGHOUT, AND HE SHALL ARRANGE HIS PIPING, WIRING, AND APPARATUS TO CONFORM TO THE ARCHITECTURAL AND STRUCTURAL DETAILS IN A SATISFACTORY MANNER AND SHALL CO-OPERATE WITH OTHER CONTRACTORS TO ENSURE THAT WORK SHALL MEET ALL REQUIREMENTS OF DIVERSE CONTRACTS.

12.2 ITEMS SHOWN ON THE DRAWINGS BUT NOT SPECIFIED OR SPECIFIED BUT NOT SHOWN SHALL BE INCLUDED.

12.3 ANY NECESSARY ITEMS TO ENSURE A COMPREHENSIVE OPERATIONAL SYSTEM, EVEN IF THEY ARE NOT EXPLICITLY STATED OR DEPICTED, SHOULD BE INCLUDED.

13.0 VALUATION OF CHANGES

13.1 FOR EACH CHANGE, SUBMIT A COMPLETE, ITEMIZED BREAKDOWN OF LABOUR AND MATERIAL AT NET COST, SHOWING QUANTITIES, UNIT COST, HOURS PER EACH ITEM INSTALLED, PROFIT, OVERHEAD ETC., ONLY THE NET DIFFERENCE BETWEEN AN EXTRA AND A CREDIT WILL BE SUBJECT TO OVERHEAD AND PROFIT MARK UP.

14.0 LANDLORD APPROVAL

14.1 CONFORM TO BASE BUILDING STANDARDS AND SPECIFICATIONS AND ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF ALL GOVERNING AUTHORITIES AND LOCAL BYLAWS.

14.2 ALL WORK MUST COMPLY WITH THE LANDLORDS GUIDELINES WHERE APPLICABLE.

14.3 OBTAIN APPROVAL FROM THE LANDLORD BEFORE CUTTING ANY STRUCTURAL WALLS OR FLOORS. CUTTING AND DRILLING SHALL ONLY BE AT TIMES ALLOWED BY THE LANDLORD. CHECK AND VERIFY THE LOCATION OF EXISTING MECHANICAL AND ELECTRICAL SERVICES IN WALLS AND BELOW THE FLOOR SLAB IN ALL AREAS REQUIRING CORE DRILLING AND CUTTING. PROTECT ALL TENANT AREAS WHERE CORE DRILLING OCCURS. PROVIDE X-RAY STUDY BEFORE DRILLING OR CUTTING WHERE REQUIRED BY THE LANDLORD.

14.4 SEAL TO BE AIR-TIGHT AROUND ALL DUCTWORK AND PIPING PENETRATIONS THROUGH PARTITIONS, BAFFLES ABOVE CEILINGS, AND THROUGH FLOORS THAT ARE NOT FIRE RATED. ALL SHUTDOWN, DRAINING AND FILLING OF ANY PORTION OF THE EXISTING BASE BUILDING SYSTEMS SHALL BE PERFORMED BY THE LANDLORD'S BUILDING OPERATIONS STAFF AND SHALL BE COORDINATED WITH THE LANDLORD FOR TIME AND DURATION OF INTERRUPTIONS. COMPLY WITH ALL OF THE LANDLORD'S INSTRUCTIONS, AND INCLUDE FOR ALL COSTS FOR THIS WORK IN THE TENDER PRICE.

14.5 MAINTAIN AND REPLACE THE TEMPORARY FILTER MEDIA AS REQUIRED TO PREVENT CONSTRUCTION DUST FROM FOULING THE BASE BUILDING EQUIPMENT. REMOVE SAME AT THE COMPLETION OF CONSTRUCTION. FILTERS IN ALL BASE BU

1.11 VIBRATION ISOLATION FLEXIBLE DUCT CONNECTORS SHALL BE USED WHERE DUCTWORK CONNECTS DIRECTLY TO AIR HANDLING EQUIPMENT. CONNECTORS SHALL BE NONCOMBUSTIBLE, OR OF COMBUSTIBLE FABRIC CONSTRUCTION PROVIDED THEY DO NOT EXCEED 10" IN LENGTH AND COMPLY WITH THE FLAME RESISTANCE REQUIREMENTS OF ULC–S109. COLLARS SHALL BE GALVANIZED IRON AND FASTENED SECURELY TO ENSURE A LEAK PROOF CONNECTION.

1.12 PROVIDE RIGID ROUND DUCT TO ALL SUPPLY AIR DIFFUSERS INSTALLED IN DRYWALL CEILINGS.

1.13 AIR TRANSFER DUCTS SHALL BE PROVIDED WHEREVER REQUIRED TO ENSURE ADEQUATE RETURN AIR AND/OR SMOKE EXHAUST AIR IN CEILING SPACE BACK TO RETURN AIR, GENERAL EXHAUST AIR, AND SMOKE EXHAUST AIR OPENINGS. WHERE THERE IS A MULTI–TENANT CORRIDOR, ENSURE THAT TRANSFER AIR DUCTS ARE NOT INSTALLED IN CORRIDOR WALLS – REPORT TO MECHANICAL CONSULTANT OF ANY EXISTING TRANSFER AIR DUCTS FOUND BETWEEN THE RENOVATED SPACE AND THE MULTI–TENANT CORRIDOR. IT SHALL BE THIS CONTRACTOR'S RESPONSIBILITY TO COORDINATE AND CONFIRM AIR TRANSFER PROVISIONS WITH THE GENERAL TRADES.

1.14 AIR TRANSFER OPENINGS INDICATED WITHOUT DUCT (BAFFLE OPENINGS AND/OR DOOR UNDERCUTS) SHALL BE THIS CONTRACTOR'S RESPONSIBILITY. COORDINATE AND CONFIRM PROVISIONS WITH GENERAL TRADES.

1.15 NEW SUPPLY AIR DIFFUSERS/REGISTERS AND RETURN/EXHAUST AIR GRILLES SHALL MATCH BASE BUILDING OR BE OF TYPE AS INDICATED ON DRAWINGS. COORDINATE FINAL LOCATION WITH LATEST ARCHITECTURAL REFLECTED CEILING PLANS. RELOCATE AND REUSE EXISTING DIFFUSERS AND GRILLES WHERE POSSIBLE OR WHERE INDICATED ON PLANS.

1.16 PROVIDE BALANCING DAMPERS FOR ALL NEW AND EXISTING DUCT BRANCHES ON EXISTING DUCTWORK WITH SUITABLE MEANS OF CEILING ACCESS FOR BALANCING, AND VOLUME DAMPERS FOR ALL NEW SUPPLY AIR DIFFUSERS AND REGISTERS. BALANCING DAMPERS SHALL BE INSTALLED AT ALL TAKE–OFFS FROM BRANCH DUCTS, AND ALL BRANCH DUCT CONNECTIONS TO MAIN DUCTS. BALANCING DAMPERS SHALL BE MANUALLY OPERATED OPPOSED BLADE TYPE, SPLITTER TYPE, OR BUTTERFLY TYPE, COMPLETE WITH LOCKING QUADRANT OPERATOR.

1.17 REFER TO SECTION 15.0 FOR TESTS AND AIR BALANCING

1.18 BEFORE INSTALLATION, OBTAIN ARCHITECT'S/INTERIOR DESIGNER'S APPROVAL ON LOCATION OF ALL REGISTERS, DIFFUSERS, AIR TROFFERS, THERMOSTATS, ACCESS PANELS, ETC.

1.19 PROVIDE FIRE DAMPERS WHERE SHOWN ON DRAWINGS AND/OR INSTALLED IN THE PLANE OF PENETRATION OF FIRE SEPARATIONS AND IN ACCORDANCE WITH NFPA–90A AND ULC–S505, AND SHALL BEAR THE ULC SEAL. DAMPERS SHALL BE TYPES A OR B, 1.5 HOUR FIRE RATED AND COMPLETE WITH 160 DEG. F REPLACEABLE LINK. A TIGHTLY FITTED ACCESS DOOR SHALL BE INSTALLED FOR EACH FIRE DAMPER TO PROVIDE ACCESS FOR INSPECTION, AND RESETTING OF DAMPER, AND REPLACING OF FUSIBLE LINK. FIRE DAMPERS SHALL BE SUPPORTED INDEPENDENTLY FROM DUCTWORK.

1.20 DUCTWORK SHALL BE MADE SUBSTANTIALLY AIR TIGHT THROUGHOUT AND SHALL HAVE NO OPENINGS OTHER THAN THOSE REQUIRED FOR PROPER OPERATION AND MAINTENANCE. THE ALLOWABLE LEAKAGE FACTOR SHALL NOT EXCEED 2% THROUGH THE LONGEST DUCT RUN. ALL DUCT JOINTS SHALL BE SEALED WITH JOINT TAPE MEETING THE FLAME RESISTANCE REQUIREMENTS OF ULC–S109. SEAL ALL JOINTS IN LOW AND MEDIUM PRESSURE DUCTWORK WITH TRANSCONTINENTAL MP DUCT SEALER.

1.21 ALL AIR HANDLING SYSTEMS SHALL BE TESTED AND BALANCED BY A QUALIFIED TESTING COMPANY TO WITHIN 5% OF THE DESIGN AIR VOLUMES. THREE (3) COPIES OF THE FINAL TESTING AND BALANCING REPORT SHALL BE SUBMITTED TO THE ARCHITECT FOR REVIEW BY THE ENGINEER.

1.22 ALL DUCTWORK SHALL BE INSTALLED TO ALLOW FREEDOM FROM VIBRATION DURING OPERATING CONDITIONS. DUCT HANGERS SHALL BE SUPPORTED FROM STRUCTURAL STEEL AND STRUCTURAL CONCRETE SLAB, BUT NOT FROM ROOF DECK. BENT GALVANIZED IRON HANGERS SHALL BE USED FOR DUCTS UP TO 36" IN WIDTH. FOR WIDER DUCTS, 1" DIAMETER RODS AND 1½" STRUCTURAL ANGLE IRONS SHALL BE USED. DUCT HANGERS SHALL BE SPACED MAXIMUM 8'–6" APART. WHERE DUCTS PASS THROUGH WALLS AND FLOORS, THE SPACE AROUND THE DUCT SHALL BE PACKED AND SEALED WITH FIRE RESISTANT SEALING COMPOUND.

1.23 ELBOWS SHALL BE CONSTRUCTED USING A RADIUS OF 1.5 TIMES OF DUCT DIAMETER / WIDTH. HOLLOW TURNING VANES IN VANE RAILS SHALL BE USED WHEN THIS IS NOT POSSIBLE.

1.24 SUPPORT OF ROOF MOUNTED DUCTS: SUPPORT ROOF MOUNTED DUCT ON FACTORY FABRICATED ALUMINUM SUPPORT ASSEMBLIES TO SUIT ROOF CONSTRUCTION, SIZED & ARRANGED TO SUIT THE DUCT, & PROPERLY SPACED.

1.25 WATERTIGHT DUCTWORK: WHERE WATERTIGHT HORIZONTAL DUCTWORK IS REQUIRED, CONSTRUCT WITHOUT BOTTOM LONGITUDINAL SEAM & MAKE WATERTIGHT. SLOPE HORIZONTAL DUCT TO HOODS, RISERS, OR DRAIN POINTS. PROVIDE DUCT DRAIN FITTINGS AT DRAIN POINTS. PROVIDE WATERTIGHT DUCTWORK FOR, AS APPLICABLE, ALL GALVANIZED STEEL DUCTWORK OUTSIDE THE BUILDING OR OTHERWISE EXPOSED TO THE ELEMENTS, FRESH AIR INTAKES, & WHEREVER ELSE SHOWN.

1.26 KITCHEN EXHAUST DUCTWORK SHALL BE INSTALLED IN COMPLIANCE WITH N.F.P.A. #96 LATEST EDITION. PROVIDE ALL ACCESS, CLEAN OUT, SEPARATIONS AS PER N.F.P.A. #96 WHETHER SHOWN ON PLANS OR NOT. ALL KITCHEN EXHAUST DUCTWORK SHALL BE 16 GAUGE WELDED.

1.27 SEAL ALL JOINTS IN LOW AND MEDIUM PRESSURE DUCTWORK WITH TRANSCONTINENTAL MP DUCT SEALER.

2.0 CONTROLS:

2.1 ALL CONTROL WIRING SHALL BE CARRIED OUT BY DIV.15; POWER WIRING SHALL BE BY DIV.16. THE CONTROL SYSTEM SHALL BE SUPPLIED AND INSTALLED COMPLETE IN ALL RESPECT AND FULLY FUNCTIONAL. DEMONSTRATE TO THE MECHANICAL CONSULTANT ON COMPLETION OF WORK.

2.2 ALL CONTROLS WORK SHALL BE PERFORMED BY THE OWNER'S/LANDLORD'S CONTROLS CONTRACTOR OR A CONTRACTOR APPROVED BY THE OWNER/LANDLORD.

2.3 PROVIDE ALL CONTROLS, EMT CONDUIT, FITTINGS, AND WIRING INCLUDING APPURTENANCES NECESSARY FOR COMPLETE AND OPERATING CONTROL SYSTEMS. PROVIDE WHERE REQUIRED A PNEUMATIC SYSTEM WITH ALL NECESSARY CONTROL AIR PIPING FROM EXISTING CONTROL AIR MAINS TO ROOM THERMOSTATS, CONTROL VALVES, DAMPERS, AND OTHER CONTROL DEVICES AS NECESSARY FOR A COMPLETE AND FUNCTIONAL SYSTEM. CONTROL PIPING SHALL BE TYPE 'L' COPPER TUBING AND/OR IN ACCORDANCE WITH BASE BUILDING SPECIFICATIONS AND STANDARDS. PLASTIC TUBING SHALL NOT BE USED IN CEILING SPACES. HARD WIRE ALL ELECTRICAL CONTROL DEVICES INTO THE ASSOCIATED SYSTEM MAGNETIC STARTER. PROVIDE POWER TO CONTROL PANEL FROM THE NEAREST NORMAL POWER ELECTRICAL DISTRIBUTION PANEL.

2.4 NEW THERMOSTATS SHALL MATCH BASE BUILDING, NEW THERMOSTATS FOR RETAIL UNITS AND RESTAURANTS SHALL MATCH BASE BUILDING C/W LOCKABLE (PASSWORD OR KEY) FEATURE. EXISTING THERMOSTATS BEING REUSED FOR RETAIL UNITS AND RESTAURANTS WITHOUT LOCKABLE (PASSWORD OR KEY) FEATURE SHALL BE PROVIDED WITH LOCKABLE VENTILATED TAMPER–PROOF COVER.

2.5 WHERE THERMOSTAT REQUIRED FOR STAND ALONE BUILDING, THERMOSTAT SHALL BE WALL MOUNTING, 24V UNLESS OTHERWISE SPECIFIED, 7–DAY PROGRAMMABLE HEAT–COOL DIGITAL THERMOSTAT FOR F° OR C° INDICATION, C/W BACKLIT DISPLAY, THERMOMETER, REAL TIME CLOCK, & MOMENTARY OVERRIDE FOR AFTER–HOURS OCCUPATION.
MOUNTING HEIGHT OF THERMOSTATS SHALL BE 5'–0" (1500MM) FROM FINISHED FLOOR OR 3"–11" (1200MM) IF IN BARRIER–FREE PATH OF TRAVEL. COORDINATE LOCATION WITH ARCHITECT/INTERIOR DESIGNER. DO NOT INSTALL IN VICINITY OF ELECTRICAL LIGHTING DIMMERS OR HEAT GENERATING EQUIPMENT SUCH AS PHOTOCOPIERS, PRINTERS, TELEVISIONS ETC.

2.6 HUMIDISTAT: WALL OR DUCT MOUNTING AS INDICATED, SOLID–STATE RELATIVE HUMIDITY SENSOR C/W A FACTORY CALIBRATED HUMIDITY TRANSMITTER ACCURATE (INCLUDING LEAD LOSS & ANALOG TO DIGITAL CONVERSION) TO ±5 BETWEEN 20 TO 80% RH AT 25° C (77° F) & C/W NON–INTERACTIVE SPAN & ZERO ADJUSTMENTS, & A 2–WIRE ISOLATED LOOP POWERED, 4–20 MA, 0–100% LINEAR PROPORTIONAL OUTPUT. HUMIDISTATS FOR OUTSIDE AIR APPLICATIONS ARE TO BE WEATHER–PROOF WITH A NEMA/EEMAC 3R ENCLOSURE, & A TYPE 304 STAINLESS STEEL PROBE WITH MOUNTING BRACKET & HARDWARE FOR DUCT MOUNTING.

2.7 CARBON MONOXIDE DETECTOR: EQUAL TO CALIBRATION TECHNOLOGIES GC–CO–200 SURFACE WALL MOUNTING 24 VDC ELECTROCHEMICAL DETECTOR WITH A MAXIMUM 10 SECOND RESPONSE TIME, A MEASUREMENT RANGE: 0 TO 200 PPM, ± 5% ACCURACY, AN INTEGRAL HEATER, & A NEMA 3RX ENCLOSURE. CONFIRM EXACT LOCATION PRIOR TO ROUGHING–IN, & CONNECT COMPLETE WITH WIRING IN CONDUIT.

2.8 PROVIDE ALL CONTROLS ARE TO BE PROVIDED INCLUDING WIRING, APPROVED PLENUM CABLE, FITTINGS, THERMOSTATS AND ACCESSORIES AS REQUIRED FOR COMPLETELY OPERATIONAL SYSTEMS. PROVIDE ALL NECESSARY CONNECTIONS AND COMPONENTS FROM MAINS TO DAMPERS, CONTROL VALVES, THERMOSTATS OR ANY OTHER DEVICES AS REQUIRED.

2.9 CLEAN AND RECALIBRATE ALL EXISTING THERMOSTATS UPON COMPLETION OF CONSTRUCTION. SUBMIT REPORT THAT THIS WORK HAS BEEN COMPLETED.

2.10 MINIMUM SETTING FOR VAV BOXES SERVING PERIMETER ZONES SHALL BE 30% OF DESIGN. MINIMUM SETTING FOR VAV BOXES SERVING INTERIOR ZONES SHALL BE 0 CFM UNLESS INDICATED OTHERWISE.

2.11 PROVIDE CONTROLS SYSTEMS TRAINING FOR OWNER/LANDLORD WHEN SYSTEM HAS BEEN COMPLETED AND VERIFIED IN ACCORDANCE WITH SPECIFICATIONS. PROVIDE FOUR (4) HOURS MINIMUM FOR NEW HVAC CONTROL SYSTEMS.

2.12 ALL NEW AND RELOCATED TERMINAL UNITS SHALL BE WIRED TO BAS.

2.13 PROVIDE ANY CONTROL WIRING NECESSARY TO COMPLETE THE AIR HANDLING UNIT TEMPERATURE CONTROL SYSTEM.

2.14 AUTOMATIC CONTROL VALVES: SUPPLY ALL REQUIRED AUTOMATIC CONTROL VALVES. HAND THE VALVES TO THE APPROPRIATE PIPING TRADES AT THE SITE FOR INSTALLATION AS PART OF THE PIPING WORK. ENSURE THAT EACH VALVE IS PROPERLY LOCATED & INSTALLED. ALL VALVES ARE TO HAVE POSITION INDICATORS. HEATING VALVES ARE TO BE NORMALLY OPEN UNLESS OTHERWISE SPECIFIED. COOLING VALVES ARE TO BE NORMALLY CLOSED UNLESS OTHERWISE SPECIFIED. EACH CONTROL VALVE MUST BE SUITABLE IN ALL RESPECTS FOR THE APPLICATION, INCLUDING SYSTEM PRESSURE, & MUST HAVE DESIGN OUTPUT & FLOW RATES WITH MAXIMUM PRESSURE DROPS CHILLED WATER VALVES FOR COILS: 28 KPA (4 PSI), HEATING WATER/GLYCOL SOLUTION VALVES FOR COILS OF 17.5 KPA (2.5 PSI), & HEATING WATER VALVES FOR RADIATION UNITS OF 7 KPA (1 PSI).

2.15 AUTOMATIC CONTROL DAMPERS: DAMPERS FOR MODULATING & MIXING APPLICATIONS ARE TO BE PARALLEL BLADE TYPE. DAMPERS FOR OPEN–SHUT SERVICE ARE TO BE OPPOSED BLADE TYPE. DAMPER MOTORS ARE TO BE SIZED TO CONTROL THE DAMPER AGAINST MAXIMUM PRESSURE OR DYNAMIC CLOSING PRESSURE, WHICHEVER IS GREATER, TO SUIT THE SIZES OF DAMPERS INVOLVED, & TO PROVIDE SUFFICIENT FORCE TO MAINTAIN THE DAMPER RATED LEAKAGE CHARACTERISTICS. OPERATORS FOR DAMPERS TO BE CONNECTED TO THE BUILDING FIRE ALARM SYSTEM OR TO FREEZE PROTECTION DEVICES ARE TO BE EQUIPPED WITH ADDITIONAL RELAYS TO PERMIT THE DAMPERS TO RESPOND AND GO TO THE REQUIRED POSITION IN LESS THAN 15 SECONDS UPON RECEIPT OF A SIGNAL. OPERATOR ENCLOSURES ARE TO BE SUITABLE FOR THE ENVIRONMENT IN WHICH THEY ARE LOCATED.
MOTORIZED DAMPER: EQUAL TO T. A. MORRISON & CO. INC. "TAMCO" SERIES 1000 (SERIES 9000 FOR FRESH & EXHAUST AIR APPLICATIONS) ALUMINUM DAMPERS, PARALLEL BLADE TYPE FOR MODULATING & MIXING APPLICATIONS, OPPOSED BLADE TYPE FOR OPEN–SHUT SERVICE. DAMPER MOTORS ARE TO BE EQUAL TO BELIMO EF SERIES, SPRING RETURN, FAIL–SAFE, 24 OR 120 VAC AS REQUIRED, MODULATING OR 2–POSITION AS REQUIRED, OVERLOAD PROTECTED & C/W ENCLOSURE TO SUIT MOUNTING LOCATION. PROVIDE WHERE SHOWN. CONNECT WITH CONTROL WIRING IN CONDUIT AS SHOWN/SPECIFIED.

2.16 CONTROL WIRING: DO ALL REQUIRED CONTROL WIRING FROM 15A–1P CIRCUITS TERMINATED AS PART OF THE ELECTRICAL WORK IN JUNCTION BOXES IN EQUIPMENT ROOMS/AREAS. COORDINATE EXACT JUNCTION BOX LOCATIONS AT THE SITE WITH THE ELECTRICAL TRADE. EXCEPT AS SPECIFIED BELOW, INSTALL WIRING IN CONDUIT. UNLESS OTHERWISE SPECIFIED THE FINAL 600 MM (2') CONNECTIONS TO SENSORS & TRANSMITTERS, & WHEREVER CONDUIT EXTENDS ACROSS FLEXIBLE DUCT CONNECTIONS IS TO BE LIQUID–TIGHT FLEXIBLE CONDUIT. CONTROL WIRING IN CEILING SPACES & WALL CAVITIES MAY BE PLENUM RATED CABLE INSTALLED WITHOUT CONDUIT BUT NEATLY HARNESSED, SECURED, & IDENTIFIED.

2.17 ALL WIRING SHALL BE FT–6 RATED AND SHALL BE RUN IN ¾" EMT CONDUIT BY THIS DIVISION WHERE RUNNING EXPOSED.

2.18 TESTING, ADJUSTING & COMMISSIONING: WHEN CONTROL WORK IS COMPLETE, CHECK THE INSTALLATION OF COMPONENTS & ALL WIRING CONNECTIONS, MAKE ANY REQUIRED ADJUSTMENTS, COORDINATE ADJUSTMENTS WITH PERSONNEL DOING HVAC TESTING, ADJUSTING & BALANCING WORK. & COMMISSION THE CONTROL SYSTEMS.

2.19 AUTOMATIC VALVE: VALVES ARE TO CONFORM TO REQUIREMENTS SPECIFIED FOR HYDRONIC PIPING SHUT–OFF VALVES. HEATING VALVES ARE TO BE NORMALLY OPEN UNLESS OTHERWISE SPECIFIED. COOLING VALVES ARE TO BE NORMALLY CLOSED UNLESS OTHERWISE SPECIFIED. VALVE OPERATORS ARE TO BE EQUAL TO BELIMO EF SERIES ENCLOSED SPRING RETURN TYPE, 1 PHASE, 120 OR 24 VAC AS REQUIRED, SIZED TO TIGHTLY SHUT THE VALVES AGAINST DIFFERENTIALS IMPOSED BY THE SYSTEM, & C/W AN ENCLOSURE TO SUIT THE MOUNTING LOCATION. PROVIDE WHERE SHOWN. CONNECT WITH CONTROL WIRING IN CONDUIT AS SHOWN/SPECIFIED.

3.0 PRODUCTS

3.1 DUCTWORK

3.1.1 GALVANIZED STEEL – RECTANGULAR OR SQUARE: LOCK FORMING GRADE HOT DIP GALVANIZED STEEL, ASTM A653, SHOP FABRICATED, WITH METAL GAUGES IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE (MINIMUM 0.478 MM –22 GGE) TO SUIT THE DUCT CONFIGURATION AND WORKING PRESSURE CLASSIFICATION. THE STEEL THICKNESS AND ZINC COATING CLASS IS TO BE FACTORY STENCILLED ON THE STEEL. GALVANIZING FOR BARE UNCOVERED DUCT TO BE FINISH PAINTED IS TO BE G90. ALL OTHER GALVANIZING IS TO BE G90.

3.1.2 GALVANIZED STEEL – ROUND: FLEXMASTER CANADA LTD. "SPIRA–DUCT"SPIRAL, MECHANICALLY LOCKED FLAT SEAM, SINGLE WALL DUCT FABRICATED FROM G90 GALVANIZED STEEL TO ASTM A53 WITH METAL GAUGES IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS – METAL AND FLEXIBLE FOR 2.5 KPA PRESSURE. FITTINGS AND COUPLINGS ARE TO BE FACTORY MADE"SPIROSAFE"GALVANIZED STEEL FITTINGS ONE METAL GAUGE HEAVIER THAN THE DUCT THEY ARE ASSOCIATED WITH AND EQUIPPED WITH A CAPTIVE U–PROFILE FLEXIBLE EPDM RUBBER GASKET SECURED IN A GROOVE AT EACH END TO PRODUCE A LEAK–PROOF JOINT WHEN FITTINGS ARE SECURED TO THE CONNECTING DUCT BY MEANS OF FROM 2 TO 6 SHEET METAL SCREWS (DEPENDING ON DUCT DIAMETER) BUT NO DUCT SEALER. DUCT SYSTEM PERFORMANCE IS TO MEET SMACNA'S LEAKAGE CLASS 3 REQUIREMENTS AT THE SYSTEM DESIGN STATIC PRESSURE.

3.1.3 GALVANIZED STEEL – ROUND – LINED: FLEXMASTER CANADA LTD. "SPIROSAFE" DOUBLE WALL SELF–SEALING DUCT SYSTEM CONSTRUCTED FROM G60 GALVANIZED STEEL AND CONSISTING OF 24 KG/M3 DENSITY, 25 MM THICK GLASS FIBRE INSULATION MEETING NFPA 90A AND CAN/ULC–S102 REQUIREMENTS AND WRAPPED IN A 0.2 MM THICK NON–WOVEN POLYESTER FABRIC, SANDWICHED BETWEEN DOUBLE WALL DUCT AND FITTINGS. THE OUTER CASING OF DUCT SECTION IS TO BE SPIRAL MECHANICALLY LOCKED, FLAT SEAM, AND THE INNER LINER IS TO BE PERFORATED WITH 3.2 MM PERFORATIONS ON 6.4 MM STAGGERED CENTRES. FITTINGS AND COUPLINGS ARE TO BE CONSTRUCTED AS FOR DUCTS AND FACTORY EQUIPPED WITH A CAPTIVE U–PROFILE EDPM RUBBER GASKET FACTORY SECURED IN A GROOVE AT EACH END AND DESIGNED AND TESTED TO PRODUCE AN AIR–TIGHT JOINT TO SMACNA LEAKAGE CLASS 3 REQUIREMENTS FROM –5 KPA TO +3KPA WHEN SECURED WITH 2 TO 6 SHEET METAL SCREWS (DEPENDING ON DUCT DIAMETER) BUT NO DUCT SEALER.

3.1.4 BLACK STEEL – RECTANGULAR: ASTM A568 HOT OR COLD ROLLED BLACK STEEL, MINIMUM 1.5 MM THICK (16 GGE), 1200 MM WIDE COIL OR SHEET MATERIAL.

3.1.5 ALUMINUM – RECTANGULAR: ALLOY 3003 TEMPER H14 ALUMINUM, ASTM B209, SHOP OR FACTORY FABRICATED, WATER–TIGHT, WITH METAL GAUGES AND FABRICATION IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE TO SUIT THE DUCT WORKING PRESSURE CLASSIFICATION.

3.1.6 FLEXIBLE METALLIC: SPIRALLY WOUND CORRUGATED ALUMINUM TUBE WITH CONTINUOUS LOCK SEAMS, SMACNA FORM "M–UN", ULC LISTED AND LABELLED AS A CLASS 1 AIR DUCT, CONSTRUCTED OF 0.006 THICK ALUMINUM ALLOY TYPE 3003–0, SUPPLIED IN 3 M LENGTHS AND SUITABLE FOR AIR VELOCITIES UP TO 20.2 M/S AND OPERATING PRESSURES FROM 4.97 KPA POSITIVE TO 0.249 KPA NEGATIVE. CONNECT TO RECTANGULAR DUCT USING "SPIN–IN" FITTING WITH DAMPER.SECURE AT EACH END WITH GEAR TYPE CLAMPS.
ACCEPTABLE PRODUCTS ARE:
.1 FLEXMASTER CANADA LTD. "T/A."
.2 ALPHA INDUSTRIES LTD. "ALPHA – FLEX"
.3 OR APPROVED ALTERNATE.

3.1.7 INSULATED FLEXIBLE SUPPLY AIR DUCT: MAXIMUM 3M (10') LENGTHS OF SPIRALLY WOUND, SEMI–RIGID, CORRUGATED ALUMINUM DUCT C/W CONTINUOUS TRIPLE LOCK SEAMS, ANSI/SMACNA FORM "M–1"; ULC–S110 LISTED & LABELLED AS A CLASS 1 AIR DUCT, & FACTORY COVERED WITH 40 MM (1½") THICK, 12 KG/M³ (0.75 LB/FT³) DENSITY FOIL FACED MINERAL WOOL BLANKET INSULATION MEETING FLAME SPREAD & SMOKE DEVELOPED RATINGS OF CAN/ULC–S102. CONNECT TO RECTANGULAR DUCT USING "SPIN–IN" FITTING WITH DAMPER. SEAL RECTANGULAR DUCT AROUND "SPIN–IN".

3.1.8 ACOUSTICALLY LINED DUCT: SHEET METAL DUCT AS ABOVE BUT LINED WITH MINIMUM 25 MM (1") THICK MINERAL WOOL ACOUSTIC LINING MATERIAL COATED ON THE AIRSIDE FACE WITH BLACK COATING, MEETING NFPA 90A REQUIREMENTS & FLAME SPREAD & SMOKE DEVELOPED RATINGS OF CAN/ULC–S102, FLEXIBLE FOR ROUND DUCTS, BOARD TYPE FOR RECTANGULAR DUCTS. PROVIDE FOR 1ST 3.6 M (12') OF SUPPLY & RETURN DUCTWORK FROM A/C SUPPLY FANS, ALL TRANSFER AIR DUCTS & WHEREVER ELSE SHOWN/SPECIFIED. INSTALL AS PER ANSI/SMACNA HVAC DUCT CONSTRUCTION STANDARDS METAL & FLEXIBLE, INCLUDING FLEXIBLE DUCT LINER DETAIL.

3.1.9 TRANSFER AIR DUCT: GALVANIZED SHEET METAL DUCT SIZED & SHAPED AS SHOWN, C/W ACOUSTIC LINING.

3.2 LOUVER:

EQUAL TO VENTEX 2425 WEATHER PROOF, EXTRUDED ALUMINUM ALLOY 3003–H14, COLOUR AS SELECTED FROM STANDARD COLOUR RANGE, WITH DRAINABLE BLADES, THICKNESS TO SUIT WALL THICKNESS, 12MM (½") MESH ALUMINUM BIRD SCREEN, & ALL REQUIRED MOUNTING HARDWARE. PROVIDE WHERE SHOWN. CONFIRM SIZE & FINISH PRIOR TO ORDERING. PROVIDE MATCHING INSULATED BLANK–OFF PANEL WHERE REQUIRED.

3.3 DUCT SYSTEM JOINT SEALANT

3.3.1 ULC LISTED AND LABELLED, PREMIUM GRADE, GREY COLOUR, WATER BASE, NON–FLAMMABLE DUCT SEALER, BRUSH OR GUN APPLIED, WITH A MAXIMUM FLAME SPREAD RATING OF 5 AND SMOKE DEVELOPED RATING OF 0.

3.4 ROUND TO RECTANGULAR DUCT CONNECTIONS

3.4.1 EQUAL TO FLEXMASTER CANADA LTD. GALVANIZED STEEL, FLARED, FLANGED OR NOTCHED "SPIN–IN" ROUND DUCT TAKE–OFF COLLARS IN ACCORDANCE WITH FIG. 2–6 OF SMACNA HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE.

3.5 SPLITTER DAMPERS

3.5.1 MINIMUM #20 GAUGE. DAMPER BLADE CONSTRUCTED OF SAME MATERIAL AS DUCT, REINFORCED TO SUIT BLADE SIZE & SYSTEM VELOCITY, & C/W DYN AIR INC. #Q–50 "DYN–A–QUAD S–S" QUADRANT REGULATOR WITH RW–50 BACKUP WASHERS, SQUARE BEARING PIN, & SIDE PIN. PROVIDE IN SUPPLY DUCTS AT BRANCH CONNECTIONS OFF MAINS, & WHEREVER ELSE SHOWN. OPERATORS FOR DAMPERS IN INSULATED DUCTS TO BE C/W STAND–OFF MOUNTING BRACKETS.

3.6 THERMAL BLANKET MATERIAL

3.6.1 EQUAL TO NAILOR INDUSTRIES INC. MODEL 0725 OR MODEL 0726 CERAMIC FIBRE MATERIAL WITH ROUND OR RECTANGULAR OPENING FOR A GRILLE OR DIFFUSER NECK.

3.7 AIR TURNING VANES

3.7.1 FOR SQUARE ELBOWS – MULTIPLE–RADIUS TURNING VANES, INTERCONNECTED WITH BARS, ADEQUATELY REINFORCED TO SUIT THE PRESSURE AND VELOCITY OF THE SYSTEM, CONSTRUCTED OF THE SAME MATERIAL AS THE DUCT THEY ARE ASSOCIATED WITH, AND IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS METAL AND FLEXIBLE.

3.8 MANUAL BALANCING (VOLUME) DAMPERS

3.8.1 DUCT VOLUME DAMPER: EQUAL TO NAILOR INDUSTRIES MODELS 1010 & 1020 SINGLE OR PARALLEL BLADE FOR RECTANGULAR DAMPERS, MODEL 1090 SINGLE BLADE FOR ROUND DAMPERS, EACH C/W A LOCKING HAND QUADRANT OPERATOR, WITH STANDOFF MOUNTING FOR INSULATED DUCTS. PROVIDE IN OPEN–END DUCTS, & WHEREVER ELSE SHOWN. EACH DESIGNED TO MAINTAIN THE INTERNAL FREE AREA OF THE CONNECTING DUCT, AND EACH COMPLETE WITH:

.1 A HEXAGONAL OR SQUARE SHAFT EXTENSION THROUGH THE FRAME
.2 NON–STICK, NON–CORROSIVE SYNTHETIC BEARINGS FOR RECTANGULAR DAMPERS, FLANGE STAINLESS STEEL BEARINGS FOR ROUND DAMPERS
.3 BLADE STOPS FOR SINGLE BLADE DAMPERS, DESIGNED TO PREVENT THE BLADE FROM MOVING MORE THAN 90O
.4 LINKAGE FOR MULTIPLE BLADE DAMPERS
.5 A LOCKING HAND QUADRANT DAMPER OPERATOR WITH 50 MM STANDOFF MOUNTING.

3.9 BACKDRAFT DAMPERS

3.9.1 T.A. MORRISON & CO. INC. "TAMCO" SERIES 7000 WT FOR VERTICAL MOUNTING, 7000 CW FOR HORIZONTAL MOUNTING, INSULATED, COUNTERBALANCED BACKDRAFT DAMPERS, 65 MM DEEP, SIZED AS SHOWN AND COMPLETE WITH:

.1 EXTRUDED ALUMINUM FRAME AND BLADES MINIMUM 1.58 MM THICK, WITH CAPTIVE EXTRUDED TPE THERMOPLASTIC BLADE GASKETS AND SIDE SEALS IN SLOTS INTEGRAL WITH THE ALUMINUM EXTRUSIONS
.2 6.4 MM THICK POLYETHYLENE FOAM INSULATION CAPPED WITH A PVC LINER FOR THE INTERIOR SIDE OF EACH DAMPER BLADE, AND POLYETHYLENE FOAM INSULATION FOR THE FRAME
.3 DAMPER BLADE COUNTERWEIGHTS INTERNAL TO THE FRAME AND CONSISTING OF ADJUSTABLE WEIGHTS FASTENED TO BRACKETS WHICH ARE RIVETED TO THE BLADES
.4 DUAL PVC LINKAGE TRACKS AT EACH END OF THE BLADES, AND NON–CORROSIVE LINKAGE WITH DELRIN PIVOT ARM AND DELRIN BEARINGS

3.10 FUSIBLE LINK DAMPERS

3.10.1 CURTAIN BLADE TYPE, DYNAMIC, GALVANIZED STEEL (UNLESS OTHERWISE SPECIFIED) FUSIBLE LINK DAMPERS, ULC CLASSIFIED TO STANDARD CAN/ULC S112 AND IN ACCORDANCE WITH NFPA 90A REQUIREMENTS, FACTORY TESTED FOR CLOSURE UNDER AIRFLOW, 1 1/2 HOUR OR 3 HOUR RATED AS REQUIRED, AND COMPLETE WITH A CONSTANT FORCE TYPE 301 STAINLESS STEEL CLOSURE SPRING, A BLACK LOCK ASSEMBLY, A STEEL SLEEVE, AND, UNLESS OTHERWISE SPECIFIED, A 74 OC RATED STANDARD FUSIBLE LINK.

3.10.2 FUSIBLE LINK DAMPERS ARE TO BE TYPE "B" OR TYPE "C" (AS REQUIRED) WITH THE FOLDED CURTAIN BLADE OUT OF THE AIR STREAM EXCEPT WHERE DAMPER SIZE OR LOCATION REQUIRES THE USE OF TYPE "A" DAMPERS WITH THE CURTAIN BLADE IN THE AIR STREAM.

3.10.3 ACCEPTABLE MANUFACTURERS ARE:
.1 RUSKIN MANUFACTURING
.2 NAILOR INDUSTRIES INC.
.3 GREENHECK
.4 NCA MANUFACTURING LTD.
.5 OR APPROVED ALTERNATE.

3.11 DUCT FIRE DAMPER

3.11.1 CURTAIN BLADE TYPE, DYNAMIC, GALVANIZED STEEL FUSIBLE LINK DAMPER, ULC CLASSIFIED TO CAN/ULC–S112 & AS PER NFPA 90A REQUIREMENTS. 1½ OR 3 HOUR RATED AS REQUIRED, &, UNLESS OTHERWISE INDICATED, C/W A 74° C (165° F) FUSIBLE LINK. PROVIDE WHERE SHOWN. INSTALL IN ACCORDANCE WITH CODE REQUIREMENTS, INCLUDING EXPANSION CLEARANCE BETWEEN DAMPER SLEEVE.

3.12 FLEXIBLE CONNECTION MATERIAL

3.12.1 PROVIDE A MINIMUM OF 100 MM (4") FLEXIBLE CONNECTION WHERE DUCTS/PLENUMS/CASINGS CONNECT TO FANS, & WHEREVER ELSE SHOWN.

3.12.2 WATERPROOF, INDOOR–OUTDOOR TYPE FLEXIBLE CONNECTION MATERIAL MEETING REQUIREMENTS OF NFPA 90A, CONSISTING OF WOVEN GLASS FIBRE FABRIC COATED ON BOTH SIDES WITH SYNTHETIC RUBBER. ACCEPTABLE PRODUCTS ARE:
.1 DURO DYNE CANADA INC. "DUROLON"
.2 DYN AIR INC. "HYFLON"
.3 OR APPROVED ALTERNATE.

3.12.3 WATERPROOF, FLAMEPROOF, HIGH TEMPERATURE FLEXIBLE CONNECTION MATERIAL MEETING REQUIREMENTS OF NFPA 90A, CONSISTING OF A WOVEN GLASS FIBRE FABRIC COATED ON BOTH SIDES WITH SILICONE RUBBER TO PRODUCE A MATERIAL WITH AN OPERATING TEMPERATURE RANGE OF FROM 50°C TO 260° C. ACCEPTABLE PRODUCTS ARE:
.1 DURO DYNE CANADA INC. "THERMOFAB"
.2 DYN AIR INC. "SILICON HI–T"
.3 OR APPROVED ALTERNATE.

3.13 ROOF DUCT SUPPORTS

3.13.1 EQUAL TO PORTABLE PIPE HANGERS (CANADA) INC. MODEL PPH–D ADJUSTABLE DUCT SUPPORT ASSEMBLIES SIZED TO SUIT THE DUCT SIZE, EACH ASSEMBLY COMPLETE WITH INJECTION MOULDED RECYCLED PLASTIC AND CARBON BLACK BASES AND TUBULAR HOT DIP

4.2 ACOUSTIC:

4.2.1 MANVILLE, "LINACOUSTIC PERMACOTE HP" OR APPROVED EQUAL, 1" (25MM) THICK ACOUSTIC LINING MATERIAL MEETING NFPA 90A AND ASTM C1071, G21 AND G22 REQUIREMENTS, NOT SUPPORTING MICROBIAL GROWTH AND FLAME SPREAD AND SMOKE DEVELOPED FIRE HAZARD RATINGS OF CAN4_S102, CONSISTING OF A BONDED FIBERGLASS MAT COATED ON THE INSIDE (AIR SIDE) FACE WITH A BLACK FIRE RESISTANT COATING..

4.2.2 PROVIDE ACOUSTIC LINING ON FIRST 12 FEET FROM UNIT OF A/C SUPPLY DUCTS AND RETURN DUCTS. ENLARGE DUCTS TO PROVIDE INSIDE CLEAR DIMENSIONS AS SHOWN ON DRAWINGS.

4.2.3 PROVIDE ACOUSTIC LINING IN DUCTWORK WHEREVER SHOWN OR SPECIFIED ON THE DRAWINGS, IN DUCTWORK DOWNSTREAM OF AIR TERMINAL BOXES FOR A DISTANCE OF 2.4 M (8') MEASURED ALONG THE DUCT & OUTWARD FROM THE BOX IN ALL DIRECTIONS, & FOR ALL TRANSFER AIR DUCTS. INSTALL LINING IN ACCORDANCE WITH REQUIREMENTS OF ANSI/SMACNA HVAC DUCT CONSTRUCTION STANDARDS METAL & FLEXIBLE, HOWEVER, REGARDLESS OF VELOCITY, AT LEADING & TRAILING EDGES OF DUCT LINER SECTIONS, PROVIDE GALVANIZED STEEL NOSING CHANNEL AS PER THE DETAIL ENTITLED FLEXIBLE DUCT LINER INSTALLATION FOUND IN THE ANSI/SMACNA MANUAL REFERRED TO ABOVE.

PLUMBING, DRAINAGE, AND PIPING

1.0 GENERAL

1.1 WORK SHALL INCLUDE ALL PLUMBING AND DRAINAGE AS REQUIRED AND/OR SHOWN ON THE DRAWINGS. ALL WORK THAT IS INSTALLED, TESTED, AND INSPECTED IN ACCORDANCE WITH THE NATIONAL PLUMBING CODE AND LOCAL PLUMBING CODES, BY-LAWS, AND REGULATIONS.

1.2 ALL REQUIRED TESTS SHALL BE MADE IN THE PRESENCE OF THE AUTHORIZED INSPECTOR CERTIFYING THE TEST. UPON COMPLETION OF THE TEST, WRITTEN REPORT TO THE ARCHITECT, SUMMARIZING COMPLETE TEST DATA AND RESULTS.

1.3 PROVIDE SLEEVES WHERE PIPING PASSES THROUGH FOUNDATIONS, FLOORS, ROOFS, OR WALLS. SLEEVES SHALL BE SCHEDULE 40 GALVANIZED OR WROUGHT IRON PIPE, OR TYPE "L" OR "K" COPPER TUBE THROUGH FOUNDATIONS, FLOORS, OR ROOFS, AND OF 20 GAUGE GALVANIZED STEEL SHEET THROUGH ABOVE GRADE WALLS. SLEEVES ARE NOT REQUIRED FOR PLUMBING VENTS. ALL SLEEVES SHALL BE SIZED TO ACCEPT INSULATED PIPE.

1.4 VERIFY EXISTING LOCATIONS AND INVERT ELEVATIONS FOR SANITARY DRAINS ON SITE BEFORE COMMENCEMENT OF WORK.

1.5 UNLESS OTHERWISE NOTED, SLOPE HORIZONTAL DRAINAGE PIPING 3"ø (75MM) AND SMALLER AT 2% SLOPE, AND PIPING LARGER THAN 3" (75MM) AT 1% SLOPE.

1.6 PROVIDE CLEANOUTS SUITABLE IN ALL RESPECTS FOR THE INTENDED APPLICATION WHERE SHOWN ON THE DRAWINGS OR WHERE REQUIRED BY CODE(S). CLEANOUTS IN PIPING 4" (100MM) AND SMALLER SHALL BE SAME SIZE AS PIPE, OTHER CLEANOUTS SHALL BE A MINIMUM 4" (100MM).

1.7 INSTALL ALL COMPONENTS IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

1.8 INSTALL SHOCK ARRESTORS ON HOT AND COLD WATER PIPING SERVING FIXTURES OR EQUIPMENT EQUIPPED WITH QUICK CLOSING VALVES.

1.9 PLUMBING FIXTURES INCLUDING DOMESTIC HOT WATER HEATERS SHALL BE NEW, OF FIRST QUALITY, IN PERFECT CONDITION, AND INSTALLED IN BEST WORKMANLIKE MANNER. VERIFY PLUMBING FIXTURE QUANTITIES AND LOCATIONS WITH ARCHITECTS/INTERIOR DESIGNER'S DRAWINGS. RELOCATION OF EXISTING DOMESTIC WATER HEATERS/TANKS IS STRICTLY NOT PERMITTED.

1.10 REMOVE ALL ABANDONED WATER SUPPLY PIPES, DRAIN LINES, AND VENT LINES BACK TO THE CORE RISER AND PROPERLY CAP AND/OR VALVE.

1.11 WHERE DOMESTIC PIPING CONNECTIONS ARE REQUIRED TO EXISTING DOMESTIC WATER PIPING AND NO PROVISIONS ARE AVAILABLE, PROVIDE "FREEZING" AS REQUIRED USING BASE BUILDING STANDARDS – MECHANICAL CONTRACTOR SHALL VISIT THE SITE TO ASCERTAIN REQUIREMENTS BEFORE SUBMITTING PRICE. WHEN REQUIRED, OBTAIN WRITTEN APPROVAL FROM LANDLORD BEFORE COMMENCEMENT OF THIS WORK. COORDINATE SCHEDULING OF THIS WORK WITH PROJECT MANAGER, BUILDING MANAGER, AND BUILDING OPERATOR. SUBMIT SHOP DRAWINGS FOR "FREEZING" KIT AND IMPLEMENT LANDLORD APPROVED PROCEDURES AND MANUFACTURER'S RECOMMENDATIONS.

1.12 CHECK AND VERIFY LOCATION OF EXISTING MECHANICAL AND ELECTRICAL INTERFERENCES IN CEILING SPACE OF FLOOR BELOW INCLUDING STRUCTURAL FLOOR SLAB IN ALL AREAS REQUIRING CORE DRILLING AND/OR CUTTING OF FLOOR SLAB.

1.13 FINAL LOCATION OF ALL NEW PLUMBING FIXTURES SHALL BE COORDINATED ON SITE WITH ALL TRADES. REFER TO ARCHITECTURAL DRAWINGS AND DETAILS FOR EXACT LOCATION OF PLUMBING FIXTURES. ALL PLUMBING FIXTURES SHALL BE PIPED COMPLETE WITH ALL NECESSARY APPURTENANCES, SUCH AS VENTS, SANITARY, HOT AND COLD WATER CONNECTIONS, ETC.

1.14 PROVIDE TRAP SEAL PRIMER FOR ALL NEW FLOOR DRAINS, FUNNEL FLOOR DRAINS, AND HUB DRAINS.

1.15 PROVIDE INDEPENDENT SUPPORTS EVERY 6'–0" (1800MM) MINIMUM FOR 1" (25MM) OR LESS COPPER PIPING, AND EVERY 8'–0" (2400MM) MINIMUM FOR COPPER PIPING 1–1/2"ø (40MM) AND LARGER. PROVIDE INDEPENDENT SUPPORTS EVERY 8'–0" (2400MM) MINIMUM FOR ALL CAST IRON PIPING. REFER TO BASE BUILDING TENANT DESIGN MANUAL, AND USE WHICHEVER REQUIREMENT IS MORE STRINGENT.

1.16 PROVIDE ISOLATING GATE VALVES ON MAIN AND/OR BRANCH LINES, AND AT ALL EQUIPMENT OR FIXTURES SERVED WITH HOT AND COLD WATER LINES. ALL VALVES SHALL BE SUITABLE FOR THE OPERATING PRESSURE OF THE SYSTEM IN WHICH THEY ARE INSTALLED. MAKE AND MODEL SHALL BE IN ACCORDANCE WITH BASE BUILDING STANDARDS AND SPECIFICATIONS, UNLESS NOTED OTHERWISE.

1.17 PROVIDE BACKFLOW PREVENTORS TO EQUIPMENT CONNECTIONS C/W DRAIN TO NEAREST FUNNEL DRAIN. BACKFLOW PREVENTORS SHALL BE INSTALLED TO CSA B64.10 REQUIREMENTS, WITH MOUNTING HEIGHT 30" (750MM) TO 50" (1250MM) A.F.F.

1.18 PROVIDE DI–ELECTRIC COUPLINGS/UNIONS WHERE COPPER PIPING CONNECTS TO FERROUS METAL AND PLUMBING EQUIPMENT SUCH AS STEEL STORAGE TANKS, PRVS, AND/OR STEEL, BLACK IRON, CAST IRON, OR GALVANIZED IRON PIPING.

1.19 PIPE HANGERS SHALL CONSIST OF GRINNELL NO. 260 CLEVIS HANGERS WITH THREADED RODS AND SUITABLE CLAMPING DEVICE AT TOP END. GRAPPLER STRAP HANGERS ARE NOT ACCEPTABLE.

1.20 WHERE SUPPORTING COPPER PIPE, THE PIPE SHALL BE ISOLATED FROM THE HANGER WITH ELECTROLYTIC ACTION TAPE OR EQUIVALENT.

1.21 VERTICAL PIPING SHALL BE SUSPENDED AT THE FLOOR AND/OR WITH INTERMEDIATE WALL SUPPORTS AT 10'–0" INTERVALS FOR PIPING 2" AND OVER, AND 6'–0" INTERVALS OR PIPING UP TO 1½". MORE FREQUENT SUPPORTS SHALL BE PROVIDED WHERE NECESSARY TO PREVENT MOVEMENT.

1.22 ALL PIPING SHALL BE INSTALLED TO MAKE PROVISION FOR THE EXPANSION AND CONTRACTION OF PIPES AND TO BE FREE FROM STRAINS AND DISTORTIONS. PROVIDE SWING JOINTS ON ALL BRANCH LINES, EXPANSION LOOPS ON ALL STRAIGHT RUNS OVER 100 FEET, AND ANCHORS TO LIMIT HORIZONTAL EXPANSION.

1.23 PROVIDE DRAIN COCKS AT ALL LOW POINTS OF WATER SYSTEMS TO ALLOW DRAINAGE OF SYSTEM AND WHERE REQUIRED TO PREVENT FREEZING.

1.24 ALL EXPOSED FITTINGS, VALVES, WASTE, AND WATER PIPING SHALL BE CHROME PLATED IN WASHROOM AND KITCHEN AREAS AND OTHER FINISHED AREAS.

1.25 PROVIDE STOPS TO EACH PLUMBING FIXTURE OF LOCKSHIELD OR HANDWHEEL TYPE AS SPECIFIED. PROVIDE ISOLATING VALVES TO EACH GROUP OF PLUMBING FIXTURES.

1.26 PROVIDE COMPLETE PLUMBING VENT SYSTEM AS REQUIRED BY O.B.C. AND LOCAL AUTHORITIES.

1.27 PROVIDE AIR COLUMN CHAMBERS AT EACH GROUP OF PLUMBING FIXTURES. THESE SHALL BE 1" MINIMUM PIPE WITH CAP. 18" LONG MOUNTED ON THE TOP OF THE SUPPLY HEADERS OF HOT AND COLD WATER. WHERE THE HEADER IS LARGER THAN 1", THE COLUMN SHALL BE ONE SIZE LARGER THAN THE HEADER. ALTERNATIVELY, PROVIDE ANCON "SHOK–GUARD" OR APPROVED EQUAL WATER HARMER ARRESTOR, SIZED FOR THE APPLICATIONS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

1.28 PROVIDE AUTOMATIC TRAP SEAL PRIMER, FOR EVERY FLOOR DRAIN, HUB DRAIN, AND COMBINATION DRAINS. TRAP SEAL PRIMER SHALL BE CONNECTED TO NEAREST WATER SUPPLY. WHERE SEVERAL TRAPS WITH PRIMER REQUIREMENTS ARE LOCATED IN CLOSE VICINITY, THE USE OF A PROPERLY SIZED FLUSH TANK IS ACCEPTABLE.

1.29 THE CONTRACTOR FOR THIS DIVISION OF WORK IS REQUIRED TO READ THE SPECIFICATIONS AND REVIEW DRAWINGS FOR ALL DIVISIONS OF WORK AND IS RESPONSIBLE FOR THE COORDINATION OF THIS WORK AND THE WORK OF ALL SUBCONTRACTORS WITH ALL DIVISIONS OF WORK. IT IS THIS CONTRACTOR'S RESPONSIBILITY TO PROVIDE ALL SUBCONTRACTORS WITH A COMPLETE SET OF BID DOCUMENTS.

1.30 ALL ROOF CUTTING, PATCHING AND FLASHING REQUIRED TO INSTALL THE PLUMBING SYSTEMS SHALL BE BY A LANDLORD APPROVED ROOFING CONTRACTOR AT THIS CONTRACTOR'S EXPENSE. COORDINATE ROOF PENETRATIONS WITH LANDLORD AND THE GENERAL CONTRACTOR.

1.31 ALL PLUMBING AND DRAINAGE WORK SHALL BE INSTALLED AS REQUIRED BY ONTARIO PLUMBING CODE AND ONTARIO BUILDING CODE, REVISED TO DATE, AND SHALL MEET THE REQUIREMENTS OF ALL PROVINCIAL AND MUNICIPAL AUTHORITIES HAVING JURISDICTION.

1.32 CONTRACTOR TO ENSURE INCOMING WATER PRESSURE. BACKFLOW PREVENTER SIZE BASED ON INCOMING PRESSURE OF 50 – 60 PSI. CONTRACTOR TO SUPPLY AND INSTALL BOOSTER PUMP IF INCOMING WATER PRESSURE IS LOW.

2.0 DOMESTIC WATER SYSTEMS

2.1 PROVIDE DOMESTIC WATER PIPING SYSTEMS. ALL PRODUCTS IN CONTACT WITH DOMESTIC WATER ARE TO BE NSF/ANSI 61 CERTIFIED LEAD FREE.

2.2 DOMESTIC WATER SERVICE: MAKE ARRANGEMENTS WITH THE MUNICIPALITY FOR INSTALLATION OF DOMESTIC WATER SERVICE FROM THE MUNICIPAL MAIN TO THE PROPERTY LINE. PAY CHARGES LEVIED BY THE MUNICIPALITY FOR THE SERVICE CONNECTION WORK IF & WHERE REQUIRED, BRACE & SECURE U/G WATER SERVICE PIPE ENTERING THE BUILDING IN ACCORDANCE WITH MUNICIPAL STANDARDS & DETAILS & PAINT METALLIC RESTRAINT DEVICES WITH 2 COATS OF CORROSION RESISTANT ASPHALT BASE COATING PRIOR TO BACKFILLING. PROVIDE DIELECTRIC UNIONS IN CONNECTIONS BETWEEN COPPER PIPE & FERROUS PIPE OR EQUIPMENT. SECURE TRAP SEAL PRIMER TUBING EMBEDDED IN CONCRETE TO REINFORCING STEEL & BE PRESENT DURING THE CONCRETE POUR TO ENSURE THAT THE TUBING IS NOT DAMAGED OR DISLODGED. PROVIDE BALANCING VALVES IN DOMESTIC HOT WATER RECIRCULATION PIPING WHERE SHOWN OR REQUIRED. FLUSH NEW OR REWORKED DOMESTIC WATER PIPING AFTER LEAKAGE TESTING IS COMPLETE, & WHEN FLUSHING IS COMPLETE, DISINFECT THE PIPING WITH A SOLUTION OF SODIUM HYPOCHLORITE TO AWWA B–300 IN ACCORDANCE WITH REQUIREMENTS OF THE MINISTRY OF ENVIRONMENT DOCUMENT ENTITLED PROCEDURE FOR DISINFECTION OF DRINKING WATER IN ONTARIO, UNDER SUPERVISION OF A P. ENG. AUTHORIZED BY THE PROFESSIONAL ENGINEERS OF ONTARIO TO PERFORM SUCH WORK, & WHEN DISINFECTING IS COMPLETE, SUBMIT WATER SAMPLES TO A CERTIFIED LABORATORY FOR PURITY TESTING & WHEN TESTING INDICATES PURE WATER IN ACCORDANCE WITH GOVERNING STANDARDS, SUBMIT A COPY OF THE TEST RESULTS & FILL THE SYSTEMS

3.0 DRAINAGE & VENT SYSTEMS

3.1 DRAINAGE SERVICE: MAKE ARRANGEMENTS WITH THE MUNICIPALITY FOR INSTALLATION OF DRAINAGE SERVICE FROM THE MUNICIPAL MAIN(S) TO THE PROPERTY LINE. PAY CHARGES LEVIED BY THE MUNICIPALITY FOR THE SERVICE CONNECTION WORK.

3.2 BUILDING WEEPER SYSTEM PIPING: PROVIDE BUILDING FOUNDATION WEEPER PIPING & EXTEND TO A CONCRETE SAND SETTLING SUMP AS SHOWN ON THE DRAWINGS. WEEPER PIPING IS TO BE PERFORATED PVC WITH AN INTEGRAL GEODESIC SOCK. PROVIDE SAND SETTLING SUMP PIPING, & CONNECT THE SUMP DISCHARGE PIPING AS SHOWN.

3.3 SLOPE HORIZONTAL DRAINAGE PIPING A/G IN SIZES TO & INCLUDING 75 MM (3") DIA. 25 MM (1") IN 1.2 M (4'), & PIPE 100 MM (4") DIAMETER & LARGER 25 MM (1") IN 2.4 M (8'). INSTALL & SLOPE U/G DRAINAGE PIPING TO INVERTS OR SLOPES INDICATED TO FACILITATE STRAIGHT & TRUE GRADIENTS BETWEEN THE POINTS SHOWN, & VERIFY AVAILABLE SLOPES BEFORE INSTALLING THE PIPES. SLOPE HORIZONTAL BRANCHES OF VENT PIPING DOWN TO THE FIXTURE OR PIPE TO WHICH THEY CONNECT WITH A MINIMUM PITCH OF 25 MM (1") IN 1.2 M (4'). EXTEND VENT STACKS UP THROUGH THE ROOF GENERALLY WHERE SHOWN, BUT WITH EXACT LOCATIONS TO SUIT SITE CONDITIONS & IN ANY CASE A MINIMUM OF 3 M (10') FROM FRESH AIR INTAKES & TERMINATE VENT STACKS A MINIMUM OF 330 MM (13") ABOVE THE ROOF, (INCLUDING ROOF PARAPETS) IN VENT STACK COVERS. PROVIDE PROPER DIELECTRIC UNIONS AT CONNECTIONS BETWEEN COPPER PIPE & FERROUS PIPE OR EQUIPMENT.

4.0 MATERIAL

4.1 UNDERGROUND SANITARY DRAINAGE PIPING: EQUAL TO IPEX "RING–TITE" DR35 RIGID PVC HUB & SPIGOT SEWER PIPE & FITTINGS TO CAN/CSA B182.2, WITH GASKET JOINTS ASSEMBLED WITH PIPE LUBRICANT.

4.2 UNDERGROUND STORM DRAINAGE PIPING: EQUAL TO IPEX "RING–TITE" DR35 RIGID PVC HUB & SPIGOT SEWER PIPE & FITTINGS TO CAN/CSA B182.2, WITH GASKET JOINTS ASSEMBLED WITH PIPE LUBRICANT.

4.3 UNDERGROUND VENT PIPING: AS FOR UNDERGROUND DRAINAGE PIPING.

4.4 ABOVE GROUND SANITARY DRAINAGE PIPING: FOR PIPING TO 40 MM (1½") DIA: TYPE DWV COPPER TO ASTM B306, WITH FORGED COPPER SOLDER TYPE DRAINAGE FITTINGS & 50% LEAD – 50% TIN SOLDER JOINTS. FOR PIPING LARGER THAN 40 MM (1½") DIA., EQUAL TO IPEX "SYSTEM XFR" 15–50 RIGID IPS PVC DRAIN, WASTE & VENT PIPE & FITTINGS TO CAN/CSA B181.2, C/W A FLAME SPREAD & A SMOKE DEVELOPED RATING TO CAN/ULC–S102–2, SOLVENT WELD JOINTS, &, FOR FIRE BARRIER PENETRATION, APPROVED FIRESTOP CONFORMING TO CAN4–S115.

4.5 ABOVE GROUND STORM DRAINAGE PIPING: FOR PIPING TO 40 MM (1½") DIA.: TYPE DWV COPPER TO ASTM B306, WITH FORGED COPPER SOLDER TYPE DRAINAGE FITTINGS & 50% LEAD – 50% TIN SOLDER JOINTS. FOR PIPING LARGER THAN 40 MM (1½") DIA., EQUAL TO IPEX "SYSTEM XFR" 15–50 RIGID IPS PVC DRAIN, WASTE & VENT PIPE AND FITTINGS TO CAN/CSA B181.2, C/W A FLAME SPREAD & A SMOKE DEVELOPED RATING TO CAN/ULC–S102–2, SOLVENT WELD JOINTS, &, FOR FIRE BARRIER PENETRATION, APPROVED FIRESTOP CONFORMING TO CAN4–S115.

4.6 CONDENSATE DRAIN: AS FOR 40 MM (1½") DIA ABOVE GROUND SANITARY DRAINAGE PIPING.

4.7 ABOVE GROUND VENT PIPING: AS FOR ABOVE GROUND DRAINAGE PIPING.

4.8 PUMPED DRAINAGE PIPING: SCHEDULE 40 MILD STEEL, GALVANIZED, ASTM A53, FACTORY OR SITE ROLLED GROOVED, C/W VICTAULIC GALVANIZED DUCTILE IRON GROOVED END FITTINGS &, UNLESS OTHERWISE SPECIFIED, VICTAULIC STYLE 77 HOT DIP GALVANIZED MECHANICAL JOINT COUPLINGS WITH GRADE M GASKETS.

4.9 PUMPED DRAINAGE PIPING SHUT–OFF VALVE: CLASS 600, 4140 KPA (600 PSI) WOG RATED FULL PORT BALL VALVES C/W A FORGED BRASS BODY, BLOWOUT–PROOF STEM, CHROME PLATED SOLID BRASS BALL, SOLDER OR SCREWED ENDS AS REQUIRED, & REMOVABLE LEVER HANDLE.

4.10 PUMPED DRAINAGE PIPING CHECK VALVE: CLASS 125, BRONZE, 1725 KPA (250 PSI) WOG RATED VERTICAL LIFT CHECK VALVE WITH SOLDER OR SCREWED ENDS AS REQUIRED, &, FOR HORIZONTAL PIPING, CLASS 125, BRONZE 1380 KPA (200 PSI) WOG RATED SWING CHECK VALVES WITH SOLDER OR SCREWED ENDS.

4.11 WEEPER SYSTEM PIPING: CORRUGATED PERFORATED PVC PIPE SIZED AS SHOWN, C/W AN INTEGRAL GEODESIC SOCK, & SUPPLIED IN COILS.

4.12 WATER METER: EQUAL TO NEPTUNE TECHNOLOGY GROUP (CANADA) LTD. PROOF, IN LINE SERVICEABLE METER IN ACCORDANCE WITH REQUIREMENTS OF AWWA C700 AND NSF/ANSI 61, DRINKING WATER SYSTEM COMPONENTS, SUITABLE FOR CONNECTION OF A REMOTE AUTOMATIC READING & BILLING UNIT & C/W A SEALED REGISTER & A POSITIVE DISPLACEMENT MEASURING CHAMBER.

4.13 UNDERGROUND DOMESTIC COLD WATER PIPING: FOR PIPING TO 75 MM (3") DIA. TYPE "K" SOFT COPPER TO ASTM B88, SUPPLIED IN A CONTINUOUS COIL WITH NO JOINTS IF POSSIBLE, & C/W, IF JOINTS ARE REQUIRED, COMPRESSION TYPE FLARED JOINT COUPLINGS. FOR PIPING 100 MM (4") DIA. & LARGER, ULC LISTED, RIGID, CLASS 150, DR18 PRESSURE RATED BELL & SPIGOT PATTERN PVC PIPE TO CAN/CSA–B137.3, & CSA CERTIFIED FITTINGS TO CAN/CSA B137.2, & AWWA C900, C/W GASKET JOINTS, & RESTRAINT HARDWARE AS REQUIRED. NOTE THAT:

.1 PIPING TO FLOOR DRAIN TRAP PRIMER CONNECTIONS (U/G OR CONCRETE ENCASED) IS TO BE EQUAL TO VERSA FITTINGS AND MFG. INC. 12 MM (½") DIA., HIGH DENSITY, SEMI–RIGID POLYETHYLENE TUBING, 1380 KPA (200 PSI) RATED

.2 PIPING FOR IRRIGATION SYSTEMS IS TO BE EQUAL TO IPEX FLEXIBLE POLYETHYLENE PIPE TO CAN/CSA B137.1, 690 KPA (100 PSI) RATED, C/W INSERTION TYPE FITTINGS & COUPLINGS SECURED WITH SERIES 300 STAINLESS STEEL GEAR TYPE CLAMPS

4.14 ABOVE GROUND DOMESTIC COLD WATER PIPING: TYPE "L" HARD DRAWN SEAMLESS COPPER TO ASTM B88, C/W COPPER SOLDER TYPE FITTINGS TO ASME/ANSI B16.18 & SOLDERED JOINTS USING NSF/ANSI 61 CERTIFIED SILVER ALLOY LEAD–FREE SOLDER, OR, AT YOUR OPTION, TYPE "L" HARD DRAWN SEAMLESS COPPER TO ASTM B88 WITH VIEGA "PROPRESS" COPPER FITTINGS WITH "SMART CONNECT" FEATURE, EDPM SEALS, & PRESSURE TYPE CRIMPED JOINTS MADE BY USE OF A RIGID TOOL CO. MODEL 330–B OR MODEL 330–C ELECTRO–HYDRAULIC CRIMPING TOOL. NOTE THAT:

.1 WATER PIPING WITHIN SUITES MAY BE PEX NON–BARRIER TYPE CROSS–LINKED POLYETHYLENE PIPING IN ACCORDANCE WITH CAN/CSA–B137.5, NSF 372, AND ASTM F876, & C/W BRASS INSERTS & CRIMP–RING JOINT FITTINGS & COUPLINGS

.2 MAINS & RISERS MAY BE EQUAL TO IPEX "AQUARISE" SDR 11 CPVC PIPE & FITTINGS TO CAN/CSA B137.6, 25/50 FLAME SPREAD & SMOKE DEVELOPED RATED IN ACCORDANCE WITH CAN/ULC S102.2, CERTIFIED TO NSF/ANSI 61, C/W PRIMER/SOLVENT WELD JOINTS, & A PRESSURE RATING OF 690 KPA (100 PSI) AT 82.2° C (180° F)

4.15 ABOVE GROUND DOMESTIC HOT WATER PIPING: AS FOR DOMESTIC COLD WATER PIPE BUT WITH, FOR SOLDERED PIPING, 95%TIN/5% ANTIMONY LEAD FREE SOLDER.

4.16 TEMPERED DOMESTIC WATER SUPPLY PIPING: AS FOR DOMESTIC HOT WATER PIPING.

4.17 TEMPERED DOMESTIC WATER RETURN PIPING: AS FOR DOMESTIC HOT WATER PIPING.

4.18 PIPING STRAINER: WYE SHAPED, BRONZE, MINIMUM 1725 KPA (250 PSI) RATED & C/W REMOVABLE PERFORATED TYPE 304 STAINLESS STEEL 20 MESH SCREEN, &, FOR STRAINERS 40 MM (1½") DIAMETER & LARGER, A BLOW DOWN PIPE CONNECTION TAPPING.

4.19 PIPING DRAIN VALVE: MINIMUM 2070 KPA (300 PSI) WATER RATED, 20 MM (3/4") DIA. STRAIGHT PATTERN FULL PORT BRONZE BALL VALVE C/W A LEVER HANDLE, THREADED OUTLET SUITABLE FOR COUPLING CONNECTION OF 20 MM (3/4") DIA. HOSE, & A CAP & CHAIN. PROVIDE AT THE BOTTOM OF PIPING RISERS, AT OTHER PIPING LOW POINTS, & WHEREVER ELSE SHOWN OR SPECIFIED.

4.20 PRESSURE GAUGE: EQUAL TO H. O. TRERICE 690 SERIES WITH DUAL SCALE RANGE SUCH THAT THE WORKING PRESSURE OF THE SYSTEM IS AT THE APPROXIMATE MID–POINT OF THE SCALE, C/W BRONZE BALL TYPE SHUT–OFF VALVE, FOR PIPING & EQUIPMENT WITH NORMAL EVERYDAY FLOW, A BRASS PRESSURE SNUBBER, &, FOR GAUGES IN DOMESTIC WATER PIPING, ANSI/NSF 61 LEAD FREE CERTIFICATION. PROVIDE WHERE SHOWN OR SPECIFIED ON DRAWINGS.

4.20 THERMOMETER: EQUAL TO H. O. TRERICE #80030 C/W DUAL SCALE DIAL & A RANGE SUCH THAT THE WORKING TEMPERATURE OF THE SYSTEM IS THE APPROXIMATE MID–POINT OF THE SCALE, A SUITABLE THERMOWELL, &, FOR THERMOMETERS IN DOMESTIC WATER PIPING, ANSI/NSF 61 LEAD FREE CERTIFICATION. PROVIDE WHERE SHOWN OR SPECIFIED ON DRAWINGS. FOR INSTALLATION OF THERMOMETERS IN PIPING WELLS, PROVIDE A COAT OF METALLIC BASE HEAT TRANSFER PASTE OR GREASE IN THE PIPING WELL.

4.21 FLEXIBLE PIPE CONNECTION: DOUBLE WALL STAINLESS STEEL FLEXIBLE CONNECTORS FOR PIPING CONNECTIONS SELECTED BY THE MANUFACTURER TO SUIT THE APPLICATION. SHOP DRAWINGS OR PRODUCT DATA SHEETS MUST INDICATE CONSTRUCTION & PERFORMANCE REQUIREMENTS THAT SUIT THE APPLICATION. PROVIDE FLEXIBLE CONNECTORS FOR PIPING CONNECTIONS TO VIBRATION ISOLATED EQUIPMENT.

NOTE:
SOME MUNICIPALITIES REQUIRE THAT BURIED P.V.C WATERMAINS MUST BE DUCTILE IRON ENTERING A BUILDING. CONTACT THE LOCAL AUTHORITY HAVING JURISDICTION. DUCTILE IRON WATERMAINS SHALL CONFORM TO ANSI/AWWA C151/A21–51 AND SHALL HAVE A CEMENT–MORTAR LINING IN CONFORMANCE WITH ANSI/AWWA C104/A21–4.

5.0 VALVES FOR DOMESTIC HOT AND COLD WATER DISTRIBUTION

5.1 DOMESTIC COLD WATER SHUT–OFF VALVES: CLASS 600, 4140 KPA (600 PSI) WOG RATED FULL PORT BALL TYPE VALVES, EACH EQUIPPED WITH AN IDENTIFYING TAG, & C/W A FORGED BRASS BODY WITH SOLDER ENDS, FORGED BRASS CAP, & BLOWOUT–PROOF STEM, SOLID FORGED BRASS CHROME PLATED BALL, "TEFLON" OR "PTFE" SEAT, & A REMOVABLE LEVER HANDLE. VALVES IN INSULATED PIPING ARE TO BE COMPLETE WITH STEM EXTENSIONS.

5.2 DOMESTIC HOT WATER SHUT–OFF VALVES: AS FOR DOMESTIC COLD WATER SHUT–OFF VALVES.

5.3 TEMPERED DOMESTIC WATER SHUT–OFF VALVES: AS FOR DOMESTIC COLD WATER SHUT–OFF VALVES.

5.4 DOMESTIC HOT WATER CHECK VALVES: FOR HORIZONTAL PIPING, CLASS 125, BRONZE, LEAD–FREE WITH IDENTIFYING TAG, 1380 KPA (200 PSI) WOG RATED HORIZONTAL SWING TYPE CHECK VALVES WITH SOLDER ENDS. FOR VERTICAL PIPING, EQUAL TO KITZ CORP. CODE 26, BRONZE, LEAD–FREE, 1725 KPA (250 PSI) WOG RATED VERTICAL LIFT CHECK VALVE WITH SOLDERING ENDS.

5.5 GLOBE VALVE: ZURN 48 RESILIENT WEDGE GATE VALVE DESIGNED FOR INSTALLATION ON POTABLE WATER LINES, IRRIGATION SYSTEMS, WATERWORKS CONNECTIONS, AND FIRE SYSTEMS. SIZE FROM 2 ½" TO 12"

5.6 BUTTERFLY VALVE: BUTTERFLY VALVES – FLANGED JOINT: LEAD FREE, NON–CORROSIVE, MINIMUM 1200 KPA (175 PSI) COLD WATER PRESSURE RATED, RESILIENT SEATED BUTTERFLY VALVES, EACH COMPLETE WITH A COATED CAST DUCTILE IRON LUG TYPE BODY, STAINLESS STEEL SHAFT, BRONZE DISC, AND EPDM SEAT, AND EACH SUITABLE FOR DOMESTIC WATER BUBBLE–TIGHT DEAD END SERVICE WITH THE VALVE IN POSITION AND EITHER SIDE OF THE CONNECTING PIPING REMOVED. BUTTERFLY VALVES TO AND INCLUDING 100 MM (4") DIAMETER ARE TO BE EQUIPPED WITH LEVER HANDLES. BUTTERFLY VALVES LARGER THAN 100 MM (4") DIAMETER ARE TO BE EQUIPPED WITH WORM GEAR OPERATORS. ACCEPTABLE PRODUCTS ARE ZURN, TOYO, AND KITZ CORPORATION

5.7 INSTALLATION:

5.7.1 INSTALL VALVES AT THE FOLLOWING LOCATIONS:
–EACH RISER BASE;
–EACH MAIN BRANCH;
–EACH SINGLE PLUMBING FIXTURE;
–EACH SINGLE ITEM OF EQUIPMENT;
–WHERE INDICATED IN THE CONTRACT DOCUMENTS.

5.8 DOMESTIC HOT WATER BALANCING VALVE: SOLDER END, GLOBE STYLE, NON–FERROUS CIRCUIT BALANCING VALVES DESIGNED TO FACILITATE PRECISE FLOW MEASUREMENT, PRECISION FLOW BALANCING, & POSITIVE SHUT–OFF, C/W CAPPED & VALVED DRAIN CONNECTION, & VALVED PORTS FOR CONNECTION TO A DIFFERENTIAL PRESSURE METER.

5.9 INTERIOR FLUSH: RECESSED, 92 MM (3 5/8") DEEP, RECESSED, ENCASED WALL HYDRANT WITH LOCKABLE STAINLESS STEEL BOX WITH HINGED COVER IDENTIFIED "WATER", BRONZE INTERIOR PARTS, A SCREWDRIVER OPERATED STOP IN THE SUPPLY, KEY OPERATED CONTROL VALVE, 20 MM (¾") DIA. HOSE CONNECTION, & A VACUUM BREAKER. HAND 3 IDENTIFIED KEYS TO THE OWNER.

5.10 INTERIOR SEMI–RECESSED HOSE BIBB: ANTI–SIPHON TYPE, 100 MM (4") DEEP HOSE BIBB WITH STAINLESS STEEL OR CHROME PLATED FACE WITH OPERATING KEY, BRONZE INTERIOR PARTS, 20 MM (¾") DIA. SOLDER INLET, 20 MM (¾") DIA. HOSE CONNECTION, & INTEGRAL VACUUM BREAKER. HAND 3 IDENTIFIED KEYS TO THE OWNER.

5.11 EXTERIOR NON–FREEZE HOSE BIBB: RECESSED OR SEMI–RECESSED (AS INDICATED), ENCASED, SELF–DRAINING HYDRANTS, EACH C/W A COPPER CASING, OPERATING ROD ASSEMBLY TO SUIT THE WALL THICKNESS, POLISHED NICKEL BRONZE BOX WITH HINGED LOCKING COVER, 20 MM (¾") DIA. THREADED HOSE CONNECTION OUTLET, VACUUM BREAKER, & A LOOSE TEE HANDLE OPERATING KEY. HAND 3 IDENTIFIED KEYS TO THE OWNER.

5.12 TRAP SEAL PRIMER: FOR PRIMING 1 OR 2 FLOOR DRAINS, EQUAL TO PRECISION PLUMBING PRODUCTS INC. MODEL P2–500 TRAP PRIMER VALVE, &, FOR PRIMING 2 TRAPS FROM THE SAME PRIMER, A DU–2 DUAL OUTLET DISTRIBUTION UNIT. FOR PRIMING FROM 3 TO 6 FLOOR DRAINS, EQUAL TO PRECISION PLUMBING PRODUCTS INC. MODEL P1–500 TRAP PRIMER VALVE C/W A MODEL DU–3 OR DU–4, 3 OR 4 OUTLET DISTRIBUTION UNIT FOR PRIMING 3 OR 4 TRAPS, & A MODEL "YS–8" SUPPLY TUBE WITH COMBINATIONS OF MODEL DU–3 & DU–4 DISTRIBUTION UNITS FOR PRIMING FROM 5 TO 6 TRAPS.

5.13 WATER HAMMER ARRESTOR: PISTON TYPE, SEALED, PRESSURIZED WATER HAMMER ARRESTORS SUITABLE FOR EITHER HORIZONTAL OR VERTICAL INSTALLATION, EACH C/W A HARD DRAWN COPPER BODY, "O"–RING PISTON SEALS, AN AIR CHARGE, & AN INLET OPENING EQUAL TO THE DIA. OF THE PIPE IN WHICH THE ARRESTOR IS REQUIRED.

5.14 LEAK DETECTOR: PROVIDE LEAK DETECTOR SYSTEM FOR ALL NEW AND EXISTING HOT WATER TANK, PUMPS, CHILLER WITHIN THE UNIT. LEAK DETECTOR SYSTEM SHALL BE CONNECTED TO BASE BUILDING ENGINEER BAS.

6.0 BACKFLOW PREVENTER AND PRESSURE REDUCE VALVE

13.0 EXPANSION / CONTRACTION

COMPENSATION SHALL BE PROVIDED TO ACCOMMODATE EXPANSION / CONTRACTION ON THE DRAINAGE SYSTEM. IT IS RECOMMENDED THAT THERE BE COMPENSATION ON EVERY SECOND FLOOR (OPPOSITE THE RISER CLAMP) FOR THE VERTICAL PIPING SYSTEM. CONSULT PIPE SYSTEM MANUFACTURER FOR SPECIFIC DETAILS REGARDING APPROVED COMPENSATION METHODS.

NOTE:
THE ABOVE ONTARIO BUILDING CODE (O.B.C.) REFERENCES ARE TAKEN FROM THE 2012 EDITION AND SHOULD BE VERIFIED BY THE TRADE CONTRACTOR BEFORE PROCEEDING.

IN ADDITION, TO ENSURE COMPATIBILITY, PERFORMANCE AND MATERIAL QUALITY, IT IS RECOMMENDED THAT THE PIPE AND FITTING DRAINAGE SYSTEM SHALL BE PRODUCED BY THE SAME MANUFACTURER.

FURTHERMORE, THE MANUFACTURER OF THE PIPE AND FITTING SYSTEM SHALL BE CONTACTED BY THE TRADE CONTRACTOR PRIOR TO THE INSTALLATION TO OBTAIN PRECISE INSTALLATION INSTRUCTIONS. AS WELL, SITE MEETINGS SHALL BE ARRANGED AND INCLUDE, THE CONTRACTOR, MANUFACTURER AND BUILDING INSPECTOR.

14.0 SEISMIC REQUIREMENTS AND VIBRATION ISOLATION

ALL EQUIPMENT SHALL BE SEISMICALLY RESTRAINED AS REQUIRED BY OBC AND LOCAL JURISDICTIONS.

PROVIDE SEISMIC RESTRAINTS FOR ALL EQUIPMENT, PIPING AND DUCT-WORK TO ONTARIO BUILDING CODE AND SMACNA "GUIDELINES FOR SEISMIC RESTRAINTS OF MECHANICAL SYSTEMS AND PLUMBING PIPING SYSTEMS" EXCEPT AS NOTED BELOW.

RESTRAINTS MAY BE OMITTED FROM:

1. GAS PIPING SMALLER THAN 1" (25MM) INSIDE DIAMETER.
2. ALL PIPING SMALLER THAN 2½" (65MM) DIAMETER.
3. ALL PIPING AND DUCTWORK SUSPENDED BY INDIVIDUAL HANGARS WHERE THE DIMENSION FROM THE TOP OF THE PIPE/DUCT TO THE BASE OF THE SUPPORT IS SMALLER THAN 12" (300MM).
4. ALL RECTANGULAR DUCTWORK LESS THAT 6 SQ.FT. (0.55 SQ.M) CROSS SECTIONAL AREA OR ROUND DUCTWORK LESS THAN 28" (700MM) DIAMETER.

SEISMIC RESTRAINTS ARE TO ALLOW FOR EXPANSION, CONTRACTION, AND ISOLATION OF EQUIPMENT.

CONTRACTOR TO RETAIN AN ONTARIO PROFESSIONAL STRUCTURAL ENGINEER TO REVIEW ALL MECHANICAL, PLUMBING AND FIRE PROTECTION EQUIPMENT FOR ADEQUACY OF SEISMIC RESTRAINT OF INSTALLED SYSTEMS. CONTRACTOR TO ABIDE BY ALL RECOMMENDATIONS OF STRUCTURAL ENGINEER.

15.0 FIRE STOPPING & SMOKE SEAL:

15.1 AT LEAST 4 WEEKS BEFORE WORK COMMENCING, SUBMIT A SAMPLE OF EACH TYPE OF FIRESTOP AND SMOKE SEAL SYSTEM IN APPLIED FORM, FOR APPROVAL. IDENTIFY EACH SYSTEM WITH MANUFACTURER'S NAME AND TYPE, ULC DESIGNATION, AND PROPOSED USE. AFTER SAMPLES ARE REVIEWED, WORK IS TO CONFORM TO REVIEWED SAMPLES.

15.2 SUBMIT A PRODUCT DATA SHEET AND A WHIMIS SHEET FOR EACH FIRESTOPPING AND SMOKE SEAL PRODUCT. SUBMIT FOR REVIEW, FULL COMPANY NAME AND EXPERIENCE OF PROPOSED FIRESTOPPING AND SMOKE SEAL SYSTEM APPLICATOR.SUBMIT A LETTER OF PROPER FIRESTOPPING AND SMOKE SEAL CERTIFICATION AS SPECIFIED IN PART 3 OF THIS SECTION.

15.3 APPLICATOR IS TO HAVE A MINIMUM OF 3 YEARS OF SUCCESSFUL EXPERIENCE ON PROJECTS OF SIMILAR SIZE AND COMPLEXITY, AND APPLICATOR'S QUALIFICATIONS ARE TO BE REVIEWED BY CONSULTANT.

15.4 COMPLY WITH FIRESTOPPING AND SMOKE SEAL PRODUCT MANUFACTURER'S RECOMMENDATIONS REGARDING SUITABLE ENVIRONMENT CONDITIONS FOR PRODUCT INSTALLATION.

15.5 FIRESTOPPING AND SMOKE SEAL SYSTEM MATERIALS SHALL BE ASBESTOS-FREE ELASTOMERIC MATERIALS TESTED, LISTED AND LABELED BY ULC IN ACCORDANCE WITH ULC S115 AND ULC S101 FOR INSTALLATION IN ULC DESIGNATED FIRESTOPPING AND SMOKE SEAL SYSTEMS TO PROVIDE A POSITIVE FIRE, WATER AND SMOKE SEAL, AND A FIRE-RESISTANCE RATING (FLAME, HOSE STREAM AND TEMPERATURE) NOT LESS THAN FIRE RESISTANCE RATING OF SURROUNDING FIRE RATED CONSTRUCTION.

15.6 MATERIALS ARE TO BE COMPATIBLE WITH ABUTTING DISSIMILAR MATERIALS AND FINISHES AND COMPLETE WITH PRIMERS, DAMMING AND BACK-UP MATERIALS, SUPPORTS, AND ANCHORING DEVICES IN ACCORDANCE WITH FIRESTOPPING MANUFACTURER'S RECOMMENDATIONS AND ULC TESTED ASSEMBLY.

15.7 PIPE INSULATION FORMING PART OF A FIRE AND SMOKE SEAL ASSEMBLY IS SPECIFIED IN SECTION ENTITLED MECHANICAL INSULATION.

16.0 SPRINKLERS:

16.1 SYSTEM DESIGN CRITERIA: FIRE PROTECTION WORK IS TO BE DESIGNED BY A FULLY QUALIFIED MECHANICAL P. ENG. REGISTERED & LICENSED IN THE JURISDICTION OF THE PROJECT, & IN ACCORDANCE WITH APPLICABLE NFPA & PROVINCIAL STANDARDS, & WHERE REQUIRED, LOCAL BUILDING & FIRE DEPARTMENT REQUIREMENTS & THE STANDARDS OF THE OWNER'S INSURER. PIPE SIZES, PIPE ROUTING, EQUIPMENT QUANTITIES & LOCATIONS, & LAYOUT OF WORK SHOWN ON THE DRAWINGS ARE TO ASSIST YOU DURING THE TENDERING PERIOD. DO NOT REDUCE THE SIZE OF THE FIRE PROTECTION SYSTEM MAIN OR RE-ROUTE THE MAIN UNLESS APPROVED.

16.2 ALL SPRINKLER WORK IN THIS CONTRACT SHALL BE PERFORMED BY THE OWNER'S/LANDLORD'S SPRINKLER CONTRACTOR AT THIS TENANT'S EXPENSE OR BY A SPRINKLER CONTRACTOR APPROVED BY THE OWNER/LANDLORD.

16.3 SPRINKLER AND LIFE SAFETY SYSTEMS SHALL REMAIN IN SERVICE AT ALL TIMES. IF SHUTDOWN OR SYSTEM DRAINAGE IS REQUIRED, NOTIFY OWNER/LANDLORD AND LOCAL AUTHORITIES 48 HOURS BEFORE THIS WORK.

16.4 HYDRAULICALLY DESIGN WET SPRINKLER SYSTEM IN OFFICE AREAS TO EXISTING BASE BUILDING DESIGN CRITERIA OF 0.10 GPM (0.0684 L/S/M2) OVER REMOTE 1500 SQFT (139.5M2) TO NFPA #13 LIGHT HAZARD OCCUPANCY, COMPLETE WITH TEST AND DRAIN CONNECTIONS, WHERE REQUIRED.

16.5 MODIFY EXISTING HYDRAULICALLY DESIGNED SPRINKLER PIPING AS REQUIRED TO SUIT NEW SPRINKLER HEAD LAYOUT IN ORDER TO AVOID INTERFERENCE WITH NEW HVAC DUCTWORK AND EQUIPMENT. COORDINATE TENANT SPRINKLER CHANGES OF EXISTING SPRINKLER SYSTEM WITH ALL TRADES (HVAC, ELECTRICAL, ARCHITECTURAL, AND STRUCTURAL) BEFORE INSTALLATION.

16.6 SUBMIT AS SHOP DRAWINGS, PDF, CAD WHITE PRINT LAYOUT DRAWINGS INDICATING SOURCE OF WATER SUPPLY, WITH PIPE SIZE & TEST FLOW & PRESSURE, "HEAD-END" EQUIPMENT PIPING SCHEMATIC, PIPE ROUTING & SIZING, & RISERS, ALL SIGNED & SEALED BY THE DESIGN P. ENG., AS WELL AS CALCULATIONS & A LIST OF DESIGN DATA USED IN PREPARING THE CALCULATIONS, SYSTEM LAYOUT & SIZING.

16.7 NEW SPRINKLER HEADS SHALL MATCH EXISTING SPRINKLER HEADS IN ACCORDANCE WITH BASE BUILDING STANDARDS AND SPECIFICATIONS, UNLESS NOTED OTHERWISE, AND SHALL BE ULC/FACTORY MUTUAL APPROVED.

16.8 REMOVE, RELOCATE AND ADD NEW SPRINKLER HEADS AND ASSOCIATED PIPING AS INDICATED AND/OR REQUIRED IN ACCORDANCE WITH NEW SPACE REQUIREMENTS, AND ADD SPRINKLER HEADS AND PIPING WHERE REQUIRED DUE TO SITE CONDITIONS TO OBTAIN THE NECESSARY APPROVALS FROM LOCAL AUTHORITIES AND UNDERWRITERS. REUSE OF REMOVED SPRINKLER HEADS SHALL NOT BE PERMITTED AT NO EXTRA CONST.

16.9 MAINTAIN GENERALLY A GOOD APPEARANCE OF CEILING SYSTEMS. COORDINATE LOCATIONS OF SPRINKLER HEADS WITH ALL DIFFUSERS AND LIGHTING FIXTURES AND LATEST ARCHITECTURAL REFLECTED CEILING PLANS AND FINISHES.

16.10 CONTRACTOR TO ENSURE PROPER SPRINKLER COVERAGE ON BOTH SIDES OF THE PARTITION WALL AS PER NFPA-13 AND OBC REQUIREMENTS. (TYP.)

16.11 NEW SPRINKLER LINE SHALL BE STANDARD BLACK STEEL SCHEDULE 40 COMPLETE WITH ALL FITTINGS, HANGERS, AND APPURTENANCES IN ACCORDANCE WITH BASE BUILDING SPECIFICATIONS AND STANDARDS.

16.12 REFER TO ARCHITECTURAL DRAWINGS FOR ALL NEW CEILING HEIGHTS AND CEILING TYPES. ADJUST SPRINKLER BRANCH PIPING AND SPRINKLER HEADS (NEW AND EXISTING) TO SUIT NEW CEILING HEIGHTS AND TYPES.

16.13 CONTRACTOR SHALL COORDINATE ON SITE EACH EXISTING AND NEW SPRINKLER PIPE/HEAD WITH DUCTS, PLUMBING AND STRUCTURAL MEMBERS. OFFSET AS REQUIRED TO SUIT NEW SITE LAYOUT AS PER NFPA-13 AND OBC REQUIREMENTS (TYP.).

16.14 SPRINKLER HEADS: SPRINKLER HEADS TYPES ARE TO BE PROVIDED IN ACCORDANCE WITH THE DRAWING SCHEDULE. CAREFULLY COORDINATE HEAD LOCATIONS WITH ALL DRAWINGS, INCLUDING ARCHITECTURAL REFLECTED CEILING PLAN DRAWINGS, &, WHERE APPLICABLE, ELECTRICAL DRAWINGS. CONFIRM LOCATIONS PRIOR TO ROUGHING-IN. MAINTAIN MAXIMUM HEADROOM IN AREAS WITH NO CEILINGS. PROVIDE GUARDS FOR HEADS WHERE THEY ARE SUBJECT TO DAMAGE. PROVIDE HIGH TEMPERATURE HEADS IN EQUIPMENT ROOMS & SIMILAR AREAS OVER HEAT PRODUCING OR GENERATING EQUIPMENT. SUPPLY A FULL COMPLEMENT (TO FILL CABINET) OF SPARE SPRINKLER HEADS OF THE TYPES USED (MINIMUM 4 OF EACH TYPE) & PLACE IN A WALL MOUNTED STORAGE CABINET LOCATED ADJACENT TO THE SPRINKLER SYSTEM "HEAD END" EQUIPMENT.

16.15 PIPING: "WET" ZONE STEEL PIPING, FITTINGS, UNIONS, COUPLINGS & FLANGES & HANGER & SUPPORT HARDWARE FOR FIRE PROTECTION WORK EXPOSED TO WEATHER EITHER INSIDE OR OUTSIDE THE BUILDING (INCLUDING PARKING GARAGES), ARE TO BE GALVANIZED.

16.16 ADDITIONAL REQUIREMENTS ARE: SLOPE HORIZONTAL PIPING SO THAT IT MAY BE COMPLETELY DRAINED THROUGH CAPPED DRAIN POINTS PROVIDE A PRESSURE GAUGE AT THE HIGHEST OUTLET IN EACH STANDPIPE RISER, AND WHERE POSSIBLE, LOCATE GAUGES IN FIRE HOSE CABINETS WHEN FIRE PROTECTION WORK IS COMPLETE, TEST SYSTEM COMPONENTS & THE OVERALL SYSTEM(S) & SUBMIT COMPLETED NFPA MATERIAL & TEST CERTIFICATE(S), & ANY OTHER DOCUMENTATION REQUIRED.

16.17 PROVIDE SHUT-OFF & CHECK VALVES WHERE SHOWN & WHEREVER ELSE REQUIRED

17.0 FIRE PROTECTION:

17.1 ALL FIRE PROTECTION WORK SHALL BE TO THE APPROVAL OF THE OWNER'S/LANDLORD'S INSURANCE UNDERWRITER AND CONFORM TO THE BASE BUILDING SPECIFICATIONS, NATIONAL FIRE PROTECTION ASSOCIATION, ONTARIO BUILDING CODE, AND ALL GOVERNING AUTHORITIES.

17.2 PROVIDE NEW FIRE HOSE CABINETS AND FIRE EXTINGUISHERS WHERE SHOWN ON PLANS OR AS REQUIRED BY CODE, IN FULL ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL FIRE MARSHAL'S AND FIRE DEPARTMENT'S OFFICE. NEW FIRE HOSE CABINETS AND EXTINGUISHERS SHALL MATCH EXISTING BASE BUILDING STANDARDS. VERIFY HOSE LENGTH BEFORE ORDERING AND INSTALLATION.

17.3 MOUNTING HEIGHT OF NEW FIRE HOSE CABINETS SHALL BE 5'-0" (1500MM) FROM FINISHED FLOOR TO CENTERLINE OF FIRST AID HOSE VALVE.

17.4 WHERE STANDPIPE PRESSURE IS GREATER THAN 90 PSI (620 KPA), PROVIDE A MODEL A156 1-1/2"ø (38MM) FORGED BRASS, ADJUSTABLE, PRESSURE RESTRICTING VALVE COM

17.5 COMPLETE WITH HYDROLATOR DRAIN VENT. WHERE STANDPIPE PRESSURE IS GREATER THAN 150 PSI (1050 KPA), PROVIDE A ZURN MODEL Z-2100 PRESSURE REGULATING ANGLE VALVE 1-1/2"ø (38MM) FEMALE X MALE RED HANDWHEEL, BRASS BODY, AND HYDROLATOR DRAIN VENT - ULC APPROVED.

17.6 ALL VALVES AND EQUIPMENT SHALL BE ULC APPROVED. NEW FIRE HOSE CABINETS SHALL BE DOUBLE VALVE CABINETS C/W 1-1/2" (40MM) HOSE AND COUPLINGS, FOG NOZZLE, HOSE RACK, RESTRICTING DISCS (WHERE REQUIRED BY AUTHORITIES HAVING JURISDICTION), ULC APPROVED FIRE EXTINGUISHER, EXTRA HOSE WRENCHES, AND ALL NECESSARY APPURTENANCES IN ACCORDANCE WITH BASE BUILDING SPECIFICATIONS AND STANDARDS. CORROSION RESISTANT CABINET SHALL BE GIVEN A SHOP COAT OF PRIMER AND PAINTED IN ACCORDANCE WITH ARCHITECT'S/INTERIOR DESIGNER'S FINISHING SCHEDULE.

17.7 NEW FIRE LINE SHALL BE STANDARD BLACK STEEL SCHEDULE 40 COMPLETE WITH ALL FITTINGS, HANGERS AND APPURTENANCES IN ACCORDANCE WITH BASE BUILDING SPECIFICATIONS AND STANDARDS. ALL FIRE STANDPIPE WORK IN THIS CONTRACT SHALL BE PERFORMED BY THE OWNER'S/LANDLORD'S CONTRACTOR OR BY A CONTRACTOR APPROVED BY THE OWNER/LANDLORD AT THIS TENANT'S EXPENSE.

17.8 MAINTAIN ALL SPRINKLER, STANDPIPE, AND OTHER FIRE AND LIFE SAFETY PROTECTION SERVICES IN OPERATION AT ALL TIMES.

17.9 FIRE HOSE CABINET: EQUAL TO NATIONAL FIRE EQUIPMENT CABINETS, FLUSH OR SURFACE WALL MOUNTING AS SHOWN, MODEL "KNIGHT 100-2" RECESSED OR MODEL CS-800-6 SURFACE MOUNTING SINGLE VALVE TYPE WITH EXTINGUISHER, MODEL "KNIGHT 200-2" RECESSED OR MODEL CS-800 SURFACE MOUNTING DOUBLE VALVE WITH EXTINGUISHER. HOSE VALVES ARE TO BE MODEL A156S, 40 MM (1½") C/W INTEGRAL AUTOMATIC DRAIN VENT, FACTORY SET TO SUIT STANDPIPE SYSTEM PRESSURE. FIRE DEPT. VALVES ARE TO BE MODEL A56, 65 MM (2½") ANGLE HOSE VALVES C/W CAP & CHAIN & MODEL C-21 SPANNER WRENCH. HOSE RACKS ARE TO BE MODEL S-4 C/W A MODEL S-5 AUTOMATIC WATER STOP, & 30 M (100') OF "POLY-FLEX" 40 MM (1½") DIAMETER HOSE WITH MODEL A70B0 COUPLINGS & MODEL A7B NOZZLE. FIRE EXTINGUISHERS ARE TO BE STORED PRESSURE, MULTI-PURPOSE, 2.26 KG (5 LB.), 4A10B-C RATED DRY CHEMICAL TYPE. ALL BRASS COMPONENTS IN RECESSED CABINETS IN FINISHED AREAS ARE TO BE CHROME PLATED. PROVIDE FIRE HOSE CABINETS WHERE SHOWN. CONFIRM EXACT CABINET LOCATIONS PRIOR TO ROUGHING-IN.

17.10 FIRE EXTINGUISHER: STORED PRESSURE, RECHARGEABLE, DRY CHEMICAL TYPE IN ACCORDANCE WITH NFPA 10 & CAN/ULC-S508, 3A10B:C RATED UNLESS OTHERWISE SPECIFIED/SHOWN, C/W PRESSURE GAUGE & WALL MOUNTING BRACKET. PROVIDE WHERE SHOWN. IF INDICATED ADJACENT TO A DOOR, INSTALL AT THE STRIKE SIDE OF THE DOOR. PROVIDE CABINETS WHERE INDICATED.

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05	PERMIT / TENDER	01.23.26

REVISION RECORD:

NO:	ISSUED FOR:	DATE: (MM.DD.YY)
01	XXXX	XX.XX.XX

APPROVED BY:

LICENSED PROFESSIONAL ENGINEER
S. SALEH
100176531
01.23.2026
PROVINCE OF ONTARIO

CONSULTANT:

ENGINEER:

TIGRIS Engineering Inc
6751 PROFESSIONAL COURT, UNIT #203
MISSISSAUGA ON L4V 1Y3
TEL: 905-462-7524

PROJECT:
MPAC KINGSTON
1471 JOHN COUNTER BLVD,
SUITE 412,
KINGSTON, ON
K7M 8S8

PROJECT NO:
25-1095

SCALE:	SHEET SIZE:
N.T.S.	24x36
DRAWN BY:	CHECKED BY:
Y.R.	S.S.

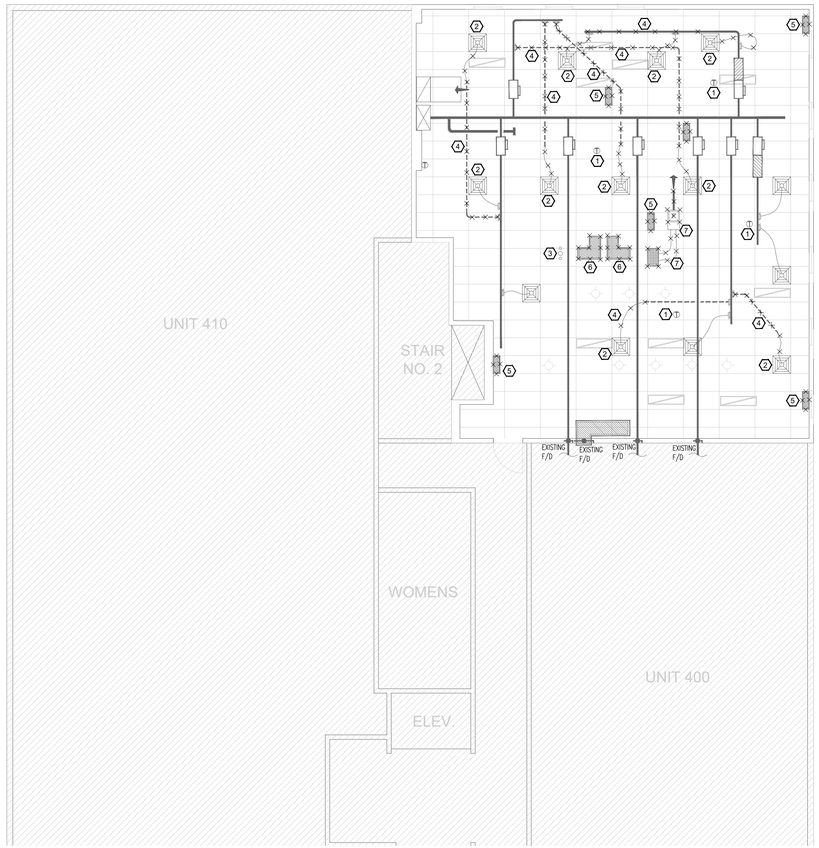
DRAWING TITLE:
MECHANICAL SPECIFICATION

DRAWING NO:
M1.4

ALL EXISTING PLUMBING & HVAC TO REMAIN AS IS UNLESS OTHERWISE NOTED

KEY NOTES:

1. EXISTING THERMOSTAT TO BE RELOCATED TO SUIT NEW SITE LAYOUT.
2. EXISTING SUPPLY AIR DIFFUSER TO BE RELOCATED TO SUIT NEW SITE LAYOUT. ADJUST DUCT WORK AS INDICATED
3. EXISTING PLUMBING ROUGH-IN FROM BELOW TO BE PREPARED FOR RECEIVING NEW SINK AT SHIFTED LOCATION. CONTRACTOR TO VERIFY EXACT LOCATION ON SITE
4. EXISTING DUCT WORK TO BE REMOVED AND CAPPED AS INDICATED
5. EXISTING RETURN AIR GRILLE TO BE REMOVED
6. EXISTING TRANSFER AIR DUCT TO BE REMOVED
7. EXISTING INLINE FAN AND ASSOCIATED DUCT WORK AND GRILLE TO BE REMOVED



1 M2.1 MECHANICAL DEMO PLAN
SCALE : 1/8" = 1' – 0"

ALL EXISTING PLUMBING & HVAC TO REMAIN AS IS UNLESS OTHERWISE NOTED

MECHANICAL CONTRACTOR TO PROVIDE AIR BALANCING FOR THE ENTIRE PLACE

EXISTING & NEW FLEX DUCT SHALL NOT EXCEED 10 FEET LENGTH, PROVIDE A RIGID ROUND DUCT FOR ANY EXISTING OR RELOCATED DIFFUSER WITH A FLEX DUCT MORE THAN 10'.

MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING CONDITION OF EXISTING HVAC UNITS AND REPORT BACK TO THE OWNER

THERMOSTAT REPLACEMENT/RELOCATION TO BE COORDINATED BETWEEN MECHANICAL AND ELECTRICAL TRADES

MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR RETAINING THEIR OWN ELECTRICAL TRADE TO COMPLETE ANY LINE VOLTAGE WIRING REQUIRED FOR THERMOSTAT REPLACEMENT/RELOCATIONS

WHEN DRY WALL OR BAFFLE CONFLICT WITH MECHANICAL ELEMENTS, CONTRACTOR TO TAPE AND SEAL AROUND EXISTING MECH ELEMENTS.

MECHANICAL CONTRACTOR TO CONFIRM OPERATION OF ALL TEMPERATURE SENSORS AND THERMOSTATS. CONTRACTOR TO PROVIDE NEW THERMOSTATS AS REQUIRED TO MATCH EXISTING. CONTRACTOR TO MAINTAIN THE SAME FUNCTIONALITY OF THE EXISTING THERMOSTAT AND CONNECT IT TO BASE BUILDING BAS SYSTEM AS REQUIRED

WHENEVER AN OFFICE OR ROOM HAS A PARTITION THAT EXTENDS UP TO THE SLAB, OR INCLUDES RIGID BAFFLES FROM THE FINISHED CEILING TO THE SLAB, THE CONTRACTOR MUST PROVIDE A 10"X8" L-SHAPED, ACOUSTICALLY LINED AIR TRANSFER DUCT AT THE PARTITION, FACING THE CORRIDOR OR ADJACENT OPEN AREA

ALL EXISTING SUPPLY AIR DIFFUSERS TO BE CLEANED AND PAINTED. REFER TO ID DRAWINGS

MECHANICAL CONTRACTOR TO COORDINATE WITH JOHNSON CONTROLS TO UPDATE THE BAS SYSTEM TO ACCOMMODATE THE NEW FLOOR PLAN

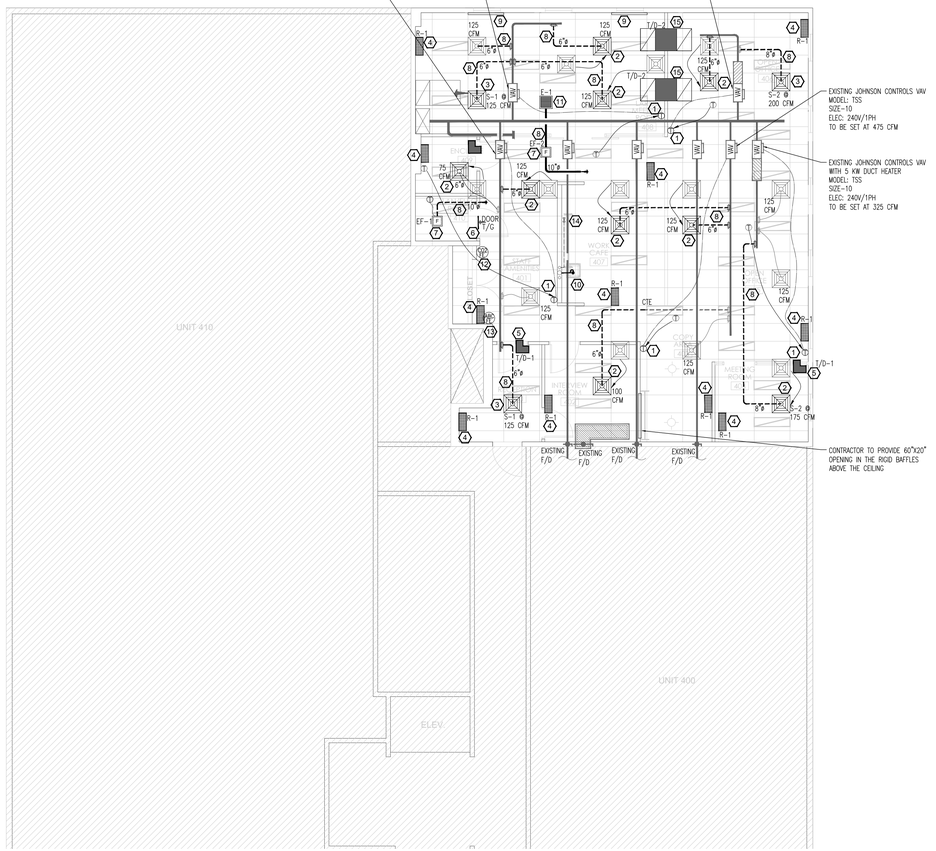
KEY NOTES:

1. NEW LOCATION OF AN EXISTING THERMOSTAT TO SUIT NEW SITE LAYOUT. EXTEND WIRING AS REQUIRED
2. NEW LOCATION OF AN EXISTING SUPPLY AIR DIFFUSER TO SUIT NEW SITE LAYOUT. ADJUST DUCT WORK AS INDICATED
3. NEW SUPPLY AIR DIFFUSER
4. NEW RETURN AIR GRILLE
5. NEW 10"X8" ACOUSTICALLY LINED L SHAPED AIR TRANSFER DUCT (T/D–1)
6. NEW DOOR TRANSFER AIR GRILLE
7. NEW EXHAUST FAN
8. NEW DUCT WORK
9. NEW OUELLET ELECTRIC BASEBOARD HEATER
   MODEL: OFM1008
   ELEC: 208V/1PH, POWER: 1KW
   C/W BUILT–IN THERMOSTAT
10. NEW SINK (S–1)
    EXTEND AND CONNECT TO EXISTING 1/2" DCW/DHW ROUGH–IN
    EXTEND AND CONNECT TO EXISTING 1 1/2" SAN. ROUGH–IN
11. NEW EXHAUST GRILLE
12. NEW CO2 FIRE EXTINGUISHER
13. NEW ABC FIRE EXTINGUISHER
14. NEW FRIDGE (F–1)
    NEW 1/2" DCW TO F–1,
    FINAL LOCATION TO BE COORDINATED ON SITE
15. NEW 30"X20" ACOUSTICALLY LINED U SHAPED AIR TRANSFER DUCT (T/D–2)

PLUMBING FIXTURES SPECS:

KITCHEN SINK (KS–1)
MANUFACTURER: ELKAY
MODEL: PSR0021955L
FINISH: STAINLESS STEEL

FAUCET – MANUFACTURER: FRANKE
MODEL: FTP.1350
FINISH: STAINLESS STEEL



2 M2.1 PROPOSED MECHANICAL LAYOUT
SCALE : 1/8" = 1' – 0"

ISSUE RECORD:

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APPROVED BY:

LICENSED PROFESSIONAL ENGINEER
S. SALEH
100176531
01.23.2026
PROVINCE OF ONTARIO

CONSULTANT:

ENGINEER:

TIGRIS Engineering Inc
6751 PROFESSIONAL COURT, UNIT #203
MISSISSAUGA ON L4V 1Y3
TEL: 905-462-7524

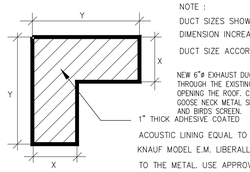
PROJECT:
MPAC KINGSTON
1471 JOHN COUNTER BLVD,
SUITE 412,
KINGSTON, ON
K7M 8S8

PROJECT NO: 25-1095

SCALE:	SHEET SIZE:
1/8" = 1' - 0 "	24x36
DRAWN BY: Y.R.	CHECKED BY: S.S.

DRAWING TITLE:
DEMO AND PROPOSED MECHANICAL DRAWINGS

DRAWING NO:
M2.1



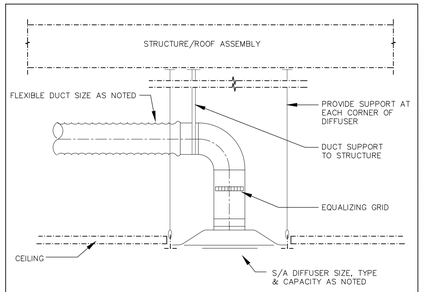
NOTE :

DUCT SIZES SHOWN ARE CLEAR DIMENSION INCREASE OVERALL DUCT SIZE ACCORDINGLY

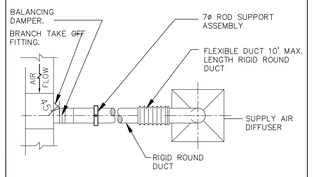
NEW 6"ø EXHAUST DUCT UP THROUGH THE EXISTING ROOF OPENING THE ROOF. C/W GOOSE NECK METAL SHEET AND BIRDS SCREEN.

1" THICK ADHESIVE COATED ACOUSTIC LINING EQUAL TO KNAUF MODEL E.M. LIBERALLY GLUED TO THE METAL. USE APPROVED NON TOXIC ADHESIVE NOT EXCEEDING 25 F.S. & 50 S.D. RATING

1 / M3.1 — ACOUSTICALLY LINED TRANSFER AIR DUCT DETAIL – 1
SCALE : NTS



2 / M3.1 — TYP. DIFFUSER DETAIL
SCALE : NTS



3 / M3.1 — SUPPLY AIR DUCT TAKE OFF
SCALE : NTS

PLUMBING FIXTURE SCHEDULE

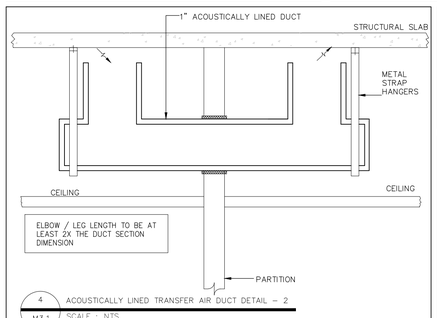
TAG	DESCRIPTION	MINIMUM ROUGH-IN CONNECTION SIZE (mm)			
		DRAIN	VENT	HW	CW
S	SINK	1 1/2"	1 1/4"	1/2"	1/2"

REFERENCE LEGEND
W.M. = WALL MOUNTED
R.I. = ROUGH IN
B.F. = BARRIER FREE
S.C. = SEMI-COUNTER MOUNTED
O.E.D. = OPEN END DRAIN

NOTE:
1. CONFIRM SERVICE ROUGH IN WITH SHOP DRAWINGS BEFORE INSTALLATION OF ALL FIXTURES/EQUIPMENT

SOFT CONV. PIPE SIZES
1/2" = 15mm
3/4" = 20
1" = 25
1 1/4" = 32
1 1/2" = 40
2" = 50
2 1/2" = 65
3" = 75

TYPE	DESCRIPTION	CW	HW	DRAIN	VENT	SPECIFICATION
FD	FLOOR DRAIN T.P.T.	1/2"	–	3"	3"	IN FINISHED AREAS: (CONC. / STEEL) SMITH SERIES #2005A FLOOR DRAIN WITH 5" NICKEL BRONZE STRAINER; (WOOD FLOORS) SMITH 2010WF1ANB OR 2051XVLSP (FOR ONE-PIECE FLOORING)
CO	CLEANOUT	–	–		–	IN FINISHED AREAS: SMITH SERIES #4000 WITH TOP TO SUIT FLOOR FINISH; IN UNFINISHED AREAS: SMITH SERIES #4220M, WITH HEAVY DUTY DUCTILE IRON TOP.



4 / M3.1 — ACOUSTICALLY LINED TRANSFER AIR DUCT DETAIL – 2
SCALE : NTS

FANS SCHEDULE

FOR SELECTION & PRICING PLEASE CONTACT BASIL TURKI
E: basil@odellassoc.com CELL: 416-560 3560

TAG	TYPE	MANUFACTURER	MODEL	CFM	SP(IN)	VOLT	PHASE	POWER	WEIGHT	RPM	REMARKS
EF-1	EXHAUST FAN CEILING MOUNTED	COOK	GC-622	300	0.15	115	1 PH	–	28 LB	1400	CONTROLLED BY REVERSE ACTING T-STAT. C/W PLASTIC GRILLE, GEMINI ISOLATOR KIT
EF-2	INLINE EXHAUST FAN	COOK	GEMINI INLINE BLOWERS 200-700 SERIES GN-740	300	0.25	115	1 PH	156W	31 LB	917	CONTROLLEY BY WALL MOUNTED TIMER SWITCH. C/W GEMINI ISOLATOR KIT (GIK) RUBBER IN SHEAR

DIFFUSER, REGISTER & GRILLE SCHEDULE

FOR SELECTION & PRICING PLEASE CONTACT BASIL TURKI
E: basil@odellassoc.com CELL: 416-560 3560

TAG	TYPE	SIZE (IN)	MANUFACTURER	REMARKS
S-1	SUPPLY DIFFUSER	24"X24" NECK SIZE: 6"ø	KRUEGER #1400	NOTE 1, 2 AND 3
S-2	SUPPLY DIFFUSER	24"X24" NECK SIZE: 8"ø	KRUEGER #1400	NOTE 1, 2 AND 3
R-1	RETURN GRILLE	24"X8"	KRUEGER #EG5	NOTE 1, 2 AND 3
DOOR T/G	DOOR TRANSFER GRILLE	18"X12"	KRUEGER #600	NOTE 1, 2 AND 3
E-1	EXHAUST GRILLE	12"X12"	KRUEGER S85	NOTE 1, 2 AND 3

NOTE:
1 EQUAL BY TITUS, EH PRICE, NAILOR ALSO ACCEPTABLE
2 CONFIRM CEILING/WALL TYPES
3 S/A AND R/A GRILLES COLOUR TO MATCH CEILING/WALL COLOUR.

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APPROVED BY:

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SCALE:	SHEET SIZE:
N.T.S.	24x36
DRAWN BY: Y.R.	CHECKED BY: S.S.

DRAWING TITLE:
MECHANICAL DETAILS & SCHEDULES

DRAWING NO:
M3.1