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Square Vis Architects Inc.
www.sqvis.ca

Addendum ADD#3

Date: June 10, 2026
Project Name: Verona Housing
Project Address: 6094 Carleton Dr, Verona, ON K0H 0B8
Project Number: 26001

THIS ADDENDUM IS ISSUED TO PROVIDE FOR MODIFICATIONS AND/OR CLARIFICATIONS DURING BIDDING AND FORMS PART OF BID AND CONTRACT DOCUMENTS FOR ABOVE PROJECT. INCLUDE IN YOUR BID AMOUNT FOR THE FOLLOWING ITEMS OF ADDITION, DELETION OR CLARIFICATION.

INDICATE IN THE SPACE PROVIDED ON THE BID FORM THAT YOU HAVE RECEIVED AND INCLUDED FOR THE REQUIREMENTS OF THIS ADDENDUM.

EXCEPT AS OTHERWISE SPECIFIED HEREIN, WORK REQUIRED BY THIS ADDENDUM SHALL BE IN ACCORDANCE WITH SPECIFICATIONS AND DRAWINGS ACCOMPANYING SAME.

1. **Reference:**
   1.1.1. Architectural Drawings
   1.1.2. Structural Drawings
   1.1.3. Mechanical Drawings
   1.1.4. Electrical Drawings

2. **Description**
   a. A001.1: Shaft wall assembly ‘SW1’ has been removed.
   b. A004: Push-button and automatic door openers have been added to Doors D102, D103, D116, D117, and D120.
   c. A004: Exit device hardware has been removed from Doors D102, D103, D120, and D123.
   d. A004: D109 door material is changed to HM/GWG.
   e. A004: Door frames for T01 and T02 have been revised to hollow metal (HM), and the door stain has been updated to match PT5.
   f. A004: Door Type ‘B’ and ‘D’ dimensions are updated.
   g. A201: In Card Room 012, the corridor wall has been relocated, and the door swing has been revised to swing outward.
   h. A201: In Common Rm 004, the corridor door is mirrored and revised to swing outward.
   i. A201: The exterior wall on the west side of the entrance has been revised to Wall Assembly ‘WB1a’.
   j. A400 and A401: Roof slope added to the elevations.
   k. A650, Detail 2: Fire-rated sealant added to the roof and wall stud.
   l. A651, Detail 5: The metal flashing at the underside of the window sill has been removed.
   m. A702: The laminate countertop edge profile has been revised to a bullnose edge.

3. **Attachments:**
   - A001.1 – Construction Assemblies
   - A004 – Door Schedule

- A201 - 1st Floor Plan
- A400 – North and South Elevations
- A401 – West and East Elevations
- A650 – Wall Sections
- A651 – Section Details
- A702 – Interior Section Detail
- Structural Addendum #2
- Mechanical Addendum #2
- Electrical Addendum #2

4. **Explanation:**
   a. **Additional notes, clarifications, and minor revisions have been incorporated as part of the ongoing design development.**

END

Reason: Design Development

June 10, 2026
Our File: 25-10031PR

Tender Addendum

Addendum #2

Structural Addendum #2

Address: 6094 Carleton Drive, Verona, ON, K0H2W0, Canada

The following tender addendum will form part of the Mechanical Construction Document – Issued for Tender, and will become part of the contract documents. Contractors are required to acknowledge receipt of this addendum by inserting its number in the bid form and signing this form.

Related Drawings:

S4-100 – Footing Layout – Re-Issued
S4-101 – Floor One Layout – Re-Issued
S4-102 – Floor Two Layout – Re-Issued
S4-103 – Roof Layout – Re-Issued

Addendum Details:

S4-100

- Updated note to reference the details 5/S4-103 and 6/S4-103 for the CMU and footing reinforcement for the new foundation walls.
- Included dead load of solar panels in design load notes.
- Provided framing dimensions.

S4-101

- Provided a missing column to two supports with a point load above.
- Re-framed 3-6 gridline rear balcony to match the current layout. Changed L8 header to steel to accommodate re-framing.
- Re-framed the framing near the card room due to the loss of the load bearing wall.
- Provided framing dimensions.

S4-102

- Provided detail for beam plate connection to provide adequate bearing for the wall above in the re-framed 3-6 gridling rear balcony as shown in 7/S4-102.
- Provided framing dimensions.

S4-103

- Provided details 5/S4-103 and 6/S4-103 to show CMU and footing reinforcement in the new foundation walls.

We hereby acknowledge receipt of the amended instructions and/or revisions and accept these modifications as being part of the contract documents.

Contractor: _____

Contractor's Representative: _____

Representative's Signature: _____

Date: _____

June 9, 2026
Our File: 25-10031PR

Tender Addendum

Addendum #2

Mechanical Addendum #2

Project: Verona
Address: 6094 Carleton Drive, Verona, ON

The following tender addendum will form part of the Mechanical Construction Document – Issued for Tender, and will become part of the contract documents. Contractors are required to acknowledge receipt of this addendum by inserting its number in the bid form and signing this form.

Related Drawings:

M010 – Equipment Schedules
M030 – Mechanical Water Treatment and Solar Hot Water Schematic
P001 – Proposed Drainage Layout Foundation

Addendum Details:

Response to Bidder Questions

Question 5: Please provide location where drain pipe needs to be repaired?

Answer 5: No existing drain pipes are intended to be repaired or reused under this scope of work. The sanitary drainage piping and plumbing fixtures shown on drawing P001 are new work and shall be supplied, installed and made fully operational by the mechanical contractor. Where the new sanitary drainage piping connects to existing site septic infrastructure, the point of connection shall be site verified to suite existing conditions.

Question 6: Is the existing drainage layout to remain?

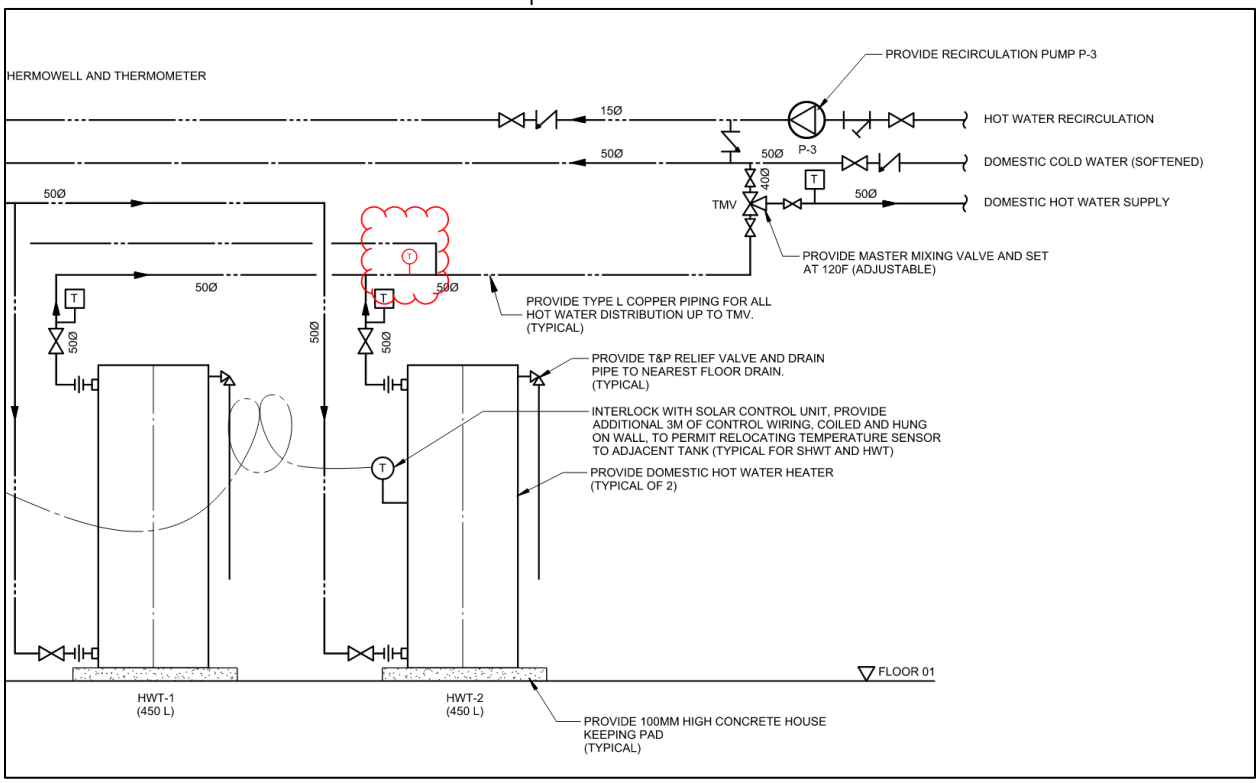
Answer 6: No. The existing drainage layout is not intended to remain. Existing sanitary drainage piping within the area of work shall be removed as required to accommodate the new work. All sanitary drainage piping and plumbing fixtures shown on drawing P001 are new and shall be supplied and installed complete by the mechanical contractor. Refer to Answer 5 above.

M010

- Refer to revised AHU-1 and CU-1 schedule attached herewith.

M030

- Provide additional thermowell and temperature sensor as indicated.



Attachments:

- 21-01024 Makeup Air Unit.pdf
- 21-01024 Remote Condensing Units.pdf

We hereby acknowledge receipt of the amended instructions and/or revisions and accept these modifications as being part of the contract documents.

Contractor: _____

Contractor's Representative: _____

Representative's Signature: _____

Date: _____

MAKEUP AIR UNIT WITH HEAT RECOVERY

TAG	SERVICE	LOCATION	MANUFACTURER	REFRIGERANT	SUPPLY FAN						RETURN FAN					
					AIRFLOW (CFM)	E.S.P ("WC)	VFD	BHP	HP	TYPE	AIRFLOW (CFM)	E.S.P ("WC)	VFD	BHP	HP	TYPE
AHU-1	VENTILATION	2F FAN ROOM	HAAKON INDUSTRIES	R-410A	2,200	1	Y	1	3	ODP	2,200	1	Y	1	2	ODP

TAG	COOLING AND REHEAT COIL PERFORMANCE									ELECTRIC HEATER					
		TOTAL CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)	EAT DB (°C)	EAT WB (°C)	LAT DB (°C)	LAT WB (°C)	APD "WC		INPUT (KW)	VOLTAGE	PHASE	HZ	CONTROLS
AHU-1	COOLING	135.31	60.24	79.7	72.7	54.4	54.2	0.95	PREHEAT	6.6	208	3	60	1 STAGE
	REHEAT	171.79	--	54.4	--	71	--	0.3	REHEAT	55	208	3	60	SCR

TAG	FILTER			HEAT RECOVERY							DEFROST	ELECTRICAL					WEIGHT		COMMENTS
	PRE-FILTER			SEASON	TOTAL EFFECTIVENESS	PERFORMANCE (°F)						VOLTAGE	PHASE	HZ	MCA	MOCP	LBS	KG	
		TYPE	MERV			S/A (DB/WB)	R/A (DB/WB)	O/A (DB/WB)	E/A (DB/WB)										
AHU-1	OA	2" PLEAT	8	WINTER	84.8%	24.1/16.9	72.0/54.4	-11.2/-11.2	15.1/15.1	PREHEATER		208	3	60	239	250	5500	2500	SEE NOTES
	RA	2" PLEAT	8	SUMMER	72.5%	79.7/72.7	75.0/63.0	82.3/73.4	80.3/64.8										

NOTE:

1. PROVIDE DISCONNECT AND STARTER FOR ALL EQUIPMENT
2. PROVIDE LOOSE VFDS FOR SUPPLY AND EXHAUST FANS
3. PROVIDE OUTDOOR AND EXHAUST AIR DAMPER, TAMCO 9000, WITH FACTORY INSTALLED AND WIRED ACTUATORS.
4. PROVIDE SPLIT TOP DECK FOR REASSEMBLY ON SITE
5. PROVIDE HOT-GAS REHEAT COIL FOR HUMIDITY CONTROL.
6. PROVIDE PREHEATER FOR DEFROST CONTROL.
7. PROVIDE INTERNAL MARINE LIGHTS FOR EACH SERVICE COMPARTMENT.
8. PROVIDE ALL REFRIGERANT METERING DEVICES, EEV, FLOW CONTROL, AND LINE COMPONENTS.
9. PROVIDE 0-10VDC MODULATING HOT GAS REHEAT VALVE AND CONTROL
10. PROVIDE SINGLE POINT POWER CONNECTION.
11. PROVIDE TERMINAL STRIP FOR BAS CONTROL OF ELECTRIC HEATERS, SUPPLY/EXHAUST VFDS, DX COOLING, AND REHEAT.
12. HRV PERFORMANCE BASED ON 2200CFM SUPPLY, 1100CFM RETURN.

REMOTE DX CONDENSING UNIT

TAG	SERVICE	LOCATION	MANUFACTURER	MODEL	REFRIGERANT	COOLING PERFORMANCE		ELECTRICAL					DIMENSIONS			WEIGHT		COMMENTS
						TOTAL CAPACITY (MBH)	STAGES	VOLTAGE	PHASE	HZ	MCA	MOCP	L (mm)	W (mm)	H (mm)	LBS	KG	
CU-1	AHU-1	OUTDOORS	REFPLUS	OEZ-150-1H1-5D	R-410A	136.65	DIGITAL SCROLL	208	3	60	49.4	80	2470.15	1079.5	1016	856	389	SEE NOTES

NOTE:

1. PROVIDE DISCONNECT AND STARTER FOR ALL EQUIPMENT
2. PROVIDE FAN CYCLING CONTROL, A19
3. PROVIDE HEAT RECLAIM VALVE KIT WITH ELECTRONCI REGULATORS
4. PROVDIE OVERIZE RECEIVER
5. PROVIDE CONTROL TRANSFORMER
6. PROVIDE DIGITAL CONTROLLER (REFPLUS PROGRAM)
7. PROVIDE DISCHARGE CHECK VALVE.
8. PROVIDE FLOODING VALVE
9. PROVIDE LIQUID LINE KIT.
10. PROVIDE LOW AMBIENT KIT.
11. PROVIDE PRESSURE CONTROLS JOHNSON P170 WITH FLEX HOS
12. PROVIDE SUCTION ACCUMULATOR AND REPLACEABLE FILTERS
13. PROVIDE DIGITAL COMPRESSOR KIT - EC3-D73
14. PROVIDE SOLENOID FOR LIQUID LINE KIT
15. PROVIDE EC3-D73 AND IB BOARD FOR HEAT RECLAIM.

ELECTRICAL ADDENDUM

Project Name:	6094 Carlton Drive, Verona McMullen Manor		
Project No.:	26-108	Instruction No..:	EAD-02
To:	Square Vis Architects Inc		
Attention:	Natalie Taleb	Date:	June 9, 2026
From:	Foroud Rasti P.Eng		

The following additions, deletions and/or items of clarification shall be included as an integral part of the Tender Documents.

DRAWINGS:

1. **Drawing E100 (Re Issued)**
   1.1. Revise the electrical legend to add specification for the new SPD unit.

2. **Drawing E101A - E102B (Re Issued)**
   2.1. Revise the emergency lighting and exit signs as indicated.
   2.2. Provide new auto door systems as indicated.

3. **Drawing E104 (Re Issued)**
   3.1. Revise the single line diagram as indicated.
   3.2. Revise panel schedules as indicated.

4. **Drawing E109 (Re Issued)**
   4.1. Revise drawing the electrical specifications as indicated.

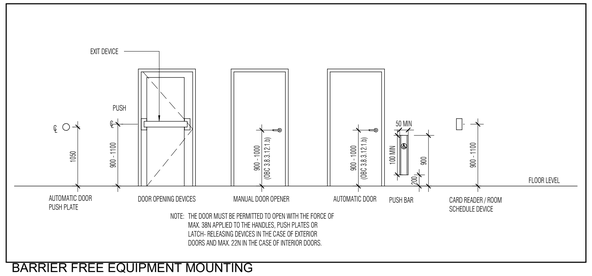
END OF EAD-02

DOOR SCHEDULE - GROUND TO SECOND FLOOR

DOOR NUMBER	OUTSIDE	INSIDE	NUMBER OF LEAFS	LEAF 1 WIDTH	LEAF 2 WIDTH	HEIGHT	THICKNESS	LEAF TYPE	MATERIAL	FINISH	CORE	TYPE	MATERIAL	FINISH	FIRE RATING	CLOSER	EXIT DEVICE	BF PUSH BUTTON	AUTOMATIC OPERATOR	CLASSROOM FUNCTION	DOOR PULL	DUMMY SET w/ ROLLER CATCH	OFFICE FUNCTION LOCK SET	PASSAGE SET	PRIVACY LOCK SET	STORAGE ROOM LOCK SET	SUITE ENTRY LOCK SET	CARD READER	DOOR CONTACT	ELECTRIC STRIKE	MAGLOCK	MAGLOCK RELEASE	REMOTE RELEASE	PUSH TO LOCK	BOLT	ACOUSTIC SEAL	DOOR SWEEP	SMOKE/AIR SEAL	THRESHOLD	WEATHER STRIP	DOOR STOP AS REQ'D	KICK PLATE	COAT HOOK	NOTES
			DOOR									FRAME				DOOR HARDWARE																									ACCESSORIES			
D100	ENTRANCE VEST.	EXTERIOR	1	965		2134	AS REQ'D	G	AL/GLT	PT	INSUL	A	AL	PT	-	CL	ED	PB	AO		YES								DC	ES									TH	WS				DOOR SWEEP, VISION STRIP, SS DOOR PULL REFER TO WINDOW SCHEDULE
D101	CORRIDOR	ENTRANCE VEST.	1	965		2134	AS REQ'D	G	AL/GLT	PT	INSUL	A	AL	PT	-	CL	ED	PB	AO		YES							CR	DC	ES			RR						TH	WS				RESIDENT TELEPHONE RELEASE, MORTISE LOCK
D102	CORRIDOR	LAUNDRY RM	1	965		2134	44	'D'	HM	PT	SC	A	HM	PT	60 MIN	CL		PB	AO							SR		CR	DC	ES											KP		
D103	CORRIDOR	GARBAGE RM	1	965		2134	44	A,	HM	PT		A	HM	PT	60 MIN	CL		PB	AO					PS				CR	DC	ES										WS	KP		
D104	GARBAGE RM	EXTERIOR	1	2134		2134	AS REQ'D	Z1	MTL	-		A	MTL	PT					AO														RR										
D105	CORRIDOR	STAIR A	1	965		2135	44	'B'	HM/GWG	PT		A	HM	PT	60 MIN	CL	ED							PS														SMS					
D106	STAIR A	EXTERIOR	1	965		2135	44	'B'	HM/GWG	PT	INSUL	A	HM	PT		CL	ED							PS																WS			
D107	EXTERIOR	COMMON RM	1	965		2135	44	'G'	MTL	PT	INSUL	A	HM	PT		CL										SR		CR	DC	ES										WS			
D109	COMMON RM	CORRIDOR	1	965		2134	44	'D'	HM/GWG	PT		A	AL	PT	60 MIN	CL		PB	AO				OF					CR	DC	ES													
D110	CORRIDOR	UNIVERSAL W/C	1	965		2134	44	A,	HM	PT		A	HM	PT	60 MIN	CL		PB	AO										DC	ES				PTL							KP		LEVER WITH PUSH TO LOCK BUTTON. REFER TO ELECTRICAL SHEET E105 FOR MORE DETAILS
D111	CORRIDOR	JANITOR RM	1	914		2134	44	A,	HM	PT	-	A	HM	PT	60 MIN	CL										SR		CR		ES											KP		
D112	CORRIDOR	STORAGE	1	914		2134	44	A,	HM	PT		A	HM	PT	60 MIN	CL										SR		CR	DC	ES								SMS				KP		
D113	CORRIDOR	ELECTRICAL RM	1	914		2134	44	A,	HM	PT		A	HM	PT	60 MIN	CL										SR		CR	DC	ES										WS			
D114	STORAGE	EXTERIOR	1	2134		2134	AS REQ'D	Z1	MTL	-		A	MTL	PT					AO														RR										
D115	CORRIDOR	MECH. RM	1	914		2134	44	A,	HM	PT		A	HM	PT	60 MIN	CL										SR		CR	DC	ES										WS			
D116	CORRIDOR	CORRIDOR	1	965		2134	44	A,	HM	PT		A	HM	HM	90 MIN	CL	ED	PB	AO			DMS								ES						DS	SMS			WS	KP		
D117	CORRIDOR	CORRIDOR	1	965		2134	44	A,	HM	PT		A	HM	HM	90 MIN	CL	ED	PB	AO			DMS								ES						DS	SMS			WS	KP		
D118	STAIR B	CORRIDOR	1	965		2135	44	'B'	HM/GWG	PT		A	HM	PT	60 MIN	CL	ED							PS													SMS					
D119	STAIR B	EXTERIOR	1	965		2135	44	'B'	HM/GWG	PT	INSUL	A	HM	PT		CL	ED							PS																WS			
D120	CARD ROOM	CORRIDOR	1	965		2134	44	'D'	HM	PT		A	HM	PT	60 MIN	CL		PB	AO							SR		CR	DC	ES											KP		
D121	CORRIDOR	PARCEL RM	1	914		2134	44	A,	HM	PT		A	HM	PT	60 MIN	CL										SR															KP		
D200	CORRIDOR	STORAGE AND FAN RM	2	915	915	2135	44	A2	HM	PT		B	HM	PT	60 MIN	CL										SR		CR	DC	ES													PROVIDE ASTRAGAL
D202	CORRIDOR	STAIR A	1	915		2135	44	'B'	HM/GWG	PT		A	HM	PT	60 MIN	CL	ED							PS													SMS					
D203	CORRIDOR	CORRIDOR	1	914		2134	44	A,	HM	PT		A	HM	HM	90 MIN	CL	ED					DMS								ES						DS	SMS			WS	KP		
D204	CORRIDOR	CORRIDOR	1	914		2134	44	A,	HM	PT		A	HM	HM	90 MIN	CL	ED					DMS								ES						DS	SMS			WS	KP		
D205	STAIR B	CORRIDOR	1	915		2135	44	'B'	HM/GWG	PT		A	HM	PT	60 MIN	CL	ED							PS													SMS					

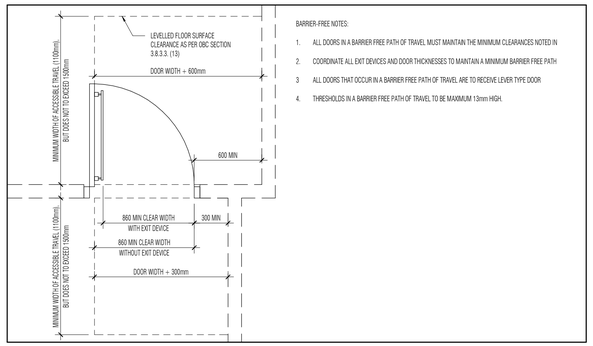
DOOR SCHEDULE - TYPICAL SUITE

DOOR NUMBER	LOCATION	NUMBER OF LEAFS	LEAF 1 WIDTH	LEAF 2 WIDTH	HEIGHT	THICKNESS	LEAF TYPE	MATERIAL	FINISH	CORE	TYPE	MATERIAL	FINISH	FIRE RATING	CLOSER	EXIT DEVICE	BF PUSH BUTTON	AUTOMATIC OPERATOR	CLASSROOM FUNCTION	DOOR PULL	DUMMY SET w/ ROLLER CATCH	OFFICE FUNCTION LOCK SET	PASSAGE SET	PRIVACY LOCK SET	STORAGE ROOM LOCK SET	SUITE ENTRY LOCK SET	CARD READER	DOOR CONTACT	ELECTRIC STRIKE	MAGLOCK	MAGLOCK RELEASE	REMOTE RELEASE	PUSH TO LOCK	BOLT	ACOUSTIC SEAL	DOOR SWEEP	SMOKE/AIR SEAL	THRESHOLD	WEATHER STRIP	DOOR STOP AS REQ'D	KICK PLATE	COAT HOOK	NOTES
		DOOR									FRAME				DOOR HARDWARE																									ACCESSORIES			
T01	BF SUITE ENTRANCE	1	965		2134	44	'A3'	WD	VNR/STD	SC	A	HM	PT	20 MIN	CL											SE												TH			KP		VIEWER. STAIN TO MATCH PT5
T02	SUITE ENTRANCE	1	914		2134	44	'A3'	WD	VNR/STD	SC	A	HM	PT	20 MIN	CL											SE												TH					VIEWER. STAIN TO MATCH PT5
T03	SUITE INTERIOR	1	965		2134	44	A,	WD	PT	-	A	WD	PT	-									PS																				PRIVACY LOCK AT WASHROOM. PT3
T04	SUITE INTERIOR	1	813		2134	44	'A'	WD	PT	-	A	WD	PT	-									PS																				PRIVACY LOCK AT WASHROOM. PT3
T05	SUITE INTERIOR	1	559		2134	44	'A'	WD	PT	-	A	WD	PT	-									PS																				PT3
T06	CLOSET SLIDING	2	762	762	2134	44	'L'	WD	PT	-	-	WD	PT	-																													SLIDING TRACK. PT3
T07	CLOSET SLIDING	2	610	610	2134	44	'L'	WD	PT	-	-	WD	PT	-																													SLIDING TRACK. PT3
T08	CLOSET SLIDING	2	457	457	2134	44	'L'	WD	PT	-	-	WD	PT	-																													SLIDING TRACK. PT3
T10	EXTERIOR TERRACE	1	813		2135	44	'G'	MTL	PT	INSUL	A	MTL	PT	-										PL														TH	WS				PT5



NOTE: THE DOOR MUST BE PERMITTED TO OPEN WITH THE FORCE OF MAX. 38N APPLIED TO THE HANDLES, PUSH PLATES OR LATCH- RELEASING DEVICES IN THE CASE OF EXTERIOR DOORS AND MAX. 22N IN THE CASE OF INTERIOR DOORS.

BARRIER FREE EQUIPMENT MOUNTING HEIGHT
1 : 50

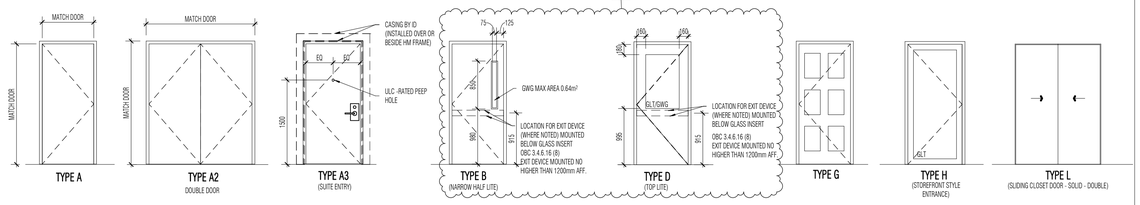


BARRIER-FREE NOTES:

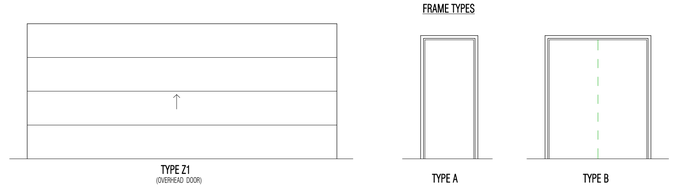
1. ALL DOORS IN A BARRIER FREE PATH OF TRAVEL MUST MAINTAIN THE MINIMUM CLEARANCES NOTED IN
2. COORDINATE ALL EXIT DEVICES AND DOOR THICKNESSES TO MAINTAIN A MINIMUM BARRIER FREE PATH
3. ALL DOORS THAT OCCUR IN A BARRIER FREE PATH OF TRAVEL ARE TO RECEIVE LEVER TYPE DOOR
4. THRESHOLDS IN A BARRIER-FREE PATH OF TRAVEL TO BE MAXIMUM 13mm HIGH.

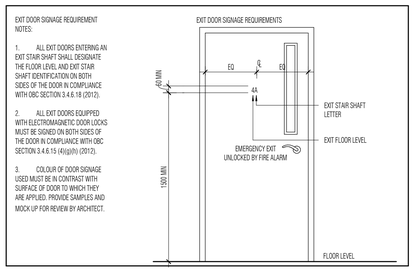
BARRIER FREE NOTES
1 : 50

DOOR TYPES



FRAME TYPES



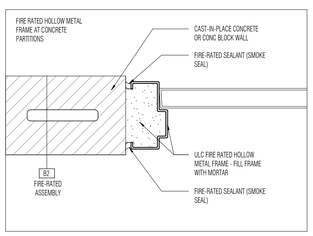


EXIT DOOR SIGNAGE
1 : 50

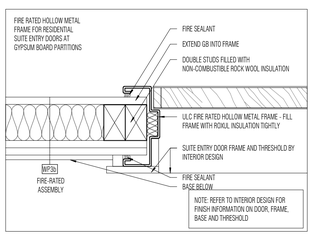
NOTES:

1. ALL FIRE RATED DOORS TO HAVE CLOSERS AND LATCH SET OR LOCK SET.
2. ALL FIRE RATED DOORS AND FRAMES TO HAVE A ULC FIRE RATED LABEL PER SCHEDULE.
3. ALL LATCH SETS AND LOCK SETS TO BE LEVER HANDLES.
4. COORDINATE LOCATIONS OF HORIZONTAL DOOR STILES WITH EXIT DEVICES.
5. ALL EXTERIOR DOORS C/W WEATHERSTRIPPING AND INTEGRAL OR REMOVABLE ASTRAGAL AT DOUBLE
6. ALL FIRE RATED DOUBLE DOORS TO BE COMPLETE WITH AN INTEGRAL OR REMOVABLE ASTRAGAL AS PER SCHEDULE
7. ALL FRAMED EXTERIOR GLAZED DOORS TO BE COMPLETE WITH DOUBLE GLAZED THERMAL UNITS.
8. ALL OVERHEAD DOORS TO BE MOTORIZED.
9. REFER TO MECHANICAL DRAWINGS FOR DOOR UNDERCUTS AND GRILLES.
10. ALL INSULATED EXTERIOR DOORS TO HAVE INSULATED, THERMALLY BROKEN FRAMES.
11. SMOKE SEALS AT ALL FIRE RATED DOORS.
12. HARDWARE NOTED FOR CODE REQUIREMENTS ONLY.

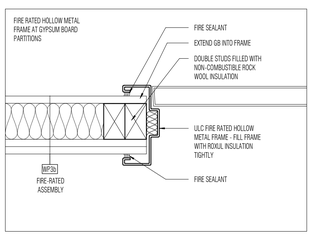
DOOR GENERAL NOTES
1 : 50



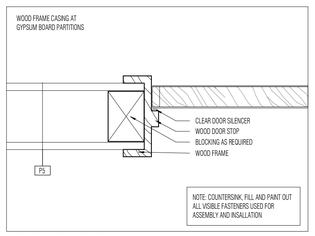
J1: HM (FRR) at CMU



J2: HM (FRR) at GB Partition, Suites



J3: HM (FRR) at GB Partition



J4: WD at GB Partition, Casing

DOOR JAMB DETAIL
1 : 5

DOOR HARDWARE SPECIFICATIONS	GENERAL NOTES
MORTISE LEVER: MANUFACTURER: HAGER SERIES: 3500 SERIES LEVER FINISH: BRUSHED NICKEL (SUITE INTERIOR) FINISH: MATT BLACK. (UNIT ENTRANCE) DEADBOLT: HAGER - 3200 SERIES HINGES: HAGER - BB1279 EXIT DEVICES: HAGER – 4700 SERIES CONTINUOUS GEARED HINGES: PEMKO _PM_SLF_HD CONTINUOUS STEEL HINGES: PEMKO PIVOTS: IVES FLUSH BOLTS AND ACCESSORIES: IVES - COR SERIES CYLINDERS: ASSA TWIN MAX + - ASSA TWIN 6000 ELECTRIFIED LOCKSET: SARGENT ELECTRIC STRIKES: HES 1006 SERIES STANDARD STRIKES: HES 5200 SERIES (NON-FIRE RATED OPENINGS), HES 5300 SERIES (FIRE RATED OPENINGS) SURFACE MOUNTED STRIKES: HES 9400 (NON-FIRE RATED OPENINGS), HES 9500 (FIRE RATED OPENINGS) DOOR CLOSERS (SURFACE MOUNT): HAGER - 5400 SERIES DOOR CLOSERS (HEAVY DUTY): HAGER - 5100 SERIES WALL MOUNTED DOOR STOP: HAGER - 236W FLOOR MOUNTED STOP: HAGER - 243F AUTOMATIC DOOR OPERATORS: BESAM SW200i KICK PLATE: HAGER - 190S SUITE DOOR VIEWER: IVES - U696 FOB SYSTEM: ASSA ABLOY - ACCENTRA	1. REFER TO HARDWARE SCHEDULE FOR DETAILED SPECIFICATIONS AS SUPPLIED BY: CONTRACTOR 2. REFER TO FLOOR PLAN FOR DOOR SWINGS. 3. PROVIDE SHOP DRAWINGS OF DOOR/FRAME DETAILS FOR DESIGNERS APPROVAL BEFORE PROCEEDING WITH WORK. 4. FINISHES: - REFER TO WALL FINISHED PLAN FOR PAINT SPECIFICATIONS. - ALL PAINTED DOOR/FRAMES (INCLUDING SIDELIGHTS) - TO BE SHOP FINISHED. 5. SECURITY: TO BE SUPPLIED AND INSTALLED BY CONTRACTOR. 6. KEYING - CONTRACTOR IS TO WORK WITH OWNER FOR KEYING REQUIREMENTS. - KEYING IS TO BE INCLUDED IN SCOPE OF WORK . CONTACT CLIENT TO DETERMINE KEYING REQUIREMENTS. - ALL SUITE LOCKS TO BE KEYED TO SUB MASTER AND BUILDING MASTER SYSTEM. - CONTRACTOR TO PROVIDE 3 SETS OF KEYS TO THE CLIENT. - BASE BUILDING KEYING PROVIDED BY OWNER. - BASE BUILDING KEY WAY IS TO BE CONFIRMED BY OWNER.

AFF	Above finish floor
AL	Aluminum
AN	Anodized
AO	Automatic door operator
AS	Acoustic seal
AST	Astragal
BF	Barrier free, barrier free hardware
CH	Coat hook
CID	Clear inside dimension
CL	Closer
CLC	Closer, Concealed
CLR	Clear finish
CR	Card reader
CYL	Cylinder
DB	Dead bolt
DC	Door contact
DP	Door pull
DPR	Door pull - recessed
DS	Door sweep
DSD	Door stop - door mounted
DSF	Door stop - floor mounted
DSO	Door stop - overhead recessed
DSW	Door stop - wall mounted
ED	Exit device
ESP	Escutcheon plate
EQ	Equal
ES	Electric strike
(E)	Existing
(E/R)	Existing/relocated
FFL	Finished floor level
FG	Fixed glazing
FIN	Finish
FL	Floor
FPL	Flush pull
FRR	Fire resistance rating
GALV	Galvanized
GK	Gasket
GL	Glazing, glass
GLB	Glass - back painted
GLFCG	Glass - fire rated ceramic glass
GLL	Glass - laminated
GLT	Glass - tempered
GLS	Glass - safety
GWG	Georgian wire glass
HC	Hollow core
HCC	Honey comb core
HG	Hinge
HGPC	Hinge, centre pivot
HGPO	Hinge, offset pivot
HM	Hollow metal (doors and frames to be ULC fire rated per schedule, insulated at exterior)
HR	Hour
ID	Interior design
INSUL	Insulated, insulation
KP	Kick plate
L	Length/long
LA	Latch
LS	Lock set
MAG	Magnetic lock
MTL	Metal
(N)	New
PB	Push button
PP	Push plates
PS	Passage set
PT	Paint, painted
(R)	Relocated
RC	Roller catch
RR	Remote release
SC	Solid core
SS	Stainless steel
STD	Stained, stain
STL	Steel
TBD	To be determined
TH	Threshold
THK	Thick
TRR	Temperature rise rating
TT	Thumb turn
VNR	Veneer
WD	Wood
WS	Weatherstripping

DOOR ABBREVIATION
1 : 50

DO NOT SCALE DRAWINGS. THE CONTRACTOR SHALL CHEECK AND VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.

CLIENT:

ENGINEERING:

SQUARE VIS ARCHITECTS INC.
930 THE EAST MALL, SUITE 100
ETOBICOKE, ON M9B 6J9

SEAL

Revision Schedule

Rev	Date	By	Description
3	2026-03-02	SR	ISSUED FOR 90% REVIEW
4	2026-03-20	SR	ISSUED FOR PERMIT
5	2026-05-11	SR	ISSUED FOR TENDER
6	2026-05-15	SR	RE-ISSUED FOR PERMIT
7	2026-06-01	SR	ADDENDUM-2
8	2026-06-08	SR	RE-ISSUED FOR PERMIT
9	2026-06-10	SR	ADDENDUM-3

PROJECT NAME: VERONA
PROJECT ADDRESS: 6094 Carleton Drive, Verona, ON

ISSUE DATE: 01/06/2025
DRAWN BY:
CHECKED BY:

SHEET TITLE: DOOR SCHEDULE
SCALE: AS SHOWN

SHEET NUMBER: A004

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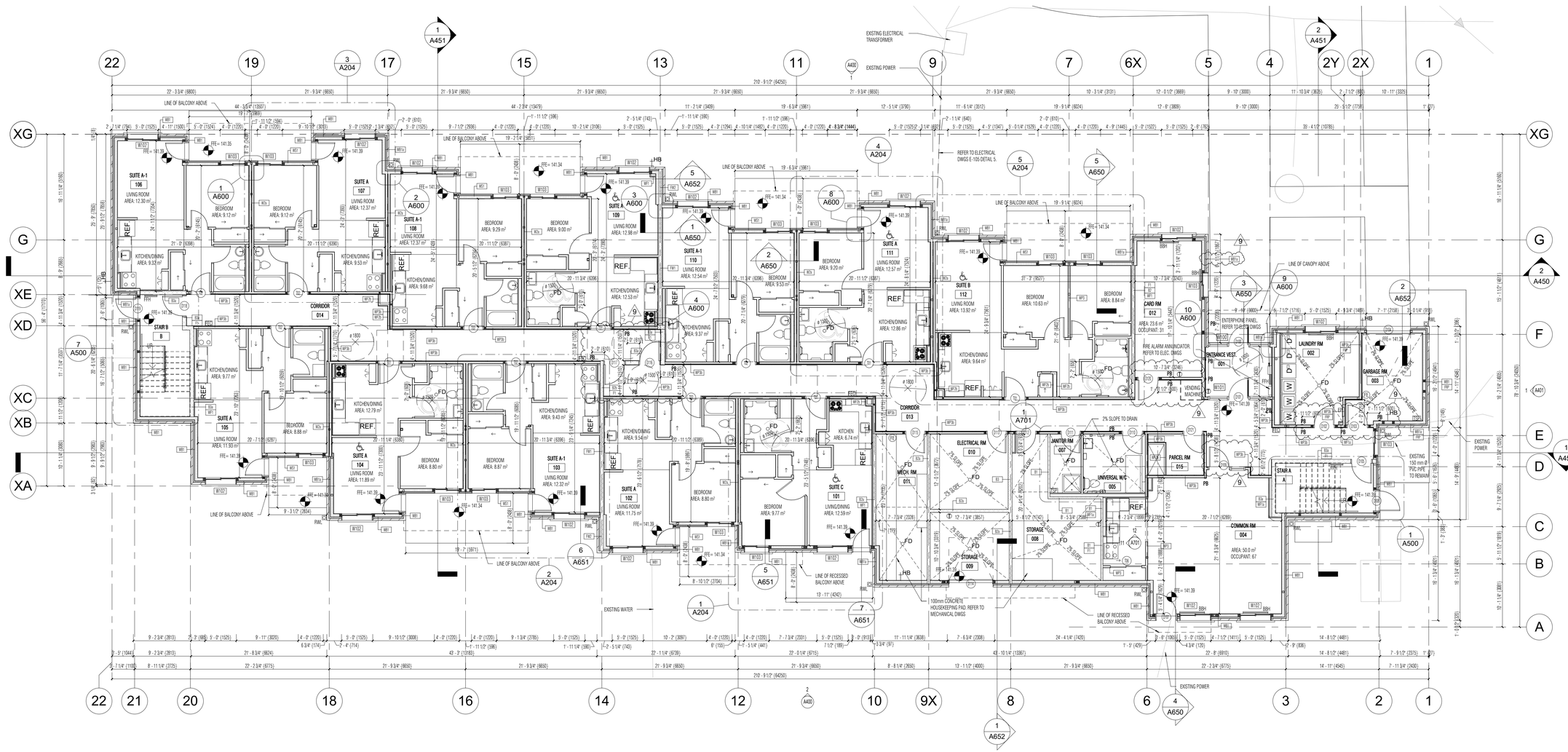

DO NOT SCALE DRAWINGS. THE CONTRACTOR SHALL CHEECK AND VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.

CLIENT:

ENGINEERING:

SQUARE VIS ARCHITECTS INC.
930 THE EAST MALL, SUITE 100
ETOBICOKE, ON M9B 6J9

SEAL

Revision Schedule

Rev	Date	By	Description
3	2026-03-02	SR	ISSUED FOR 90% REVIEW
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8	2026-06-08	SR	RE-ISSUED FOR PERMIT
9	2026-06-10	SR	ADDENDUM-3

PROJECT NAME:
VERONA
PROJECT ADDRESS:
6094 Carleton Drive,
Verona, ON

ISSUE DATE: 01/06/2025
DRAWN BY:
CHECKED BY:

SHEET TITLE:
1ST FLOOR PLAN

SCALE: AS SHOWN

SHEET NUMBER:
A201

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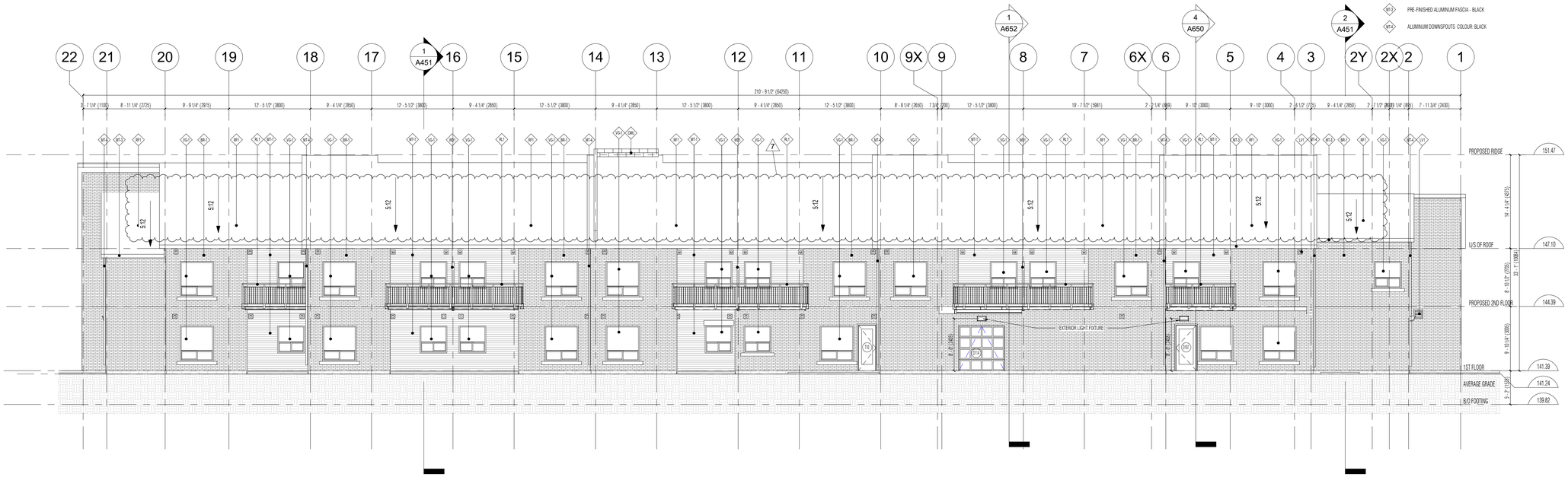
LEGEND:

BR-1 BRICK - BRAMPTON BRICK - CONTEMPORARY SERIES - VENETIAN	RL1 HOT DIP GALVANIZED STEEL RAILING - COLOUR:BLACK
CMU CMU	RF1 ASPHALT SHINGLES (SRI-0-29)
LV1 MECHANICAL LOUVRES	GL1 RESIDENTIAL VISION GLASS
MT-1 ALUMINUM SIDING - LONGBOARD TONGUE & GROOVE PLANKS - DARK CHERRY	WD1 WOOD PRIVACY SCREEN - WESTERN RED CEDAR
MT-2 ALUMINUM SIDING - BLACK	
MT-3 PRE-FINISHED ALUMINUM FASCIA - BLACK	
MT-4 ALUMINUM DOWNSPOUTS COLOUR: BLACK	



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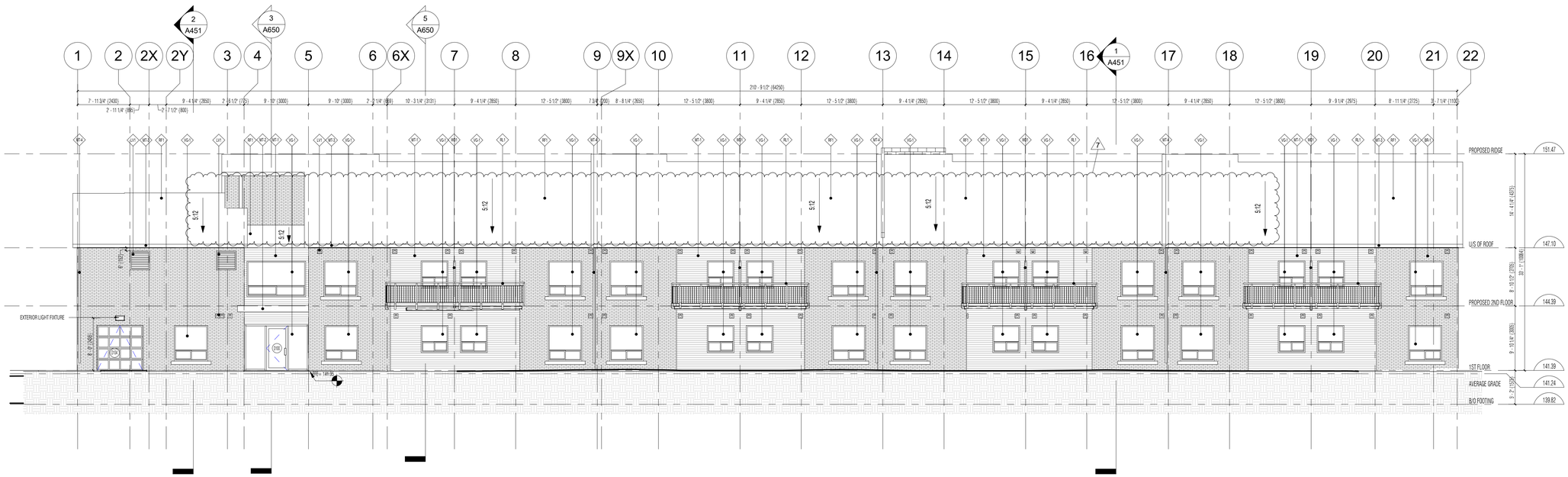
1 : 100



1 Elevation North
1 : 100

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CLIENT:

ENGINEERING:

SQUARE VIS ARCHITECTS INC.
930 THE EAST MALL, SUITE 100
ETOBICOKE, ON M9B 6J9

SEAL

Revision Schedule

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6	2026-06-01	SR	ADDENDUM-2
7	2026-06-10	SR	ADDENDUM-3

PROJECT NAME:
VERONA
PROJECT ADDRESS:
6094 Carleton Drive,
Verona, ON

ISSUE DATE: 01/06/2025
DRAWN BY:
CHECKED BY:

SHEET TITLE:
NORTH AND SOUTH ELEVATIONS

SCALE: AS SHOWN

SHEET NUMBER:
A400

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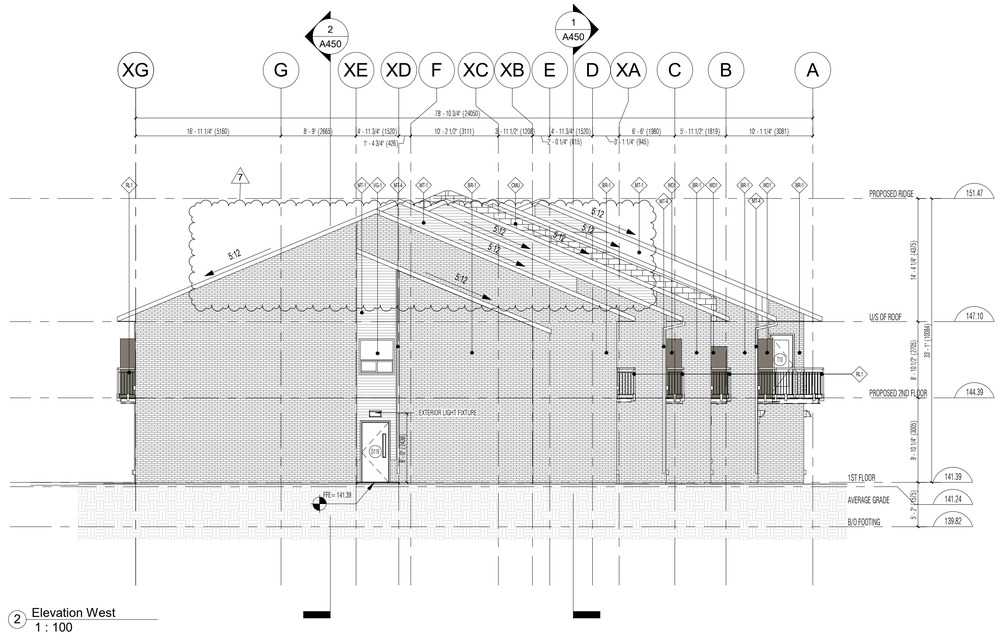
LEGEND:

BR-1	BRICK - BRAMPTON BRICK - CONTEMPORARY SERIES - VENETIAN	RL1	HOT DIP GALVANIZED STEEL RAILING - COLOUR:BLACK
CMU	CMU	RF1	ASPHALT SHINGLES (SRI-0-29)
LV1	MECHANICAL LOUVRES	GD-1	RESIDENTIAL VISION GLASS
MT-1	ALUMINUM SIDING - LONGBORAD TONGUE & GROOVE PLANKS - DARK CHERRY	WD1	WOOD PRIVACY SCREEN - WESTERN RED CEDAR
MT-2	ALUMINUM SIDING - BLACK		
MT-3	PRE-FINISHED ALUMINUM FASCIA - BLACK		
MT-4	ALUMINUM DOWNSPOUTS COLOUR: BLACK		



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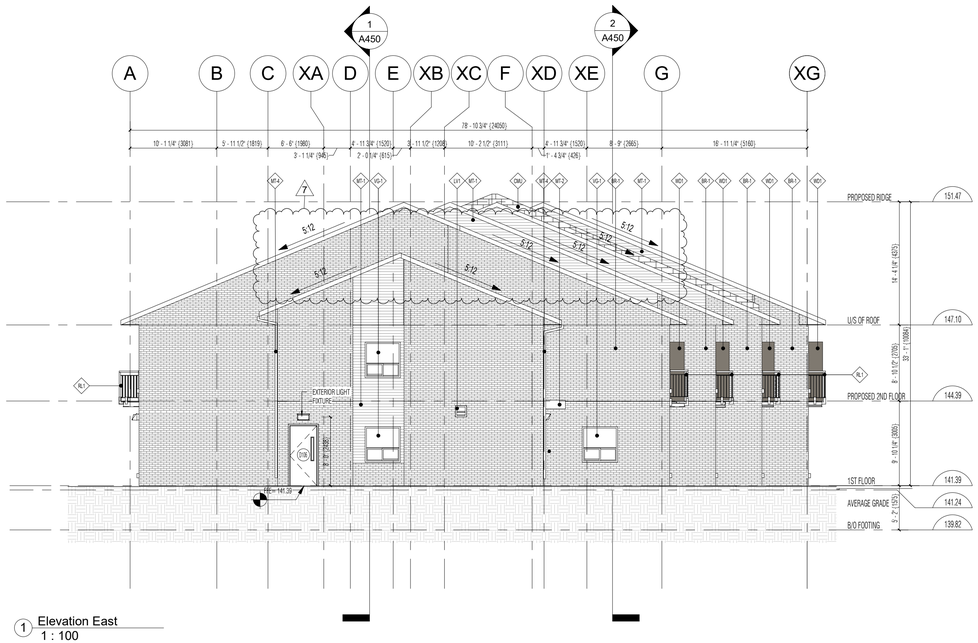

1 Elevation East
1 : 100

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CLIENT:

ENGINEERING:

SQUARE VIS ARCHITECTS INC.
930 THE EAST MALL, SUITE 100
ETOBICOKE, ON M9B 6J9

SEAL

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5	2026-05-11	SR	ISSUED FOR TENDER
6	2026-06-01	SR	ADDENDUM-2
7	2026-06-10	SR	ADDENDUM-3

PROJECT NAME:
VERONA

PROJECT ADDRESS:
6094 Carleton Drive,
Verona, ON

ISSUE DATE: 01/06/2025
DRAWN BY:
CHECKED BY:

SHEET TITLE:
WEST AND EAST ELEVATIONS

SCALE: AS SHOWN

SHEET NUMBER:
A401

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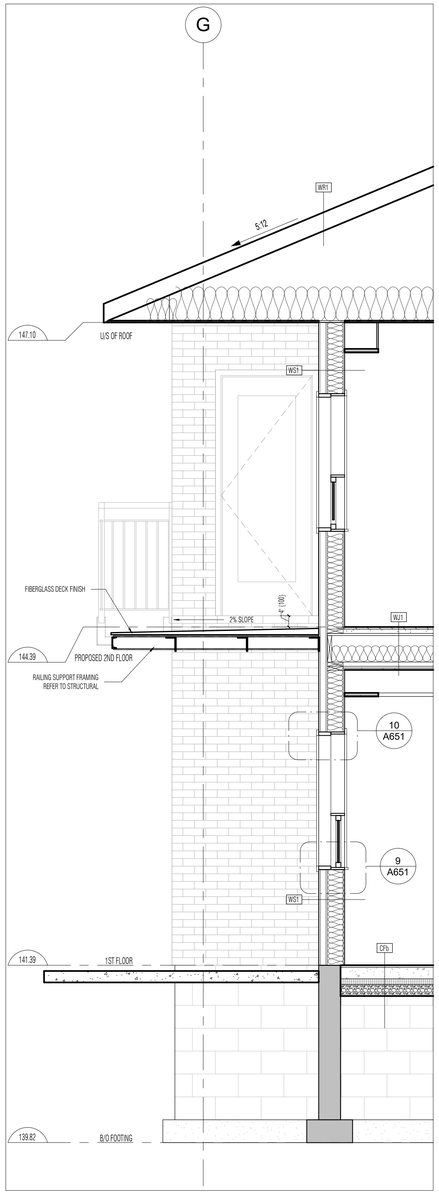

5 SECTION AT TYPICAL BALCONY
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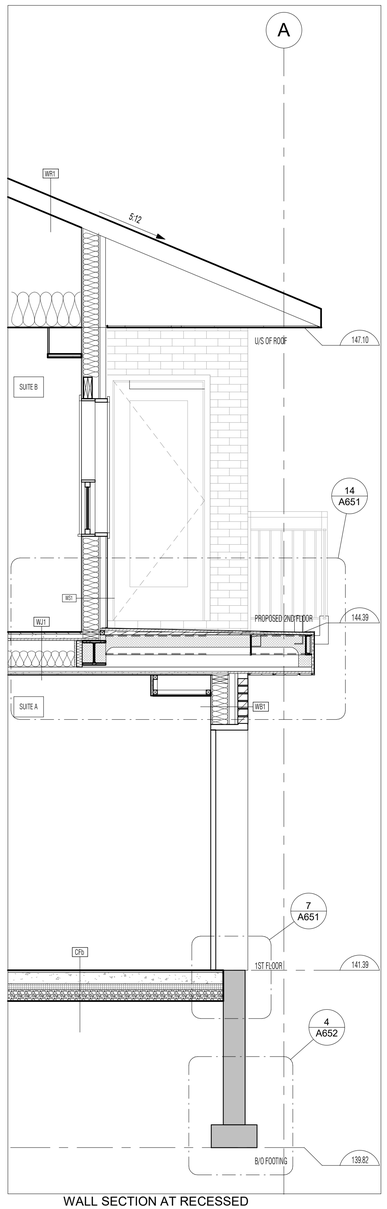

4 WALL SECTION AT RECESSED BALCONY
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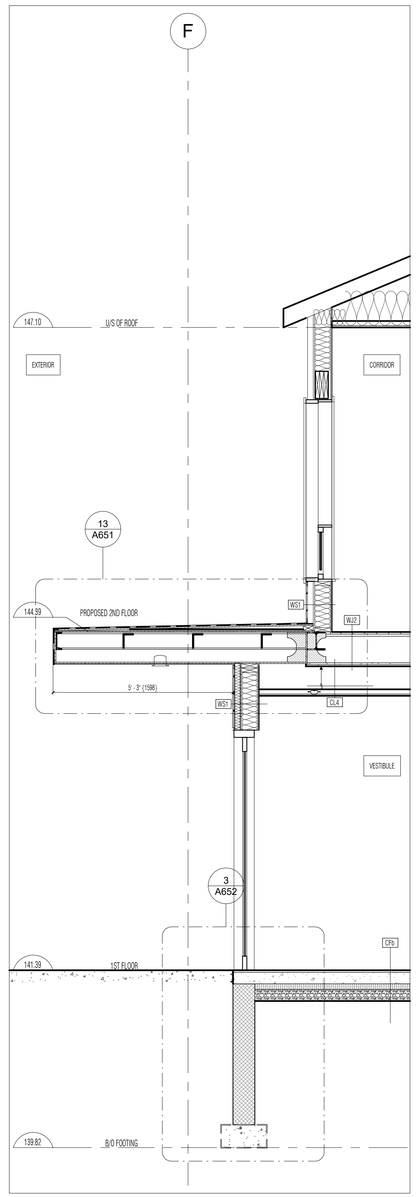

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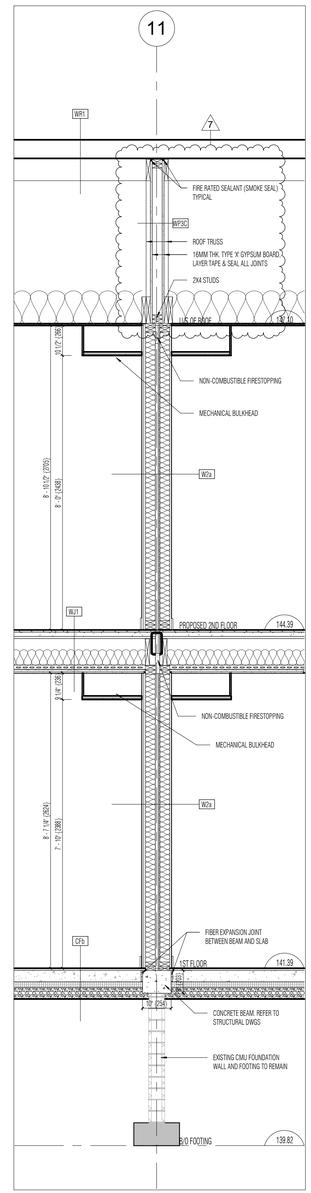

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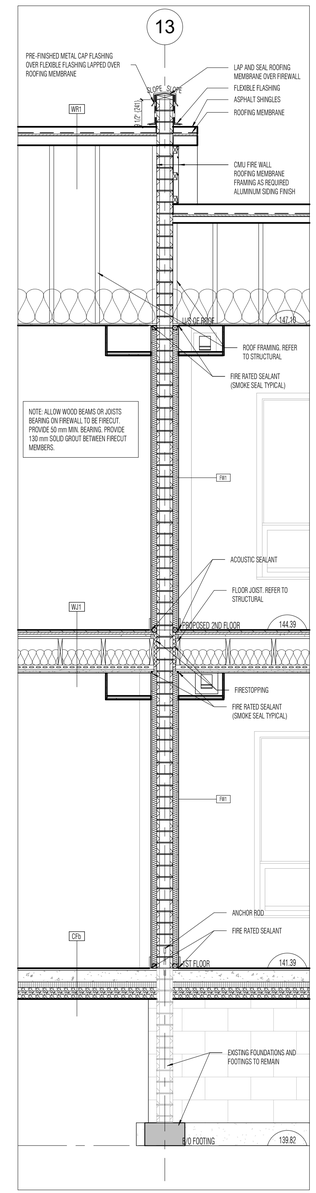

1 SECTION AT FIRE WALL
1 : 25

DO NOT SCALE DRAWINGS. THE CONTRACTOR SHALL CHEECK AND VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.

CLIENT:

ENGINEERING:

SQUARE VIS ARCHITECTS INC.
930 THE EAST MALL, SUITE 100
ETOBICOKE, ON M9B 6J9

SEAL

Revision Schedule

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6	2026-06-01	SR	ADDENDUM-2
7	2026-06-10	SR	ADDENDUM-3

PROJECT NAME:
VERONA
PROJECT ADDRESS:
6094 Carleton Drive,
Verona, ON

ISSUE DATE: 01/06/2025
DRAWN BY:
CHECKED BY:

SHEET TITLE:
WALL SECTIONS

SCALE: AS SHOWN

SHEET NUMBER:
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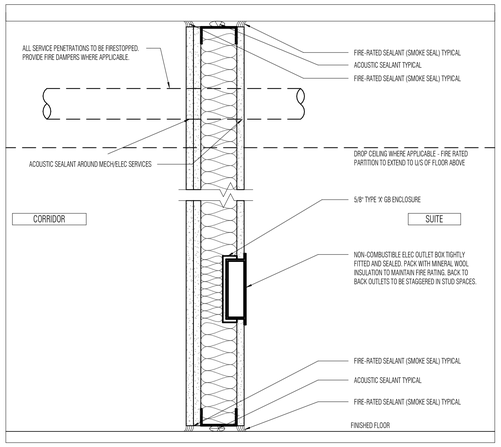

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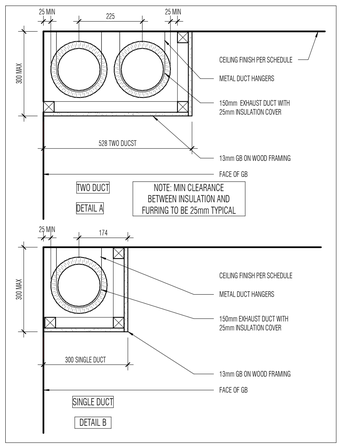

15 EXHAUST DUCT DETAIL
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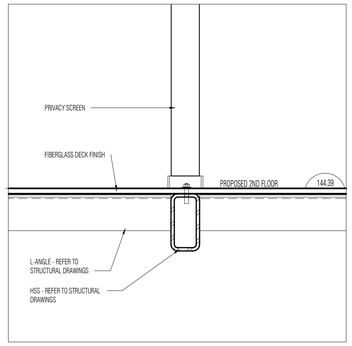

12 PRIVACY SCREEN DETAIL
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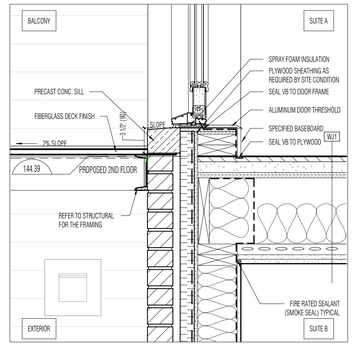

8 DOOR AT SECOND FLOOR BALCONY
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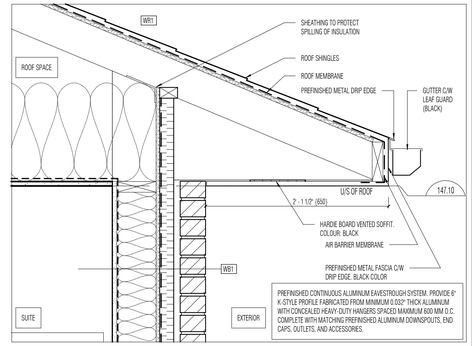

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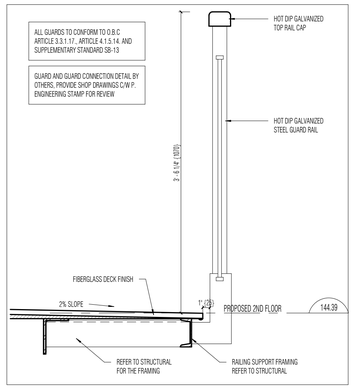

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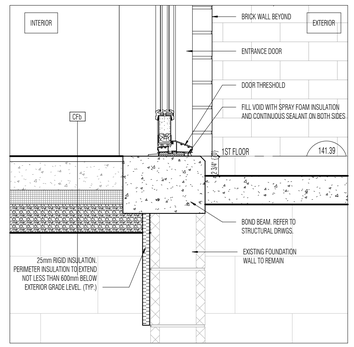

7 DOOR AT GROUND FLOOR
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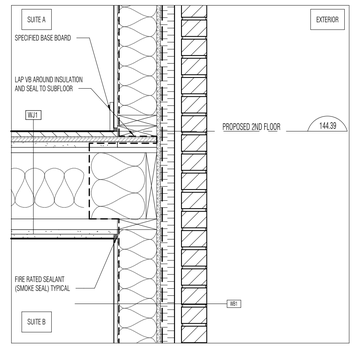

3 TYPICAL SECTION AT MASONRY CLADDING AT SECOND FLOOR
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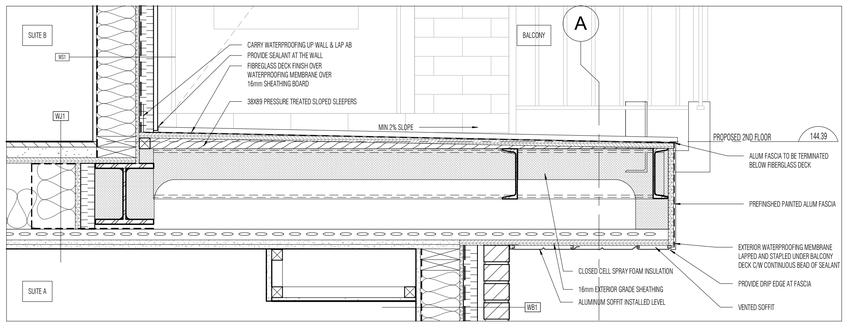

14 SECTION AT RECESSED BALCONY
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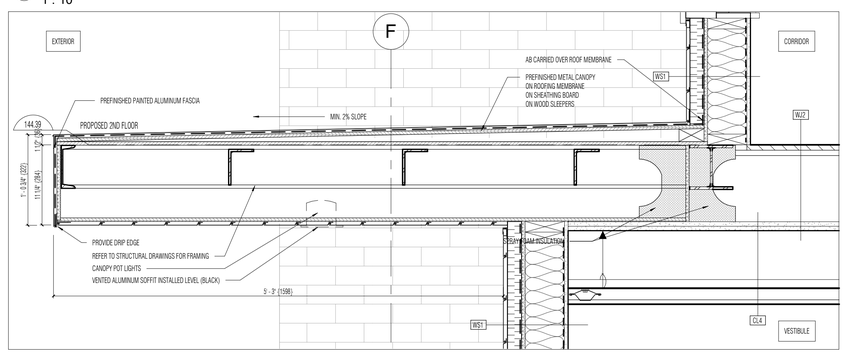

13 ENTRANCE CANOPY
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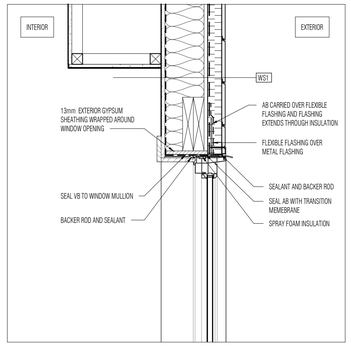

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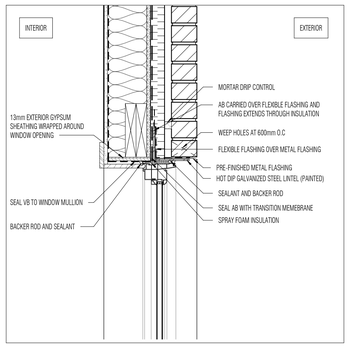
1 : 10



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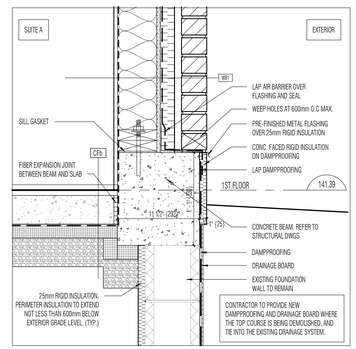
1 : 10



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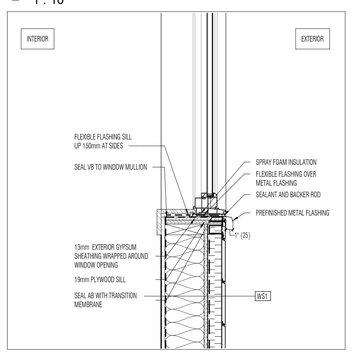
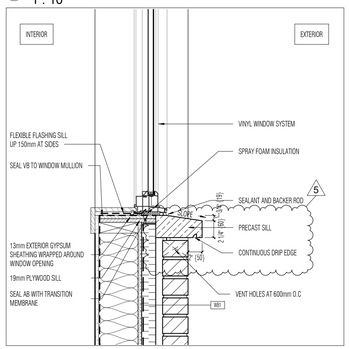
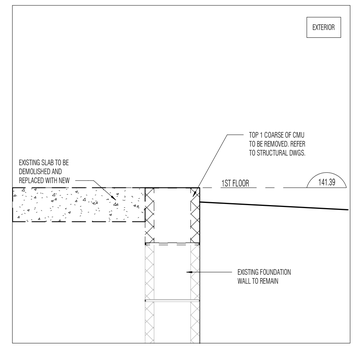
1 : 10



9 WINDOW SILL AT ALUMINUM SIDING
1 : 10



5 WINDOW SILL AT BRICK
1 : 10



1 SLAB DEMOLITION AT FOUNDATION
1 : 10

DO NOT SCALE DRAWINGS. THE CONTRACTOR SHALL CHEECK AND VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.

CLIENT:

ENGINEERING:

SQUARE VIS ARCHITECTS INC.
930 THE EAST MALL, SUITE 100
ETOBICOKE, ON M9B 6J9

SEAL

Revision Schedule

Rev	Date	By	Description
1	2026-03-20	SR	ISSUED FOR PERMIT
2	2026-05-11	SR	ISSUED FOR TENDER
3	2026-05-15	SR	RE-ISSUED FOR PERMIT
4	2026-06-01	SR	ADDENDUM-2
5	2026-06-10	SR	ADDENDUM-3

PROJECT NAME: VERONA
PROJECT ADDRESS: 6094 Carleton Drive, Verona, ON

ISSUE DATE: 01/06/2025
DRAWN BY:
CHECKED BY:

SHEET TITLE: SECTION DETAILS
SCALE: AS SHOWN

SHEET NUMBER: A651

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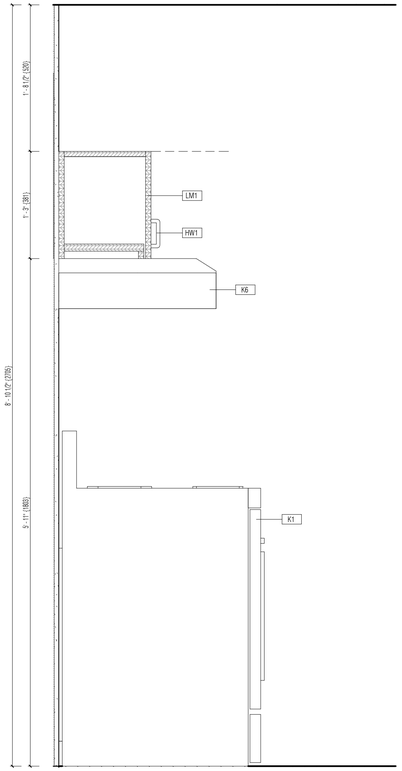
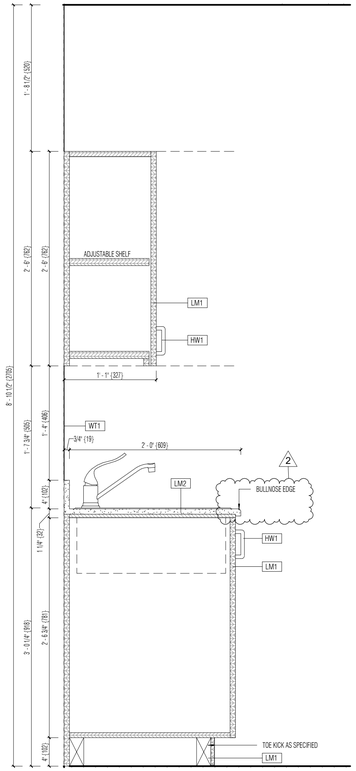
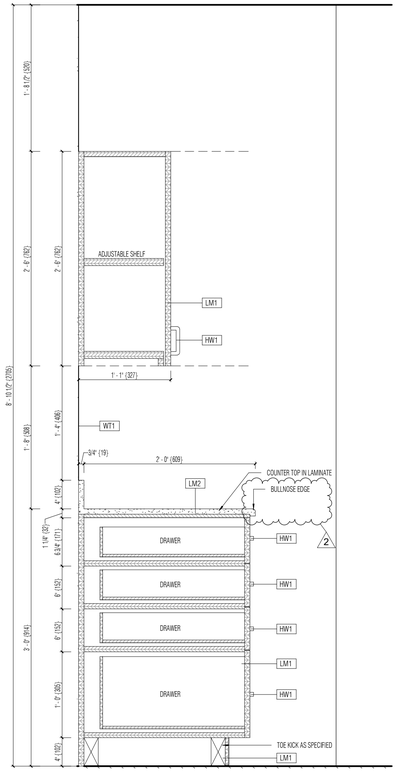


3 SECTION AT RANGER
1 : 10



2 SECTION AT SINK
1 : 10



1 SECTION AT DRAWER
1 : 10

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CLIENT:

ENGINEERING:

SQUARE VIS ARCHITECTS INC.
930 THE EAST MALL, SUITE 100
ETOBICOKE, ON M9B 6J9

SEAL

Revision Schedule

Rev	Date	By	Description
1	2026-06-01	SR	ADDENDUM-2
2	2026-06-10	SR	ADDENDUM-3

PROJECT NAME:
VERONA
PROJECT ADDRESS:
6094 Carleton Drive,
Verona, ON

ISSUE DATE: 01/06/2025
DRAWN BY:
CHECKED BY:

SHEET TITLE:
INTERIOR SECTION DETAIL

SCALE: AS SHOWN

SHEET NUMBER:
A702

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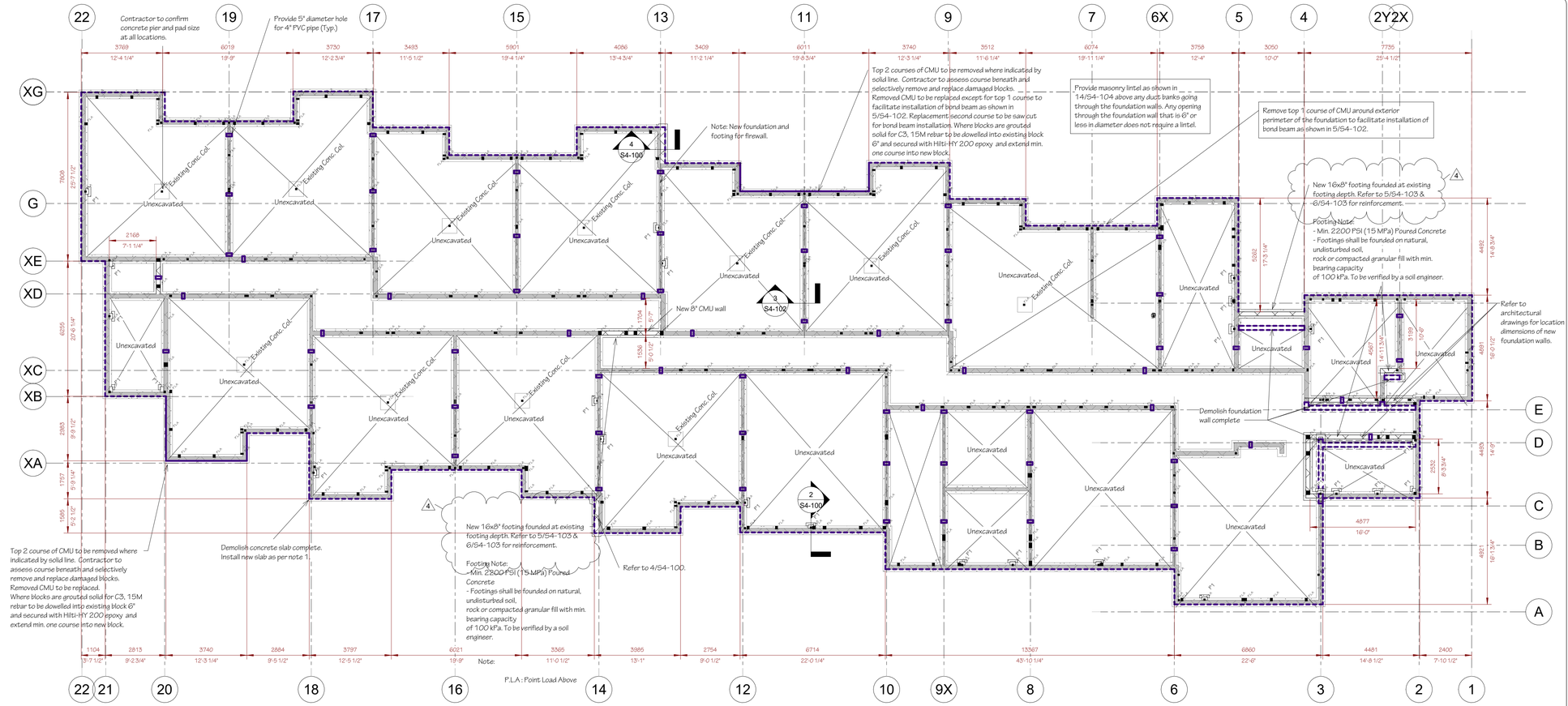
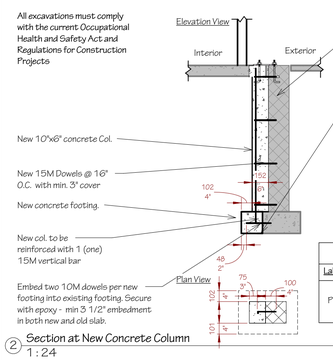


Phase 4 - Restoration A
Structural Plan, 4_S__t/o Footing
1 1 : 96

Structural Sheet List

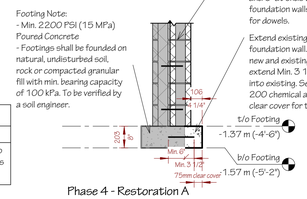
Sheet Number	Sheet Name
4 Restoration	
S4-100	Structural Plans
S4-101	Structural Plans
S4-102	Structural Plans
S4-103	Structural Plans
S4-104	Structural Plans

All excavations must comply with the current Occupational Health and Safety Act and Regulations for Construction Projects



2 Section at New Concrete Column
1 : 24

Foundation Pier Legend	
Label	Foundation Pier
P1	New concrete foundation and col. to be constructed at each point load as per 2/S4-100



Phase 4 - Restoration A
Structural Section, Section 24
4 1 : 24

Structural Steel

1.0 All structural steel must conform to CSA G40.21 M 5350 grade.
2.0 All bolts must conform to ASTM A325 and all welding material shall conform to CSA standard W48 with electrode classifications matching the specified steel.
3.0 The steel erector must be certified by the canadian welding bureau to the requirements of CSA W47. All welding must conform to CSA W59.
4.0 Structural steel construction must conform to CSA S16.1-94 (Limit states design of structural steel).
5.0 The contractor must verify all dimensions on site prior to fabrication.
6.0 Copies of all shop drawings must be provided to the project engineer prior to fabrication.

Concrete and Masonry Notes:

1.0 All masonry construction must be completed in conformance with CSA S304.1-04 (R2010) -(Design of Masonry Structures), CSA A370-14 (Connectors for Masonry), CSA A371-14 (Masonry construction for buildings) and CSA A165 Series-14 (CSA standards on concrete masonry units).
2.0 Chimneys and fireplaces must conform to CSA A405-M87 (R2000) - (Design and construction of masonry chimneys and fireplaces).
3.0 Calcium chloride must not be added to any concrete, mortar or grout mix.
4.0 When conducting masonry repairs dampen the edges of adjacent units prior to application of mortar to existing components.
5.0 All concrete construction must conform to CSA A23.3 (design of concrete structures).
6.0 Reinforcing steel shall be deformed bars conforming to CSA G30.18_M grade 400
7.0 All structural concrete must be placed with a slump of not more than 4" (100mm), specified strengths are 28 day strength (25 MPa or better unless otherwise specified).
8.0 Provide temporary weather protection and heat to keep mortar, concrete and grout from freezing for 48 hours following completion of placement.
9.0 Unless specified otherwise garage, carport and exterior slabs and exterior steps shall be 32 MPa concrete with 5 - 8% air entrainment, other slabs 25 MPa psi concrete, or 15 MPa over 2 layers polyethylene vapor retarder lapped not less than 24". Floor slabs are to be a minimum 4" thick, placed on a minimum 4" of coarse, clean, granular material (3/4" clear stone or better). All fill other than coarse clean material placed beneath concrete slabs shall be compacted to provide uniform support.
10.0 Concrete slabs in attached garages shall be sloped to drain to the exterior, interior slabs shall be sloped to available drainage.
11.0 Concrete unit masonry (block) foundation walls must have 1 course at grade filled solid to prevent convective heat transfer within the wall cavity.
12.0 Circular piers shall extend to minimum 4'0" below grade level (to
below frost depth), be formed with Sonotube or equivalent,
wrapped in not less than 2 layers 6 mil poly sheeting (exterior to Sonotube) to prevend addfreezing. Piers to extend minimum 8" above finished grade.

General Notes:

Steel Framing Notes:
Provide shop drawings for steel framing to project engineer for review prior to construction

All coped beams assume that one bolt lined required for securement. If two bolt lines are required the project engineer must be contacted to re-design with two bolt lines.

Where steel beams are to support wood members, install a nailer plate on top as shown in 7/S4-102.

Steel stairs to be designed by fabricators. Connection between steel stairs and concrete foundation to be designed by fabricators.

All shop drawings for all steel framing including stairs shall be provided to the project engineer to review prior to purchase.

Balcony Notes:
Balconies to be sloped min 2% to exterior

CMU Notes:
Where structural members are bearing, CMU to be solid grouted at and 2 courses below bearing location.

Note 1 Concrete Slab:

Backfill excavation with granular "B" or better, compact in 12" lifts to 98% SPMDD or backfill with 0.3 MPa non-shrink fill

New Concrete Slab Installation -
install new concrete slab:
-Min 6" thickness
-25 MPa
-Install 6"x6" welded wire mesh supported on 6" granular base compacted to 98% SPMDD
-New concrete floor must match existing floor elevation. new concrete to be graded to existing floor drain if existing.

Note 2: General Repairs

1. Damaged curb and walkways to be repaired as required.
2. All CMU cores to have debris removed from them prior to construction.

Design Loads:

Floors:

Dead Load in residential units	1.23kPa
Dead load everywhere else	0.58kPa
Live Load (units)	1.9kPa
Live Load (corridors and stairwells)	4.8kPa
Live Load (garbage room, fan & storage room)	3.6kPa

Balconies:

Dead Load	0.5kPa
Live Load	4.8kPa

Roof:

Roof Snow Load	1.8kPa
Low Sloped Roof Snow Load	2.7kPa
+ Solar Panel Accumulation	1.0kPa
+ Drift Accumulation (see plans)	
Solar Panel Dead Load	0.21kPa
Dead Load	0.75kPa
Live Load (Attic)	0.35kPa

Load-Bearing Walls:

Exterior	2.0 kPa
Interior	0.5 kPa

Wind Design Loads:

- $q_{1/50}$ 0.47 Kpa
- Building exposure: Open terrain
- Building importance (I_w) : Normal (1.0)
- Roof Slope = 23°

Primary Structure Action

building surface		1	1E	2	2E	3	3E	4	4E	5	5E	6	6E
Load Case A	C_pC_g	1.01	1.45	-.85	-1.35	-0.87	-1.22	-0.77	-1.12	n/a	n/a	n/a	n/a
	ULS (kPa)	0.45	0.65	-0.38	-0.6	-0.39	-0.54	-0.35	-.50	n/a	n/a	n/a	n/a
Load Case B	C_pC_g	-0.85	-0.9	-1.3	-2.0	-0.7	-1.0	-0.85	-0.9	0.75	1.15	-0.55	-0.8
	ULS (kPa)	-0.38	-0.4	-0.58	-0.89	-0.31	-0.45	-0.38	-0.40	0.33	0.51	-0.25	-0.27

T Smith Engineering Inc.
707 Kipling Ave, Toronto, ON, M8Z 5G4
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4. All framing lumber must be Spruce-Pine-Fir no 1. Grade or better unless specified otherwise.
5. Falsework and shoring not specified on these drawings is the responsibility of the constructor, all falsework and shoring shall be designed and inspected by a licensed professional engineer.

Note:

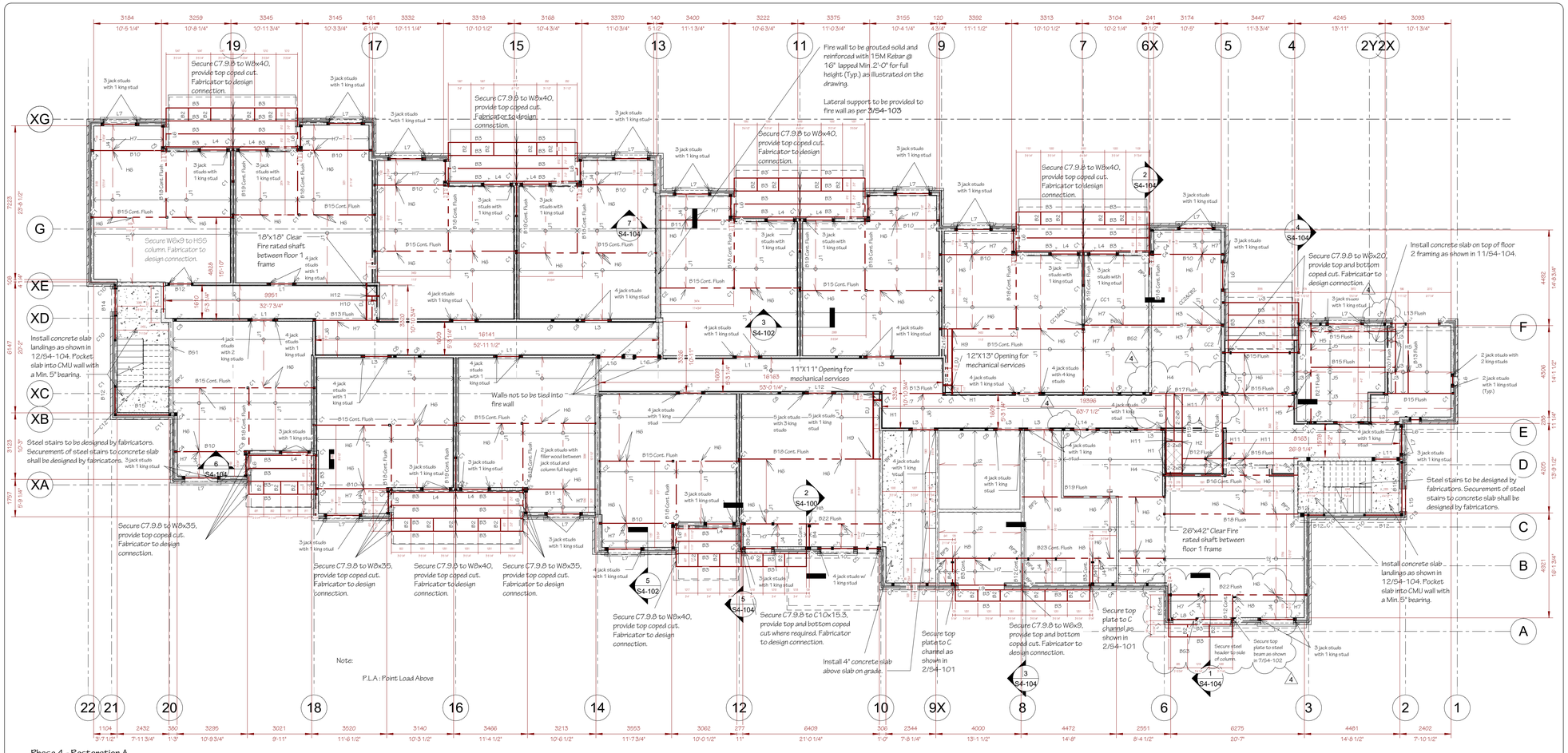
Contractor to verify foundation layout and report any discrepancies to the project engineer.

LICENSED PROFESSIONAL ENGINEER
100012996
T.D. SMITH
June 10/26
PROVINCE OF ONTARIO

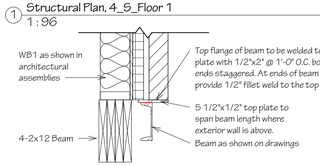
#	Description	Date
4	Revision	June 10/26
3	Revised for Addendum	May 28/26
2	Issued for Tender	May 13/26
1	Issued For Permit	March 19/26

Client	Kingston Frontenac Housing Corp.
Address	6094 Carleton Drive, Verona, ON
File	25-10031PR
Title	Structural Plans
Sheet	S4-100

Drawings Remain The Property Of T Smith Engineering Inc



Phase 4 - Restoration A
Structural Plan, 4_S_Floor 1
1 1 : 96



2 Detail, C Channel Top Plate
1 : 12

Joist Schedule

Label	Joist Size
J1	2x10 @ 16" oc
J2	2x10 @ 12" oc
J3	2x12 @ 12" oc
J4	2x6 @ 16" oc
J5	2x12 @ 12" oc
J6	2x8 @ 16" oc
J7	2-2x8 @ 12" oc

Baseplate Schedule

Label	Plate Size
BP1	4 1/2"x 4 1/2"x 1/2"
BP2	7 1/2" x 7 1/2" x 1/2"
BP3	5 1/2"x11"x 1/2"
BP4	5 1/2"x9"x1/2"

Lintel Schedule

Label	Header Size	Bearing	Label	Header Size	Bearing
L1	2 - 2x8		L9	W6x9 + L 3 1/2" x 3 1/2" x 1/4"	6" minimum for steel angle
L2	2 - 2x10		L10	3 - 1 3/4" x 7 1/4" 2.0E LVL + L 5" x 3 1/2" x 5/16"	6" minimum for steel angle
L3	2 - 2x12		L11	L 5" x 3" x 1/2"	6" minimum
L4	3 - 2x6		L12	2 - 1 3/4" x 9 1/4" 2.0E LVL	
L5	3 - 2x8		L13	W6x20 + L 3 1/2" x 3 1/2" x 1/4"	
L6	3 - 2x6 + L 3 1/2" x 3 1/2" x 1/4"	6" minimum for steel angle	L14	2 - 1 3/4" x 7 1/4" 2.0E LVL	
L7	3 - 2x8 + L 3 1/2" x 3 1/2" x 1/4"	6" minimum for steel angle	L15	L 3 1/2" x 3 1/2" x 1/4"	6" minimum
L8	W6x9 + L 5" x 3 1/2" x 5/16"	6" minimum for steel angle	L16	Lintel as per 13/S4-104	8" minimum

Beam Schedule

Label	Beam Size
B1	2 - 1 3/4" x 9 1/4" 2.0E LVL
B2	C3x3.5
B3	C7x9.8
B4	4-2x6
B5	C10x30
B6	3 - 1 3/4" x 9 1/4" 2.0E LVL
B7	4 - 1 3/4" x 9 1/4" 2.0E LVL
B8	3-2x10
B9	C10x15.3
B10	2 - 1 3/4" x 9 1/4" 2.0E LVL
B11	3 - 1 3/4" x 9 1/4" 2.0E LVL
B12	W6x9
B13	W6x12
B14	W6x15
B15	W6x20
B16	W8x21
B17	W8x24
B18	W8x35
B19	W8x40
B20	W10x19
B21	W10x26
B22	W10x45
B23	W10x49
B24	3-2x12

Hanger Schedule

Label	Hanger	Top Flange Fasteners	Face Fasteners	Joist Fasteners
H1	LUS28-2		(6) 10HDG (0.148" x 3" HDG 10d Common)	(4) 10HDG (0.148" x 3" HDG 10d Common)
H2	HWP 3 1/4" W, 7 1/4" H	Weld to top flange using 3/16" x 1 1/2" fillet welds at each end.		
H3	LU28L		(8) 10HDG (0.148" x 3" HDG 10d Common)	(6) N10 (0.148" x 1 1/2" HDG)
H4	HWP 3 1/2" W, 9 1/4" H	Weld to top flange using 3/16" x 1 1/2" fillet welds at each end.		
H5	JB212A	(4) N10 (0.148" x 1 1/2" HDG)	(2) N10 (0.148" x 1 1/2" HDG)	(2) N10 (0.148" x 1 1/2" HDG)
H6	JB210A	(4) N10 (0.148" x 1 1/2" HDG)	(2) N10 (0.148" x 1 1/2" HDG)	(2) N10 (0.148" x 1 1/2" HDG)
H7	JB26	(2) N10 (0.148" x 1 1/2" HDG)	(2) N10 (0.148" x 1 1/2" HDG)	(2) PRONGS
H8	HWP 6 1/4" W, 9 1/4" H	Weld to top flange using 3/16" x 1 1/2" fillet welds at each end.		
H9	BA210-2	(6) N10 (0.148" x 1 1/2" HDG)	(4) N10 (0.148" x 1 1/2" HDG)	(2) N10 (0.148" x 1 1/2" HDG)
H10	WP26-2	(4) N10 (0.148" x 1 1/2" HDG)		(2) N10 (0.148" x 1 1/2" HDG)
H11	BA28-2	(6) N10 (0.148" x 1 1/2" HDG)	(4) N10 (0.148" x 1 1/2" HDG)	(2) N10 (0.148" x 1 1/2" HDG)
H12	LU26-2L		(6) 10HDG (0.148" x 3" HDG 10d Common)	(4) N10 (0.148" x 1 1/2" HDG)

Wood Beam Seat Legend

Label	Beam Seat	Fasteners	Notes
BS1	GLBSA	1 - 1/2" bolt	
BS2	CC0 1/8	4 - 3/4" bolts	Provide a 1/4" fillet weld around perimeter where it meets the base plate.
BS3	CC04.62-3.62.	4 - 5/8" bolts	Provide a 1/4" fillet weld around perimeter where it meets the top plate.

Wood Column Cap Legend

Label	Column Cap	Beam Fasteners	Post Fasteners
CC1	ECCQ5-65DS2.5	14-No.1/4"x2 1/2" SDS screws	14-No.1/4"x2 1/2" SDS screws
CC2	ECCQ7.1-65DS2.5	14-No.1/4"x2 1/2" SDS screws	14-No.1/4"x2 1/2" SDS screws

Wood Column Base Legend

Label	Column Base	Fasteners	Notes
CB1	RCPS4HDG	4- 16d nails	Provide solid grout 2 courses below
CB2	RCPS5.5HDG	4- 16d nails	Provide solid grout 2 courses below

Notes:
1. Provide filler wood where required to make connection snug.

Column Schedule

Label	Column	Baseplate	Topplate
C1	HSS 3 1/2"x3 1/2" x 3/16"	Baseplate as per 10/S4-104	Topplate as per 8/S4-104
C2	HSS 3"x1 1.2" x1/8"	Baseplate as per 9/S4-104	Topplate as per 8/S4-104
C3	3-2x4		
C4	3-2x6		
C5	4-2x6		
C6	2-2x6		
C7	2-2x4		
C8	4-2x4		
C9	HSS 5"x3" x 6/16"	Baseplate as per 10/S4-104	Topplate as per 8/S4-104
C10	HSS 3" 1/2" x 3 1/2 x 5/16"	Baseplate as per 10/S4-104	Topplate as per 8/S4-104
C11	HSS 4" x 4" x 5/16"	Baseplate as per 10/S4-104	Topplate as per 8/S4-104
C12	HSS 4" x 4" x 1/2"	Baseplate as per 10/S4-104	Topplate as per 8/S4-104
C13	HSS 5" x 5" x 6/16"	Baseplate as per 10/S4-104	Topplate as per 8/S4-104

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Note:

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LICENSED PROFESSIONAL ENGINEER
100012990
T.D. SMITH
June 10/26
PROVINCE OF ONTARIO

#	Description	Date
4	Revision	June 10/26
3	Revised for Addendum	May 28/26
2	Issued for Tender	May 15/26
1	Issued For Permit	March 19/26

Client	Kingston Frontenac Housing Corp.
Address	6094 Carleton Drive, Verona, ON
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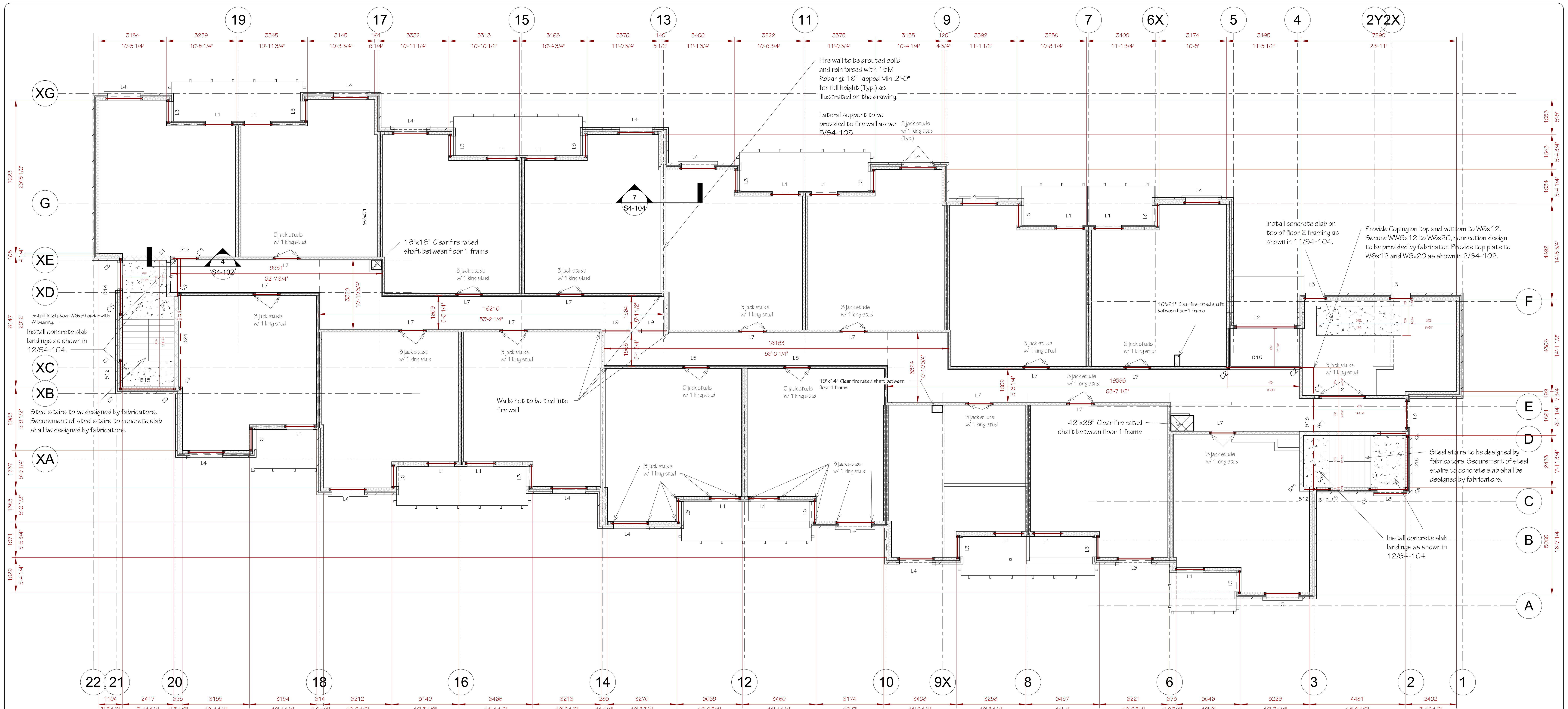


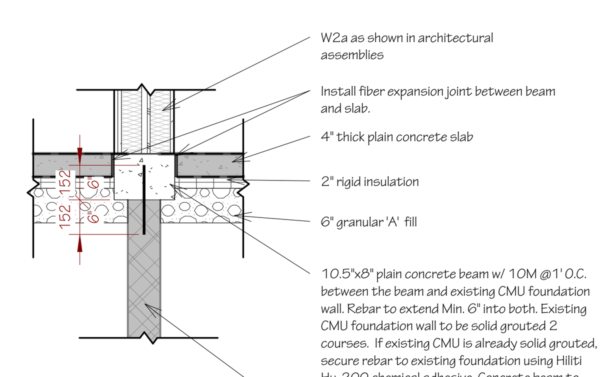
1 4_S_Floor 2
1 : 96

Beam Schedule	
Label	Beam Size
B1	2 - 1 3/4" x 9 1/4" 2.0E LVL
B2	C3x3.5
B3	C7x9.8
B4	4-2x6
B5	C10x30
B6	3 - 1 3/4" x 9 1/4" 2.0E LVL
B7	4 - 1 3/4" x 9 1/4" 2.0E LVL
B8	3-2x10
B9	C10x15.3
B10	2 - 1 3/4" x 9 1/4" 2.0E LVL
B11	3 - 1 3/4" x 9 1/4" 2.0E LVL
B12	W6x9
B13	W6x12
B14	W6x15
B15	W6x20
B16	W8x21
B17	W8x24
B18	W8x35
B19	W8x40
B20	W10x19
B21	W10x26
B22	W10x45
B23	W10x49
B24	3-2x12

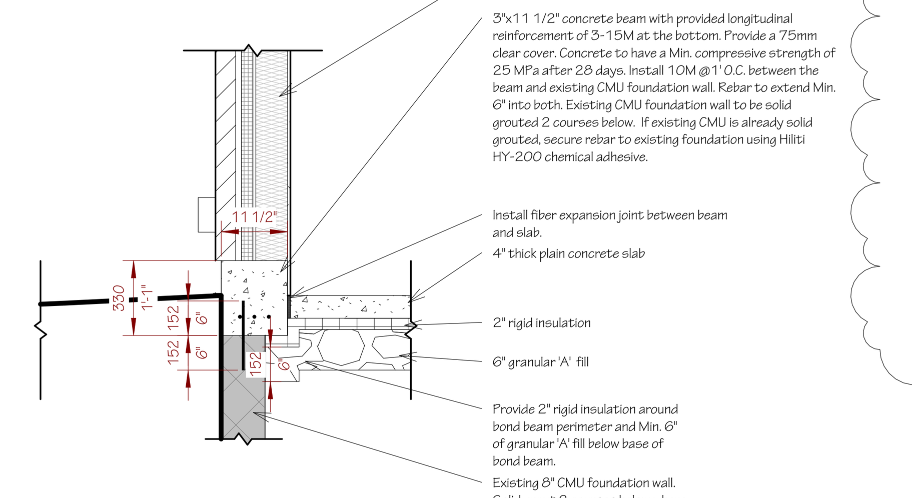
Column Schedule			
Label	Column	Baseplate	Topplate
C1	H.S.S 3 1/2"x3 1/2" x 3/16"	Baseplate as per 10/S4-104	Topplate as per 8/S4-104
C2	H.S.S 5"x3" x 6/16"	Baseplate as per 10/S4-104	Topplate as per 8/S4-104
C3	3-2x4		
C4	3-2x6		
C5	HSS 3" 1/2" x 3 1/2 x 5/16"	Baseplate as per 10/S4-104	Topplate as per 8/S4-104
C6	HSS 4" x 4" x 5/16"	Baseplate as per 10/S4-104	Topplate as per 8/S4-104
C7	HSS 4" x 4" x 1/2"	Baseplate as per 10/S4-104	Topplate as per 8/S4-104
C8	HSS 5" x 5" x 6/16"	Baseplate as per 10/S4-104	Topplate as per 8/S4-104

Lintel Schedule		
Label	Header Size	Bearing
L1	3 - 2x10	
L2	3 - 2x12	
L3	3 - 2x10 + L 3 1/2" x 3 1/2" x 1/4"	6" minimum for steel angle
L4	3 - 2x12 + L 3 1/2" x 3 1/2" x 1/4"	6" minimum for steel angle
L5	2-2x12	
L6	L 5" x 3" x 1/2"	6" minimum
L7	2-2x10	
L8	L 3 1/2" x 3 1/2" x 1/4"	6" minimum
L9	Lintel as per 13/S4-104	8" minimum

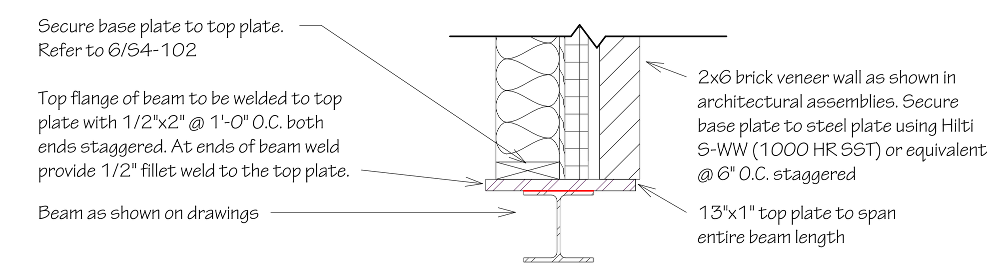
Baseplate Schedule	
Label	Plate Size
BP1	7 1/2"x7"x1/2"
BP2	5 1/2"x7"x1/2"



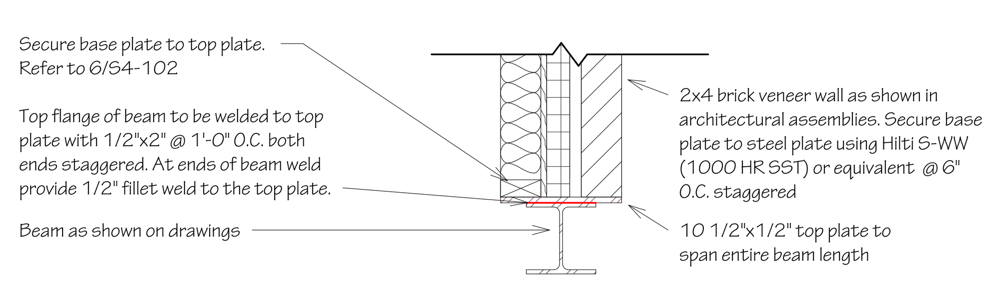
3 Phase 4 - Restoration A
Detail, Concrete Beam Supporting W2a Wall
1 : 24



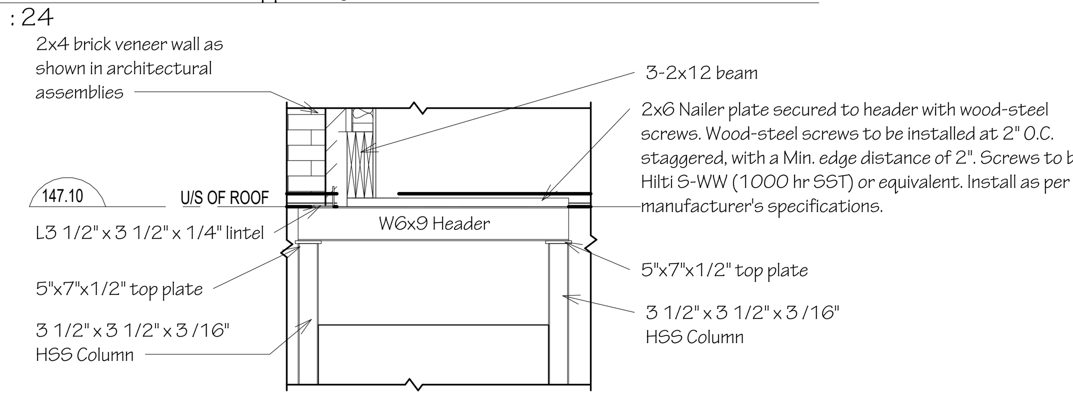
5 Phase 4 - Restoration A
Detail, Concrete Beam Supporting Exterior Wall
1 : 24



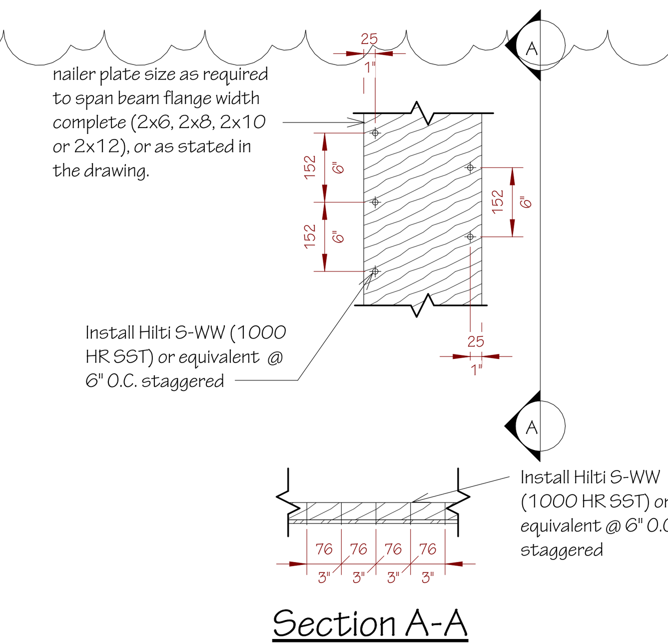
7 Detail, Beam with Plate Not Centered
1 : 12



2 Detail, Beam with Plate
1 : 12



4 Phase 4 - Restoration A
Detail, Detail 2
1 : 24



6 Detail, Nailer Plate Nailing Pattern
1 : 12

T Smith Engineering Inc.
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tSmithEngineering.com

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2. All dimensions must be verified on site by the contractor and client, drawings shall not be scaled.
3. The scope of work outlined on the drawings is a minimum requirement. Deviations or substitutions from the enclosed specifications must be greater than or equal to the outlined scope, and all changes must be approved by the project engineer in writing. All construction and repair must be conducted in conformance with the requirements of all applicable codes, regulations and bylaws.
4. All framing lumber must be Spruce-Pine-Fir no 1. Grade or better unless specified otherwise.
5. Falsework and shoring not specified on these drawings is the responsibility of the constructor, all falsework and shoring shall be designed and inspected by a licensed professional engineer.

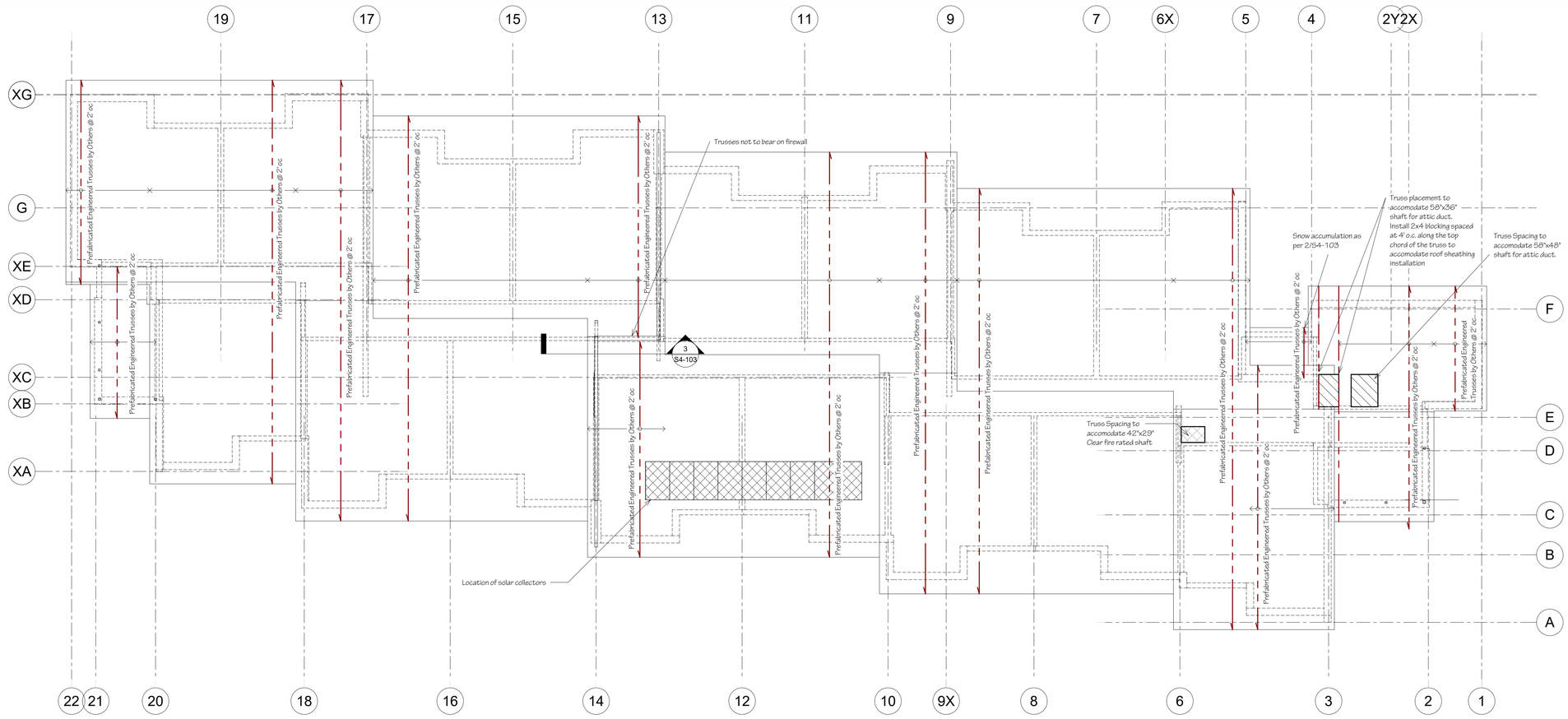
Note:
Contractor to verify foundation layout and report any discrepancies to the project engineer.

LICENSED PROFESSIONAL ENGINEER 100012996 T.D. SMITH June 10/26 PROVINCE OF ONTARIO

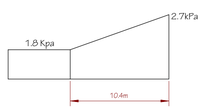
#	Description	Date
4	Revision	June 10/26
3	Revised for Addendum	May 28/26
2	Issued for Tender	May 13/26
1	Issued For Permit	March 19/26

Client: Kingston Frontenac Housing Corp.
Address: 6094 Carleton Drive, Verona, ON
File: 25-10031PR
Title: Structural Plans
Sheet: S4-102

Drawings Remain The Property Of T Smith Engineering Inc



1 Phase 4 - Restoration A
Structural Plan, 4_S_Roof
1 : 96

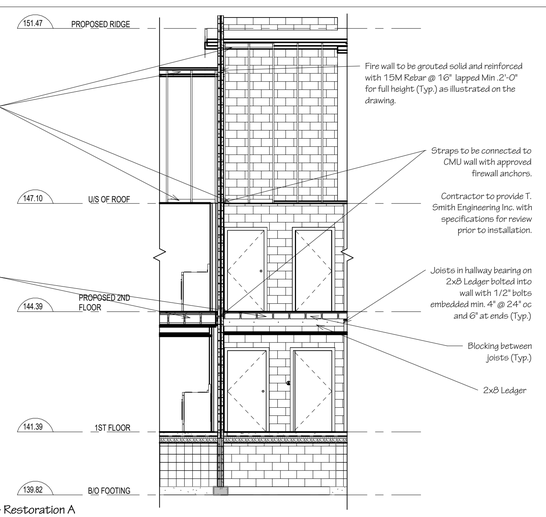


Snow Accumulation Diagram

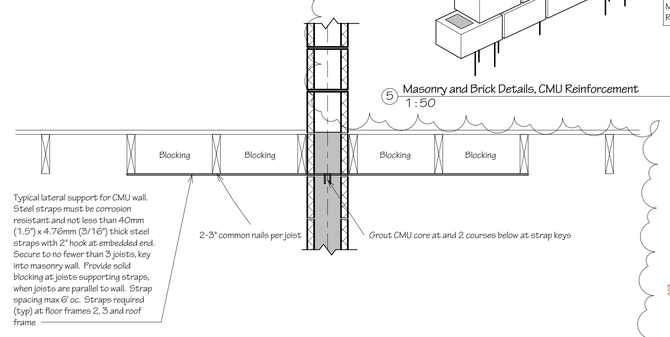
2 Snow Accumulation
1 : 96

Roof Notes:
Contractor to field verify truss dimensions with shop drawings.
Truss shop drawings to be provided for project engineer review and permit application prior to fabrication.
Roof design loads: Ss=2.4 kPa; Sr=0.4kPa, superimposed dead load 0.75 kPa
Sheathing to be a minimum ½" plywood (exterior grade) or as stated in truss manufacturers specifications, installed in full sheets, where feasible, supported on all edges with tongue and groove material, 2x2" wood blocking, or edge clips with staggered joints
Soffits to be fully vented, install moore vents and 1 roof vent per 200SF of ceiling area
Supply and Install ice and water shield at eaves, valleys etc..
Supply and install new asphalt shingles
Supply and Install all flashing, eaves trough, downspout, roof trim, fascia board and soffit.

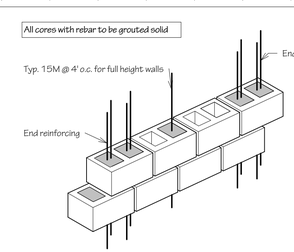
Solar Collector System Notes:
The panels Manufacture is Viessmann. The model number is SV2F, and each panel weighs 90 lbs. The panels will be installed on a mounting kit to increase the slope of the panels.
snow accumulation around solar as per 4/S4-103
See system package for additional information



3 Phase 4 - Restoration A
Detail, Firewall Section
1 : 64



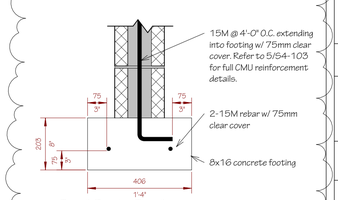
4 Detail, Lateral Support
1 : 12



Note:
- Full height walls are reinforced with BL-10 Ladder reinforcement every three courses
- All walls are reinforced with 15M @ 4' o.c.
-Refer to diagram for end reinforcement

CMU block size = 8"
Block compresive strength = 30 MPa
Mortar Type = S
Reinforcing Fy = 400 MPa

5 Masonry and Brick Details, CMU Reinforcement
1 : 50



6 Detail, Footing Detail
1 : 10

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Note:

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LICENSED PROFESSIONAL ENGINEER
100012996
T.D. SMITH
June 10/26
PROVINCE OF ONTARIO

#	Description	Date
4	Revision	June 10/26
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Client	Kingston Frontenac Housing Corp.
Address	6094 Carleton Drive, Verona, ON
File	25-10031PR
Title	Structural Plans
Sheet	S4-103

Drawings Remain The Property Of T Smith Engineering Inc

LIGHTING NOTES

A. THE CONTRACTOR IS RESPONSIBLE TO COORDINATE EXACT VOLTAGE OF PROPOSED LIGHT FIXTURES WITH SYSTEM VOLTAGE ON SITE AND THEIR SUPPLIER.

B. PROVIDE ALL REQUIRED MOUNTING ACCESSORIES TO SUIT FIXTURES INSTALLATION.

C. CONTRACTOR TO PROVIDE ALL REQUIRED LOW VOLTAGE CONTROL WIRING TO SUIT LIGHTING CONTROL SYSTEM'S REQUIREMENTS.

D. IT IS CONTRACTOR'S RESPONSIBILITY TO ENSURE VOLTAGE DROPS FOR NORMAL LIGHTING CIRCUITS AND EMERGENCY LIGHTING CIRCUITS ARE COORDINATED PRIOR TO INSTALLATION OF FIXTURES.

E. CONFIRM MOUNTING HEIGHTS OF ALL EMERGENCY LIGHTING AND EXIT SIGNS PRIOR TO ROUGH-IN AND INSTALLATION. PROVIDE ALL REQUIRED MOUNTING ACCESSORIES FOR PENDANT UNITS TO SUIT.

GENERAL NOTES

A. THESE DRAWINGS ARE DIAGRAMMATIC REFERENCE DRAWINGS ONLY. BEFORE ANY ELECTRICAL EQUIPMENT IS ROUGHED IN, REFER TO ARCHITECTURAL DRAWING DETAILS AND ELEVATIONS OR DETAILS ON THE ELECTRICAL DRAWINGS FOR EXACT LOCATION. WHERE THIS DETAILED INFORMATION IS NOT SHOWN ON THE DRAWING, VERIFY THE EXACT LOCATION ON SITE.

B. DETAILS ARE INTENDED TO BE FOR GENERAL ARRANGEMENT ONLY. THEY DO NOT SHOW ALL NECESSARY COMPONENTS, BUT ARE MERELY A GUIDE AS TO THE ORIENTATION OF EQUIPMENT WHERE IT IS REQUIRED.

C. MAINTAIN THE INTEGRITY OF ALL FIRE SEPARATIONS. PROVIDE ALL NECESSARY PRODUCTS APPROVED BY RELEVANT AUTHORITY HAVING JURISDICTION, WHICH ARE REQUIRED TO GO AROUND AND IN CABLE THROUGH CONDUIT, ETC., WHICH PASS THROUGH FIRE RATED ASSEMBLIES TO RETAIN THE FIRE RATING OF THESE ASSEMBLIES.

D. ROOFING WORK, WHERE ROOF REVISIONS AND/OR REPLACEMENTS ARE PART OF THE PROJECT, INCLUDE FOR DISCONNECTING, LIFTING, OR TEMPORARILY REMOVING ELECTRICAL EQUIPMENT AND ELECTRICAL CONNECTIONS TO OTHER ROOF MOUNTED EQUIPMENT AS REQUIRED TO PERMIT COMPLETION OF THE ROOFING WORK, AND FOR RE-INSTALLING/RE-CONNECTING THE EQUIPMENT WHEN THE ROOFING WORK IS COMPLETE.

E. HAZARDOUS MATERIALS AND WASTE, IF HAZARDOUS MATERIALS AND/OR WASTE NOT LISTED IN THE SPECIFICATION IS FOUND, STOP THE ASSOCIATED WORK AND NOTIFY THE OWNER AND CONSULTANT IMMEDIATELY AND AWAIT DIRECTIONS

F. DRILLING OF FLOORS, WALLS AND CEILINGS SHALL BE BY THIS CONTRACTOR. OBTAIN WRITTEN APPROVAL FOR ALL LOCATIONS FROM THE GENERAL CONTRACTOR.

G. CUTTING EFFECTING STRUCTURAL INTEGRITY OF THE BUILDING SHALL NOT BE ALLOWED WITHOUT PRIOR APPROVAL FROM THE STRUCTURAL ENGINEER.

H. PROVIDE FIRE RATED PATCH AROUND PENETRATION POINTS FROM ANY LOCATIONS WHERE CONDUITS PASS THROUGH FIRE RATED STRUCTURES.

I. LIMIT ALL USE OF Bx CABLE FOR SHORT RUNS IN CEILING SPACE THAT SHALL NOT EXCEED 10 FT. USE CONDUIT FOR ALL OTHER RUNS INCLUDING VERTICAL RUNS AND IN INACCESSIBLE CEILING AREAS.

J. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE NATIONAL BUILDING CODE AND NATIONAL SAFETY CODE STANDARDS.

K. ALL CONDUIT SHALL BE EMT UNLESS OTHERWISE NOTED. USE WEATHERPROOF PVC CONDUIT FOR ALL OUTDOOR RUNS.

L. PROVIDE COMPLETE LABELING INDICATING PANEL & BREAKER NUMBER ON ALL FACES OF RECEPTACLES, SWITCHES & JUNCTION BOX COVERPLATES & RESPECTIVE POWER CONNECTIONS. ENSURE FONT SIZE OF 18 PT. LABEL. MECHANICAL & OTHER EQUIPMENT. DISCONNECT SWITCHES SHALL STATE LOCATION OF ELECTRICAL PANELS PROVIDING POWER.

W. ALL CONDUITS AND FEEDERS PASSING THROUGH THE FIRE-RATED CORRIDOR SHALL BE ROUTED WITHIN A FIRE-RATED SHAFT. THE RATING OF THE SHAFT SHALL MATCH THE RATING OF THE CORRIDOR. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE FIRE-RATED SHAFT AND COORDINATING ITS EXACT LOCATION AND ROUTING WITH ALL RELEVANT TRADES PRIOR TO INSTALLATION.

X. ALL NEW DISTRIBUTION EQUIPMENT INSIDE THE ELECTRICAL ROOMS, INCLUDING ELECTRICAL PANELS, SPLITTERS, AND DISCONNECT SWITCHES, SHALL BE MOUNTED ON A FIRE-RATED PLYWOOD BACKBOARD, SIZED TO SUIT THE EQUIPMENT LAYOUT.

LUMINARIES SCHEDULE

TYPE	DESCRIPTION
	WALL OR CEILING MOUNTED EXIT SIGN, SINGLE OR DOUBLE FACE, GREEN WITH RUNNING MAN SYMBOL, AS INDICATED ON DRAWINGS. PROVIDE ALL MOUNTING ACCESSORIES TO SUIT. BEGHELLI (LUMACELL LA SERIES) OR APPROVED EQUAL
	SURFACE MOUNTED EMERGENCY REMOTE HEAD C/W 6W, 24VDC LED LAMPS. UNITS TO BE WHITE. BEGHELLI (LUMACELL MQM SERIES) OR APPROVED EQUAL
	EMERGENCY BATTERY UNIT C/W 2x6W LED REMOTE HEADS AND A CAPACITY OF 720W. UNIT TO BE SUITABLE FOR 120VAC-24VDC OPERATION. BEGHELLI (LUMACELL RGS SERIES) OR APPROVED EQUAL
	WALL MOUNTED COMBO EXIT SIGN, SINGLE OR DOUBLE FACE, GREEN WITH RUNNING MAN SYMBOL, WITH TWO REMOTE HEADS (12V, 6W LED) AND A 36W SELF BATTERY UNIT AS INDICATED ON THE DRAWINGS. PROVIDE ALL MOUNTING ACCESSORIES TO SUIT. BEGHELLI (STELLA COMBO RM SERIES) OR APPROVED EQUAL
'B'	8" ROUND, SURFACE MOUNTED LED FIXTURE C/W 15W, 1200 LUMEN OUTPUT, 3000K COLOUR TEMPERATURE AND 120V DRIVER. LITELINE DL6-15W-WH
'P'	4" ROUND, SURFACE MOUNTED LED FIXTURE C/W 12W, 900 LUMEN OUTPUT, 3000K COLOUR TEMPERATURE AND 120V DRIVER. LITELINE DL4-12W-WH
'H'	6" DIAMETER RECESSED DOWN LIGHT C/W 2000 LUMEN OUTPUT, 22W, 4000K COLOUR TEMPERATURE, MEDIUM BEAM ANGLE AND A WHITE TRIPM. FIXTURE SHALL BE SUITABLE FOR 120V POWER CONNECTIONS AND SUITABLE FOR EXTERIOR APPLICATION. PROVIDE ALL REQUIRED MOUNTING ACCESSORIES TO SUIT CEILING TYPE. LITELINE GEN06 IS 40 M SW X
'W'	3'-0" LONG WALL MOUNTED LINEAR BATHROOM VANITY LIGHTING C/W 1700 LUMEN OUTPUT, 27W LED LAMP, 3000K AND SUITABLE FOR 120V POWER CONNECTIONS. LITHONIA LIGHTING FMVCSL 36IN MVOLT 30K 90CRI BN M6
'F'	4' LONG SURFACE MOUNTED LED FIXTURE C/W 3200 LUMENS, 3000K COLOUR TEMPERATURE AND 120V DRIVER. PROVIDE ALL MOUNTING ACCESSORIES TO SUIT. LITELINE LEDP-6I4 WH 30 4 2
'S'	4" DIAMETER RECESSED DOWN LIGHT C/W 1500 LUMEN OUTPUT, 19W, 3000K COLOUR TEMPERATURE, MEDIUM BEAM ANGLE AND A WHITE TRIPM. FIXTURE SHALL BE SUITABLE FOR 120V POWER CONNECTIONS AND SUITABLE FOR EXTERIOR APPLICATION. LITELINE GEN04 IC 30 M SW X
'V'	EXTERIOR WALL MOUNTED LED LIGHT FIXTURE TO REPLACE EXISTING LIGHTING. FIXTURES TO BE FULL CUT OFF AND C/W 3000 LUMENS, 28W, 4000K COLOUR PREMATURE. VOLTAGE TO MATCH EXISTING CIRCUIT FEEDING EXISTING FIXTURES. PROVIDE ALL REQUIRED MOUNTING ACCESSORIES TO SUIT. COOPER LIGHTING XTOR3B W BK
'K'	8" ROUND, SURFACE MOUNTED LED FIXTURE C/W 15W, 1200 LUMEN OUTPUT, 3000K COLOUR TEMPERATURE AND 120V DRIVER. LITELINE DL6-15W-WH
'A'	4' LONG LED FIXTURE SUITABLE FOR T-BAR CEILING C/W 3200 LUMENS, 3000K COLOUR TEMPERATURE AND 120V DRIVER. PROVIDE ALL MOUNTING ACCESSORIES TO SUIT. LITELINE LEDP-6I4 WH 30 4 2

RESIDENTIAL GENERAL NOTES

1. ALL INSTALLATIONS SHALL COMPLY TO THE ONTARIO ELECTRICAL SAFETY CODE 2018, ELECTRICAL SAFETY AUTHORITY STANDARDS, AND ONTARIO BUILDING CODE FOR RESIDENTIAL OCCUPANCIES.

2. ALL ELECTRICAL DEVICES SHOWN ARE FOR DIAGRAMMATICAL PURPOSES ONLY. ALL LOCATIONS AND DIMENSIONS SHALL BE SITE VERIFIED AND COORDINATED WITH ALL TRADES. PREPARE INTERFERENCE DRAWINGS WITH ALL TRADES PRIOR TO ALL ROUGH-INS.

3. ALL SUITES SHALL BE INSTALLED WITH A PJ3000 MEDIA DISTRIBUTION ENCLOSURE (MDE) PROVIDED BY THE LOCAL SERVICE PROVIDER. EACH MDE SHALL HAVE AT LEAST ONE DEDICATED RECEPTACLE.

4. PANEL BOARDS

4.1. PANEL BOARDS SHALL NOT BE LOCATED IN CLOTHES CLOSETS, BATHROOMS, HAZARDOUS LOCATIONS, NOR IN ANY SIMILAR UNDESIRABLE PLACES.

4.2. PANEL BOARDS IN SUITES SHALL BE INSTALLED AS HIGH AS POSSIBLE, WITH NO OVER CURRENT DEVICE OPERATING HANDLE POSITIONED MORE THAN 1.7m ABOVE FINISHED FLOOR.

5. ARC-FAULT CIRCUIT INTERRUPTER (AFCI)

5.1. ALL ARC-FAULT CIRCUIT DEVICES SHALL PROVIDE BOTH SERIES AND PARALLEL ARC-FAULT PROTECTION TO THE ENTIRE BRANCH CIRCUIT WIRING.

5.2. ARC-FAULT PROTECTION FOR BRANCH CIRCUITS SHALL BE INSTALLED IN ACCORDANCE TO OESC RULE 26-656.

5.3. EACH BRANCH CIRCUIT SUPPLYING 125V RECEPTACLES RATED 20A OR LESS SHALL BE PROTECTED BY AFCI UNLESS EXEMPTED BY RULE 26-656.

6. RECEPTACLES

6.1. RECEPTACLES EXPOSED TO WEATHER SHALL BE PROVIDED WITH WET LOCATION COVER PLATES.

6.2. MOUNT ALL RECEPTACLES, TELEVISION, AND VOICE/DATA OUTLETS 460mm A.F.F. OR 150mm ABOVE COUNTERTOPS.

6.3. ALL RECEPTACLES SHALL BE TAMPER-RESISTANT TYPE OF CSA CONFIGURATION 5-15R AND 5-20R UNLESS DEDICATED TO STATIONARY APPLIANCES OR LOCATED ABOVE 2m ABOVE FINISHED FLOOR.

6.4. RECEPTACLES OF CSA CONFIGURATION TYPE 5-15R OR 5-20R INSTALLED WITHIN 1.5m OF SINKS, BATHTUBS, OR SHOWER STALLS SHALL BE PROTECTED BY GROUND FAULT CIRCUIT INTERRUPTER.

6.5. DUPLEX RECEPTACLES SHALL BE INSTALLED IN FINISHED WALLS OF EVERY ROOM (OTHER THAN BATHROOMS, HALLWAYS, LAUNDRY ROOMS, WATER CLOSET ROOMS, UTILITY ROOMS, OR CLOSETS) SO THAT NO POINT ALONG FLOOR LINE OF ANY USABLE WALL SPACE IS MORE THAN 1.8m HORIZONTALLY.

6.6. DUPLEX RECEPTACLES SHALL BE INSTALLED IN A HALLWAY SO THAT NO POINT ALONG FLOOR LINE IS MORE THAN 4.5m HORIZONTALLY.

6.7. AT LEAST ONE DUPLEX RECEPTACLE SHALL BE PROVIDED IN A BALCONY OR PORCH.

6.8. KITCHEN

6.8.1. ONE (1) CSA 5-15R OUTLET FOR REFRIGERATOR.

6.8.2. ONE (1) CSA 14-50R OUTLET FOR FREE-STANDING ELECTRIC RANGE.

6.8.3. ONE (1) CSA 5-15R AFCI OUTLET FOR DISHWASHER.

6.8.4. ONE (1) CSA 5-15R AFCI OUTLET FOR MICROWAVE.

6.8.5. NO. OF ABOVE COUNTER OUTLETS SO THAT NO POINT ALONG THE WALL LINE IN MORE THAN 900mm FROM AN OUTLET.

6.8.6. AT LEAST ONE (1) OUTLET INSTALLED AT EACH PERMANENTLY FIXED ISLAND COUNTER SPACE.

7. MOUNT ALL SWITCHES AND MISC. CONTROL DEVICES AT 1100mm ABOVE FINSIHED FLOOR TO CENTER LINE.

8. RESIDENTIAL PUBLIC CORRIDORS SHALL HAVE AT LEAST ONE DUPLEX RECEPTACLE IN EACH 10m OF LENGTH.

9. ALL SUITE COMMON AND BEDROOM AREAS SHALL BE INSTALLED WITH A SMOKE/VISUAL ALARM.

10. ALL SUITE SMOKE/VISUAL ALARMS AND CARBON MONOXIDE ALARMS (IF APPLICABLE) SHALL BE SUPPLIED FROM A LIGHTING BRANCH CIRCUIT AND INTERLOCKED TO ALARM ALL DEVICES UPON ACTIVATION.

11. WHERE A FUEL BURNING APPLIANCE OR STORAGE GARAGE IS LOCATED ADJACENT TO A RESIDENTIAL OCCUPANCY, A CARBON MONOXIDE ALARM SHALL BE INSTALLED ADJACENT TO EACH SLEEPING AREA IN THE SUITE.

12. EACH FLOOR SHALL HAVE TWO (2) FIRE DETECTION CIRCUITS:

12.1. PROVIDE SEPARATE CIRCUIT ON EACH FLOOR, FOR SUITE DEVICES.

12.2. PROVIDE SEPARATE CIRCUIT ON EACH FLOOR FOR, COMMON AREA DEVICES

13. EACH SUITE SHALL BE INSTALLED WITH A FIRE ALARM SYSTEM HORN/STROBE DEVICE.

14. ACCESSIBLE SUITES & PUBLIC AREA

14.1. PROVIDE ADDITIONAL RECEPTACLES ON SIDE OF THE COUNTER WORK SURFACE AREA IN KITCHEN FOR PEOPLE WITH DISABILITY.

14.2. MOUNT LIGHT SWITCHES IN SUITES AND PUBLIC AREA AT 1070mm (3'-6") HEIGHT
14.3. SET DUPLEX OUTLETS 610mm (24") AFF.

14.4. PROVIDE TV AND TEL. OUTLETS 610mm (24") AFF.

14.5. PROVIDE TEL. OUTLETS IN LIVING ROOM, ONE IN BEDROOM AND BATHROOM FOR PLUG-IN TYPE PHONES.

14.6. SPLIT CIRCUIT RECEPTACLES SWITCH FOR LIGHT OVER SINK AND FAN TO BE BUILT IN THE FACE OF COUNTER.

DRAWING LIST

E100	ELECTRICAL LEGEND AND NOTES
E101A	PART. GROUND FLOOR NEW ELECTRICAL LAYOUT
E101B	PART. GROUND FLOOR NEW ELECTRICAL LAYOUT
E102A	PART. SECOND FLOOR NEW ELECTRICAL LAYOUT
E102B	PART. SECOND FLOOR NEW ELECTRICAL LAYOUT
E103	TYPICAL SUITES NEW ELECTRICAL LAYOUTS
E104	SINGLE LINE DIAGRAMS AND PANEL SCHEDULES
E105	ELECTRICAL SITE PLAN
E106	FIRE ALARM RISER DIAGRAM AND SPECIFICATIONS
E107	FIRE ALARM ZONING
E108	TELEPHONE/DATA CONDUIT LAYOUT
E109	ELECTRICAL DETAILS
E110	ELECTRICAL SPECIFICATIONS
E200	IDENTIFIED PRICE #1

ELECTRICAL LEGEND

- $3 — THREE-WAY SWITCH, 15A, 125V, MOUNTED ON LOCK SIDE OF DOOR 4'-6" (1370mm) AFF
- $ — DOUBLE GANG SINGLE POLE SWITCHES MOUNTED ON LOCK SIDE OF DOOR 4'-6" (1370mm) AFF
- PC — PHOTOCELL
- T — DIGITAL TIME CLOCK
- C — CONTACTOR
- $MS — MOTION SENSOR LIGHT SWITCH SHALL BE HUBBELL H-MOSS OCCUPANCY SENSORS AD1277WI SUITABLE FOR 120V. SENSOR SHALL BE MANUAL "ON" WITH AUTO-OFF FUNCTION AND C/W FIELD ADJUSTABLE VIEWING ANGLE AND ADAPTIVE TECHNOLOGY. PROVIDE INDIVIDUAL TIME AND SENSOR ADJUSTMENT TO CLIENT'S REQUIREMENTS. OR APPROVED EQUAL

FIRE ALARM SYSTEM

- MANUAL PULL STATION
- FIXED HEAT DETECTOR
- FIRE ALARM SMOKE DETECTOR COMBINED PHOTOELECTRIC AND HEAT DETECTOR.
- DUCT SMOKE DETECTOR
- FS — SPRINKLER SYSTEM WATER FLOW SWITCH
- SA — SPRINKLER SYSTEM ALARM CHECK VALVE/SUPERVISED VALVE
- PS — LOW/HIGH PRESSURE SWITCH
- F — FIRE ALARM SPEAKER (RECESSED)
- F — FIRE ALARM SPEAKER/STROBE (RECESSED)
- CEILING MOUNTED STROBE LIGHT
- WALL MOUNTED STROBE LIGHT
- FAP — FIRE ALARM CONTROL PANEL
- ANN — FIRE ALARM ANNUNCIATOR PANEL
- F — 120V SMOKE ALARM C/W A VISUAL SIGNALLING COMPONENT AS PER OBC REQUIREMENTS C/W BATTERY BACK UP (NOT CONNECTED TO THE FIRE ALARM SYSTEM). BRK CAT# 7010BSLA OR APPROVED EQUAL NOTE : IF MORE THAN ONE SMOKE ALARM OR COMBINATION CARBON MONOXIDE / SMOKE ALARM IS REQUIRED IN THE UNIT, THEY SHALL BE WIRED SO THAT THE ACTIVATION OF ONE DETECTOR WILL CAUSE ALL SMOKE ALARMS WITHIN THE UNIT TO SOUND.
- C — SAME AS ABOVE BUT FOR CARBON MONOXIDE DETECTOR TO BE CONNECTED TO SMOKE ALARM CIRCUIT AND SHALL BE WIRED SO THAT THE ACTIVATION OF SMOKE OR CO DETECTOR WILL CAUSE ALL SMOKE AND CO ALARM WITHIN UNIT TO SOUND. BRK CAT# C05120BN OR APRROVED EQUAL.
- F — FIRE ALARM CONNECTION, REFER TO DRAWINGS FOR DETAILS

SECURITY SYSTEM

- SCP — SECURITY CONTROL PANEL BY OTHERS
- SECURITY CAMERA, PROVIDE 3/4" CONDUIT C/W NYLON FISH CORD
- SR — SECURITY CARD READER, PROVIDE 3/4" CONDUIT C/W NYLON FISH CORD
- SD — SECURITY DOOR CONTACT, PROVIDE 3/4" CONDUIT C/W NYLON FISH CORD
- DR — SECURITY DOOR RELEASE, PROVIDE 3/4" CONDUIT C/W NYLON FISH CORD
- SD — ELECTRIC DOOR STRIKE, PROVIDE 3/4" CONDUIT C/W NYLON FISH CORD
- MOTION DETECTOR

COMMUNICATIONS SYSTEM

- WALL MOUNTED TELEPHONE OUTLET C/W 3/4" (27mm) CONDUIT MOUNTED 2'-3" (685.8mm) ABOVE FLOOR
- WALL MOUNTED DATA OUTLET C/W 3/4" (21mm) CONDUIT TO MAIN CORRIDORS ACCESSIBLE CEILING SPACE UNLESS OTHERWISE NOTED
- WALL MOUNTED TELEPHONE AND DATA OUTLET C/W 3/4" (27mm) CONDUIT
- WALL MOUNTED COAXIAL CABLE TV OUTLET C/W 3/4" (27mm) CONDUIT BACK TO SUITS 'IT' BOX, MOUNTED 2'-3" (685.8mm) ABOVE FLOOR

ABBREVIATIONS

RT	RAIN TIGHT
AFF	ABOVE FINISHED FLOOR
WP	WEATHERPROOF
GFIC	GROUND FAULT INTERRUPTER CIRCUIT
E	EXISTING ELECTRICAL DEVICE TO REMAIN
R	EXISTING ELECTRICAL DEVICE TO BE REMOVED
R/R	EXISTING ELECTRICAL DEVICE TO BE REMOVED AND RE-INSTALLED.
R/E	EXISTING ELECTRICAL DEVICE TO BE RELOCATED
E/R	EXISTING ELECTRICAL DEVICE IN RELOCATED LOCATION
NL	NIGHT LIGHT
AD	AUTO DOOR
O/H	AUTOMATIC OVER HEAD DOOR

ELECTRICAL LEGEND

POWER SYSTEM

- DUPLEX "U" GROUNDED 15A, 120V RECEPTACLE MOUNTED 2'-3" (686mm) AFF IN SUITES AND 16" (406.4mm) AFF IN OTHER LOCATIONS.
- AS ABOVE BUT MOUNTED 4'-6" (1050mm) ABOVE FLOOR.
- DUPLEX RECEPTACLES AS SHOWN BUT HALF SWITCHED.
- SINGLE 15A, 120V GROUNDED RECEPTACLE FOR WASHERS IN LAUNDY ROOM MOUNTED APPROXIMATELY 2'-6" (762mm) ABOVE FLOOR.
- 15A, 120V SPLIT CIRCUIT "U" GROUNDED RECEPTACLE MOUNTED APPROXIMATELY 6" (152.4mm) ABOVE KITCHEN COUNTER.
- 30A, 1ø, 4W, 120/208V RECEPTACLE WITH SHEET STEEL COVER PLATE MOUNTED 2'-6" (762mm) AFF FOR DRYER.
- 50A, 1ø, 4W, 120/208V RECEPTACLE WITH SHEET STEEL COVER PLATE MOUNTED 2'-6" (762mm) AFF FOR RANGE.
- WEATHERPROOF DUPLEX RECEPTACLE SUPPORTED BY A 6'-0" (1524mm) ROUNDCAPPED STEEL POST IMBENDDED IN CONCRETE 4'-0" (1220mm) BELOW FINISH GRADE AND LOCATED 4'-0" (1220mm) FROM CURB OF TIRE STOP.
- SINGLE 20A, 120V GROUNDED RECEPTACLE FOR A/C UNITS MOUNTED SAME HEIGHT AS DEVICES IN THE AREA. EXACT LOCATION AND HEIGHT TO BE COORDINATED WITH A/C UNIT SLEEVE LOCATION.
- DIRECTION POWER CONNECTION
- DIRECTION POWER CONNECTION C/W DISCONNECT SWITCH
- HD — HAND DRYER
- JB — JUCTION BOX
- PULL BOX
- FUSED DISCONNECT SWITCH
- UNFUSED DISCONNECT SWITCH
- ELECTRICAL PANEL, RECESSED OR SURFACE MOUNTED
- ELECTRICAL DISTRIBUTION PANELBOARD
- VFD — VARIABLE FREQUENCY DRIVE
- TVSS — TRANSIENT VOLTAGE SURGE SUPPRESSOR UNIT
- TRANSFORMER
- CP — CONTROL PANEL
- SINGLE PHASE MOTOR
- THREE PHASE MOTOR
- DOOR RELEASE PUSH BUTTON
- CIRCUIT BREAKER
- FUSED DISCONNECT SWITCH (SINGLE LINE DIAGRAM)
- M — METERING CABINET TO SUIT LOCAL HYDRO'S REQUIREMENT C/W A 120V POWER OUTLET FED FROM NEAREST 120V PANEL AND A TELEPHONE OUTLET C/W WIRING AND CONDUIT BACK TO MAIN TELEPHONE BOARD.
- ELECTRIC BASEBOARD HEATER 208V STANDARD WATT DENSITY WITH BUILT IN THERMOSTAT, SIZED AS SHOWN OR EQUAL
- EDH — DUCT HEATER SUPPLIED AND INSTALLED BY MECHANICAL AND WIRED BY THIS ELECTRICAL CONTRACTOR
- EF — ELECTRIC FORCED AIR HEATER RECESSED IN WALL WITH TAMPERPROOF BUILT-IN THERMOSTAT, 208V,1PH, SIZE AS SHOWN OR EQUAL
- S — LINE VOLTAGE THERMOSTAT SUPPLIED BY MECHANICAL CONTRACTOR AND INSTALLED BY THIS CONTRACTOR. THIS CONTRACTOR TO PROVIDE ALL LINE VOLTAGE WIRING TO SUIT.
- SPD — SURGE PROTECTION DEVICE (SPD): TYPE 1 SURGE PROTECTIVE DEVICE 160KA PER PHASE MODEL TK-ST160-3Y208-FL, MANUFACTURER TOTAL PROTECTION SOLUTIONS C/W 30 YEAR UNLIMITED FREE REPLACEMENT WARRANTY

LIGHTING SYSTEM

- 2'x4' LED LIGHTING FIXTURE, CEILING MOUNTED
- 1'x4' LED LIGHTING FIXTURE, CEILING MOUNTED
- 1'x4' LED LIGHTING FIXTURE, WALL MOUNTED
- 2'X4' LED LIGHTING FIXTURE AS NIGHT LIGHT, CEILING MOUNTED
- 1'X4' LED LIGHTING FIXTURE AS NIGHT LIGHT, CEILING MOUNTED
- 1'X4' LED LIGHTING FIXTURE AS NIGHT LIGHT, WALL MOUNTED
- WALL MOUNTED LIGHTING FIXTURE
- POT LIGHT CEILING MOUNTED
- NIGHT LIGHT POT LIGHT, CEILING MOUNTED
- CEILING MOUNTED EXIT SIGN, ARROW DENOTES DIRECTION
- WALL MOUNTED EXIT SIGN, ARROW DENOTES DIRECTION
- POLE MOUNTED LIGHTING FIXTURE
- EXTERIOR BOLLARD TYPE FIXTURE, HIGHER MOUNTING HEIGHT
- EXTERIOR BOLLARD TYPE FIXTURE, LOWER MOUNTING HEIGHT
- EMERGENCY LIGHT
- BATTERY UNIT C/W DOUBLE LIGHT HEADS
- LIGHTING TRACK C/W LIGHTING FIXTURE
- $ — SINGLE POLE SWITCH 15A, 125V, MOUNTED ON LOCK SIDE OF DOOR 4'-6" (1370mm) AFF

DO NOT SCALE DRAWINGS. THE CONTRACTOR SHALL CHEECK AND VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.

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SEAL

Revision Schedule

Rev	Date	By	Description
1	2026-02-16	FRB	ISSUED FOR REVIEW
2	2026-03-02	FRB	ISSUED FOR 90% REVIEW
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2	2026-05-28	FRB	ISSUED FOR EAD-01
1	2026-05-12	FRB	ISSUED FOR EPR-01

Drawing Revision

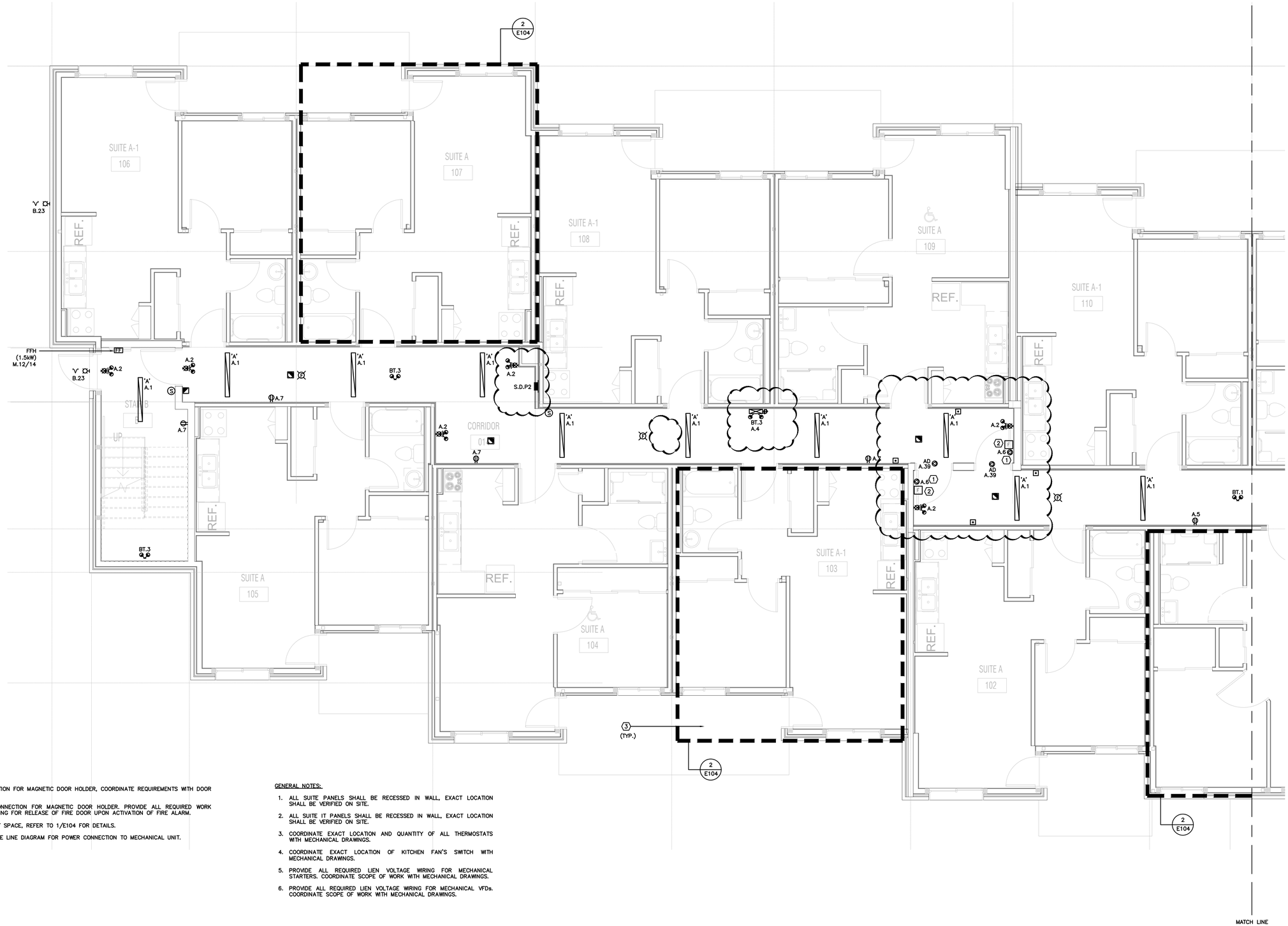
PROJECT NAME: VERONA
PROJECT ADDRESS: 6094 Carleton Drive, Verona, ON

ISSUE DATE:	MAY 2026
DRAWN BY:	N.Y.
CHECKED BY:	F.R.B.

SHEET TITLE: ELECTRICAL LEGEND AND NOTES

SCALE: AS SHOWN

SHEET NUMBER: E100



KEY NOTES:

1. POWER CONNECTION FOR MAGNETIC DOOR HOLDER, COORDINATE REQUIREMENTS WITH DOOR SUPPLIER.
2. FIRE ALARM CONNECTION FOR MAGNETIC DOOR HOLDER. PROVIDE ALL REQUIRED WORK AND PROGRAMMING FOR RELEASE OF FIRE DOOR UPON ACTIVATION OF FIRE ALARM.
3. TYPICAL TENANT SPACE, REFER TO 1/E104 FOR DETAILS.
4. REFER TO SINGLE LINE DIAGRAM FOR POWER CONNECTION TO MECHANICAL UNIT.

GENERAL NOTES:

1. ALL SUITE PANELS SHALL BE RECESSED IN WALL, EXACT LOCATION SHALL BE VERIFIED ON SITE.
2. ALL SUITE IT PANELS SHALL BE RECESSED IN WALL, EXACT LOCATION SHALL BE VERIFIED ON SITE.
3. COORDINATE EXACT LOCATION AND QUANTITY OF ALL THERMOSTATS WITH MECHANICAL DRAWINGS.
4. COORDINATE EXACT LOCATION OF KITCHEN FAN'S SWITCH WITH MECHANICAL DRAWINGS.
5. PROVIDE ALL REQUIRED LIEN VOLTAGE WIRING FOR MECHANICAL STARTERS. COORDINATE SCOPE OF WORK WITH MECHANICAL DRAWINGS.
6. PROVIDE ALL REQUIRED LIEN VOLTAGE WIRING FOR MECHANICAL VFDs. COORDINATE SCOPE OF WORK WITH MECHANICAL DRAWINGS.

1 / E101A PART. GROUND FLOOR NEW ELECTRICAL LAYOUT
SCALE: 1:50

DO NOT SCALE DRAWINGS. THE CONTRACTOR SHALL CHEECK AND VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.

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Rev.	Date	By	Description
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2	2026-05-28	FRB	ISSUED FOR EAD-01
1	2026-05-12	FRB	ISSUED FOR EPR-01

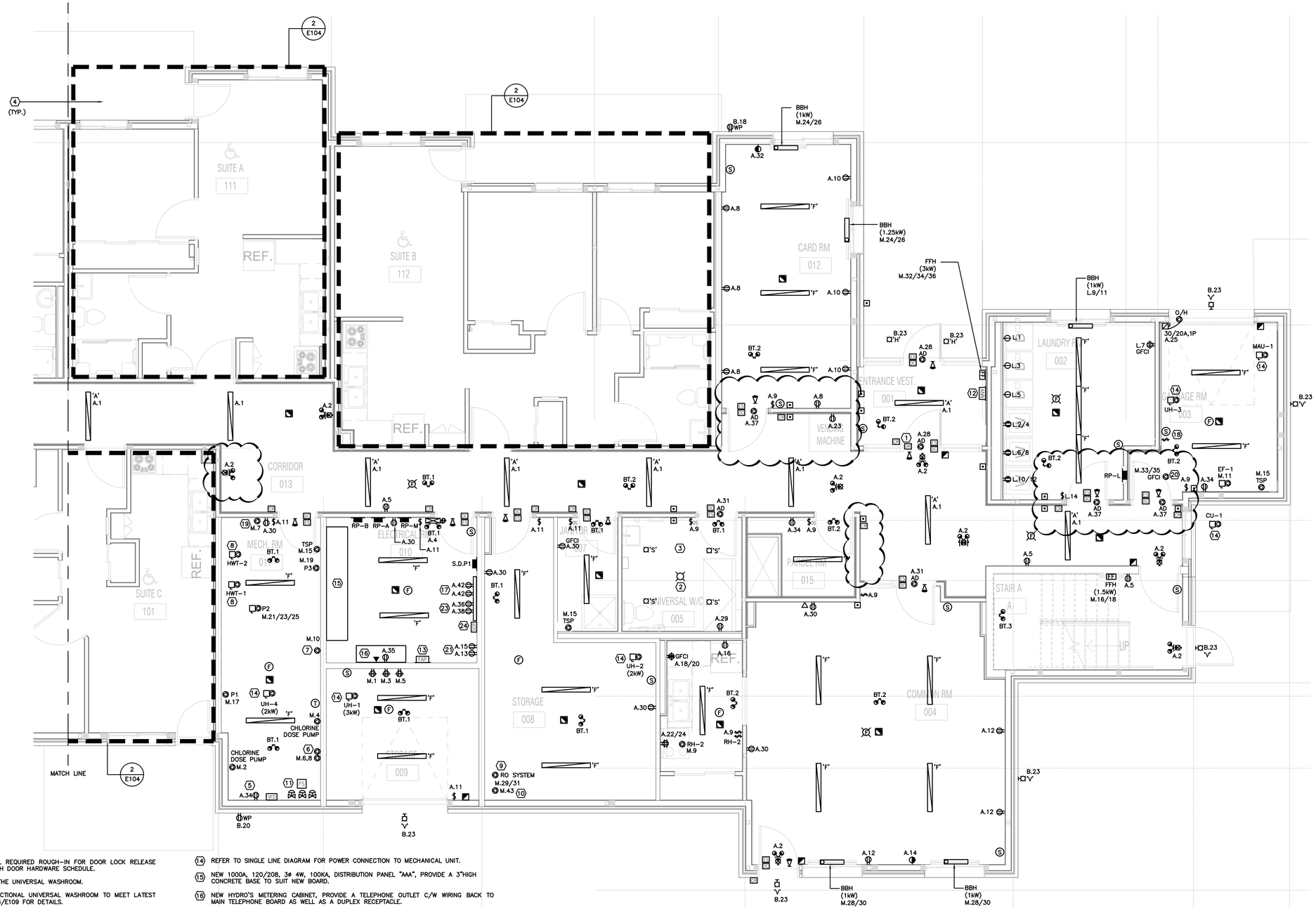
Drawing Revision

PROJECT NAME: VERONA
PROJECT ADDRESS: 6094 Carleton Drive, Verona, ON

ISSUE DATE: MAY 2026
DRAWN BY: N.Y.
CHECKED BY: F.R.B.

SHEET TITLE: PART. GROUND FLOOR NEW ELECTRICAL LAYOUT
SCALE: AS SHOWN

SHEET NUMBER: E101A



KEY NOTES:

1. DOOR LOCK RELEASE BOX, PROVIDE ALL REQUIRED ROUGH-IN FOR DOOR LOCK RELEASE SYSTEM. COORDINATE REQUIREMENTS WITH DOOR HARDWARE SCHEDULE.
2. PROVIDE A FIRE ALARM STROBE INSIDE THE UNIVERSAL WASHROOM.
3. CONTRACTOR TO PROVIDE A FULLY FUNCTIONAL UNIVERSAL WASHROOM TO MEET LATEST LATEST OBC REQUIREMENTS, REFER TO 3/E109 FOR DETAILS.
4. TYPICAL TENANT SPACE, REFER TO DRAWING E103 FOR DETAILS.
5. RECEPTACLE FOR GF PUMP, CONFIRM EXACT LOCATION WITH MECHANICAL DRAWINGS.
6. POWER CONNECTIONS FOR UV STERILIZATION SYSTEM.
7. POWER CONNECTION FOR WATER TREATMENT SYSTEM CONTROL PANEL, COORDINATE EXACT LOCATION ON SITE.
8. REFER TO SINGLE LINE DIAGRAM FOR POWER CONNECTIONS TO HOT WATER TANKS.
9. POWER CONNECTION FOR RO SYSTEM, CONFIRM EXACT LOCATION WITH MECHANICAL DRAWINGS.
10. POWER CONNECTION FOR RO SYSTEM BOOSTER PUMP.
11. PROVIDE ALL REQUIRED FIRE ALARM CONNECTIONS TO NEW SPRINKLER SUPERVISED VALVES AND FLOW SWITCH. REFER TO FIRE ALARM RISER DIAGRAM FOR DETAILS.
12. MAIN FIRE ALARM ANNUNCIATOR PANEL.
13. MAIN FIRE ALARM PANEL.
14. REFER TO SINGLE LINE DIAGRAM FOR POWER CONNECTION TO MECHANICAL UNIT.
15. NEW 1000A, 120/208, 3ø 4W, 100KA, DISTRIBUTION PANEL "AAA", PROVIDE A 3"HIGH CONCRETE BASE TO SUIT NEW BOARD.
16. NEW HYDRO'S METERING CABINET, PROVIDE A TELEPHONE OUTLET C/W WIRING BACK TO MAIN TELEPHONE BOARD AS WELL AS A DUPLEX RECEPTACLE.
17. APPROXIMATE LOCATION OF MAIN TELEPHONE AND DATA BOARD.
18. PROVIDE ALL REQUIRED LINE VOLTAGE WIRING FOR MAU-1 AND EF-1 STARTER AND INTERCONNECTION, COORDINATE SCOPE OF WORK WITH MECHANICAL DRAWINGS.
19. POWER CONNECTION FOR DETLASOL CONTROL BOX.
20. GFCI POWER CONNECTION FOR HEAT TRACING SYSTEM, CONFIRM EXACT LOCATION WITH MECHANICAL DRAWINGS.
21. POWER OUTLETS FOR FUTURE IT CABINET BY OTHERS.
23. GFCI POWER OUTLETS FOR SECURITY SYSTEM.
24. APPROXIMATE LOCATION OF SECURITY PANEL, CONTRACTOR TO VERIFY THE EXACT LOCATION WITH SECURITY CONTRACTOR PRIOR TO ANY WORK

GENERAL NOTES:

1. ALL SUITE PANELS SHALL BE RECESSED IN WALL, EXACT LOCATION SHALL BE VERIFIED ON SITE.
2. ALL SUITE IT PANELS SHALL BE RECESSED IN WALL, EXACT LOCATION SHALL BE VERIFIED ON SITE.
3. COORDINATE EXACT LOCATION AND QUANTITY OF ALL THERMOSTATS WITH MECHANICAL DRAWINGS.
4. COORDINATE EXACT LOCATION OF KITCHEN FAN'S SWITCH WITH MECHANICAL DRAWINGS.
5. PROVIDE ALL REQUIRED LINE VOLTAGE WIRING FOR MECHANICAL STARTERS. COORDINATE SCOPE OF WORK WITH MECHANICAL DRAWINGS.
6. PROVIDE ALL REQUIRED LINE VOLTAGE WIRING FOR MECHANICAL VFDs. COORDINATE SCOPE OF WORK WITH MECHANICAL DRAWINGS.

1 PART. GROUND FLOOR NEW ELECTRICAL LAYOUT
E101B SCALE: 1:50

DO NOT SCALE DRAWINGS. THE CONTRACTOR SHALL CHEECK AND VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.

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1	2026-05-12	FRB	ISSUED FOR EPR-01

Drawing Revision

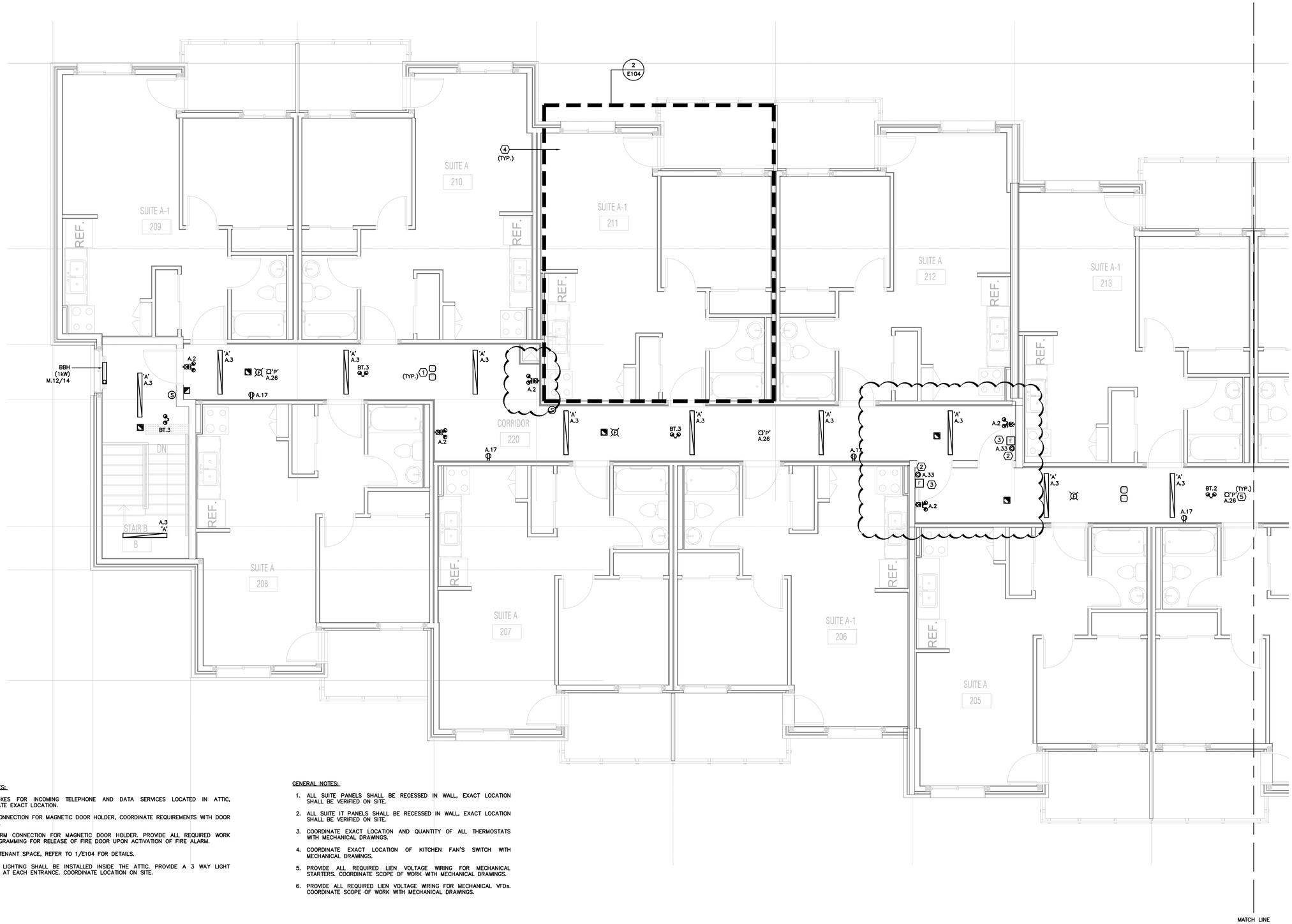
PROJECT NAME: VERONA
PROJECT ADDRESS: 6094 Carleton Drive, Verona, ON

ISSUE DATE:	MAY 2026
DRAWN BY:	N.Y.
CHECKED BY:	F.R.B.

SHEET TITLE: PART. GROUND FLOOR NEW ELECTRICAL LAYOUT

SCALE: AS SHOWN

SHEET NUMBER: E101B



KEY NOTES:

1. PULL BOXES FOR INCOMING TELEPHONE AND DATA SERVICES LOCATED IN ATTIC, COORDINATE EXACT LOCATION.
2. POWER CONNECTION FOR MAGNETIC DOOR HOLDER, COORDINATE REQUIREMENTS WITH DOOR SUPPLIER.
3. FIRE ALARM CONNECTION FOR MAGNETIC DOOR HOLDER. PROVIDE ALL REQUIRED WORK AND PROGRAMMING FOR RELEASE OF FIRE DOOR UPON ACTIVATION OF FIRE ALARM.
4. TYPICAL TENANT SPACE, REFER TO 1/E104 FOR DETAILS.
5. TYPE 'P' LIGHTING SHALL BE INSTALLED INSIDE THE ATTIC. PROVIDE A 3 WAY LIGHT SWITCHES AT EACH ENTRANCE. COORDINATE LOCATION ON SITE.

GENERAL NOTES:

1. ALL SUITE PANELS SHALL BE RECESSED IN WALL, EXACT LOCATION SHALL BE VERIFIED ON SITE.
2. ALL SUITE IT PANELS SHALL BE RECESSED IN WALL, EXACT LOCATION SHALL BE VERIFIED ON SITE.
3. COORDINATE EXACT LOCATION AND QUANTITY OF ALL THERMOSTATS WITH MECHANICAL DRAWINGS.
4. COORDINATE EXACT LOCATION OF KITCHEN FAN'S SWITCH WITH MECHANICAL DRAWINGS.
5. PROVIDE ALL REQUIRED LIEN VOLTAGE WIRING FOR MECHANICAL STARTERS. COORDINATE SCOPE OF WORK WITH MECHANICAL DRAWINGS.
6. PROVIDE ALL REQUIRED LIEN VOLTAGE WIRING FOR MECHANICAL VFDs. COORDINATE SCOPE OF WORK WITH MECHANICAL DRAWINGS.

1 / E102 PART. SECOND FLOOR NEW ELECTRICAL LAYOUT
SCALE: 1:50

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2	2026-05-28	FRB	ISSUED FOR EAD-01
1	2026-05-12	FRB	ISSUED FOR EPR-01

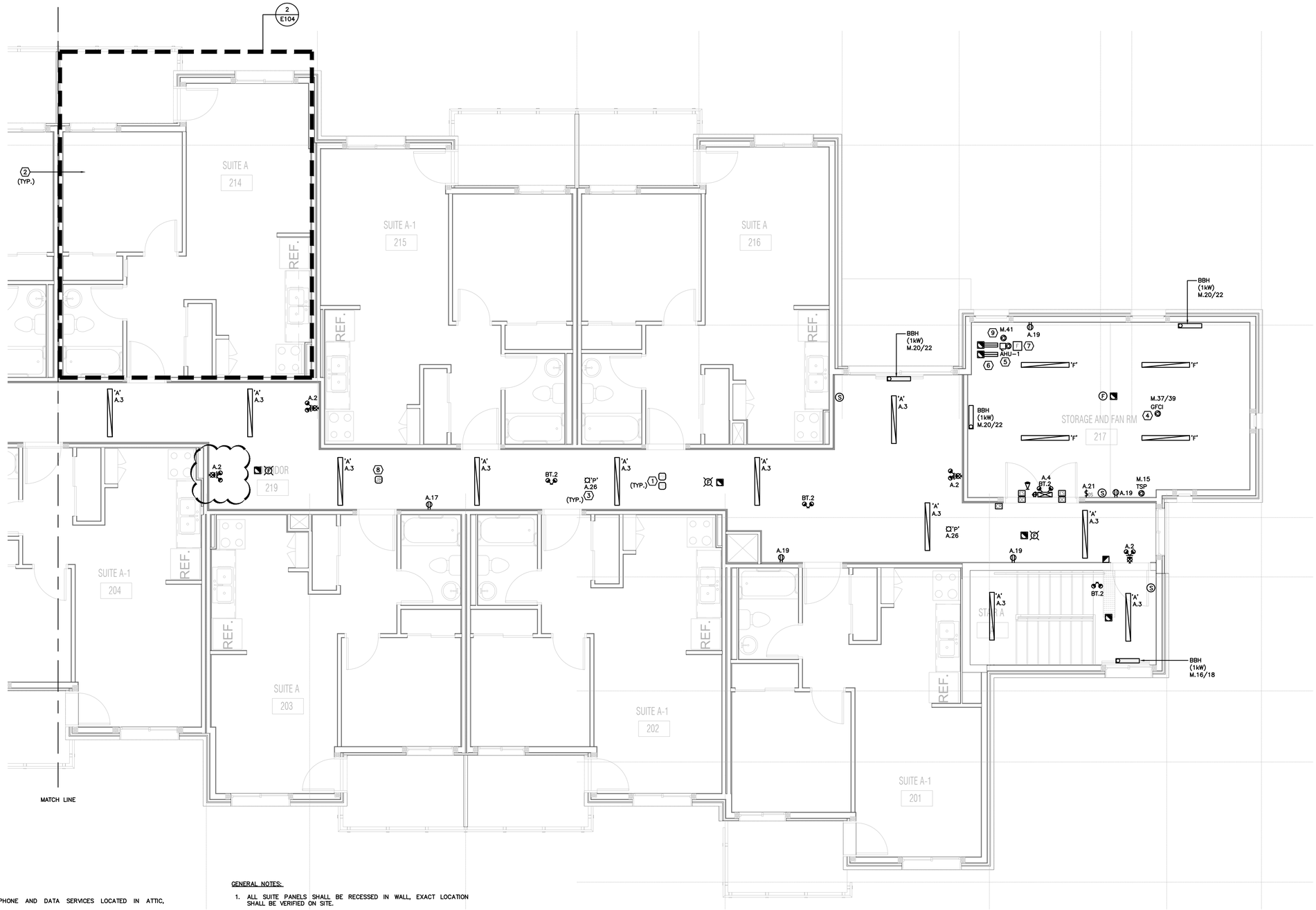
Drawing Revision

PROJECT NAME: VERONA
PROJECT ADDRESS: 6094 Carleton Drive, Verona, ON

ISSUE DATE: MAY 2026
DRAWN BY: N.Y.
CHECKED BY: F.R.B.

SHEET TITLE: PART. SECOND FLOOR NEW ELECTRICAL LAYOUT
SCALE: AS SHOWN

SHEET NUMBER: E102A



KEY NOTES:

1. PULL BOXES FOR INCOMING TELEPHONE AND DATA SERVICES LOCATED IN ATTIC, COORDINATE EXACT LOCATION.
2. TYPICAL TENANT SPACE, REFER TO 1/E104 FOR DETAILS.
3. TYPE 'P' LIGHTING SHALL BE INSTALLED INSIDE THE ATTIC. PROVIDE A 3 WAY LIGHT SWITCHES AT EACH ENTRANCE. COORDINATE LOCATION ON SITE.
4. GFCI POWER CONNECTION FOR HEAT TRACING SYSTEM, CONFIRM EXACT LOCATION WITH MECHANICAL DRAWINGS.
5. POWER CONNECTION FOR AHU-1, PROVIDE ALL REQUIRED LINE VOLTA EWIRING FOR THE UNIT'S VFDs. REFER TO DISTRIBUTION DIAGRAM FOR DETAILS.
6. FIRE ALARM DUCT SMOKE DETECTORS FOR AHU-1.
7. PROVIDE A FIRE ALARM CONNECTION TO AHU-1 THAT THE UNIT WOULD SHUT DOWN DURING ACTIVATION OF FIRE ALARM SYSTEM.
8. PROVIDE A JUNCTION BOX IN THE ATTIC C/W (1) 2" EMPTY CONDUIT ROUTED TO THE MAIN ELECTRICAL ROOM. LABEL THE JUNCTION BOX AND CONDUIT AS FOLLOWS: "EMPTY CONDUIT FOR FUTURE RADON EXHAUST SYSTEM.
9. 120V POWER CONNECTION FOR AHU-1 BUILT IN RECEPTACLE AND LIGHTING.

GENERAL NOTES:

1. ALL SUITE PANELS SHALL BE RECESSED IN WALL, EXACT LOCATION SHALL BE VERIFIED ON SITE.
2. ALL SUITE IT PANELS SHALL BE RECESSED IN WALL, EXACT LOCATION SHALL BE VERIFIED ON SITE.
3. COORDINATE EXACT LOCATION AND QUANTITY OF ALL THERMOSTATS WITH MECHANICAL DRAWINGS.
4. COORDINATE EXACT LOCATION OF KITCHEN FAN'S SWITCH WITH MECHANICAL DRAWINGS.
5. PROVIDE ALL REQUIRED LIEN VOLTAGE WIRING FOR MECHANICAL STARTERS. COORDINATE SCOPE OF WORK WITH MECHANICAL DRAWINGS.
6. PROVIDE ALL REQUIRED LIEN VOLTAGE WIRING FOR MECHANICAL VFDs. COORDINATE SCOPE OF WORK WITH MECHANICAL DRAWINGS.

1 PART. SECOND FLOOR NEW ELECTRICAL LAYOUT
E102B SCALE: 1:50

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Drawing Revision

PROJECT NAME: VERONA
PROJECT ADDRESS: 6094 Carleton Drive, Verona, ON

ISSUE DATE: MAY 2026
DRAWN BY: N.Y.
CHECKED BY: F.R.B.

SHEET TITLE: PART. SECOND FLOOR NEW ELECTRICAL LAYOUT
SCALE: AS SHOWN

SHEET NUMBER: E102B

KEY NOTES:

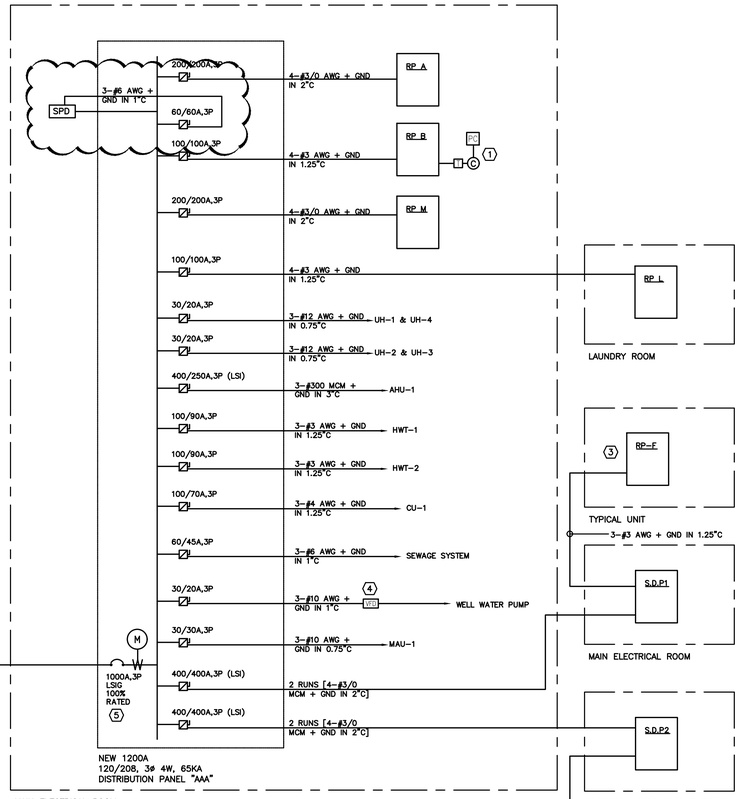
1. PROVIDE A DIGITAL TIME CLOCK C/W ASTRO DIAL TO CONTROL ALL EXISTING AND NEW EXTERIOR LIGHTING. PROVIDE ALL REQUIRED LOW VOLTAGE WIRING, PHOTOCELLS, CONTACTORS AND RELAYS TO SUIT.
2. PROVIDE NEW SECONDARY DUCT BANK C/W WIRING FROM EXISTING TRANSFORMER TO NEW DISTRIBUTION PANEL "AAA", CONTRACTOR TO ALLOW FOR MIN 2 ON SITE MEETING WITH LOCAL HYDRO TO COORDINATE THE SCOPE.
3. TYPICAL IN SUITE ELECTRICAL PANELS, REFER TO PANEL "F" SCHEDULE FOR QUANTITY OF THE REQUIRED PANELS.
4. VFD FOR WELL WATER PUMP, THIS ELECTRICAL CONTRACTOR TO ALLOW FOR ALL REQUIRED LINE VOLTAGE WIRING AND CONDUITS TO SUIT. CONFIRM EXACT LOCATION WITH MECHANICAL DRAWINGS.
5. PROVIDE A 1000A,3P, 100% RATED MAIN BREAKER.

GENERAL NOTES:

1. ALL FUSES SHALL BE TYPE J UNLESS OTHERWISE NOTED.
2. ALL MOTOR FUSES SHALL BE DUAL ELEMENT TYPE D.
3. REFER TO MECHANICAL SCHEDULE FOR ALL WIRING AND CONDUIT SIZES.

NOTES RE: ELECTRICAL STUDIES

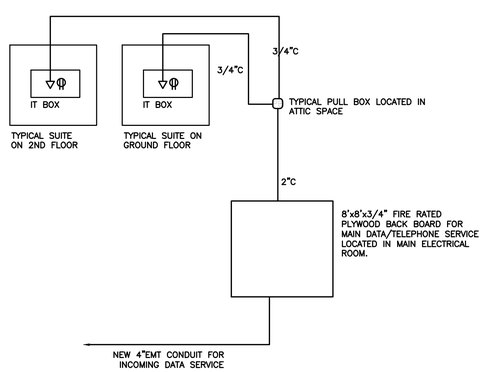
1. CONTRACTOR TO PROVIDE A SHORT CIRCUIT STUDY, COORDINATION STUDY, AND ARC FLASH STUDY PRIOR TO ORDERING ANY DISTRIBUTION EQUIPMENT. ALL DISTRIBUTION EQUIPMENT KA RATINGS, INTERRUPTING CAPACITIES, AND PROTECTIVE DEVICE SETTINGS SHALL BE COORDINATED AND VERIFIED BASED ON THE RESULTS OF THE STUDIES.
2. CONTRACTOR SHALL SUBMIT THE FINAL STUDIES AND CONFIRMED EQUIPMENT RATINGS FOR ENGINEER REVIEW PRIOR TO PROCUREMENT.



LEGEND

———	NEW
– – – –	EXISTING TO REMAIN
—X—X X—X—	EXISTING TO BE REMOVED

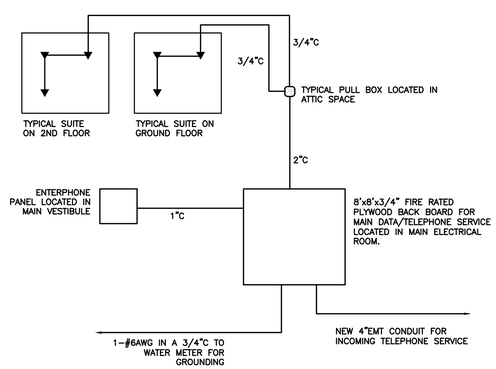
1 E104 DISTRIBUTION DIAGRAM
SCALE: N.T.S.



NOTES:

1. ALL CONDUITS SHALL BE EMT UNLESS OTHERWISE NOTED.
2. ALL CONDUITS SHALL BE 3/4" EMT UNLESS OTHERWISE NOTED.
3. REFER TO FLOOR PLAN FOR EXACT QUANTITY OF IT PANELS.
4. PROVIDE A RECESSED 'IT' PLASTIC BOX C/W A DUPLEX RECEPTACLE FOR EACH SUIT.

3 E104 DATA SERVICE DETAIL
SCALE: N.T.S.



NOTES:

1. ALL CONDUITS SHALL BE EMT UNLESS OTHERWISE NOTED.
2. ALL CONDUITS SHALL BE 3/4" EMT UNLESS OTHERWISE NOTED.
3. REFER TO FLOOR PLAN FOR EXACT QUANTITY OF TV OUTLETS.

2 E104 TELEPHONE SERVICE DETAIL
SCALE: N.T.S.

DESCRIPTION	LOAD (KW)	BRKR	CCT No	PH	CCT No	BRKR	LOAD (KW)	DESCRIPTION
EXTERIOR RECEPTACLE	–	20	1	A	2	15	–	EXTERIOR RECEPTACLE
EXTERIOR RECEPTACLE	–	20	3	B	4	2P		
EXTERIOR RECEPTACLE	–	20	5	C	6	15	–	EXTERIOR RECEPTACLE
EXTERIOR RECEPTACLE	–	20	7	A	8	2P		
EXTERIOR RECEPTACLE	–	20	9	B	10	15	–	EXTERIOR RECEPTACLE
EXTERIOR RECEPTACLE	–	20	11	C	12	2P		
EXTERIOR RECEPTACLE	–	20	13	A	14	15	–	EXTERIOR RECEPTACLE
EXTERIOR RECEPTACLE	–	20	15	B	16	2P		
SPARE	–	20	17	C	18	20	–	EXTERIOR RECEPTACLE
SPARE	–	20	19	A	20	20	–	EXTERIOR RECEPTACLE
SPARE	–	20	21	B	22	20	–	SPARE
EXTERIOR LIGHTING	–	*20	23	C	24	20	–	SPARE
SEWAGE SYSTEM	–	15	25	A	26	20	–	SPARE
EXTERIOR LIGHTING	–	*20	27	B	28	20	–	SPARE
		2P	29	C	30	20	–	SPARE
EXTERIOR LIGHTING	–	*20	31	A	32	20	–	SPARE
		2P	33	B	34	–	–	–
–	–	–	35	C	36	–	–	–
–	–	–	37	A	38	–	–	–
–	–	–	39	B	40	–	–	–
–	–	–	41	C	42	–	–	–

NOTES: *CONTROLLED VIA TIME CLOCK C/W ASTRO DIAL
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PANEL RP–B

VOLTS (V):	120/208V	TYPE:	–	RECESSED	☐
PHASE:	3	CONN. LOAD (KW):	–	SURFACE	☒
WIRES:	4	DEMAND LOAD (A):	–	SPRINKLERPROOF	☒
MAINS (A):	100	LOCATION:	MAIN ELECTRICAL ROOM	FED THRU LUGS	☐
I.C. (K.A):	35			MAIN BREAKER	☐

DESCRIPTION	LOAD (KW)	BRKR	CCT No	PH	CCT No	BRKR	LOAD (KW)	DESCRIPTION
WASHER	–	15	1	A	2	30	–	DRYER 2–#10+GND–IN 3/4"C
WASHER	–	15	3	B	4	2P		
WASHER	–	15	5	C	6	30	–	DRYER 2–#10+GND–IN 3/4"C
RECEPTACLE	–	15	7	A	8	2P		
ELECTRIC HEATER	–	15	9	B	10	30	–	DRYER 2–#10+GND–IN 3/4"C
		2P	11	C	12	2P		
–	–	–	13	A	14	15	–	LIGHTING
–	–	–	15	B	16	15	–	SPARE
–	–	–	17	C	18	15	–	SPARE
–	–	–	19	A	20	20	–	SPARE
–	–	–	21	B	22	20	–	SPARE
–	–	–	23	C	24	–	–	–

NOTES: –
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PANEL RP–L

VOLTS (V):	120/208V	TYPE:	–	RECESSED	☒
PHASE:	3	CONN. LOAD (KW):	–	SURFACE	☐
WIRES:	4	DEMAND LOAD (A):	–	SPRINKLERPROOF	☒
MAINS (A):	100	LOCATION:	LAUNDRY ROOM	FED THRU LUGS	☐
I.C. (K.A):	10			MAIN BREAKER	☒ 100A,3P

DESCRIPTION	LOAD (KW)	BRKR	CCT No	PH	CCT No	BRKR	LOAD (KW)	DESCRIPTION
RECEPTACLE	–	15	1	A	2	15	–	CHLORINE DOSE PUMP
RECEPTACLE	–	15	3	B	4	15	–	CHLORINE DOSE PUMP
RECEPTACLE	–	15	5	C	6	15	–	UV STERILIZATION SYSTEM
DETLASOL CONTROL BOX	–	15	7	A	8	15	–	UV STERILIZATION SYSTEM
RH–2	–	15	9	B	10	15	–	WATER TREATMENT SYSTEM
EF–1	–	15	11	C	12	20	–	ELECTRIC HEATER
–	–	–	13	A	14	2P		
TSPs	–	15	15	B	16	20	–	ELECTRIC HEATER
P1	–	15	17	C	18	2P		
P3	–	15	19	A	20	20	–	ELECTRIC HEATER
P2	–	15	21	B	22	2P		
			23	C	24	15	–	ELECTRIC HEATER
		3P	25	A	26	2P		
EXISTING SUMP PUMP	–	20	27	B	28	15	–	ELECTRIC HEATER
RO SYSTEM	–	15	29	C	30	2P		
		2P	31	A	32	15	–	ELECTRIC HEATER
HEAT TRACING SYSTEM (GFCI)	–	20	33	B	34	3P		
		2P	35	C	36			
HEAT TRACING SYSTEM (GFCI)	–	20	37	A	38	15	–	SPARE
		2P	39	B	40	15	–	SPARE
AHU–1	–	20	41	C	42	20	–	SPARE
RO SYSTEM BOOSTER PUMP	–	15	43	A	44	15	–	SPARE
–	–	–	45	B	46	15	–	SPARE
–	–	–	47	C	48	15	–	SPARE
–	–	–	49	A	50	15	–	SPARE
–	–	–	51	B	52	20	–	SPARE
–	–	–	53	C	54	20	–	SPARE
–	–	–	55	A	56	–	–	–
–	–	–	57	B	58	–	–	–
–	–	–	59	C	60	–	–	–
–	–	–	61	A	62	–	–	–
–	–	–	63	B	64	–	–	–
–	–	–	65	C	66	–	–	–

NOTES: –
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PANEL RP–M

VOLTS (V):	120/208V	TYPE:	–	RECESSED	☐
PHASE:	3	CONN. LOAD (KW):	–	SURFACE	☒
WIRES:	4	DEMAND LOAD (A):	–	SPRINKLERPROOF	☒
MAINS (A):	225	LOCATION:	MAIN ELECTRICAL ROOM	FED THRU LUGS	☐
I.C. (K.A):	35			MAIN BREAKER	☐

DESCRIPTION	LOAD (KW)	BRKR	CCT No	PH	CCT No	BRKR	LOAD (KW)	DESCRIPTION
CORRIDOR LIGHTING	–	20	1	A	2	*20	–	EXIT SIGNS
CORRIDOR LIGHTING	–	20	3	B	4	*20	–	EMERGENCY BATTERY UNIT
GENERAL RECEPTACLES	–	15	5	C	6	*15	–	MAGNETIC DOOR HOLDERS
GENERAL RECEPTACLES	–	15	7	A	8	15	–	RECEPTACLES
LIGHTING	–	20	9	B	10	15	–	RECEPTACLES
LIGHTING	–	20	11	C	12	15	–	RECEPTACLES
FUTURE IT CABINET	–	20	13	A	14	20	–	AC RECEPTACLE
FUTURE IT CABINET	–	20	15	B	16	15	–	FRIDGE
GENERAL RECEPTACLES	–	15	17	C	18	15	–	SPLIT RECEPTACLE
GENERAL RECEPTACLES	–	15	19	A	20	2P		
LIGHTING	–	20	21	B	22	40	–	STOVE 2–#8+GND IN 3/4"C
VENDING MACHINE	–	15	23	C	24	2P		
OVERHEAD DOOR	–	20	25	A	26	20	–	LIGHTING IN ATTIC
SPARE	–	20	27	B	28	15	–	AUTO DOOR
UNIVERSAL WASHROOM RECEPTACLE	–	20	29	C	30	15	–	GENERAL RECEPTACLES
AUTO DOOR	–	15	31	A	32	20	–	AC RECEPTACLE
MAGNETIC DOOR HOLDERS	–	*15	33	B	34	15	–	RECEPTACLES
HYDRO-METER	–	–	35	C	36	*15	–	SECURITY SYSTEM
AUTO DOORS	–	15	37	A	38	*15	–	SECURITY SYSTEM
AUTO DOORS	–	15	39	B	40	*20	–	FIRE ALARM PANELS
–	–	–	41	C	42	20	–	TEL. AND TV RECEPTACLES
–	–	–	43	A	44	15	–	SPARE
–	–	–	45	B	46	15	–	SPARE
–	–	–	47	C	48	15	–	SPARE
–	–	–	49	A	50	15	–	SPARE
–	–	–	51	B	52	20	–	SPARE
–	–	–	53	C	54	20	–	SPARE
–	–	–	55	A	56	–	–	–
–	–	–	57	B	58	–	–	–
–	–	–	59	C	60	–	–	–
–	–	–	61	A	62	–	–	–
–	–	–	63	B	64	–	–	–
–	–	–	65	C	66	–	–	–

NOTES: *LOCK ON
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PANEL RP–A

VOLTS (V):	120/208V	TYPE:	–	RECESSED	☐
PHASE:	3	CONN. LOAD (KW):	–	SURFACE	☒
WIRES:	4	DEMAND LOAD (A):	–	SPRINKLERPROOF	☒
MAINS (A):	225	LOCATION:	–	FED THRU LUGS	☐
I.C. (K.A):	35			MAIN BREAKER	☐

DESCRIPTION	LOAD (KW)	BRKR	CCT No	PH	CCT No	BRKR	LOAD (KW)	DESCRIPTION
UNIT 101 2–#3+GND IN 1.25"C	15	100	1	A	2	100	15	UNIT 201 2–#3+GND IN 1.25"C
		2P	3	B	4	2P		
UNIT 102 2–#3+GND IN 1.25"C	15	100	5	C	6	100	15	UNIT 202 2–#3+GND IN 1.25"C
		2P	7	A	8	2P		
UNIT 110 2–#3+GND IN 1.25"C	15	100	9	B	10	100	15	UNIT 203 2–#3+GND IN 1.25"C
		2P	11	C	12	2P		
UNIT 111 2–#3+GND IN 1.25"C	15	100	13	A	14	100	15	UNIT 204 2–#3+GND IN 1.25"C
		2P	15	B	16	2P		
UNIT 112 2–#3+GND IN 1.25"C	15	100	17	C	18	100	15	UNIT 205 2–#3+GND IN 1.25"C
		2P	19	A	20	2P		
UNIT 216 2–#3+GND IN 1.25"C	15	100	21	B	22	100	15	UNIT 213 2–#3+GND IN 1.25"C
		2P	23	C	24	2P		
SPARE	–	100	25	A	26	100	15	UNIT 214 2–#3+GND IN 1.25"C
		2P	27	B	28	2P		
SPARE	–	100	29	C	30	100	15	UNIT 215 2–#3+GND IN 1.25"C
		2P	31	A	32	2P		
–	–	–	33	B	34	–	–	–
–	–	–	35	C	36	–	–	–
–	–	–	37	A	38	–	–	–
–	–	–	39	B	40	–	–	–
–	–	–	41	C	42	–	–	–

NOTES: –
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PANEL S.D.P1

VOLTS (V):	120/208V	TYPE:	–	RECESSED	☐
PHASE:	3	CONN. LOAD (KW):	210	SURFACE	☒
WIRES:	4	DEMAND LOAD (A):	334	SPRINKLERPROOF	☒
MAINS (A):	400	LOCATION:	MAIN ELECTRICAL ROOM	FED THRU LUGS	☐
I.C. (K.A):	35			MAIN BREAKER	☐

DESCRIPTION	LOAD (KW)	BRKR	CCT No	PH	CCT No	BRKR	LOAD (KW)	DESCRIPTION
UNIT 103 2–#3+GND IN 1.25"C	15	100	1	A	2	100	15	UNIT 206 2–#3+GND IN 1.25"C
		2P	3	B	4	2P		
UNIT 104 2–#3+GND IN 1.25"C	15	100	5	C	6	100	15	UNIT 207 2–#3+GND IN 1.25"C
		2P	7	A	8	2P		
UNIT 105 2–#3+GND IN 1.25"C	15	100	9	B	10	100	15	UNIT 208 2–#3+GND IN 1.25"C
		2P	11	C	12	2P		
UNIT 106 2–#3+GND IN 1.25"C	15	100	13	A	14	100	15	UNIT 209 2–#3+GND IN 1.25"C
		2P	15	B	16	2P		
UNIT 107 2–#3+GND IN 1.25"C	15	100	17	C	18	100	15	UNIT 210 2–#3+GND IN 1.25"C
		2P	19	A	20	2P		
UNIT 108 2–#3+GND IN 1.25"C	15	100	21	B	22	100	15	UNIT 211 2–#3+GND IN 1.25"C
		2P	23	C	24	2P		
UNIT 109 2–#3+GND IN 1.25"C	15	100	25	A	26	100	15	UNIT 212 2–#3+GND IN 1.25"C
		2P	27	B	28	2P		
SPARE	–	100	29	C	30	–	–	–
		2P	31	A	32	–	–	–
SPARE	–	100	33	B	34	–	–	–
		2P	35	C	36	–	–	–
–	–	–	37	A	38	–	–	–
–	–	–	39	B	40	–	–	–
–	–	–	41	C	42	–	–	–

NOTES: –
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PANEL S.D.P2

VOLTS (V):	120/208V	TYPE:	–	RECESSED	☒
PHASE:	3	CONN. LOAD (KW):	210	SURFACE	☐
WIRES:	4	DEMAND LOAD (A):	334	SPRINKLERPROOF	☒
MAINS (A):	400	LOCATION:	MAIN CORRIDOR	FED THRU LUGS	☐
I.C. (K.A):	35			MAIN BREAKER	☒ 400A,3P

DO NOT SCALE DRAWINGS. THE CONTRACTOR SHALL CHEECK AND VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.

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SEAL

Revision Schedule

Rev	Date	By	Description
1	2026-02-16	FRB	ISSUED FOR REVIEW
2	2026-03-02	FRB	ISSUED FOR 90% REVIEW
3	2026-03-20	FRB	ISSUED FOR PERMIT
4	2026-04-17	FRB	PRE TENDER REVIEW
5	2026-05-13	FRB	ISSUED FOR TENDER

Rev	Date	By	Description
2	2026-06-09	FRB	ISSUED FOR EAD-02
1	2026-05-28	FRB	ISSUED FOR EAD-01

Drawing Revision

PROJECT NAME: VERONA
PROJECT ADDRESS: 6094 Carleton Drive, Verona, ON

ISSUE DATE:	MAY 2026
DRAWN BY:	N.Y.
CHECKED BY:	F.R.B.

SHEET TITLE: SINGLE LINE DIAGRAMS AND PANEL SCHEDULES
SCALE: AS SHOWN

SHEET NUMBER: E104

ELECTRICAL SPECIFICATIONS

1. GENERAL
1.1. REFER TO THE PROJECT GENERAL CONDITIONS, TENDER FORMS, ARCHITECTURAL SPECIFICATIONS AND DRAWINGS, ETC. PRIOR TO SUBMITTING BID, CAREFULLY EXAMINE EXISTING SITE CONDITIONS TO ENSURE THE BID INCLUDES FOR EVERYTHING NECESSARY FOR COMPLETION OF WORK IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS.

1.2. REFER TO ARCHITECTURAL MILLWORK DRAWINGS FOR EXACT DIMENSIONING RELATED TO ELECTRICAL DEVICES (SWITCHES, POWER AND COMMUNICATION OUTLETS, FLOOR MONUMENTS, ETC..)

2. CODES AND BY-LAWS
2.1. COMPLY WITH LAWS, REGULATIONS AND CODES OF AUTHORITIES HAVING JURISDICTION. PERFORM WORK IN ACCORDANCE WITH LOCAL APPLICABLE GOVERNING CODES AND AUTHORITIES INCLUDING THE NATIONAL BUILDING CODE (NBC)

3. PERMITS, CERTIFICATES AND FEES
3.1. PAY FOR AND OBTAIN PERMITS, INSPECTION AND CERTIFICATES TO COMPLETE WORK. KEEP COPY OF SUCH PERMITS AND CERTIFICATES, ETC., ON JOB SITE. WHERE WORK INVOLVES ELECTROMAGNETIC LOCK WORK, PROVIDE PERMITS AS REQUIRED BY LOCAL AUTHORITY HAVING JURISDICTION.

4. OWNER'S GUIDELINES FOR TENANT CONSTRUCTION
4.1. SHALL BE STRICTLY ADHERED TO BY THIS CONTRACTOR.

4.2. WORK WHICH MAY CAUSE NOISE DISTURBANCES MUST BE SCHEDULED AT TIMES APPROVED BY OWNER AND/OR LANDLORD. COORDINATE WORK WITH TRADES TO MINIMIZE NOISE DISTURBANCES.

5. SCOPE OF WORK
5.1. INCLUDES BUT IS NOT LIMITED TO, SUPPLY LABOUR, TOOLS, SERVICES AND EQUIPMENT, AND PROVIDE MATERIALS REQUIRED TO COMPLETE INSTALLATION AND/OR RELOCATION, AND TESTING OF ALL SYSTEMS IN ACCORDANCE WITH THIS SPECIFICATION AND DRAWINGS, INCLUDING:
5.1.1. DEMOLITION AND PROVISION OF NEW ELECTRICAL SYSTEMS AS INDICATED ON DRAWINGS. POWER DISTRIBUTION INCLUDING ALL CONDUITS, OUTLET BOXES, FLOOR BOXES, WIRING, DEVICES AS INDICATED ON THE LAYOUT DRAWINGS.
5.1.2. RELOCATION OF EXISTING LUMINARIES AND PROVISION OF NEW LUMINARIES AS INDICATED ON DRAWINGS, INCLUDING LIGHTING CONTROL DEVICES.
5.1.3. PROVISION OF EXIT SIGNS AND EMERGENCY BATTERY UNITS / REMOTE HEADS INCLUDING ASSOCIATED CONDUITS AND WIRING TO FORM A COMPLETE EMERGENCY LIGHTING SYSTEM.
5.1.4. RELOCATION AND PROVISION OF NEW FIRE ALARM DEVICES AS INDICATED.

5.2. UNLESS NOTED OTHERWISE, ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF ALL WIRING, CABLES AND ELECTRICAL DEVICES EXISTING IN WALLS TO BE DEMOLISHED AND REMOVAL OF ALL OTHER REDUNDANT ELECTRICAL DEVICES NOT SHOWN ON PLANS. CUT BACK AND CAP UNUSED RACEWAYS AND OUTLETS AND REMOVE UNUSED WIRING BACK TO PANELBOARD. REVISE PANELBOARD DIRECTORIES ACCORDINGLY, IF AFFECTED BY WORK. OBSOLETE MATERIALS, WHICH ARE DISCONNECTED AND ARE NOT TO BE RELOCATED OR REUSED, WILL BECOME THE PROPERTY OF THIS CONTRACTOR. REMOVE FROM SITE AND DISPOSE.

5.3. PROVIDE JUNCTION BOXES, OUTLET BOXES, WIRING, PLATES, ETC., AS NECESSARY FOR COMPLETE RELOCATION OF DEVICES. CLEAN AND RELAMP RELOCATED LUMINARIES. REPLACE FAULTY BALLASTS. WHEN RELOCATION WORK IS COMPLETE, CONFIRM RELOCATED DEVICES ARE IN PROPER WORKING ORDER.

5.4. WHERE EXISTING SERVICES PASS THROUGH OR ARE IN AN AREA TO SERVE ITEMS WHICH ARE TO REMAIN, MAINTAIN SERVICES. INCLUDE FOR RE-ROUTING OF EXISTING SERVICES CONCEALED BEHIND FINISHES AND WHICH BECOME EXPOSED DURING RENOVATION WORK, SO AS TO BE CONCEALED BEHIND FINISHES.

5.5. IN AREAS WHICH ARE NOT BEING ARCHITECTURALLY RENOVATED AND WHICH DIVISION 26, 27, 28 MUST RUN SERVICES THROUGH, BE RESPONSIBLE FOR REMOVAL AND REINSTALLATION OF ARCHITECTURAL CEILING TILES, MECHANICAL EQUIPMENT, ETC., AS REQUIRED FOR INSTALLATION OF WORK. SECURELY SUPPORT ANY DEVICE/LUMINARIES LEFT "DANGLING" DUE TO REMOVAL OF SUPPORTING MEANS. PRIOR TO REMOVAL OF CEILING TILES OR OTHER DEVICES, INSPECT FOR DAMAGES/WORKING ORDER AND REPORT ANY DEFICIENCIES TO OWNER PRIOR TO START OF WORK.

5.6. ANY FIRE ALARM, SECURITY SYSTEM OR COMMUNICATION SYSTEM (IF APPLICABLE) DEVICE THAT HAS BEEN WORKED ON OR RELOCATED SHALL BE TESTED AND VERIFIED BY THE OWNER'S AUTHORIZED CONTRACTOR AFTER COMPLETION OF WORK. INCLUDE IN BID FOR ALL COSTS.

5.7. ENSURE ALL EXISTING CEILING MOUNTED FIRE ALARM BELLS/SPEAKERS ARE SECURELY ATTACHED TO CEILING/WALL AND ARE FLUSH WITH CEILING TILES AS REQUIRED.

6. CHANGES TO SCOPE OF WORK
6.1. NO EXTRA CHARGE FOR MATERIAL AND LABOUR SHALL BE ADDED TO THE CONTRACT FOR OUTLETS MOVED WITHIN TEN (10) FEET FROM THE LOCATION SHOWN ON THE PLANS PRIOR TO ROUGH-IN.

6.2. ADDITION OR DELETION OF WORK SHALL BE PRICE BASED ON INDUSTRY STANDARD LABOUR RATES. MATERIAL PRICES STANDARD TRADE DISCOUNTS. LABOUR UNITS SHALL NOT EXCEED NECA 1. MARK-UP SHALL NOT EXCEED TEN PERCENT (10%) FOR OVERHEAD AND FIVE PERCENT (5%) FOR PROFIT.

7. VALUATION OF CHANGES:
7.1. PROVIDE COMPLETE BREAKDOWN OF MATERIAL, LABOR, OVERHEAD, PROFIT, ETC., WHEN SUBMITTED QUOTATIONS FOR CHANGE NOTICES ON THIS PROJECT.

7.2. THE HOURLY LABOR RATE SHALL BE INCLUSIVE OF ALL CHARGES FOR SUPERVISION, VARIABLE LABOR FACTORS, HAND TOOLS, PAYROLL BURDENS, HEIGHT FACTORS, WARRANTIES, STORAGE, RENTALS, ADDITIONAL BONDING, PARKING, CLEAN-UP, AS-BUILD DRAWINGS, HOISTING, FREIGHT AND DELIVERY, BUT EXCLUSIVE OF OVERHEAD AND PROFIT.

7.3. THE LABOR HOURS SHALL BE BASED ON THE LATEST ISSUE OF THE NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION (NECA) LABOR UNITS, COLUMN ONE NORMAL FOR THE DURATION OF THIS CONTRACT. LABOR FOR SMALLS SUCH AS, BUT NOT LIMITED TO, COUPLINGS, STRAPS, MARETTES, SCREWS, ETC., WILL NOT BE PAID FOR.

7.4. THE MATERIAL PRICES SHALL BE BASED ON THE CURRENT NATIONAL PRICES SYSTEM (NPS) CATALOG LESS APPLICABLE TRADE DISCOUNTS.

8. ALTERATIONS AND ADDITIONS:
8.1. CONTRACTORS SHALL NOTE THAT THIS CONTRACTOR IS AN ALTERATION TO AN EXISTING BUILDING AND SHALL THOROUGHLY INVESTIGATE THE EXISTING ELECTRICAL INSTALLATION AND CONDITIONS.

8.2. CONTRACTORS ARE REQUIRED TO VISIT THE SITE AND ENSURE THAT ALL WORK ASSOCIATED WITH THE ELECTRICAL INSTALLATION REQUIRED TO BE REMOVED OR RELOCATED IS ALLOWED FOR IN THE TENDER PRICE. ALSO, CONTRACTORS SHALL ENSURE THAT THE WORK CAN BE CARRIED OUT AS INDICATED ON THE DRAWINGS OR SHALL ADVISE THE ENGINEER IMMEDIATELY OR ANY ANTICIPATED PROBLEMS.

8.3. NO EXTRA WILL SUBSEQUENTLY BE ALLOWED TO COVER ANY SUCH ERROR, OMISSION, AND/OR OVERSIGHT FOR NOT HAVING MADE A THOROUGH INSPECTION OF THE GROUNDS, EXISTING CONDITIONS, DRAWINGS, SPECIFICATION, AND DESIGN INTENT.

8.4. THE ELECTRICAL CONTRACTOR SHALL NOTE THAT THE EXISTING BUILDING WILL REMAIN IN OPERATION THROUGHOUT BUILDING OPERATIONS. THEY SHALL ACCORDINGLY ALLOW FOR ANY WORK REQUIRED TO BE DONE WHICH MAY AFFECT POWER SUPPLY AND OPERATION OF THE BUILDING TO BE CARRIED OUT AFTER HOURS OR AT A TIME CONVENIENT TO THE BUILDING MANAGEMENT. PROVIDE TEMPORARY SERVICES AS REQUIRED TO ENSURE CONTINUED OPERATION AT ALL TIMES.

9. COORDINATION AND COOPERATION
9.1. COORDINATE WORK WITH ALL TRADES TO ENSURE A PROPER AND COMPLETE INSTALLATION.

9.2. THIS CONTRACTOR IS RESPONSIBLE FOR OBTAINING ACCURATE DIMENSIONS FROM THE ARCHITECTURAL DRAWINGS AND AT SITE; AND TO NOTIFY ALL TRADES CONCERNED OF REQUIREMENT FOR OPENINGS, SLEEVES, INSERTS AND OTHER HARDWARE NECESSARY IN THEIR WORK FOR INSTALLATION OF YOUR WORK, PRIOR TO AND DURING INSTALLATION.

9.3. EXACT LOCATIONS AND ROUTING OF SERVICES MUST BE PROPERLY PLANNED, COORDINATED AND ESTABLISHED WITH ALL AFFECTED TRADES PRIOR TO INSTALLATION. VERIFY THE LOCATION OF EXISTING MECHANICAL AND ELECTRICAL SERVICES IN THE CEILING SPACE OF THIS FLOOR, AND IN THE CEILING SPACE OF THE FLOOR BELOW WHERE NEW SERVICES ARE REQUIRED TO PASS THROUGH THAT SPACE.

9.4. THIS CONTRACTOR SHALL COORDINATE AND PROVIDE TEMPORARY POWER SERVICES AND LIGHTING TO OTHER TRADES THROUGHOUT DURATION OF CONSTRUCTION.

10. MECHANICAL TRADES WIRING:
10.1. PROVIDE ALL CONDUIT, WIRING, SPLITTERS, OUTLET BOXES AND DISCONNECT SWITCHES AS SHOWN. ALL MOTORS, STARTERS, AND CONTROL WIRING BELOW 120V PROVIDED UNDER DIVISION 15. DIVISION 16 SHALL INSTALL ALL LINE VOLTAGE STARTERS, THERMOSTATS, AND WIRING. PROVIDE ALL LINE VOLTAGE WIRING AS REQUIRED.

10.2. CLEARLY MARK ALL EXPOSED CONDUIT, PULL BOXES, JUNCTION BOXES, ETC., TO INDICATE THE NATURE OF THE SERVICE.

10.3. MEGGER ALL LIGHTING AND POWER CIRCUITS TO MEET CODES AND LATEST NETA MANUAL. ALL FEEDERS SHALL BE MEGGER TESTED WITH 1000VDC APPROVED MEGGER TEST. HAND CRANKED INSTRUMENTS ARE NOT ALLOWED. SUBMIT MEGGER TEST RESULTS PRIOR TO POWER ON.

10.4. PROVIDE LAMACOID NAMEPLATES FOR ALL DISTRIBUTION EQUIPMENT INDICATING SOURCE OF POWER AND EQUIPMENT BEING FED. PROVIDE TYPEWRITTEN DIRECTORIES FOR ALL PANELS.

10.5. CONTRACTOR TO ENSURE THAT THE ELECTRICAL SYSTEMS ARE FUNCTIONAL AND IN GOOD WORKING ORDER AS PER THE ELECTRICAL SPECIFICATIONS AND TO THE INTENT OF THE WORKING ELECTRICAL DRAWINGS.

11. HAZARDOUS MATERIALS
11.1. IF AT ANY TIME DURING COURSE OF WORK ASBESTOS MATERIALS ARE ENCOUNTERED OR SUSPECTED, CEASE WORK IN AREA IN QUESTION AND IMMEDIATELY REPORT, IN ACCORDANCE WITH NATIONAL BUILDING CODE REGULATION TO GENERAL CONTRACTOR. DO NOT RESUME WORK IN AFFECTED AREA WITHOUT APPROVAL FROM GENERAL CONTRACTOR.

11.2. MATERIALS CONTAINING PCBS OR MERCURY SHALL BE PROPERLY DISPOSED OF OFFSITE IN ACCORDANCE WITH LOCAL GOVERNING AUTHORITY REGULATIONS.

12. INTERRUPTIONS TO AND SHUT DOWNS OF EXISTING SERVICES AND SYSTEMS
12.1. COORDINATE WITH BUILDING'S OPERATING STAFF AND OBTAIN A OWNERS'S WRITTEN APPROVAL TO PERFORM SHUT DOWNS AND INTERRUPTIONS TO EXISTING BASE BUILDING SYSTEMS AND SERVICES AT ACCEPTABLE TIMES. INCLUDE FOR COSTS OF PREMIUM TIME TO PERFORM WORK DURING NIGHTS, WEEKENDS OR OTHER TIME OUTSIDE OF NORMAL WORKING HOURS, AS NECESSARY TO MAINTAIN SERVICES IN OPERATION OR WITH MINIMUM INTERRUPTIONS.

13. CUTTING, PATCHING AND CORE DRILLING
13.1. PIPE SLEEVES SHALL BE PROVIDED THROUGH FIRE-RATED WALL AND FLOORS.

13.2. IN FIRE RATED CONSTRUCTION, PACK AND SEAL VOID BETWEEN OPENING AND PIPE, DUCTS OR CONDUIT FOR LENGTH OF OPENING, WITH ASBESTOS FREE ELASTOMERIC AND INTUMESCENT ULC LISTED AND LABELED MATERIALS. MAKE WATERTIGHT AND INSTALL FIRESTOP AND SMOKE SEAL MATERIALS IN ACCORDANCE TO ULC CERTIFICATION AND MANUFACTURER'S REQUIREMENTS TO PROVIDE FIRESTOP RATINGS SEPARATION OF OPENINGS IN ACCORDANCE WITH GOVERNING BUILDING CODE REQUIREMENTS.

13.3. CUTTING OR CORE DRILLING OF CONCRETE STRUCTURE IS PERMITTED ONLY WITH THE APPROVAL OF THE LANDLORD, LANDLORDS STRUCTURAL CONSULTANT AND X-RAY INSPECTION. COORDINATE WITH STRUCTURAL STEEL, ADJACENT TENANTS AND WORK TO BE PERFORMED OUTSIDE OF NORMAL WORKING HOURS. OBTAIN WRITTEN APPROVAL FROM LANDLORD PRIOR TO ANY DRILLING, CORING OR X-RAYING. ANY DRILLING, CORING OR X-RAYING IS TO BE PERFORMED BY BASE BUILDING CONTRACTOR AND TO BE INCLUDED IN TENDER PRICE.

14. NOISE AND VIBRATION
14.1. ELECTRICAL EQUIPMENT SHALL OPERATE WITHOUT OBJECTIONABLE NOISE OR VIBRATION. IF, IN THE OPINION OF THE CONSULTANT, THE EQUIPMENT OPERATES WITH NOISE OR VIBRATION, THEN THE EQUIPMENT SHALL BE REPLACED OR NOISE OR VIBRATION ELIMINATED.

14.2. CONNECTION TO NOISE-PRODUCING AND VIBRATING EQUIPMENT SHALL BE MADE WITH LIQUID-TIGHT FLEXIBLE CONDUIT AND ASSOCIATED CONNECTORS. THIS INCLUDES TRANSFORMERS, DIMMING EQUIPMENT RACKS, CONVERTERS, AND MOTORS. USE A MINIMUM OF 1m (3FT) OF FLEXIBLE CABLE WITH SLACK AT EACH DEVICE.

14.3. VIBRATION ISOLATORS SHALL BE PROVIDED WHERE INDICATED OR REQUIRED. TRANSFORMERS SHALL BE ISOLATED FROM THE STRUCTURE, WITH SPRING AND RUBBER ISOLATORS WHEN WALL MOUNTED OR SUSPENDED AND 12mm (1/2") HIGH DENSITY NEOPRENE SANDWICH PADS (TYPE MWP) WHEN FLOOR MOUNTED.

15. ACCESS DOORS AND PANELS
15.1. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION OF LOCATION OF ACCESS DOORS AND/OR PANELS TO GIVE ACCESS TO NEW AND EXISTING ELECTRICAL EQUIPMENT OR SYSTEMS AND OTHER SIMILAR ELECTRICAL WORK WHICH MAY NEED MAINTENANCE OR REPAIR BUT WHICH IS CONCEALED IN INACCESSIBLE CONSTRUCTION.

15.2. ACCESS DOORS AND/OR PANELS WILL BE SUPPLIED AND INSTALLED BY OTHERS. BEFORE COMMENCING INSTALLATION OF ELECTRICAL WORK, PREPARE ON A SET OF REFLECTED CEILING PLANS, COMPLETE LAYOUTS OF ALL CEILING ACCESS DOORS WHICH WILL BE REQUIRED. SUBMIT THESE LAYOUTS FOR APPROVAL AND SHOW THE EXACT SIZES AND LOCATIONS OF SUCH CEILING ACCESS DOORS.

16. INSPECTION OF WORK
16.1. CONSULTANT SHALL AT ALL TIMES HAVE ACCESS TO WORK AND SHALL BE NOTIFIED AT AGREED UPON TIMES OF STAGES OF WORK.

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

17. PRODUCTS AND MATERIALS
17.1. CSA, UL, ULC AND CGA APPROVALS SHALL BE PROVIDED BY THE MANUFACTURER WHERE REQUIRED BY FEDERAL, PROVINCIAL OR LOCAL AUTHORITIES.

17.2. PRODUCTS LISTED AND/OR SPECIFIED REQUIRED FOR THE PERFORMANCE OF THE WORK SHALL BE NEW, THE BEST OF THEIR RESPECTIVE KIND AND OF UNIFORM PATTERN THROUGHOUT. EXCEPT OTHERWISE NOTED, ALL MATERIALS AND PRODUCTS SHALL BE EQUAL TO THE BASE BUILDING MATERIALS.

17.3. ENSURE PRODUCTS AND MATERIALS SUPPLIED FROM MANUFACTURERS OTHER THAN BASE SPECIFIED MANUFACTURERS ARE EQUIVALENT TO THE SPECIFIED ONES. ALTERNATIVES TO THE PRODUCTS AND MATERIALS SPECIFIED HEREIN AND/OR ON THE DRAWING MAY BE SUBMITTED SEPARATELY SHOWING ANY CHANGE TO THE BASE CONTRACT PRICE FOR THEIR SUBSTITUTION.

18. CONDUIT
18.1. EMT, GALVANIZED, COLD ROLLED STEEL TUBING TO CSA C22.2 NO. 83M, STEEL SET SCREW FITTINGS.

18.2. LIQUIDTIGHT FLEXIBLE STEEL CONDUIT WITH PVC COVER TO CSA C22.2 NO. 56.

18.3. RIGID, SCHEDULE 40, PVC CONDUIT AND FITTINGS TO CAN/CSA C22.2 NO. 85M AND CSA C22.2 NO. 136.

18.4. USE LIQUIDTIGHT FLEXIBLE METAL CONDUIT FOR FINAL CONNECTIONS TO ROTATING EQUIPMENT AND DRY-TYPE TRANSFORMERS.

18.5. USE RIGID PVC CONDUIT IN CONCRETE SLABS.

18.6. USE EMT FOR ALL OTHER APPLICATIONS.

18.7. INSTALL, SUPPORT AND SECURE CONDUIT AND CONDUCTORS CONCEALED AND PROVIDE INSTALLATIONS IN ACCORDANCE WITH OESC AND LOCAL GOVERNING AUTHORITIES. PLAN AND COORDINATE LOCATIONS AND ROUTING OF SERVICES, WITH TRADES PRIOR TO INSTALLATION. IDENTIFY CONDUIT RUNS (I.E. TAG BOTH ENDS OF CONDUIT RUNS). EXPLOSIVE POWDER ACTUATED FASTENERS WILL NOT BE PERMITTED UNLESS SPECIFIC WRITTEN APPROVAL FOR THEIR USE AND TYPE HAS BEEN OBTAINED FROM LANDLORD. UNDER NO CIRCUMSTANCES USE CEILING SUSPENSION HANGERS OR GRIDS FOR SUSPENSION OF CONDUIT AND CONDUCTORS.

18.8. WHERE CONDUIT AND/OR CONDUCTORS ARE EXPOSED, ARRANGE SAME TO AVOID INTERFERENCE WITH OTHER WORK AND PARALLEL TO BUILDING LINES. WHERE HORIZONTAL CONDUITS AND/OR CONDUCTORS ARE EXPOSED, INSTALL AS HIGH AS POSSIBLE. DO NOT INSTALL CONDUIT AND/OR CONDUCTORS WITHIN 6" (150 MM) OF "HOT" PIPES OR EQUIPMENT UNLESS CONDUIT AND/OR CONDUCTORS ARE ASSOCIATED WITH EQUIPMENT. INDEPENDENTLY RUN CONDUIT AND CONDUCTORS MUST BE SUPPORTED FROM THE CEILING/WALL STRUCTURE.

18.9. ALL NON CONTINUOUS CONDUIT SYSTEMS FOR LAN CABLING SHALL BE INSTALLED COMPETE WITH GROUNDING BUSHINGS AND A GROUND WIRE CONNECTION TO THE NEAREST GROUNDING POINT. WHERE LAN CABLES ARE NOT RUN IN CONDUIT WITHIN CEILING SPACES, THEY SHALL BE RATED FT6 AND SUPPORTED ON J HOOKS IN ACCORDANCE WITH MANUFACTURERS INSTALLATION GUIDELINES.

18.10. THE CONTRACTOR SHALL ADVISE THE CONSULTANT OF ANY COMMUNICATIONS CONDUIT LENGTHS IN EXCESS OF 70M PRIOR TO INSTALLATION.

18.11. INSTALL ALL WIRING IN CONDUIT UNLESS NOTED OTHERWISE, MINIMUM SIZE – 1/2" (16mm).

18.12. THE MINIMUM SIZE FOR TELECOMMUNICATIONS CONDUITS SHALL BE 3/4" (21mm).

18.13. MINIMUM SIZE CONDUIT FOR LAN SYSTEM SHALL BE 3/4" (21mm).

19. CABLE TRAYS
19.1. CABLE TRAY FITTINGS TO: EEMAC F5-1

19.2. CABLE TRAY SHALL BE cUL LISTED AND TYPE AND DIMENSIONS AS INDICATED ON DRAWINGS.

19.3. FITTINGS: HORIZONTAL ELBOWS, END PLATES, DROP OUTS, VERTICAL RISERS AND DROPS, TEES, WYES, EXPANSION JOINTS AND REDUCERS WHERE REQUIRED MANUFACTURED ACCESSORIES FOR CABLE TRAY SUPPLIED. RADII ON FITTINGS TO SUIT APPLICATION AND INSTALLATION.

19.4. ACCEPTABLE MANUFACTURERS:
19.4.1. HUBBELL, LEGRAND CABLOFIL, CANADIAN ELECTRICAL RACEWAYS

19.5. HANGERS AND SUPPORTS
19.5.1. PROVIDE SUPPORTS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION AND TO SUIT LOADING OF CABLE TRAYS.

19.6. EXECUTION
19.6.1. INSTALL COMPLETE CABLE TRAY SYSTEM
19.6.2. INSTALL #6 AWG GREEN INSULATED GROUND WIRE AND BOND TO EACH SECTION AND FITTING.
19.6.3. REMOVE SHARP BURRS AND PROJECTIONS TO PREVENT DAMAGE TO CABLES OR INJURY TO PERSONS.

20. EXIT SIGNS
EXIT LIGHTS TO BE GREEN 'RUNNING MAN' LED EDE SERIES FLAT TRIM (FULLY RECESSED) TYPE UNLESS OTHERWISE NOTED.

20.1. BACK-TO-WALL, CEILING MOUNTED, SUSPENDED, SINGLE SIDED, DOUBLE SIDED AS INDICATED ON DRAWINGS.

20.2. ACCEPTABLE MANUFACTURERS ARE:
20.2.1. EMERGI-LITE, LUMACELL, BEGHELLI, AIMLITE

20.3. INSTALL EXIT SIGNS IN ACCORDANCE TO NATIONAL BUILDING CODE.

20.4. MOUNT EXIT LIGHTS ON CEILING OR WALL AND ORIENT FOR PROPER EXITING DIRECTION AS INDICATED ON DRAWINGS.

20.5. CHAIN HANG EXIT LIGHT FROM CEILING SLAB.

21. OUTLET BOXES, PULLBOXES AND JUNCTION BOXES
21.1. BOXES – CODE GAUGE, GALVANIZED PRESSED STEEL, GALVANIZED CAST STEEL AND RIGID PVC TO CSA C22.2 NO. 18.

21.2. USE MULTI-GANG BOXES WHERE DEVICES ARE GROUPED.

21.3. USE PRESSED STEEL BOXES WITH EMT CONDUIT, USE CAST STEEL BOXES WITH RIGID METAL CONDUIT AND USE RIGID PVC BOXES WITH RIGID PVC CONDUIT.

21.4. USE SINGLE AND MULTI-GANG PRESSED STEEL BOXES FOR FLUSH INSTALLATIONS IN STUD WALLS WITH EXTENSION RINGS AS REQUIRED.

21.5. USE 102MM SQUARE BOXES OR OCTAGON BOXES FOR OUTLETS IN CEILING SPACES.

21.6. USE CONCRETE BOXES FOR FLUSH INSTALLATIONS IN POURED CONCRETE. PROVIDE EXTENSION RINGS AS REQUIRED.

21.7. INSTALL ALL DEVICES FLUSH MOUNTED IN FINISHED AREAS UNLESS OTHERWISE INDICATED.

21.8. PROVIDE PULLBOXES AND JUNCTION BOXES WHEREVER NECESSARY TO FACILITATE CONDUCTOR/CONDUIT INSTALLATIONS. GENERALLY, PROVIDE CONDUIT RUNS EXCEEDING 30 METRES IN LENGTH OR WITH MORE THAN 3 NO 90 DEGREE BENDS WITH PULLBOX INSTALLED AT CONVENIENT AND SUITABLE INTERMEDIATE ACCESSIBLE LOCATION. PROVIDE JUNCTION BOXES AND PULLBOXES SIZED IN ACCORDANCE WITH CODE TO SUIT NUMBER AND SIZE OF CONDUITS AND CONDUCTORS.

21.9. OUTLET BOXES FOR POWER AND LIGHTING TO BE SINGLE GANG. WHERE MULTIPLE OUTLETS OR LIGHT SWITCHES ARE INDICATED PROVIDE MULTI GANG BOXES AND MATCHING SINGLE COVER PLATE TO SUIT.

21.10. FLOOR BOXES FOR POWER AND DATA/TELEPHONE ARE TO BE COMPARTMENTALIZED (SEPARATING SERVICES), STEEL POKE-THRU TYPE WITH STEEL FLUSH FITTING COVER PLATES. ACCEPTABLE MANUFACTURER: WIREMOLD (6ATC EVOLUTION MULTI-SERVICE POKE-THRU DEVICE SERIES), HUBBELL, OR APPROVED EQUIVALENT.

21.11. OUTLET BOXES FOR LAN SYSTEM TO BE 102MM SQUARE, DEEP BOX WITH SINGLE GANG PLASTER RING FOR DRYWALL FINISHES.

21.12. PROVIDE SEPARATE OUTLET BOXES FOR POWER, LIGHTING AND LAN SYSTEMS.

21.13. LAN AND SECURITY CONDUIT SYSTEMS, INSTALL PULL BOX AT EVERY 30METRES IN LENGTH OR AFTER EVERY 2NO 90 DEGREE BENDS. CONDUITS MUST ENTER AND EXIT THE PULL BOXES AT 180 DEGREES TO EACH OTHER. CONDUITS FOR LAN SYSTEMS TO BE SIZED IN ACCORDANCE WITH TIA-569.

22. WIRE AND CABLE
22.1. CONDUCTORS: ASTM CLASS B, SOFT, BARE, STRANDED ELECTROLYTIC COPPER.

22.2. CONDUCTORS #8 AWG AND LARGER: XPLE INSULATION TO CSA C22.2 NO. 38. RW90 XPLE, 90 C, 600V INSULATION.

22.3. CONDUCTORS #14 TO #10 AWG: THERMOPLASTIC INSULATION TO CSA C22.2 NO. 75M. T90 NYLON 90 C, 600V INSULATION.

22.4. USE T90 NYLON CONDUCTORS FOR RECEPTACLE AND BRANCH CIRCUIT WIRING.

22.5. USE RW90 CONDUCTORS FOR ALL EQUIPMENT FEEDERS.

22.6. AC90 CABLE, 600 V, 90 C TO CSA 22.2 NO. 51.

22.7. REFER TO DRAWINGS FOR SIZING OF CONDUCTORS. GENERALLY, BRANCH CIRCUIT CONDUCTOR SIZES ARE INDICATED ON CONSULTANT'S DRAWINGS. SUCH SIZES ARE MINIMUM REQUIREMENTS AND MUST BE INCREASED, TO SUIT LENGTH OF RUN AND VOLTAGE DROP. CONDUCTORS NOT SIZED ON DRAWINGS SHALL BE SIZED IN ACCORDANCE WITH OESC. MAXIMUM 2% VOLTAGE DROP IS PERMITTED.

22.8. CONDUCTORS FOR RUNS LONGER THAN 21M SHALL BE NO. 10 AWG AND FOR RUNS OVER 39M SHALL BE NO. 8AWG. DO NOT USE CONDUCTORS SMALLER THAN NO. 12 AWG UNLESS OTHERWISE NOTED.

19.9 CONDUCTORS IN PLENUM SPACES AND IN RAISED FLOOR AREAS SHALL COMPLY WITH NATIONAL BUILDING CODE REQUIREMENTS WITH REGARDS TO FLAME AND SMOKE TEST FT6 (PLENUM RATED).

19.10 USE AC90 CABLE FOR CONNECTIONS FROM CEILING BOXES TO LUMINARIES IN CONCEALED CEILINGS. THE LENGTH OF AC90 CABLE FROM THE JUNCTION BOX TO THE LUMINARIES NOT TO EXCEED 1200MM.

19.11 USE AC90 CABLE CONCEALED IN DRYWALL WALLS, PLASTER WALLS, BLOCK WALLS, STUD PARTITIONS FOR RECEPTACLES AND LIGHTING SWITCHES ONLY. THE LENGTH OF AC90 CABLE FROM THE JUNCTION BOX TO THE OUTLET NOT TO EXCEED 3600MM.

19.12 Bx #12 MAY BE USED IN CEILING SPACE FROM BOX DOWN TO RECEPTACLES IN PARTITIONS. Bx RUNS SHALL NOT EXCEED 10' IN LENGTH AND SHALL NOT TERMINATE TO PANELS.

19.13 PROVIDE A 6MM POLYPROPYLENE PULL LINE IN EACH EMPTY CONDUIT.
19.14 MINIMUM CONDUCTOR SIZES: POWER (#12 AWG), LIGHTING (#12 AWG), CONTROL (#14 AWG)

23. WIREWAY
20.1 PROVIDE LOW-PROFILE, DURABLE WIREWAY AS INDICATED ON DRAWINGS
20.2 INSTALLATION SHALL REQUIRE NO CORE DRILLING OR TRENCHING.
20.3 COORDINATE POWER AND TELECOM COMPONENTS ACCORDING TO LOCATION AND ROUTING REQUIREMENTS. PROVIDE PRE-WIRED POWER COMPONENTS AS REQUIRED.
20.4 FINISHES SHALL BE REVIEWED AND CONFIRMED BY ARCHITECT

24. PANELBOARDS
21.1 PANELBOARDS TO CSA 22.1 NO 29.

21.2 ENCLOSURES: DEAD FRONT CONSTRUCTION, CODE GAUGE STEEL NEMA 2.

21.3 BUS: COPPER INCLUDING HALF CAPACITY GROUND BAR AND 200% NEUTRAL BAR. BRACED FOR MINIMUM INTERRUPTING CAPACITY OF 14KA RMS SYMMETRICAL.

21.4 CIRCUIT BREAKERS: BOLT-ON, QUICK-MAKE, QUICK-BREAK, THERMAL AND MAGNETIC TRIPS, TRIP INDICATING, TRIP FREE HANDLE. MINIMUM INTERRUPTING CAPACITY 14KA RMS SYMMETRICAL, TO CSA C22.2 NO 5. MULTI-POLE BREAKERS TO HAVE COMMON HANDLE.

21.5 PROVIDE 2 KEYS PER PANEL BOARD, ALL PANELS KEYED ALIKE.

21.6 ACCEPTABLE MANUFACTURER: SQUARE D OR APPROVED EQUAL.

21.7 CONTRACTOR TO VERIFY AND MAKE NECESSARY ADJUSTMENTS TO ENSURE THAT LOADING ON EACH PHASE OF EXISTING AND NEW PANELBOARDS IS BALANCED. PROVIDE CONSULTANT WITH A PHASE LOADING REPORT. UNBALANCE LOAD SHALL BE LESS THAN 5%.

21.8 PROVIDE A CIRCUIT LOCK-ON DEVICE FOR FIRE ALARM, EMERGENCY LIGHTING, NIGHT LIGHTS, SECURITY AND EXIT LIGHTS CIRCUITS.

21.9 WHERE CIRCUITS ARE BEING ADDED TO EXISTING PANELBOARDS, PROVIDE BREAKERS OF TYPE TO MATCH EXISTING DEVICES. QUALITY AND STANDARDS OF BREAKERS SHALL MATCH EXISTING. CONFIRM REQUIREMENTS ON SITE PRIOR TO ORDERING.

25. SERVICE ENTRANCE BOARD:
25.1. THE SERVICE ENTRANCE BOARD SHALL CONSIST OF A COMPLETELY METAL ENCLOSED FREE-STANDING STRUCTURE CONSISTING OF A MAIN SWITCH COMPARTMENT, HYDRO METERING AS REQUIRED, METERING PANEL DISTRIBUTION SECTIONS AND THE THROUGH FLOOR/WALL BUS DUCT TO THE VAULT C/W FIRE BARRIER. DETAILS OF MAIN INCOMING (600V) SERVICE TO BE VERIFIED WITH HYDRO PRIOR TO SUBMISSION OF SHOP DRAWINGS.

25.2. BUS WORK SHALL BE SILVER-PLATED COPPER, BRACED WITH WITHSTAND AVAILABLE SHORT CIRCUIT ON THE SYSTEM AND BREAKERS AND FUSES SHALL HAVE ADEQUATE INTERRUPTING CAPACITY AND SHALL BE FULLY COORDINATE WITH OTHER EQUIPMENT ON THE LOAD AND LINE SIDE.

25.3. THE MAIN SWITCH COMPARTMENT SHALL CONTAIN BREAKER OF TYPE, FRAME, AND SIZE OR FUSED DISCONNECT SWITCH WITH FUSES OF TYPE AND SIZE AS INDICATED. THE MAIN SWITCH COMPARTMENT SHALL HAVE DOOR WITH HINGE AND THE SWITCH HANDLE SHALL PROTRUDE THROUGH AN OPENING IN THE DOOR. THE DOOR SHALL HAVE PROVISIONS FOR PADLOCKING.

25.4. MAIN SWITCH OR BREAKERS SHALL BE EQUIPPED WITH GROUND FAULT RELAYS. IN ADDITION, ALL UNDERGROUND FEEDERS SHALL BE GROUND FAULT PROTECTED. PROVIDE GROUND FAULT EQUIPMENT WHERE INDICATED ON DRAWINGS AND AS REQUIRED BY CODE.

25.5. THE CURRENT TRANSFORMER COMPARTMENT, WHERE REQUIRED, SHALL HAVE A REMOVABLE STEEL MOUNTING PLATE AND SHALL BE EQUIPPED WITH ALL HARDWARE AND BUS DUCT TO RECEIVE THE LOCAL UTILITIES CURRENT AND POTENTIAL TRANSFORMERS. CURRENT TRANSFORMERS SHALL BE OBTAINED FROM THE UTILITY AND INSTALLED IN THE COMPARTMENT BY THE SERVICE ENTRANCE BOARD MANUFACTURER OR AS PER UTILITIES STANDARD REQUIREMENTS.

25.6. THE ENTIRE PANEL, BUSWORK AND CONNECTIONS SHALL BE TO THE UTILITIES APPROVAL. OBTAIN THEIR REQUIREMENTS PRIOR TO INSTALLATION.

25.7. SWITCHBOARD SHALL BE VERMIN PROOF AND SPRINKLERPROOF.

26. METERING CABINETS:
26.1. METERING CABINETS SHALL BE OF SIZE SHOWN ON DRAWING OR AS REQUIRED WITH REMOVABLE STEEL METER MOUNTING PLATE, TWO DOORS AND SEALING HASPS TO UTILITY APPROVAL. PROVIDE A CAT.5E WIRED TELEPHONE LINE FROM EACH METER CABINET TO THE MAIN TELEPHONE ENTRY POINT.

26.2. THE CABINET SHALL BE MOUNTED ON THE WALL AS SHOWN ON THE DRAWINGS AND TO THE SATISFACTION OF THE LOCAL UTILITY. METER SOCKETS SHALL BE TO APPROVAL OF UTILITY.

26.3. THE CONTRACTOR SHALL CONFIRM METERING REQUIREMENTS WITH LOCAL HYDRO METERING DEPARTMENT PRIOR TO WORK COMMENCEMENT AND METERING EQUIPMENT SUPPLY.

26.4. PROVIDE ALL REQUIRED NEUTRAL WIRES TO METER AS PER LOCAL HYDRO'S REQUIREMENT

26.5. CONFIRM ALL LOCATIONS AND OUTLETS PRIOR TO INSTALLATION. ALLOW TO RELOCATE ANY OUTLET WITH 5 METERS OF SPECIFIED LOCATION PRIOR TO INSTALLATION.

26.6. PROVIDE ALL CONCRETE WORK REQUIRED FOR ELECTRICAL WORK IN ACCORDANCE WITH ARCHITECTURAL DIVISION OF SPECIFICATION. THIS INCLUDES HOUSEKEEPING PAD BELLOW ALL FLOOR STANDING EQUIPMENT.

26.7. SUPPLY AND INSTALL ALL UNDERGROUND DUCTS WHERE INDICATED. THESE SHALL BE INSPECTED AND APPROVED BY ALL LOCAL AUTHORITIES AS REQUIRED. AFTER COMPLETION OF INSTALLATION, DUCTS SHALL BE CLEANED AND ENDS PLUGGED WITH DUCT PLUGS. ALL DUCT JOINTS TO BE GLUED. ALL EXCAVATION AND BACKFILLING SHALL BE CARRIED OUT IN ACCORDANCE WITH ARCHITECTURAL DIVISION OF SPECIFICATION.

26.8. DUCTS TO BE PVC TYPE 11 CSA APPROVED AND TO BE SLOPED FROM BUILDING TO STREET.

26.9. PROVIDE AN UNDERGROUND 100MM DRAIN PIPE FROM EACH PADMOUNT TRANSFORMER TO THE CLOSEST CATCH BASIN. INCLUDE FOR ALL CIVIL WORK ASSOCIATED WITH ELECTRICAL SITE SERVICE SCOPE.

26.10. TWO (2) – CABLE PULLING EYES ARE TO BE INSTALLED ABOVE CABLE DUCTS ON CEILING AND OVER DOORS AS DIRECTED BY LOCAL AUTHORITY INSPECTOR.

27. WIRING DEVICES
27.1. SWITCHES: COMMERCIAL GRADE BACK AND SIDE WIRED, WITH GROUND SCREW TO CSA C22.2 NO 111, 15 AND 20 AMP AS REQUIRED, 1 POLE, 125V WHITE DECORATOR TYPE.

27.2. RECEPTACLES: COMMERCIAL GRADE BACK AND SIDE WIRED. WITH GROUND SCREW TO CSA C22.2 NO 111, 15 AND 20 AMP AS REQUIRED, 1 POLE, 125V WHITE DECORATOR TYPE.

27.3. SURGE PROTECTION DEVICE (SPD): TYPE 1 SURGE PROTECTIVE DEVICE, 100KA – 200KA PER PHASE RATING.

28. TRANSFORMERS:
28.1. DRY TYPE DISTRIBUTION TRANSFORMERS SHALL BE INDOOR AIR COOLED TYPE RATED THREE PHASE 60 CYCLE, OF KVA RATING SHOWN ON THE DRAWINGS, 600-208Y/120V, 1.2KV CLASS, AND CAPABLE OF WITHSTANDING A 10KV BASIC IMPULSE LEVEL (BIL). THEY SHALL HAVE STANDARD PRIMARY TAPS. THE TRANSFORMER SHALL BE DESIGNED WITH A CLASS B OR H INSULATION SYSTEM.

28.2. THE SOUND LEVEL IN DECIBELS SHALL BE IN ACCORDANCE WITH NEMA TRI CURRENT STANDARDS. THE TRANSFORMER SHALL BE EQUIPPED WITH TERMINAL BOARDS, TAP CHANGING LINKS, SUITABLE SOLDERLESS CONNECTORS AND SHALL HAVE A VENTILATED CODE GAUGE STEEL ENCLOSURE COMPLETE WITH HINGED REMOVABLE EXPANDED METAL SIDE PANELS AND MOUNTING BRACKETS FOR FLOOR OR WALL MOUNTING AS SHOWN. MOUNT ALL TRANSFORMERS 75KVA AND UNDER AT HIGH LEVEL IN LOCATION SHOWN UNLESS OTHERWISE NOTED.

28.3. THE COMPLETED ASSEMBLY SHALL BE PAINTED WITH A PRIMER COAT AND A FINISH COAT OF ASA#61 GRAY. THE TRANSFORMER SHALL CONFORM TO CSA-C8022, NEMA TRI AND CEMA L2 CURRENT STANDARDS EXCEPT WHERE NOTED AND SHALL BE APPROVED TO CSA CODE PART 2 SPECIFICATION C22.2 NO.47 WHERE APPLICABLE.

28.4. TRANSFORMERS SHALL BE SPRINKLERPROOFED AS REQUIRED TO MEET LOCAL AND HYDRO CODES.

29. DISTRIBUTION COORDINATION STUDY, SHORT CIRCUIT STUDY AND COMMISSIONING REPORT:
29.1. PROVIDE A DISTRIBUTION COORDINATION, SHORT CIRCUIT AND ARC FLASH STUDY TO CONFIRM THAT ALL EQUIPMENT OFFERED IS SUITABLY RATED FOR THIS PROJECT. THIS REPORT TO BE SIGNED BY A.P ENG. ALLOW TO PROVIDE THE COORDINATION SHORT CIRCUIT STUDY WITH THE DISTRIBUTION SHOP DRAWINGS SUBMISSION OF ALL EQUIPMENT. SHOW ALL SWITCHGEAR AND DISTRIBUTION FROM THE SERVICE ENTRY TO THE LAST PANEL. OBTAIN DETAILS FROM UTILITY AND INCORPORATE INTO STUDY.

29.2. CONTRACTOR SHALL OBTAIN ALL DATA AS REQUIRED BY THE POWER SYSTEM STUDIES IN WRITING. THE CONTRACTOR SHALL EXPEDITE COLLECTION OF THE DATA TO ELIMINATE UNNECESSARY DELAYS AND TO ASSURE COMPLETION OF THE STUDIES REQUIRED FOR FINAL APPROVAL OF THE DISTRIBUTION SHOP DRAWINGS AND/OR PRIOR TO THE RELEASE OF THE EQUIPMENT FOR MANUFACTURING.

29.3. PROVIDE ALL REQUIRED ARC FLASH LABELS AS PER Z462. LABELS SHALL COMPLY WITH Q3 STANDARD LABEL.

29.4. ALLOW TO FULLY COMMISSION THE SWITCHGEAR AND AT THE END OF THE PROJECT. WORK TO BE DONE BY AN INDEPENDENT SPECIALIST. FOR SERVICES 1200A AND OVER, ALLOW TO CARRY OUT AN INFRARED SCAN OF THE ENTIRE DISTRIBUTION.

29.5. PROVIDE AN ARC FLASH STUDY AND PROVIDE ARC FLASH RATING LABELS ON ALL ELECTRICAL DISTRIBUTION EQUIPMENT AND PANELS.

30. MOUNTING HEIGHTS AND DIMENSIONS
30.1. INSTALL THE FOLLOWING DEVICES/EQUIPMENT AT THE MOUNTING HEIGHTS INDICATED BELOW (DIMENSIONS ARE TO TOP OF DEVICE/EQUIPMENT UNLESS NOTED OTHERWISE).
PANELBOARDS – 2000MM (6'-7") AFF
LIGHT SWITCH – 1200MM (4'-0") AFF
RECEPTACLE – FINISHED AREAS – 450MM (1'-6") AFF
RECEPTACLE – UNFINISHED AREAS – 1200MM (4'-0") AFF
LAN OUTLETS – FINISHED AREAS – 450MM (1'-6") AFF
LAN OUTLETS – UNFINISHED AREAS – 1200MM (4'-0") AFF
FURNITURE WHIP CONNECTIONS – 450MM (1'-6") AFF
FIRE ALARM PULL STATION – 1200MM (4'-0") AFF (CENTRE OF DEVICE)
FIRE ALARM END OF LINE DEVICE – 1400MM (4'-7") AFF
FIRE ALARM AUDIBLE DEVICES – MINIMUM OF 2400MM (8'-0") MM AFF AND MAXIMUM OF 450MM (1'-6") BELOW CEILING
FIRE ALARM VISUAL DEVICES – THE ENTIRE LENS IS NOT LESS THAN 2000MM (6'-7") AND NOT MORE THAN 2400MM (8'-0") AFF
CARD READERS – 950MM (3'-2") AFF
EMERGENCY BATTERY UNITS – 450MM (1'-6") BELOW CEILING
STARTERS/DISCONNECT SWITCHES – 1800MM (5'-11") AFF

31. IDENTIFICATION NAMEPLATES
31.1. FOR EACH PIECE OF ELECTRICAL DISTRIBUTION EQUIPMENT FROM ELECTRICAL SOURCE OF SUPPLY UP TO AND INCLUDING PANELBOARDS, RELAYS OR ANY OTHER DEVICE, PROVIDE ENGRAVED LAMACOID IDENTIFICATION NAMEPLATES SECURED TO APPARATUS, WORDING TO INDICATE SOURCE OF ELECTRICAL SUPPLY AND COLOUR, FORMAT AND SIZE TO MATCH BASE BUILDING.

31.2. PROVIDE REPLACEMENT BRANCH CIRCUIT DIRECTORY CARDS, NEATLY TYPEWRITTEN TO INCORPORATE ADDITIONAL AND EXISTING CONNECTED LOADS. TAG ALL CABLING. PROVIDE ADHESIVE LABELS ON EACH POWER RECEPTACLE IDENTIFYING THE PANEL AND THE CIRCUIT NUMBER. UNLESS NOTED OTHERWISE, LABEL SHALL BE WHITE WITH BLACK LETTERING.

31.3. PROVIDE 'P-TOUCH' LABELS ON ALL WIRING DEVICES TO REFLECT THE PANEL AND CIRCUIT NUMBERS. LABELS TO BE CLEAR WITH BLACK LETTERING, 5MM HIGH BOLD TYPE FACE,

32. GROUNDING
32.1. PROVIDE COMPLETE SYSTEM OF GROUNDING, WHICH COMPLIES WITH REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION FOR ELECTRICAL WORK, INCLUDING REQUIRED GROUNDING SECTIONS OF OESC. CONNECT GROUNDING CONDUCTORS TO EXISTING BUILDING GROUND SYSTEM

32.2. PROVIDE GROUND WIRES WITH ALL FEEDERS AND CIRCUITS IN ACCORDANCE WITH APPLICABLE CODES AND HYDRO REQUIREMENTS.

32.3. MAIN ELECTRICAL ROOM GROUNDING SHALL CONSIST OF MINIMUM OF FOUR (4) – ¾" DIAMETER, 10' LONG CU GROUNDING RODS INTERCONNECTED WITH ⅜ BARE COPPER CONDUCTOR. INTERCONNECT MAIN ELECTRICAL ROOM GROUNDING TO THE POWER TRANSFORMER, IF APPLICABLE, WITH ⅜ BARE COPPER CONDUCTOR. GROUND INTERCONNECTION SHALL BE COMPLETED, VISIBLE AND ACCESSIBLE FOR INSPECTION IN APPROVED 10"X10" PVC JUNCTION BOX EMBEDDED IN FINISHED FLOOR. CONTRACTOR TO SUPPLY AND INSTALL CU GROUND BUS ON THE WALL AND PROVIDE THE FOLLOWING GROUNDING CONNECTIONS:

32.3.1. ⅜ CU BARE TO MAIN BOARD OR SWITCH GROUNDING LUGS
32.3.2. ⅜ CU BARE TO REBAR
32.3.3. ⅜ CU BARE TO BUILDING STEEL
32.3.4. ⅜ CU BARE TO MAIN GAS PIPE WITH GROUNDING BRIDGE ACROSS THE GAS METER
32.3.5. ⅜ CU BARE TO WATER MAIN IF MADE OF METAL#6 CU INSULATED TO 12 POSITION GROUND BUS (2"X6") FOR TELEPHONE SERVICE. 12 POSITION GROUND BUS ON INSULATORS TO BE PROVIDED AND INSTALLED BY THIS CONTRACTOR.

32.4. USE CADWELD LUGS FOR FINAL CONNECTION AND TERMINATION OF GROUND/BOND WIRING.

33. FIRE ALARM SYSTEM WORK
33.1. FIRE ALARM SYSTEM WORK, INCLUDING INTERCONNECTIONS SHALL BE PERFORMED BY THE OWNERS'S DESIGNATED CONTRACTOR AS A SUB-CONTRACTOR TO THIS TRADE. TEST AND VERIFY ALL DEVICES UPON COMPLETION AND SUBMIT LETTER OF CERTIFICATION LISTING THE FLOOR, DEVICE AND THE DATE TESTED.

33.2. NEW WORK TO BE AN EXTENSION OF EXISTING SYSTEM. PROVIDE DEVICES TO MATCH EXISTING AND BE COMPLETELY COMPATIBLE WITH EXISTING SYSTEM. PERFORM WORK AND TESTING IN ACCORDANCE WITH LATEST EDITIONS OF CAN/ULC_S524, -S536 AND -S537, AND LOCAL FIRE CODE HAVING JURISDICTION. UNLESS OTHERWISE NOTED, CONNECT ADDITIONAL DEVICES TO EXISTING ZONES SERVING AREA AND AS PER OESC REQUIREMENTS.

33.3. DURING WORK TO THE EXISTING FIRE ALARM SYSTEM THE TIME AND DURATION OF INTERRUPTION SHALL BE APPROVED BY THE OWNER/LANDLORD AND ONLY 1 ZONE SHALL BE INTERRUPTED AT ANY 1 TIME. IN ALL AREAS WHERE THE RENOVATION WORK REQUIRES SHUTDOWN OF ANY PART OF THE FIRE ALARM PROTECTION SYSTEM, PROVIDE MANUAL FIRE ALARM PROTECTION (FIRE WARDEN) BY MEANS OF SUPERVISING THE AREA AS APPROVED BY GOVERNING AUTHORITIES. AT NO TIME SHALL THE FIRE ALARM SYSTEM OR ANY 1 ZONE BE LEFT INOPERATIVE OVERNIGHT. PROVIDE ALL REQUIRED BYPASS WIRING AND TEMPORARY WIRING AS MAY BE REQUIRED TO MAINTAIN ALL PARTS OF THE FIRE ALARM SYSTEM OPERATIVE DURING CONSTRUCTION AND ALTERATIONS.

33.4. PROVIDE FIRE ALARM PULL STATION AT LOCATIONS OF ELECTROMAGNETICALLY LOCKED DOORS. PULL STATIONS SHALL BE C/W AUXILIARY CONTACTS FOR CONNECTIONS TO SECURITY SYSTEM TO RELEASE MAGLOCKS UPON FIRE ALARM SYSTEM AND PULL STATION ACTIVATION. PROVIDE WIRING AND CONDUIT AND REQUIRED INTERCONNECTIONS TO SECURITY SYSTEM. CO-ORDINATE WORK WITH SECURITY SYSTEM CONTRACTOR. PROVIDE NATIONAL BUILDING CODE COMPLIANT MESSAGE SIGNAGE WITH 'PULL STATION FOR EMERGENCY EXIT', ADJACENT PULL STATION.

33.5. COORDINATE WORK WITH MECHANICAL DIVISIONS WITH REGARDS TO INTERCONNECTIONS TO AIR HANDLING SYSTEMS, FIRE SUPPRESSION SYSTEMS, SUPERVISORY VALVES AND FLOW SWITCHES, BUILDING AUTOMATION SYSTEM, ETC. PERFORM SUCH INTERCONNECTIONS TO STANDARDS OF EXISTING SYSTEMS AND DOCUMENT IN SHOP DRAWINGS.

33.6. FIRE ALARM SYSTEM TO BE VERIFIED AND A SIGNED VERIFICATION REPORT PROVIDED TO THE ENGINEER. TWO COPIES OF THE FIRE ALARM VERIFICATION REPORT ARE TO BE PROVIDED TO BROOKFIELD PROPERTIES MANAGER PRIOR TO TENANT OCCUPATION. PROJECT MANAGER TO BE NOTIFIED FORTY-EIGHT (48) HOURS PRIOR TO FIRE ALARM VERIFICATION TESTING.

34. CIRCUITRY
34.2. CIRCUITRY SHOWN ON PLANS IS FOR GROUPING PURPOSES ONLY. EXACT CIRCUITS ARE TO BE DETERMINED ON SITE BASED ON AVAILABILITY. RECORD FINAL CIRCUITRY ARRANGEMENT ON PANEL DIRECTORY AND ON 'AS-BUILT' DRAWINGS.

34.3. POWER RECEPTACLES MOUNTED ON DEMISING/FIRE RATED PARTITIONS TO HAVE 2LB./SQ.FT SHEET LEAD BARRIER INSTALLED BEHIND AND EXTENDING 6" IN EACH SIDE OF THE OUTLET.

34.4. CIRCUITRY SHOWN ON PLANS AS EXISTING SHALL BE VERIFIED FOR CONTINUITY ON SITE BY THIS CONTRACTOR PRIOR TO COMMENCING NEW WORK. VERIFY THAT NO MORE THAN SIX (6) DUPLEX RECEPTACLES ARE CONNECTED TO ANY ONE CIRCUIT. RECORD EXISTING CIRCUITRY ON PANEL DIRECTORY AND ON 'AS-BUILT' DRAWINGS.

35. LIGHTING SYSTEM
35.1. TEMPORARY LIGHTING SHALL BE PROVIDED THROUGHOUT THE PROJECT IN BOTH HARD CEILINGS AND IN T-BAR CEILINGS AREAS, WHERE REQUIRED BY THE GENERAL CONTRACTOR.

35.2. THOROUGHLY REVIEW CEILING TYPES, FINISHES AND CONSTRUCTION DETAILS WITH ARCHITECT/INTERIOR DESIGNER BEFORE PLACING LUMINARIES ORDERS AND ENSURE REQUIRED FIXTURE PARTS ARE INCLUDED. CONFIRM LUMINARIES LOCATIONS PRIOR TO ROUGHING_IN AND INSTALL IN ACCORDANCE WITH APPLICABLE ARCHITECTURAL REFLECTED CEILING PLANS, LOCATIONS AND/OR WALL ELEVATIONS.

35.3. SUPPORT NEW AND/OR RELOCATED LUMINARIES DIRECTLY TO CEILING SLAB STRUCTURE, NOT TO CEILING HANGERS, DUCTWORK, PIPING, CABLE TRAYS, ETC.

35.4. FLUORESCENT LUMINARIES, UNLESS NOTED OTHERWISE, SHALL BE CONNECTED TO EXISTING LIGHTING CIRCUITS SERVING THE SPACE OR AT ADJACENT CEILING JUNCTION BOXES. LAMP COLOUR TEMPERATURES SHALL MATCH EXISTING STANDARDS. PROVIDE SWITCHING WHERE INDICATED ON PLANS. MULTIPLE SWITCHES TO BE GANGED UNDER A COMMON COVERPLATE.

35.5. ALL LUMINARIES, FLUORESCENT AND INCANDESCENT, NEW AND EXISTING SHALL BE CIRCUITED TO MAINTAIN THE BUILDING LIGHTING SYSTEM ZONES (WHERE APPLICABLE).

35.6. WHERE AN EXISTING LIGHTING CIRCUIT SERVES MORE THAN ONE TENANT, PROVIDE RELAY(S) AS REQUIRED FOR INDEPENDENT CONTROL AT DEMISING PARTITION AND INTERLOCK WITH THE BUILDING AUTOMATION SYSTEM. INSTALL RELAYS IN/ADJACENT TO THE EXISTING LIGHTING CONTROL PANEL IN THE 9TH FLOOR ELECTRICAL ROOM.

35.7. WHERE NEW INCANDESCENT LUMINAIRES ARE SHOWN CONNECTED TO EXISTING ONES, CONTRACTOR TO VERIFY LOAD ON CIRCUIT TO ENSURE THAT IT WILL NOT BE OVERLOADED.

35.8. MASTER SWITCHES SHALL CONSIST OF RELAYS OR MULTIPLE POLE RELAYS AS REQUIRED TO OPERATE CIRCUITS INDICATED ON PLAN, AND SHALL BE ACTIVATED BY THE BASE BUILDING LIGHTING CIRCUIT SERVING THE RESPECTIVE DESIGNATED AREA. MULTIPLE SWITCHES (TOGGLE, DIMMER, ETC...) SHALL BE GANGED UNDER A COMMON COVERPLATE.

35.9. PROVIDE SEPARATE NEUTRAL WIRING FOR EACH CIRCUIT SERVING LUMINAIRES LOCALLY CONTROLLED BY DIMMERS AND/OR SWITCHES.

36. LIGHTING CONTROL AND SWITCH
36.1. LIGHTING CONTROL SHALL BE AS INDICATED ON DRAWINGS.

36.2. SWITCHES SHALL BE, UNLESS OTHERWISE NOTED, BRYANT QUIET TYPE WITH WHITE SPECIFICATION GRADE FOR 120V AND HEAVY DUTY GRADE FOR 347V.

36.3. LIGHT SWITCHES OF QUALITY AS MANUFACTURED BY BRYANT, P & S, ARROW HART, LEVITON AND HUBBELL, SHALL BE CONSIDERED AS ACCEPTABLE AS SPECIFIED ALTERNATES.

36.4. DIMMERS SHALL BE LUTRON SPECIFICATION GRADE OR APPROVED ALTERNATE. OCCUPANCY SENSORS SHALL BE WATTSTOPPER DUAL TECHNOLOGY OR APPROVED EQUAL.

37. AUTOMATIC CONTROL OF EXTERIOR LIGHTS:
37.1. CONTRACTORS, PHOTO-ELECTRIC CONTROLS AND TIME SWITCHES SHALL BE USED TO CONTROL THE EXTERIOR LIGHTING INCLUDING PRIMARY POLE LIGHTING.

37.2. IF THE PHOTOCELL IS NOT INDICATED ON THE DRAWINGS, OBTAIN THE LOCATION FROM THE CONSULTANT.

37.3. THE PHOTO-ELECTRIC CELL AND TIME CLOCKS SHALL BE WIRED SO AS TO CONTROL A MAGNETIC CONTRACTOR. EACH CONTACTOR SHALL HAVE AN 'ON-OFF-AUTO' SWITCH TO PERMIT MANUAL OPERATION OF THE INDIVIDUAL CONTRACTOR. CONTRACTORS TO BE MINIMUM 20A HID LIGHTING DUTY. TIME CLOCKS TO BE DIGITAL WITH 96 HOUR SPRING CARRY OVER

37.4. CONTRACTORS SHALL HAVE LAMACOID NAMEPLATES INDICATING THAT CONTROL CIRCUIT IS SUPPLIED FROM A DIFFERENT SOURCE.

29. LUMINARIES SCHEDULE
29.1. REFER TO LUMINARIES SCHEDULE AS INDICATED ON DRAWINGS.

30. EMERGENCY LIGHTING
30.1. EMERGENCY LIGHTING SHALL BE FED FROM THE EXISTING EMERGENCY CIRCUIT WHERE POSSIBLE. EMERGENCY CIRCUIT LOADING NOT TO SURPASS 70%. NEW EMERGENCY CIRCUITS ARE TO BE PROVIDED AS NECESSARY.

30.2. INCLUDE FOR AND PROVIDE TESTING OF EMERGENCY SYSTEM AND MEASUREMENT OF LIGHT LEVELS TO MEET NATIONAL BUILDING CODE REQUIREMENTS OF 1 LUX MINIMUM, 10 LUX AVERAGE. OBTAIN LOCAL INSPECTION APPROVALS. INCLUDE REQUIRED TEST MEASUREMENTS IN REPORT, SUBMIT LETTER OF CERTIFICATION, LISTING THE FLOOR AND THE DATE OF TEST.

31. IT/COMMUNICATIONS SYSTEMS:
31.1. SUPPLY AND INSTALL THE REQUIRED DUCTBANK, AN EMPTY RACEWAY SYSTEM C/W CONDUITS, PULLBOXES, PANELS, OUTLET BOXES, COVER PLATES, SUITABLE FOR THE INSTALLATION OF IT AND COMMUNICATIONS CABLES AND ASSOCIATED EQUIPMENT, BUT THE IT COMPANY AND UTILITY. THE COMPLETE CONDUIT INSTALLATION SHALL MEET ALL THEIR REQUIREMENTS.

31.2. RACEWAYS SHALL BE RIGID, GALVANIZED STEEL CONDUIT WHERE EXPOSED TO MECHANICAL INJURY. IN ALL OTHER LOCATIONS, EMT MAY BE USED. MINIMUM CONDUIT SIZE TO BE 19MM. WORK TO BE DONE TO CSA T527 AND CSA T530.

31.3. ALL DATA OUTLETS SHALL BE WIRED WITH CAT5E CABLING AND TERMINATED AT BOTH ENDS. USE A BIX BLOCK IN TELEPHONE ROOMS AND RJ45 OUTLETS IN DATA BOXES. CERTIFY AND PROVIDE RECORD OF CERTIFICATION FOR ALL CABLES AT END OF INSTALLATION.

31.4. PVC DUCT SHALL BE USED FOR UNDERGROUND SERVICE ENTRANCE.

31.5. PROVIDE A 110V POWER OUTLET ADJACENT TO THE IT EQUIPMENT LOCATIONS FOR UTILITY COMPANY'S STEP DOWN TRANSFORMER.

31.6. UNLESS OTHERWISE SHOWN, STEEL PULLBOXES SHALL BE INSTALLED EVERY 30M OR LESS OF STRAIGHT CONDUIT RUN; EVERY 25M OR LESS OF STRAIGHT CONDUIT RUN AND ONE 90 DEGREE BEND OR EQUIVALENT; EVERY TWO 90 DEGREE BENDS OR EQUIVALENT.

31.7. A #6 GROUND WIRE SHALL BE RUN FROM THE TELEPHONE SERVICE PANEL TO SERVICE GROUND TO PROVIDE A GROUND FOR THE TELEPHONE SYSTEM.

32. SHOP DRAWINGS AND OPERATING/MAINTENANCE INSTRUCTION MANUALS
32.1. SUBMIT SHOP DRAWINGS AND OPERATING/MAINTENANCE INSTRUCTION MANUALS FOR FIXTURES AND EQUIPMENT WITHIN 7 DAYS OF AWARD OF CONTRACT FOR REVIEW BY THE CONSULTANT AND OWNER.

32.2. PROPERLY IDENTIFY ELECTRONIC SHOP DRAWINGS FOR REVIEW AND SHOW IN DETAIL EQUIPMENT AND MATERIALS. ENDORSE EACH DRAWING; INCLUDE COMPANY NAME AND SUBMITTAL DATE.

33. RECORD DRAWINGS (AS-BUILTS)
33.1. WHEN WORK BEGINS AT SITE, CLEARLY AND ACCURATELY MARK ON A BOUND SET OF WHITE PRINTS OF CONTRACT DRAWINGS, ON A DAILY BASIS, ALL CHANGES AND DEVIATIONS FROM ROUTING AND LOCATIONS OF EQUIPMENT SHOWN ON CONTRACT DRAWINGS, CHANGES AND DEVIATIONS INCLUDING THOSE MADE BY ADDENDA, CHANGE NOTICES, AND SITE INSTRUCTIONS, AND CHANGES AND DEVIATIONS INDICATED ON SUPPLEMENTAL DRAWINGS ISSUED WITH ADDENDA, CHANGE NOTICES, AND SITE INSTRUCTIONS. MAINTAIN "AS-BUILT" WHITE PRINTS AT SITE FOR PERIODIC INSPECTION BY CONSULTANT THROUGHOUT DURATION OF WORK.

33.2. WHEN WORK ENDS AT SITE, UPDATE A COMPUTER FILE COPY OF CONTRACT DOCUMENT DRAWING SET SO THAT IT REFLECTS ALL DEVIATIONS FROM ORIGINAL CONTRACT DOCUMENT DRAWINGS, THUS FORMING A TRUE "AS-BUILT" DRAWING DISK SET. RECORD ALL CHANGES MADE DURING CONSTRUCTION ON A SEPARATE RED LINE LAYER LABELED: 'CONTRACTOR_AS-BUILT'. SUBMIT ELECTRONIC COPY (AUTOCAD 2004) OF 'AS-BUILT' TO THE ENGINEER FOR REVIEW AND APPROVAL.

33.3. TWO SETS OF AS-BUILT DRAWINGS ARE TO BE PROVIDED TO THE LANDLORD INCLUDING AN ELECTRONIC COPY FOR FUTURE REFERENCE AND USE.

33.4. UPDATE LANDLORD'S DISTRIBUTION RISER DIAGRAMS POSTED IN ELECTRICAL ROOMS.

34. WARRANTY
34.1. WARRANT WORK TO BE IN STRICT ACCORDANCE WITH CONTRACT DOCUMENTS AND FREE FROM DEFECTS FOR ONE (1) YEAR PERIOD FROM DATE OF WRITTEN ACCEPTANCE BY CONSULTANT. REPAIR AND/OR REPLACE ANY SUCH DEFECTS WHICH APPEAR IN WORK WITHIN WARRANTY PERIOD, ORDINARY WEAR AND TEAR AND WILFUL DAMAGE BY, OR CARELESSNESS OF OWNER'S STAFF OR AGENTS EXCEPTED, WITHOUT ADDITIONAL EXPENSE TO OWNER. WHERE SUCH DEFECTS OCCUR, BE RESPONSIBLE FOR COSTS INCURRED IN MAKING DEFECTIVE WORK GOOD, INCLUDES REPAIR OR REPLACEMENT OF BUILDING FINISHES, OTHER MATERIALS, OR DAMAGE TO OTHER EQUIPMENT CAUSED BY SUCH DEFECTS, OR BY SUBSEQUENT REPLACEMENT OR REPAIRS.

35. TESTING, COMMISSIONING, DEMONSTRATION OF USE & OPERATION OF SYSTEMS
35.1. ELECTRICAL SYSTEMS DEMONSTRATION WILL BE PERFORMED BY THE RESPECTIVE VENDOR/CONTRACTOR, TO THE OWNER. DEMONSTRATION TO TAKE PLACE AFTER SYSTEMS ARE TESTED AND/OR COMMISSIONED AND BEFORE TURNOVER OF SYSTEMS TO OWNER.

35.2. SUBMIT AMPERAGE READING FOR EACH PHASE OF EACH TRANSFORMER, AFTER LOADS HAVE BEEN BALANCED.

35.3. CONFIRMATION THAT ALL ELECTRICAL PANELS HAVE BEEN TAGGED WITH LAMICOID NAMEPLATES AND TYPED DIRECTORIES AND ALL PERMITS HAVE BEEN CLOSED.

36. FINAL ELECTRICAL SAFETY AUTHORITY CERTIFICATE
36.1. CERTIFICATE SHALL BE SUBMITTED UPON COMPLETION OF CONTRACT. FINAL PAYMENT SHALL BE SUBJECT TO RECEIPT OF THIS CERTIFICATE.

37. CLEANING UP
37.1. DURING CONSTRUCTION, KEEP SITE REASONABLY CLEAR OF RUBBISH AND WASTE MATERIAL RESULTING FROM WORK ON DAILY BASIS. AFTER COMPLETION OF WORK, REMOVE RUBBISH AND DEBRIS, ARRANGE AND PAY FOR REPAIR OF DAMAGES CAUSED AND LEAVE PREMISES AND WORK IN GOOD ORDER.

38. ELECTRICAL SHUT DOWNS
38.1. ALL ELECTRICAL SHUT DOWNS ARE TO BE COORDINATED WITH LANDLORD PROJECT MANAGER AND GENERAL CONTRACTOR A MINIMUM OF THREE (3) WEEKS PRIOR TO TIME OF PLANNED SHUT DOWN.

39. SEISMIC RESTRAINT:
39.1. PROVIDE ALL MATERIALS AND LABOUR NECESSARY TO SUPPLY AND INSTALL SEISMIC RESTRAINTS AND ANCHORAGE FOR ALL ELECTRICAL EQUIPMENT INCLUDING, BUT NOT LIMITED TO, SWITCHGEAR, TRANSFORMERS, STANDBY GENERATORS, LIGHT FIXTURES, BATTERY PACKS, CONDUITS, RACEWAYS, BUS DUCTS, ETC., TO CONFIRM WITH LOCAL BUILDING CODE AND ALL OTHER APPLICABLE REGULATIONS.

39.2. CONTRACTOR SHALL RETAIN AND PAY FOR A REGISTERED SEISMIC ENGINEER TO DESIGN AND INSPECT THE SEISMIC RESTRAINTS OF THE ELECTRICAL SYSTEM COMPONENTS COVERED UNDER DIVISION 16 FOR THIS CONTRACT.

39.3. THE SEISMIC ENGINEER RETAINED BY CONTRACTOR SHALL PROVIDE FOR THE FOLLOWING:

39.4. SIGNED AND SEALED LETTERS OF ASSURANCE OF PROFESSIONAL DESIGN AND COMMITMENT FOR FIELD REVIEW AND SUMMARY OF DESIGN AND FIELD REVIEW AS REQUIRED BY AUTHORITIES HAVING JURISDICTION.

39.4.1. CERTIFIED DETAILED DRAWINGS OF SEISMIC RESTRAINTS.
39.4.2. DETAILED SPECIFICATION FOR SEISMIC RESTRAINTS.
39.4.3. WRITTEN REPORTS OF SITE REVIEWS.
39.4.4. SIGNED AND SEALED LETTER OF ASSURANCE OF PROFESSIONAL REVIEW AND COMPLIANCE.

39.5. SUBSTANTIAL PERFORMANCE WILL NOT BE CONSIDERED WITHOUT THE SUBMISSION OF THE ABOVE DOCUMENTS. ALL THE ABOVE DOCUMENTS SHALL BE SUBMITTED TO THE CONSULTANT FOR FURTHER DISTRIBUTION AND FILES.

39.6. THE CONTRACTOR SHALL COOPERATE WITH THE SEISMIC ENGINEER AND PROMPTLY SUPPLY SUCH INFORMATION, INCLUDING WEIGHTS OF EQUIPMENT AND BASE FRAME OR MOUNTING PLATE LAYOUTS, AS REQUESTED BY THE SEISMIC ENGINEER NECESSARY TO SUPPORT THE DESIGN AND DETAILS FOR SEISMIC RESTRAINT.

39.7. THE CONTRACTOR SHALL NOT BE ENTITLED TO ANY ADDITIONAL COMPENSATION ARISING FROM THE TECHNICAL DIRECTION PROVIDED BY THE SEISMIC ENGINEER FOR SEISMIC RESTRAINT AND ANCHORAGE OF ELECTRICAL SYSTEMS.

39.8. CONTRACTORS AND SEISMIC RESTRAINT ENGINEER SHALL NOTE SPECIFIC STRUCTURAL DESIGN AND CONSTRUCTION REQUIREMENTS FOR THIS BUILDING AND SHALL DESIGN AND INSTALL THE SEISMIC RESTRAINT SYSTEM TO SUIT.

SITE SERVICES AND UNDERGROUND DUCT BANK

40. UNDERGROUND DUCT BANKS:
40.1. SUPPLY AND INSTALL UNDERGROUND CONCRETE ENCASED DUCTBANKS FOR CABLES INDICATED. CONCRETE WORK AS DETAILED HEREIN SHALL BE PROVIDED BY THIS SECTION. TRENCHING AND BACKFILLING SHALL BE DONE BY THIS SECTION.

40.2. DUCTBANKS SHALL FOLLOW GENERAL ROUTE SHOWN ON THE DRAWINGS AND SHALL TERMINATE AT SPECIFIED LOCATIONS. EXACT LOCATION OF DUCTBANKS AND TERMINATING POINTS SHALL BE VERIFIED ON THE SITE PRIOR TO COMMENCEMENT OF WORK.

40.3. THE DUCTBANK SHALL CONSIST OF PARALLEL DUCTS ENCASED IN CONCRETE. THE NUMBER AND ARRANGEMENT OF DUCTS SHALL BE AS SHOWN ON THE DRAWINGS. DUCTS SHALL BE CSA CERTIFIED TYPE DBII POLYVINYL FOR CONCRETE ENCASEMENT OR DIRECT BURIAL, WITH AN INTERNAL DIAMETER OF FOUR INCHES MINIMUM UNLESS OTHERWISE SHOWN ON THE DRAWINGS.

40.4. BENDS SHALL GENERALLY BE AS FACTORY SUPPLIED OF APPROVED RADIUS. RADIUS OF SUCH BENDS SHALL NOT BE LESS THAN STANDARD FOR THE 100MM DIAMETER DUCT 1M.

40.5. THE DUCT LENGTHS SHALL BE JOINED TOGETHER WITH AN APPROVED COUPLING TO PROVIDE A SOUND JOINT. ADJACENT COUPLINGS SHALL BE STAGGERED BY AT LEAST 200MM. JOINT SOLVENT SHALL BE USED TO SEAL THE COUPLINGS.

40.6. WHERE TRENCH IS DRY AND FIRM, NO BED SHALL BE REQUIRED. WHERE TRENCH IS WET, SUPPLY AND INSTALLED 150MM LAYER OF CRUSHED STONE IN THE BOTTOM. NO CONCRETE SHALL BE POURED IN TRENCHES CONTAINING WATER.

40.7. THE DUCTS SHALL BE LAID WITH A MINIM SPACING OF 150MM CENTER TO CENTER, BOTH HORIZONTALLY AND VERTICALLY FOR 100MM DIAMETER. FOR LARGER DUCTS, SPACING SHALL BE INCREASED CORRESPONDINGLY. SPACERS SHALL BE INSTALLED ON 3M CENTERS AND WITHIN 600MM OF EACH COUPLING USED. SPACERS SHALL BE SPECIALLY FORMED PLASTIC. WOOD SPACERS SHALL NOT BE USED.

40.8. THE DUCTS SHALL BE ON EVEN GRADE SLOPED NOT LESS THAN 20MM IN A 1000MM RUN IN DIRECTION OPPOSITE TO THE ELECTRICAL ROOM. PRIOR ENTRANCE INTO ELECTRICAL ROOM DUCTS SHALL BE DRAINED VIA FRENCH DRAIN IF SLOPE OPPOSITE TO ELECTRICAL ROOM IS NOT FEASIBLE.

40.9. THE TOP SURFACE OF CONCRETE ENCASEMENT SHALL BE A MINIMUM 760MM BELOW FINISHED GRADE, UNLESS OTHERWISE INDICATED ON THE DRAWING, BUT IN NO CASE SHALL IT BE LESS THAN 600MM TO THE FINISHED GRADE OR SURFACE. HIGH VOLTAGE DUCTS SHALL HAVE MINIMUM 1000MM OF 98% COMPACTED SOIL OR NATIVE MATERIAL OVER THEM.

40.10. NO FERROUS METAL SHALL BE INSTALLED BETWEEN PRIMARY CABLE DUCTS. RE-ENFORCING SHALL BE INSTALLED ONLY NEAR THE BOTTOM OF THE DUCT UNLESS SPECIFICALLY INDICATED OTHER OR REQUIRED BY A LOCAL HYDRO AUTHORITY. WHERE THE DUCTBANK IS CONSTRUCTED OVER RECENT FILL OR UNSTABLE GROUND, OR PASSES THROUGH WALLS OR FOOTINGS, OR UNDER DRIVEWAYS OR PARKING LOTS, THE CONCRETE SHALL 5 BE REINFORCED WITH " DIAMETER HI-BOND STEEL BARS LAID 8 2 LONGITUDINALLY AT 150MM LATERAL SPACING AND SET AT THE DEPTH 3 OF THE CONCRETE ENVELOPE BELOW THE BOTTOM ROW OF DUCTS.

40.11. ALL REINFORCING RODS USED SHALL HAVE A MINIMUM LENGTH OF 2000MM. INDIVIDUAL LENGTHS OF REINFORCING RODS ARE TO BE OVERLAPPED BY A MINIMUM OF 300MM AND IS TO EXTEND AT LEAST 1000MM ONTO SOLID GROUND. IN ALL CASES WHERE THE DUCT BANK ENTERS A BUILDING, IT SHALL BE REINFORCED FOR A DISTANCE OF 2500MM OUTSIDE THE BUILDING. DUCTBANKS PASSING BENEATH OR THOUGH BUILDING FOOTINGS, UNDER HIGHWAYS, STREETS, ROADS, OR HEAVILY TRAVELED DRIVEWAYS SHALL BE REINFORCED, AND REINFORCING SHALL EXTEND A DISTANCE OF 1500MM BEYOND IN BOTH DIRECTIONS.

40.12. THE DUCTS SHALL BE ENCASED WITH A MINIMUM 24MPA CONCRETE WITH A MINIMUM COVER OF 75MM ON ALL SIDES. THE CONCRETE SHALL HAVE A SLUMP OF 100MM TO 150MM AND BE OF A PEA GRAVEL AGGREGATE. TO PREVENT ANY DISPLACEMENT OF THE DUCT STRUCTURE DURING POURING, THE DUCT STRUCTURE SHALL BE BRACED DOWN EVERY 3000MM AND THE CONCRETE SHALL BE DEFLECTED DOWN ALONGSIDE THE DUCTS TO THE BOTTOM AND UP THROUGH THE DUCT ASSEMBLY.

40.13. WHEN CROSSING OTHER UTILITIES, THE CONCRETE DUCT ENCASEMENT SHALL MAINTAIN A MINIMUM OF 450MM VERTICAL CLEARANCE. WHEN RUNNING PARALLEL TO ANOTHER UTILITY, THE DUCTBANK SHALL BE A MINIMUM OF 1500MM CLEAR OF SAID UTILITY BUT IN NO CASE SHALL IT BE INSTALLED IN THE SAME EXCAVATION.

40.14. WHEN COMPLETED, THE DUCTS SHALL BE CLEANED AND ENDS PLUGGED WITH DUCT PLUGS. THE DUCTS SHALL BE TESTED FOR CLEARANCE BY PULLING A STEEL WIRE BRUSH AND A 95MM MANDREL THROUGH THEIR COMPLETE LENGTH.

40.15. DUCTS INSTALLED FOR P.U.C CABLES AND DUCTS LEFT AS SPARE SHALL HAVE ONE CONTINUOUS LENGTH 10MM POLYPROPYLENE ROPE INSTALLED IN EACH DUCT TO FACILITATE THE INSTALLATION OF THE CABLES IN THE DUCT. TERMINATION POINTS, GRADES, AND ROUTE OF DUCT BANK SHALL BE CONFIRMED BY THE P.U.C ON-SITE.

40.16. NOTIFY CONSULTANT AND P.U.C AT LEAST 48 HOURS BEFORE CONCRETE IS POURED TO PERMIT INSPECTION OF THE DUCT INSTALLATION.

40.17. ASSUME RESPONSIBILITY TO HAVE THE DUCTS INSPECTED BY THE INSPECTION OFFICE AND P.U.C (WHERE APPLICABLE) PRIOR TO POURING OF CONCRETE AND AGAIN PRIOR TO BACKFILLING.

41. EXCAVATION AND BACKFILLING:
41.1. EXCAVATE AND BACKFILL AS REQUIRED FOR THIS WORK BOTH INSIDE AND OUTSIDE THE BUILDING. ALL TRENCH EXCAVATION SHALL BE CARRIED OUT IN STRICT CONFORMITY WITH THE TRENCH EXCAVATOR PROTECTION ACT AND AMENDMENTS, STATUTES OF ONTARIO AND REGULATIONS, AS REVISED AND AMENDED TO DATE.

41.2. ALL EXCAVATION AND BACKFILLING SHALL BE PROVIDED BY THIS ELECTRICAL CONTRACTOR.

41.3. CAREFULLY CHECK AND AVOID DISTURBING OR DAMAGING ANY EXISTING UNDERGROUND PIPING, CONDUIT OR OTHER SERVICES UNCOVERED DURING CARRYING OUT OF THE WORK. MAKE GOOD ANY DAMAGE.

41.4. UNDERGROUND SEWERS AND OTHER SERVICES ARE INDICATED APPROXIMATELY ON THE MECHANICAL, ELECTRICAL, OR ARCHITECTURAL SITE PLANS. THE LOCATION OF SUCH SERVICES HAS BEEN DETERMINED FROM AVAILABLE INFORMATION BUT HAS NOT BEEN VERIFIED IN THE FIELD. CAREFULLY CHECK SUCH DISCREPANCY BEFORE PROCEEDING WITH ANY NEW WORK. ENGAGE THE SERVICES OF LOCAL P.U.C, HYDRO, TELEPHONE, AND GAS AUTHORITIES TO ACCURATELY DETERMINE LOCATION OF ANY UNDERGROUND UTILITIES.

41.5. EXCAVATION FOR ALL UNDERGROUND SERVICES SHALL BE OF THE REQUIRED DEPTH AND DIMENSION, AND SHALL BE:

41.5.1. PREPARED AS REQUIRED, SO THAT NO PORTION OF ANY DUCT SHALL BEAR DIRECTLY AGAINST ANY ROCK OR OTHER HARD SURFACE.
41.5.2. KEPT DRY AT ALL TIMES BY BAILING, PUMPING, OR OTHER MEANS. SIDES AND BOTTOMS SHALL BE KEPT FROM FREEZING.
41.5.3. BOTTOMS OF EXCAVATION SHALL BE GRADED AS REQUIRED.
41.5.4. BANKS OF EXCAVATIONS SHALL BE EVENLY CUT AND/OR TRIMMED AND THEY SHALL BE SHORED AS REQUIRED TO PREVENT CAVING IN, AND THE MATERIAL USED SHALL BE CAREFULLY DRAWN DURING BACKFILLING.
41.5.5. WIDTH OF EXCAVATION SHALL BE CAREFULLY CONTROLLED AND SHALL BE LIMITED TO TWICE THE O.D OF DUCTS, CONDUITS OR DUCTBANK, AND AS SHOWN ON THE DRAWINGS.
41.5.6. EXCAVATING, DUCT LAYING, AND BACKFILLING SHALL BE EXECUTED IN LIMITED LENGTH AS DETERMINED BY PROJECT MANAGER TO ENABLE ALL PROTECTIVE MEASURES TO FUNCTION EFFICIENTLY AT ALL TIMES.

41.6. WHERE EXCAVATING IS NECESSARY IN CLOSE PROXIMITY TO AND BELOW ANY FOOTING LEVEL, BACKFILLING SHALL BE DONE WITH REINFORCED CONCRETE FURNISHED UNDER THIS SECTION TO THE LEVEL OF THE TOP OF HIGHEST ADJACENT FOOTING.

41.7. ALL DUCTS ENTERING AND LEAVING THE BUILDING OR PASSING OTHER EXCAVATED AREAS SHALL BE SUPPORTED ON A REINFORCED CONCRETE PAD, RESTING AT BOTH ENDS ON AT LEAST 1800MM SOLID UNDISTURBED EARTH OR A CHECK IN CONCRETE FOUNDATION WALL.

41.8. IN AREAS WHERE REINFORCED SUSPENDED SLAB IS INDICATED ON STRUCTURAL DRAWINGS, DUCTS SHALL BE SUPPORTED FROM REINFORCING RODS.

41.9. SHOULD THE EXCAVATION BY NEGLIGENCE OR ERROR BE CARRIED TO GREATER DEPTH THAN SHOWN OR AUTHORIZED, SUCH EXTRA EXCAVATION SHALL BE REPLACED WITH WELL-COMPACTED GRANULAR B CRUSHED STONE FILL OR REINFORCED CONCRETE, AS REQUIRED TO GIVE A BEARING VALUE EQUAL TO THAT PROVIDED BY ADJACENT SOIL.

41.10. BACKFILLING SHALL NOT BE COMMENCED UNTIL INSTALLATION IS INSPECTED AND APPROVED. BACKFILLING SHALL BE CARRIED OUT CAREFULLY TO AVOID INJURY TO THE WORK AND SUBSEQUENT SETTLEMENT AND SHALL BE EXECUTED AS FOLLOWS:

41.10.1. ALL BACKFILLING REQUIRED TO BRING LEVEL UP TO UNDERSIDE OF STONE FILL (UNDER PARKING AREAS, AND ROADS), AND TO UNDERSIDE OF SIDEWALK SHALL BE GRANULAR B MATERIAL, SUPPLIED UNDER THIS SECTION AND TAMPED EVERY 150MM IN DEPTH TO CONSOLIDATE. SAID FILL SHALL BE CLEAN, SHALL NOT HAVE PARTICLES OVER 65MM IN LARGEST DIMENSIONS, AND WITH NOT MORE THAN 8% PASSING A #200 SIEVE.
41.10.2. ALL BACKFILL PLACED UNDER PAVED AREAS (PARKING AREAS, DRIVEWAYS, SIDEWALKS, ETC.) SHALL BE COMPACTED IN 150MM TO 200MM LAYERS TO 98% SPDD (REFER TO GENERAL REQUIREMENTS OUTLINED IN SPECIFICATION SECTION 02315 & SOIL REPORT). TESTING AND INSPECTION OF SAID BACKFILL INCLUDING CHECKING THE PLACING AND COMPACTION OF FILL, SHALL BE DONE BY AN INDEPENDENT INSPECTION TESTING COMPANY. THE COST OF THE INSPECTION AND TESTING OF THIS FILL WILL BE PAID BY OTHERS. ONE TEST SHALL BE MADE (EVERY 2 LAYERS OF FILL) FOR EACH 5,000 SQUARE FEET OR LESS OF FILLED AREAS FOR DRIVEWAYS, PARKING AREAS, AND SIDEWALKS.
41.10.3. EXTERIOR BACKFILL IN AREAS TO RECEIVE SOD OR SEED SHALL BE CLEAN FILL, FREE FROM ORGANIC MATERIAL AND DEBRIS, PLACED IN A MAXIMUM 300MM LAYER AND COMPACTED TO ACHIEVE 90% DRY DENSITY AS DETERMINED BY THE STANDARD AASHO TEST. FROZEN EARTH SHALL NOT BE USED FOR BACKFILLING NOR SHALL ANY BACKFILLING BE PLACED ON OR AGAINST FROZEN GROUND.
41.10.4. BACKFILL TRENCHES WITHIN BUILDING AND GRANULAR B CRUSHED STONE IN LAYERS AND COMPACT TO 100% STANDARD PROCTOR DENSITY.
41.10.5. SUPPLY AND INSTALL A 150MM WIDE PLASTIC FILM 200MM BELOW FINISHED SURFACE OR GRADE TO MARK THE LOCATION OF DUCTS, CABLES AND CONDUITS. FILM SHALL BE MANUFACTURED BY GRIFFOLYN OR EQUAL, AND SHALL CONTAIN CONTINUOUS PRINTED WARNING AND MESSAGE DESIGNATING SERVICE BURIED. FILM SHALL BE ORANGE FOR POWER LINES, AND GREEN FOR COMMUNICATIONS LINES.
41.10.6. IN SETTLEMENT OCCURS, IT SHALL BE MADE UP AS SOON AS POSSIBLE SO THAT REGULAR TRAFFIC IN AND AROUND THE WORK WILL NOT BE INCONVENIENCED. AFTER A PERIOD ADEQUATE TO REVEAL THAT SETTLEMENT HAS PASSED, FILL ALL DEPRESSIONS TO RESTORE THE CORRECT GRADE.

41.11. PATCHING OF ALL PAVED AREAS, ROADS, WALKS, SODDING, ETC, DAMAGED BY THE NEW WORK WILL BE DONE BY ANOTHER DIVISION AND PAID BY THIS ELECTRICAL CONTRACTOR.

41.12. BE RESPONSIBLE FOR MAKING GOOD ANY SUBSEQUENT SETTLEMENT OF FILL AND PAY ALL COSTS INVOLVED IN MAKING GOOD PAVING, CURBS, AND ALL OTHER SURFACE RESTORATIONS.

41.13. BACKFILLING TO SUBGRADE LEVEL BY THIS ELECTRICAL CONTRACTOR AND FINISH BACKFILLING SHALL BE DONE BY PAVING CONTRACTOR.

41.14. EXCAVATED MATERIALS SHALL BE PILED, STORED AND/OR DISPOSED OF AS FOLLOWS:

41.14.1. DURING THE PROCESS OF THE CONTRACT, IN SUCH PLACES AND IN SUCH A MANNER THAT A MINIMUM OF DAMAGE OR DISFIGUREMENT OF EXISTING GROUND WILL RESULT.
41.14.2. ON COMPLETION OF WORK, ALL EXCAVATED MATERIAL SHALL BE REMOVED AND DEPOSED OF.

DO NOT SCALE DRAWINGS. THE CONTRACTOR SHALL CHEECK AND VERIFY ALL DIMENSIONS AND REPORT ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK.

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Revision Schedule

Rev	Date	By	Description
1	2026-02-16	FRB	ISSUED FOR REVIEW
2	2026-03-02	FRB	ISSUED FOR 90% REVIEW
3	2026-03-20	FRB	ISSUED FOR PERMIT
4	2026-04-17	FRB	PRE TENDER REVIEW
5	2026-05-13	FRB	ISSUED FOR TENDER

Rev	Date	By	Description
1	2026-06-09	FRB	ISSUED FOR EAD-02

Drawing Revision

PROJECT NAME: VERONA
PROJECT ADDRESS: 6094 Carleton Drive, Verona, ON

ISSUE DATE: MAY 2026
DRAWN BY: N.Y.
CHECKED BY: F.R.B.

SHEET TITLE: ELECTRICAL SPECIFICATIONS
SCALE: AS SHOWN

SHEET NUMBER: E109