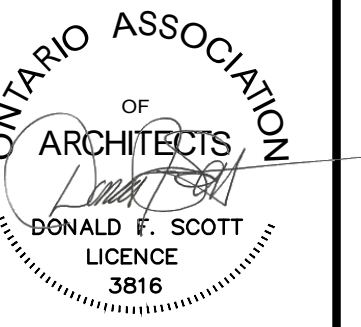




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VERIFY DIMENSIONS ON SITE. DRAWINGS ARE PREPARED TO  
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DO NOT SCALE DRAWINGS.

## SITE AND KEY PLAN

WHITEHERN HISTORIC HOUSE  
STAFF KITCHENETTE  
41 JACKSON STREET  
HAMILTON, ON

# A100

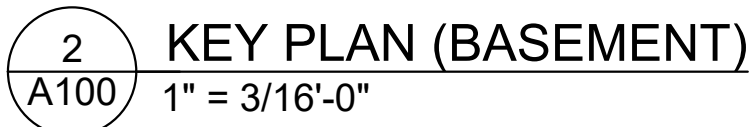
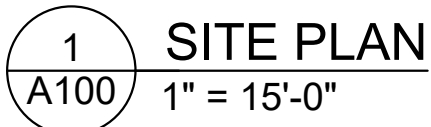
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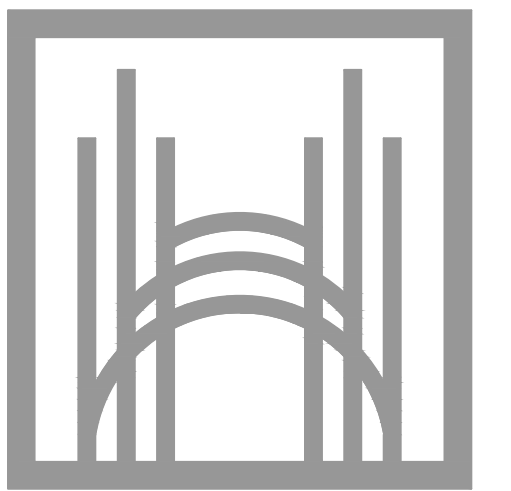
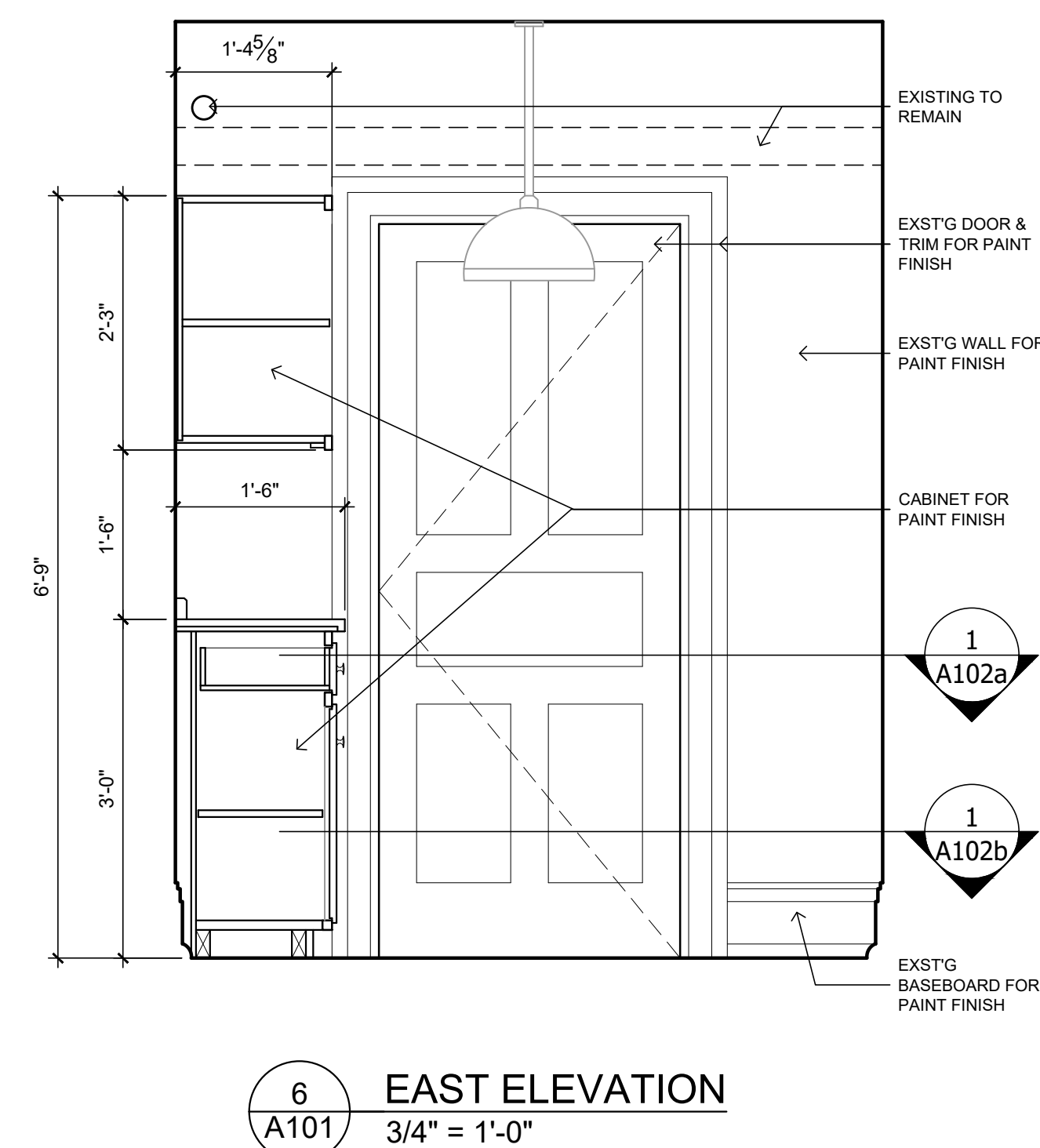
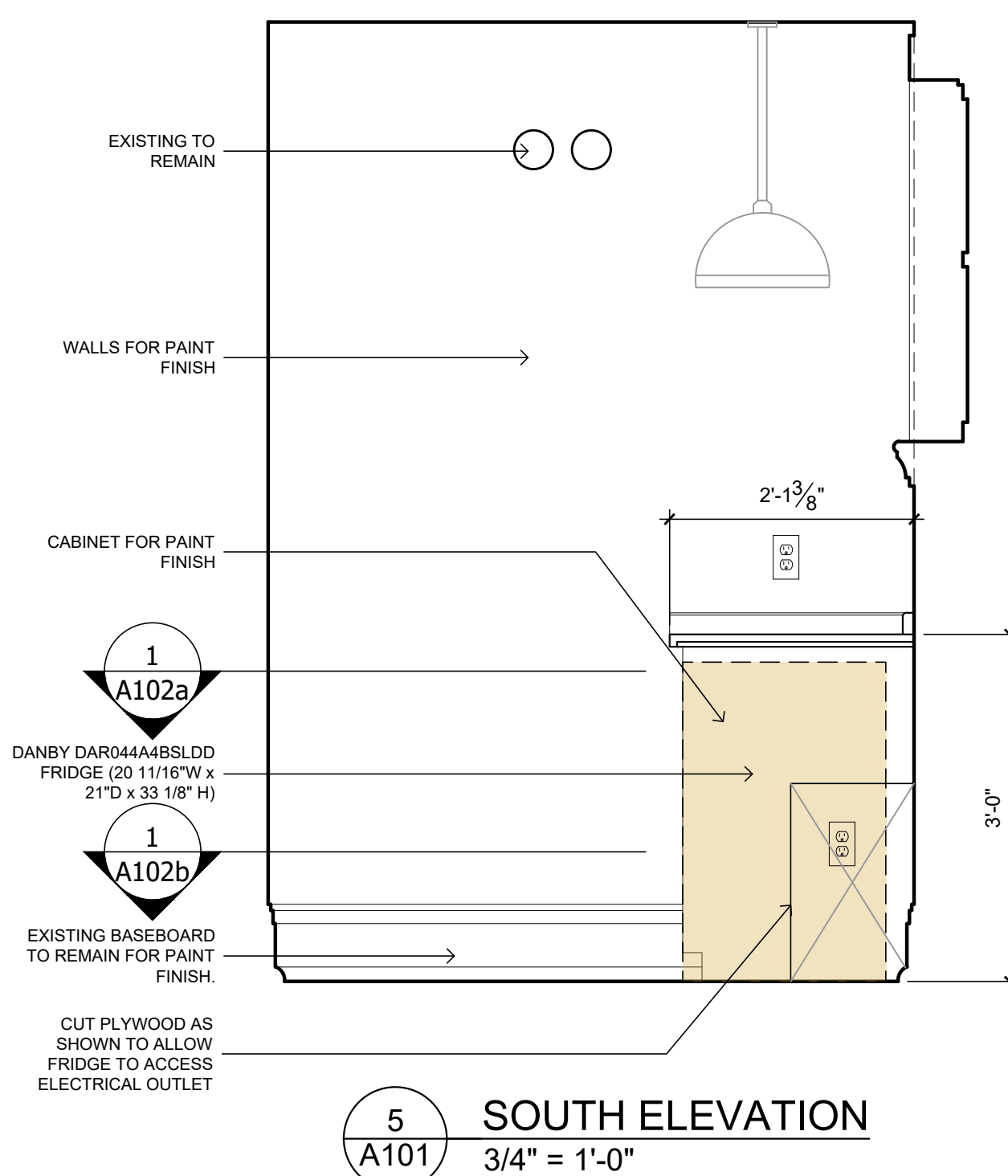
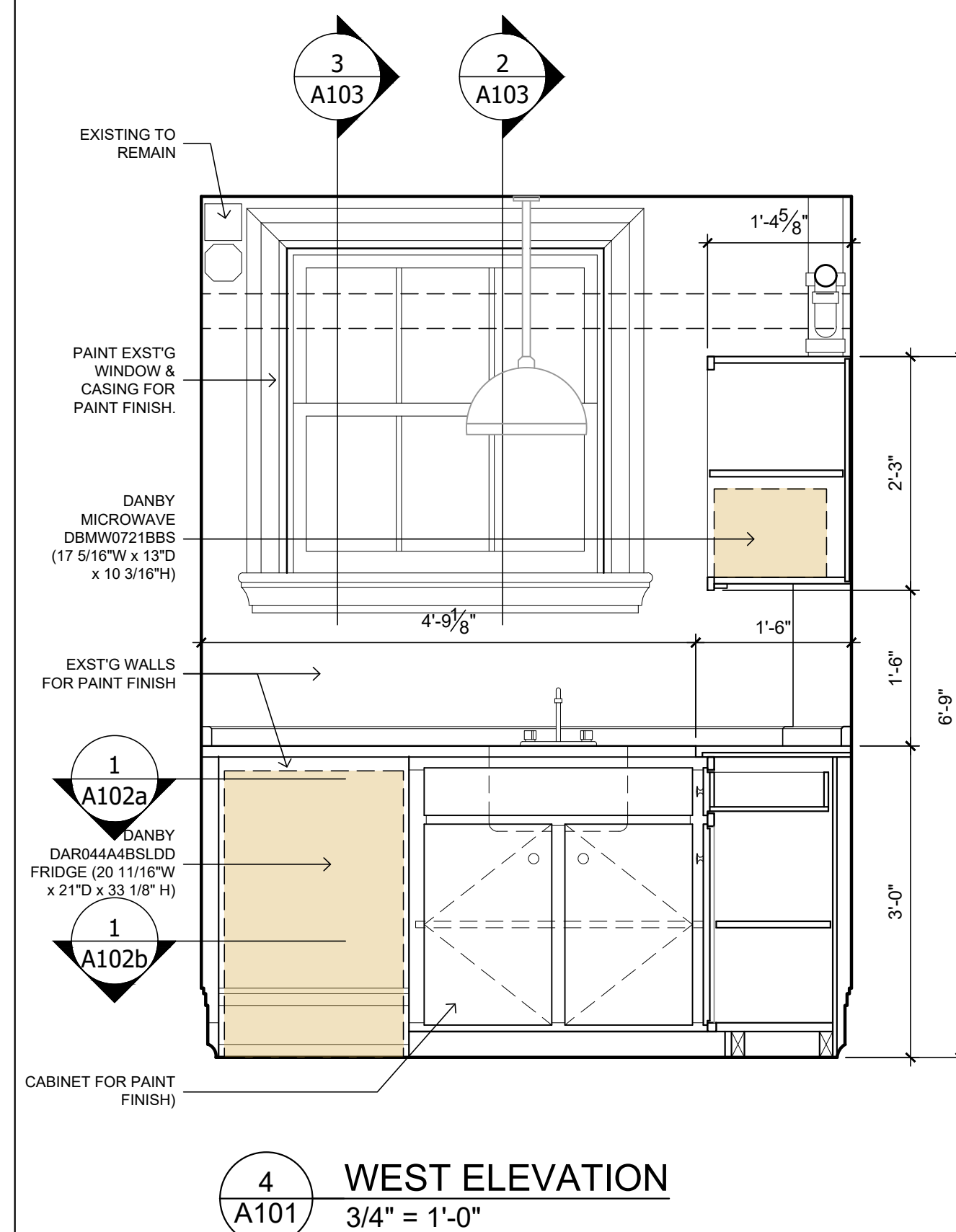
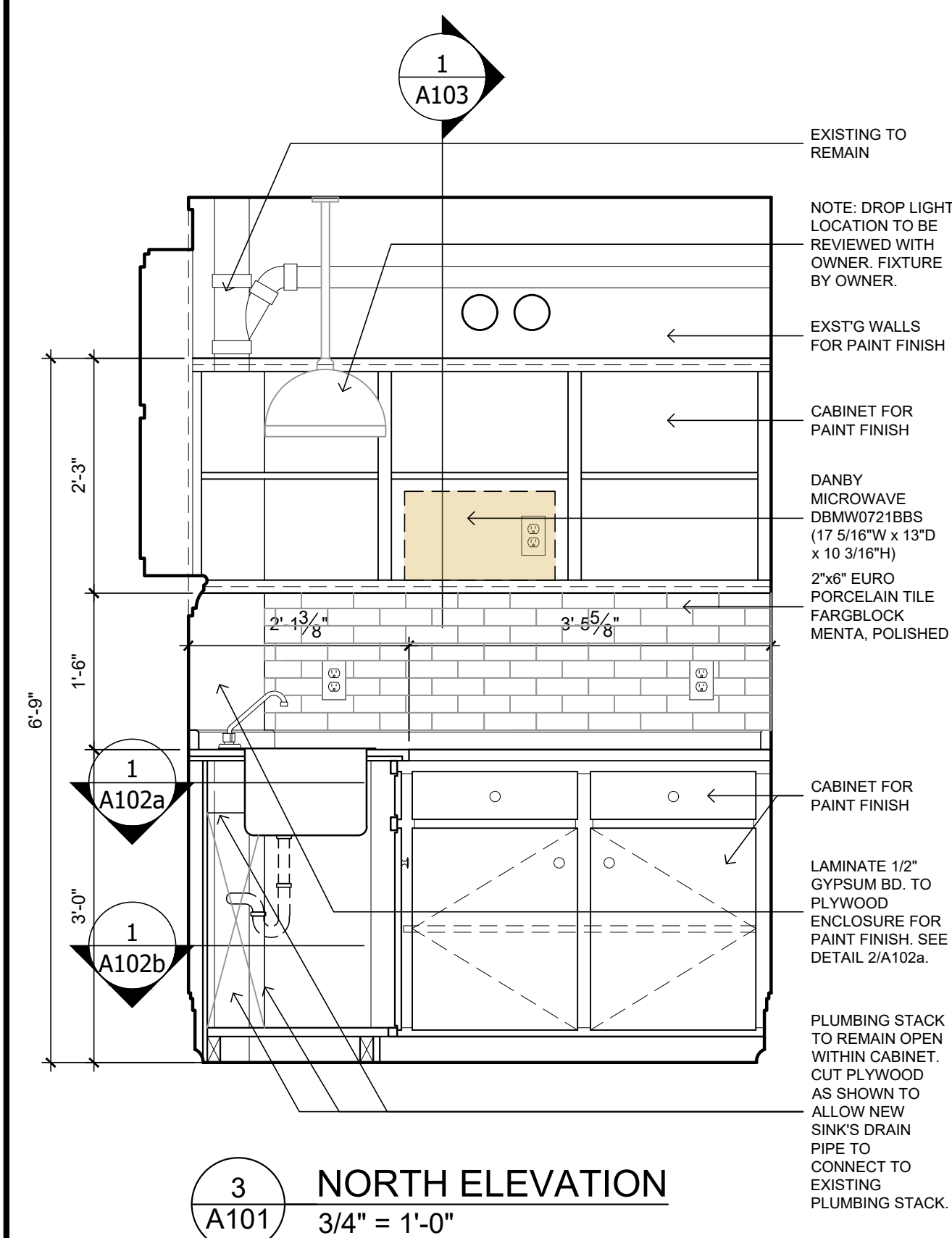
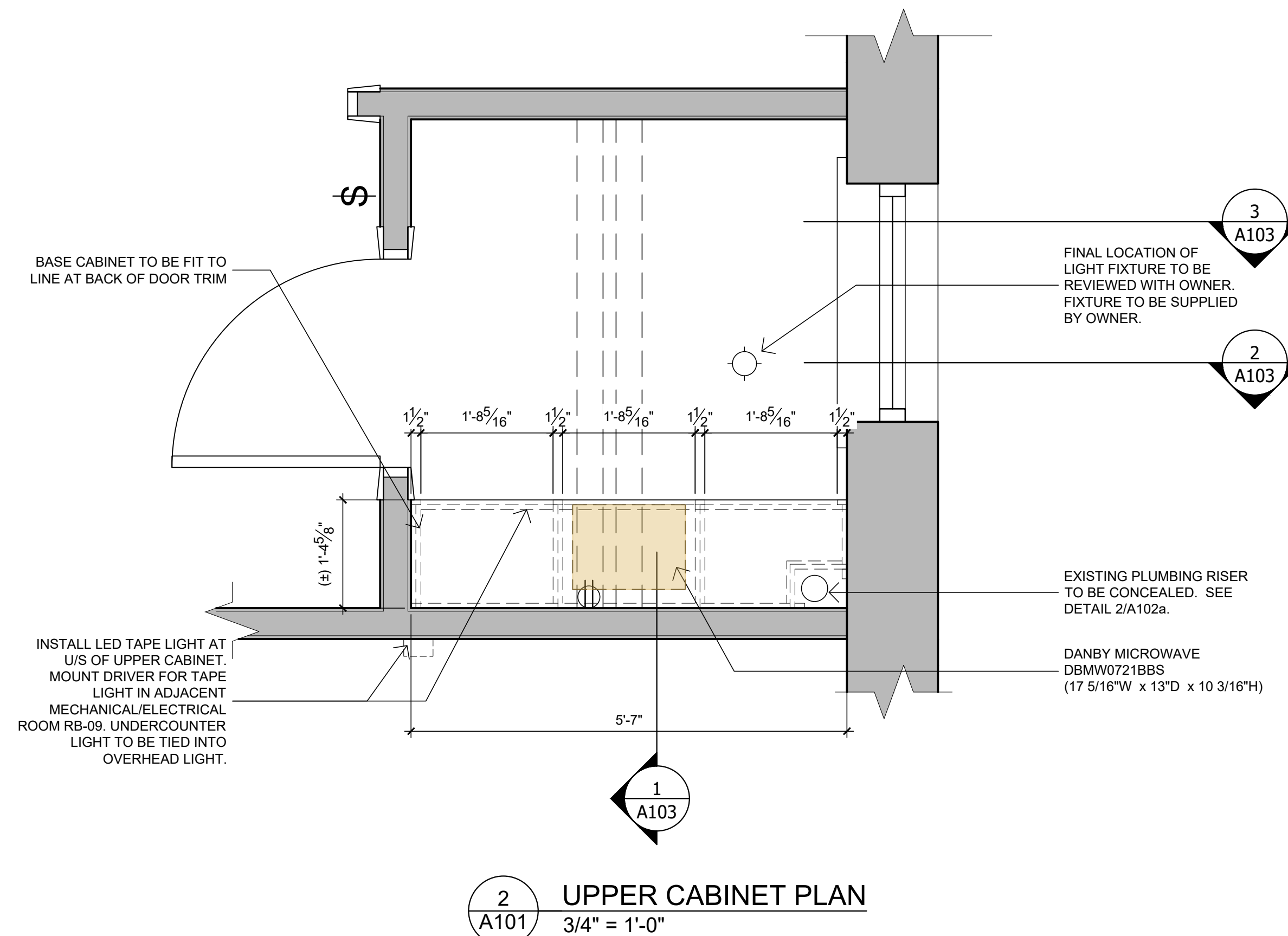
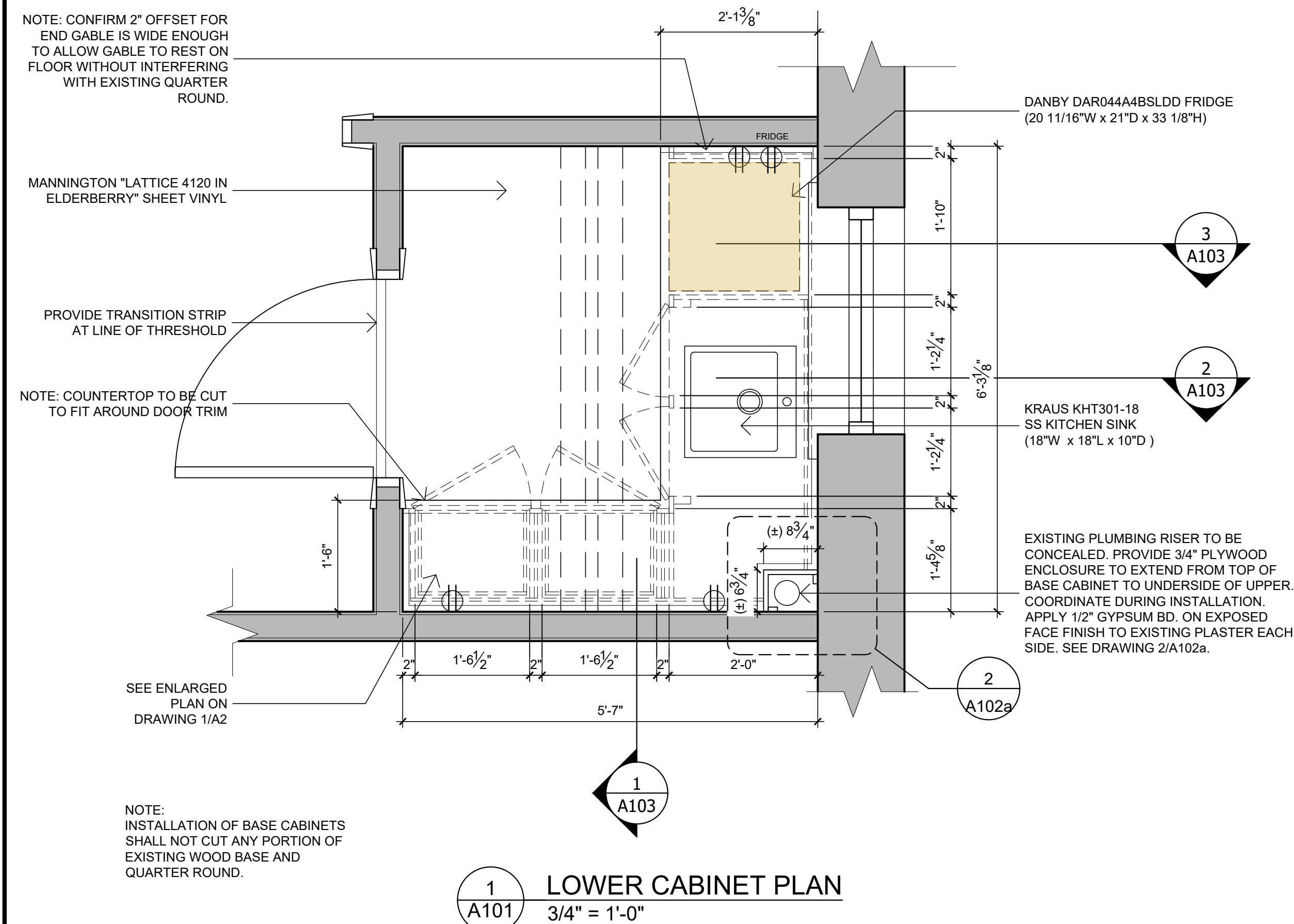
- MECHANICAL:

- |    |  |
|----|--|
| M1 | MECHANICAL NOTES,<br>SCHEDULES, DETAILS,<br>PLUMBING & FIRE PROTECTION |
| M2 | SPECIFICATIONS   |

- ELECTRICAL:

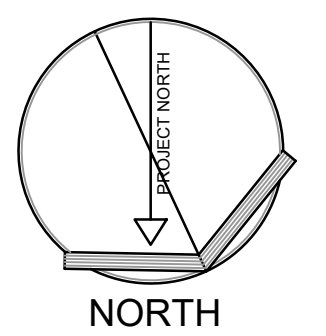
- ## E1 FLOOR PLAN, LEGEND, DETAILS & SPECIFICATIONS





GEORGE ROBB  
ARCHITECT

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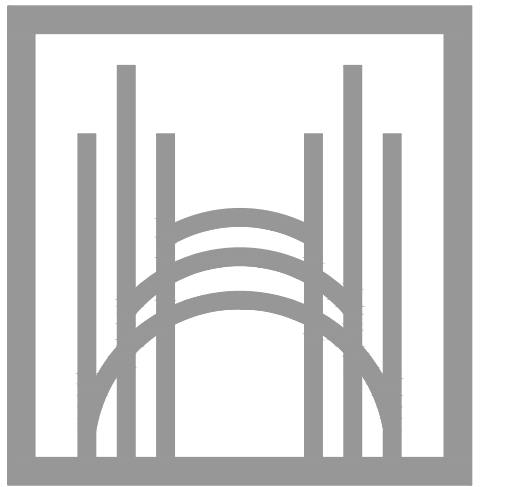
## CABINET PLAN AND ELEVATIONS

WHITEHERN HISTORIC HOUSE  
STAFF KITCHENETTE  
41 JACKSON STREET  
HAMILTON, ON

PROJECT NUMBER	2403
SCALE	AS SHOWN
DATE	JULY 2024
DRAWN	
CHECKED	
SET NO.	DRAWING NO.

# A101

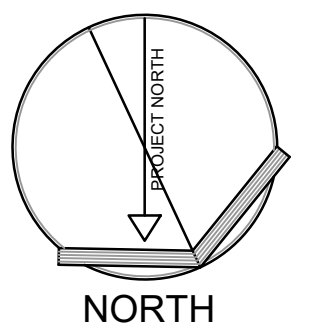




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CITY OF HAMILTON

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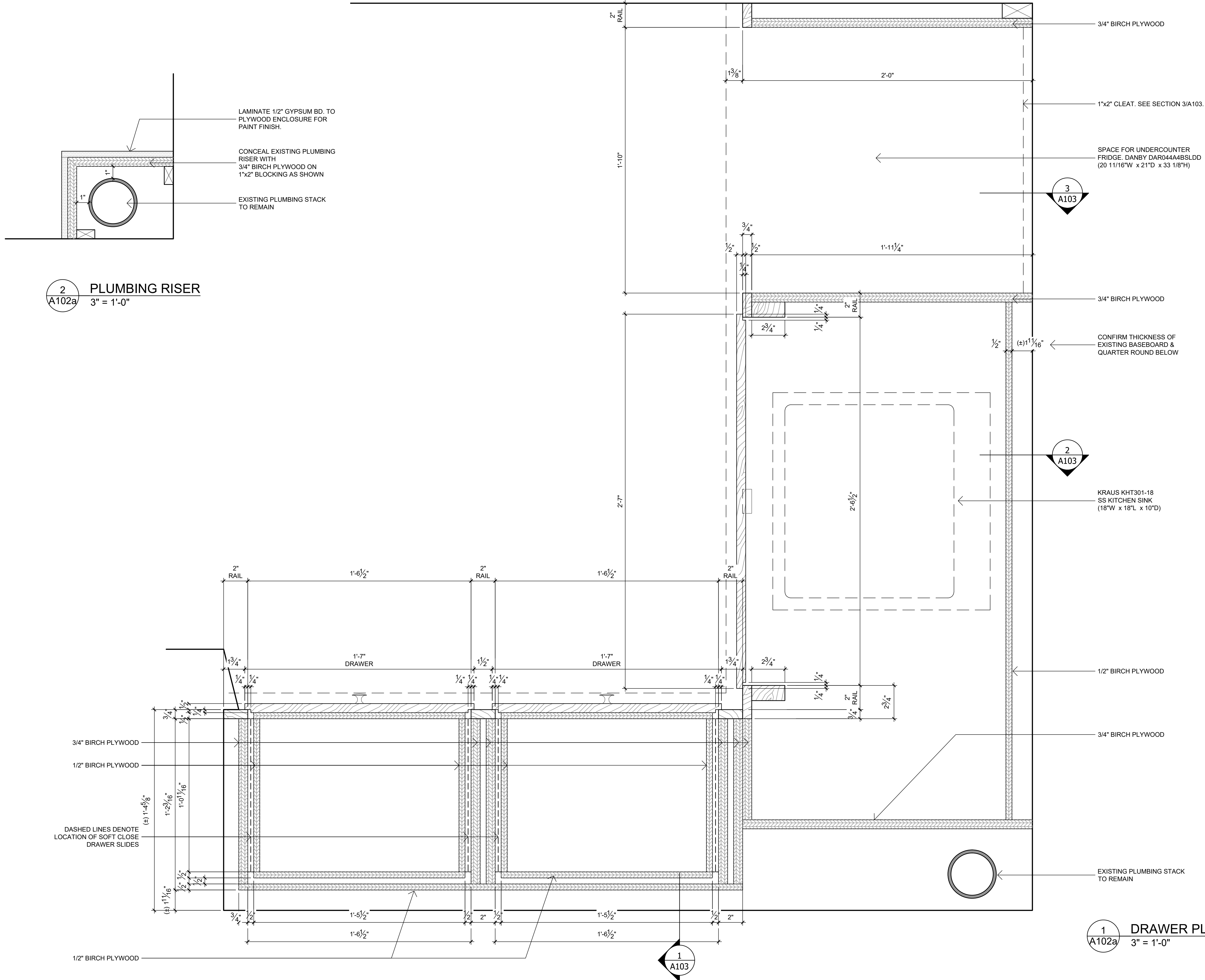
No.	Issue	Date
01	CLIENT COORDINATION	2024.07.29
02	PERMIT/TENDER	2024.09.05

DRAWER PLAN

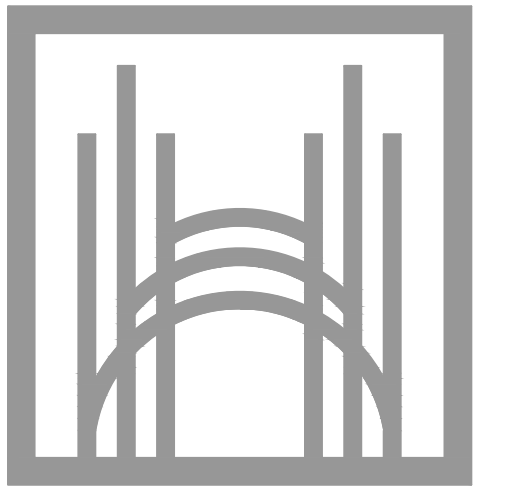
WHITEHERN HISTORIC HOUSE  
STAFF KITCHENETTE  
41 JACKSON STREET  
HAMILTON, ON

PROJECT NUMBER	2403
SCALE	AS SHOWN
DATE	JULY 2024
DRAWN	
CHECKED	
SET NO.	DRAWING NO.

A102a



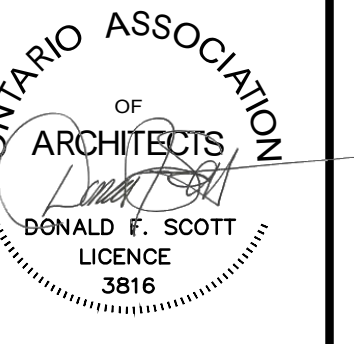
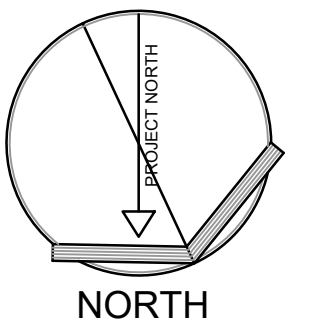
1  
A102a  
DRAWER PLAN  
3" = 1'-0"



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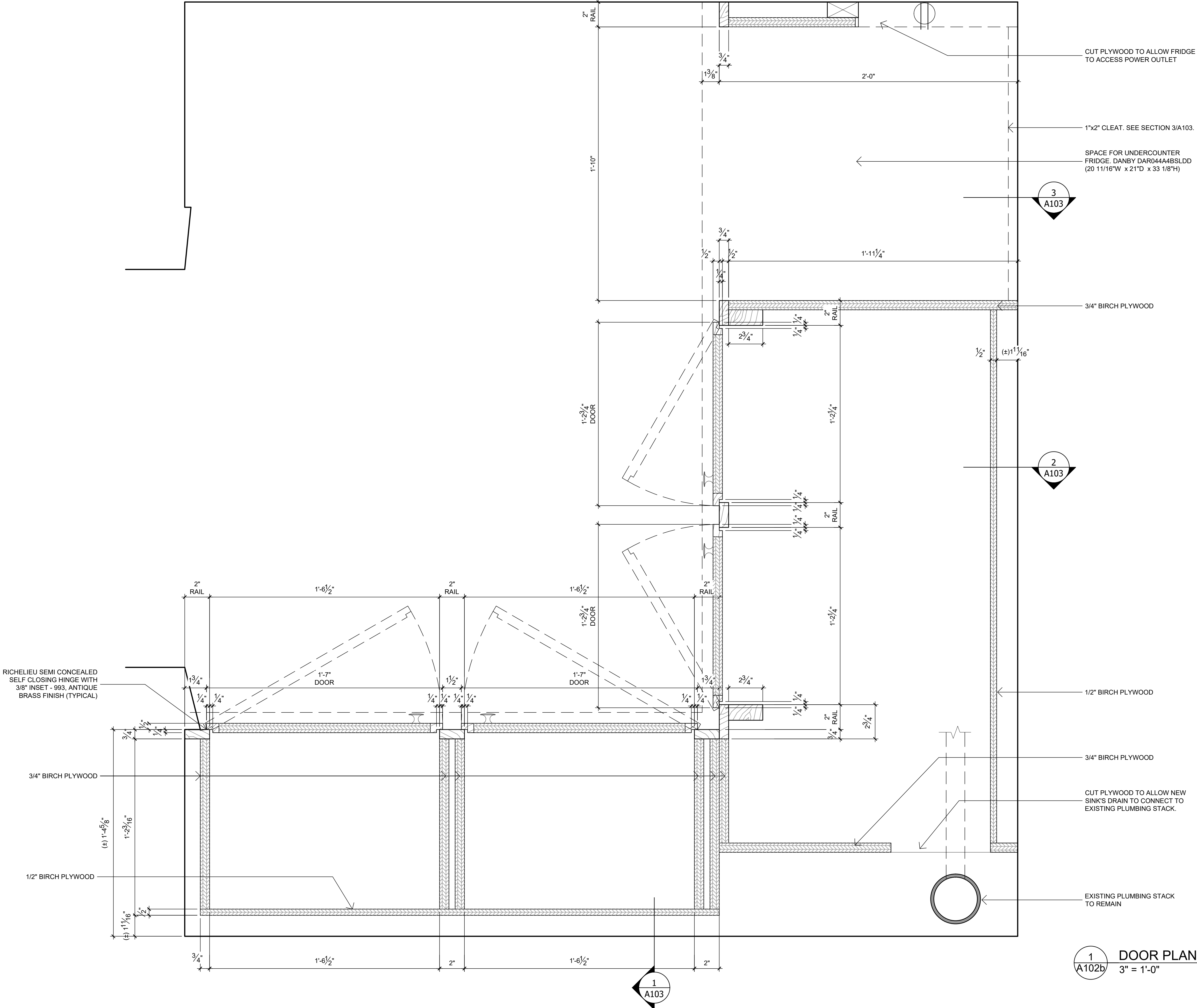
No.	Issue	Date
01	CLIENT COORDINATION	2024.07.29
02	PERMIT/TENDER	2024.09.05

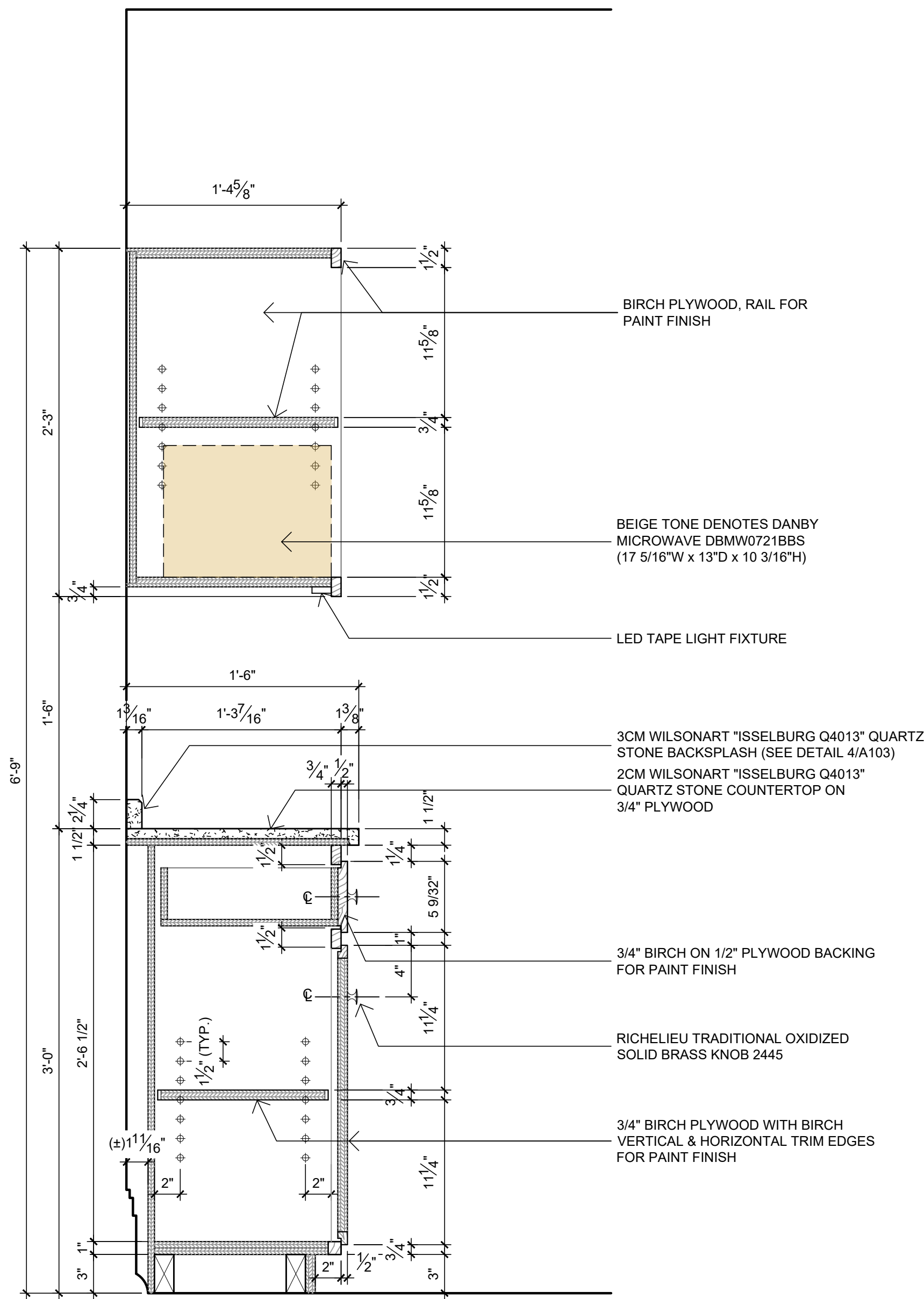
DOOR PLAN

WHITEHERN HISTORIC HOUSE  
STAFF KITCHENETTE  
41 JACKSON STREET  
HAMILTON, ON

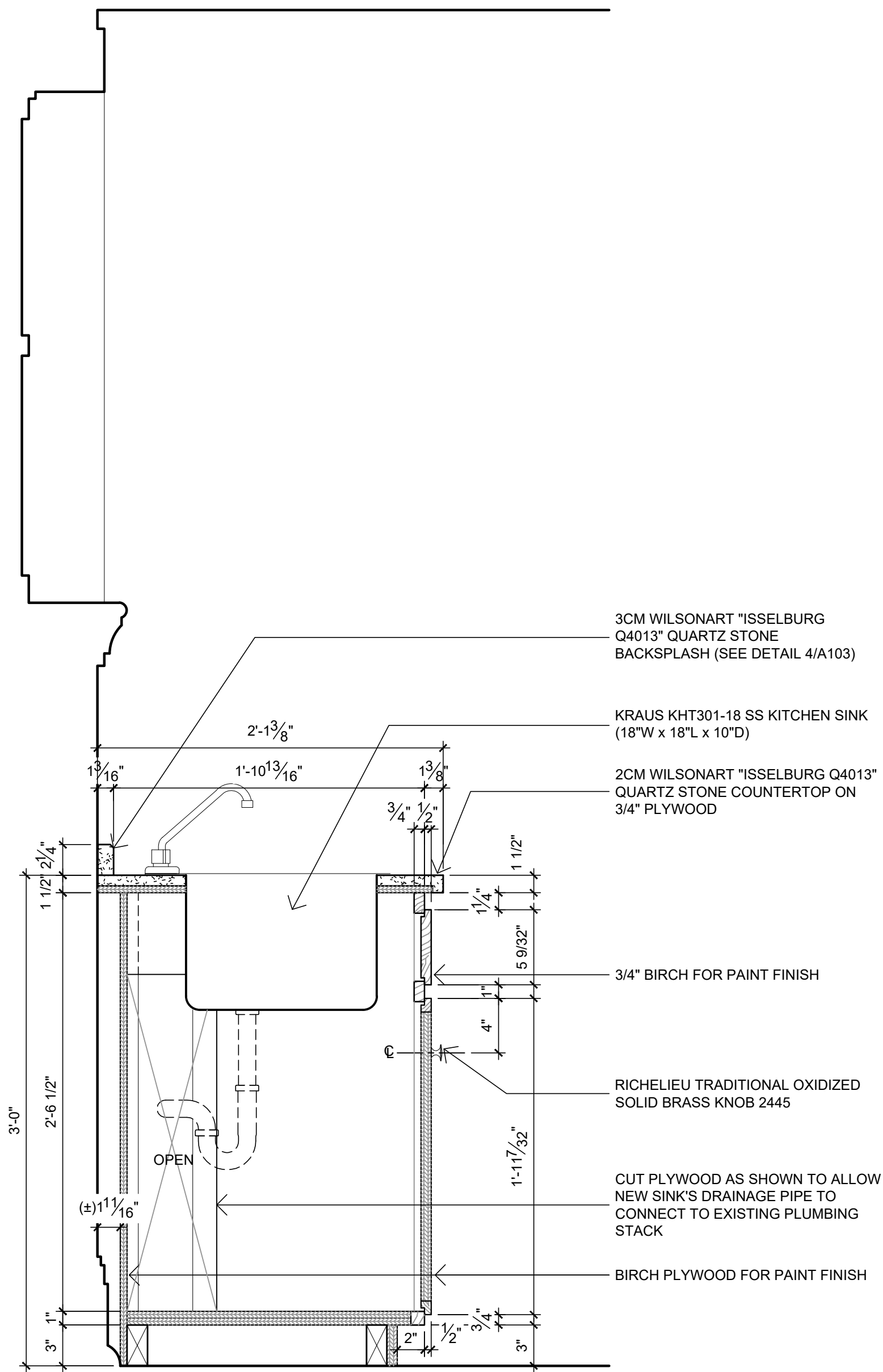
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SCALE	AS SHOWN
DATE	JULY 2024
DRAWN	
CHECKED	
SET NO.	DRAWING NO.

A102b

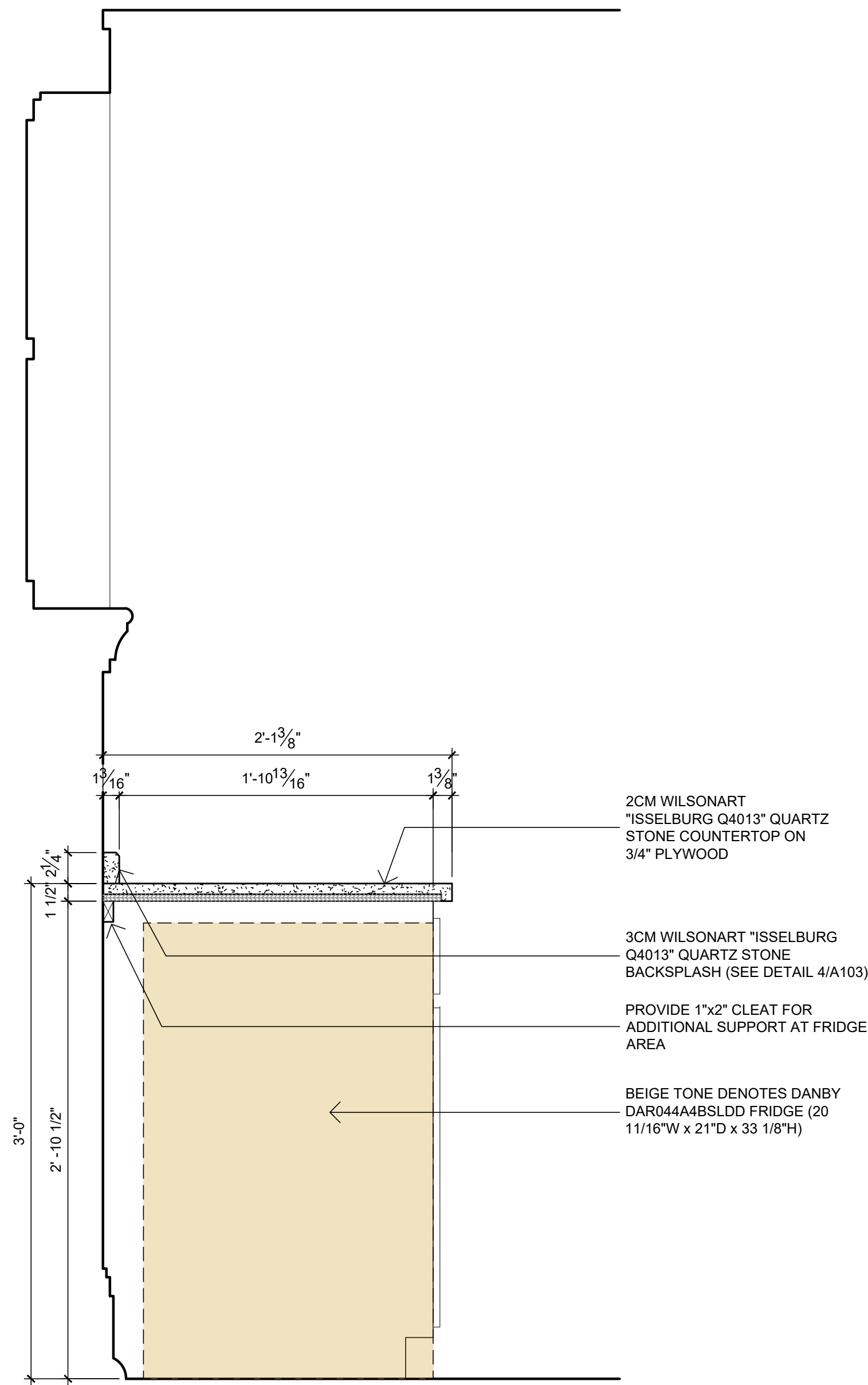




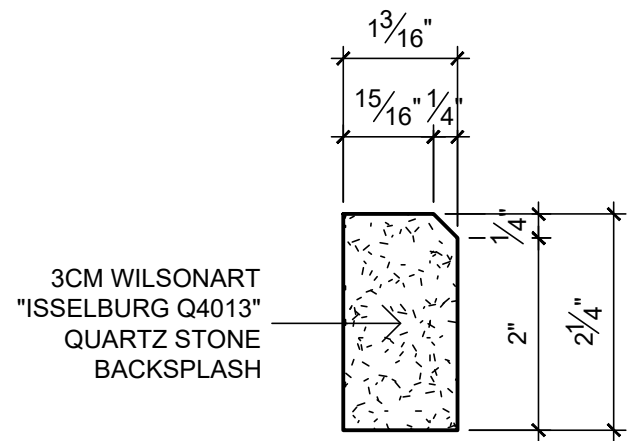
1 CABINET SECTION -1  
A103 1 1/2" = 1'-0"



2 CABINET SECTION -2  
A103 1 1/2" = 1'-0"



3 CABINET SECTION -3  
A103 1 1/2" = 1'-0"



4 BACKSPLASH  
A103 6" = 1'-0"



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CITY OF HAMILTON

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ARCHITECT

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No.	Issue	Date
01	CLIENT COORDINATION	2024.07.29
02	PERMIT/TENDER	2024.09.05

#### SECTION DETAILS

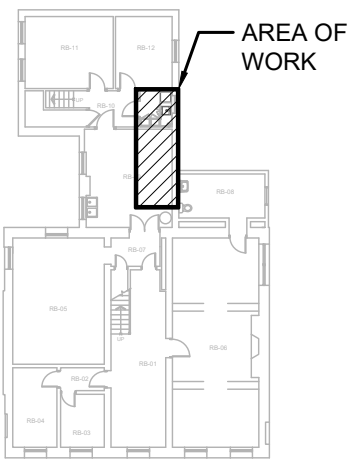
WHITEHERN HISTORIC HOUSE  
STAFF KITCHENETTE  
41 JACKSON STREET  
HAMILTON, ON

PROJECT NUMBER	2403
SCALE	AS SHOWN
DATE	JULY 2024
DRAWN	
CHECKED	
SET NO.	DRAWING NO.

A103



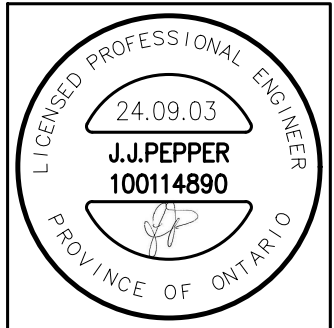
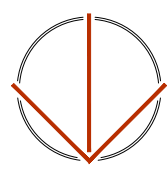
KEYPLAN



REVISIONS

NO.	ISSUED FOR	DATE
00	PERMIT / CONSTRUCTION	24.08.02
01	PERMIT / CONSTRUCTION	24.09.03

NORTH



DESIGN	TM	DRAWN	TM
CHECKED	JP	REVIEWED	JP

PROJECT

WHITEHERN HOUSE  
KITCHENETTE DESIGN

ADDRESS

41 JACKSON STREET,  
HAMILTON, ON

PROJECT NO.

CE-5977

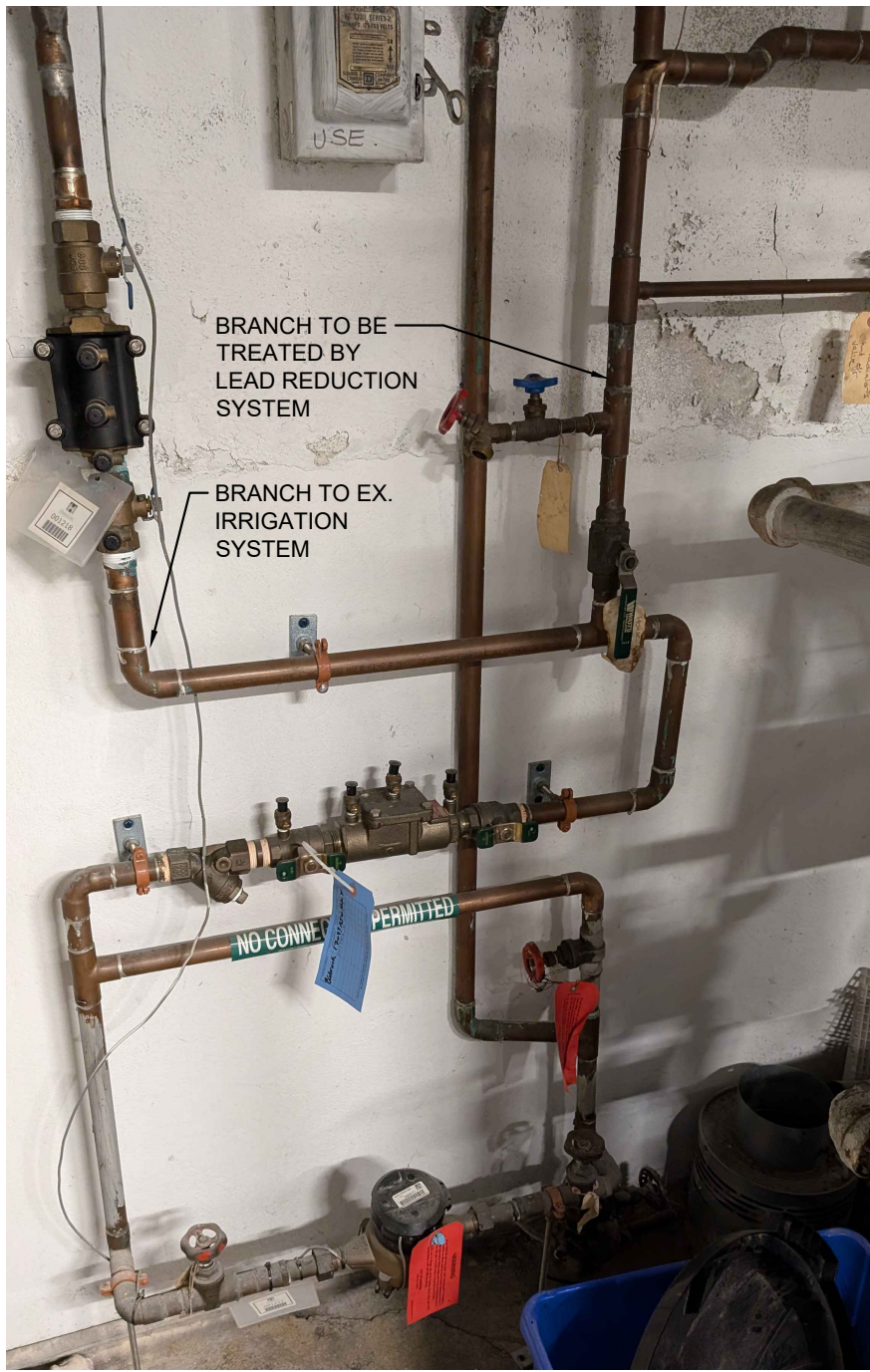
DRAWING TITLE

MECHANICAL NOTES,  
SCHEDULES, DETAILS,  
PLUMBING & FIRE PROTECTION

DRAWING NUMBER

M1 OF 2

PIPING LEGEND	
ITEM	DESCRIPTION
————	NEW ITEM
-----	EXISTING ITEM TO REMAIN
----	BELOW FLOOR PIPING
----	POTABLE (DOMESTIC) COLD WATER (DCW)
----	POTABLE (DOMESTIC) HOT WATER (DHW)
—SAN—	SANITARY DRAIN
—G—	GATE VALVE
—B—	BALL VALVE
—P—	BACKFLOW PREVENTER
DCVA	DOUBLE CHECK VALVE ASSEMBLY
RP	REDUCED PRESSURE ASSEMBLY
—O—	ELBOW TURNED UP
—G—	ELBOW TURNED DOWN
— —	PIPE SINGLE LINE CUTOFF
—FD—	FLOOR CLEAN OUT
—W—	WALL CLEAN OUT
FD	FLOOR DRAIN; FFD: FUNNEL FLOOR DRAIN; HD: HUB DRAIN
—FEX—	FIRE EXTINGUISHER
—N—	NEW CONNECTION TO EXISTING
THIS IS A STANDARD LEGEND. ALL SYMBOLS MAY NOT NECESSARILY BE USED ON DRAWINGS.	



LEAD REDUCTION INSTALLATION REFERENCE DETAIL  
SCALE: N.T.S.

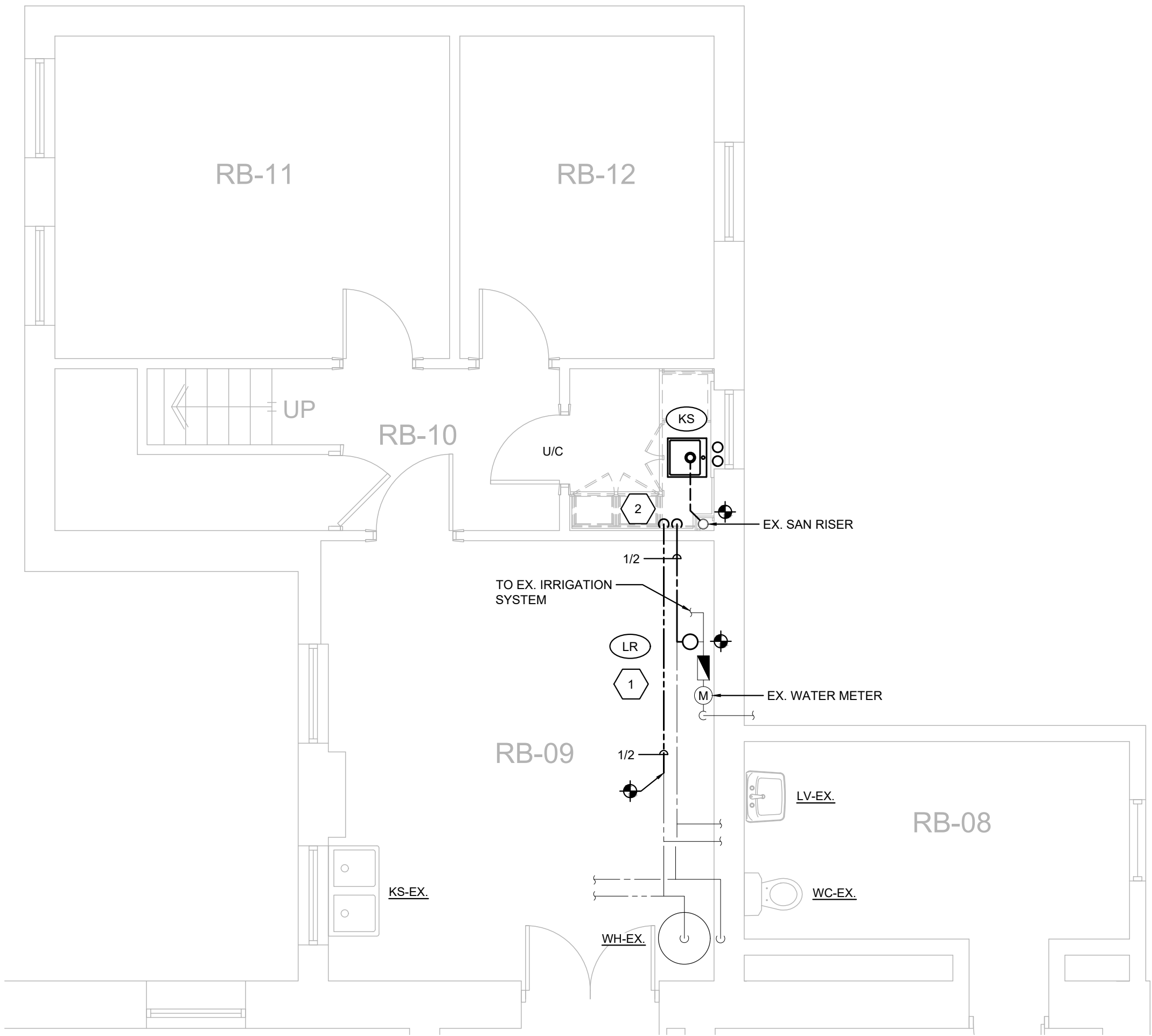
PLUMBING FIXTURE SCHEDULE				
DWG REF	DESCRIPTION	HOT	COLD	DRAIN
KS	SINK: KRAUS MODEL KHT301-18 SINGLE BOWL, STAINLESS STEEL, KITCHEN SINK, OVERALL DIMENSIONS 18"x18"x10" (450x450x250mm), SINGLE REAR CENTER SET DRAIN AND 35mm (1-3/8") TOP SPUD INLET. FAUCET: CHICAGO FAUCETS MODEL 434-ABCP SINGLE LEVER DECK MOUNTED SINK FAUCET WITH PULL DOWN SIDE SPRAY, CHROME PLATED, INTEGRAL TUBULAR BRASS SPOUT, DUAL PATTERN 1.5 USGPM OUTLET. DRAIN: BENEKE SOLID WHITE PLASTIC, OPEN FRONT WITH REMOVABLE BUMPERS, CONCEALED CHECK HINGE AND COVER.	13mm 1/2"	13mm 1/2"	32mm 1-1/4"
LR	AQUATELL PENTAIR LR8860 HEAVY DUTY POLYPROPYLENE WHOLE-HOME LEAD REDUCTION SYSTEM, 40,000 GALLON CAPACITY & 10.0 GPM MAXIMUM FLOW RATE, C/W MODEL 655210-43 REPLACEMENT CARTRIDGE	--	19mm 3/4"	--

GENERAL NOTES: (APPLICABLE TO ALL DRAWINGS)

- THESE DRAWINGS ARE AN INTEGRAL PART OF THE SPECIFICATIONS WHICH ACCOMPANY THEM.
- ALL MATERIALS AND WORKMANSHIP SHALL BE NEW UNLESS NOTED OTHERWISE, FREE OF DEFECTS, AND COMPLY WITH ALL APPLICABLE STANDARDS.
- ALL DIMENSIONS ARE IN INCHES UNLESS NOTED OTHERWISE.
- INSTALL PIPING TIGHT TO UNDERSIDE OF STRUCTURE UNLESS NOTED OTHERWISE.
- DO NOT SCALE DRAWINGS. OBTAIN ALL DIMENSIONS FROM EXISTING ARCHITECTURAL PLANS, SITE INSPECTIONS, AND MANUFACTURER'S SHOP DRAWINGS.
- REFER TO ARCHITECTURAL DRAWINGS FOR LOCATION OF FIRE RATED ASSEMBLIES.
- OPENINGS IN EXTERIOR WALLS AND ROOF ARE TO BE PROPERLY FLASHED AND MADE WEATHERPROOF.
- ALL NECESSARY CUTTING / PATCHING FOR MECHANICAL WORK SHALL BE PROVIDED BY APPROPRIATE TRADE(S) AT CONTRACTOR'S EXPENSE UNLESS NOTED OTHERWISE.
- MAKE GOOD ALL BUILDING COMPONENTS DAMAGED BY WORK OF THIS TRADE TO THE CONSULTANT SATISFACTION.
- PROVIDE ALL SLEEVES, INSERTS AND HANGERS REQUIRED FOR THE WORK. TREAT ALL SLEEVES OR HOLES PIERCING ACOUSTICAL SEPARATIONS FOR INSTALLATIONS OF THIS DIVISION TO MAINTAIN ACOUSTICAL RATING. ALL GAPS SHALL BE PACKED WITH ACOUSTICAL INSULATION AND SEALED AT BOTH ENDS WITH ACOUSTICAL CAULKING. PATCH ALL OPENINGS AROUND INSTALLATIONS OF THIS DIVISION PIERCING FIRE OR SMOKE SEPARATIONS WITH AN APPROVED WATERTIGHT SMOKE AND FIRE STOP SEALANT.
- INSTALL ALL EQUIPMENT & ASSOCIATED PIPING, APPURTENANCES TO PROVIDE MAINTENANCE ACCESS. ALLOW FOR ALL ACCESS DOORS REQUIRED FOR EQUIPMENT INSTALLATIONS & SERVICE. ENSURE PROPER ACCESS DOOR SIZE, TYPE AND FIRE RATING.
- COORDINATE ALL WORK WITH OTHER TRADES AND SUPPLIERS/MANUFACTURERS TO AVOID INTERFERENCES AND CONFLICTS BETWEEN SERVICES. PLAN WORK WELL IN ADVANCE TO ELIMINATE INSTALLATION AND COORDINATE DIFFICULTIES. COOPERATE WITH OTHER TRADES ON SITE TO RESOLVE INTERFERENCES TO SATISFACTORILY COMPLETE THE PROJECT.
- THIS TRADE IS RESPONSIBLE FOR ALL EXCAVATION / BACKFILL REQUIRED TO INSTALL SERVICES SHOWN ON THESE DRAWINGS
- DEBRIS WILL BE KEPT TO A MINIMUM. ON COMPLETION OF CONSTRUCTION AND PRIOR TO THE FINAL INSPECTION AND ACCEPTANCE BY THE OWNER, SITE SHALL BE CLEANED AND ALL SCRAP MATERIALS RESULTING FROM THE WORK SHALL BE REMOVED.
- PRIOR TO THE FINAL INSPECTION, ALL EQUIPMENT SHALL BE CLEANED. ALL CONSTRUCTION DUST AND DIRT SHALL BE REMOVED FROM INSTALLED EQUIPMENT AT THE END OF THE JOB.
- EXISTING INSTALLATIONS SHOWN FOR GENERAL REFERENCE ONLY. ATTEND SITE TO ASSESS WORK PRIOR TO BID SUBMISSION. INCLUDE ALL COSTS TO MODIFY AND / OR EXTEND NEW WORK AS REQUIRED TO MEET DESIGN INTENT. VERIFY ALL EXISTING DUCT / PIPE SIZES & CLEARANCES ON SITE.
- ALL EXISTING MECHANICAL EQUIPMENT TO REMAIN UNLESS NOTED OTHERWISE
- SCHEDULE AND PHASE WORK TO REDUCE INTERFERENCE AND DOWNTIME OF EXISTING SYSTEMS. NOTIFY OWNER'S REPRESENTATIVE OF ALL DOWNTIME PRIOR TO PROCEEDING WITH WORK.
- REMOVE EXISTING CEILING TILES AS REQUIRED TO PERFORM WORK. SAFELY STORE TILES FOR REINSTALLATION AFTER WORK & INSPECTIONS ARE COMPLETE. EXISTING DAMAGED TILES MUST BE IDENTIFIED & REPORTED TO OWNER'S REPRESENTATIVE BEFORE REMOVAL. REPLACE ANY DAMAGED TILES TO MATCH EXISTING.
- ALLOW FOR SCOPING OF EXISTING CONCEALED DRAINAGE PIPING TO VERIFY LOCATION & ROUTING.

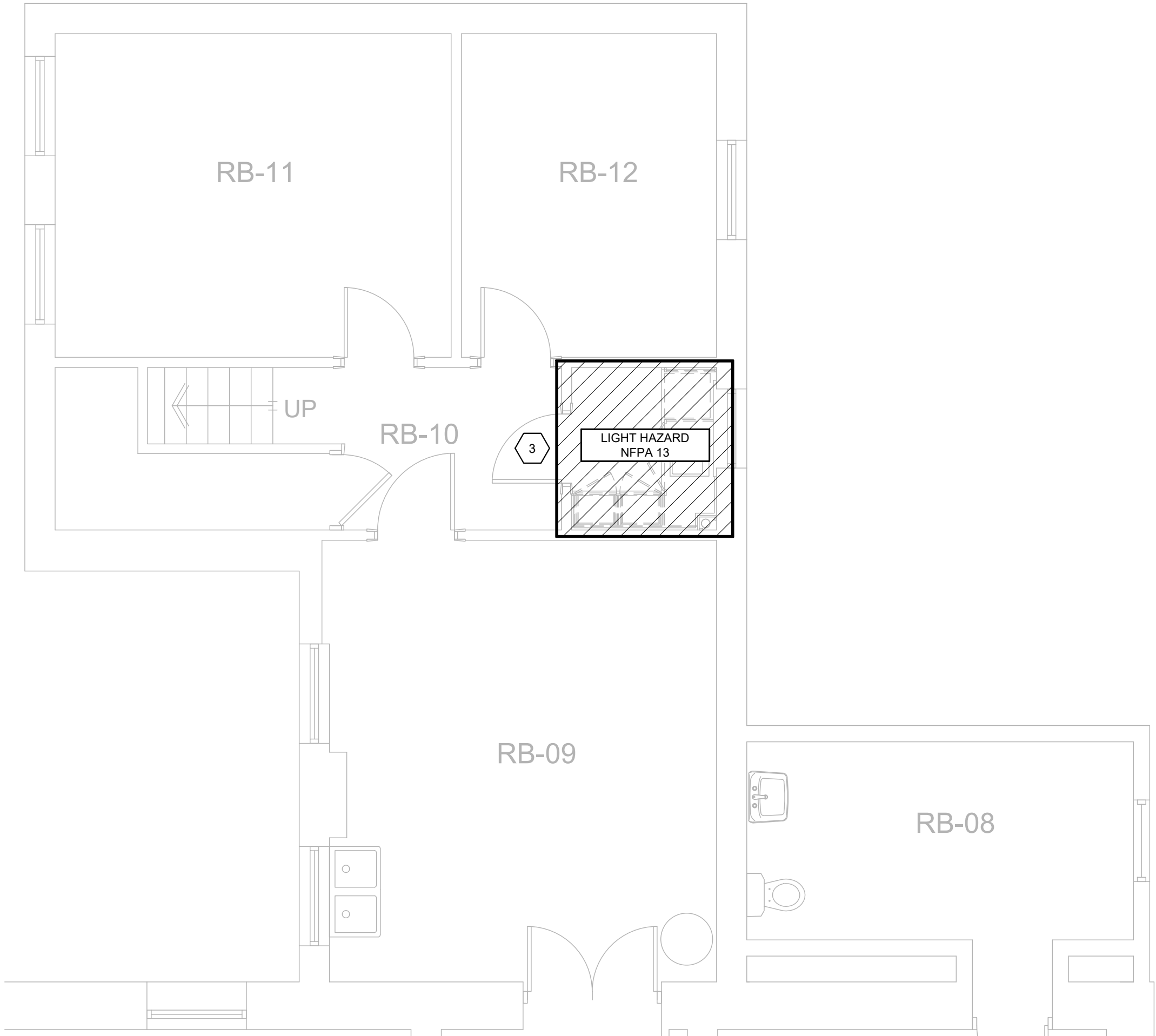
DRAWING NOTES (INDICATED WITH HEXAGONS):

- FACILITATE INSTALLATION OF LEAD REDUCTION SYSTEM ON DOMESTIC COLD WATER PIPING UPSTREAM OF EXISTING WATER HEATER AND NEW & EXISTING FIXTURES, AND DOWNSTREAM OF EXISTING IRRIGATION SYSTEM. REFER TO INSTALLATION DETAIL FOR CLARIFICATION.
- ROUTE DOMESTIC HOT & COLD WATER AND SANITARY PIPING THROUGH MILLWORK TO/FROM KITCHEN SINK.
- REVISE EXISTING SPRINKLER HEAD LOCATIONS TO SUIT REVISED USE OF SPACE AS NECESSARY FOR COMPLIANCE WITH NFPA 13. SUBMIT SPRINKLER DRAWINGS & HYDRAULIC CALCULATIONS FOR APPROVAL BY PROFESSIONAL ENGINEER PRIOR TO COMMENCING WORK.



PARTIAL GROUND FLOOR PLAN - PLUMBING

SCALE: 1/4" = 1'-0"



PARTIAL GROUND FLOOR PLAN - FIRE PROTECTION

SCALE: 1/4" = 1'-0"



1. <u>MECHANICAL GENERAL REQUIREMENTS:</u>		TO BE ORGANIZED WITH BOOKMARKS IN A FORMAT TO MATCH THE SPECIFICATION SECTIONS. ONCE MANUAL IS REVIEWED AND ACCEPTED, PROVIDE PDF VERSION ON ELECTRONIC MEDIA.	3.7. <u>SURFACE FINISHES:</u>	BRASS SOLDER JOINT DRAINAGE FITTINGS TO ASME B16.29 OR ASME B16-29.	5.1.4. <u>SPRINKLER HEADS:</u>	
1.1. <u>GENERAL:</u>			3.7.1. <u>PIPING:</u>	4.3.1.1.3. <u>PVC DWV</u> , TO CAN/CSA-B182.1 OR B182.2. RUBBER RING GASKETS INTEGRAL WITH BELL OR SOLVENT WELD TO ASTM D2564.	5.1.4.1. <u>CONCEALED:</u> ULC LISTED, ORDINARY RATING CHROME PLATED SPRINKLER HEAD WITH COVER PLATE, CONFORMING TO NFPA 13, COMPLETE WITH WHITE COATED TWO-PIECE STYLE ESCUTCHEON TO PERMIT REMOVING CEILING TILES WITHOUT REMOVING SPRINKLERS. ESCUTCHEON PLATES TO BE ADJUSTABLE UP TO 1/2". USE CONCEALED SPRINKLER HEADS IN AREAS WITH FINISHED CEILINGS.	
1.1.1. MAKE SITE VISIT(S) AS NECESSARY BEFORE BID CLOSING TO ESTABLISH AND VERIFY ALL EXISTING CONDITIONS. MAKE ALLOWANCE FOR ANY NEW OR EXISTING SERVICE AND EQUIPMENT RELOCATIONS NECESSARY TO COMPLETE THE WORK AND INCLUDE IN THE BID PRICE. EXTRAS WILL NOT BE ALLOWED FOR FAILURE TO PROPERLY EVALUATE EXISTING CONDITIONS.	1.2.4.2.2. MANUALS SHALL INCLUDE THE FOLLOWING INFORMATION:  CONTACT INFORMATION OF CONSULTANTS AND CONTRACTORS  COMPLETE SET OF FINAL PROJECT SHOP DRAWINGS  MAINTENANCE INSTRUCTIONS, INCLUDING PREVENTIVE MAINTENANCE INSTRUCTIONS FOR COMPONENTS OF EQUIPMENT  FINAL TESTING AND BALANCING REPORT  MANUFACTURERS' WARRANTIES AND GUARANTEES		3.7.1.1. <u>EXPOSED INTERIOR PIPING:</u> FINISH EXPOSED INSULATED PIPING, VALVES AND FITTINGS WITH PVC JACKETING. PVC MUST HAVE ATTAINED 25/50 FIRE RATING, BASED ON CANULC-S102-M88 TESTING.	4.3.1.1.4. <u>PVC SYSTEM 15:</u> TO CSA B182.2. FLAME SPREAD RATING NOT GREATER THAN 25 PER CANULC 102.2 WITH CERTIFICATION LABEL.	5.1.4.2. <u>UPRIGHT:</u> ULC LISTED, PLAIN BRONZE, STANDARD PATTERN, ORDINARY RATING, UPRIGHT TYPE SPRINKLER HEADS CONFORMING TO NFPA 13. USE UPRIGHT SPRINKLER HEADS IN EXPOSED LOCATIONS.	
1.1.2. THE DRAWINGS SHOW THE GENERAL INTENT OF THE WORK, NOT THE DETAILS OF INSTALLATION. CO-ORDINATE THE ROUTING AND INSTALLATION OF ALL MECHANICAL SERVICES WITH ALL EXISTING CONDITIONS, STRUCTURE AND THE WORK OF ALL OTHER TRADES. PROVIDE INSTALLATION DRAWINGS AS REQUIRED.			3.7.1.2. <u>SANITARY PIPING:</u> FINISH INSULATED SANITARY PIPING BELOW BARRIER FREE LAVATORY TRAPS WITH PVC JACKETING. PVC MUST HAVE ATTAINED 25/50 FIRE RATING, BASED ON CANULC-S102-M88 TESTING.	4.3.1.1.5. <u>PVC XFR:</u> TO CSA B182.2. FLAME SPREAD RATING NOT GREATER THAN 25 & SMOKE DEVELOPED CLASSIFICATION NOT GREATER THAN 50 PER CANULC 102.2 WITH CERTIFICATION LABEL.		
1.1.3. DO NOT SCALE MECHANICAL DRAWINGS. TAKE FIELD DIMENSIONS PRIOR TO ANY INSTALLATION.	1.2.4.3. <u>AS-BUILT DRAWINGS:</u>		4. <u>PIPING SYSTEMS:</u>	4.3.1.1.6. <u>POLYETHYLENE:</u> TO CSA B137.1. BUTT FUSION FITTINGS TO ASTM D3261.	5.1.4.3. SPRINKLER HEADS SHALL COME COMPLETE WITH WIRE GUARD WHERE APPROPRIATE.	
1.2. <u>DESCRIPTION:</u> PROVIDE WORK IN ACCORDANCE WITH FULL INTENT AND MEANING OF DRAWINGS AND SPECIFICATIONS. THE WORD "PROVIDE" WHERE USED IN THE CONTRACT DOCUMENTS, IS TO BE INTERPRETED AS "SUPPLY AND INSTALL, ALONG WITH ALL ASSOCIATED HARDWARE AND CONNECTIONS."	1.2.4.3.1. MAINTAIN AN ACCURATE RECORD OF DEVIATIONS AND CHANGES FROM CONTRACT DRAWINGS WITH RED LINE MARKINGS. TRANSFER AS-BUILT MARK-UPS TO DIGITAL DRAWING FORMAT. THIS PROCESS SHOULD BE COMPLETED BEFORE TESTING, BALANCING AND/OR COMMISSIONING. SUBMIT TO THE CONSULTANT WITH THE O&M MANUALS AT COMPLETION OF PROJECT.		4.1. <u>GENERAL:</u>	4.3.1.1.7. <u>GALVANIZED STEEL:</u> TO ASTM A52/A52M.	6. <u>PLUMBING SYSTEM:</u>	
1.3. <u>WORKMANSHIP:</u> PROVIDE ALL NEW MATERIALS AND EQUIPMENT WITH THE APPROPRIATE LISTING (I.E. CSA, ULC, CETL, ETC.) ALL WORKMANSHIP BY THIS TRADE SHALL BE FIRST CLASS, CONFORMING TO INDUSTRY STANDARD PRACTICES FOR SAFETY, ACCESSIBILITY, DURABILITY AND NEATNESS FOR ACCEPTANCE BY THE OWNER'S REPRESENTATIVES.	1.2.4.3.2. FORMAT FILES TO MATCH EXACTLY THE LAYERING SYSTEM AND SYMBOLOGY OF THE CONSULTANT. BIND ALL EXTERNAL REFERENCES.		4.1.1. <u>EXPANSION AND CONTRACTION:</u> INSTALL ALL PIPING SO AS TO BE FREE FROM STRAIN AND DISTORTION DUE TO EXPANSION AND CONTRACTION AS GOVERNED BY REQUIREMENTS OF ANSI B31.1, EXCEPT AS HEREINAFTER MODIFIED. ALLOW FOR EXPANSION AND CONTRACTION BY OFFSETS, EXPANSION U-BENDS OR LOOPS. DO NOT USE EXPANSION JOINTS OF ANY TYPE UNLESS SPECIFICALLY INDICATED ON DRAWINGS.	4.3.1.2. <u>APPLICATION:</u>	6.1. <u>REFERENCE STANDARDS:</u>	
1.4. <u>SLEEVES, HANGERS, INSERTS:</u> PROVIDE ALL SLEEVES, INSERTS AND HANGERS REQUIRED FOR THE MECHANICAL SERVICES. PROVIDE ALL SLEEVES OR HOLES PIERCING ACUSTICAL SEPARATIONS FOR INSTALLATIONS OF THE DIVISION TO MAINTAIN ACUSTICAL RATING. ALL GAPS SHALL BE PACKED WITH ACUSTICAL INSULATION AND SEALED AT BOTH ENDS WITH ACUSTICAL CAULKING. PATCH ALL OPENINGS AROUND INSTALLATIONS OF THIS DIVISION PIERCING FIRE OR SMOKE SEPARATIONS WITH AN APPROVED WATER TIGHT SMOKE AND FIRE STOP SEALANT.	1.2.4.3.3. THE AS-BUILT DRAWINGS SHALL HAVE A VALUE OF \$5,000 UNLESS THE MECHANICAL CONTRACT VALUE IS LESS THAN \$100,000 WHICH SHALL HAVE A \$3,000 OR HIGHER. ONCE AS-BUILT DRAWINGS HAVE BEEN COMPLETED, SUBMITTED AND REVIEWED, PAYMENT WILL BE RELEASED. THIS VALUE IS NOT INCLUDED IN THE AMOUNT REQUIRED BY THE CONSTRUCTION LIEN ACT.		4.1.2. <u>LINES, GRADES AND SLOPES:</u>	4.3.1.2.1. <u>ABOVE GRADE:</u>	6.1.1. CONFORM TO ALL APPLICABLE CODES INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:	
1.5. <u>INTERPRETATION:</u> DIVISION OF THE WORK AMONG SUPPLIERS OR VENDORS AND SUBCONTRACTORS IS SOLELY THE CONTRACTORS RESPONSIBILITY. NEITHER THE OWNER NOR CONSULTANT ASSUMES ANY RESPONSIBILITY TO ACT AS AN ARBITER TO ESTABLISH SUBCONTRACT TERMS BETWEEN SECTORS OR DISCIPLINES OF WORK.	1.2.4.3.4. THIS PROJECT UTILIZED THE FOLLOWING DIGITAL FORMAT(S): AUTOCAD		4.1.2.1. INSTALL LIQUID AND AIR PIPING FREE OF POCKETS AND PITCH TO DRAIN, AT LOW POINTS IN PIPING, WITH VALVES OR TRAPS INSTALLED AS REQUIRED FOR DRAINAGE OF THE PIPING.	4.3.1.2.1.1. <u>PIPING 75 MM (3") AND SMALLER:</u> DWV COPPER	6.1.1.1. <u>CSA-B84.10:</u> SELECTION AND INSTALLATION OF BACKFLOW PREVENTERS	
1.6. <u>COORDINATION BETWEEN TRADES:</u> CO-ORDINATE THE WORK OF THIS TRADE WITH ALL OTHER TRADES ON THE JOB SO THAT THE WORK MAY PROGRESS WITHOUT ANY DELAY. SCHEDULE AND PHASE DEMOLITION AND NEW WORK TO REDUCE INTERFERENCE AND DOWNTIME OF EXISTING SYSTEMS. NOTIFY OWNER'S REPRESENTATIVE OF ALL DOWNTIME PRIOR TO PROCEEDING WITH WORK.	1.2.5. <u>EQUIPMENT NAMEPLATES:</u> PROVIDE LAMINATED WHITE PHENOLIC PLASTIC NAMEPLATES WITH 10 MM HIGH BLACK LETTERS FOR EQUIPMENT INSTALLED UNDER THIS DIVISION. INCLUDE EQUIPMENT NUMBER AND EQUIPMENT NAME GENERALLY AS LISTED ON DRAWING SCHEDULES. SUBMIT LIST OF NAMEPLATES TO CONSULTANT FOR REVIEW PRIOR TO FABRICATION. IF THE OWNER HAS SPECIFIC STANDARDS, FOLLOW THESE STANDARDS.		4.1.2.2. INSTALL PIPING TO FOLLOWING SLOPES:  DRAINAGE PIPING: 1:50 ON DRAINS OF NPS 3 SIZE AND LESS AND 1:100 ON DRAINS OF NPS 4 AND LARGER.  POTABLE (DOMESTIC) WATER PIPING: PITCH TO LOW POINTS SO THAT ALL PIPING MAY BE COMPLETELY DRAINED.	4.3.1.2.1.2. <u>PIPING 150 MM (6") AND SMALLER:</u> PVC DWV	6.1.1.2. <u>CSA-B149.1:</u> NATURAL GAS AND PROPANE INSTALLATION CODE	
1.7. <u>DISCREPANCY:</u> IF A DISCREPANCY IS FOUND IN THE SPECIFICATION OR ON THE DRAWINGS, REQUEST CLARIFICATION PRIOR TO THE END OF THE QUESTION PERIOD SO THAT CLARIFICATION CAN BE PROVIDED IN WRITING.	1.2.6. <u>FIRESTOPPING AND SMOKE SEAL:</u>		4.1.2.3. <u>UNIONS OR FLANGES - PROVIDE IN THE FOLLOWING LOCATIONS:</u>	4.3.2.1. <u>REFERENCE STANDARDS:</u>	6.2. <u>VENTING:</u> PLUMBING VENTING MAY NOT BE SHOWN ON DRAWINGS. PROVIDE A COMPLETE PLUMBING VENTING SYSTEM FOR ALL PLUMBING FIXTURES SHOWN, IN ACCORDANCE WITH OBC SECTION 7.5.	
1.8. <u>REGULATORY REQUIREMENTS:</u> CONFORM TO GOVERNING MUNICIPAL AND PROVINCIAL CODES, RULES AND REGULATIONS AND/OR AUTHORITIES HAVING JURISDICTION.	1.2.6.1. PROVIDE ULC LISTED FIRESTOP SYSTEM TO SEAL AROUND ALL MECHANICAL SERVICES WHICH PENETRATE PART OF A BUILDING ASSEMBLY REQUIRED TO HAVE A FIRE RESISTANCE RATING.		4.1.3.1. FOR BY-PASSES AROUND EQUIPMENT, CONTROL VALVES, DEVICES IN PIPING SYSTEMS, AND ELSEWHERE INDICATED ON DRAWINGS.	4.3.2.1.1. ALL MATERIALS TO BE NSF/ANSI 61 & 372 CERTIFIED.	6.3. <u>STERILIZATION OF POTABLE (DOMESTIC) WATER SYSTEMS:</u>	
1.9. <u>CODES AND STANDARDS:</u>	1.2.6.2. SUBMIT DETAILED SHOP DRAWINGS TO THE CONSULTANT FOR REVIEW, INCLUDING:  -MANUFACTURER'S TECHNICAL, PRODUCT DATA AND INSTALLATION INSTRUCTIONS FOR EACH SPECIFIC TYPE AND LOCATION OF PENETRATION  -CERTIFICATION THAT PROPOSED FIRESTOPPING MATERIALS AND ASSEMBLIES COMPLY WITH CAN4-S115-M  -ULC LISTINGS WITH COPIES OF ULC DATA SHEETS FOR EACH SPECIFIC TYPE AND LOCATION OF PENETRATION		4.1.3.2. AT CONNECTIONS TO EQUIPMENT (LOCATE BETWEEN SHUT-OFF VALVE AND EQUIPMENT).	4.3.2.1.2. <u>COPPER:</u>	6.3.1. FLUSH EACH SYSTEM, AFTER COMPLETION, BY ALLOWING FULL FLOW OF WATER THROUGH SYSTEM FOR A PERIOD OF FIFTEEN MINUTES, OR LONGER WHEN DIRECTED BY CONSULTANT.	
1.9.1. ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE ONTARIO BUILDING CODE, THE ONTARIO FIRE CODE AND ANY OTHER LOCAL REGULATIONS HAVING JURISDICTION OVER THE WORK OF THIS TRADE.			4.1.3.3. PROVIDE DIELECTRIC UNIONS, OR ISOLATING TYPE COMPANION FLANGES, AT ALL CONNECTIONS BETWEEN COPPER TUBING AND FERROUS PIPING.	4.3.2.1.2.1. <u>PIPING:</u> SEAMLESS WATER TUBE TO ASTM B88	6.3.2. AFTER FLUSHING OF THE SYSTEM IS COMPLETED, PROVIDE A 24 HOUR CONTACT STERILIZATION TREATMENT BY TREATING THE WATER WITH 50 PPM OF CHLORINE AS RECOMMENDED IN AWWA SPECIFICATION C-651. AFTER STERILIZATION PERIOD HAS ELAPSED, FLUSH SYSTEM TO REDUCE CHLORINE CONTENT TO AN ACCEPTABLE LEVEL.	
1.9.2. WHERE A CODE OR STANDARD IS REFERENCED, THE LATEST VERSION OF THE CODE OR STANDARD REFERENCED IN THE APPLICABLE BUILDING CODE IS TO BE APPLIED.			4.1.4. <u>PIPING CONNECTIONS TO MAINS:</u>	4.3.2.1.2.2. <u>FITTINGS:</u>	6.4. <u>PLUMBING FIXTURES:</u>	
1.10. <u>SAFETY:</u> COMPLY WITH ALL PROVINCIAL/FEDERAL AND/OR LOCAL SAFETY REGULATIONS, INCLUDING THE OCCUPATIONAL HEALTH AND SAFETY ACT. IN ADDITION, COMPLY WITH ALL OF THE OWNER'S HEALTH AND SAFETY REQUIREMENTS.			4.1.4.1. MAKE BRANCH CONNECTIONS OF STEAM, GAS, AND COMPRESSED AIR PIPING, TO RESPECTIVE HORIZONTAL PIPING OF LARGER DIAMETER, TO UPPER QUADRANT OF LARGER PIPE.	4.3.2.1.2.3. <u>SOLDER JOINT FITTINGS</u> TO ASME B16.18 (CAST) OR B16.22 (WROUGHT) OR  COLD PRESS FITTINGS WITH EPDM SEALING ELEMENT TO ASME B16.18 OR ASME B16.22. INSTALLED USING PROPER TOOL, ACTUATOR, JAWS, AND RINGS AS INSTRUCTED BY THE PRESS FITTING MANUFACTURER.	6.4.1. PROVIDE CSA COMPLIANT PLUMBING FIXTURES.	
1.11. <u>PERMITS AND FEES:</u> OBTAIN ALL PERMITS REQUIRED FOR INSTALLATION OF MECHANICAL TRADES WORK, ARRANGE FOR INSPECTIONS TESTS THEREWITH AND PAY ALL COSTS FOR PERMITS, INSPECTIONS, AND ASSOCIATED FEES. THIS INCLUDES ANY TSSA INSPECTION AND/OR CERTIFICATION. OBTAIN PERMITS IMMEDIATELY AFTER NOTIFICATION OF AWARD OF CONTRACT.			4.1.4.2. MAKE DOWN FEED PIPING CONNECTIONS, TO HORIZONTAL SUPPLY AND RETURN WATER MAINS, ON BOTTOM QUADRANT OF MAINS.	4.3.2.1.3.1. CROSSLINKED POLYETHYLENE PIPING TO CAN/CSA-B137.5. PRESSURE AND TEMPERATURE RATINGS: 93°C (200°F) AT 80 PSI (551 KPA), 82°C (180°F) AT 100 PSI (689 KPA).  50 MM (2") AND SMALLER: CANULC-S102.2 LISTED TO A MAXIMUM OF 25 FLAME SPREAD / 50 SMOKE DEVELOPED WITH NO LIMITATIONS ON SPACING.  65 MM (2-1/2") AND LARGER: CANULC-S102.2 LISTED TO A MAXIMUM OF 25 FLAME SPREAD / 50 SMOKE DEVELOPED WITH RATED FIBERGLASS INSULATION.	6.4.2. PROVIDE PLUMBING FIXTURES AS INDICATED IN SCHEDULE ON DRAWINGS.	
1.12. <u>TAXES:</u> ENSURE THAT PROVINCIAL AND/OR FEDERAL TAXES ARE INCLUDED WHERE REQUIRED.	1.2.7. <u>MECHANICAL PROJECT COMPLIANCE:</u>		4.1.5. <u>SLEEVES:</u>	4.3.2.1.3.2. SEAL PENETRATIONS AT FIRE SEPARATIONS PER CANULC-S115.	6.4.3. CAULK ALL AROUND BASES OF MOP SERVICE SINKS, BUILT-IN BATHTUBS, AND OTHER BUILT-IN FIXTURES.	
1.13. <u>WARRANTY:</u> PROVIDE A WRITTEN WARRANTY FOR ALL MATERIALS, EQUIPMENT AND LABOUR FOR A ONE-YEAR PERIOD TO BEGIN AT THE TIME OF SUBSTANTIAL COMPLETION. COMPLETE ALL WARRANTY REGISTRATION DOCUMENTATION ON BEHALF OF THE BUILDING OWNER. INCLUDE COPIES OF COMPLETED DOCUMENTATION IN OPERATIONS AND MAINTENANCE MANUALS.	1.2.7.1. THE FOLLOWING DOCUMENTS AND/OR CONFIRMATION IS REQUIRED TO ALLOW THE CONSULTANT TO ISSUE OUR LETTER OF GENERAL REVIEWS:  - CONFIRMATION THAT FIRESTOPPING IS COMPLETE		4.1.5.1. INSTALL SLEEVES WHERE PIPING PASSES THROUGH FOUNDATIONS, ABOVE GRADE FLOORS, AND WALLS. FABRICATE SLEEVES OF SCHEDULE 40 BLACK STEEL, PIPE OR TYPE "K" COPPER TUBING.	4.3.2.1.3.3. PIPING WITHIN A FIRE SEPARATION PER CANULC-S101.	6.5. <u>VALVES:</u>	
1.14. <u>CERTIFICATION:</u> PROVIDE MANUFACTURER'S WRITTEN CERTIFICATION OF THE INSTALLATION AND OPERATION OF ALL SYSTEMS AND MAJOR EQUIPMENT.			4.1.5.2. SLEEVES FOR PIPING PASSING THROUGH ROOFS WILL BE SUPPLIED AND INSTALLED UNDER THIS DIVISION.	4.3.2.1.3.4. ALL FITTINGS BY TUBING MANUFACTURER.	6.5.1. SUBMIT SHOP DRAWINGS FOR ALL VALVES.	
1.15. <u>EXISTING SERVICE:</u>			4.1.5.3. MAKE SLEEVES LARGE ENOUGH TO PASS FULL THICKNESS OF PIPE COVERING WHERE SAME IS USED, AND WITH SUFFICIENT CLEARANCE BETWEEN PIPE AND SLEEVE TO ALLOW FOR ANY LATERAL MOVEMENT OF PIPING DUE TO EXPANSION AND CONTRACTION.	4.3.2.1.3.5. 25 YEAR CSA SYSTEM WARRANTY (INCLUDING CONSEQUENTIAL) FROM INSTALLATION DATE.	6.5.2. <u>POTABLE (DOMESTIC) WATER:</u>	
1.15.1. DO NOT SHUT DOWN OR MAKE CONNECTIONS TO ANY EXISTING SERVICE WITHOUT WRITTEN PERMISSION OF THE OWNER.			4.1.5.4. FILL SLEEVES FOR FUTURE USE WITH LIME MORTAR.	4.3.2.1.4. <u>PVC:</u> TO CSA B137.3 OR CSA B137.2. MINIMUM PRESSURE RATING 1,100 KPA (160 PSI).	6.5.2.1. <u>REFERENCE STANDARDS:</u>	
1.15.2. BE RESPONSIBLE FOR DEMOLITION AND REMOVAL OF MECHANICAL EQUIPMENT AND SERVICES DESIGNATED FOR REMOVAL ON DRAWINGS.			4.1.6. <u>ESCUTCHEON PLATES:</u> PROVIDE ESCUTCHEON PLATES ON BARE PIPING PASSING THROUGH FINISHED WALLS OR FLOORS.	4.3.2.2. <u>APPLICATION:</u>	6.5.2.1.1. LEAD FREE, 0.25% CONTENT PER NSF-61/372	
1.16. <u>SITE PROTECTION AND CLEANLINESS:</u> PROTECT ALL WORK AND MATERIALS, BEFORE AND AFTER ERECTION, FROM WEATHER AND OTHER HAZARDS, AND KEEP IN A CLEAN AND ORDERLY MANNER. AVOID ACCUMULATION OF DEBRIS AS THE WORK PROGRESSES. ON COMPLETION OF THE CONSTRUCTION AND PRIOR TO THE FINAL INSPECTION AND ACCEPTANCE BY THE OWNER, CLEAN UP AND REMOVE FROM THE SITE ALL SCRAP MATERIALS RESULTING FROM THE WORK OF THIS TRADE.	2. <u>TESTING AND BALANCING:</u>		4.1.7. <u>PIPE IDENTIFICATION:</u>	4.3.2.2.1. <u>ABOVE GROUND PIPING 75 MM (3") AND SMALLER:</u>	6.5.2.1.2. BRONZE TO ASTM C8930	
1.17. <u>ADJUSTMENT AND OPERATION OF SYSTEMS:</u> WHEN WORK IS COMPLETE, ADJUST ALL EQUIPMENT ITEMS, OF VARIOUS SYSTEMS, FOR PROPER OPERATION WITHIN FRAMEWORK OF DESIGN INTENT, AND OPERATING CHARACTERISTICS AS PUBLISHED BY EQUIPMENT MANUFACTURER.	2.1. <u>PRESSURE TESTS:</u>		4.1.7.1. LABEL PIPING INSTALLED UNDER THIS DIVISION TO INDICATE CONTENT AND DIRECTION OF FLOW. INCLUDE OPERATING PRESSURE OR VACUUM, AS APPLICABLE.	4.3.2.2.1.1. TYPE "L" HARD DRAWN COPPER TUBING. PROVIDE SOLDER TO THREADED ADAPTERS AT SCREWED VALVES OR EQUIPMENT.	6.5.2.1.3. BRASS TO ASTM C46750	
1.18. <u>MISCELLANEOUS STEEL:</u> SUPPLY AND INSTALL MISCELLANEOUS STRUCTURAL SUPPORTS, PLATFORMS, AND BRACES, AS REQUIRED TO HANG OR SUPPORT ALL EQUIPMENT, PIPING AND SIMILAR ITEMS.	2.1.1. PROVIDE PRESSURE TESTS ON ALL PIPING INCLUDED IN THIS CONTRACT. FURNISH ALL PUMPS, COMPRESSORS, GAUGES AND CONNECTORS NECESSARY FOR TESTS.		4.1.7.2. ALL LABELS SHALL BE OF SUFFICIENT WIDTH TO OVERLAP ITSELF.	4.3.2.2.1.2. PEX-A FOR 38 MM (1-1/2") AND SMALLER (ON COMPLETION OF INSTALLATION THE SYSTEM SHALL BE CHARGED WITH POTABLE WATER TO A PRESSURE WHICH MEETS LOCAL PLUMBING CODES. THE SYSTEM SHALL REMAIN AT THIS PRESSURE FOR A MINIMUM OF 24 HOURS TO ENSURE SYSTEM INTEGRITY). PROVIDE COPPER STUB-OUT ELBOWS AT EACH FUTURE CONNECTION. STUB-OUT TO BE MANUFACTURED FROM SEAMLESS COPPER TUBING WITH A MACHINED ASTM F-1807 PEX GARB CONNECTION AND SPIN SEALED OUTLET. FOLLOW MANUFACTURERS INSTRUCTIONS FOR INSTALLATION.	6.5.2.1.4. CAST IRON TO ASTM A126	
1.19. <u>EQUIPMENT INSTALLATION:</u> INSTALL AND START UP ALL ITEMS OF EQUIPMENT, DEVICES AND SYSTEMS IN ACCORDANCE WITH MOST RECENT MANUFACTURER'S PUBLISHED GUIDELINES AND RECOMMENDATIONS. CONTRACTOR IS RESPONSIBLE FOR ASCERTAINING MANUFACTURER'S INSTALLATION GUIDELINES AND RECOMMENDATIONS. TOUCH-UP ALL SHOP PAINTED EQUIPMENT DAMAGED IN TRANSIT OR DURING INSTALLATION TO MATCH ORIGINAL SHOP FINISH.	2.1.2. CONDUCT HYDROSTATIC TESTS FOR A MINIMUM PERIOD OF 2 HOURS, DURING THIS TIME THE PRESSURE SHALL REMAIN CONSTANT.		4.1.7.3. PROVIDE LABELS OF PLASTIC COATED TAPE, WITH SELF-ADHESIVE BACKING SURFACE, FOR INSTALLATION ON INSULATED PIPE, PROVIDE ADHESIVE SUITABLE FOR THIS APPLICATION. CONFORM WITH CAN/CSB-24.3 AND/OR OWNER STANDARDS FOR PRIMARY LABEL COLOUR, AND WITH LEGEND AND DIRECTION ARROWS IN BLACK. PRINT LEGEND IN FULL WHEREVER FEASIBLE, OR A RECOGNIZED ABBREVIATION OF SERVICE INVOLVED.	4.3.2.2.1.3. CPVC: BUILDINGS OF NON-COMBUSTIBLE CONSTRUCTION, HIGH-RISE BUILDINGS AND IN RETURN AIR FLEXUMS. FIRESTOPPING SYSTEMS SHALL BE LISTED UNDER CANULC-S115 AND TESTED WITH A PRESSURE DIFFERENTIAL OF 50 PA.	6.5.2.1.5. STAINLESS STEEL TO ASTM A351	
1.20. <u>CUTTING AND PATCHING:</u> PROVIDE ALL CUTTING AND PATCHING REQUIRED FOR THE WORK OF THIS TRADE. ALL CUTTING AND PATCHING SHALL BE PERFORMED BY TRADE SPECIALIZING IN THE MATERIAL TO BE PATCHED. ALL COSTS FOR CUTTING AND PATCHING RELATED TO THE WORK OF THIS TRADE IN THE BID PRICE, WHERE PIPES AND DUCTS ARE SHOWN PASSING THROUGH EXISTING WALLS, FLOORS, AND ROOF. CUT AND PATCH THE NECESSARY OPENINGS. SHOULD CUTTING, REPAIRING, AND PATCHING OF PREVIOUSLY FINISHED WORK, OF OTHER TRADES, BE REQUIRED TO ALLOW INSTALLATION OF MECHANICAL WORK, PAY ALL COSTS FOR TRADE SECTION CONCERNED TO PERFORM WORK.	2.1.3. FOR PNEUMATIC TESTS, FIRST PRESSURIZE SYSTEM WITH AIR TO APPROXIMATELY ONE-HALF SPECIFIED PRESSURE, BUT NOT TO EXCEED 345 KPA (50 PSIG), AND EXAMINE ALL JOINTS FOR LEAKS WITH A SOAP/SUDS SOLUTION. REPAIR ANY LEAKS.		4.1.7.4. LOCATE LABELS AS FOLLOWS: AT EVERY END OF EVERY PIPE RUN, ADJACENT TO VALVE OR ITEM OF EQUIPMENT SERVICES, ON EACH EXPOSED PIPE PASSING THROUGH WALL, PARTITION OR FLOOR AT INTERVALS OF 15 M (50'-0") ALONG EVERY EXPOSED PIPE RUN EXCEEDING 15 M (50'-0") IN LENGTH. AT EVERY ACCESS POINT ON CONCEALED PIPING.	6.5.2.1.6. CPVC RATED TO 1,600 KPA (232 PSI) AT 23°C (73°F)	6.5.2.1.7. ALL PRESSURE RATINGS, SIZES TO MSS SP-25	
1.21. <u>SPARE PARTS / TOOLS TO BE FURNISHED:</u>	2.1.4. FORWARD COPIES OF ALL FINAL TESTS ON ALL PRESSURE AND DRAINAGE PIPING TO CONSULTANT.		4.2. <u>HANGERS AND SUPPORTS:</u>	6.5.2.2. <u>ISOLATION / SHUT-OFF:</u> 2 PIECE BRASS OR BRONZE BODY, 1.034 KPA (150 PSI) 80 WOG RATING, FULL PORT, STAINLESS STEEL BALL, LOCKING LEVER HANDLE WITH INSULATION STEM EXTENSION, SOLDERED, THREADED OR PEX CONNECTIONS. MANUFACTURED TO MSS SP-110.	6.5.2.2.1. LEAD FREE, 0.25% CONTENT PER NSF-61/372	
1.21.1. ALL SPECIALITY TOOLS NECESSARY FOR EQUIPMENT INSTALLED IN THIS PROJECT.			4.2.1. <u>GENERAL:</u>	6.6. <u>PLUMBING SPECIALTIES:</u>	6.5.2.2.2. BRONZE TO ASTM C8930	
1.22. <u>CHANGES IN THE WORK:</u> CHANGES TO THE CONTRACT REQUIRING ADDITIONS TO OR DELETIONS FROM THE WORK OF THIS DIVISION SHALL BE CARRIED OUT UPON WRITTEN REQUEST OF THE CONSULTANT. EXTRAS TO THE CONTRACT OR CREDITS SHALL BE SUBMITTED WITH A COMPLETE COST BREAKDOWN AS FOLLOWS:  - MATERIALS, QUANTITIES AND UNIT PRICES FOR ALL EQUIPMENT REQUIRED OR DELETED  - UNIT HOURS  - TOTAL MATERIAL COST  - TOTAL HOURS  - HOURLY RATE (REFER TO SUPPLEMENTARY CONDITIONS AND GENERAL CONTRACT)  - TOTAL OVERHEAD AND PROFIT (REFER TO SUPPLEMENTARY CONDITIONS AND GENERAL CONTRACT)	3. <u>MECHANICAL INSULATION:</u>		4.2.1.1. PIPE HANGERS & SUPPORTS TO CSA B214 & MSS SP-58.	6.6.1. <u>WATER HAMMER ARRESTORS:</u> PROVIDE IN ACCORDANCE WITH THE PLUMBING AND DRAINAGE INSTITUTE STANDARD PDI-WH-201. ARRESTORS SHALL BE COPPER CONSTRUCTION WITH BELLOWS SIZED TO PDI WH-201 AND PRE-CHARGED FOR OPERATION IN TEMPERATURE RANGE -0.5C TO 82C (33F TO 180F) AND A MAXIMUM 10.6 BAR (150 PSI) WORKING PRESSURE.	6.5.2.2.3. BRASS TO ASTM C46750	
	3.1. WHERE INSULATION THICKNESS IS NOT IDENTIFIED, COMPLY WITH ASHRAE 90.1 REQUIREMENTS.		4.2.1.2. SUPPORT OR SUSPEND ALL PIPING WITH NECESSARY HANGERS, STRUCTURAL SUPPORTS AND/OR BRACKETS AS REQUIRED, TO PREVENT SAGGING, WARPING AND VIBRATION.	6.6.1.1. <u>WATER HAMMER ARRESTORS:</u> PROVIDE IN ACCORDANCE WITH THE PLUMBING AND DRAINAGE INSTITUTE STANDARD PDI-WH-201. ARRESTORS SHALL BE COPPER CONSTRUCTION WITH BELLOWS SIZED TO PDI WH-201 AND PRE-CHARGED FOR OPERATION IN TEMPERATURE RANGE -0.5C TO 82C (33F TO 180F) AND A MAXIMUM 10.6 BAR (150 PSI) WORKING PRESSURE.	6.5.2.2.4. CAST IRON TO ASTM A126	
	3.2. ALL PRODUCTS TO HAVE FLAME SPREAD RATING LESS THAN 25 AND SMOKE DEVELOPED CLASSIFICATION LESS THAN 50 IN COMPLIANCE WITH CANULC-S102.		4.2.1.3. DO NOT ALLOW LOADS, OF ANY NATURE, TO BE TRANSMITTED THROUGH PIPING CONNECTIONS TO EQUIPMENT.		6.5.2.2.5. STAINLESS STEEL TO ASTM A351	
	3.3. PROVIDE A CONTINUOUS VAPOUR BARRIER ON ALL COLD SYSTEMS.		4.2.1.4. PROVIDE SUITABLY DAMPENED SPRING HANGERS FOR FIRST THREE SUPPORTS FROM EQUIPMENT CONNECTION ON PIPING SUBJECT TO EXCESSIVE MOVEMENT.		6.5.2.2.6. CPVC RATED TO 1,600 KPA (232 PSI) AT 23°C (73°F)	
	3.4. <u>DEFINITIONS:</u>  CONCEALED: INSULATED MECHANICAL SERVICES AND EQUIPMENT IN SUSPENDED CEILINGS AND NON ACCESSIBLE CHASES AND FURRED IN SPACES.  EXPOSED: NOT CONCEALED		4.2.1.5. DO NOT HANG ANY PIPE, FROM ANOTHER PIPE OR FROM ROOF DECK, UNLESS SPECIFICALLY INDICATED ON DRAWINGS.		6.5.2.2.7. ALL PRESSURE RATINGS, SIZES TO MSS SP-25	
	3.5. <u>INSULATION TYPES:</u>		4.2.1.6. PROVIDE DIELECTRIC SEPARATION AS REQUIRED.		6.5.2.2.8. ISOLATION / SHUT-OFF: 2 PIECE BRASS OR BRONZE BODY, 1.034 KPA (150 PSI) 80 WOG RATING, FULL PORT, STAINLESS STEEL BALL, LOCKING LEVER HANDLE WITH INSULATION STEM EXTENSION, SOLDERED, THREADED OR PEX CONNECTIONS. MANUFACTURED TO MSS SP-110.	
	3.5.1. <u>PGF - PRE-FORMED GLASS FIBRE:</u> FIBROUS GLASS SPLIT SECTIONAL PIPE INSULATION CONFORMING TO CANULC C-5702, WITH FACTORY APPLIED VAPOUR BARRIER JACKET TO ASTM C921 AND SELF-SEAL LAP JOINT.		4.2.2. <u>HANGERS:</u>			
	3.5.2. <u>FGF - FLEXIBLE GLASS FIBRE:</u> ASTM C553 FLEXIBLE NON-COMBUSTIBLE BLANKET, WITH FACTORY APPLIED VAPOUR BARRIER JACKET TO ASTM E96/E96M. THERMAL CONDUCTIVITY TO ASTM C518.		4.2.2.1. FOR ALL INSULATED PIPING UP TO NPS 4, CARRYING LIQUIDS AT TEMPERATURES 10.5°C (51°F) AND HIGHER, USE STANDARD WEIGHT CLEVIS HANGERS.	4.3. <u>FIRE PROTECTION:</u>		
	3.5.3. <u>RGF - RIGID GLASS FIBRE:</u> ASTM C612 RIGID NON-COMBUSTIBLE BLANKET, WITH FACTORY APPLIED VAPOUR BARRIER JACKET TO ASTM E96/E96M. THERMAL CONDUCTIVITY TO ASTM C518.		4.2.2.2. FOR INSULATED PIPING CARRYING LIQUIDS AT A TEMPERATURE OF 10°C (50°F) OR LESS, USE ELONGATED CLEVIS TYPE HANGERS.	4.3.1. <u>GENERAL:</u>		
	3.5.4. <u>CF - CELLULAR FOAM:</u> ASTM C534/C534M. FLEXIBLE, CELLULAR ELASTOMERIC, MOULDED OR SHEET. COATING: URETHANE. COATING: USE WATERPROOF VAPOUR BARRIER ADHESIVE. EXPOSED INSULATION TO HAVE WHITE FINISH.		4.2.2.3. PROVIDE INSULATION PROTECTION BEARING PLATES AT ALL HANGERS AND SUPPORTS FOR ALL INSULATED PIPING.	5.1.1.1. PROVIDE A SPRINKLER SYSTEM TO PROTECT THE COMPLETE BUILDING, EXISTING AND NEW. DESIGN FOR HAZARD OCCUPANCY IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA NO. 13 AND THE ONTARIO BUILDING CODE.		
	3.6. <u>PIPING:</u>		4.2.2.4. FOR NON-INSULATED PIPING USE CLEVIS TYPE OR WROUGHT STEEL CONSTRUCTION.	5.1.1.2. INSTALLATION OF PIPE, FITTINGS, VALVES, AND ACCESSORIES SHALL CONFORM TO NFPA 13. MANUFACTURERS INSTALLATION INSTRUCTIONS AND CONDITIONS OF LISTINGS.		
	3.6.1. DO NOT INSULATE FLANGES OR UNIONS AT CONNECTION TO EQUIPMENT.		4.2.2.5. FOR COPPER TUBING PROVIDE COPPER COATED HANGERS.	5.1.1.3. LOCATION, SPACING, AND POSITION OF SPRINKLER HEADS AND DRAINS SHALL CONFORM TO NFPA 13. REFER TO ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL DRAWINGS AS WELL AS SITE CONDITIONS FOR BUILDING ELEMENTS, EQUIPMENT, AND SERVICES WHICH MAY AFFECT THIS WORK.		
	3.6.2. VALVE OPERATORS AND BALANCING VALVE TEST PORTS TO BE ACCESSIBLE WITHOUT REMOVAL OF INSULATION.		4.2.2.6. ATTACH HANGER RODS, TO BUILDING STRUCTURE, BY MEANS OF MALLEABLE IRON BEAM CLAMPS OR CONCRETE INSERTS.	5.1.1.4. LOCATE SPRINKLER HEADS IN POSITIONS ACCEPTABLE TO THE ARCHITECT AND NFPA 13. IN "T" BAR CEILING THIS IS GENERALLY CENTER OF TILE OR AT QUARTER POINTS WITH SPRINKLERS LOCATED SYMMETRICALLY WITH EACH OTHER IN THE AREA OR ROOM. SECTION OF SPRINKLER HEAD TYPES SHALL BE AS INDICATED ON DRAWINGS.		
	3.6.3. PIPE INSULATION INSERTS AND SHIELDS: PROVIDE RIGID INSERTS AND SHIELDS AT ALL HANGER SUPPORTS WHERE PIPING IS INSULATED. INSERT THICKNESS TO MATCH INSULATION THICKNESS. INSERT TO BE HYDROCAL CALCIUM SILICATE RIGID PIPE INSULATION. INSERT AND SHIELD TO PROTECT BOTTOM HALF OF PIPE. SHIELD TO BE FABRICATED FROM GALVANIZED STEEL. SHIELD COLOUR TO MATCH COLOUR OF INSULATION FINISH. SHIELD AND INSERT LENGTH TO BE AS FOLLOWS:  NOMINAL PIPE SIZE      INSERT LENGTH  MM (IN)                      MM (IN)  40-65 (1-1/2 - 2-1/2)      250 (10)		4.2.3. <u>HANGER SPACING:</u>	5.1.2. <u>SUBMITTAL:</u> PREPARE AND SUBMIT COMPLETE PLANS, INSTALLATION AND HYDRAULIC CALCULATION SHOP DRAWINGS FOR FIRE PROTECTION WORK TO CONSULTANT, PROVINCIAL AND LOCAL FIRE INSPECTION AUTHORITIES AND TO THE OWNER'S INSURANCE UNDERWRITER. DESIGN TO BE COMPLETED BY FIRE PROTECTION ENGINEER THAT IS QUALIFIED AND INSURED AS REQUIRED BY BUILDING CODE. SHOP DRAWINGS ARE TO BE SEALED AND SIGNED BY THE FIRE PROTECTION ENGINEER. FIRE PROTECTION ENGINEER TO COMPLETE THE COMMITMENT TO GENERAL REVIEW FOR THE FIRE PROTECTION WORK.	5.1.3.2. ARRANGE AND PAY FOR ALL REVIEWS AND INSPECTIONS REQUIRED BY LOCAL INSPECTION AUTHORITY.	
	3.6.4. <u>PIPE INSULATION TYPE AND THICKNESS:</u>		3.6.4.1. <u>PLUMBING:</u>	5.1.3.3. COORDINATE TESTING OF AUTOMATIC SPRINKLER SYSTEMS WITH FIRE ALARM SYSTEM VERIFICATION TO ENSURE THAT ALL DEVICES ARE FULLY TESTED.		
	3.6.4.1.1. <u>POTABLE (DOMESTIC) COLD WATER AND CITY WATER (PGF):</u> 25 MM (1")		3.6.4.1.1. <u>POTABLE (DOMESTIC) HOT WATER (PGF):</u>			
	3.6.4.1.2. <u>POTABLE (DOMESTIC) HOT WATER (PGF):</u>		3.6.4.1.2. <u>SANITARY DRAIN (PGF):</u> 25 MM (1")			
	3.6.4.1.3. <u>SANITARY DRAIN (PGF):</u> 25 MM (1")		3.6.4.1.3. <u>SANITARY DRAIN (PGF):</u> 25 MM (1")			
	3.6.4.1.4. <u>SANITARY DRAIN (PGF):</u> 25 MM (1")		3.6.4.1.4. <u>SANITARY DRAIN (PGF):</u> 25 MM (1")			
	3.6.4.1.5. <u>SANITARY DRAIN (PGF):</u> 25 MM (1")		3.6.4.1.5. <u>SANITARY DRAIN (PGF):</u> 25 MM (1")			
	3.6.4.1.6. <u>SANITARY DRAIN (PGF):</u> 25 MM (1")		3.6.4.1.6. <u>SANITARY DRAIN (PGF):</u> 25 MM (1")			
	3.6.4.1.7. <u>SANITARY DRAIN (PGF):</u> 25 MM (1")		3.6.4.1.7. <u>SANITARY DRAIN (PGF):</u> 25 MM (1")			
	3.6.4.1.8. <u>SANITARY DRAIN (PGF):</u> 25 MM (1")		3.6.4.1.8. <u>SANITARY DRAIN (PGF):</u> 25 MM (1")			
	3.6.4.1.9. <u>SANITARY DRAIN (PGF):</u> 25 MM (1")		3.6.4.1.9. <u>SANITARY DRAIN (PGF):</u> 25 MM (1")			
	3.6.4.1.10. <u>SANITARY DRAIN (PGF):</u> 25 MM (1")		3.6.4.1.10. <u>SANITARY DRAIN (PGF):</u> 25 MM (1")			
	3.6.4.1.11. <u>SANITARY DRAIN (PGF):</u> 25 MM (1")		3.6.4.1.11. <u>SANITARY DRAIN (PGF):</u> 25 MM (1")			
	3.6.4.1.12. <u>SANITARY DRAIN (PGF):</u> 25 MM (1")		3.6.4.1.12. <u>SANITARY DRAIN (PGF):</u> 25 MM (1")			
	3.6.4.1.13. <u>SANITARY DRAIN (PGF):</u> 25 MM (1")		3.6.4.1.13. <u>SANITARY DRAIN (PGF):</u> 25 MM (1")			
	3.6.4.1.14. <u>SANITARY DRAIN (PGF):</u> 25 MM (1")		3.6.4.1.14. <u>SANITARY DRAIN (PGF):</u> 25 MM (1")			
	3.6.4.1.15. <u>SANITARY DRAIN (PGF):</u> 25 MM (1")		3.6.4.1.15. <u>SANITARY DRAIN (PGF):</u> 25 MM (1")			
	3.6.4.1.16. <u>SANITARY DRAIN (PGF):</u> 25 MM (1")		3.6.4.1.16. <u>SANITARY DRAIN (PGF):</u> 25 MM (1")			
	3.6.4.1.17. <u>SANITARY DRAIN (PGF):</u> 25 MM (1")		3.6.4.1.17. <u>SANITARY DRAIN (PGF):</u> 25 MM (1")			
	3.6.4.1.18. <u>SANITARY DRAIN (PGF):</u> 25 MM (1")		3.6.4.1.18. <u>SANITARY DRAIN (PGF):</u> 25 MM (1")			
	3.6.4.1.19. <u>SANITARY DRAIN (PGF):</u> 25 MM (1")		3.6.4.1.19. <u>SANITARY DRAIN (PGF):</u> 25 MM (1")			
	3.6.4.1.20. <u>SANITARY DRAIN (PGF):</u> 25 MM (1")		3.6.4.1.20. <u>SANITARY DRAIN (PGF):</u> 25 MM (1")			
	3.6.4.1.21. <u>SANITARY DRAIN (PGF):</u> 25 MM (1")		3.6.4.1.21. <u>SANITARY DRAIN (PGF):</u> 25 MM (1")			
	3.6.4.1.22.					



ELECTRICAL GENERAL REQUIREMENTS

GENERAL CONDITIONS:

- ALL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE ONTARIO ELECTRICAL SAFETY CODE, THE LOCAL ELECTRICAL SAFETY AUTHORITY INSPECTION OFFICE, THE ONTARIO BUILDING CODE, THE ONTARIO FIRE CODE AND ANY OTHER LOCAL REGULATIONS HAVING JURISDICTION OVER THE WORK OF THIS TRADE.
- BEFORE TENDERING, EXAMINE THE SITE AND ALL DRAWINGS AND SPECIFICATIONS OF ALL TRADES AND BE FAMILIAR WITH THE WORK OF THIS TRADE. NO EXTRAS WILL BE ALLOWED FOR THE FAILURE TO DO SO.
- ALL ELECTRICAL WORK SHALL COMPLY WITH CSA ELECTRICAL BULLETIN APPLICABLE AT TENDER CLOSE, WHERE SPECIFIC BULLETINS ARE NOT NAMED THEY ARE STILL CONSIDERED AN INTEGRAL PART OF THIS SPECIFICATION.
- PROVIDE ALL GROUNDING AND BONDING TO GROUND REQUIRED, REGARDLESS IF NOT SHOWN ON THE DRAWINGS. GROUNDING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE ONTARIO ELECTRICAL SAFETY CODE.
- PROVIDE ALL NEW MATERIALS HAVING CSA, CUL, WARNOCK HERSEY OR OTHER APPROVAL AGENCY LABEL AND LISTING. ALL WORKMANSHIP BY THIS TRADE SHALL BE FIRST CLASS, CONFORMING TO INDUSTRY STANDARD PRACTICES FOR SAFETY, ACCESSIBILITY, DURABILITY AND NEATNESS FOR ACCEPTANCE BY THE OWNERS' REPRESENTATIVES.
- ARRANGE AND PAY FOR ALL PERMITS AND INSPECTION FEES REQUIRED FOR THE WORK OF THIS TRADE. SUBMIT TO THE LOCAL ELECTRICAL INSPECTION DEPARTMENT AND/OR ELECTRICAL SUPPLY AUTHORITY ANY AND ALL DRAWINGS REQUIRED FOR PERMITS, FEES, APPROVALS, EXAMINATIONS AND SERVICES.
- PROVIDE ALL CUTTING AND PATCHING REQUIRED FOR THE WORK OF THIS TRADE. ALL CUTTING AND PATCHING SHALL BE PERFORMED BY QUALIFIED TRADES PERSONS. INCLUDE ALL COSTS FOR CUTTING AND PATCHING RELATED TO THE WORK OF THIS TRADE IN THE TENDER PRICE.
- PROVIDE ALL SLEEVES, INSERTS AND HANGERS REQUIRED FOR THE ELECTRICAL WORK. TREAT ALL SLEEVES OR HOLES PIERCING ACOUSTICAL SEPARATIONS FOR INSTALLATIONS OF THE DIVISION TO MAINTAIN ACOUSTICAL RATING. ALL GAPS SHALL BE PACKED WITH ACOUSTICAL INSULATION AND SEALED AT BOTH ENDS WITH ACOUSTICAL CAULKING. PATCH ALL OPENINGS AROUND INSTALLATIONS OF THIS DIVISION PIERCING FIRE OR SMOKE SEPARATIONS WITH AN APPROVED WATERTIGHT SMOKE AND FIRE STOP SEALANT.
- PROVIDE ACCESS PANELS AS FOLLOWS: SHEET STEEL CONSTRUCTION WITH FACTORY APPLIED PRIME COAT OF PAINT, POSITIVE LATCHING SYSTEM, MINIMUM 18 GAUGE STEEL. PROVIDE HINGED DOORS FOR ALL ACCESS PANELS WITH A SIZE OF 450mm x 450mm (18" x 18") OR LARGER. WHEN THE ACCESS DOOR IS LOCATED IN A FIRE RATED ASSEMBLY OR A FIRE SEPARATION HAVING A FIRE RESISTANCE RATING, PROVIDE ACCESS DOORS WHICH ARE ULC LISTED FOR THE REQUIRED FIRE RESISTANCE RATING ALLOWED BY THE ONTARIO BUILDING CODE.
- TOUCH-UP ALL SHOP PAINTED EQUIPMENT DAMAGED IN TRANSIT OR DURING INSTALLATION TO MATCH ORIGINAL SHOP FINISH.
- AVOID ACCUMULATION OF DEBRIS AS THE WORK PROGRESSES. ON COMPLETION OF THE CONSTRUCTION AND PRIOR TO THE FINAL INSPECTION AND ACCEPTANCE BY THE OWNER, CLEAN UP AND REMOVE FROM THE SITE ALL SCRAP MATERIALS RESULTING FROM THE WORK OF THIS TRADE.
- CO-ORDINATE THE WORK OF THIS TRADE WITH ALL OTHER TRADES ON THE JOB SO THAT THE WORK MAY PROGRESS WITHOUT ANY DELAY. SCHEDULE AND PHASE DEMOLITION AND NEW WORK TO REDUCE INTERFERENCE AND DOWNTIME OF EXISTING SYSTEMS. NOTIFY OWNER'S REPRESENTATIVE OF ALL DOWNTIME PRIOR TO PROCEEDING WITH WORK.
- IN AREAS WHERE SPACE IS LIMITED AND MULTIPLE TRADES ARE INSTALLING SERVICES, COORDINATE INSTALLATION OF SERVICES. PREPARE INTERFERENCE DRAWINGS PRIOR TO CONSTRUCTION TO ENSURE INSTALLATION OF ALL SERVICES IS COORDINATED.
- PRIOR TO THE FINAL INSPECTION, CLEAN ALL ELECTRICAL EQUIPMENT, CLEAN ALL CONSTRUCTION DUST AND DIRT FROM INSTALLED EQUIPMENT AT THE END OF THE JOB. REPAIR ANY DAMAGE CAUSED BY THE ELECTRICAL TRADE TO EXISTING BUILDINGS OR EQUIPMENT, ETC TO THE CONSULTANT'S SATISFACTION.
- UPON COMPLETION OF THE WORK, PROVIDE THE FINAL UNCONDITIONAL CERTIFICATE OF ACCEPTANCE FROM THE LOCAL ELECTRICAL SAFETY AUTHORITY INSPECTION OFFICE.
- PROVIDE A ONE YEAR GUARANTEE ON ALL MATERIALS, AND LABOUR FROM THE DATE OF ACCEPTANCE BY THE OWNER. COMPLETE ALL WARRANTY REGISTRATION DOCUMENTATION ON BEHALF OF THE BUILDING OWNER. SUBMIT COPIES OF COMPLETED DOCUMENTATION IN OPERATIONS AND MAINTENANCE MANUALS.
- ON MULTI-PHASE FEEDERS AND PANELS, ADJUST THE PHASE LOADING SO AS NOT TO EXCEED A PHASE IMBALANCE OF 10% LINE TO LINE, UNDER NORMAL OPERATING CONDITIONS OF THE FEEDER OR PANEL.
- SUBMIT SHOP DRAWINGS IN ELECTRONIC PDF FORMAT FOR THE FOLLOWING EQUIPMENT: BREAKERS, FIRE ALARM DEVICES, EXIT AND EMERGENCY LIGHTING UNITS, ETC. THE SHOP DRAWINGS SHALL BEAR THE NAME OF THE MANUFACTURER, THE MANUFACTURER'S CATALOGUE NUMBER, AND THE CONSULTANT'S DESIGNATION, ALONG WITH ALL PERTINENT INFORMATION PERTAINING TO THAT SPECIFIC PIECE OF EQUIPMENT.
- ALL ELECTRICAL EQUIPMENT SHALL BE MOUNTED PLUMBED TRUE.
- DEVICE BOXES SHOWN BACK TO BACK SHALL BE OFFSET A MINIMUM OF 305mm (12") TO REDUCE SOUND TRANSMISSION BETWEEN ROOMS.
- AS-BUILT DRAWINGS:
  - MAINTAIN AN ACCURATE RECORD OF DEVIATIONS AND CHANGES FROM CONTRACT DRAWINGS WITH RED LINE MARKINGS. TRANSFER AS-BUILT MARK-UPS TO DIGITAL DRAWING FORMAT. THIS PROCESS SHOULD BE COMPLETED BEFORE THE FINAL INSPECTION BY THE CONSULTANT. SUBMIT TO THE CONSULTANT WITH THE O&M MANUALS AT COMPLETION OF THE PROJECT.
  - FORMAT FILES TO MATCH EXACTLY THE LAYERING SYSTEM AND SYMBOLOGY OF THE CONSULTANT. BIND ALL EXTERNAL REFERENCES.
  - THIS PROJECT UTILIZED THE FOLLOWING DIGITAL FORMAT(S): AUTOCAD/PDF.
- WHERE THE WORD PROVIDE IS USED IN THESE SPECIFICATIONS OR ON THE DRAWINGS, IT HAS THE MEANING "PROVIDE AND INSTALL COMPLETE WITH ALL ASSOCIATED MOUNTING HARDWARE AND CONNECTIONS".
- CHANGES IN THE WORK
  - CHANGES TO THE CONTRACT REQUIRING ADDITIONS TO OR DELETIONS FROM THE WORK OF THIS DIVISION SHALL BE CARRIED OUT UPON WRITTEN REQUEST OF THE CONSULTANT. EXTRAS TO THE CONTRACT OR CREDITS SHALL BE SUBMITTED WITH A COMPLETE COST BREAKDOWN AS FOLLOWS: MATERIALS, QUANTITIES AND UNIT PRICES FOR ALL EQUIPMENT REQUIRED OR DELETED, UNIT MAN HOURS, TOTAL MATERIAL COST, TOTAL MAN HOURS, HOURLY RATE, (REFER TO SUPPLEMENTARY CONDITIONS AND GENERAL CONTRACT), TOTAL OVERHEAD AND PROFIT, (REFER TO SUPPLEMENTARY CONDITIONS AND GENERAL CONTRACT).
- ELECTRICAL PROJECT COMPLIANCE
  - PROVIDE THE FOLLOWING DOCUMENTS TO THE CONSULTANT TO ISSUE THE LETTER OF GENERAL REVIEW:
    - ESA INSPECTION REPORT
    - A SIGNED VERIFICATION LETTER FROM THE ELECTRICAL CONTRACTOR CONFIRMING THE FOLLOWING:
      - LIGHTING AND LIGHTING CONTROLS OPERATIONAL

CONDUCTORS & RACEWAYS:

- USE R90 COPPER CONDUCTORS CSA APPROVED FOR THE APPLICATION. CONDUCTORS IN WET LOCATION TO BE RW90. SIZE THE CONDUCTORS SO THAT THE MAXIMUM BRANCH CIRCUIT VOLTAGE DROP DOES NOT EXCEED 3%. MINIMUM CONDUCTOR SIZE IS #12 AWG UNLESS OTHERWISE INDICATED.
- DESIGN IS BASED ON COPPER CONDUCTORS. ALUMINUM CONDUCTORS ARE NOT PERMITTED ON THIS PROJECT.
- ALL CONDUCTORS ARE TO BE INSTALLED IN RACEWAYS AS DESCRIBED BELOW:
  - PVC CONDUIT: IN CONCRETE SLAB, UNDERGROUND BURIED, BELOW SLAB ON GRADE OR EXTERIOR EXPOSED SURFACE RACEWAYS.
  - EMT RACEWAYS: INTERIOR SURFACE RACEWAYS, BRANCH CIRCUIT WIRING FROM PANELS, CONCEALED IN ACCESSIBLE CEILINGS AND INTERIOR WALLS OR IN INTERIOR CONCRETE BLOCK CONSTRUCTION.
  - ARMoured CABLE (BX): FOR FINAL DROPS TO FIXTURES IN CEILING SPACES. (LENGTH NOT TO EXCEED 3M IN THIS APPLICATION) AND FOR EXISTING BLOCK WALLS.
  - SURFACE METAL RACEWAYS (SMR): FOR EXISTING CONSTRUCTION WHERE EXISTING WALLS AND FINISHES ARE TO REMAIN OR NEW SERVICES CANNOT BE FISHED IN EXISTING WALL.
  - OBTAIN PERMISSION FROM THE CONSULTANT PRIOR TO INSTALLATION. COLOUR AND SIZE OF RACEWAYS TO BE CONFIRMED WITH CONSULTANT FOR THE SPECIFIC APPLICATION.
- ALL CONDUIT AND WIRING IS TO BE CONCEALED IN ALL FINISHED AREAS.

DEVICES:

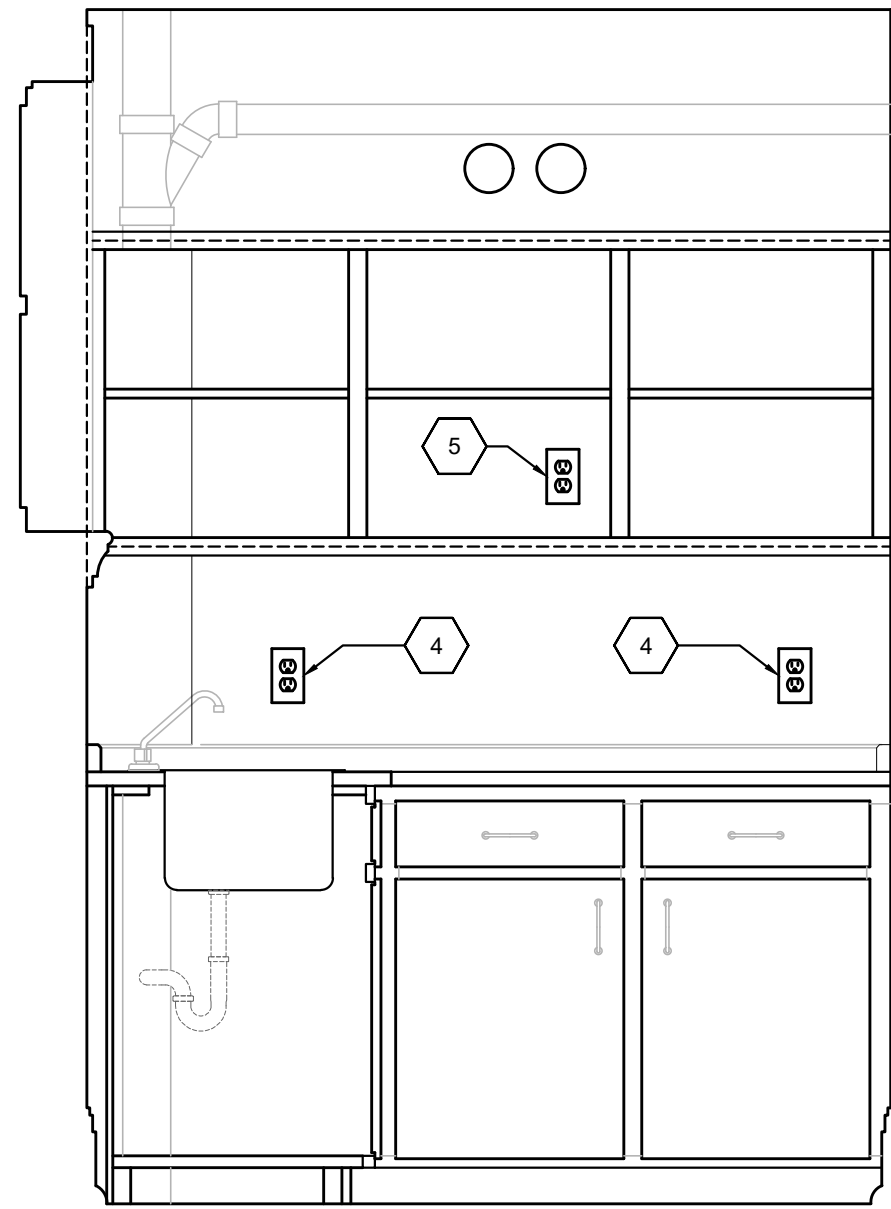
- SWITCHES:
  - SPECIFICATION GRADE RATED 15 AMP, 125 VAC, SINGLE POLE, SINGLE THROW.
- RECEPTACLES:
  - SPEC GRADE, DUPLEX, RATED 15 AMP, 125 VAC, EEMAC 5-15R CONFIGURATION, U-GROUND.
  - GROUND FAULT INTERRUPTING, CLASS A DUPLEX, RATED 15 AMP, 125 VAC, EEMAC 5-15R FIG. TRIP RATED FOR 4-6 MA LEAKAGE CURRENT. C/W PUSH TO TEST AND RESET BUTTONS.
- COVER PLATES:
  - SMOOTHLINE BAKELITE, COLOUR TO MATCH SWITCHES AND RECEPTACLES.
  - BRUSHED STAINLESS STEEL, NUMBER 430, IN OFFICES AND KITCHENS.
- COLOUR OF DEVICES: WHITE
- ALL DEVICES OF THE SAME TYPE, SIZE AND RATING ARE TO BE OF THE SAME MANUFACTURER THROUGHOUT THE PROJECT.

LIGHTING:

- PROVIDE FIXTURES COMPLETE WITH ALL ACCESSORIES MOUNTING HARDWARE, AND LAMPS AS SPECIFIED IN THE FIXTURE SCHEDULE OR AS APPROVED BY OWNERS AS AN EQUAL FIXTURE COMPLETE WITH MIN. 5 YEAR WARRANTY.
- PRODUCTS OF EQUAL QUALITY BY ALTERNATE MANUFACTURERS SUCH AS LITHONIA, SIGNIFY, COOPER, HUBBELL, AND CREE ARE ALSO ACCEPTABLE. PROVIDE PHOTOMETRIC CALCULATIONS ALONG WITH ALTERNATE FIXTURE SELECTIONS TO THE ENGINEER FOR REVIEW AT LEAST TWO FULL BUSINESS DAYS PRIOR TO TENDER CLOSING.
- FIXTURES WHICH ARE MARKED N.I.C. OR FIXTURES WITHOUT MARKINGS ARE TO BE PRICED FOR WIRING AND INSTALLATION ONLY AS PART OF THIS CONTRACT.
- LUMINAIRES TO BE SUPPORTED FROM THE STRUCTURE THROUGH THE USE OF APPROVED CHAINS TO MEET THE REQUIREMENTS OF THE OBC. SUPPORT FROM MECHANICAL OR ELECTRICAL SERVICES IS NOT PERMITTED.

RENOVATIONS ON EXISTING BUILDING:

- RENOVATIONS SHALL BE MADE ON THE EXISTING BUILDING AS INDICATED ON THE DRAWINGS AND SPECIFIED HEREIN. REMOVE ALL EXISTING LUMINAIRES, OUTLET BOXES, SWITCHES, RECEPTACLES, ETC. AS INDICATED ON DRAWINGS. ALL EQUIPMENT REMOVED AND NOT REUSED SHALL REMAIN THE PROPERTY OF THE OWNER UNLESS SPECIFICALLY NOTED OTHERWISE. ALL EQUIPMENT INSTALLED IN RENOVATED AREAS SHALL BE NEW. ELECTRICAL TRADE WILL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING REQUIRED FOR ELECTRICAL INSTALLATION. ALL CONDUIT SHALL BE INSTALLED CONCEALED IN FINISHED AREAS UNLESS SPECIFICALLY NOTED OTHERWISE.
- NEW CONDUCTORS SHALL BE INSTALLED TO THE NEAREST OUTLET AS REQUIRED FOR EQUIPMENT THAT IS RELOCATED. INSTALLATION OF JUNCTION BOXES FOR SPLICING PURPOSES SHALL NOT BE PERMITTED UNLESS SPECIFICALLY CALLED FOR.
- PROVIDE ALL CONDUCTORS REQUIRED TO RECONNECT EXISTING CIRCUITS WHERE REQUIRED THAT MAY BE DISRUPTED DUE TO RENOVATIONS ON THE EXISTING FLOOR.
- PROVIDE NEW BREAKERS WHERE REQUIRED IN EXISTING PANELS TO PICK-UP ADDITIONAL CIRCUITS INDICATED ON THE DRAWINGS.
- ALL EXISTING LUMINAIRES THAT ARE RELOCATED SHALL BE REMOVED, CHECKED, SERVICED, CLEANED, AND RE-LAMPED PRIOR TO RE-INSTALLATION. ALL UNITS NOT REUSED SHALL BE TURNED OVER TO THE OWNER, COMPLETE WITH LAMPS.
- COORDINATE WITH MECHANICAL DRAWINGS AND SAFELY DISCONNECT AND REMOVE ALL MOTOR/MECHANICAL EQUIPMENT BEING DEMOLISHED. REMOVE UNUSED WIRING/CONNECTION BACK TO SOURCE PANEL. EXTEND WIRING/CONNECTION OF ALL MOTOR/MECHANICAL EQUIPMENT BEING RELOCATED. PROVIDE PROPER JUNCTION BOX AT EACH POINT OF EXTENSION.



DETAIL #1 - NORTH ELEVATION

SCALE: 3/4" = 1'-0"

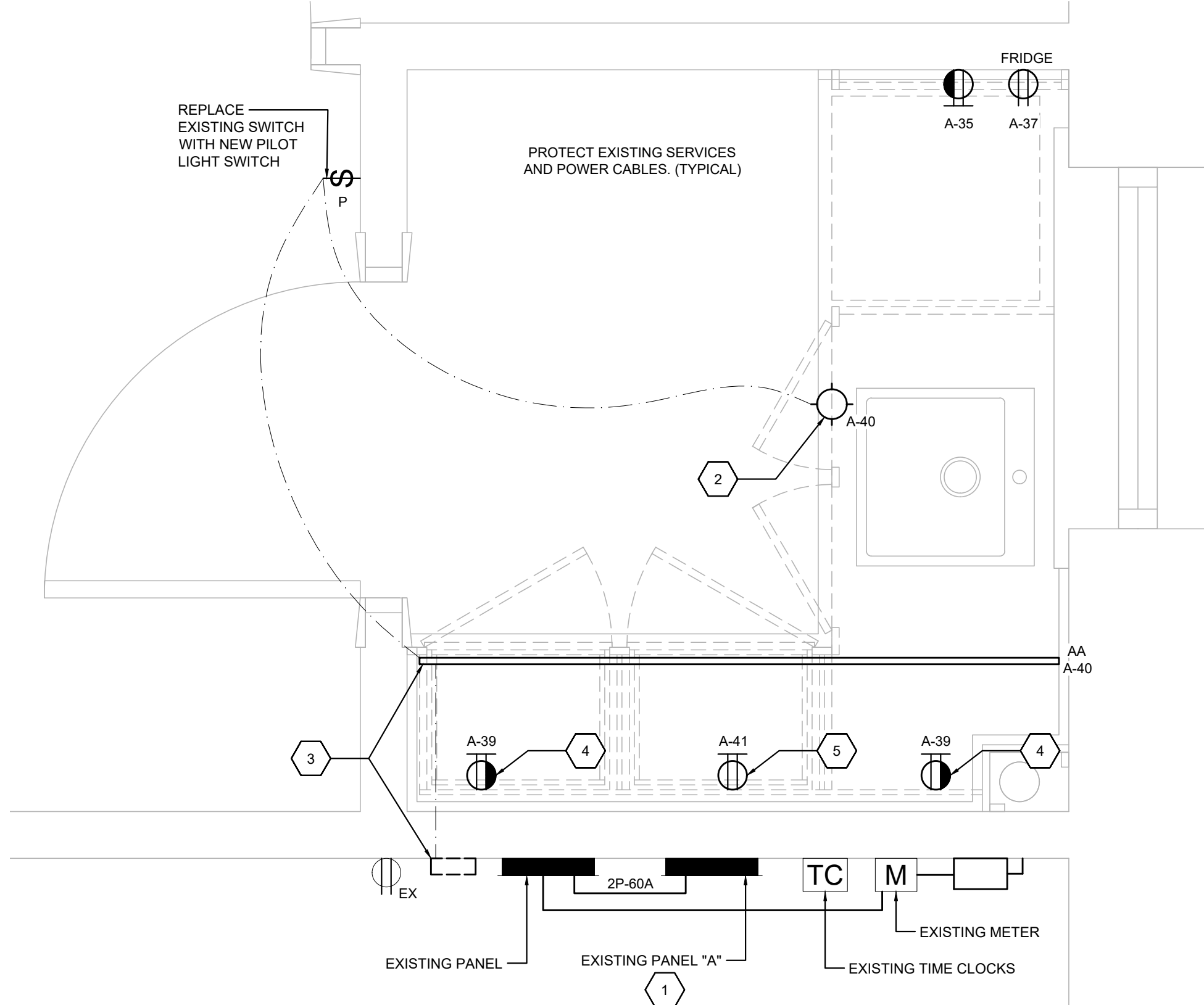
LIGHTING FIXTURE SCHEDULE				
FIXTURE TAG	DESCRIPTION AND MODEL SERIES	INPUT	LIGHT SOURCE	MOUNTING
AA	UNDER COUNTER FLEXIBLE LED STRIP LIGHT, HIGH OUTPUT, WET LOCATION SUITABLE. HARDWARE POWER CONNECTOR. CONFIRM LENGTH WITH OWNER'S REPRESENTATIVE PRIOR TO ORDERING. GM LIGHTING: V120-HO SERIES	120V 4W / FT	LED 305L / FT 2700K	SURFACE UNDER CABINET
NOTES: <ul style="list-style-type: none"><li>PROVIDE ALL NECESSARY MOUNTING HARDWARE FOR A COMPLETE INSTALLATION.</li><li>COORDINATE WITH ARCHITECTURAL PLANS TO CONFIRM CABINET MATERIAL AND MOUNTING TYPE.</li></ul>				

GENERAL NOTES:

- EXISTING ELECTRICAL DEVICES ARE SHOWN FOR THE DESIGN INTENT OF THIS PROJECTS SCOPE OF WORK ONLY. NOT ALL EXISTING ELECTRICAL DEVICES ARE SHOWN. CONTRACTOR TO CONFIRM ON SITE. REPORT ANY DISCREPANCIES TO CONSULTANT FOR REVIEW AND APPROVAL PRIOR TO ANY WORK ACTIVITY.
- PROTECT ALL INTERIOR AND EXTERIOR FINISHES, CEILINGS, WALLS, FLOORS, ETC FROM DAMAGE DUE TO THE WORK OF THIS DIVISION.
- REPAIR ANY DAMAGE CAUSED BY THE ELECTRICAL TRADE TO EXISTING BUILDINGS OR EQUIPMENT, ETC., TO THE CONSULTANT SATISFACTION. UPON COMPLETION OF THE WORK, CLEAN ALL EQUIPMENT AND REMOVE FROM THE SITE ALL ELECTRICAL DEBRIS.
- ELECTRICAL EQUIPMENT TO BE REMOVED MUST BE ISOLATED AND DISCONNECTED AT THE SOURCE PRIOR TO REMOVAL OPERATIONS. DURING ISOLATION AND DISCONNECTION PROCEDURES DANGER TAGS MUST BE USED TO IDENTIFY ANY FEEDERS OR EQUIPMENT REMAINING ENERGIZED TO ACCOMMODATE NEW CONSTRUCTION.
- REMOVE ALL UNUSED, ABANDONED OR REDUNDANT WIRING AND CONDUIT BACK TO SOURCE.
- UNLESS OTHERWISE NOTED IN SPEC OR ON DRAWINGS, ALL EXISTING ELECTRICAL INSTALLATIONS (IE. SWITCHES, FIXTURES, OUTLETS, FIRE ALARM, SECURITY, COMMUNICATION ETC.) IN NON RENOVATED AREAS TO REMAIN AS PRESENTLY INSTALLED. MODIFY/EXTEND EXISTING CONTROL CIRCUITS AS REQUIRED TO MAINTAIN OPERATION.
- PROVIDE LEGIBLE SIGNS AND BARRIERS ON OR AROUND ALL LIVE PANELS AND EQUIPMENT DURING CONSTRUCTION TO PREVENT INJURY OR SHOCK.
- COORDINATE WITH FACILITY MAINTENANCE DEPARTMENT FOR DISPOSAL OF REMOVED DEVICES. DISPOSE OF ALL UNWANTED DEVICES AS REQUIRED AS PER FACILITY STANDARDS.

DRAWING NOTES (INDICATED WITH HEXAGONS):

- PROVIDE POWER TO NEW LIGHTING AND DEVICES FROM EXISTING PANEL "A". REUSE EXISTING CIRCUITS WHERE POSSIBLE. PROVIDE NEW CIRCUITS IN EXISTING PANEL "A" TO MEET THE DESIGN INTENT WHERE REQUIRED. CIRCUITING SHOWN IS FOR THE DESIGN INTENT ONLY. CONFIRM PANEL "A" LOADS BEFORE CONNECTING NEW KITCHEN RECEPTACLES. IF REQUIRED, UPGRADE THE POWER FEEDER OR PROVIDE AN ALTERNATIVE POWER SOURCE FROM THE NEAREST PANEL WITH AVAILABLE CAPACITY.
- INSTALL AND PROVIDE POWER CONNECTION FOR SUSPENDED LIGHT FIXTURE SUPPLIED BY OWNER. COORDINATE EXACT MOUNTING HEIGHT AND LOCATION ON SITE WITH OWNER'S REPRESENTATIVE.
- INSTALL AND PROVIDE POWER CONNECTION FOR TAPE LIGHT SURFACE MOUNTED UNDER COUNTER. COORDINATE EXACT LENGTH AND MOUNTING LOCATION ON SITE WITH OWNERS REPRESENTATIVE. IF NECESSARY, LOCATE LIGHT DRIVER DEVICE IN ELECTRICAL ROOM AS INDICATED.
- GFI RECEPTACLES MOUNTED OVER COUNTER BETWEEN BASE CABINET AND UPPER CABINET. REFER TO DETAIL #1 ON THIS DRAWING.
- RECEPTACLE FOR MICROWAVE MOUNTED HIGH IN UPPER CABINET SPACE. REFER TO DETAIL #1 ON THIS DRAWING.

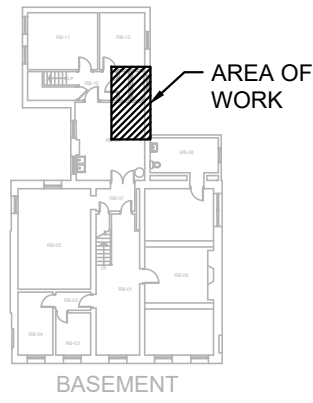


PARTIAL BASEMENT FLOOR PLAN - ELECTRICAL LAYOUT

SCALE: 1" = 1'-0"

COMMUNICATION LEGEND	
SYMBOL	DESCRIPTION
EX	EXISTING TO REMAIN
⬢	CEILING OR PENDANT LIGHT FIXTURE
⌚	PILOT LIGHT SWITCH
⌚	DUPLEX RECEPTACLE
⌚	DUPLEX RECEPTACLE - OVER COUNTER
⌚	GFI RECEPTACLE - OVER COUNTER
■	ELECTRICAL PANEL
M	ELECTRICAL METER
□	DISCONNECT

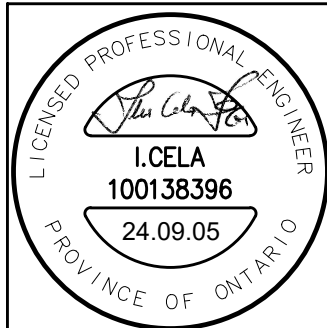
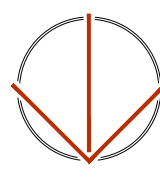
KEYPLAN



REVISIONS

NO.	ISSUED FOR	DATE
00	PERMIT / CONSTRUCTION	24.08.02
01	PERMIT / CONSTRUCTION	24.09.03
02	PERMIT / CONSTRUCTION	24.09.05

NORTH



DESIGN	SW	DRAWN	SW
CHECKED	IC	REVIEWED	IC

PROJECT

WHITEHERN HOUSE  
KITCHENETTE DESIGN

ADDRESS

41 JACKSON STREET,  
HAMILTON, ON

PROJECT NO.

CE-5977

DRAWING TITLE

FLOOR PLAN, LEGEND,  
DETAILS & SPECIFICATIONS -  
ELECTRICAL

DRAWING NUMBER

E1 OF 1

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