

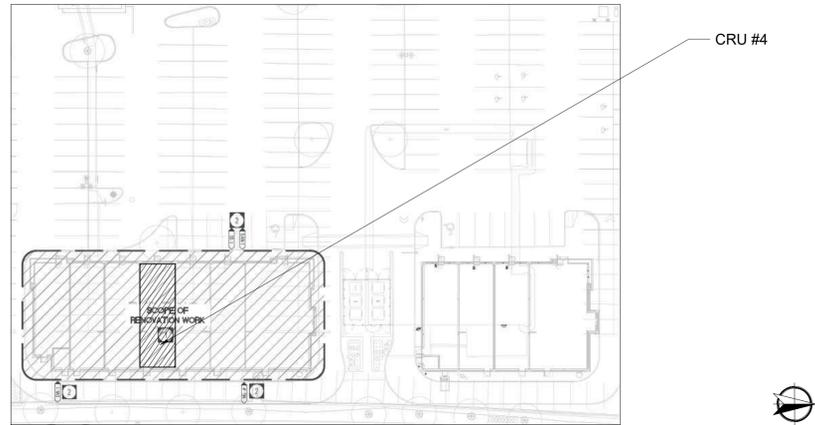
**GENERAL NOTES**

- BEFORE COMMENCING ANY WORK, THE GENERAL CONTRACTOR SHALL VERIFY ALL THE DRAWINGS, DIMENSIONS, DETAILS, SPECIFICATIONS, & SITE CONDITIONS. NOTIFY THE DESIGNER OF ALL ERRORS, OMISSIONS AND/OR ABNORMALITIES.
- ALL WORK EXECUTED MUST CONFORM TO MUNICIPAL RULES AND REGULATIONS AND NATIONAL BUILDING CODE 2010 C/W MANITOBA BUILDING CODE AMENDMENTS.
- ALL NECESSARY PERMITS MUST BE OBTAINED BY DESIGNER BEFORE STARTING CONSTRUCTION.
- LANDLORD APPROVAL MUST BE AWARDED PRIOR TO START OF INSTALLATION.
- ONE SET OF LANDLORD APPROVED FOR ALTERATION TO BE KEPT ON SITE AND AVAILABLE FOR VERIFICATION AT ALL TIMES OF ALTERATION (IF REQUIRED.)
- ALTERNATE PROPOSALS WILL BE ACCEPTED OR REJECTED BEFORE ISSUANCE OF CONTRACTS.
- COST OF ANY CHANGES REQUIRED BY OTHER TRADES DUE TO SUBSTITUTION OF ALTERNATE MATERIALS SHALL BE INCLUDED IN THE ALTERNATE PROPOSAL.
- G.C. WILL EXAMINE SITE CONDITIONS BEFORE STARTING AND WILL ENSURE THAT NO DAMAGE WILL OCCUR TO UNALTERED PARTS OF THE STORE.
- ALL ITEMS ON DRAWINGS TO BE SUPPLIED & INSTALLED BY CONTRACTOR, UNLESS SPECIFICALLY NOTED OTHERWISE.
- CONTRACTOR TO PROVIDE FIRE EXTINGUISHERS AS PER CODE.
- DO NOT COMPROMISE THE RATING OF ANY DEMISING WALLS.
- DRAWINGS ARE NOT TO BE SCALED. ALL DIMENSIONS SHOULD BE FIELD VERIFIED PRIOR TO SUBMISSION FOR PRICING. IF NOT DESIGNER NO CLIENT IS LIABLE FOR ANY ADDITIONAL COSTS ASSOCIATED WITH ITEM.

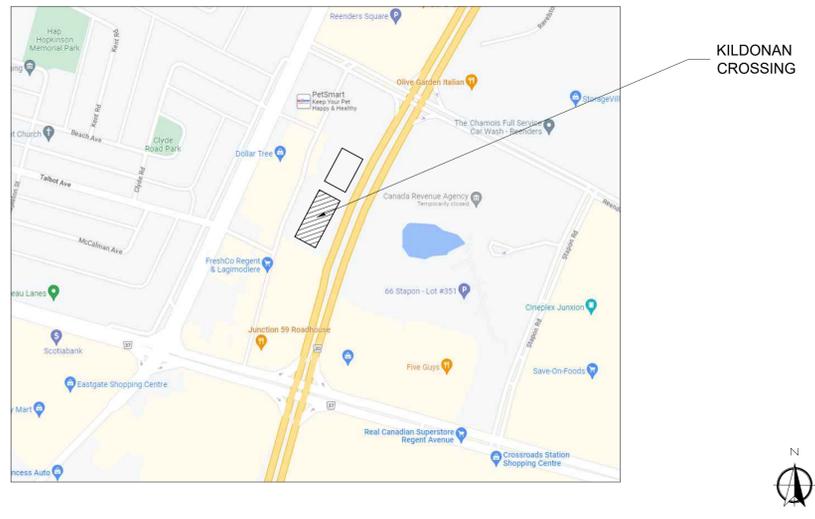


**KILDONAN CROSSING**  
 1615 REGENT AVE W  
 WINNIPEG, MB  
 R2C5C6  
 CRU #4

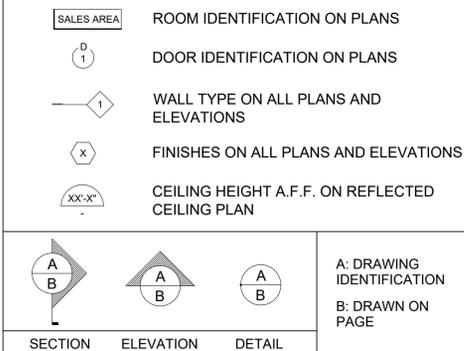
**SITE PLAN (FOR REFERENCE ONLY)**



**KEY PLAN - (FOR REFERENCE ONLY)**



**SYMBOLS**



**PROJECT DIRECTORY**

**LANDLORD**  
 COMPANY: LS PROPERTIES  
 CONTACT: FABRICIO MENDES  
 ADDRESS: UNIT 460 - 1615 REGENT AVENUE W.  
 WINNIPEG, MB R2C 5C6  
 PHONE: 204-996-7004  
 EMAIL: fabricio@lsproperties.ca

**CLIENT**  
 COMPANY: STEEL N INK  
 CONTACT: JAMIE RANDOLPH  
 ADDRESS: 2-330 FIRST ST  
 COLLINGWOOD, ON L9Y 1B4  
 PHONE: 514-826-2072  
 EMAIL: STEELNINK@GMAIL.COM

**DESIGNER**  
 COMPANY: G.L. SMITH PLANNING & DESIGN  
 CONTACT: MELISSA TENPOW  
 ADDRESS: 4711 YONGE STREET, SUITE 800  
 TORONTO, ON M2N 6K8  
 PHONE: 416-497-3662 ext 4302  
 FAX: 1-866-472-9693  
 EMAIL: melissa@glsmith.ca

**MECHANICAL/ELECTRICAL ENGINEER**  
 COMPANY: G.L. SMITH PLANNING & DESIGN  
 CONTACT: BRENT YEE CHING  
 ADDRESS: 4711 YONGE STREET, SUITE 800  
 TORONTO, ON M2N 6K8  
 PHONE: 416-497-3662 ext 4355  
 FAX: 1-866-472-9693  
 EMAIL: brent@glsmith.ca

**GENERAL CONTRACTOR**  
 COMPANY: X  
 CONTACT: X  
 ADDRESS: X  
 PHONE: (XXX) XXX-XXXX  
 EMAIL: X

**DRAWING INDEX**

DWG NO.	TITLE
TP	TITLE PAGE
LS	LIFE SAFETY PLANS
RS	RESPONSIBILITY SCHEDULE
0.0	EXISTING CONDITIONS PLAN
1.0	STOREFRONT PLAN & ELEVATION
2.0	CONSTRUCTION PLANS
2.1	RESTROOM DETAILS
3.0	INTERIOR ELEVATIONS
3.1	MILLWORK DETAILS
4.0	REFLECTED CEILING + COMMUNICATIONS PLANS
5.0	FINISHES PLANS
M1.0	DRAWING LIST AND MECHANICAL LEGENDS
M2.0	DETAILS
M3.0	PLUMBING PLAN AND NOTES
M3.1	SANITARY PLAN AND NOTES
M4.0	HVAC PLAN AND NOTES
M5.0	SCHEDULES
M6.0	SEPCIFICATIONS
M6.1	SEPCIFICATIONS
M6.2	SEPCIFICATIONS
E1.0	DRAWING LISTS AND ELECTRICAL LEGENDS
E1.1	ELECTRICAL DETAILS & SINGLE LINE DIAGRAM
E2.0	LIGHTING PLAN
E3.0	POWER SYSTEMS, PLAN & RISER PANEL SCHEDULE
E4.0	ELECTRICAL DETAILS
E5.0	ELECTRICAL SPECIFICATIONS

Item	2010 National Building Code W/ Manitoba Building Code Amendments Data Matrix Part 3	BC Reference
1	Project Description <input type="checkbox"/> New <input type="checkbox"/> Addition <input type="checkbox"/> Change of Use <input checked="" type="checkbox"/> Alteration	Part 3
2	Major Occupancy(s) D	3.1.2.1.(1)
3	Building Area (m <sup>2</sup> ) Existing 113.8 New 0 Total 113.8	1.4.1.2.
4	Suite Area Existing 113.8 New 0 Total 113.8	1.4.1.2.
5	Number of Storeys Above grade - 1 Below grade - 0	3.2.1.1. & 3.1.1.15
6	Number of Streets/Fire Fighter Access 2	3.2.2.10. & 3.2.5.5
7	Building Classification 3 2 2 60 (Group D, up to 2 Storeys)	3.2.2.20 - 90
8	Sprinkler System Proposed <input type="checkbox"/> entire building <input type="checkbox"/> selected compartments <input type="checkbox"/> selected floor areas <input type="checkbox"/> basement <input type="checkbox"/> in lieu of roof rating <input checked="" type="checkbox"/> not applicable	3.2.2.20.-90 3.2.1.5. 3.2.2.17. INDEX
9	Standpipe required <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	3.2.5.8
10	Fire Alarm required <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	3.2.4.
11	Water Service/ Supply is adequate <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	3.2.5.7. (as per existing)
12	High Building <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	3.2.6.
13	Construction Restrictions <input type="checkbox"/> Combustible permitted <input type="checkbox"/> Combustible <input type="checkbox"/> Non-combustible <input checked="" type="checkbox"/> Both Actual Construction <input type="checkbox"/> Combustible <input type="checkbox"/> Non-combustible <input checked="" type="checkbox"/> Both	3.2.2.20.-90
14	Mezzanine(s) Area m <sup>2</sup> N/A	3.2.1.1.(3)-(7)
15	Occupant load based on 1st Floor Occupancy D Load 25 persons	3.1.17
16	Barrier-free Design <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (Explain)	3.8.
17	Hazardous Substances <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	3.3.1.2.(1) & 3.3.1.20
18	Required Fire Resistance Rating (FRR) Horizontal Assemblies FRR (Hours) _____ Floors N/A Hours _____ Roof N/A Hours _____ FRR of Supporting Members _____ Floors 45 Minutes _____ Roof N/A Hours _____ Listed Design No. or Description (SG-2) _____ Listed Design No. Or Description (SG-2) _____	3.2.2.20.-90 & 3.2.1.4 (as per existing)
(Spatial Separation - Construction of Exterior Walls - Continued ) (AS PER EXISTING)		3.2.3.
Wall	Area of EBF(m <sup>2</sup> ) L.D. (m) L/H Or H/L Permitted Max. % of Openings Proposed % of Openings FRR (Hours) Listed Design or Description Comb Const Comb. Constr. Nonc. Cladding Non-comb. Constr.	
North	as per existing design	
South	as per existing design	
East	as per existing design	
West	as per existing design	
20	Others: Washrooms : (1) new unisex universal washroom	

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 Suite 800  
 Toronto, ON.  
 M2N 6K8  
 T.416.497.3662  
 info@glsmith.ca  
 www.glsmith.ca

**G.L. SMITH**

PROFESSIONAL STAMPS:



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**ISSUE**

#	Date	Description	Dwn
4	MAY 18, 2023	ISSUED FOR TENDER	BS
3	MAY 17, 2023	ISSUED FOR PERMIT	BS
2	MAY 4, 2023	ISSUED FOR LLDOR REVIEW	MT
1	APRIL 25, 2023	ISSUED FOR CLIENT REVIEW	BS

**PROJECT TITLE:**



**KILDONAN CROSSING**  
 1615 REGENT AVE W  
 WINNIPEG, MB  
 R2C 5C6  
 CRU # 4

**REVISION**

**TITLE PAGE**

PRINT DATE: 17-May-23 SCALE: N/A  
 DRAWN BY: BS DRAWING NO:  
 CHECKED BY: MT  
 PROJECT NO: 23-1020

**TP**



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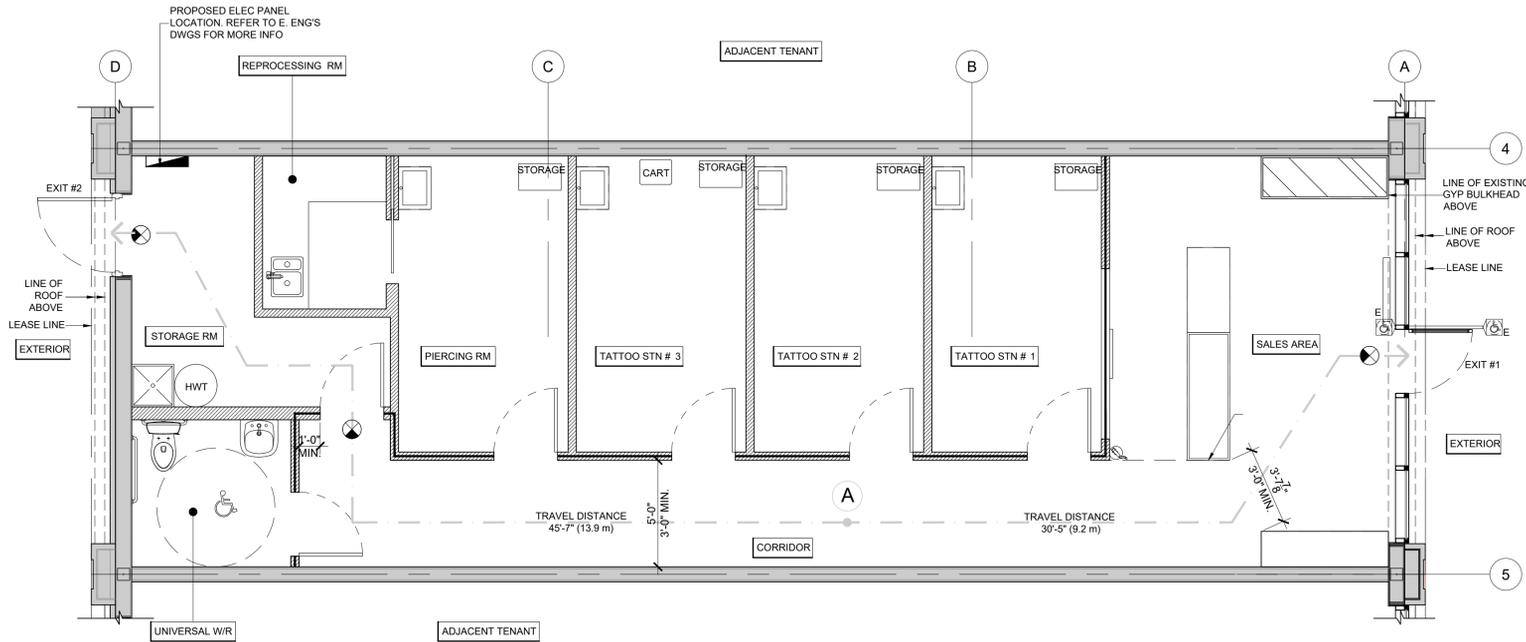
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**A** LIFE SAFETY PLAN  
LS SCALE: 1/4"=1'-0"

PLUMBING FACILITIES	LEGEND	EXIT ACCESS TRAVEL DISTANCE	AREA CALCULATIONS	EGRESS CALCULATIONS	OCCUPANCY LOAD CALCULATIONS																																																												
TOTAL OCCUPANCY LOAD: 26 PERSONS 13 FEMALES + 13 MALES = 26 PERSONS AS PER SENTENCE 3.7.2.2.(1) WATER CLOSETS REQUIRED FOR EACH SEX: (1) AS PER TABLE 3.7.2.2.B. WATER CLOSETS PROVIDED: (1) NEW UNISEX UNIVERSAL WASHROOM LAVATORIES REQUIRED: (1) FOR A ROOM CONTAINING ONE OR TWO WATER CLOSETS AS PER 3.7.2.3. LAVATORIES PROVIDED: (1) PROVIDED <b>CALCULATED REQUIRED NUMBER OF PLUMBING FIXTURES AS PER NATIONAL BUILDING CODE 2010 C/W MANITOBA BUILDING CODE AMENDMENTS:</b> REFERENCES 3.7.2.2.(1), 3.7.2.2.B., 3.7.2.3.	<table border="1"> <thead> <tr> <th>SYMBOL</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td></td> <td>HATCHED AREA OF NO WORK</td> </tr> <tr> <td></td> <td>DENOTES TRAVEL DISTANCE</td> </tr> <tr> <td></td> <td>FIRE PULL</td> </tr> <tr> <td></td> <td>FIRE EXTINGUISHER</td> </tr> <tr> <td></td> <td>EXIT SIGN</td> </tr> <tr> <td></td> <td>PUSH BUTTON ACTUATOR</td> </tr> </tbody> </table> <p>*NOTE: FOR EXACT EMERGENCY LIGHTING &amp; EXIT SIGNS LOCATIONS REFER TO SHEETS 4.0 &amp; ELECTRICAL DWGS.</p>	SYMBOL	DESCRIPTION		HATCHED AREA OF NO WORK		DENOTES TRAVEL DISTANCE		FIRE PULL		FIRE EXTINGUISHER		EXIT SIGN		PUSH BUTTON ACTUATOR	<p>PER NATIONAL BUILDING CODE 2010 C/W MANITOBA BUILDING CODE AMENDMENTS. (OCCUPANCY - 'D' PERSONAL SERVICES)</p> <table border="1"> <thead> <tr> <th>REMOTE POINT</th> <th>MAXIMUM ALLOWABLE TRAVEL DISTANCE</th> <th>TRAVEL DISTANCE TO EXIT 1</th> <th>TRAVEL DISTANCE TO EXIT 2</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>30m PER NBC 2010 3.4.2.5.(1)(F)</td> <td>30'-5" (9.2 m)</td> <td>45'-7" (13.9m)</td> </tr> </tbody> </table> <p>NOTE: PORTABLE FIRE EXTINGUISHERS SHALL BE PROVIDED AND INSTALLED IN ACCORDANCE WITH PROVINCIAL OR TERRITORIAL REGULATIONS OR MUNICIPAL BYLAWS. LOCATIONS TO BE MARKED WITH RED AND WHITE SIGN ABOVE (CONTAINING SYMBOL OR PHRASE. FIRE EXTINGUISHERS SHOULD BE PROVIDED WITH CURRENT CERTIFICATION TAGS BY A LICENSED INSPECTION SERVICE AT TIME OF TURNOVER.</p>	REMOTE POINT	MAXIMUM ALLOWABLE TRAVEL DISTANCE	TRAVEL DISTANCE TO EXIT 1	TRAVEL DISTANCE TO EXIT 2	A	30m PER NBC 2010 3.4.2.5.(1)(F)	30'-5" (9.2 m)	45'-7" (13.9m)	<table border="1"> <thead> <tr> <th>RETAIL / HALLWAY</th> <th>523 SQ. FT.</th> </tr> </thead> <tbody> <tr> <td>REPROCESSING ROOM</td> <td>49 SQ. FT.</td> </tr> <tr> <td>WASHROOMS</td> <td>64 SQ. FT.</td> </tr> <tr> <td>STORAGE AREAS</td> <td>119 SQ. FT.</td> </tr> <tr> <td>TATOO STN</td> <td>333 SQ. FT.</td> </tr> <tr> <td>PIERCING ROOM</td> <td>111 SQ. FT.</td> </tr> <tr> <td><b>TOTAL AREA</b></td> <td><b>1225 SQ. FT.</b></td> </tr> </tbody> </table>	RETAIL / HALLWAY	523 SQ. FT.	REPROCESSING ROOM	49 SQ. FT.	WASHROOMS	64 SQ. FT.	STORAGE AREAS	119 SQ. FT.	TATOO STN	333 SQ. FT.	PIERCING ROOM	111 SQ. FT.	<b>TOTAL AREA</b>	<b>1225 SQ. FT.</b>	<p>EGRESS WIDTH PER OCCUPANT SERVED FOR USER GROUP-D (PERSONAL SERVICES) AS PER SECTION 3.4.3.2.(1).(a). CAPACITY OF ACCESS TO EXITS - NATIONAL BUILDING CODE 2010 C/W MANITOBA BUILDING CODE AMENDMENT - 6.1mm EGRESS WIDTH PER PERSON</p> <table border="1"> <thead> <tr> <th>OCCUPANT LOAD</th> <th>EGRESS WIDTH REQUIRED</th> <th>EGRESS WIDTH PROVIDED</th> <th>NO. OF EXITS REQUIRED</th> </tr> </thead> <tbody> <tr> <td>25 OCCUPANTS</td> <td>6" (152.5 MM) MINIMUM</td> <td>7.5" (193 MM)</td> <td>(2) EXITS</td> </tr> </tbody> </table> <p><b>EGRESS REQUIRED</b></p> <table border="1"> <tbody> <tr> <td>NUMBER OF EXITS REQUIRED:</td> <td>2</td> </tr> <tr> <td>NUMBER OF EXITS PROVIDED:</td> <td>2</td> </tr> <tr> <td>DOORWAY WIDTH:</td> <td>800 mm MIN.</td> </tr> <tr> <td>DOOR WIDTH:</td> <td>800 mm MIN.</td> </tr> <tr> <td>EGRESS PASSAGE WIDTH:</td> <td>1100 mm MIN.</td> </tr> </tbody> </table> <p>*MAX. TRAVEL DISTANCE = 30m (NON-SPRINKLERED) PER NATIONAL BUILDING CODE 2010 C/W MANITOBA BUILDING CODE AMENDMENTS.</p>	OCCUPANT LOAD	EGRESS WIDTH REQUIRED	EGRESS WIDTH PROVIDED	NO. OF EXITS REQUIRED	25 OCCUPANTS	6" (152.5 MM) MINIMUM	7.5" (193 MM)	(2) EXITS	NUMBER OF EXITS REQUIRED:	2	NUMBER OF EXITS PROVIDED:	2	DOORWAY WIDTH:	800 mm MIN.	DOOR WIDTH:	800 mm MIN.	EGRESS PASSAGE WIDTH:	1100 mm MIN.	<p>CALCULATED OCCUPANT LOAD AS PER NBC 2010 W/ MBC AMENDMENTS - OCCUPANCY CLASSIFICATION - 'D' PERSONAL SERVICES</p> <p><b>OCCUPANCY LOAD CALCULATIONS</b></p> <table border="1"> <tbody> <tr> <td>TOTAL AREA : 113.8 SQ M (1225 SQ FT.)</td> <td>= 25 PEOPLE</td> </tr> <tr> <td>/ 4.6 SQ M (49.5 SQ FT.)</td> <td></td> </tr> <tr> <td><b>TOTAL OCCUPANT LOAD :</b></td> <td><b>= 25 PEOPLE</b></td> </tr> </tbody> </table>	TOTAL AREA : 113.8 SQ M (1225 SQ FT.)	= 25 PEOPLE	/ 4.6 SQ M (49.5 SQ FT.)		<b>TOTAL OCCUPANT LOAD :</b>	<b>= 25 PEOPLE</b>
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PROJECT TITLE:



KILDONAN CROSSING  
1615 REGENT AVE W  
WINNIPEG, MB  
R2C 5C6  
CRU # 4

REVISION	#	Date	Description	Dwn

DRAWING TITLE:

LIFE SAFETY PLAN

PRINT DATE:	17-May-23	SCALE:	AS NOTED
DRAWN BY:	BS	DRAWING NO.:	
CHECKED BY:	MT		
PROJECT NO.:	23-1020		

LS

RESPONSIBILITY SCHEDULE

RESPONSIBLE MATERIAL	LANDLORD		OWNER		TENANT'S GENERAL CONTRACTOR		REMARKS	RESPONSIBLE MATERIAL	LANDLORD		OWNER		TENANT'S GENERAL CONTRACTOR		REMARKS	RESPONSIBLE MATERIAL	LANDLORD		OWNER		TENANT'S GENERAL CONTRACTOR		REMARKS	
	SUPPLY	INSTALL	SUPPLY	INSTALL	SUPPLY	INSTALL			SUPPLY	INSTALL	SUPPLY	INSTALL	SUPPLY	INSTALL			SUPPLY	INSTALL	SUPPLY	INSTALL	SUPPLY	INSTALL		SUPPLY
PREPARATION	L.LORD APPROVAL						BY G.L. SMITH PLANNING & DESIGN	JUNCTION BOX AT CASH WRAP					●	●		CASH WRAP					●	●	G.C TO USE REQUIRED VENDOR. COORDINATE W/ CLIENT	
	PERMITS AND FEES						BY G.L. SMITH PLANNING & DESIGN	CASH REGISTER EQUIPMENT			●	●				DISPLAY UNIT					●	●	G.C TO USE REQUIRED VENDOR. COORDINATE W/ CLIENT	
	HOARDING						G.C. TO CONFIRM BASED ON SPECIFIC SITE	WIRING/CABLING IN CASH WRAP					●	●		TATTOO CHAIR			●	●				
	HOARDING GRAPHICS			●		●	●	WINDOW COVERINGS PROVIDED BY G.C. GRAPHICS BY CLIENT	TELEPHONE DISTRIBUTION/ WIRING			●	●	●	●	TATTOO EQUIP			●	●				
	DEMOLITION-STOREFRONT						N/A	ELECTRIC CONDUIT					●	●		6' JEWELRY DISPLAY					●	●	G.C TO USE REQUIRED VENDOR. COORDINATE W/ CLIENT	
	DEMOLITION-INTERIOR PARTITIONS						N/A	DISPLAY, DECORATIVE & GENERAL LIGHT FIXTURES & BULBS					●	●		IPAD BAR					●	●	BY G.C. MILLWORK VENDOR	
	DEMOLITION-CEILINGS						N/A	BOH LIGHT FIXTURES & BULBS					●	●		DIGITAL DISPLAY			●		●		G.C. TO COORDINATE W/ CLIENT	
	DEMOLITION-WASHROOMS						N/A	ELECTRICAL PANEL & SERVICE	●	●			●	●		BACKSPLASH					●	●	G.C. TO COORDINATE W/ CLIENT	
	DEMOLITION-DEMISING WALLS						N/A	ALARM SYSTEM							N/A	ELEC PANEL COVER							N/A	
	REMOVE EXIST. FF&E AND FINISHES						N/A	SPEAKER SYSTEM			●	●	●	●		STORAGE CABINETS					●	●		
	REMOVE & CAP EXIST. PLUMBING & ELEC.						N/A	EMERGENCY LIGHTING					●	●										
	EXISTING CONCRETE SLAB	●	●			●	●	G.C. TO LEVEL AND REPAIR AS REQUIRED.	OUTLETS					●	●									
TEMPORARY FACILITIES, SERVICES & CONTROLS								TIME CLOCK					●	●										
CLEAN UP								SWITCHES					●	●										
BLOCKING								SENSORS					●	●										
DEMISING WALL STUDS							N/A																	
DEMISING WALL GYPSUM BOARD	●	●			●	●	G.C TO PATCH & REPAIR AS REQ'D. MAINTAIN FIRE RATING IN ALL APPLICABLE AREAS	EXHAUST FANS/ VENTS WASHROOM					●	●										
STRUCTURAL STEEL							N/A	FIRE DETECTION					●	●										
SEISMIC REQUIREMENT							N/A	FIRE EXTINGUISHERS					●	●										
INTERIOR PARTITIONS							●	●	HVAC UNIT					●	●									
GYPSUM BOARD CEILING/FIRE RATING							N/A	HVAC CONTROL (THERMOSTAT)					●	●	MODIFY AS REQ'D	"NEON" SIGN			●		●		SIGNAGE TO BE PROVIDED BY CLIENT. MOUNTING BY G.C. (PLUG IN POWER)	
ACOUSTIC CEILING TILE /GRID							●	●	DUCTWORK					●	●									
FURRING STRIPS							●	●	SPRINKLERS															
INTERIOR DOORS/ FRAMES							●	●	AIR CURTAINS															
REAR EXIT DOORS/ FRAMES							●	●	SERVICE ACCESS/ ACCESS PANELS					●	●									
DOOR HARDWARE							●	●	NEW AIR FILTERS AT STORE TURN-OVER					●	●									
STOREFRONT DOORS							●	●	WASHROOM SINKS					●	●									
STOREFRONT GLAZING							●	●	TOILETS					●	●									
TELEPHONE & ELEC. BACK BOARDS							●	●	HOT WATER TANK					●	●									
STOCKROOM-FLOORING FINISH							●	●	BARRIER FREE HARDWARE					●	●									
SALES AREA - FLOORING FINISH							●	●	KITCHEN PLUMBING FIXTURE PACKAGE							N/A								
BATHROOM - FLOORING FINISH							●	●	WATER FILTER							N/A								
SCHLUTER STRIPS							●	●	SANITARY WASTE AND VENT					●	●	EXISTING UNUSED PLUMBING LINES TO BE CLEANED UP.								
BASE THROUGHOUT							●	●	PORTABLE WATER SUPPLY							N/A								
PAINT							●	●	FLOOR DRAINS					●	●									
WALL FINISHES							●	●																

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ISSUE

4	MAY 18, 2023	ISSUED FOR TENDER	BS
3	MAY 17, 2023	ISSUED FOR PERMIT	BS
2	MAY 4, 2023	ISSUED FOR L.LORD REVIEW	MT
1	APRIL 25, 2023	ISSUED FOR CLIENT REVIEW	BS

# Date Description Dwn

PROJECT TITLE:



KILDONAN CROSSING  
1615 REGENT AVE W  
WINNIPEG, MB  
R2C 5C6  
CRU # 4

REVISION

1	MAY 17, 2023	REV TO RESPONSIBILITY SCHEDULE	BS
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# Date Description Dwn

DRAWING TITLE:

RESPONSIBILITY SCHEDULE

PRINT DATE: 17-May-23 SCALE: N/A

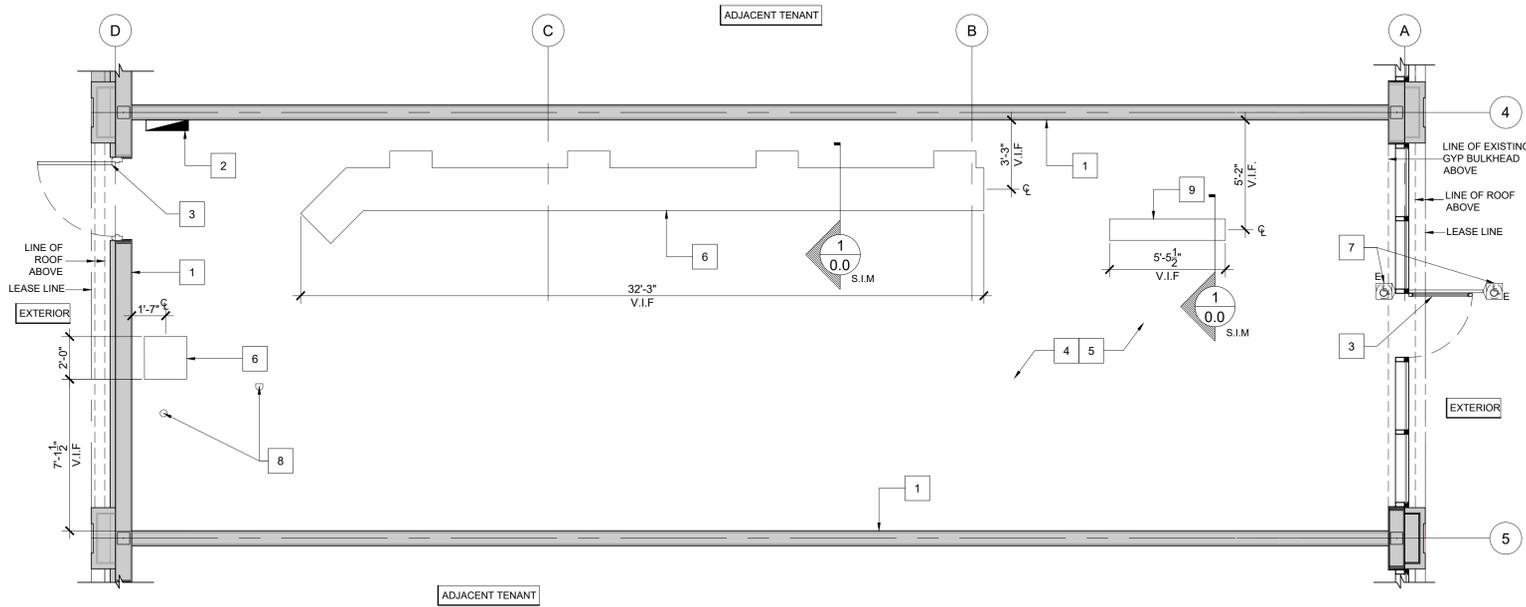
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CHECKED BY: MT

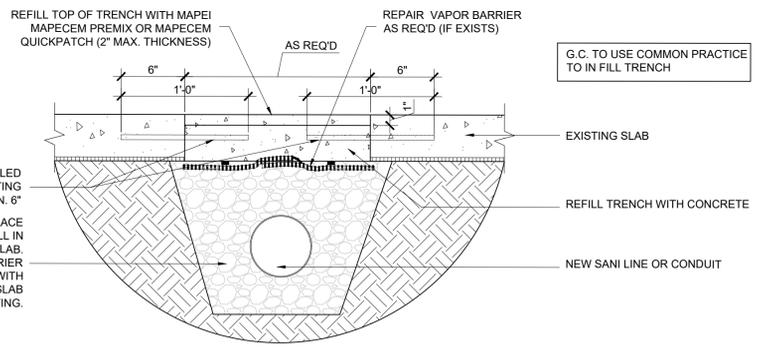
PROJECT NO: 23-1020

RS

NOTE: THIS CHART IS PROVIDED AS A GUIDE AND SHOULD NOT BE MISTAKEN AS THE ONLY DETERMINING FACTOR INDICATING RESPONSIBILITIES. PLEASE REFER TO THE ENTIRE DRAWING PACKAGE. IF A DISCREPANCY ARISES IT IS THE RESPONSIBILITY OF THE CONTRACTOR OR SUB TRADE TO CONTACT GLS IMMEDIATELY FOR CLARIFICATION. NOT DOING SO DOES NOT EXEMPT THE CONTRACTOR OR SUB TRADE FROM THE RESPONSIBILITY AND/OR LIABILITY IN PROVIDING A PRODUCT OR PERFORMANCE INDICATED.



**A**  
0.0 DEMOLITION PLAN  
SCALE: 1/4"=1'-0"



**1**  
0.0 TRENCHING DETAIL  
SCALE: 1 1/2"=1'-0"

**KEYED NOTES:**

- 1 EXISTING DEMISING WALL TO REMAIN & PATCH/REPAIR AS REQ'D. G.C. TO REVIEW L.L. WORK AND ADVISE CLIENT OF ANY ISSUES.
- 2 PROPOSED LOCATION OF NEW ELECTRICAL PANELS. COORDINATE W/ ENG DWGS
- 3 EXISTING DOOR TO REMAIN - COORDINATE W/ DOOR LEGEND
- 4 G.C. TO CONFIRM OVERALL UNIT DIMENSIONS. REPORT FINDINGS TO CLIENT AND DESIGNER TO REVIEW
- 5 G.C. TO SALVAGE ANY EXISTING GREEN RUNNING MAN EXIT SIGNS WHICH CAN BE REUSED IN NEW DESIGN
- 6 APPROX. LOCATION OF TRENCHING FOR NEW SANITARY LINES. REFER TO MECH ENG'S DWG'S FOR MORE INFO.
- 7 EXISTING POWER DOOR OPERATOR TO REMAIN. G.C. TO ENSURE IN GOOD WORKING ORDER
- 8 EXISTING PLUMBING ROUGH INS BY LANDLORD. VERIFY LOCATION IN FIELD.
- 9 APPROX. LOCATION OF TRENCHING FOR CASH CONDUITS. REFER TO DWG 4.0 AND ELEC ENG DWGS FOR MORE INFORMATION

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2	MAY 4, 2023	ISSUED FOR LLORD REVIEW
1	APRIL 25, 2023	ISSUED FOR CLIENT REVIEW

PROJECT TITLE:

STEEL  
N  
INK

KILDONAN CROSSING  
1615 REGENT AVE W  
WINNIPEG, MB  
R2C 5C6  
CRU # 4

REVISION		
#	Date	Description

**EXISTING CONDITIONS PLAN**

PRINT DATE: 17-May-23	SCALE: AS NOTED
DRAWN BY: BS	DRAWING NO.:
CHECKED BY: MT	<b>0.0</b>
PROJECT NO.:	23-1020



**G.L. SMITH**

PROFESSIONAL STAMPS:



**STOREFRONT GENERAL NOTES:**

- STOREFRONT DIMS TO BE VERIFIED AND RETURNED TO DESIGNER INCLUDING HEIGHTS.
- EXISTING LANDLORD DEMISING CAP & WALLS TO BE PROTECTED DURING CONSTRUCTION.
- SIGNAGE TO BE SUBMITTED BY VENDOR TO LANDLORD FOR APPROVAL.
- ENSURE ALL METAL ON STOREFRONT ARE BRAKE FORMED AROUND CORNERS, SEAMS AND ROLLED EDGES, NO MITERED CORNERS OR SHARP EDGES. MINIMUM OF 16 GAUGE METAL.

**STOREFRONT KEYED NOTES:**

- EXISTING GLAZING & DOORS TO BE CLEANED. STICKERS TO BE REMOVED.
- EXISTING CONCRETE TO BE POWER WASHED AND SEALED.
- BUILDING FACADE TO BE POWER WASHED. CORRECT PRESSURE TO BE USED. DO NOT DAMAGE EXISTING MATERIAL. PREP FOR NEW PAINT FINISH.
- G.C. TO PROVIDE POWER & ADEQUATE BACKER FOR NEW SIGNAGE AS REQUIRED.

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**PROJECT TITLE:**



KILDONAN CROSSING  
1615 REGENT AVE W  
WINNIPEG, MB  
R2C 5C6  
CRU # 4

**REVISION**

#	Date	Description	Dwn

**DRAWING TITLE:**

**STOREFRONT PLAN & ELEVATION**

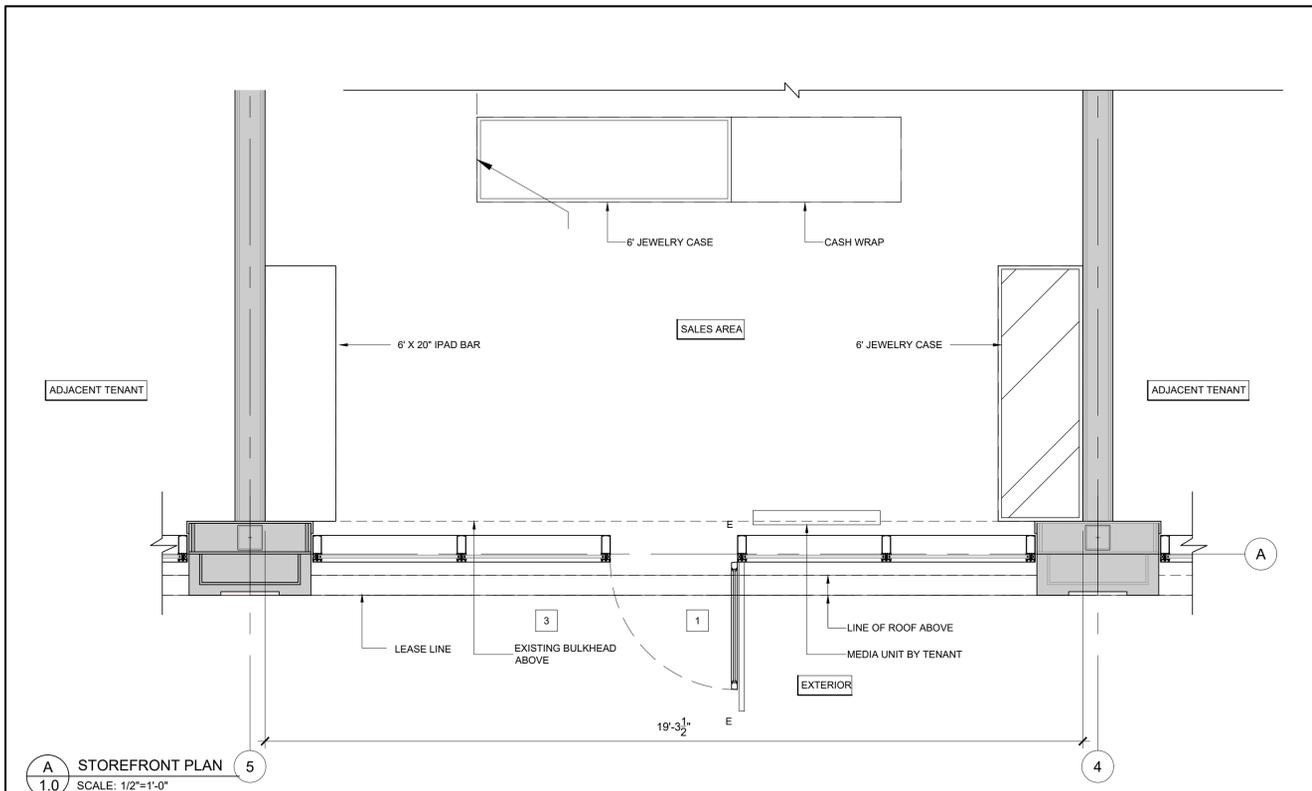
PRINT DATE: 17-May-23 SCALE: AS NOTED

DRAWN BY: BS DRAWING NO:

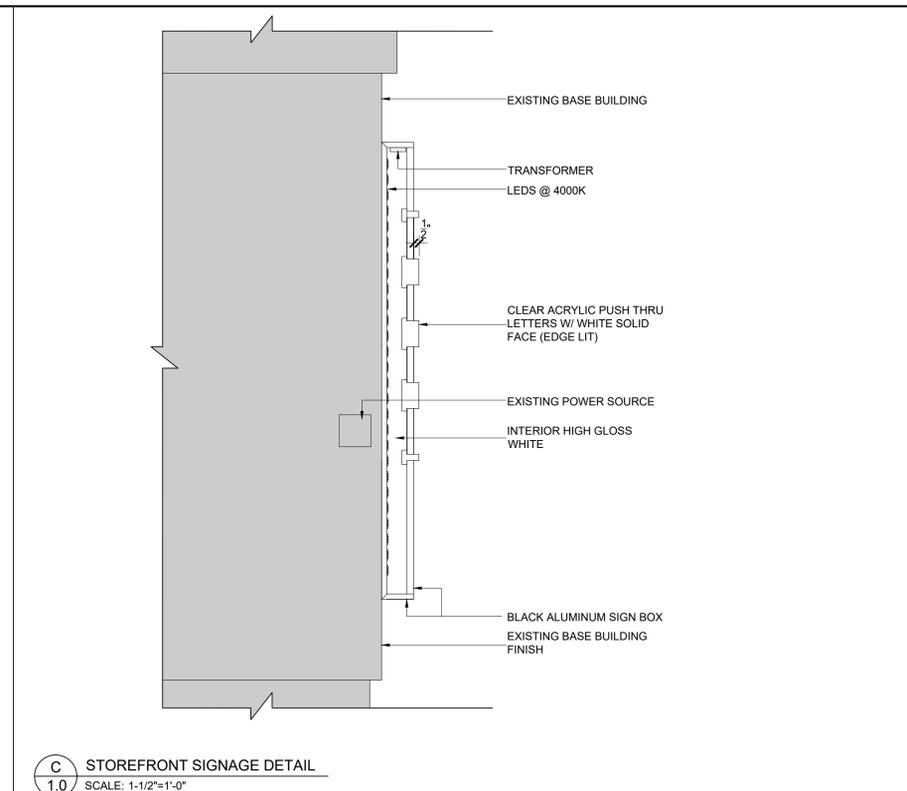
CHECKED BY: MT

PROJECT NO: 23-1020

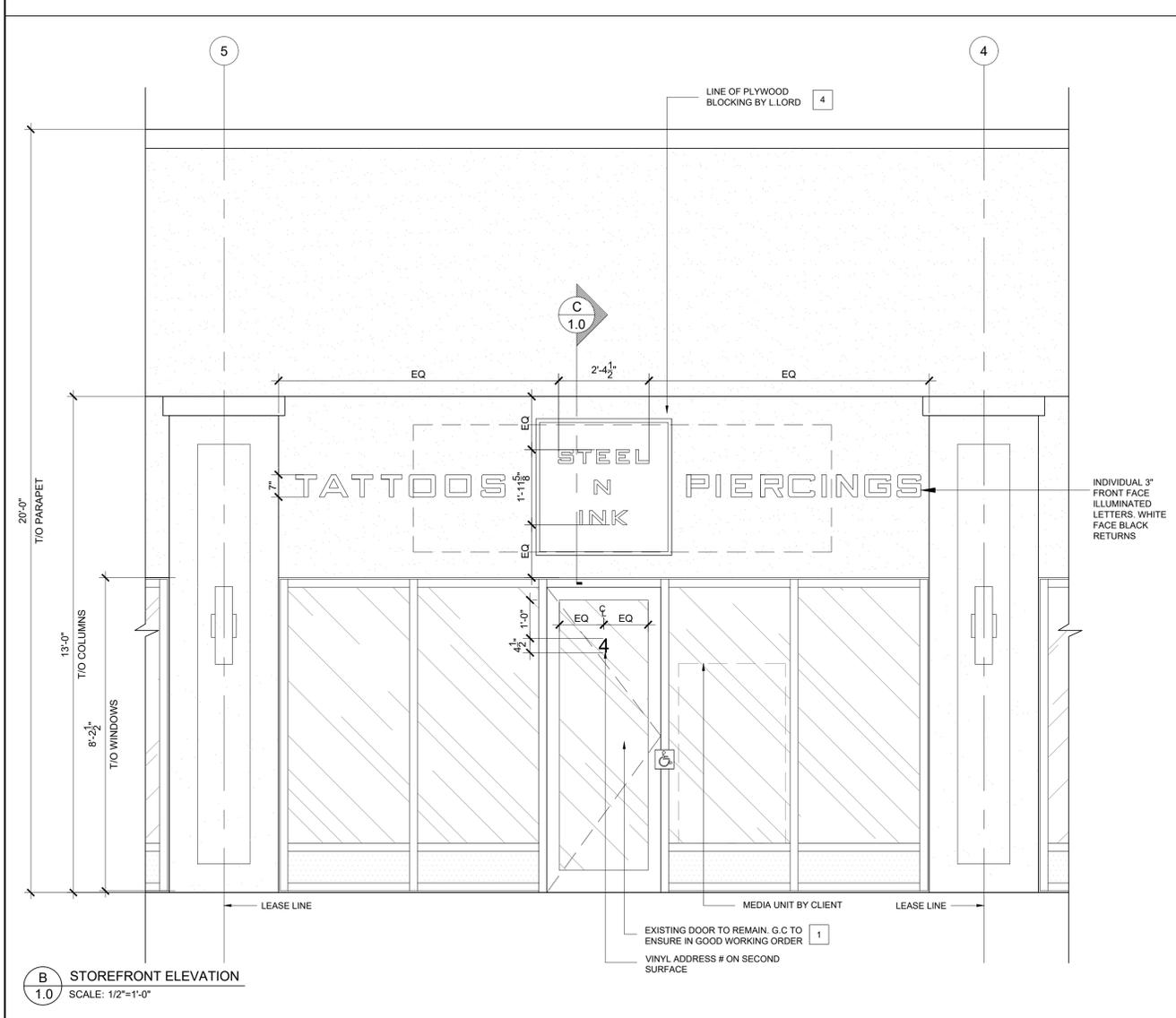
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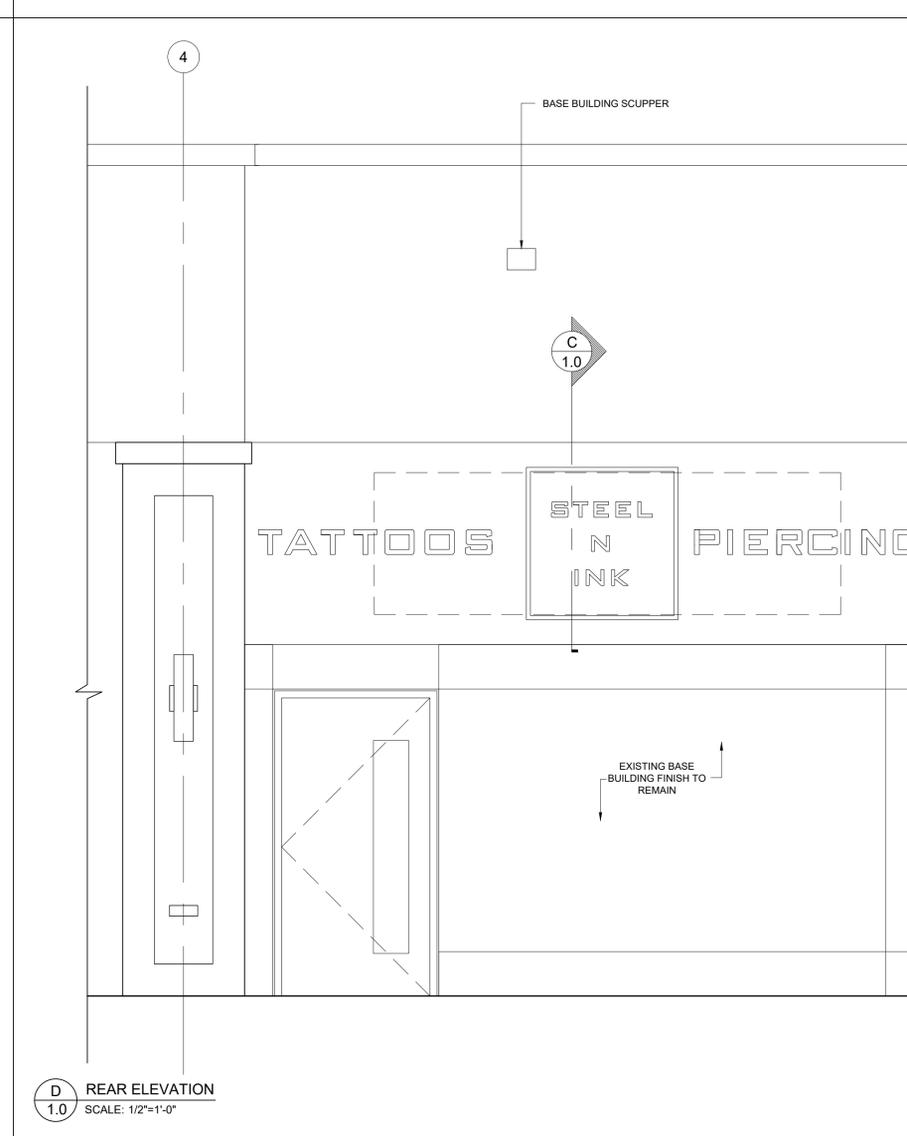
**A STOREFRONT PLAN**  
1.0 SCALE: 1/2"=1'-0"



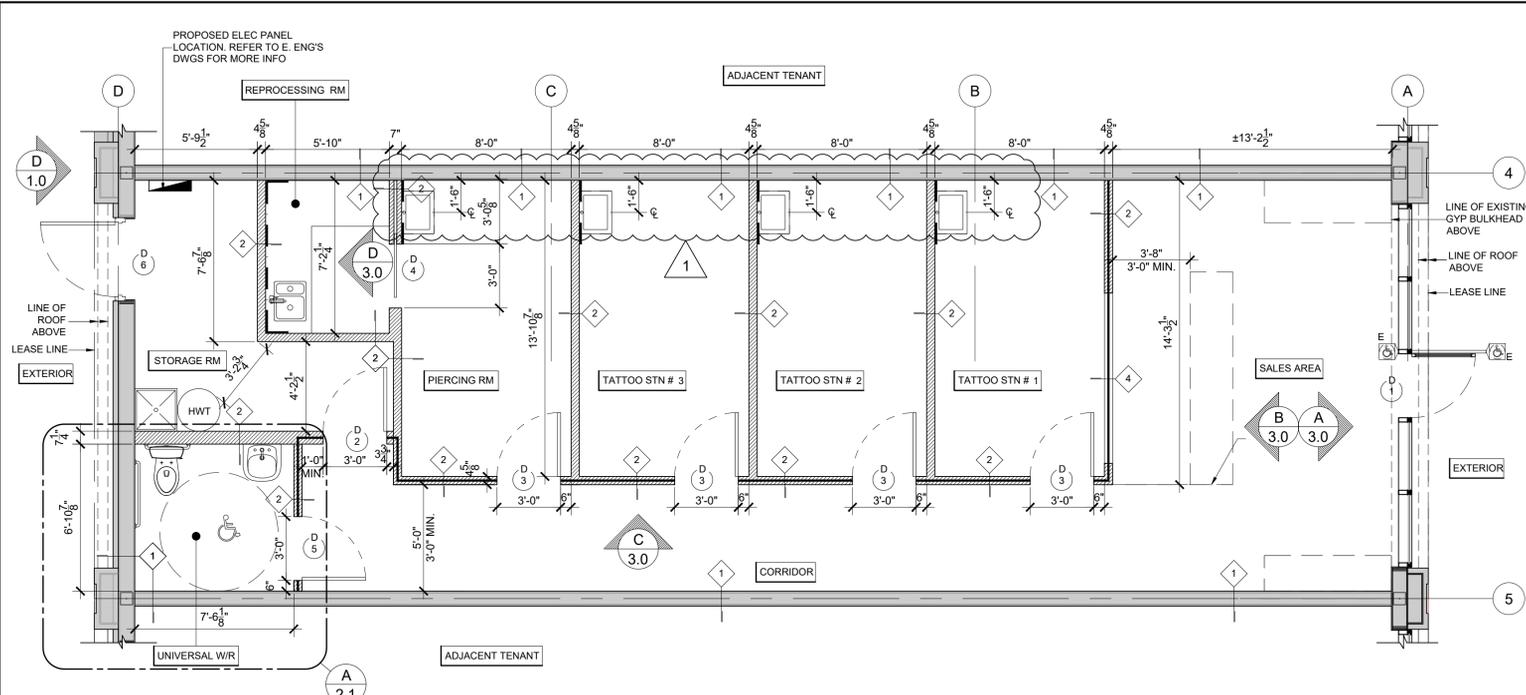
**C STOREFRONT SIGNAGE DETAIL**  
1.0 SCALE: 1-1/2"=1'-0"



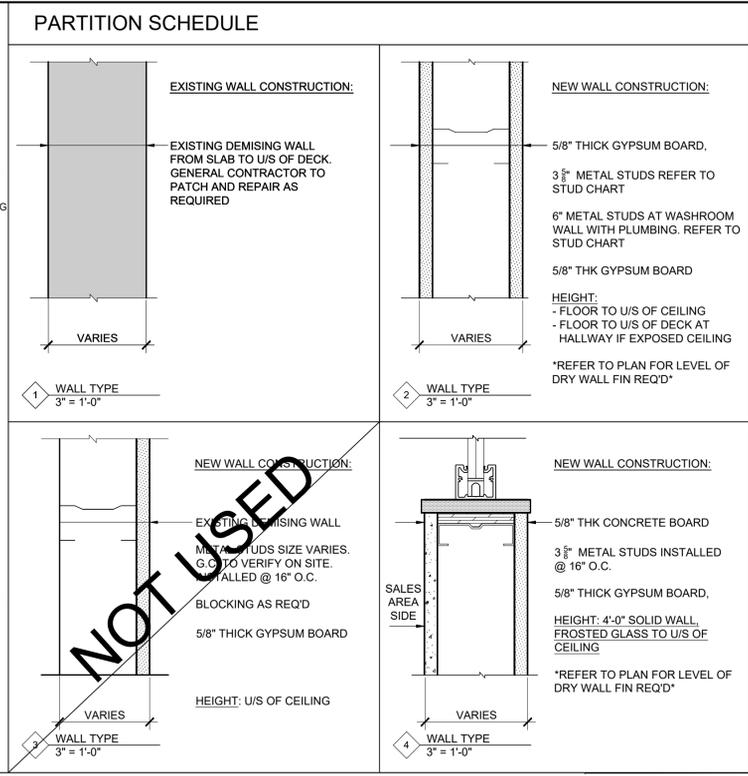
**B STOREFRONT ELEVATION**  
1.0 SCALE: 1/2"=1'-0"



**D REAR ELEVATION**  
1.0 SCALE: 1/2"=1'-0"



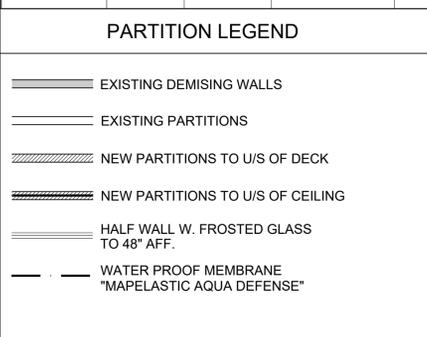
**A** CONSTRUCTION PLAN  
SCALE: 1/4"=1'-0"



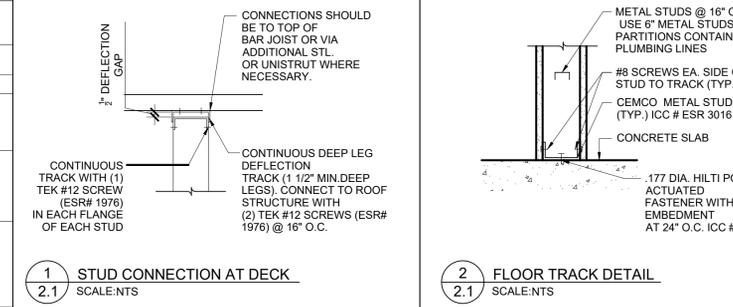
- GENERAL CONSTRUCTION NOTES:**
- T.G.C. SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE DESIGNER PRIOR TO COMMENCING THE WORK.
  - THESE DRAWINGS ARE NOT TO BE SCALED.
  - ONE SET OF DRAWINGS ARE TO BE KEPT ON SITE AND AVAILABLE FOR CHECKING AT ALL TIMES DURING CONSTRUCTION.
  - ALL MATERIALS TO MEET FLAME SPREAD RATING REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.
  - ALL WORK TO BE COMPLETED TO MEET THE APPLICABLE LOCAL BUILDING CODES, AND LOCAL HEALTH, FIRE REGULATIONS.
  - T.G.C. SHALL BE RESPONSIBLE TO OBTAIN ALL NECESSARY PERMITS, INSPECTIONS AND SIGN OFFS BY AUTHORITY REQUIRED FOR TENANT WORK TO PROCEED.
  - DRYWALL CEILING MUST HAVE ACCESS PANELS TO ALLOW ACCESS TO WATER AND SPRINKLER VALVES, VAV BOXES, REHEAT COILS, CLEAN OUTS, OR ELECTRICAL JUNCTION BOXES; CONSULT WITH THE CONSTRUCTION MANAGER FOR LOCATIONS.
  - T.G.C. IS RESPONSIBLE TO REPAIR DAMAGE TO EXISTING PARTITIONS AND/OR EXISTING FIRE SEPARATIONS WITHIN THE AREA OF SCOPE OF WORK SHOWN AS TO REMAIN. RATINGS ARE TO MATCH EXISTING.
  - T.G.C. IS TO ENSURE SUFFICIENT BLOCKING IS PROVIDED IN AREAS WHICH REQUIRE SUPPORT FOR PARTITION OR CEILING MOUNTED EQUIPMENT OR MATERIALS.
  - SEAL AROUND ALL PENETRATIONS IN PARTITIONS AND MAKE READY TO ACCEPT NEW FINISHES.
  - T.G.C. REFER TO DETAIL DRAWINGS FOR WALL TYPES AND DIMENSIONS OF SPECIFIC AREAS.
  - PREPARE EXISTING DOORS AND WALLS WITHIN THE PROJECT AREA AS REQUIRED TO ACCEPT NEW PAINT FINISHES.
  - T.G.C. TO ENSURE ALL TRADES HAVE COMPLETED THEIR PORTION OF THE WORK BEFORE BOARDING UP BOTH SIDES OF THE STUDS. THIS IS TO INCLUDE INSPECTION AS REQUIRED BY LOCAL AND PROVINCIAL BY-LAWS AND BUILDING CODES.
  - SLAGGER OUTLETS OCCURRING ON OPPOSITE SIDES OF THE SAME PARTITION TO MAINTAIN ACOUSTICAL INTEGRITY.
  - T.G.C. TO ENSURE DRYWALL IS FLUSH, CLEAN AND FREE FROM DUST PRIOR TO APPLICATION OF ALL WALL FINISHES.

**DOOR SCHEDULE**

DOOR #	DOORS				FRAMES		SPECIFICATION			
	LOCATION	DESCRIPTION	DIMENSIONS	DESCRIPTION	TYPE	QTY	SUPPLIED BY	INSTALLED BY	REMARKS	
D 1	EXTERIOR SALES AREA	EXISTING DOOR	EXIST. EXIST. EXIST. EXIST.	EXIST. EXIST.	T-1	1	G.C.	G.C.	EXISTING DOOR ENSURE DOOR & HARDWARE ARE IN GOOD WORKING CONDITION	
D 2	CORRIDOR STORAGE	HOLLOW CORE	(PT) 3'-0" 7'-0" 1 3/4"	HOLLOW METAL (PT)	T-5	1	G.C.	G.C.	ENSURE HINGES ARE BLACK IN FINISH	
D 3	CORRIDOR PIERCING RM.	SWING DOOR	BLACK 3'-0" 7'-0" 1 3/4"	WOOD BLACK	T-6	1	G.C.	G.C.	ENSURE HINGES ARE BLACK IN FINISH	
D 4	PIERCING RM. PROCESSING	POCKET DOOR	BLACK 3'-0" 7'-0" 1 3/4"	WOOD BLACK	T-4	1	G.C.	G.C.	CROWDERFRAME "2X6 SHIM KIT" MODIFICATION KIT REQUIRED. G.C. TO ENSURE HARDWARE WILL WORK WITH DOORS	
D 5	CORRIDOR UNIVERSAL WC	HOLLOW CORE	(PT) 3'-0" 7'-0" 1 3/4"	HOLLOW METAL (PT)	T-5	1	G.C.	G.C.	ENSURE HINGES ARE BLACK IN FINISH	
D 6	STORAGE EXTERIOR	EXISTING DOOR	EXIST. EXIST. EXIST. EXIST.	EXIST. EXIST.	H-1	3	G.C.	G.C.	EXISTING DOOR ENSURE DOOR & HARDWARE ARE IN GOOD WORKING CONDITION	



**TYPICAL STEEL STUD CONNECTION DETAILS**



**ISSUE**

#	Date	Description	Dwn
4	MAY 18, 2023	ISSUED FOR TENDER	BS
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**SPECIFICATION LEGEND**

DOORS	HARDWARE	DOOR CLOSURE
T-1 ALUMINUM S.F. DOOR BY: EDWARD EXISTING TO REMAIN	H-1 HINGES BY: EDWARD TYPE: STANDARD HINGE MODEL: 079-C15-NRP SIZE: 4 1/2" x 4" FINISH: SATIN NICKEL	H-7 DOOR CLOSURE BY: EDWARDS TYPE: 400 SERIES DOOR CLOSURE MODEL: 404IC - C-28 NOTE: MOUNT ON NON-SALES AREA SIDE OF DOOR
T-2 WOOD BARN DOOR BY: CONTRACTOR TYPE: HOLLOW WOOD CORE FINISH: PRIMED	H-2 DOOR HANDLE BY: DOREX TYPE: T2 SERIES MODEL: T2-F-80-19 FINISH: 19 MATTE BLACK FUNCTION: (KEYED ONE SIDE)	H-8 DOOR STOP BY: EDWARDS TEL # 416-231-3325 TYPE: LOW PROFILE FLOOR STOP MODEL: 81-235-C3
T-3 STANDARD WOOD DOOR BY: CONTRACTOR TYPE: SOLID WOOD CORE FINISH: PRIMED	H-3 DOOR HANDLE BY: DOREX TYPE: T2 SERIES MODEL: T2-F-40-19 FINISH: 19 MATTE BLACK FUNCTION: PRIVACY PUSH BUTTON THUMB TURN	H-9 SLIDING DOOR TRACK BY: K.N. CROWDER TYPE: POCKET DOOR KIT MODEL: TYPE C PROVIDE AS REQ'D: CROWDERFRAME "2X6 SHIM KIT" MODIFICATION KIT
T-4 SHAKER / GLASS POCKET DOOR BY: CONTRACTOR TYPE: SHAKER STYLE POCKET DOOR WITH 3 FROSTED GLASS PANELS. SHOP DRAWINGS REQ'D FOR APPROVAL	H-4 HINGES BY: RICHELIEU TYPE: 4" ADJUSTABLE SPRING HINGE MODEL: CRBL FINISH: BLACK	H-10 SLIDING DOOR PULL BY: TRIMCO TYPE: POCKET DOOR PULL MODEL: 1069 SERIES FINISH: BLACK
T-5 HOLLOW METAL DOOR BY: CONTRACTOR TYPE: HOLLOW CORE METAL DOOR 1 1/2" THK WITH 3 PIECE METAL FRAME	H-5 DOOR HANDLE BY: DOREX TYPE: FC SERIES MODEL: FC-42 FINISH: C260 STAIN CHROMIUM FUNCTION: (KEYED ONE SIDE/ PUSH BUTTON ON)	H-11 DOOR PULL - STOREFRONT BY: C.R. LAURENCE OF CANADA TYPE: 84" LOCKING LADDER PULL FINISH: BRUSHED STAINLESS STEEL
T-6 SHAKER / GLASS SWING DOOR BY: CONTRACTOR TYPE: SHAKER STYLE DOOR WITH 3 FROSTED GLASS PANELS. SHOP DRAWINGS REQ'D FOR APPROVAL FINISH: BLACK	H-6 LOW TRAFFIC EMERGENCY EXIT PUSH BAR BY: DETEX ALARM TYPE: DEAD BOLT ECL-230 SERIES MODEL: ECL-230D EXIT CONTROL LOCK	H-12 DOOR PULL - BARN DOOR BY: RICHELIEU TYPE: 8740R1001912900 FINISH: MATTE BLACK
L-1 LOCK - CYLINDER BY: MEDECO SUPPLIED AND INSTALLED BY OWNER		H-13 HARDWARE SET - BARN DOOR BY: RICHELIEU TYPE: T58500180 FINISH: BLACK ANODIZED
L-2 OCCUPANCY LOCK BY: SCHLAGE TYPE: L SERIES MODEL: L496 FINISH: 630 SATIN STAINLESS STEEL		

**TYPICAL METAL STUD SCHEDULE**

NOTE THIS SCHEDULE IS APPLICABLE @ 5PSF (WIND LOAD) W/ AN LSD FACTORED WIND LOAD OF 7PSF. CHART APPLICABLE TO INTERIOR WALLS AND PARTITIONS ONLY. (OBC 2012 AND NBC 2010 PROJECTS)

STUD	FLANGE	LIP	STUD SPACING		
			12" O.C.	16" O.C.	24" O.C.
3 5/8"	1 1/2"	3/8"	MAX STUD HT.		
	362S125-33		15'-3 3/4"	13'-10 1/4"	12'-2 1/2"
	362S125-43		16'-8 3/4"	15'-2 3/4"	13'-3 3/4"
3 5/8"	1 5/8"	3/8"			
	362S162-33		16'-10 3/4"	15'-3 3/4"	13'-4 3/4"
	362S162-43		18'-4 3/4"	16'-8 3/4"	14'-7 1/4"
6"	1 1/2"	3/8"			
	600S125-33		22'-8 3/4"	20'-7 1/4"	18'-0"
	600S125-43		25'-0"	22'-8 3/4"	19'-10 3/4"
	600S125-54		26'-9 3/4"	24'-4 3/4"	21'-3 3/4"
6"	1 5/8"	3/8"			
	600S162-33		25'-0"	22'-8 3/4"	19'-9 3/4"
	600S162-43		27'-2 3/4"	24'-8 3/4"	21'-8 3/4"
	600S162-54		29'-2 3/4"	26'-7 1/4"	23'-2 3/4"
6"	2"	3/8"			
	600S200-33		26'-1 1/4"	23'-8 3/4"	20'-8 3/4"
	600S200-43		28'-7 1/4"	26'-0"	22'-8 3/4"
	600S200-54		30'-9 3/4"	27'-10 3/4"	24'-4 3/4"
8"	1 5/8"	3/8"			
	800S162-43		33'-10 3/4"	30'-9 3/4"	26'-10 3/4"
	800S162-54		36'-6"	33'-1 1/4"	29'-0"
	800S162-68		39'-6"	35'-10 3/4"	31'-3 3/4"
8"	2"	3/8"			
	800S200-43		35'-10 3/4"	32'-7 1/4"	28'-6"
	800S200-54		38'-7 1/4"	35'-0"	30'-7 1/4"
	800S200-68		41'-4 3/4"	37'-7 1/4"	32'-10 3/4"

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**GS**

**G.L. SMITH**

PROFESSIONAL STAMPS:

**Gary L. Smith**  
REGISTERED DESIGNER OF INTERIOR FINISHES  
ONTARIO

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**ISSUE**

**PROJECT TITLE:**

**STEEL N INK**

**KILDONAN CROSSING**  
1615 REGENT AVE W  
WINNIPEG, MB  
R2C 5C6  
CRU # 4

**REVISION**

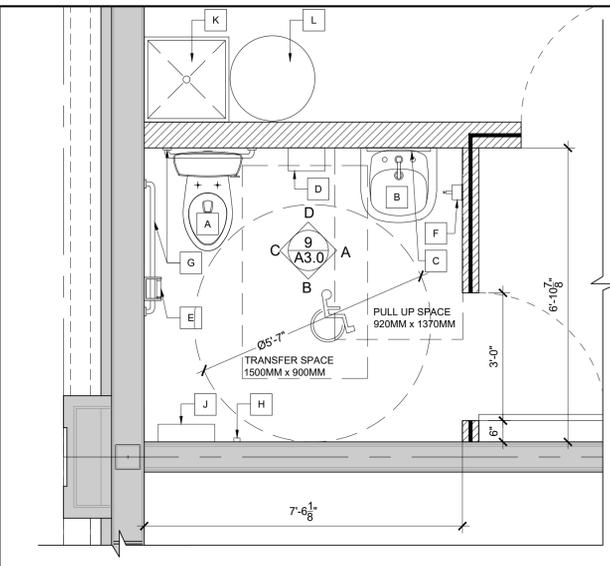
**CONSTRUCTION PLAN**

PRINT DATE: 17-May-23  
SCALE: AS NOTED

DRAWN BY: BS  
DRAWING NO: 23-1020

CHECKED BY: MT  
PROJECT NO: 23-1020

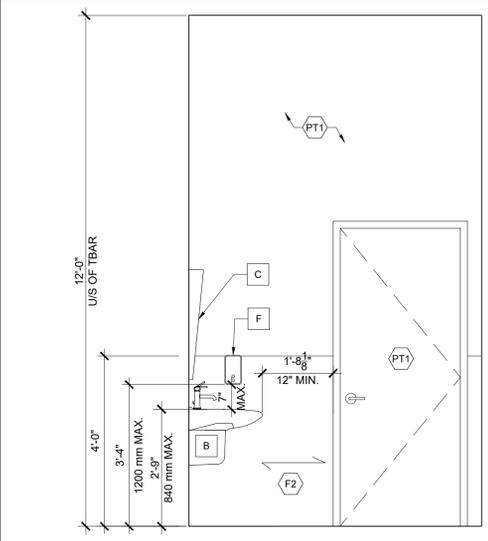
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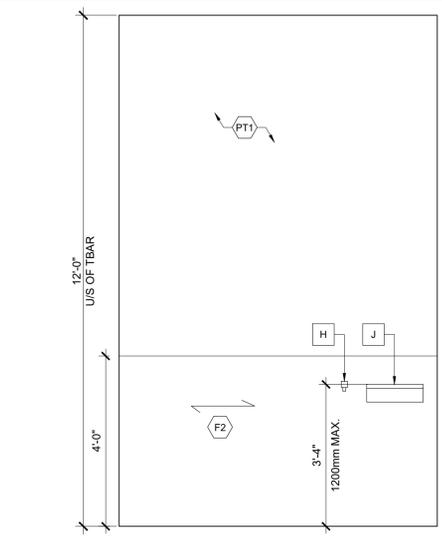
**A** PLAN OF RESTROOM  
3.1 SCALE: 1/2"=1'-0"

WASHROOM ACCESSORIES	
A	2-PIECE WATER CLOSET (SEE ENGINEER'S DRAWING FOR SPECIFICATIONS)
B	LAVATORY AND FAUCET (SEE ENGINEER'S DRAWING FOR SPECIFICATIONS)
C	WALL MIRROR: #B-293-1830
D	PAPER TOWEL HOLDER: HAND PAPER DISPENSER #101 BY "FROST"
E	TISSUE PAPER HOLDER: #B-273
F	SOAP DISPENSER: #B-2111 BY "BOBRICK"
G	GRAB BARS: #B-5806X36 & B-5806X24 AS PER LOCAL CODES
H	HOOK: #B-233
I	BRAILLE SIGN: SPECIFICATIONS SEE DETAIL 2/02A FOR
J	SHELF: #295X16
K	MOP SINK AND FAUCET (SEE ENGINEER'S DRAWING FOR SPECIFICATIONS)
L	HOT WATER TANK (SEE ENGINEER'S DRAWING FOR SPECIFICATIONS)

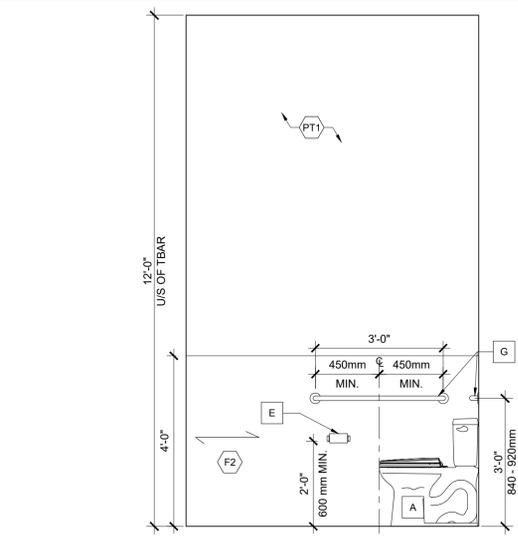
-GARBAGE: 24.5 LITERS #B-279 BY "BOBRICK" AS PER CLIENTS REQUEST  
 -STAINLESS STEEL ACCESSORIES, SATIN FINISH BY BOBRICK OR ANY APPROVED EQUIVALENT  
 -EXPOSED HOT, COLD AND DRAIN LINES TO HAVE INSULATED PIPES IN ACCORDING TO NATION BUILDING CODE W/ MANITOBA AMENDMENTS 3.8.3.11.



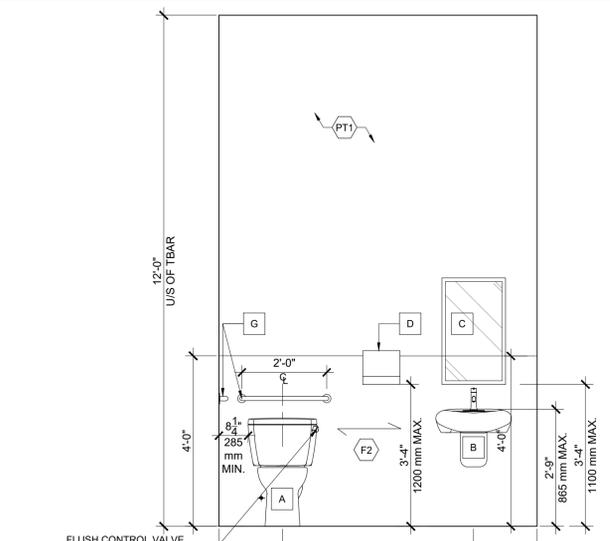
**B** ELEVATION  
3.1 SCALE: 1/2"=1'-0"



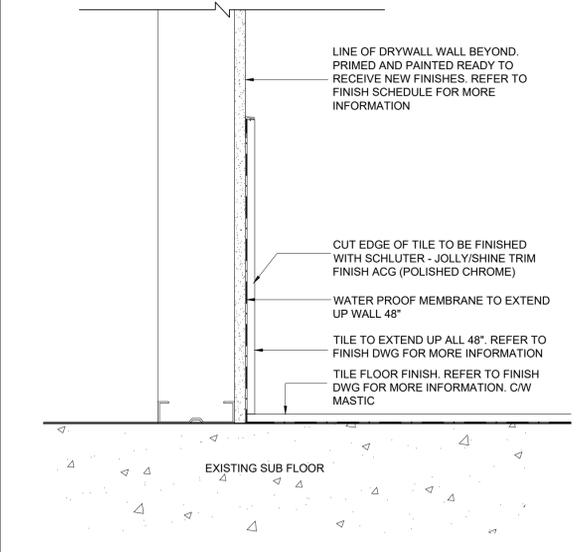
**C** ELEVATION  
3.1 SCALE: 1/2"=1'-0"



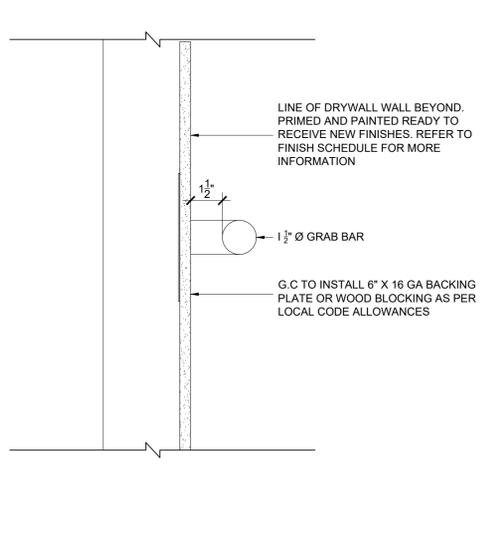
**D** ELEVATION  
3.1 SCALE: 1/2"=1'-0"



**E** ELEVATION  
3.1 SCALE: 1/2"=1'-0"



**1** DETAIL OF TILE & MEMBRANE  
3.1 SCALE: 3"=1'-0"



**3.1** DETAIL OF TYP. GRAB BAR INSTALL  
A03.1 SCALE: 3"=1'-0"



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ISSUE

#	Date	Description	Dwn
4	MAY 18, 2023	ISSUED FOR TENDER	BS
3	MAY 17, 2023	ISSUED FOR PERMIT	BS
2	MAY 4, 2023	ISSUED FOR LLDOR REVIEW	MT
1	APRIL 25, 2023	ISSUED FOR CLIENT REVIEW	BS

#	Date	Description	Dwn

PROJECT TITLE:



KILDONAN CROSSING  
1615 REGENT AVE W  
WINNIPEG, MB  
R2C 5C6  
CRU # 4

REVISION

#	Date	Description	Dwn

DRAWING TITLE:

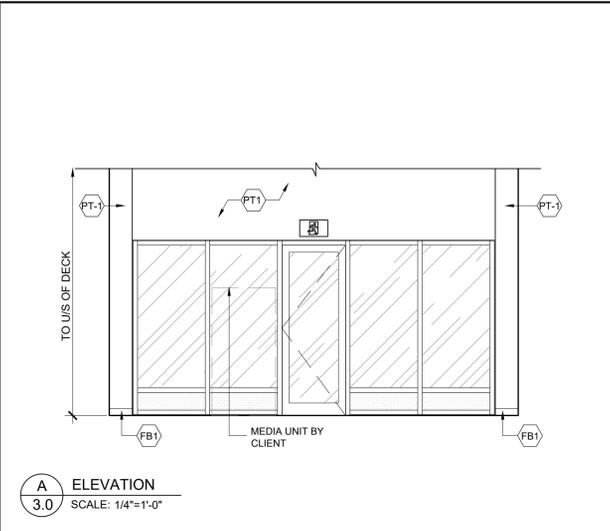
RESTROOM  
DETAILS

PRINT DATE:	17-May-23	SCALE:	AS NOTED
DRAWN BY:	BS	DRAWING NO.:	
CHECKED BY:	MT		
PROJECT NO.:	23-1020		

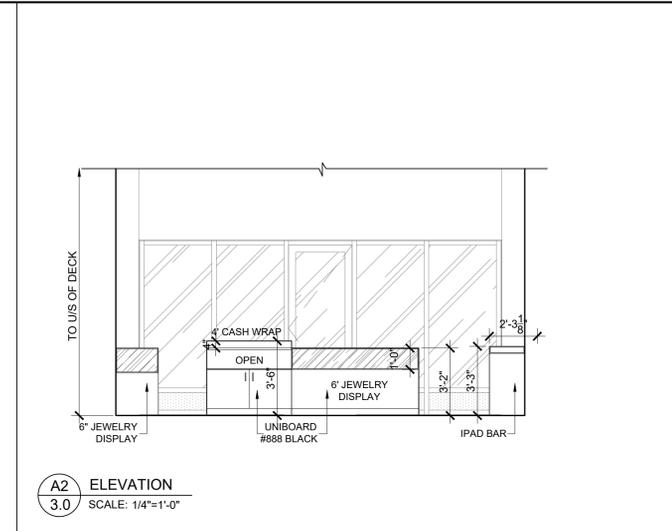


G.L. SMITH

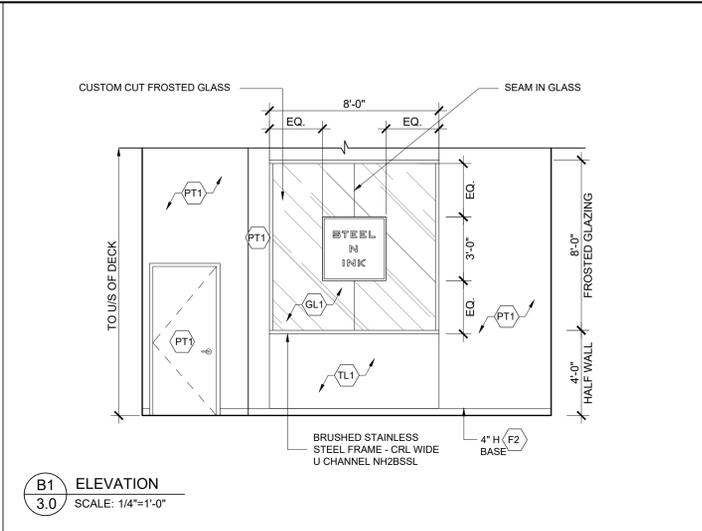
PROFESSIONAL STAMPS:



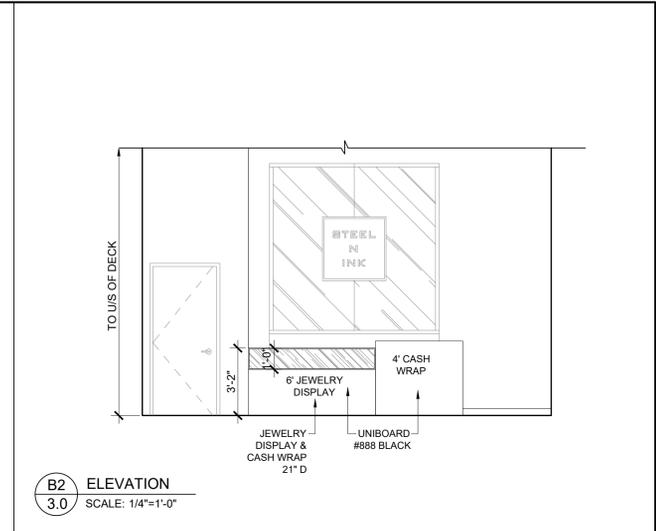
**A** ELEVATION  
3.0 SCALE: 1/4"=1'-0"



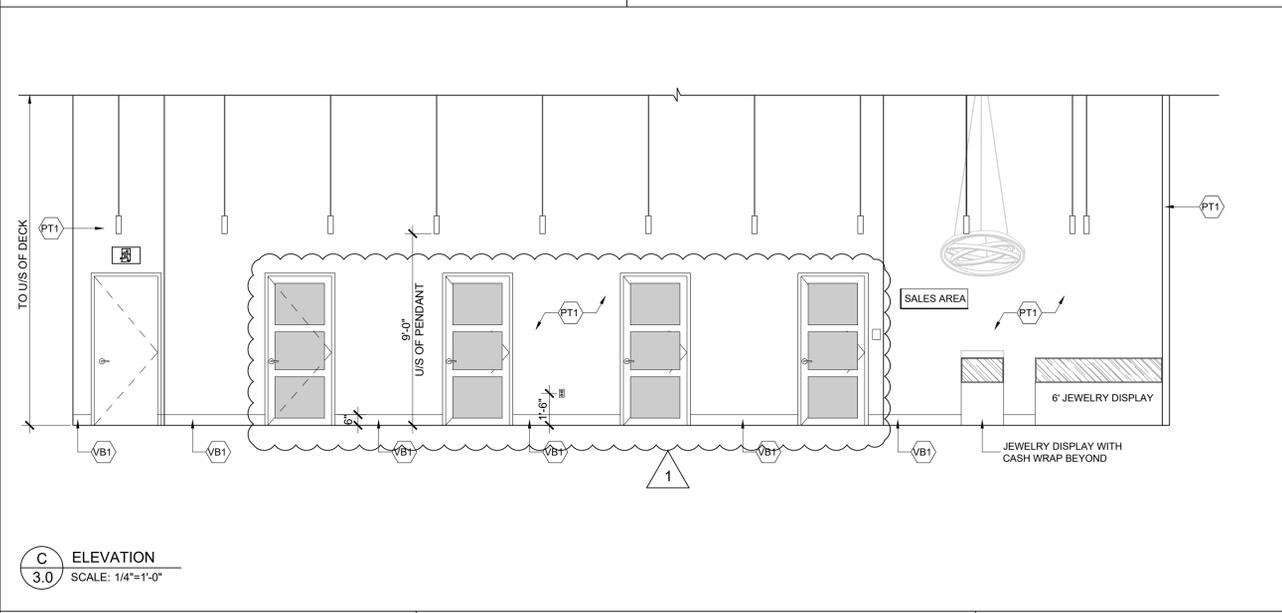
**A2** ELEVATION  
3.0 SCALE: 1/4"=1'-0"



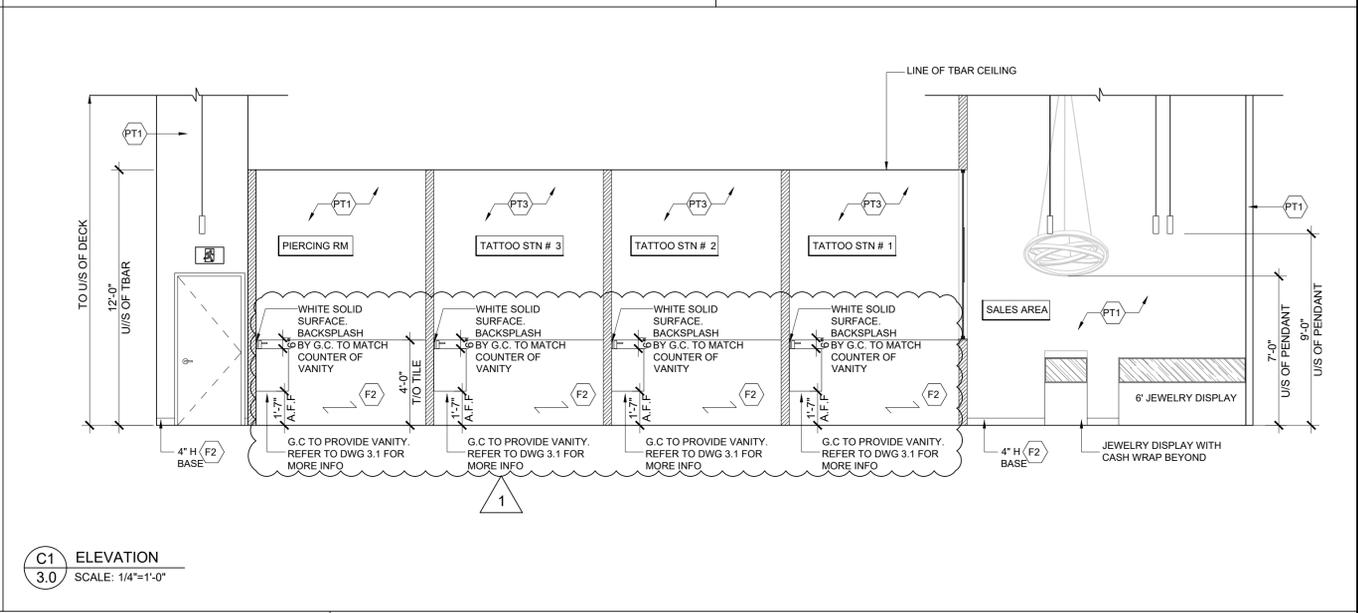
**B1** ELEVATION  
3.0 SCALE: 1/4"=1'-0"



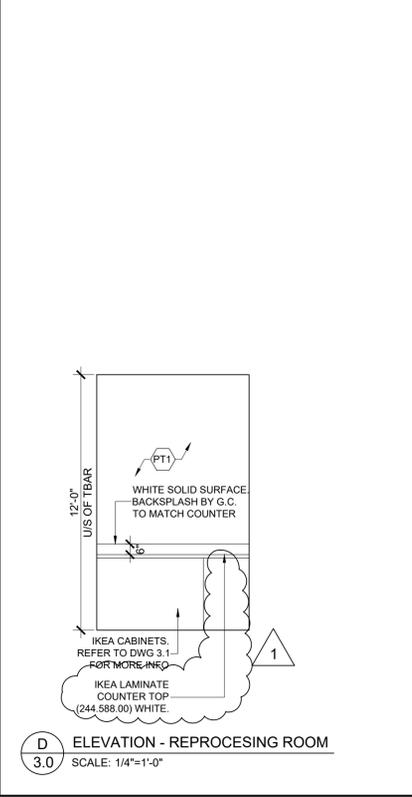
**B2** ELEVATION  
3.0 SCALE: 1/4"=1'-0"



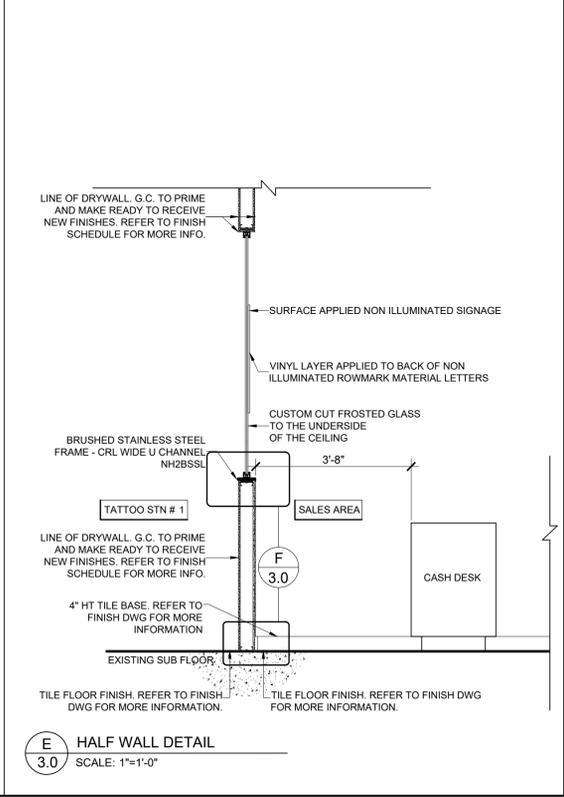
**C** ELEVATION  
3.0 SCALE: 1/4"=1'-0"



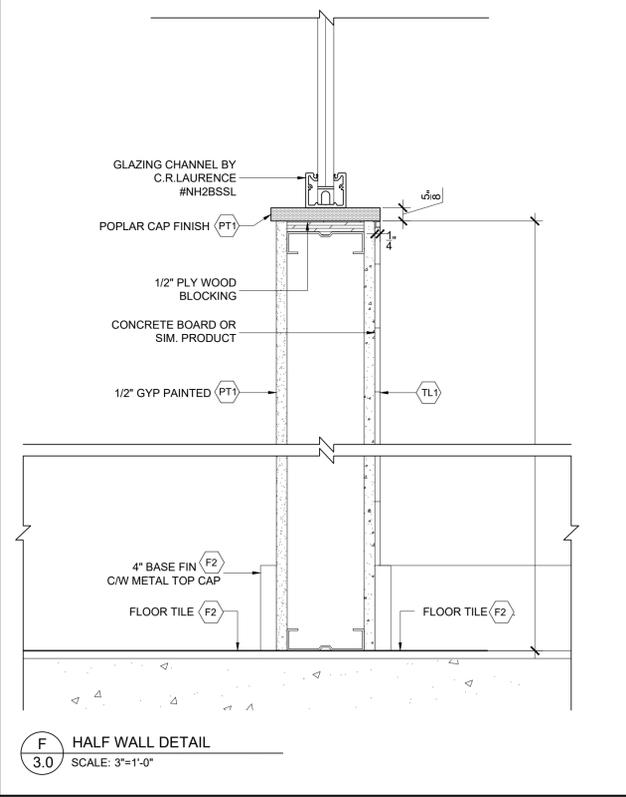
**C1** ELEVATION  
3.0 SCALE: 1/4"=1'-0"



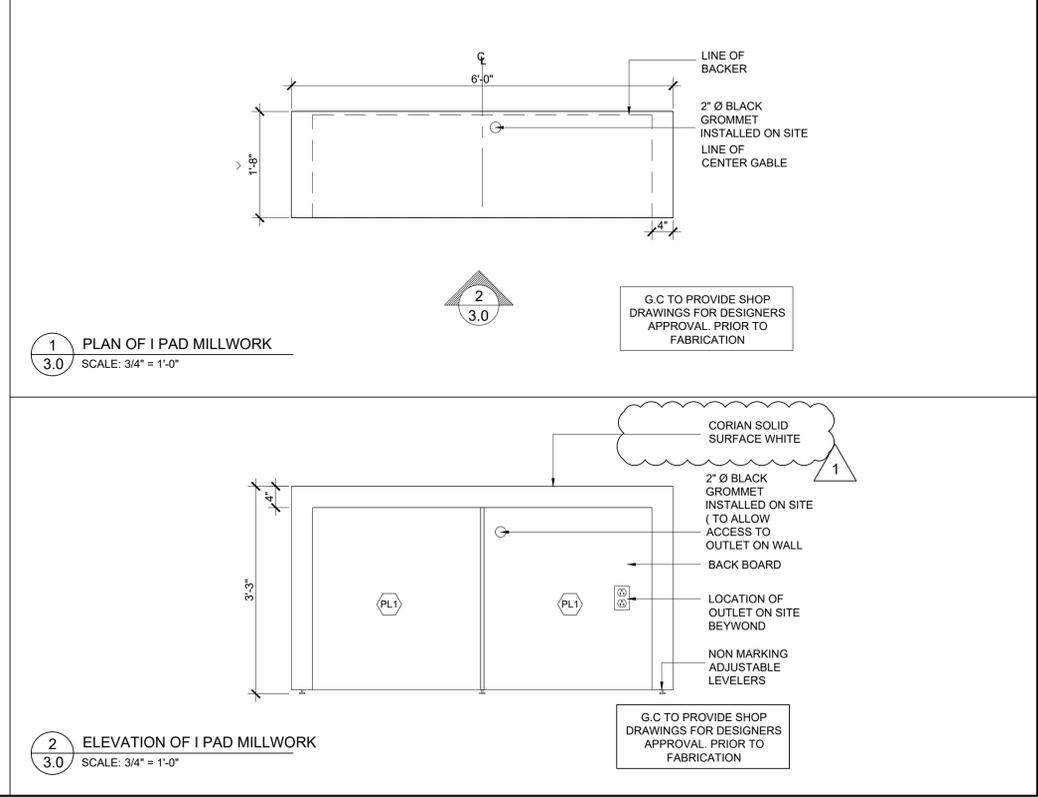
**D** ELEVATION - REPROCESSING ROOM  
3.0 SCALE: 1/4"=1'-0"



**E** HALF WALL DETAIL  
3.0 SCALE: 1"=1'-0"



**F** HALF WALL DETAIL  
3.0 SCALE: 3"=1'-0"



**1** PLAN OF I PAD MILLWORK  
3.0 SCALE: 3/4"=1'-0"

**2** ELEVATION OF I PAD MILLWORK  
3.0 SCALE: 3/4"=1'-0"

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PROJECT TITLE:



KILDONAN CROSSING  
1615 REGENT AVE W  
WINNIPEG, MB  
R2C 5C6  
CRU # 4

REVISION

#	Date	Description	Dwn

DRAWING TITLE:

INTERIOR ELEVATIONS

PRINT DATE:	SCALE:
17-May-23	AS NOTED
DRAWN BY:	DRAWING NO:
BS	
CHECKED BY:	
MT	
PROJECT NO:	
23-1020	

3.0

G.C TO PROVIDE BELOW IKEA MILLWORK + SINK + FAUCET OR SIMILAR.  
G.C TO CONFIRM DIMENSIONS ON SITE PRIOR TO PURCHASING



COUNTERTOP TO BE WHITE. REFER TO DWG 5.0 FOR MORE INFO

G.C TO PROVIDE BELOW IKEA MILLWORK + SINK + FAUCET OR SIMILAR.  
G.C TO CONFIRM DIMENSIONS ON SITE PRIOR TO PURCHASING



COUNTERTOP TO BE WHITE. REFER TO DWG 5.0 FOR MORE INFO

### Item list

1. SE B2E11 - Base cabinet with drawers and inner drawers				
Art. num.	Price	Quant.	Total price	
SEKTION base cabinet frame, white 24x24"	902.653.88	\$83.00	1	\$83.00
MAXIMERA drawer, high, white 24x24"	102.656.79	\$105.00	2	\$210.00
MAXIMERA drawer, low, white 24x24"	702.656.62	\$75.00	1	\$75.00
UTRUSTA drawer front, low 24"	802.656.28	\$14.00	1	\$14.00
VOXTORP drawer front, dark gray 24x15"	604.561.72	\$41.00	2	\$82.00
MAXIMERA add-on side for drawer, high, glass 23 5/8"	502.388.58	\$15.00	2	\$30.00

This cabinet includes one or more cover panels. You'll find it/them below.

2. SE SB2D* - Base cabinet for sink with door				
Art. num.	Price	Quant.	Total price	
SEKTION base cabinet frame, white 30x24x30"	302.653.86	\$88.00	1	\$88.00
VOXTORP door, dark gray 15x30"	104.561.41	\$65.00	2	\$130.00
TOLLSTON kitchen faucet with handspray, black polished metal	403.416.91	\$299.00	1	\$299.00
VRESJON inset sink, 1 bowl, stainless steel 37x44 cm	805.045.39	\$139.00	1	\$139.00
LILLVIKEN lid	203.178.52	\$10.00	1	\$10.00
LILLVIKEN sink strainer with stopper	503.254.26	\$10.00	1	\$10.00
SEKTION reinforced ventilated top rail, galvanized 36"	602.845.80	\$15.00	1	\$15.00
UTRUSTA hinge w b-in damper for kitchen 110"	805.248.82	\$25.00	2	\$50.00

3. SE B2E11 - Base cabinet with drawers and inner drawers				
Art. num.	Price	Quant.	Total price	
SEKTION base cabinet frame, white 24x24x30"	902.653.88	\$83.00	1	\$83.00
MAXIMERA drawer, high, white 24x24"	102.656.79	\$105.00	2	\$210.00
MAXIMERA drawer, low, white 24x24"	702.656.62	\$75.00	1	\$75.00
UTRUSTA drawer front, low 24"	802.656.28	\$14.00	1	\$14.00
VOXTORP drawer front, dark gray 24x15"	604.561.72	\$41.00	2	\$82.00
MAXIMERA add-on side for drawer, high, glass 23 5/8"	502.388.58	\$15.00	2	\$30.00

Suspension rail				
Art. num.	Price	Quant.	Total price	
SEKTION suspension rail, galvanized 84"	602.615.27	\$30.00	1	\$30.00

Legs & toe kick				
Art. num.	Price	Quant.	Total price	
LERHYTTAN decorative toekick, black stained 87"	203.978.15	\$70.00	2	\$140.00
LERHYTTAN leg for decorative toekick, black stained 4 1/4"	703.978.13	\$45.00	5	\$225.00
SEKTION leg 4 1/2"	102.655.18	\$20.00	2	\$40.00

Item list				
1. Filler piece - Filler piece for base cabinet				
Filler pieces fill the gaps between cabinets or a wall and cabinet, and are made by cutting up cover panels.				
2. SE B2D31* - Base cabinet with inner drawers				
Art. num.	Price	Quant.	Total price	
SEKTION base cabinet frame, white 24x24x30"	902.653.88	\$83.00	1	\$83.00
AXSTAD door, matt white 12x30"	104.260.45	\$60.00	2	\$120.00
MAXIMERA drawer, medium, white 24x24"	802.656.66	\$90.00	3	\$270.00
UTRUSTA drawer front, medium 24"	202.656.31	\$18.00	3	\$54.00
MAXIMERA add-on side for drawer, medium, glass 23 5/8"	302.388.59	\$12.00	3	\$36.00
UTRUSTA hinge w b-in damper for kitchen 153"	104.272.62	\$28.00	2	\$56.00

3. SE CBS* - Corner base cabinet with shelves				
Art. num.	Price	Quant.	Total price	
SEKTION base corner cabinet frame, white 47x26x30"	502.655.02	\$140.00	1	\$140.00
AXSTAD door, matt white 21x30"	604.260.76	\$92.00	1	\$92.00
UTRUSTA shelf for corner base cabinet, white 47"	102.656.22	\$50.00	1	\$50.00
UTRUSTA hinge w b-in damper for kitchen 110"	805.248.82	\$25.00	1	\$25.00

5. SE SB2D* - Base cabinet for sink with door				
Art. num.	Price	Quant.	Total price	
SEKTION base cabinet frame, white 36x24x30"	802.653.98	\$93.00	1	\$93.00
AXSTAD door, matt white 16x30"	004.260.55	\$83.00	2	\$166.00
VIMMEREN kitchen faucet with handspray, stainless steel color	103.052.89	\$199.00	1	\$199.00
VRESJON inset sink, 1 bowl, stainless steel 37x44 cm	805.045.39	\$139.00	1	\$139.00
LILLVIKEN lid	203.178.52	\$10.00	1	\$10.00
LILLVIKEN sink strainer with stopper	503.254.26	\$10.00	1	\$10.00
SEKTION reinforced ventilated top rail, galvanized 36"	602.845.81	\$16.00	1	\$16.00
UTRUSTA hinge w b-in damper for kitchen 110"	805.248.82	\$25.00	2	\$50.00

Suspension rail				
Art. num.	Price	Quant.	Total price	
SEKTION suspension rail, galvanized 84"	602.615.27	\$30.00	2	\$60.00

Legs & toe kick				
Art. num.	Price	Quant.	Total price	
FORBATTRA toekick, matt white 84x4 1/2"	904.177.54	\$35.00	2	\$70.00
SEKTION leg 4 1/2"	102.655.18	\$20.00	3	\$60.00

A MILLWORK - TATTOO STN RM  
3.1 SCALE: NTS

B MILLWORK - PROCESSING ROOM  
3.1 SCALE: NTS



#### Agostini 24" Single Bathroom Vanity with Resin Vanity Top

See More By **Steelside™**  
★★★★☆ 4.6 109 Reviews

**\$529.99** ~~\$757.39~~ 30% Off  
**On Sale**

Get \$25 off \$150 with the **Wayfair Credit Card** <sup>1</sup>

Free shipping  
Get it between Thu, May 25 - Mon, May 29  
Ship to: **M4C 1B5 - Toronto** ▼

Select Base Finish: Concrete Gray



1 Add to Cart



#### Cubic Single Hole Bathroom Faucet with Optional Drain Assembly

See More By **KIBI**  
★★★★☆ 4.8 825 Reviews

**\$144.99** ~~\$334.99~~ 57% Off

Get \$25 off \$150 with the **Wayfair Credit Card** <sup>1</sup>

Free shipping  
Get it between Thu, May 25 - Mon, May 29  
Ship to: **M4C 1B5 - Toronto** ▼

Finish/Colour (4)  
Chrome

Optional Accessories (2)  
Without Pop-Up Drain

1 Add to Cart

#### Product Overview

Warranty Included Spout Height: 4.5"

#### Norway Broom Closet Pantry Black Wengue / White

See More By **Ebern Designs**  
☆☆☆☆☆ 0 | 0 Reviews

**\$679.99**

Product Information

- Specifically design to store your mop and broom
- Five interior shelves
- Perfect to store cleaning supplies
- 71.3 inch high storage cabinet
- One Year Warranty

Weights & Dimensions

1 Add to Cart

See Full Details

C MILLWORK - TATTOO STN VANITY  
3.1 SCALE: NTS

D MILLWORK - TATTOO STN FAUCET  
3.1 SCALE: NTS

E MILLWORK - TATTOO STN STORAGE  
3.1 SCALE: NTS



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KILDONAN CROSSING  
1615 REGENT AVE W  
WINNIPEG, MB  
R2C 5C6  
CRU # 4

#### REVISION

#	Date	Description	Dwn
1	MAY 17, 2023	REV TO VANITY AND MILLWORK DETAILS	BS

#### DRAWING TITLE:

#### MILLWORK DETAILS

PRINT DATE: 17-May-23 SCALE: AS NOTED

DRAWN BY: BS DRAWING NO:

CHECKED BY: MT

PROJECT NO: 23-1020

3.1



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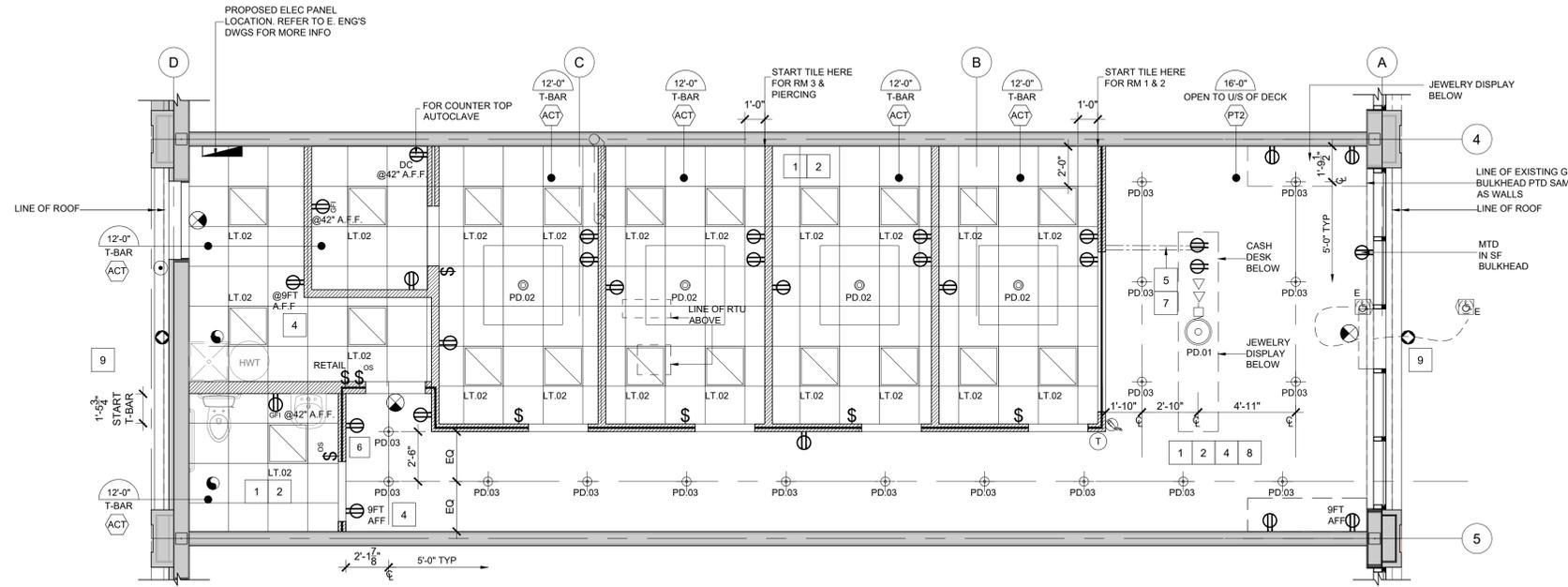
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**A** REFLECTED CEILING PLAN  
**4.0** SCALE: 1/4"=1'-0"

RCP KEYED NOTES:

- G.C. TO ENSURE THAT ALL DIFFUSERS AND ACCESS HATCHES ARE PAINTED THE SAME COLOUR AS CEILING.
- MAINTAIN/PROVIDE ACCESS TO ALL BASE BUILDING AND TENANT INSTALLED EQUIPMENT ABOVE THE CEILING THAT MAY REQUIRE PERIODIC SERVICE OR MAINTENANCE. COORDINATE WITH THE LANDLORDS BUILDING OPERATIONS MANAGER
- ALL SPRINKLER HEADS ARE TO BE RECESSED AND W/ BLACK COVER
- POWER FOR SECURITY CAMERA, FACE PLATE & FIXTURE TO BE SAME AS ADJACENT WALLS
- T.G.C. TO TRENCH AS NOTED W/ (2) SEPARATE 3/4" DIAMETER CONDUITS, ONE FOR POWER AND ONE FOR COMMUNICATION SEE ENG'S DWGS FOR MORE INFO. ALL SUPPLIED, INSTALLED & TERMINATED BY G.C.
- POWER FOR TENANT SUPPLIED SIGN. POWER TO BE ON A TIME CLOCK
- ALL CABLING TO BE CAT6.
- ALARM CABLING BY OTHERS. ALL OTHER CABLING UNLESS NOTED OTHERWISE TO BE BY G.C.
- G.C. TO PROVIDE POWER FOR ALL EXTERIOR SIGNAGE IF NONE EXISTING. FINAL CONNECTION BY G.C. ELECTRICIAN. PROVIDE A TIMER IF REQ'D.

GENERAL RCP NOTES:

- REFER TO THE MECHANICAL ENGINEER DRAWINGS FOR THE HVAC DISTRIBUTION AND DESIGN.
- REFER TO THE ELECTRICAL ENGINEER DRAWINGS FOR ALL LIGHTING, CONTROLS AND SWITCHING. COORDINATE THEIR DRAWINGS WITH THE DESIGN DRAWINGS FOR LIGHT FIXTURE MOUNTING HEIGHTS. GENERAL CONTRACTOR IS TO PROVIDE ALL LIFE/SAFETY EXIT LIGHTING AS PER THE ELECTRICAL ENGINEERS' DRAWINGS.
- ALL SURFACES EXISTING AS WELL AS ALL NEW HVAC DISTRIBUTION IS TO BE PAINTED OUT TO MATCH CEILING.
- STOREFRONT SIGNAGE TO ADHERE TO APPLICABLE CITY BY-LAWS.
- ALL NEW FIXTURES TO BE U.L.C. LISTED AND FURNISHED BY OWNER VENDOR, INSTALLED BY CONTRACTOR. CONTRACTOR TO CONFORM TO ALL APPLICABLE LOCAL CODES AND INSTALL PER MANUFACTURER SPECIFICATIONS.

GENERAL POWER & COMM. NOTES:

- POWER AND COMMUNICATION DRAWINGS TO BE USED FOR LOCATION PURPOSES ONLY. REFER TO ELECTRICAL DRAWINGS FOR DETAILS, SPECIFICATIONS AND REQUIREMENTS. REPORT ANY DISCREPANCIES.
- ALL MECHANICAL, ELECTRICAL AND COMMUNICATION WORK TO COMPLY WITH THE REQUIREMENTS OF THE BUILDING LANDLORD AND AUTHORITIES HAVING JURISDICTION.
- ALL MATERIALS AND LABOURS BY T.G.C. U.O.N.
- ALL CAT 6 CABLES TO BE TERMINATED (KEYSTONE PLATED) AND LABELED BY T.G.C.
- NEW POWER/VOICE/DATA RECEPTACLES ARE TO BE MOUNTED AT 16" AFF. TO THE CENTERLINE OF THE DEVICE UNLESS OTHERWISE NOTED. ALL SWITCHES ARE TO BE MOUNTED SO THAT THE CENTER LINE OF THE DEVICE ALIGNS WITH THE CENTERLINE OF THE DOOR HARDWARE. ALL CONDUIT AND WIRING IS TO BE CONCEALED WITHIN WALLS, ALSO COORDINATE WITH MILLWORK.
- DIMENSIONS TAKEN FROM THE FACE OF THE PARTITION TO THE CENTRE OF THE SERVICE OR GROUP OF SERVICES U.O.N.
- WHERE POWER AND COMMUNICATION SERVICES ARE ADJACENT ON PLAN, GANGED COVER PLATES SHALL BE USED.
- CONTRACTOR TO ENSURE TRADES HAVE COMPLETED THEIR PORTION OF THE WORK BEFORE BOARDING UP BOTH SIDES OF STUDS. THIS IS TO INCLUDE INSPECTIONS AS REQUIRED BY LOCAL AND PROVINCIAL BY-LAWS AND BUILDING CODES.
- CONTRACTOR TO SUPPLY AND INSTALL EMPTY CONDUIT, C/W PULL STRINGS, WIRING, CONNECTIONS AND BOXES FOR ALL SECURITY AND CABLE TELEVISION WIRING.
- WHERE POWER AND COMMUNICATION ARE SHOWN ON A COLUMN, CENTER GANG ON COLUMN U.O.N.
- ALL COVER PLATES AND RECEPTACLES AND SWITCHES TO MATCH WALL FINISH U.O.N.

E = EXISTING R = RELOCATED  
N = NEW  
D = DEMO

ELECTRICAL LEGEND

ITEM #	SYMBOL	QTY.	DESCRIPTION	MFG	MODEL #	BULB	V	W	REMARKS
1.	○ PD.01	1	DECORATIVE PENDANT	MODERN FORMS LIGHTING	PD-24848-BK	LED		107W	SUSPENDED AT 7'-0" AFF
2.	○ PD.02	4	DECORATIVE PENDANT	KUZCO LIGHTING	PD88148-BK	LED		100W	SUSPENDED AT 7'-0" AFF
3.	○ PD.03	17	GENERAL LIGHTING	LIGHTOLIER	3DP-CY-BKST-LC-S-DI-BK-BK-E26-PAR38	LED	120V	15W	SUSPENDED AT 9'-0" AFF C/W COMPATIBLE PHILIPS 14PAR38/LED/835/F25/GLDIM LAMP
4.	○ DL.01	0	SINGLE SPOT	STANPRO	9780-LPDL4RND9W/SC C7/BK/STD	LED		9W	
5.	□ LT.02	21	2X2 LED LIGHT PANEL	FEIT ELECTRIC	FP2X2J4U WY/WH (SPECIFY SURFACE MTD TRIM KIT AS REQ'D)	LED		48W	FOR NEW T-BAR CEILING INSTALL
6.	□ S	2 = E	RECESSED SPEAKERS						SEE ENG DWG'S FOR MORE INFO
7.	□ E	SEE ENGINEER DWGS	DOUBLE HEAD EMERGENCY LIGHT	STANPRO	STAN-N2-06-12V4WLJ				SEE ENG DWG'S FOR MORE INFO
8.	□ E	SEE ENGINEER DWGS	DOUBLE HEAD EMERGENCY LIGHT WITH BATTERY PACK	STANPRO	STAN-SLC12200-2N3WLJ-2H				SEE ENG DWG'S FOR MORE INFO
9.	□ E	SEE ENGINEER DWGS	COMBO EXIT SIGN/ DOUBLE HEAD EMERGENCY LIGHT	STANPRO	STAN-PRMS-2L				SEE ENG DWG'S FOR MORE INFO
10.	○ E	SEE ENGINEER DWGS	ILLUMINATED EXIT SIGN SINGLE FACE EXIT	STANPRO	STAN-RMS-0-WH-UDC				SEE ENG DWG'S FOR MORE INFO
11.	○ T	1	THERMOSTAT LOCATION						SEE ENG DWG'S FOR MORE INFO
12.	—	SEE PLAN	ELECTRICAL PANEL LOCATION						SEE ENG DWG'S FOR MORE INFO
13.	○ E	2	MULTI PURPOSE DRY CHEMICAL FIRE EXTINGUISHER						SEE ENG DWG'S FOR MORE INFO
14.	○ E	25	DUPLEX OUTLET SINGLE PHASE 15A/120V						SEE ENG DWG'S FOR MORE INFO. FACE PLATE COLOUR TO MATCH W/ WALL FIN.
15.	○ E	2	GROUND FAULT INTERRUPTER DUPLEX OUTLET SINGLE PHASE 15A/120V						SEE ENG DWG'S FOR MORE INFO. FACE PLATE COLOUR TO MATCH W/ WALL FIN.
16.	○ E	1	DIRECT CONNECTION DUPLEX OUTLET SINGLE PHASE 15A/120V						SEE ENG DWG'S FOR MORE INFO. FACE PLATE COLOUR TO MATCH W/ WALL FIN.
17.	○ E	0	FLOOR MONUMENT DUPLEX COVER PLATE						SEE ENG DWG'S FOR SPEC. SILVER COVER PLATE
18.	○ E	2	DATA PORT CAT 6						SEE ENG DWG'S FOR MORE INFO
19.	○ E	2 = E	PUSH BUTTON OPERATOR						EXISTING BY L.LORD
20.	○ E	1 BELL BUZZER	BELL & BUZZER						SEE ENG DWG'S FOR MORE INFO
21.	○ E	2	DIRECT CONNECT FOR HARDWIRED SIGNAGE. POWER ON TIME CLOCK						STOREFRONT SIGN ON TIME CLOCK. SEE ENG DWG'S FOR MORE INFO
22.	○ E	6	SINGLE POLE TOGGLE SWITCH						SEE ENG DWG'S FOR MORE INFO
23.	○ E	2	OCCUPANCY SENSOR						SEE ENG DWG'S FOR MORE INFO

ISSUE

#	Date	Description	Dwn
4.	MAY 18, 2023	ISSUED FOR TENDER	BS
3.	MAY 17, 2023	ISSUED FOR PERMIT	BS
2.	MAY 4, 2023	ISSUED FOR L.LORD REVIEW	MT
1.	APRIL 25, 2023	ISSUED FOR CLIENT REVIEW	BS

PROJECT TITLE:



KILDONAN CROSSING  
1615 REGENT AVE W  
WINNIPEG, MB  
R2C 5C6  
CRU # 4

REVISION

#	Date	Description	Dwn
1	MAY 17, 2023	REV TO VANITY AND STORAGE DETAILS	BS

DRAWING TITLE:

REFLECTED CEILING AND COMMUNICATIONS PLANS

PRINT DATE:	17-May-23	SCALE:	AS NOTED
DRAWN BY:	BS	DRAWING NO.:	4.0
CHECKED BY:	MT	PROJECT NO.:	23-1020



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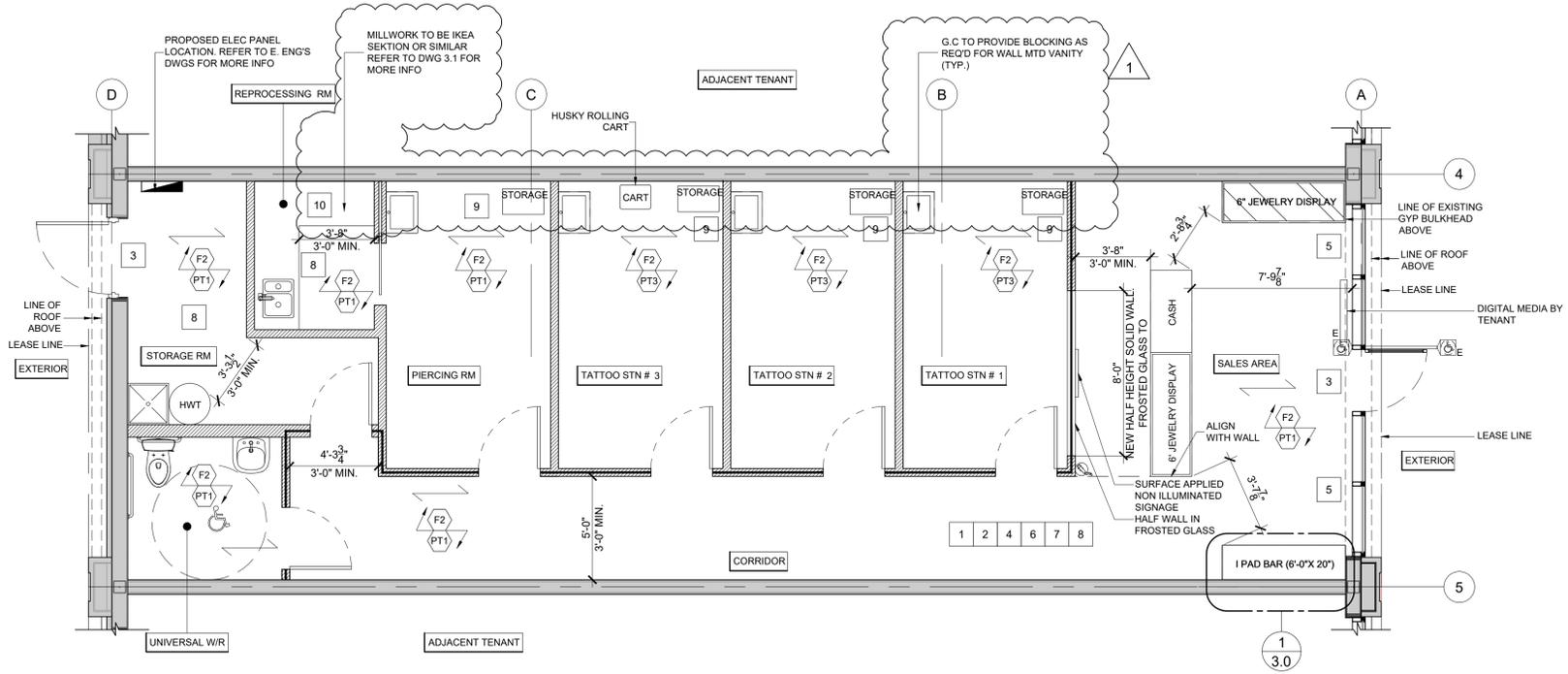
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A FINISHES PLAN  
5.0 SCALE: 1/4"=1'-0"

FINISH KEYED NOTES:

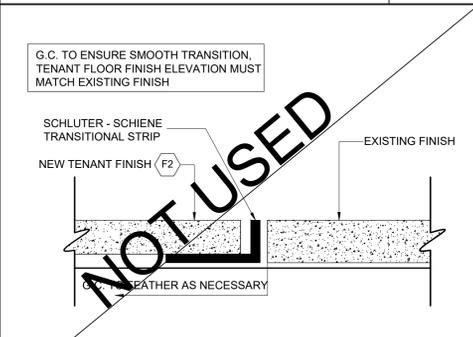
- ALL WALLS TO BE PAINTED (PT) U.O.N.
- ENSURE LEVEL 5 GYP FINISH ON WALL NOTED TO RECEIVE ACCENT COLOUR
- G.C. SHALL PROVIDE AN APPROPRIATE THRESHOLD TRANSITION STRIP AND WEATHER STRIPPING AT ALL EXTERIOR DOORS EXISTING AND NEW.
- CLIENT VENDOR TO PREP FLOOR FOR TENANT FLOORING. ENSURE A LEVEL FLOOR PRIOR TO INSTALL. REPORT ANY ISSUES TO TENANT PROJECT MANGER
- EXISTING GLAZING TO BE CLEANED AND FREE OF PREVIOUS TENANT SIGNAGE.
- MITER ALL OUTSIDE CORNERS OF WALL BASE, COPE INSIDE CORNERS (WHEN MATERIAL ALLOWS FOR SUCH INSTALL)
- G.C. TO PROTECT NEW FLOOR DURING CONSTRUCTION UP UNTIL TURN OVER
- BASE TO BE 4" H (F2) TILE
- G.C. TO PROVIDE STORAGE CABINETS. REFER TO DWG 3.1 FOR MORE INFO
- IKEA LAMINATE COUNTER TOP (244.588.00) WHITE. G.C. TO PROVIDE AS SPECIFIED OR EQUIVALENT. PROVIDE SAMPLE TO CLIENT FOR APPROVAL

GENERAL FINISH NOTES:

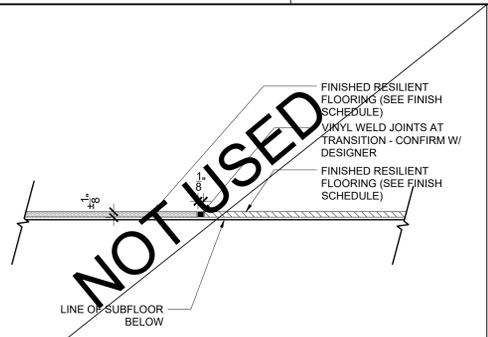
- REFER TO FINISH SCHEDULE ON SHEET EG FOR MORE INFO.
- REFER TO ELEVATIONS ON DWG 3.0 AND 3.1 FOR LOCATIONS OF FINISHES.
- REFER TO MILLWORK DETAILS FOR MILLWORK FINISHES.
- T.G.C. IS TO PROVIDE DRAW-DOWNS OF EACH PAINT COLOUR TO DESIGNER FOR APPROVAL PRIOR TO COMMENCEMENT OF WORK.
- ALL NEW MATERIALS FOR INSTALLATION, FINISHING AND SEALING ARE TO BE EXECUTED TO MANUFACTURER'S INSTRUCTIONS AND SPECIFICATIONS FOR APPLICATION AND INTENDED USE.
- T.G.C. TO MAKE SITE GOOD, LEVEL & READY TO ACCEPT NEW FLOOR FINISHES. PREPARE/STRIP/ SKIM SLAB AS REQUIRED TO ENSURE LEVEL SURFACE. REMOVE EXCESS ADHESIVE FROM FLOOR, BASE & WALL SURFACES WITHOUT DAMAGE. CLEAN, SEAL AND WAX FLOOR AND BASE SURFACES TO FLOORING MANUFACTURER'S INSTRUCTIONS, AS REQUIRED.
- ALL NEW PARTITIONS & BASE BUILDING SURFACES REQUIRING REPAIR SHALL BE PRIMED AND RECEIVE 2 COATS OF FINISH AS SPECIFIED. DARK PAINT COLOURS TO RECEIVE 4 COATS OF PAINT
- ALLOW FOR PAINT TOUCH-UPS AFTER MILLWORK AND FURNITURE INSTALLATION.
- T.G.C. TO ENSURE THAT ALL DRYWALL IS FLUSH, CLEAN AND FREE FROM DUST PRIOR TO APPLICATION OF ALL WALL FINISHES.
- MAKE GOOD ALL EXISTING AREAS AFFECTED BY CONSTRUCTION OR DEMOLITION AND ANY SURFACES NOTED AS EXISTING.
- ALL FINISHES TO CONFORM TO MINIMUM FLAME SPREAD RATING AND SMOKE CLASSIFICATION BY XBC 201X.
- INSTALL TILE ON FLOORS WITH STRAIGHT 1/4" GROUT JOINT U.O.N.O
- G.C. TO PROTECT FLOORING FROM DAMAGE DURING FIXTURE DELIVERY AND INSTALLATION.
- PAINTER SHALL BE RESPONSIBLE FOR THE REMOVAL OF HARDWARE, SWITCH AND OUTLET COVERS, ETC. AND REINSTALLATION OF SAME AFTER PAINTING.
- ALL EXPOSED PIPING, DUCTWORK, REGISTERS, CONDUITS, ALL THREAD, OR ANY OTHER ITEMS EXPOSED IN CEILING AREAS SHALL BE PAINTED TO MATCH CEILING COLOUR UNLESS PROHIBITED BY BUILDING OR FIRE CODES.
- AT COMPLETION OF PAINTING, ALL PAINT MATERIALS AND EQUIPMENT SHALL BE REMOVED, ALL PAINT SPOTS REMOVED, AND ALL AREAS THOROUGHLY CLEANED.

FINISH LEGEND

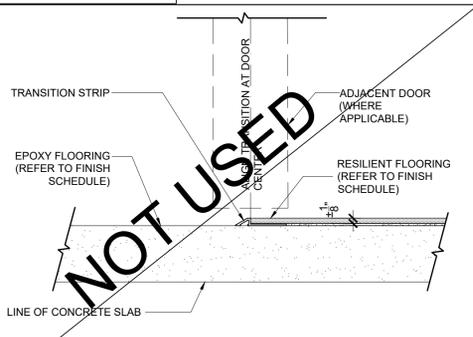
	NO.	MATERIAL	DESCRIPTION	LOCATION	REMARKS
LAMINATES	(PL)	PLASTIC LAMINATE (BLACK)	FORMICA 909 BLACK	INTERIOR MILLWORK CONSTRUCTION	
	(PL2)	COLOUR THRU LAMINATE (WHITE)	NEVAMAR MELCOR JI NM555-7024E CHALK WHITE	PLATFORMS	ADRIAN BECK PANOLAM INDUSTRIES 416-970-4912 ADRIAN_BECK@PANOLAM.COM
PAINT	(PT)	PAINT (STORE INTERIOR)	BENJAMIN MOORE, WHITE HERON OC-57, LATEX PAINT, PEARL FINISH	SALES AREA, WASHROOM	
	(PT2)	PAINT (STORE CEILING)	BENJAMIN MOORE, BLACK INK, 2127-20, LATEX PAINT, FLAT FINISH	STOREFRONT CEILING	AURA LINE
	(PT3)	PAINT GREY	BENJAMIN MOORE, KENDALL CHARCOAL HC-166 PEARL FINISH	BOH (TATTOO STNS) WALLS / SEMI TRIM	
FLOORING	(F1)	TILE (PORCELAIN)			
	(F2)	TILE (PORCELAIN)	OLYMPIA TILE - DESIGN INDUSTRY - OXYDE DARK R.F. DI. OOK 1224 12"x24" GROUT BY FLEXTILE, CHARCOAL	GENERAL THROUGHOUT	CONTACT: OLYMPIA TILE DEANNA MALONEY PH: 416-785-9555 ext 395
	(VCT)	VINYL COMPOSITE TILE	ARMSTRONG, 12" x 12", 51909 - PEWTER	WASHROOM	
	(VB1)	VINYL BASE	JOHNSON 4" COVE VINYL BASE - WHITE	WASHROOM	
MILL-WORK	(ML)	MELAMINE (WHITE)	3" THK. WHITE MELAMINE	INTERIOR MILLWORK FINISH	
	(M1)	POLISHED ALUMINUM	TBD		
	(M2)	POLISHED CHROME	1/2" POLISHED CHROME	FLOOR FIXTURES	
	(M3)	WHITE POWDER COAT	TO MATCH (PT)	FLOOR FIXTURES & STOREFRONT	
METAL	(M4)	MATTE BLACK METAL	ALPOLIC METAL COMPOSITE BLX BLACK	STOREFRONT	
	(ACT)	CEILING TILE	BLACK - CEILUME CENTURY CEILING TILE 2X2	BOH (TATTOO STNS)	T'S BLACK FINISH
CEILING	(MR)	MIRROR	1/2" CLEAR MIRROR	MILLWORK	
	(GL)	TEMPERED GLASS (CLEAR)	CLEAR TEMPERED GLASS		
MISC.	(FB)	FABRIC	BLACK VINYL (FAUX LEATHER)		
	(FRP)	STANDARD F.R.P. PANELS	F.R.P. PANEL BY MARLITE MODEL NO. S-100 "WHITE" FINISH - SMOOTH	FROM BASE TO 48" AFF (LOWER PORTION OF WALL IN STOCKROOM)	APPROPRIATE WHITE TRIM AT TOP OF PANEL AS REQUIRED (PANEL SIZE: 4' x 8') CONTACT: GREG LEARY 903-280-7630
	(TL)	TILE (PORCELAIN)	OLYMPIA TILE - CITY SERIES - LIGHT GREY (3" X 12") UD.CT.LGR.0312.MT GROUT BY FLEXTILE, SNOW WHITE	SALES AREA HALF WALL	CONTACT: OLYMPIA TILE DEANNA MALONEY PH: 416-785-9555 ext 395 SEE DWG 5.0 FOR REF



C TRANSITION DETAIL - TILE TO EXISTING  
5.0 SCALE: 1'-0"=1'-0"



D TRANSITION DETAIL - TILE TO TILE  
5.0 SCALE: 1'-0"=1'-0"



E TRANSITION DETAIL - TILE TO CONCRETE  
5.0 SCALE: 1'-0"=1'-0"

ISSUE

#	Date	Description	Dwn
4	MAY 18, 2023	ISSUED FOR TENDER	BS
3	MAY 17, 2023	ISSUED FOR PERMIT	BS
2	MAY 4, 2023	ISSUED FOR LLORD REVIEW	MT
1	APRIL 25, 2023	ISSUED FOR CLIENT REVIEW	BS

PROJECT TITLE:



KILDONAN CROSSING  
1615 REGENT AVE W  
WINNIPEG, MB  
R2C 5C6  
CRU # 4

REVISION

#	Date	Description	Dwn
1	MAY 17, 2023	REV TO VANITY AND STORAGE DETAILS	BS

DRAWING TITLE:

FINISHES PLAN

5.0

### GENERAL LEGEND

	ROOM NUMBER (REFER TO ARCHITECTURAL DRAWINGS)		NOTE BUBBLE INDICATING THAT A DRAWING NOTE APPLIES. REFER TO NOTES
	REVISION BUBBLE		DETAIL NUMBER DRAWING NUMBER

### FIRE PROTECTION LEGEND

	NEW CONCEALED SPRINKLER HEAD		EXISTING UPRIGHT SPRINKLER HEAD TO REMAIN
	NEW SIDEWALL SPRINKLER HEAD		EXISTING CONCEALED TYPE SPRINKLER HEAD TO REMAIN
	NEW DRY PENDANT SPRINKLER HEAD		EXISTING SIDE WALL TYPE SPRINKLER HEAD TO REMAIN
	NEW UPRIGHT SPRINKLER HEAD		EXISTING PENDANT TYPE SPRINKLER HEAD
	NEW FIRE EXTINGUISHER ASSEMBLY		EXISTING SPRINKLER HEADS TO BE REMOVED
	EXISTING FIRE EXTINGUISHER ASSEMBLY		FIRE HOSE CABINET

### PLUMBING AND SANITARY LEGEND

	SANITARY BELOW GRADE/FLOOR	CTE	CONNECT TO EXISTING
	SANITARY ABOVE GRADE/FLOOR		REDUCER/INCREASER
	STORM BELOW GRADE/FLOOR		UNION
	STORM ABOVE GRADE/FLOOR		BALL VALVE
	GREASE SUCTION LINE		GATE VALVE/SHUT-OFF VALVE
	GREASE WASTE LINE		CHECK VALVE
	DOMESTIC COLD WATER		DOUBLE CHECK VALVE ASSEMBLY
	DOMESTIC HOT WATER		DUAL CHECK VALVE
	DOMESTIC HOT WATER @110° F		REDUCED PRESSURE B.F.P.
	HOT WATER RECIRCULATION LINE		GAS PIPING
	FILTERED COLD WATER LINE		WALL HYDRANT / HOSE BIB
	PIPE DOWN		TEE FITTING
	PIPE UP		LINE CLEANOUT
	ROOF DRAIN		FLOOR CLEANOUT
	ELECTRIC HEAT TRACING		PRV VALVE
	HUB DRAIN		THERMOSTAT MIXING VALVE
	FLOOR DRAIN		WATER METER
	FUNNEL FLOOR DRAIN		GAS METER
	TRAP PRIMER		FILTRATION SYSTEM
	PIPING SERVICE CONTINUES		CIRCULATION PUMP
	REFER TO STANDARD DETAIL DRAWINGS FOR ADDITIONAL REQUIREMENT OF EQUIPMENT NOTED		
	PIPING SIZE REDUCTION		

### HVAC LEGEND

	SQUARE SUPPLY AIR DUCT UP		VOLUME DAMPER
	SQUARE SUPPLY AIR DUCT DOWN		BACK DRAFT DAMPER
	SQUARE RETURN OR EXHAUST AIR DUCT UP		SPLITTER DAMPER
	SQUARE RETURN OR EXHAUST AIR DUCT DOWN		FIRE DAMPER
	ROUND RETURN OR EXHAUST AIR DUCT UP		FIRE FLAP
	ROUND RETURN OR EXHAUST AIR DUCT DOWN		CAPPED CONNECTION
	EXISTING DUCT TO REMAIN		UNDER CUT DOOR 19mm
	EXISTING DUCT TO BE REMOVED		DUCT BREAK - DUCT CONTINUES
	ACOUSTIC LINED DUCT		UNIT HEATER
	INSULATED DUCT		ACOUSTICALLY LINED TRANSFER AIR DUCT
	FLEXIBLE DUCT		EXISTING DIFFUSER RE-BALANCE AIR QUANTITY
	EXISTING FLEXIBLE DUCT		ELECTRIC THERMOSTAT TO REMAIN
	RIGID ROUND DUCT		ELECTRIC THERMOSTAT TO BE REMOVED
	EXISTING RIGID ROUND DUCT		TEMPERATURE SENSOR
	DUCT CLEAN OUT		CO2 SENSOR
	FLEX CONNECTION		MOTORIZED CONTROL DAMPER
	ELBOW WITH TURNING VANES		EXISTING ELECTRIC THERMOSTAT
	WALL/DUCT SUPPLY REGISTER		HUMIDISTAT
	BAFFLE ONE SIDE OF DIFFUSER		DUCT HEATING COIL
	BAFFLE/BLANK DIFFUSER BLANK OFF		LINEAR DIFFUSER
	ROUND DIFFUSER		RETURN/EXHAUST GRILLE
	SUPPLY AIR A. TYPE OF DIFFUSER B. SIZE OF DIFFUSER & NECK C. INDICATES CAPACITY FOR EACH		RETURN AIR A. TYPE GRILLES/REGISTER B. SIZE OF GRILLES/REGISTERS

### DRAWING LIST

DRAWING NO.	DRAWING NAME
M1.0	DRAWING LIST AND MECHANICAL LEGENDS
M2.0	DETAILS
M3.0	PLUMBING PLAN AND NOTES
M3.1	SANITARY PLAN AND NOTES
M4.0	HVAC PLAN AND NOTES
M5.0	SCHEDULES
M6.0	SPECIFICATIONS
M6.1	SPECIFICATIONS
M6.2	SPECIFICATIONS

### ABBREVIATIONS

ABC	ALBERTA BUILDING CODE	AFF	ABOVE FINISHED FLOOR
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	ARI	AIR-CONDITIONING AND REFRIGERATION INSTITUTE
AHRI	AIR-CONDITIONING, HEATING AND REFRIGERATION INSTITUTE	ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR CONDITIONING ENGINEERS
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS	ASTM	ASTM INTERNATIONAL (FORMERLY AMERICAN SOCIETY FOR TESTING AND MATERIALS)
BHP	BOILER HORSEPOWER OR BRAKE HORSEPOWER	Btu/hr	BRITISH THERMAL UNITS PER HOUR
CFM	CUBIC FEET PER MINUTE	CSA	CANADIAN STANDARDS ASSOCIATION
CTE	CONNECT TO EXISTING	CSA	CANADIAN STANDARDS ASSOCIATION
cu. ft.	CUBIC FEET	cu. m.	CUBIC METER
db	DRY BULB	DDC	DIRECT DIGITAL CONTROL
dia.	DIAMETER	EF	EXHAUST FAN
FFH	FAN FORCED HEATER	FHC	FIREHOSE CABINET
F.L.A.	FULL LOAD AMPS	ft.	FOOT OR FEET
gal	GALLONS	GPM	GALLONS PER MINUTE
hp	MOTOR HORSEPOWER	in.	INCH OR INCHES
kg	KILOGRAM	kPa	KILOPASCALS
kW	KILOWATTS	L	LITRE
L/s	LITRES PER SECOND	MBH	1000 BRITISH THERMAL UNITS PER HOUR
mm	MILLIMETRE	m	METRE
NPT	AMERICAN NATIONAL STANDARD TAPER PIPE THREAD	OAT	OUTSIDE AIR TEMPERATURE
OBC	ONTARIO BUILDING CODE	ppm	PART PER MILLION
psi	POUNDS PER SQUARE INCH	psig	POUNDS PER SQUARE INCH GAUGE
PVC	POLYVINYL CHLORIDE	REL	RELOCATE
RH	RELATIVE HUMIDITY	rpm	REVOLUTIONS PER MINUTE
sp. in. wg.	STATIC PRESSURE, INCHES WATER GAUGE	SF	SUPPLY FAN
TDS	TOTALLY DISSOLVED SOLIDS	ULC	UNDERWRITER'S LABORATORIES OF CANADA
VFD	VARIABLE FREQUENCY DRIVE	W	WATT
W/ft.	WATTS PER FOOT	WC	WATER CLOSET
wb	WET BULB		

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#### ISSUE

#	Date	Description	Dwn
4	2023-05-18	ISSUED FOR TENDER	TW
3	2023-05-17	ISSUED FOR PERMIT	TW
2	2023-05-04	ISSUED FOR LLORD REVIEW	TW
1	2023-04-25	ISSUED FOR CLIENT REVIEW	TW

#### PROJECT TITLE:



KILDONAN CROSSING  
1616 REGENT AVE W  
WINNIPEG, MB  
R2C 5C6  
CRU # 4

#### REVISION

#	Date	Description	Dwn

#### DRAWING TITLE:

DRAWING LIST  
& MECHANICAL LEGENDS

PRINT DATE: 2023-05-18 SCALE: AS NOTED

DRAWN BY: TW DRAWING NO:

CHECKED BY: JM **M1.0**

PROJECT NO: 23-1020



PROFESSIONAL STAMPS:

### PLUMBING NOTED DEVICES

1. CONNECT NEW 1"Ø DOMESTIC COLD WATER LINE TO EXISTING WATER LINE OF ADEQUATE SIZE ABOVE WASHROOM AND EXTEND AS INDICATED ON DRAWING.
2. SUPPLY AND INSTALL NEW SINK, PROVIDE NEW 1/2"Ø DOMESTIC HOT AND COLD WATER LINES DOWN IN WALL TO SERVE SINK. REFER TO DETAIL 10/MZ.0.
3. SUPPLY AND INSTALL NEW HOT WATER TANK IN CEILING SPACE COMPLETE WITH ALL ASSOCIATE APPURTENANCES; HANGARS, SUPPORTS, DRIP TRAY, PLUMBING LINES ETC. REFER TO DETAILS #5 M2.0 PROVIDE NEW 3/4"Ø DOMESTIC COLD WATER LINE TO HOT WATER TANK AND NEW 3/4"Ø DOMESTIC HOT WATER LINE EXTENDED FROM HOT WATER TANK. INSTALL AS PER MANUFACTURER RECOMMENDATIONS.
4. SUPPLY AND INSTALL NEW LAVATORY, PROVIDE NEW 1/2"Ø DOMESTIC HOT AND COLD WATER LINES DOWN IN WALL TO SERVE NEW LAVATORY.
5. SUPPLY AND INSTALL NEW WATER CLOSET, PROVIDE NEW 1/2"Ø DOMESTIC COLD WATER LINES DOWN IN WALL TO SERVE NEW WATER CLOSET.
6. SUPPLY AND INSTALL NEW MOP SINK, PROVIDE NEW 1/2"Ø DOMESTIC HOT AND COLD WATER LINES DOWN IN WALL TO SERVE SINK.
7. EXISTING WALL MOUNTED FIRE EXTINGUISHER TO BE RELOCATED TO PROPOSED LOCATION AS INDICATED, PROVIDE TO WALL MOUNT BRACKETS AS REQUIRED.

### PLUMBING NOTES

- A. SUPPLY AND INSTALL PLUMBING FIXTURES WHERE SHOWN. FOR EXACT LOCATION OF FIXTURES REFER TO ARCHITECTURAL DRAWINGS. PROVIDE SCREW DRIVER STOPS ON EACH FIXTURE SUPPLY. VISIBLE PARTS OF FIXTURE TRIM TO BE HEAVILY CHROME-PLATED.
- B. SUPPLY AND INSTALL DRAINAGE SYSTEM, CLEANOUTS, TRAPS, FITTINGS AND VENTING IN ACCORDANCE WITH PLUMBING CODE AND LOCAL MUNICIPAL REGULATIONS.
- C. SIZES AND MATERIALS OF PLUMBING PIPES AND DRAINS TO BE IN ACCORDANCE WITH PLUMBING CODE AND AUTHORITIES HAVING JURISDICTION.
- D. BURIED SANITARY DRAIN: P.V.C., SDR-35, OR VITRIFIED TILE.
- E. ABOVE GROUND WASTE AND VENT STACKS SHALL BE P.V.C. - DWV PLASTIC PIPING FOR SINGLE-STORY BUILDINGS AND 'DWV' COPPER PIPING WITH WROUGHT COPPER SOLDER JOINTS FOR MULTI-STORY BUILDINGS.
- F. DOMESTIC COLD AND HOT WATER PIPING: STANDARD TYPE 'L' COPPER. SOLDER JOINTS WITH 95/5 SOLDER, LEAD FREE.
- G. COVER DOMESTIC COLD AND HOT WATER PIPING WITH FIBRE-GLASS STANDARD PIPE INSULATION WITH FACTORY APPLIED FLAME RETARDANT DUAL TEMPERATURE BARRIER JACKET. INSULATION THICKNESS SHALL BE FOLLOWS:  
- RUNOUTS UP TO 2" (12" MAX. LENGTH) USE 1/2" INSULATION  
- 1/2" UP TO 4" PIPE USE 1" INSULATION.
- H. POTABLE WATER PIPING TO BE FLUSHED AND STERILIZED ON COMPLETION OF WORK.
- I. SUPPLY AND INSTALL BACK FLOW PREVENTOR IF REQUIRED BY LOCAL CODES AND/OR AUTHORITIES.
- J. ALL DOMESTIC HOT AND COLD WATER LINES TO BE MINIMUM 3/4"Ø UNLESS INDICATED OTHERWISE.

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4	2023-05-18	ISSUED FOR TENDER	TW
3	2023-05-17	ISSUED FOR PERMIT	TW
2	2023-05-04	ISSUED FOR LLORD REVIEW	TW
1	2023-04-25	ISSUED FOR CLIENT REVIEW	TW

#### PROJECT TITLE:

STEEL  
N  
INK

KILDONAN CROSSING  
1616 REGENT AVE W  
WINNIPEG, MB  
R2C 5C6  
CRU # 4

#### REVISION

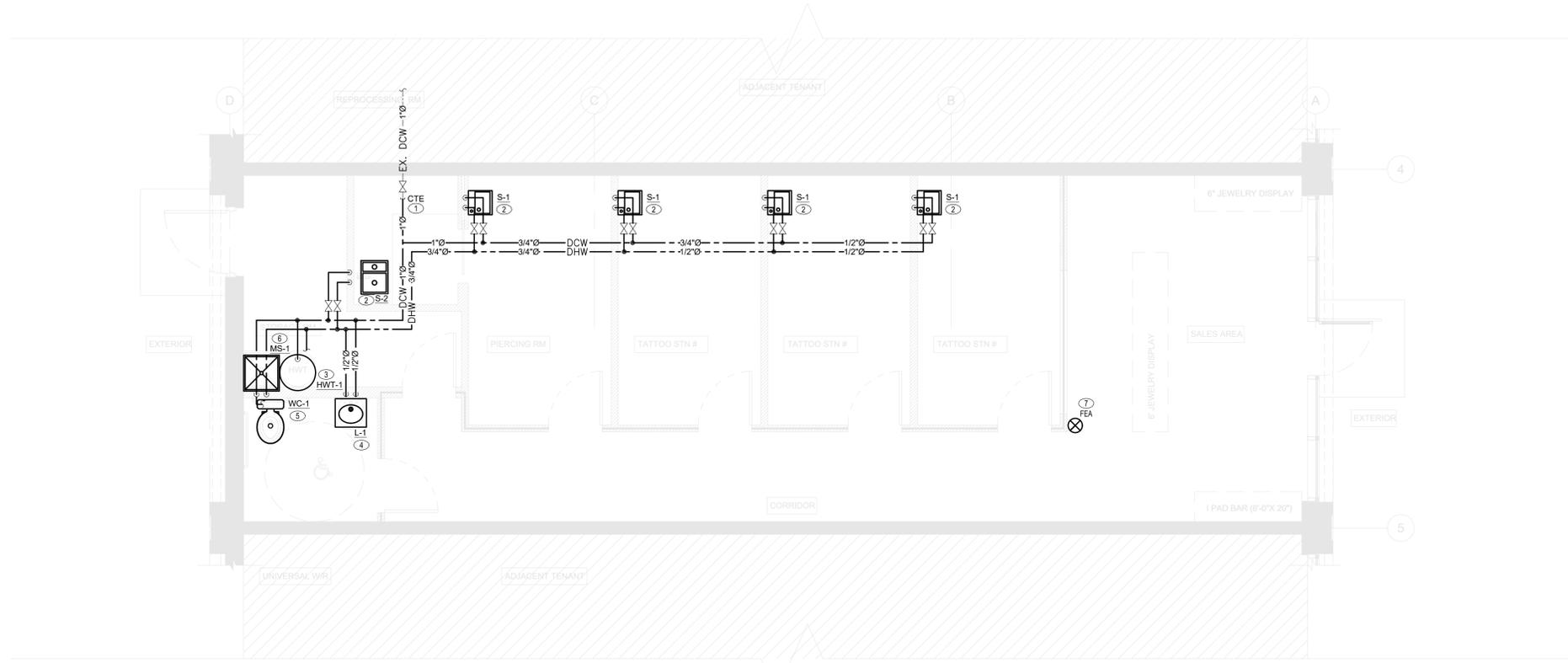
#	Date	Description	Dwn

#### DRAWING TITLE:

PLUMBING PLAN  
& NOTES

PRINT DATE: 2023-05-18 SCALE: AS NOTED  
DRAWN BY: TW DRAWING NO:  
CHECKED BY: JM  
PROJECT NO: 23-1020

M3.0



1 PLUMBING PLAN  
M3.0 SCALE: 1/4"=1'-0"



PROFESSIONAL STAMPS:

### SANITARY NOTED DEVICES

- TIE-IN NEW SANITARY LINE TO EXISTING 6"Ø SANITARY MAIN ON SITE. VERIFY EXACT LOCATION OF EXISTING LINE ON SITE.
- TIE-IN NEW SANITARY LINE TO EXISTING 4"Ø SANITARY LINE ON SITE. VERIFY EXACT LOCATION OF EXISTING LINE ON SITE.
- SUPPLY AND INSTALL NEW SINK S-1. PROVIDE NEW 1-1/2"Ø SANITARY DRAIN FROM SINK DOWN IN FURRED OUT WALL TO BELOW GRADE. 1-1/2"Ø VENT LINE UP TO CEILING SPACE.
- SUPPLY AND INSTALL NEW SINK S-2. PROVIDE NEW 1-1/2"Ø SANITARY DRAIN FROM SINK DOWN IN FURRED OUT WALL TO BELOW GRADE. 1-1/2"Ø VENT LINE UP TO CEILING SPACE.
- SUPPLY AND INSTALL NEW MOP SINK MS-1. PROVIDE NEW 3"Ø SANITARY DRAIN FROM SINK DOWN IN FURRED OUT WALL TO BELOW GRADE. 2-1/2"Ø VENT LINE UP TO CEILING SPACE.
- SUPPLY AND INSTALL NEW LAVATORY L-1. PROVIDE NEW 1-1/2"Ø SANITARY DRAIN FROM LAVATORY DOWN IN FURRED OUT WALL TO BELOW GRADE. 1-1/4"Ø VENT LINE UP TO CEILING SPACE.
- SUPPLY AND INSTALL NEW WATER CLOSET WC-1. PROVIDE NEW 3"Ø SANITARY DRAIN FROM LAVATORY DOWN IN FURRED OUT WALL TO BELOW GRADE. 2"Ø VENT LINE UP TO CEILING SPACE.
- NEW HOT WATER TANK IN CEILING SPACE DISCHARGE DRIP PAN AND PRESSURE RELIEF OVER NEW HUB DRAIN IN CEILING SPACE TIE HUB DRAIN INTO TAIL STOCK OF NEW SINK. REFER TO DETAILS 9/M2.0 AND 10/M2.0. HUB DRAIN IN CEILING SPACE TO BE TRAPPED AND PRIMED.
- NEW VENT LINE TO SERVE THE NEW PLUMBING FIXTURE. CONNECT NEW VENT LINES TO EXISTING 3"Ø VENT LINE IN CEILING SPACE. VERIFY EXACT LOCATION ON SITE. PROVIDE A COMPLETE AND OPERATION VENTING SYSTEM AS PER OBC AND LOCAL AUTHORITIES HAVING JURISDICTION.

### SANITARY NOTES

- SUPPLY AND INSTALL PLUMBING FIXTURES WHERE SHOWN. FOR EXACT LOCATION OF FIXTURES REFER TO ARCHITECTURAL DRAWINGS. PROVIDE SCREW DRIVER STOPS ON EACH FIXTURE SUPPLY. VISIBLE PARTS OF FIXTURE TRIM TO BE HEAVILY CHROME-PLATED.
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  - RUNOUTS UP TO 2" (12' MAX. LENGTH) USE 1/2" INSULATION
  - 1/2" UP TO 4" PIPE USE 1" INSULATION,
- POTABLE WATER PIPING TO BE FLUSHED AND STERILIZED ON COMPLETION OF WORK.
- SUPPLY AND INSTALL BACK FLOW PREVENTOR IF REQUIRED BY LOCAL CODES AND/OR AUTHORITIES.
- ALL DOMESTIC HOT AND COLD WATER LINES TO BE MINIMUM 3/4"Ø UNLESS INDICATED OTHERWISE.

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STEEL  
N  
INK

KILDONAN CROSSING  
1616 REGENT AVE W  
WINNIPEG, MB  
R2C 5C6  
CRU # 4

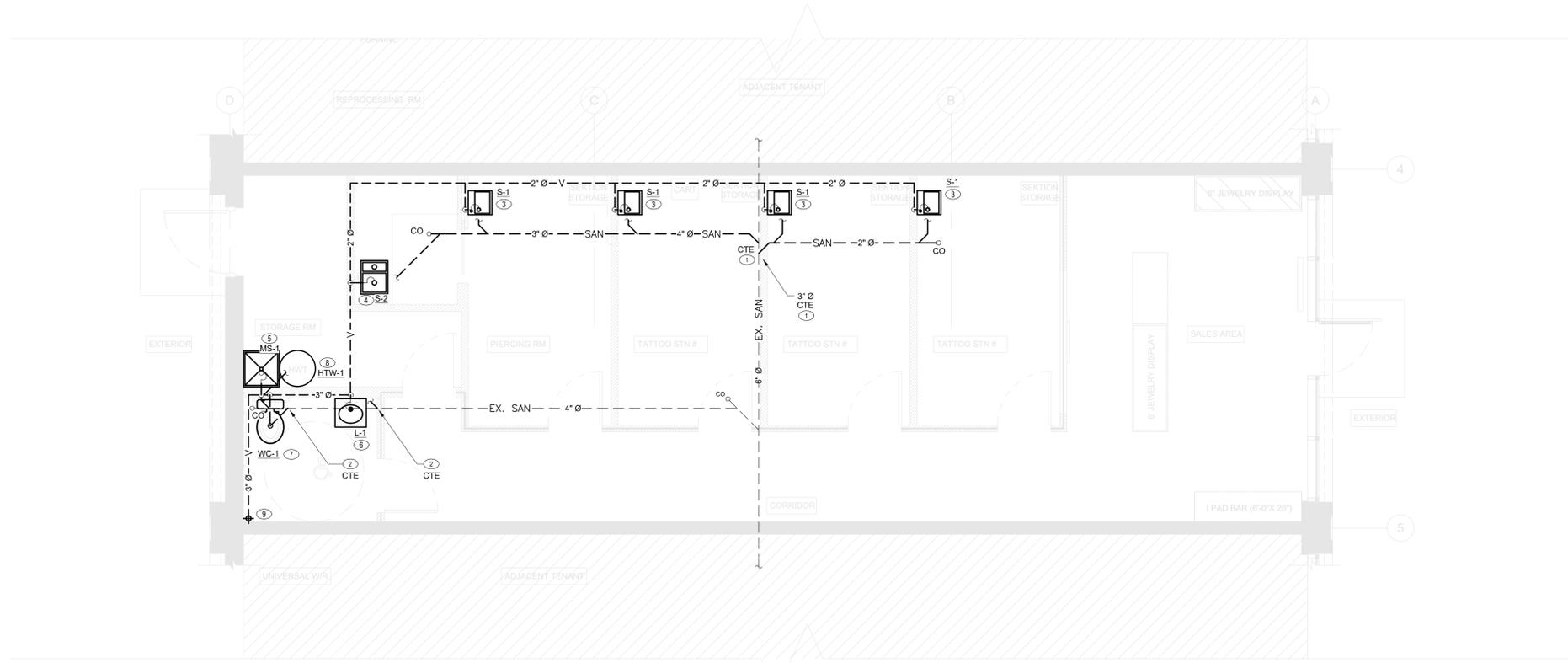
#### REVISION

#### DRAWING TITLE:

SANITARY PLAN  
& NOTES

PRINT DATE:	2023-05-18	SCALE:	AS NOTED
DRAWN BY:	TW	DRAWING NO.:	
CHECKED BY:	JM		
PROJECT NO.:	23-1020		

M3.1



1 SANITARY PLAN  
M3.1 SCALE: 1/4"=1'-0"

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CRU # 4

#	Date	Description	Dwn

DRAWING TITLE:

HVAC PLAN  
& NOTES

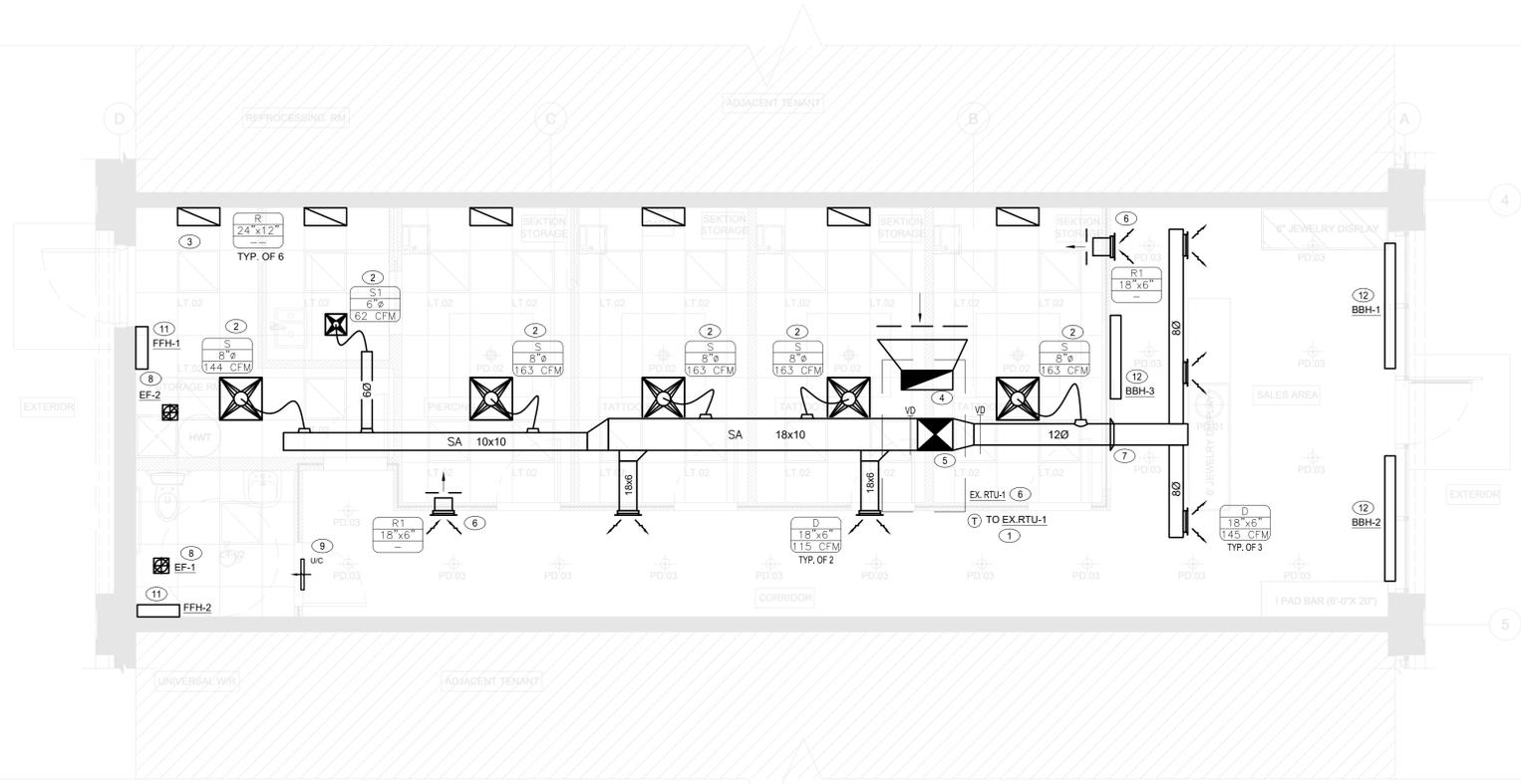
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DRAWN BY: TW DRAWING NO:  
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HVAC NOTES

- NEW 7 DAY PROGRAMMABLE THERMOSTAT AT THIS PROPOSED LOCATION COMPLETE WITH LOCKABLE COVER, EXTEND CONTROL WIRING AS REQUIRED. INSTALL THERMOSTAT AT 48" A.F.F.
- SUPPLY AND INSTALL NEW DIFFUSER AS INDICATED ON DRAWINGS, DUCT RUN-OUT SIZE TO MATCH DIFFUSER INLET. PROVIDE NEW FLEXIBLE DUCT FROM SUPPLY AIR DUCTWORK OR EXTEND RIGID AS REQUIRED, MAXIMUM LENGTH OF FLEXIBLE DUCTWORK NOT TO EXCEED 8'-0".
- SUPPLY AND INSTALL NEW RETURN AIR GRILLE AS INDICATED ON DRAWINGS.
- SUPPLY AND INSTALL NEW ACOUSTICALLY LINED RETURN AIR ELBOW. RETURN ELBOW TO MATCH RETURN AIR OPENING, CONTRACTOR TO VERIFY EXACT SIZE OF UNIT OPENINGS ON SITE PRIOR TO MANUFACTURING NEW DUCT WORK.
- NEW SUPPLY DUCTWORK TO BE ACOUSTICALLY LINED FOR THE FIRST 15'. NEW TO MATCH SUPPLY AIR OPENING. CONTRACTOR TO VERIFY EXACT SIZE OF UNIT OPENINGS ON SITE PRIOR TO MANUFACTURING NEW DUCT WORK. G.C. TO CONFIRM EXISTING IF ANY.
- EXISTING ROOF TOP UNITS TO REMAIN
- PROVIDE DUCT COLLAR AT WALL PENETRATION (TYPICAL)
- SUPPLY AND INSTALL EXHAUST FAN IN CEILING SPACE COMPLETE WITH HANGERS, SUPPORTS, FLEX CONNECTIONS, DUCTWORK, CONTROLS/CONTROL WIRING, ETC. INTERLOCK FAN WITH OCCUPANCY SENSOR FOR WASHROOM - TIME DELAY TO OFF MINIMUM 15 MIN. EXTEND 6"Ø EXHAUST DUCT AND TERMINATE UP THRU ROOF WITH GOOSENECK, OUTLET TO BE MINIMUM 10'-0" FROM ANY FRESH AIR INTAKES OR BUILDING OPENINGS. WIRED BY ELECTRICAL DIVISION. FIELD VERIFY ON SITE.
- 1"Ø DOOR UNDER CUT.
- 18" x 6" RETURN AIR GRILLE CONNECTED TO 18" x 6" TRANSFER AIR DUCT AND DISCHARGE TO CEILING SPACE.
- NEW BASEBOARD HEATERS BBH-1, BBH-2 AND BBH-3. SUPPLIED AND INSTALLED BY ELECTRICAL DIVISION. REFER TO ELECTRICAL DRAWING FOR SPEC. (TYPICAL)
- NEW FAN FORCED HEATERS FFH-1 AND FFH-2. SUPPLIED AND INSTALLED BY ELECTRICAL DIVISION. REFER TO ELECTRICAL DRAWING FOR SPEC. (TYPICAL)

HVAC NOTES

- ALL 90° SUPPLY & RETURN ELBOWS SHALL HAVE SMOOTH RADIIUSES. SQUARE ELBOWS SHALL BE COMPLETE WITH TURNING VANES.
- UNLESS NOTES OTHERWISE, MEASUREMENTS ARE IN IMPERIAL UNITS, SUCH AS CUBIC FEET PER MINUTE (AIR FLOW) AND INCHES (DISTANCE).
- FOR VENTS AND DUCTWORK PASSING THROUGH FIRE RATED ASSEMBLY, DIVISION 23 SHALL PROVIDE APPROPRIATE FIRE CLOSURE(S) SUCH AS DAMPERS, CAULKING, AND FIRE DONUTS. ALL FIRE CLOSURE RATINGS SHALL MATCH THE RATING OF THE FIRE RATED ASSEMBLIES THROUGH WHICH THEY ARE DESIGNED TO PASS THROUGH.
- ALL THERMOSTATS SHALL BE SITUATED AT A HEIGHT OF 1.2m (4') AFF. AT THE LOCATION SPECIFIED ON PLAN. COORDINATION BETWEEN THE PROFESSIONS IS RECOMMENDED TO AVOID ANY POSSIBLE OBSTRUCTIONS.
- EXISTING HEAT PUMP TO REMAIN. PROFESSIONALLY CLEAN DUCTWORK. REPAIR IF NECESSARY.



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

### ELECTRIC WATER HEATER SCHEDULE

No.	MANUFACTURER & MODEL	CAPACITY (GAL)	TYPE	GAS PRESSURE (in.W.C.)	ELECTRICAL	WATT	DIMENSIO NS IN	WEIGHT (LBS)
HWT-1	AO SMITH - DEL-15	15	ELECTRICAL	---	208V/1/60	3000	--	73

NOTES & REMARKS  
HWT-1 SUPPLIED AND INSTALLED BY MECHANICAL CONTRACTOR, WIRED BY ELECTRICAL DIVISION.

### PLUMBING FIXTURE SCHEDULE

TYPE	SPECIFICATION	TRIM	TRAPS & SUPPLIES EQUAL TO	CW	FW	HW	110	WASTE	VENT	REMARKS
WC-1	AMERICAN STANDARD CADET 2467 016 ELONGATED	2 - PIECE WATER CLOSET ELONGATED C/W SEAT WITH COVER	INTEGRAL	1/2"	-	-	-	3"	1 1/2"	PROVIDE WHEELCHAIR SEAT CENTICO #820STS" SEE SPEC. FOR AUTOMATIC CONTROL NOTES.
L-1	WALL HUNG BASIN (WHEELCHAIR USE) -AMERICAN STANDARD "LUCERNE" #0355.012" BRASS METERING FAUCET WITH LEVER HANDLE - SYMMONS: SLC-6000	SLOAN #ETF-80-4-BDT; GRID STRAINER	MCGUIRE #155A DRAIN, #8872C-17T "P" TRAP, SMITH SERIES #0700 CARRIER	1/2"	-	1/2"	-	1 1/4"	1 1/4"	MIXING VALVE - ZURN ZW3870XLT
S-1	IKEA PRODUCT: LILLANGEN FINISH: WHITE W/ S.S. LEGS C/W ENSEN FAUCET	IKEA PRODUCT: ENSEN FAUCET MODEL: 203.813.82 FINISH: STAINLESS STEEL	-	1/2"	-	1/2"	-	2"	1-1/2"	PROVIDE PROTECTIVE COVER FOR EXPOSED PIPEWORK P-TRAP, HW & CW ANGLE STOPS AND SUPPLIES. FOR NARROW WALL PROVIDE 'Z' TYPE SLEEVE FOR ARMS
S-2	IKEA PRODUCT: HILLESJON 1-1/2" BOWL DUAL MOUNT SINK MODEL: 10324886 INCLUDED: LILLVIKEN SINK STRAINER W/ STOPPER	IKEA PRODUCT: ALMAREN KITCHEN FAUCET MODEL: 503.416.43 FINISH: STAINLESS STEEL SEKTION BASE CABINET W/ 2 DOORS (36"X24"X30")	-	1/2"	-	1/2"	-	2"	1-1/2"	PROVIDE PROTECTIVE COVER FOR EXPOSED PIPEWORK P-TRAP, HW & CW ANGLE STOPS AND SUPPLIES. FOR NARROW WALL PROVIDE 'Z' TYPE SLEEVE FOR ARMS
MS-1	ZURN PRODUCT: Z1996-24 MOP SERVICE BASIN 24"X24" MOLDED HIGH DENSITY COMPOSITE BASIN, PVC DRAIN BODY, STAINLESS STEEL AND 3 GASKETED OUTLET CONNECTION	ZURN PRODUCT: Z1996-SF SERVICE SINK FAUCET FINISH: CHROME PLATED SERVICE FAUCET, COMPLETED WITH VACUUM BREAKER, INTEGRAL STOPS, ADJUSTABLE WALL BRAVE, PAIL HOOK, FOUR-ARM HOT AND COLD HANDLE AND 3/4 HOSE THREAD ON SPOUT.	-	1/2"	-	1/2"	-	3"	2"	PROVIDE PROTECTIVE COVER FOR EXPOSED PIPEWORK P-TRAP, HW & CW ANGLE STOPS AND SUPPLIES. FOR NARROW WALL PROVIDE 'Z' TYPE SLEEVE FOR ARMS

NOTES & REMARKS  
- SUPPLIED AND INSTALLED MY MECHANICAL CONTRACTOR - ROUGH IN AND FINAL INSTALLATION.  
- ALL FIXTURES SHALL BE SUPPLIED & INSTALLED BY DIVISION 22 UNLESS OTHERWISE NOTED. MAKE ALL CONNECTIONS WITH BRAIDED FLEXIBLE HOSE.

### EXHAUST FAN SCHEDULE

TAG	SERVICE	TYPE	MANUFACTURER	MODEL	FLOW (CFM)	ESP ("W.G.)	RPM	MOTOR (HP)	VOLTAGE	WEIGHT (LBS)	REMARKS
EF-1 TO EF-2	WASHROOMS	CEILING EXHAUST FAN	GREENHECK	SP-A70-VG	70	0.375	838	10.8 WATTS	115V/1/60	12	NEW

REMARKS  
- THIS CONTRACTOR SHALL VERIFY THE VOLTAGES OF ALL MECHANICAL EQUIPMENT WITH DIVISION 28 PRIOR TO ORDERING.  
- ALL ROOF MOUNTED FANS TO BE SUPPLIED C/W ROOF CURB, BIRDSCREENS & WEATHERPROOF HOUSING.

### EXISTING ROOF TOP UNIT

TAG	SERVICE/ LOCATION	TON	MANUFACTURER	MODEL	SUPPLY AIR			O/A	HEATING COIL			COOLING COIL			PHYSICAL					REMARKS	
					FLOW (CFM)	ESP ("W.G.)	MOTOR (HP)	FLOW (CFM)	INPUT (MBH)	OUTPUT (MBH)	EFF.	EER.	TOTAL (MBH)	SENS. (MBH)	LENGTH (IN.)	WIDTH (IN.)	HEIGHT (IN.)	SOUND POWER (dBA)	WEIGHT (LBS)		
EX. RTU-1	ROOF TOP	4	ALLIED	LGH048H4E	1600	0.7	--	221	--	350	--	--	150	--	--	--	--	--	--	--	EXISTING TO REMAIN

### AIR TERMINALS

TAG	SERVICE	DESCRIPTION	NOTES
S/S1	SQUARE PLAQUE CEILING DIFFUSER	PRICE MODEL 'SPD', 24"X24" ALUMINUM CONSTRUCTION SQUARE PLAQUE CEILING DIFFUSERS, REFER TO DRAWING FOR NECK SIZES. CONTRACTOR TO REFER TO CEILING TYPE ON ARCHITECTURAL DRAWINGS AND PROVIDE CORRESPONDING MOUNTING REQUIREMENTS. DIFFUSERS TAGGED "S1" SHALL BE 12"x12" FACE SIZE.	-
R	RETURN AIR GRILLE	PRICE MODEL '80D'. REFER TO DRAWING FOR GRILLE SIZES. CONTRACTOR TO REFER TO CEILING TYPE ON ARCHITECTURAL DRAWINGS AND PROVIDE CORRESPONDING MOUNTING FRAME REQUIREMENTS, T-BAR APPLICATION TO BE CORE ONLY LAY-IN TYPE.	1
D	SUPPLY AIR REGISTER	PRICE MODEL '520D'. DOUBLE DEFLECTION @ 45°, STEEL CONSTRUCTION, 3/4" SPACING C/W OPPOSED BLADE DAMPER. FRONT BLADE PARALLEL TO LONG DIMENSION. REFER TO DRAWING FOR GRILLE SIZES. REFER TO ARCHITECTURAL CEILING PLANS FOR MOUNTING REQUIREMENTS.	1,2
R1	RETURN AIR GRILLE	PRICE MODEL '530'. @ 45° BLADE DEFLECTION, STEEL CONSTRUCTION, 3/4" SPACING C/W OPPOSED BLADE DAMPER. FRONT BLADE PARALLEL TO LONG DIMENSION. REFER TO DRAWING FOR GRILLE SIZES. REFER TO ARCHITECTURAL CEILING PLANS FOR MOUNTING REQUIREMENTS.	1

NOTES:  
1. CONCEALED FASTENERS  
2. C/W OPPOSED BLADE DAMPER

### ELECTRIC HEATER SCHEDULE

TAG	TYPE	MFGR & MODEL	HEATING KW	VOLTAGE BLOWER MOTOR	REMARKS
FFH-1 & FFH-2	FAN FORCED HEATER	STELPRO MODEL: WF2008T	2 kW	208/1/60	INTERGRATED THERMOSTAT WALL MOUNTED RECESSED
BBH-1 & BBH-2	BASEBOARD HEATER	STELPRO MODEL: DB18158	1.5 kW	208/1/60	
BBH-3	BASEBOARD HEATER	STELPRO MODEL: DB112108	1 kW	208/1/60	

NOTES & REMARKS  
UNIT TO BE SUPPLY AND INSTALL BY ELECTRICAL DIVISION.



G.L. SMITH

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#### ISSUE

#	Date	Description	Dwn
4	2023-05-18	ISSUED FOR TENDER	TW
3	2023-05-17	ISSUED FOR PERMIT	TW
2	2023-05-04	ISSUED FOR LROD REVIEW	TW
1	2023-04-25	ISSUED FOR CLIENT REVIEW	TW

#	Date	Description	Dwn

#### PROJECT TITLE:



KILDONAN CROSSING  
1616 REGENT AVE W  
WINNIPEG, MB  
R2C 5C6  
CRU # 4

#### REVISION

#	Date	Description	Dwn

#	Date	Description	Dwn

#### SCHEDULES

PRINT DATE: 2023-05-18 SCALE: AS NOTED

DRAWN BY: TW DRAWING NO:

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M5.0

# 1. GENERAL

## 1.1. CONTRACTOR RESPONSIBILITIES

- 1.1.1. THE RESPONSIBILITY AND SCOPE OF EACH SUB-TRADE RESTS SOLELY WITH THE CONTRACTOR. EXTRAS WILL NOT BE CONSIDERED BASED ON THE GROUNDS OF DIFFERENCE IN INTERPRETATION OF SPECIFICATIONS AND DRAWINGS AS TO WHICH TRADE INVOLVED SHALL PROVIDE CERTAIN SPECIALTIES OR MATERIALS.
- 1.1.2. CONTRACTOR TO MAKE CERTAIN THAT ALL ADDENDA TO THE SPECIFICATIONS AND ALL REVISIONS TO THE DRAWINGS ARE INCLUDED IN THEIR QUOTATION.
- 1.1.3. CONTRACTOR TO ENSURE THAT DELIVERY TIME OF ALL MECHANICAL EQUIPMENTS WILL NOT CAUSE A DELAY IN THE SCHEDULING OF THIS PROJECT.
- 1.1.4. ALL WORK AND MATERIALS SHALL COMPLY WITH THE CURRENT EDITION OF THE ALBERTA BUILDING CODE, LOCAL BUILDING REGULATIONS, AND ALL CODES AND AUTHORITIES HAVING JURISDICTION.
- 1.1.5. PRIOR TO SUBMITTING A TENDER THE CONTRACTOR SHALL NOTE ANY DISCREPANCIES AND BRING THEM TO THE ATTENTION OF THE ENGINEER. FURTHER, THE CONTRACTOR IS TO EXAMINE THE SITE, CONDITIONS AND ALL ASSOCIATED SCOPES OF WORK THAT FALL UNDER HIS CONTRACT AND DETERMINE THAT ALL COSTS FOR THE WORK ARE FULLY COVERED IN HIS TENDER SUBMISSION
- 1.1.6. DURING CONSTRUCTION THE CONTRACTOR SHALL ENSURE THAT ALL MATERIAL AND EQUIPMENT IS NEW AND MEETS OR EXCEEDS THE QUALITY AS SET OUT IN THE SPECIFIED MEETS AND APPLICABLE CODES. THE INSTALLATION OF ALL EQUIPMENT AND MATERIALS SHALL BE OF THE HIGHEST WORKMANSHIP AND QUALITY. ATTENTION TO DETAIL, SAFETY, NEATNESS, ACCESS FOR MAINTENANCE, DURABILITY, ETC. IS EXPECTED AND REQUIRED.
- 1.1.7. IF THE OWNER OR THEIR REPRESENTATIVE PRE-PURCHASES OR SUPPLIES EQUIPMENT OR MATERIALS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE INSTALLATION OF THEM AS PER MANUFACTURER'S RECOMMENDATIONS. OWNER FURNISHED ITEMS MUST MEET THE COMPLIANCE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
- 1.1.8. ALL EQUIPMENT IS TO BE SET STRAIGHT AND SQUARE WITH THE STRUCTURE. PIPING AND DUCTWORK IS TO BE INSTALLED PARALLEL OR AT RIGHT ANGLES TO ALL WALLS AND STRUCTURAL MEMBERS, HANGER RODS, EQUIPMENT BASES, SUPPORTS AND ISOLATION ARE TO BE SET PLUMB AND SQUARE AND IN VERTICAL ALIGNMENT WHERE APPLICABLE. ALL WORK IS TO BE NEAT AND CLEAN UPON COMPLETION.
- 1.1.9. THE CONTRACTOR SHALL MAKE NECESSARY REVISION, ALTERATIONS, CHANGES AND ADDITIONS TO ANY AND ALL WORK AS REQUIRED TO ACCOMMODATE OTHER TRADES SCOPE OF WORKS INCLUDING, ARCHITECTURAL, STRUCTURAL AND ELECTRICAL WITHOUT COST TO THE OWNER.
- 1.1.10. THE TERM "SUPPLY," "PROVIDE," "INSTALL" SHALL MEAN TO SUPPLY AND INSTALL ALL NECESSARY LABOUR, MATERIALS, TOOLS AND EQUIPMENT AS MAY BE NECESSARY TO INSTALL SAME FOR THE COMPLETE AND FUNCTIONAL OPERATION OF THE MECHANICAL SYSTEMS FOR THIS PROJECT.
- 1.1.11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE TRANSPORTATION AND PROTECTION OF ALL EQUIPMENT AND MATERIAL PROVIDED FOR THIS PROJECT UNTIL THE OWNER HAS ACCEPTED THE BUILDING. THIS SHALL INCLUDE STORAGE OF SAME ON SITE AND REMOVAL OF ALL MATERIALS AND REFUSE AS A RESULT.
- 1.1.12. PROVIDE ALL NECESSARY SCAFFOLDING, LADDERS, HOISTS, RIGGING, ETC. AS REQUIRED FOR THE INSTALLATION OF THE WORK WITHIN THIS SCOPE. ALL HOISTING SUPPORTS, DELIVERY, ETC OF EQUIPMENT AND MATERIAL FOR THIS PROJECT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR.
- 1.1.13. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF THE BUILDING, WORK OF OTHERS, ETC. DURING THE COURSE OF CARRYING OUT THE WORK AS INVOLVED IN THIS CONTRACT. THE CONTRACTOR SHALL MAKE GOOD AND/OR PAY FOR ANY DAMAGES SUSTAINED. THE OWNER RESERVES THE RIGHT TO BACKCHARGE THE CONTRACTOR FOR THE REPAIR AND/OR REPLACEMENT OF ANY DAMAGES.
- 1.1.14. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND APPROVALS AND PAY FOR ALL NECESSARY FEES OR OTHER COSTS ASSOCIATED WITH CARRYING OUT THE WORK HEREIN. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ANY AND ALL CERTIFICATES AS REQUIRED TO ENSURE THAT THE INSTALLATION IS IN CONFORMANCE WITH, AND HAS BEEN APPROVED BY ALL AUTHORITIES HAVING JURISDICTION. ANY REVISIONS AND/OR CHANGES REQUIRED BY THE AUTHORIZED INSPECTOR SHALL BE DONE WITHOUT CHARGE TO THE OWNER AND SHALL BE DONE SO AS NOT TO AFFECT SCHEDULE OR THE WORK OF OTHERS. ALL PERMITS SHALL BE POSTED IN A CONSPICUOUS PLACE ON SITE. UPON COMPLETION THIS CONTRACTOR IS TO PROVIDE THE OWNER WITH A CERTIFICATE OF FINAL APPROVAL FROM ALL AUTHORITIES INVOLVED IN THE SCOPE OF THIS WORK.
- 1.1.15. IN CARRYING OUT THE WORK THE CONTRACTOR SHALL USE ONLY FULLY QUALIFIED TRADESPERSONS RECOGNIZED UNDER MUNICIPAL, PROVINCIAL AND FEDERAL REGULATIONS AND LICENSING.
- 1.1.16. THE CONTRACTOR IS TO PROVIDE ALL NECESSARY INFORMATION ON REQUIRED OPENINGS, SLEEVES, AND CHASES AS MAY BE REQUIRED FOR HIS WORK TO ALL OTHER TRADES INVOLVED SO THAT THE WORK MAY BE DONE IN A TIMELY AND COST EFFECTIVE MANNER. FAILURE TO DO SO WILL RESULT IN ANY COSTS BEING CHARGED BACK TO THE CONTRACTOR. ALL DRILLING FOR HANGER RODS, BRACKETS, SUPPORTS, SLEEVES, ETC. SHALL BE BY THIS CONTRACTOR.
- 1.1.17. INSTALL ALL PIPING, DUCTWORK, EQUIPMENT, ETC. GENERALLY IN THE ROUTES AND LOCATIONS AS SHOWN ON THE DRAWINGS. INSTALL ALL MATERIAL AND EQUIPMENT CLOSE TO STRUCTURE TO MINIMIZE, SHAFTS, FURRINGS, ETC. PIPING AND DUCTWORK THAT IS NOT INSTALLED PROPERLY SHALL BE REMOVED AND RE-INSTALLED AT NO EXTRA COST.
- 1.1.18. THIS CONTRACTOR IS TO CO-ORDINATE THE DETAILED INSTALLATION OF THE DUCTWORK, PIPING AND EQUIPMENT WITH ALL CONDUIT, CABLE TRAYS, STRUCTURAL ELEMENTS, AND OTHER WORK OF THE OTHER TRADES. NO ADDITIONAL COSTS WILL BE CONSIDERED FOR CHANGES AS THE RESULT OF INTERFERENCE WITH THE WORK OF OTHERS. THIS INCLUDES ANY ADDITIONAL MATERIAL REQUIRED TO CORRECT MINOR JOB CONFLICTS FOR NORMALLY ACCEPTED PROCEDURES OF ANY AND ALL TRADES.
- 1.1.19. THIS CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF ALL NECESSARY ISOLATION VALVES, SPRINGS ISOLATORS, SHUT-OFFS, UNIONS, COUPLINGS, ETC. AS MAY BE REQUIRED FOR THE SAFE OPERATION AND CONTINUED MAINTENANCE OF ALL SYSTEMS AND EQUIPMENT. THIS SHALL INCLUDE ALL NECESSARY COMPONENTS AS MAY BE REQUIRED BY THE MANUFACTURER AS NOTED IN THEIR RESPECTIVE LITERATURE AND INSTALLATION DETAILS.
- 1.1.20. THE CONTRACTOR MAY USE EQUIVALENT EQUIPMENT AND MATERIALS FROM AN APPROVED MANUFACTURER OTHER THAN THAT SPECIFICALLY SPECIFIED. THE USE OF SAME DOES NOT RELIEVE THE CONTRACTOR FROM CONFIRMING TO OTHER TRADES AFFECTED ALL RELEVANT INFORMATION SUCH AS DIMENSIONS, ELECTRICAL, WEIGHT, ETC. ANY NECESSARY REVISIONS AS A RESULT SHALL BE PAID FOR BY THIS CONTRACTOR. IF THE PROPOSED EQUIPMENT OR NECESSARY MODIFICATIONS ARE NOT TO THE SATISFACTION OF THE ENGINEER THAT THE END RESULT WILL BE THE SAME, THE CONTRACTOR SHALL PROVIDE THE SPECIFIED EQUIPMENT AT NO ADDITIONAL COST TO THE OWNER.
- 1.1.21. ALL EQUIPMENT AND MATERIAL SPECIFIED AND NOTED ON THE DRAWINGS IS SET AS A MINIMUM STANDARD FOR THE CONTRACTOR TO WORK TO. ALL SUBMITTED TENDERS SHALL BE BASED ON MATERIAL AND EQUIPMENT AS SPECIFIED. EQUIPMENT AND MATERIAL SUPPLIERS OTHER THAN THOSE SPECIFIED ARE TO MAKE A WRITTEN SUBMISSION FOR CONSIDERATION AS AN EQUAL OR ALTERNATE ALONG WITH ANY COST SAVINGS THAT MAY BE REALIZED AS A RESULT OF USING THIS EQUIPMENT. SUBMISSION FOR CONSIDERATION AS AN EQUAL SHALL BE MADE, ALONG WITH TECHNICAL INFORMATION, A MINIMUM OF 2 DAYS BEFORE TENDERS CLOSE.
- 1.1.22. THE CONTRACTOR SHALL NOT USE THE PERMANENT HEATING SYSTEM FOR TEMPORARY HEATING WITHOUT WRITTEN PERMISSION FROM THE OWNER/ENGINEER. ANY EQUIPMENT THAT IS USED SHALL BE CLEANED, LUBRICATED AND NEW FILTERS INSTALLED PRIOR TO TURNING OVER TO OWNER FOR COMPLETION.
- 1.1.23. BEFORE FABRICATION AND INSTALLATION OF DUCTWORK AND PIPING, MAKE CERTAIN THAT ALL ITEMS CAN BE INSTALLED AS SHOWN ON THE DRAWINGS WITHOUT INTERFERENCE WITH THE STRUCTURE OR THE WORK OF OTHER TRADES. IF ANY MATERIALS ARE FABRICATED OR INSTALLED PRIOR TO THE INVESTIGATION AND REACHING OF A SOLUTION TO POSSIBLE INTERFERENCE PROBLEMS, NECESSARY CHANGES SHALL BE MADE AT THE CONTRACTOR'S EXPENSE.

## 1.2. EXAMINATION OF WORK

- 1.2.1. DRAWINGS ARE DIAGRAMMATIC AND APPROXIMATELY TO SCALE. THE CONTRACT DOCUMENTS ESTABLISH SCOPE, MATERIAL AND QUALITY AND ARE NOT DETAILED INSTALLATION INSTRUCTIONS.
- 1.2.2. THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE BUILDING, STRUCTURE AND THE WORKS OF THE OTHER TRADES INVOLVED. THIS CONTRACTOR SHALL WORK AND CO-OPERATE WITH THE OTHER TRADES TO ENSURE A QUALITY INSTALLATION, AND MINIMIZE CONFLICTS.

## 1.3. INTENT

- 1.3.1. IT IS THE INTENT OF THIS SPECIFICATION AND DRAWINGS TO PROVIDE FOR A COMPLETE AND FULLY OPERATING SYSTEM IN COMPLETE ACCORD WITH ALL APPLICABLE CODES. THESE SPECIFICATIONS MAY NOT COVER EACH AND EVERY ITEM REQUIRED FOR THE COMPLETE MECHANICAL INSTALLATION. THEREFORE, THE CONTRACTOR SHALL MAKE HIS OWN PROVISIONS FOR ALL LABOUR, MATERIALS AND EQUIPMENTS DEEMED NECESSARY TO COMPLETE THE MECHANICAL SYSTEM.
- 1.3.2. THE SPECIFICATIONS ARE INTEGRAL WITH THE DRAWINGS WHICH ACCOMPANY THEM. NEITHER IS TO BE USED ALONE. ANY ITEM OR SUBJECT OMITTED FROM ONE, BUT IMPLIED ON THE OTHER IS PROPERLY SPECIFIED.
- 1.3.3. WHENEVER DIFFERENCES OCCUR IN THE CONTRACT DOCUMENTS, THE MAXIMUM CONDITION WILL GOVERN AND BE INCLUDED IN THE CONTRACT PRICE.
- 1.3.4. CONFORM TO MANUFACTURER'S INSTRUCTIONS, DETAILS AND PROCEDURES FOR EQUIPMENT INSTALLATIONS.
- 1.3.5. CONFIRM ALL NEW EQUIPMENT LOADING AND SUPPORT WITH STRUCTURAL ENGINEER PRIOR TO INSTALLATION.

## 1.4. QUALITY ASSURANCE

- 1.4.1. COMPLY WITH ALL PROVINCIAL AND LOCAL CODES FOR PROVISION OF MATERIALS, LABOUR AND INSTALLATION.
- 1.4.2. USE TRADESMAN LICENSED BY PROVINCIAL AUTHORITIES FOR THE WORK SPECIFIED IN THIS SECTION.
- 1.4.3. USE HIGHEST QUALITY PIPING CONFORMING TO THE APPROPRIATE ASTM AND CSA SPECIFICATIONS.
- 1.4.4. ALL MUNICIPAL BYLAWS AND NFPA STANDARDS GOVERNING THE INSTALLATION SHALL BE STRICTLY ADHERED TO.
- 1.4.5. CONCEALED OR INSULATED WORK SHALL REMAIN UNCOVERED UNTIL REQUIRED TESTS HAVE BEEN COMPLETED. BUT IF CONSTRUCTION SCHEDULE REQUIRES, ARRANGE FOR PRIOR TESTS ON PARTS OF SYSTEM AS APPROVED.

## 1.5. INSURANCE

- 1.5.1. THE CONTRACTOR MUST HAVE COMPREHENSIVE GENERAL LIABILITY INSURANCE COVERAGE OF NOT LESS THAN \$2,000,000.00 INCLUDING NON OWNED CAR COVERAGE, CONTRACTUAL LIABILITY AND CONTAINING A CROSS LIABILITY CLAUSE. COVERAGE SHALL INCLUDE LOSS OR DAMAGE CAUSED BY THE CONTRACTOR.
- 1.5.2. THE CONTRACTOR SHALL CARRY FULL EMPLOYEE'S LIABILITY INSURANCE IN ACCORDANCE WITH THE WORKER'S COMPENSATION ACT.

## 1.6. LIABILITY

- 1.6.1. THIS CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR LAYING OUT HIS WORK AND FOR ANY DAMAGE CAUSED TO OWNER OR OTHER CONTRACTOR BY IMPROPER LOCATION OR CARRYING OUT HIS WORK.
- 1.6.2. THIS CONTRACTOR SHALL PROTECT ALL FINISHED AND UNFINISHED WORK OF HIS OWN AND OTHER CONTRACTORS, INCLUDING EXISTING FROM DAMAGE DUE TO CARRYING OUT HIS WORK.

## 1.7. COORDINATION AND CO-OPERATION

- 1.7.1. COORDINATE WORK WITH ALL OTHER SUBCONTRACTORS AND TRADES INVOLVED.
- 1.7.2. CONFIRM IN WRITING TO GENERAL CONTRACTOR/ENGINEER ANY EXISTING SERVICES OR WORKS DEEMED TO BE UNACCEPTABLE/EFFECTIVE PRIOR TO COMMENCING WORK.
- 1.7.3. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ARCHITECTURAL, STRUCTURAL, LANDSCAPE, IRRIGATION CIVIL, FIRE PROTECTION, GEOTECHNICAL AND ELECTRICAL DRAWINGS. REPORT ANY DISCREPANCIES TO ENGINEER PRIOR TO TENDER CLOSE.

## 1.8. CERTIFICATES, FEES, ETC.

- 1.8.1. GIVE ALL NOTICES, OBTAIN ALL PERMITS AND PAY ALL FEES SO THAT THE WORK SPECIFIED MAY BE CARRIED OUT. FURNISH ANY CERTIFICATES AT THE OWNER'S REQUEST AS EVIDENCE THAT WORK INSTALLED CONFORMS WITH THE LAWS AND REGULATIONS OF ALL AUTHORITIES HAVING JURISDICTIONS. CERTIFICATES/PERMITS ARE TO BE PROVIDED FOR QUALITY OF WORKMANSHIP AND WORKMAN QUALIFICATIONS.
- 1.8.2. INSPECTIONS SHALL BE MADE PROMPTLY. IF ANY WORK IS COVERED UP WITHOUT CONSENT, IT SHALL, IF REQUIRED, BE UNCOVERED FOR EXAMINATION AND MADE GOOD AT NO EXTRA COST TO OWNER.
- 1.8.3. GIVE NECESSARY NOTICES, OBTAIN NECESSARY PERMITS AND PAY REQUIRED FEES AND TAXES IN ORDER THAT THE WORK UNDER THIS CONTRACT MAY BE CARRIED OUT.
- 1.8.4. BE RESPONSIBLE TO FILE THE NECESSARY PLANS, TO PREPARE FOR AND OBTAIN APPROVAL OF DOCUMENTS AS REQUIRED BY GOVERNMENT DEPARTMENTS HAVING JURISDICTION AND TO OBTAIN CERTIFICATES OF INSPECTION REQUIRED. DELIVER THESE TO THE CONSULTANT PRIOR TO REQUEST FOR ACCEPTANCE AND FINAL PAYMENT OF THE WORK.
- 1.8.5. WORK AND MATERIALS SHALL BE IN COMPLETE ACCORDANCE WITH THE APPROVAL OF LOCAL CODES AND AUTHORITIES HAVING JURISDICTION.
- 1.8.6. PROVIDE CHANGES THAT ARE REQUIRED BY THE AUTHORITIES HAVING JURISDICTION, AS PART OF THE CONTRACT AND GIVE IMMEDIATE NOTIFICATION OF SUCH CHANGES TO THE CONSULTANT.
- 1.8.7. COMPLY WITH ALL CURRENT EDITIONS OF RELEVANT CODES AND REGULATIONS INCLUDING THE FOLLOWING:
  - 1.8.7.A THE 2014 ALBERTA BUILDING CODE.
  - 1.8.7.B THE 2015 NATIONAL PLUMBING CODE.

## 1.9. STANDARD OF WORKMANSHIP AND MATERIALS

- 1.9.1. MAKE AND QUALITY OF MATERIALS USED ARE SUBJECT TO APPROVAL BY THE ENGINEER. REMOVE CONDEMNED MATERIALS AND INSTALL SUITABLE MATERIALS IN THEIR PLACE.
- 1.9.2. MATERIAL SHALL BE NEW AND UNIFORM PATTERN THROUGHOUT.
- 1.9.3. EMPLOY ONLY TRADESMAN WITH PROPER LICENSE FOR WORK.

## 1.10. INSPECTIONS (SUBSTANTIAL COMPLETION)

- 1.10.1. GENERAL CONTRACTOR AND/OR MECHANICAL CONTRACTOR TO PROVIDE PRELIMINARY SCHEDULE FOR THE SITE REVIEW LISTED BELOW TO ENGINEER PRIOR TO COMMENCING CONSTRUCTION.
- 1.10.2. SITE REVIEW REQUIRED:
  - 1.10.2.A FINAL REVIEW.
- 1.10.3. GENERAL CONTRACTOR AND/OR MECHANICAL CONTRACTOR TO NOTIFY CONSULTANT 2 WEEKS PRIOR TO ESTIMATED REVIEW DATES. RECONFIRM EXACT REVIEW DATES MINIMUM 3 BUSINESS DAYS PRIOR TO REQUIRED INSPECTION.
- 1.10.4. NOTIFY CONSULTANT 5 DAYS PRIOR TO FINAL INSPECTION. ALL SYSTEMS SHALL BE FULLY OPERATIONAL AND ANY DEFICIENCIES SHALL BE IDENTIFIED TO ENGINEER.
- 1.10.5. ALL DEFICIENCIES SHALL BE COMPLETED WITHIN 2 WEEKS AFTER SUBSTANTIAL COMPLETION. FAILURE TO COMPLETE WORK WITHIN THE TIME FRAME WILL RESULT IN WORK BEING DONE BY THE OWNER AND THE COST BEAR BY THE CONTRACTOR.

## 1.11. APPROVALS

- 1.11.1. THE PRICE SUBMITTED FOR THIS CONTRACT SHALL BE BASED ON THE USE OF MATERIALS AND EQUIPMENTS SPECIFIED. IF THIS CONTRACTOR WISHES TO QUOTE ON EQUIVALENT MATERIALS AND EQUIPMENTS, HE MUST QUOTE ON PRODUCTS APPROVED BY THE ENGINEER IN WRITING, AS AN EQUIVALENT TO THE PRODUCT SPECIFIED.
- 1.11.2. THIS CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY ADDITIONAL WORK OR

- MATERIALS REQUIRED BY THE MECHANICAL TRADE OR OTHER CONTRACTORS TO ACCOMMODATE APPROVED EQUIVALENT MATERIALS OR EQUIPMENTS. EXTRAS SHALL NOT BE APPROVED TO COVER SUCH WORK.
- 1.11.3. ALL MATERIALS AND EQUIPMENTS SHALL BE NEW, RECYCLED/OLD/REFURBISHED SHALL NOT BE ACCEPTED UNLESS PROVIDED BY THE OWNER OR THE OWNERS REPRESENTATIVE AS OWNER SUPPLIED EQUIPMENT.

## 1.12. VALUATION OF CHANGES

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

## 1.13. GUARANTEE

- 1.13.1. THE MECHANICAL SUBCONTRACTOR, AS A CONDITION PRECEDENT TO FINAL PAYMENT AFTER COMPLETION OF HIS WORK, SHALL GIVE OWNER A WRITTEN GUARANTEE WARRANTING ALL APPARATUS FURNISHED UNDER THE CONTRACT FOR A PERIOD OF TWO YEARS OR NO LESS THAN THE MINIMUM REQUIRED BY THE NEW HOME WARRANTY FROM THE DATE OF FINAL ACCEPTANCE OF HIS WORK BY THE ARCHITECT AND ENGINEER.
- 1.13.2. BIND ALL GUARANTEE AND WARRANTY CERTIFICATES IN MAINTENANCE MANUALS.
- 1.13.3. ATTEND IMMEDIATELY AT NO COST TO OWNER, TO ANY AND ALL DEFECTS OCCURRING DURING THE WARRANTY PERIOD.

## 1.14. SHOP DRAWINGS

- 1.14.1. BEFORE FABRICATION OF ANY MATERIALS OR EQUIPMENT, SUBMIT A COMPLETE SET OF SHOP DRAWINGS, DATA SHEETS AND ONE (1) ELECTRONIC COPY COVERING ALL ITEMS OF EQUIPMENT FURNISHED AND INTENDED FOR INSTALLATION.
- 1.14.2. THE ENGINEER'S REVIEW SHALL NOT RELIEVE THIS CONTRACTOR FROM RESPONSIBILITY TO PROVIDE MATERIALS AND EQUIPMENTS IN ACCORDANCE WITH THE DESIGN INTENT AND CONTRACT DOCUMENTS. ALL DIMENSIONS AND SUITABILITY FOR SITE CONDITIONS ARE THE RESPONSIBILITY OF THE CONTRACTOR. ALL ELECTRICAL CHARACTERISTICS MUST BE COORDINATED WITH THE ELECTRICAL SUB-CONTRACTOR.
- 1.14.3. DO NOT PURCHASE ANY EQUIPMENTS PRIOR TO APPROVAL OF SHOP DRAWINGS.
- 1.14.4. BE RESPONSIBLE FOR PRESENTING AND EXPEDITING THE PROCESSING OF SHOP DRAWINGS TO SUIT MANUFACTURING SCHEDULE OF EQUIPMENT AND CONSTRUCTION SCHEDULE OF BUILDING.
- 1.14.5. EACH SHOP DRAWING SHALL INDICATE CLEARLY THE CORRECT NAME AND ADDRESS OF THE PROJECT, THE INTENDED USE AND LOCATION OF THE EQUIPMENT, AND THE SPECIFIED DESIGNATION NUMBER.
- 1.14.6. DRAWING PACKAGES TO BE SUBMITTED IN CONGRUENT GROUPS THAT MATCH EQUIPMENT SCHEDULE. IE. ALL PUMPS IN ONE PACKAGE.
- 1.14.7. CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR ALL EQUIPMENT LISTED IN SCHEDULES AS WELL AS ALL PRE-MANUFACTURED SYSTEMS AND ASSOCIATED PRODUCTS. IE. PLASTIC PIPING SYSTEMS, VALVES, TRIM, AIR SEPARATOR ETC.

## 1.15. RECORD "AS-BUILT" DRAWINGS

- 1.15.1. KEEP IN THE JOB OFFICE AN EXTRA SET OF WHITE PRINTS AND SPECIFICATIONS ON WHICH ALL CHANGES AND DEVIATIONS SHALL BE RECORDED DAILY. AT COMPLETION OF THE PROJECT, TURN OVER TO THE ENGINEER THREE SETS OF NEAT AS-BUILT DRAWINGS AND SPECIFICATIONS.
- 1.15.2. UPON COMPLETION, THE CONTRACTOR SHALL SUPPLY TO THE OWNER ONE SET OF MARKED-UP RECORD DRAWINGS INDICATING ALL DIMENSIONS, INVERTS, DISTANCES FROM STRUCTURE, ETC. AS DONE ON SITE. PROVIDE 3 SETS OF OPERATION AND MAINTENANCE MANUALS THAT WILL INCLUDE APPROVED SHOP DRAWINGS, ETC. IN 3 RING BINDERS NEATLY BOUND AND LABELED.

## 1.16. OPERATION AND MAINTENANCE DATA

- 1.16.1. FURNISH THREE SETS OF OPERATING AND MAINTENANCE DATA FOR ALL EQUIPMENTS AND SYSTEMS. DATA SHALL BE ASSEMBLED IN BOOK FORM WITH HARD COVER AND INDEX. IDENTIFY FRONT COVER WITH PROJECT NAME AND LOCATION OF THE PROJECT. CONSULTING ENGINEER AND CONTRACTOR, PRIOR TO SUBSTANTIAL COMPLETION SUBMIT ONE COPY TO ENGINEER. REVIEW WITH CONSULTANT/OWNER IF DIGITAL O&M MANUAL IS ACCEPTABLE PRIOR TO TENDER CLOSE.
- 1.16.2. THE OPERATION AND MAINTENANCE MANUALS SHALL CONTAIN THE FOLLOWING AS A MINIMUM:
 

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MAINTENANCE TASKS	BALANCING REPORTS
LUBRICATION INFORMATION	IDENTIFICATION DIRECTORY
LIST OF CONTRACTORS	
MANUFACTURER'S INSTALLATION AND MAINTENANCE DATA SHEETS	

## 1.17. TURNOVER SEMINAR

- 1.17.1. AT COMPLETION OF PROJECT, MECHANICAL CONTRACTOR SHALL ORGANIZE AND CONDUCT A 1 HOUR SEMINAR TO INSTRUCT OWNER'S REPRESENTATIVES IN OPERATION AND PREVENTATIVE MAINTENANCE OF EQUIPMENT AND SYSTEMS.

## 1.18. TESTING

- 1.18.1. TEST ALL EQUIPMENTS AND MATERIALS WHERE REQUIRED BY SPECIFICATIONS OR AUTHORITIES HAVING JURISDICTION, TO DEMONSTRATE ITS PROPER OPERATION TO THE OWNER'S REPRESENTATIVE. TEST PROCEDURES SHALL BE IN ACCORDANCE WITH APPLICABLE PORTIONS OF THE ASME, ASHRAE, SMACNA, NFPA, CSA AND OTHER RECOGNIZED TEST CODES AS FAR AS FIELD CONDITIONS PERMIT.
- 1.18.2. NOTIFY THE OWNER/ENGINEER PRIOR TO STARTING ANY TESTING. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES THAT OCCUR AS A RESULT OF TESTING. HE SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH LIABILITY AND REPAIRS AS NECESSARY.
- 1.18.3. ALL DEFECTS, LEAKS, ETC. SHALL BE REPAIRED OR REPLACED IMMEDIATELY UPON DISCOVERY. LEAKING JOINTS SHALL BE RE-DONE AND COMPLETED IN A TIMELY MANNER.
- 1.18.4. PERFORMANCE TESTS SHALL BE CARRIED OUT UPON COMPLETION OF PRESSURE TESTS AND INSTALLATION. THE CONTRACTOR SHALL MAKE ALL NECESSARY CHANGES AND MODIFICATIONS AS REQUIRED TO DELIVER AN OPERATIONAL SYSTEM.
- 1.18.5. ALL TESTS SHALL BE A MINIMUM OF THE FOLLOWING: CONFIRM REQUIREMENTS OF LOCAL INSPECTION AGENCIES.
- 1.18.6. DOMESTIC WATER PIPING: TEST TO 1.5 TIMES MAXIMUM WORKING PRESSURE OR 1035 kPa (150 PSI) WATER PRESSURE MEASURED AT SYSTEM LOW POINT. FOR A MINIMUM OF 8 HOURS.
- 1.18.7. DRAINAGE SYSTEM: TEST BY FILLING WITH WATER TO PRODUCE WATER PRESSURE OF 3m (10ft) OF WATER COLUMN MINIMUM AND 10m (33ft) WATER COLUMN MAXIMUM FOR A DURATION OF 8 HOURS. CHECK FOR PROPER GROUND AND OBSTRUCTION BY BALL TEST.
- 1.18.8. ALL TESTS SHALL BE MAINTAINED WITH NO APPRECIABLE LOSS OF PRESSURE. WHERE LEAKS DO OCCUR IMMEDIATELY REPAIR AND REPLACE.
- 1.18.9. MECHANICAL CONTRACTOR IS TO TEST AND VERIFY IN WRITING ALL CONTROL SYSTEMS ARE OPERATING AS PER SPECIFICATION.
- 1.18.10. ALL HYDRONIC PIPING SHALL BE TESTED AS REQUIRED BY PIPE MANUFACTURER AND AUTHORITIES HAVING JURISDICTION.
- 1.18.11. HYDRONIC HEATING PIPING: TEST TO 1.5 TIMES MAX. WORKING PRESSURE OR 1035 KPA (150PSI) WATER PRESSURE MEASURED AT SYSTEM LOW POINT FOR A MINIMUM OF 8 HOURS.

- 1.18.12. WATER BALANCING SHALL BE CARRIED OUT BY AN INDEPENDENT AGENCY SPECIALIZING IN THIS FORM OF WORK AND IN ACCORDANCE WITH GUIDELINES ESTABLISHED BY THE CURRENT ADDITION OF THE ALBERTA BUILDING CODE.

## 1.19. EQUIPMENT CLEANUP

- 1.19.1. DUCTS AND EQUIPMENTS SHALL BE THOROUGHLY CLEANED OF DIRT, CUTTINGS AND OTHER FOREIGN SUBSTANCES. DISCONNECT, CLEAN AND RECONNECT WHENEVER NECESSARY FOR THE PURPOSE OF LOCATING AND REMOVING OBSTRUCTIONS. REPAIR WORK DAMAGED IN THE CAUSE OF REMOVING OBSTRUCTIONS. DUCTS SHALL BE PROFESSIONALLY VACUUM CLEANED PRIOR TO TURNING OVER TO OWNER.
- 1.19.2. REPAIR ANY TEMPORARY EQUIPMENT USED FOR TEMPORARY HEAT, TO THE FULL SATISFACTION OF THE OWNER.
- 1.19.3. REMOVE ALL TOOLS, WASTE MATERIAL, GARBAGE, PACKAGING MATERIALS GENERATED FROM THIS SCOPE OF WORK FROM SITE. UPON COMPLETION ENSURE ALL SURFACES ARE CLEANED OF GREASE, DIRT, ETC. ONCE COMPLETED THE FACILITY SHALL BE AVAILABLE FOR IMMEDIATE USE.

## 1.20. IDENTIFICATION

- 1.20.1. PROVIDE FOR IDENTIFICATION OF PIPING AND DUCTWORK WITH MARKERS SHOWING SERVICE AND DIRECTION OF FLOW. APPLY LABELS AT MAXIMUM 15m (50ft) INTERVALS, BEFORE AND AFTER PASSING THROUGH WALLS, AT ACCESS DOOR OPENINGS, AT EACH SHUT OFF VALVE AND ADJACENT TO EACH PIECE OF EQUIPMENT. LABELS SHALL BE WATERPROOF AND HEAT RESISTANT WITH YELLOW BACKGROUND, MINIMUM 25mm (1") LETTERING AND DRY ADHESIVE BACKING. PROVIDE 3M #76 ADHESIVE IN ADDITION TO DRY ADHESIVE BACKING.
- 1.20.2. PROVIDE 50mm (2") WIDE COLOUR BAND OF PLASTIC PRESSURE SENSITIVE TAPE FOR PIPING SYSTEMS. SPACING SHALL BE SAME AS LABELS.
- 1.20.3. TAG AUTOMATIC CONTROLS, ELECTRIC SWITCHES, INSTRUMENTS AND RELAYS WITH LAMICOID LABELS WITH 15mm (1/2") LETTERS AND KEY WITH CONTROL SCHEMATICS.
- 1.20.4. PROVIDE LAMICOID LABELS WITH 15mm (1/2") LETTERS ON EQUIPMENT AND MOTOR STARTERS.

## 1.21. CUTTING AND PATCHING

- 1.21.1. THE MECHANICAL CONTRACTOR SHALL INCLUDE AND BE RESPONSIBLE FOR CUTTING, PATCHING AND MAKE GOOD ALL OPENINGS REQUIRED FOR THE MECHANICAL SERVICES.
- 1.21.2. LOCATE HOLES AND PROVIDE SLEEVES, CUTTING AND FITTING REQUIRED FOR MECHANICAL WORK. RELOCATE IMPROPERLY LOCATED HOLES AND REPAIR WORK ACCORDINGLY.
- 1.21.3. PROVIDE EXPANSION BOLTS, HANGER RODS, BRACKETS AND SUPPORTS.
- 1.21.4. DO NOT ALTER STRUCTURAL MEMBERS OF BUILDING WITHOUT OBTAINING APPROVAL FROM ARCHITECT AND STRUCTURAL ENGINEER.
- 1.21.5. PERFORM PATCHING OF FINISHED WORK IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF SPECIFICATIONS.

## 1.22. FLASHING

- 1.22.1. DO ALL FLASHING AND COUNTER FLASHING WHERE DUCTS AND OTHER MECHANICAL PARTS ARE PASSING THROUGH WEATHER AND/OR WATER PROOF WALLS, FLOORS AND ROOFS, ALL TO THE SATISFACTION OF THE OWNER.

## 1.23. PIPE HANGARS, SUPPORTS AND SLEEVES

- 1.23.1. ALL HANGERS AND HANGER RODS SHALL BE SUPPLIED AND INSTALLED BY THIS CONTRACTOR FOR THE INSTALLATION OF HIS WORK IN THIS DIVISION.
- 1.23.2. HANGERS AND SUPPORTS SHALL SECURE PIPES IN PLACE, PREVENT VIBRATION, MAINTAIN ALIGNMENT BY ADJUSTMENT, PROVIDE FOR EXPANSION AND CONTRACTION. ALL SUPPORTS SHALL BE DIRECTLY FROM THE STRUCTURE, AND NOT FROM OTHER EQUIPMENTS, PIPING OR DUCTWORK.
- 1.23.3. PROVIDE SUPPORTS AND CLEVIS TYPE HANGERS ON OUTSIDE OF INSULATION. INSTALLATION SHALL MEET THE REQUIREMENTS OF APPLICABLE CODES.
- 1.23.4. USE OF PERFORATED STRAP, WIRE OR CHAIN HANGERS IS NOT PERMITTED.
- 1.23.5. STEEL PIPES UP TO AND INCLUDING 100mm (4") DIAMETER, USE HEAVY DUTY CLEVIS OR LOOP TYPE HANGERS.
- 1.23.6. COPPER PIPES, USE HANGERS IN COPPER PLATE FINISH OR STEEL LOOP HANGER W/ APPROVED ELECTROLYSIS BARRIER (POLY TAPE).
- 1.23.7. CAST IRON PIPES USE HEAVY-DUTY CLEVIS OR LOOP TYPE HANGERS.
- 1.23.8. SUPPORT PIPES IN ACCORDANCE WITH THE CURRENT EDITION OF THE NATIONAL PLUMBING CODE, MANUFACTURER'S RECOMMENDATIONS, ASHRAE STANDARDS AND/OR APPLICABLE CODES.
- 1.23.9. PROVIDE HANGERS AND SUPPORTS FOR ALL DUCTWORK, IN ACCORDANCE WITH SMACNA H.V.A.C. DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE, LATEST EDITION.

## 1.24. ELECTRIC MOTORS AND WIRING

- 1.24.1. SUPPLY ALL MECHANICAL EQUIPMENT WITH ELECTRIC MOTORS AS REQUIRED.
- 1.24.2. THE ELECTRICAL SUBCONTRACTOR SHALL BE RESPONSIBLE TO SUPPLY ALL MOTOR STARTERS AND DISCONNECT SWITCHES, ALL LINE VOLTAGE WIRING TO STARTERS AND STARTERS TO MOTORS EXCEPT ON PRE-WIRED PACKAGED EQUIPMENT FOR ALL MOTORS FOR THIS PROJECT.
- 1.24.3. CONTROLS (FAN SWITCHES) CONNECTED TO MECHANICAL EQUIPMENTS SHALL BE SUPPLIED BY THE MECHANICAL TRADE AND SHALL BE INSTALLED, WIRED IN AND CONNECTED BY THE CONTROL TRADE.
- 1.24.4. CONFIRM ELECTRICAL SERVICE VOLTAGE AND PHASE WITH ELECTRICAL ENGINEER, AND/OR CONTRACTOR PRIOR TO ORDERING OF MECHANICAL EQUIPMENT.
- 1.24.5. ALL MOTORS SUPPLIED WITH MECHANICAL EQUIPMENT SHALL OPERATE AT A MAXIMUM OF 1,750 RPM UNLESS OTHERWISE NOTED. REFER TO DIVISION 16 OR 26 DOCUMENTATION FOR AVAILABLE VOLTAGE/PHASE AND CYCLE INFORMATION.

## 1.25. FIRE PROTECTION

- 1.25.1. FIRE EXTINGUISHERS (TO BE SUPPLIED BY THIS CONTRACTOR AND INSTALLED AS DIRECTED BY LOCAL INSPECTION AUTHORITY), MULTI-PURPOSE ABC, DRY CHEMICAL WITH RECHARGEABLE CYLINDER, HOSE, SHUT-OFF NOZZLE, PRESSURE GAUGE AND MOUNTING BRACKETS, REFER TO LATEST VERSION OF NFPA 10 FOR FIRE EXTINGUISHER TYPE, MINIMUM UL RATING REQUIREMENT, SIZE AND SPACING REQUIREMENTS.
- 1.25.2. FIRE PROTECTION EQUIPMENT AND INSTALLATION SHALL BE APPROVED BY THE PROVINCIAL AND LOCAL FIRE COMMISSIONERS, AS WELL AS THE OWNER'S INSURANCE UNDERWRITER.
- 1.25.3. THE INSTALLATION IS TO CONFORM TO: N.F.P.A. AND F.M. REGULATIONS AND PAMPHLETS APPLICABLE TO THIS PROJECT, PROVINCIAL AND MUNICIPAL CODES, AND AUTHORITIES HAVING JURISDICTION.
- 1.25.4. EXTEND ALL DRAINS TO THE NEAREST AVAILABLE FLOOR/HUB DRAIN. RUN AUXILIARY DRAINS TO A POINT ACCEPTABLE TO THE AUTHORITIES HAVING JURISDICTION AND THE ENGINEER. ALL DRAINS SHALL BE EQUIPPED WITH A SHUT-OFF VALVE. NIPPLE AND CAP DRAINS SHALL NOT DISCHARGE TO THE OUTSIDE WITHOUT PRIOR WRITTEN APPROVAL OF THE ENGINEER/OWNER. WHERE NECESSARY, EXTEND OUT FROM BUILDING SUCH THAT THEY SHALL BE LOCATED TO PREVENT DAMAGE TO THE BUILDING OR SURROUNDINGS.
- 1.25.5. DEVIATIONS FROM THE REVIEWED SHOP DRAWINGS, FOR THE PURPOSE OF CO-ORDINATION WITH OTHER WORK, SHALL NOT CONSTITUTE ANY CHANGE TO THE CONTRACT.



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#	Date	Description	Dwn
4	2023-05-18	ISSUED FOR TENDER	TW
3	2023-05-17	ISSUED FOR PERMIT	TW
2	2023-05-04	ISSUED FOR LOAD REVIEW	TW
1	2023-04-25	ISSUED FOR CLIENT REVIEW	TW

### PROJECT TITLE:



KILDONAN CROSSING  
1616 REGENT AVE W  
WINNIPEG, MB  
R2C 5C6  
CRU # 4

### REVISION

#	Date	Description	Dwn

### DRAWING TITLE:

### SPECIFICATIONS

PRINT DATE:	SCALE:
2023-05-18	AS NOTED
DRAWN BY	

## 2. PLUMBING

### 2.1. GENERAL

- 2.1.1. ALL SANITARY SEWERS SHALL HAVE A MINIMUM SLOPE OF 1% FOR LINES 100mm (4") AND OVER. FOR LINES 75mm (3") AND UNDER USE MINIMUM 2% SLOPE.
- 2.1.2. PLUMBING INSTALLATION SHALL COMPLY WITH LOCAL BUILDING REGULATIONS. SUCH REQUIREMENTS SHALL HAVE PRECEDENCE OVER THE DRAWINGS AND SPECIFICATIONS.
- 2.1.3. ALL PIPES SHALL BE LOCATED AWAY FROM AND PROTECTED FROM DAMAGE BY LOAD BEARING FOOTINGS.
- 2.1.4. PROVIDE APPROVED BACKFLOW OR SIPHON PREVENTION DEVICES ON PLUMBING LINES WHERE CONTAMINATION OF POTABLE DOMESTIC WATER MAY OCCUR. THESE DEVICES SHALL BE GENERALLY PROVIDED FOR JANITOR'S SINKS, HOSE BIBBS, FIRE PROTECTION SYSTEMS, IRRIGATION SYSTEMS AND WHERE REQUIRED BY CODE. PROTECTION DEVICES SHALL COMPLY WITH CSA B64. PROVIDE BACKFLOW TEST REPORTS TO ENGINEER.
- 2.1.5. ALL EXPOSED DRAINAGE PIPING CONNECTED TO PLUMBING FIXTURES IN FINISHED AREAS SHALL BE CHROME PLATED.
- 2.1.6. ALL EXPOSED WATER PIPING CONNECTED TO PLUMBING FIXTURES IN FINISHED AREAS TO BE CHROME PLATED.

### 2.2. PIPE AND PIPE FITTINGS

- 2.2.1. THIS SECTION IS TO BE READ IN CONJUNCTION WITH THE FIRE STOPPING SECTION OF THIS SPECIFICATION. ENSURE AN APPROPRIATE FIRE STOPPING PENETRATION EXISTS FOR ALL MATERIAL TYPES AND SIZES.
- 2.2.2. DRAINAGE AND VENT PIPING ABOVE GRADE SHALL BE DWV COPPER OR CAST IRON WITH MECHANICAL JOINTS.
- 2.2.3. SANITARY DRAINS 40mm (1 1/2") AND SMALLER MAY BE HARD TEMPERED COPPER DRAINAGE TUBE (DWV). INSTALL CHROME PLATE WHERE EXPOSED.
- 2.2.4. SYSTEM 15 DWV PIPING MAY BE USED FOR APPLICATIONS WHERE A FLAME SPREAD RATING OF NOT MORE THAN 25 IS REQUIRED AND INSTALLED IN STRICT COMPLIANCE WITH LOCAL CODES AND BYLAWS.
- 2.2.5. SYSTEM XFR DWV PIPING MAY BE USED FOR APPLICATIONS WHERE A FLAME SPREAD AND SMOKE DEVELOPMENT RATING OF NOT MORE THAN 25 AND 50 RESPECTIVELY IS REQUIRED AND INSTALLED IN STRICT COMPLIANCE WITH LOCAL CODES AND BYLAWS. LIMITED FIRE STOPPING DETAILS EXIST FOR XFR PIPING. ENSURE THAT THERE IS AN APPROPRIATE U.L.C./CUL LISTED FIRE STOPPING DETAIL FOR EACH PENETRATION PRIOR TO TENDER CLOSE.
- 2.2.6. DOMESTIC WATER PIPING (DCW, DHW, DHWR) ABOVE GRADE SHALL BE TYPE 'L' HARD COPPER WITH WROUGHT COPPER, BRONZE OR CAST BRASS FITTINGS JOINED WITH 95-5 'LEAD FREE' SOLDER. ALL PIPING SHALL MEET THE APPROVAL OF LOCAL CODES AND AUTHORITIES HAVING JURISDICTION.
- 2.2.7. HEATING WATER AND CHILLED WATER SUPPLY AND RETURN PIPING SHALL BE TYPE 'L' HARD COPPER WITH WROUGHT COPPER, BRONZE OR CAST BRASS FITTINGS JOINED WITH 95-5 'LEAD FREE' SOLDER OR SCHEDULE 40, STEEL PIPING TO ASTM A53, GRADE B.
- 2.2.8. LONGEST POSSIBLE LENGTHS OF COPPER SHOULD BE UTILIZED TO MINIMIZE JOINTS ON SITE.
- 2.2.9. JOINTS IN COPPER PIPE SHALL BE SOLDERED OR BRAZED. BOTH APPLICATIONS SHALL BE CARRIED OUT TO THE REQUIREMENTS OF THE LOCAL CODE AND AS PER THE CANADIAN COPPER AND BRASS DEVELOPMENT ASSOCIATION RECOMMENDATIONS. INSTALL AS PER THE FOLLOWING PROCEDURES:
- 2.2.9.a. REAM ENDS OF PIPES AND TUBES AND REMOVE BURRS. BEVEL PLAIN ENDS OF STEEL PIPE.
- 2.2.9.b. REMOVE SCALE, SLAG, DIRT AND DEBRIS FROM INSIDE AND OUTSIDE OF PIPE FITTINGS BEFORE ASSEMBLY.
- 2.2.9.c. SOLDER JOINTS: APPLY ASTM B813, WATER-FLUSHABLE FLUX, UNLESS OTHERWISE INDICATED TO TUBE END. CONSTRUCT JOINTS ACCORDING TO 'ASTM B828 OR CDA'S "COPPER TUBE HANDBOOK", USING LEAD-FREE SOLDER ALLOY COMPLYING WITH ASTM B32.
- 2.2.9.d. BRAZED JOINTS: CONSTRUCT JOINTS ACCORDING TO AWS'S "BRAZING HANDBOOK", "PIPE AND TUBE" CHAPTER, USING SIL-FOS 15 BRAZING FILLER METAL COMPLYING WITH AWS A5.8.
- 2.2.10. THREADED JOINTS: THREAD PIPE WITH TAPERED PIPE THREADS ACCORDING TO ASME B1.20.1. CUT THREADS FULL AND CLEAN USING SHARP DIES. REAM THREADED PIPE ENDS TO REMOVE BURRS AND RESTORE FULL I.D. JOIN PIPE FITTINGS AND VALVES AS FOLLOWS:
- 2.2.10.a. APPLY APPROPRIATE TAPE OR THREAD COMPOUND TO EXTERNAL PIPE THREADS UNLESS DRY SEAL THREADING IS SPECIFIED.
- 2.2.10.b. DAMAGED THREADS: DO NOT USE PIPE OR PIPE FITTINGS WITH THREADS THAT ARE CORRODED OR DAMAGED. DO NOT USE PIPE SECTIONS THAT HAVE CRACKED OR OPEN WELDS.
- 2.2.11. WELDED JOINTS: CONSTRUCT JOINTS ACCORDING TO AWS D10.12, USING QUALIFIED PROCESSES AND WELDING OPERATORS ACCORDING TO PART 1 "QUALITY ASSURANCE" ARTICLE.
- 2.2.12. FLANGED JOINTS: SELECT APPROPRIATE GASKET MATERIAL, SIZE, TYPE AND THICKNESS FOR SERVICE APPLICATION. INSTALL GASKET CONCENTRICALLY POSITIONED. USE SUITABLE LUBRICANTS ON BOLT THREADS.
- 2.2.13. PLASTIC PIPING SOLVENT-CEMENT JOINTS: CLEAN AND DRY JOINING SURFACES. JOIN PIPE AND FITTINGS ACCORDING TO THE FOLLOWING:
- 2.2.13.a. COMPLY WITH ASTM F402, FOR SAFE-HANDLING PRACTICE OF CLEANERS, PRIMER, AND SOLVENT CEMENTS.
- 2.2.13.b. ABS PIPING: JOIN ACCORDING TO ASTM D2235 AND ASTM D2861 APPENDICES.
- 2.2.13.c. PVC PIPING: JOIN ACCORDING TO ASTM D2846/D2846M APPENDIX.
- 2.2.13.d. PVC PRESSURE PIPING: JOIN SCHEDULE NUMBER ASTM D1785, PVC PIPE AND PVC SOCKET FITTINGS ACCORDING TO ASTM D2672. JOIN OTHER-THAN-SCHEDULE-NUMBER PVC PIPE AND SOCKET FITTINGS ACCORDING TO ASTM D2855.
- 2.2.13.e. PVC NONPRESSURE PIPING: JOIN ACCORDING TO ASTM D2855.
- 2.2.13.f. PVC TO ABS NONPRESSURE TRANSITION FITTINGS: JOIN ACCORDING TO ASTM D3138 APPENDIX.
- 2.2.14. PLASTIC PRESSURE PIPING GASKETTED JOINTS: JOIN ACCORDING TO ASTM D3139.
- 2.2.15. PLASTIC NONPRESSURE PIPING GASKETTED JOINTS: JOIN ACCORDING TO ASTM D3212.
- 2.2.16. PROVIDE PIPE SLEEVES FOR ALL PIPING PASSING THROUGH FLOOR SLAB. PIPE SLEEVES WILL PROJECT 50mm (2") ABOVE FINISHED FLOOR LEVEL AND BE CAULKED TO MAKE WATER TIGHT PENETRATION.
- 2.2.17. WHERE DISSIMILAR METALS ARE JOINED OR SUPPORTED, THE PIPING SHALL HAVE NON CONDUCTING TYPE CONNECTIONS OR HANGERS TO PREVENT GALVANIC CORROSION.
- 2.2.18. PROVIDE CHROME PLATED RIGID OR FLEXIBLE SUPPLIES TO ALL PLUMBING FIXTURES WITH STOPS, REDUCERS, AND ESCUTCHEONS SECURELY ATTACHED TO WALL AND/OR FLOOR SURFACE.
- 2.2.19. ALL PLUMBING FIXTURES SHALL BE PROVIDED WITH AN APPROVED CLEAR SILICONE SEALANT AROUND PERIMETER WHERE FIXTURES ATTACH TO WALLS AND/OR FLOORS.
- 2.2.20. PLUMBING FIXTURES SHOWN ON ARCHITECTURAL DRAWINGS AND NOT ON MECHANICAL DRAWINGS SHALL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR WITH ALL NECESSARY PIPING FOR THE COMPLETE OPERATION OF THE FIXTURE. CHECK ALL ARCHITECTURAL DRAWINGS DURING THE TENDERING PERIOD.
- 2.2.21. PROVIDE TRAP PRIMERS, WATTS A200 OR EQUIVALENT, ON ALL FLOOR DRAINS
- 2.2.22. PROVIDE ESCUTCHEON ON ALL EXPOSED PIPING PENETRATIONS THROUGH WALL AND FLOOR.
- 2.2.23. INSTALL APPROVED REDUCED PRESSURE BACKFLOW PREVENTER AFTER WATER METER TO MEET APPLICATION. PROVIDE BACKFLOW TEST REPORT TO ENGINEER.
- 2.2.24. UPON COMPLETION OF THE INSTALLATION OF THE POTABLE WATER SERVICE, FLUSH,

- CHLORINATE WITH SODIUM HYDROCHLORIDE TO AWWA C-601 SPECIFICATIONS AND LET STANDING FOR 24 HOURS. THOROUGHLY FLUSH AGAIN UNTIL AWWA STANDARD IS MET.
- 2.2.25. RETAIN AN INDEPENDENT INSPECTION FIRM TO SUPERVISE / INSPECT THE CHLORINATING AND FLUSHING PROCEDURES AND PERFORM CHEMICAL TESTS AS REQUIRED.
- 2.3. PIPING CONNECTIONS
- 2.3.1. MAKE CONNECTIONS ACCORDING TO THE FOLLOWING, UNLESS OTHERWISE INDICATED:
- 2.3.1.a. INSTALL UNIONS, IN PIPING NPS 2 (DN 50) AND SMALLER, ADJACENT TO EACH VALVE AND AT FINAL CONNECTION TO EACH PIECE OF EQUIPMENT.
- 2.3.1.b. INSTALL FLANGES, IN PIPING NPS 2-1/2 (DN 65) AND LARGER, ADJACENT TO FLANGED VALVES AND AT FINAL CONNECTION TO EACH PIECE OF EQUIPMENT.
- 2.3.1.c. DRY PIPING SYSTEMS: INSTALL DIELECTRIC UNIONS AND FLANGES TO CONNECT PIPING MATERIALS OF DISSIMILAR METALS.
- 2.3.1.d. WET PIPING SYSTEMS: INSTALL DIELECTRIC COUPLING AND NIPPLE FITTINGS TO CONNECT PIPING MATERIALS OF DISSIMILAR METALS.
- 2.4. PIPE INSULATION
- 2.4.1. ALL COVERINGS SHALL BE APPLIED IN A WORKMANLIKE MANNER BY A RED SEAL JOURNEYMAN INSULATION MECHANIC TO PRESENT A NEAT AND CLEAN APPEARANCE AT COMPLETION OF THE WORK TO THE SATISFACTION OF THE ENGINEER. INSULATION ASSEMBLIES SHALL COMPLY WITH CURRENT EDITION OF THE NATIONAL BUILDING REGULATIONS WITH FLAME SPREAD AND SMOKE DEVELOPED RATINGS NOT EXCEEDING 25 AND 50 RESPECTIVELY.
- 2.4.2. PROVIDE INSULATION AND ALL SERVICE JACKET (AS.J) FOR
- 2.4.2.A. CONDENSATE LINES,
- 2.4.2.B. DOMESTIC COLD WATER LINES,
- 2.4.2.C. CHILLED WATER LINES.
- 2.4.3. PROVIDE INSULATION C/W VAPOR BARRIER AND ALL SERVICE JACKET (AS.J) FOR:
- 2.4.3.A. DOMESTIC HOT WATER LINES
- 2.4.3.B. DOMESTIC HOT WATER RE-CIRCULATION LINES, AND
- 2.4.3.C. HEATING WATER LINES.
- 2.4.4. PIPE INSULATION SHALL BE AS PER ASHRAE 90.1-2010 TABLE 6.8.3A AND 6.8.3B.
- 2.4.4.a. FLUID OPERATING TEMPERATURES BETWEEN 105°F AND 140°F ARE TO HAVE A PIPE INSULATION THICKNESS OF:
- 2.4.4.a.a. 1 1/2" FOR PIPES SIZES 1 1/2"Ø AND LARGER.
- 2.4.4.a.b. 1" FOR PIPE SIZES 1 1/4"Ø AND SMALLER.
- 2.4.4.b. FLUID OPERATING TEMPERATURES BETWEEN 141°F AND 200°F ARE TO HAVE A PIPE INSULATION THICKNESS OF:
- 2.4.4.a.a. 2" FOR PIPES SIZES 1 1/2"Ø AND LARGER.
- 2.4.4.a.b. 1 1/2" FOR PIPE SIZES 1 1/4"Ø AND SMALLER.
- 2.4.4.b. FLUID OPERATING TEMPERATURES BETWEEN 40°F AND 60°F ARE TO HAVE A PIPE INSULATION THICKNESS OF:
- 2.4.4.a.a. 1/2" FOR PIPES SIZES 1 1/4"Ø AND SMALLER.
- 2.4.4.a.b. 1" FOR PIPE SIZES 1 1/2"Ø AND LARGER.
- 2.4.5. FINISH INSULATION NEATLY AT HANGERS, SUPPORTS AND OTHER PROTRUSIONS. INSULATE FITTINGS AND VALVES.
- 2.4.6. PROVIDE INSULATION AND COVERS IN ACCORDANCE WITH AUTHORITIES GOVERNING COMBUSTIBILITY AND FIRE PROOFING OF MATERIALS, AS PER MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTIONS.
- 2.4.7. PROVIDE NON COMBUSTIBLE INSULATION, JACKETS AND FINISHES HAVING A FLAME SPREAD/ SMOKE DEVELOPED RATINGS OF 25/50 OR LESS, MEETING CANULC S-102 REQUIREMENTS.
- 2.4.8. INSULATE FITTINGS WITH FABRICATED MITERED OR PREFORMED SECTIONS OF SPECIFIED INSULATION.
- 2.4.9. ALL DOMESTIC WATER (DCW, DHW, DHWR) PIPING IS TO BE INSULATED THE FULL LENGTH.
- 2.4.10. PIPE INSULATION SHALL MEET OR EXCEED THE REQUIREMENTS OF ASHRAE 90.1-2010.
- 2.4.11. ALL HEATING WATER (HW/SHWR) PIPING IS TO BE INSULATED THE FULL LENGTH.
- 2.4.12. ALL CONDENSATE (CND) PIPING IS TO BE INSULATED THE FULL LENGTH.
- 2.4.13. WHERE FIBERGLASS PIPE INSULATION IS USED, INSULATE ALL PIPE FITTINGS, ELBOWS, ETC. WITH PREFORMED FIBROUS GLASS INSULATION FITTINGS OR INSULATING CEMENT, TO THE SAME THICKNESS AS ADJACENT INSULATION. PIPE ELBOWS AND PIPE FITTINGS ON ALL EXPOSED INSULATION SHALL BE COVERED WITH PVC FITTING COVERS, OR APPROVED EQUAL.
- 2.4.14. WHERE PIPING IS SUPPORTED AT EXTERIOR SURFACE OF INSULATION PROVIDE 300mm (12") LONG, SUPPORT SHIELD WITH HIGH DENSITY INSULATION UNDER SHIELD, AT EACH HANGER LOCATION.
- 2.5. CLEANOUTS
- 2.5.1. PROVIDE AND SET CLEANOUTS AT ALL POINTS REQUIRED BY CODES AND WHERE INDICATED ON THE DRAWINGS. ALL CLEANOUTS SHALL BE MADE ACCESSIBLE BY EXTENDING BRANCH CONNECTIONS TO FINISHED SURFACE AND FITTING THEM WITH A SUITABLE ACCESS COVER TO ACCEPT FLOOR FINISH.
- 2.5.2. CLEANOUTS IN CONCRETE SHALL BE ADJUSTABLE TYPE FOR LEVEL INSTALLATION.
- 2.5.3. CLEANOUTS IN UNFINISHED AREAS SHALL BE WATTS CO-200-R OR EQUAL.
- 2.5.4. CLEANOUTS IN FINISHED AREAS SHALL BE WATTS CO-1200-R OR EQUAL.
- 2.6. VALVES
- 2.6.1. VALVES SHALL BE INSTALLED AS INDICATED ON THE DRAWINGS, AS SPECIFIED, AND AS REQUIRED TO ISOLATE ALL FIXTURES, EQUIPMENT, ETC.
- 2.6.2. PROVIDE ALL VALVES AS SHOWN ON THE DRAWINGS OR REQUIRED BY LOCAL BUILDING CODES AND AUTHORITIES HAVING JURISDICTION.
- 2.6.3. USE BALL VALVES ON ALL DOMESTIC WATER PIPING, 2" (50mm) OR LESS IN DIAMETER.
- 2.6.4. PROVIDE BRONZE TYPE BALL VALVES ON MAIN AND BRANCH LINES AND ISOLATION VALVES FOR EACH PLUMBING FIXTURE SERVED.
- 2.6.5. ALL ISOLATION VALVES INSTALLED FOR SHUT-OFF PURPOSES TO BE RED AND WHITE #0444A BALL VALVES, UNLESS OTHERWISE SPECIFIED.
- 2.6.6. HYDRONIC HEATING - CONTROL VALVES ARE TO FAIL OPEN.
- 2.6.7. ALL VALVES COMPLETE WITH DRAIN AND CAP ARE TO HAVE THE VALVE HANDLE REMOVED.
- 2.7. PLUMBING FIXTURES
- 2.7.1. ALL FIXTURES SHALL BE FREE FROM FLAWS OR BLEMISHES AND SUBJECT TO APPROVAL. ALL FINISHED SURFACES SHALL BE CLEAR, SMOOTH AND BRIGHT AND GUARANTEED NOT TO CRAZE, COLOR OR SCALE.
- 2.7.2. FIXTURE SUPPORT MUST BE SUCH THAT THEY WILL NOT COME LOOSE WITH ORDINARY USAGE AND THAT ANCHORING WILL BE RIGID. REINFORCE WALL BEHIND FIXTURES IF REQUIRED FOR PROPER SUPPORT.
- 2.7.3. REFER TO FIXTURE SCHEDULE ON DRAWINGS.
- 2.7.4. WHEELCHAIR ACCESSIBLE LAVATORY P-TRAP AND ANGLE VALVE ASSEMBLIES SHALL BE COVERED WITH THE MOLDED, ANTI-MICROBIAL TRUEBRO, INC. LAVATORY GUARD. UNDER SINK PROTECTIVE PIPE COVER ACCESSORY, COLOR WHITE, COVER SHALL BE SECURED WITH SNAP CLIP FLUSH, RE-USABLE FASTENERS, ANGLE STOP SHALL HAVE LOCK-LID LOCKING ACCESS COVERS.
- 2.7.5. ALL PLUMBING FIXTURES MUST BE CSA APPROVED.

- 2.7.6. CONTRACTOR TO PROVIDE THREE (3) EACH OF THE FOLLOWING SPARE PARTS:
- 2.7.6.A. WATER CLOSET FILL VALVE ASSEMBLY.
- 2.7.6.B. KITCHEN FAUCET MIXING VALVE AND TRIM KIT.
- 2.7.6.C. BATHROOM FAUCET MIXING VALVE AND TRIM KIT.
- 2.8. DOMESTIC HOT WATER SYSTEM
- 2.8.1. TEMPERATURE IN ALL TANKS TO BE 140°F (60°C).
- 2.9. PIPING SYSTEMS CLEANING AND CHEMICAL TREATMENT
- 2.9.1. PROVIDE FOR FLUSHING AND DISINFECTION OF ENTIRE DOMESTIC WATER SYSTEMS.
- 2.9.2. MAKE SYSTEMS COMPLETELY OPERATIONAL, TOTALLY FILLED, THOROUGHLY VENTED, AND COMPLETELY STARTED.
- 2.9.3. ALL DOMESTIC HOT, COLD AND DOMESTIC RECIRCULATION WATER SYSTEMS WILL BE REQUIRED TO BE THOROUGHLY FLUSHED WITH POTABLE WATER TO CLEAN, COLLECT AND LABEL WITH COLLECTION LOCATION FOUR (4) POTABLE WATER TEST SAMPLES FROM THE MOST REMOTE FIXTURES IN THE BUILDING (FROM HOT WATER TAP AND COLD-WATER TAP) AND FROM A FIXTURE MIDWAY THROUGH THE BUILDING (FROM HOT WATER TAP AND COLD WATER TAP), OR, AT LOCATIONS AS DIRECTED BY THE ENGINEER. HAVE SAMPLES TESTED AND SUBMIT TEST RESULTS TO ENGINEER FOR REVIEW.
- 2.9.4. IF TESTING INDICATES CONTAMINATION, IF REQUIRED BY THE ENGINEER, OR, IF REQUIRED BY THE AHJ, DISINFECT DOMESTIC HOT, COLD AND DOMESTIC RECIRCULATION WATER SYSTEMS. ADD CHLORINE TO WATER IN SYSTEM TO 50 PPM AND LET STAND FOR 24 HOURS. CHECK CHLORINE CONTENT AFTER 24 HOURS AND INSURE THE CONTENT IS NOT LESS THAN 20PPM. IF LESS THAN 20PPM REPEAT PROCESS. FLUSH SYSTEM UNTIL THE CHLORINE CONTENT OF WATER BEING DRAINED IS EQUAL TO THE CHLORINE CONTENT OF THE MAKE-UP WATER. UTILIZE PLUMBING FIXTURES (I.E. LAV, SINKS, FLUSHMETERS, ETC.) FOR DRAINAGE. RE-TEST UP TO FOUR (4) ADDITIONAL SAMPLES AS DIRECTED BY THE ENGINEER.
- 2.9.5. IF DISINFECTION PROCEDURES ARE NOT SUCCESSFUL, RETAIN AN INDEPENDENT INSPECTION FIRM TO SUPERVISE / INSPECT THE CHLORINATING AND FLUSHING PROCEDURES AND PERFORM CHEMICAL TESTS AS REQUIRED.
- 2.9.6. UPON COMPLETION OF THE INSTALLATION OF THE BELOW GRADE POTABLE WATER SERVICE, FLUSH, CHLORINATE WITH SODIUM HYDROCHLORIDE TO AWWA C-601 SPECIFICATIONS AND LET STANDING FOR 24 HOURS. THOROUGHLY FLUSH AGAIN UNTIL AWWA STANDARD IS MET.

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#### ISSUE

#	Date	Description	Dwn
4	2023-05-18	ISSUED FOR TENDER	TW
3	2023-05-17	ISSUED FOR PERMIT	TW
2	2023-05-04	ISSUED FOR LOAD REVIEW	TW
1	2023-04-25	ISSUED FOR CLIENT REVIEW	TW

#### PROJECT TITLE:



KILDONAN CROSSING  
1616 REGENT AVE W  
WINNIPEG, MB  
R2C 5C6  
CRU # 4

#### REVISION

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M6.1

### 3. HVAC

#### 3.1. DUCTWORK

- 3.1.1. DUCTWORK SHALL BE GALVANIZED STEEL AND SHALL BE LOCK FORMING QUALITY. ALL DUCTWORK SHALL BE CONSTRUCTED, BRACED, CONNECTED AND JOINED AS RECOMMENDED IN THE LATEST ISSUE OF ASHRAE GUIDE AND THE DUCT CONSTRUCTION STANDARDS ISSUED BY THE SHEET METAL NATIONAL ASSOCIATION INC. (SMACNA). ALL DUCTWORK SHALL BE INSTALLED TO CONFORM TO THE MOST CURRENT EDITION OF THE ALBERTA BUILDING CODE, NFPA PAMPHLETS 90A AND 91 AND IN ACCORDANCE WITH APPLICABLE CODES.
  - 3.1.1.A. THE MINIMUM SHEET METAL THICKNESS FOR DUCTS SHALL BE 28 GAUGE. 30 GAUGE DUCT THICKNESS WILL NOT BE PERMITTED.
  - 3.1.1.B. THE USE OF SNAP LOCK DUCTWORK IS NOT PERMITTED.
  - 3.1.1.C. DUCTWORK IS TO BE CONSTRUCTED AND GAUGE SELECTED BASED ON SYSTEM STATIC PRESSURE REQUIREMENTS, JOINT TYPE, REINFORCEMENT TYPE AND REINFORCING SPACING.
  - 3.1.1.D. RECTANGULAR DUCTS ARE TO BE COMPLETE WITH CROSSBREAKING OR BEADING WHERE REQUIRED.

- 3.1.2. DUCT SIZES SHOWN ARE SHEET METAL SIZES. WHERE INTERNAL INSULATION IS SPECIFIED MAKE AN ALLOWANCE FOR INSULATION THICKNESS. MAINTAIN INTERNAL DUCT SIZES SHOWN. PRIOR TO FABRICATION, CHECK CEILING SPACES, HEIGHTS AND CONFLICTS. WITH OTHER TRADES AT THE SITE AND OFF DRAWINGS, PROVIDE ADDITIONAL OFFSETS AND CHANGES IN DIRECTION REQUIRED, WITHOUT ADDITIONAL COST.
- 3.1.3. DUCTS SHALL NOT, UNDER ANY CIRCUMSTANCES, BE SUPPORTED BY MEANS OF PERFORATED BAND IRON, WIRE OR CHAIN. DUCTS SHALL NOT BE SUPPORTED FROM HANGERS SUPPLIED BY OTHER TRADES.
- 3.1.4. ROUND DUCTWORK SHALL BE SUSPENDED BY BAND IRON HANGERS.
- 3.1.5. RECTANGULAR DUCTWORK SHALL BE SUPPORTED AT MAXIMUM 2.4m (7'-10") SPACING.
- 3.1.6. FLEXIBLE DUCTWORK SHALL BE FLEXMASTER MODEL F48SM OR THERMIFLEX TYPE M-KE.
- 3.1.7. FLEXIBLE DUCTWORK ALUMINUM HELICALLY WOUND, INSULATED AND ULC LISTED. MAXIMUM LENGTH IS TO BE 1m (3'-0") AT FINAL CONNECTION TO DIFFUSERS.
- 3.1.8. ALL EXPOSED DUCTWORK IS TO BE INTERNALLY SEALED AT DUCT CONNECTIONS TO PROVIDE A CLEAN FINISH. ALL JOINTS ARE TO BE CLEANED PRIOR TO JOB COMPLETION.
- 3.1.9. DUCTS TO BE GALVANIZED STEEL LOCK FORMING QUALITY, HAVING GALVANIZED COATING TO ASTM A525 C30 DESIGNATION FOR BOTH SIDES.
- 3.1.10. FASTENERS TO BE SHEET METAL SCREWS ON LOW PRESSURE DUCTS.
- 3.1.11. SEALANT: OIL RESISTANT, WATER RESISTANT, FIRE RESISTIVE, COMPATIBLE WITH ADJACENT MATERIALS. ALL DUCT JOINTS ARE TO BE SEALED WITH SEALANT.
- 3.1.12. RIGIDLY CONSTRUCT METAL DUCTS WITH PROPRIETARY PRE-MANUFACTURED DUCT JOINING SYSTEM MECHANICALLY TIGHT, SUBSTANTIALLY AIR TIGHT, BRACED AND STIFFENED SO AS NOT TO BREATHE, RATTLE, VIBRATE OR SAG.
- 3.1.13. PROPRIETARY PRE-MANUFACTURED DUCT JOINING SYSTEM SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST EDITIONS OF ASHRAE AND SMACNA GUIDELINES. DUCT CONNECTION SYSTEM SHALL CONSIST OF ROLL-FORMED FLANGES, CORNER PIECES, GASKETS AND CLEATS. FLANGES ARE USED TO ATTACH TO DUCT WALL WITH INTEGRAL MASTIC THAT ALLOW FLANGE TO SEAL ITSELF TO THE DUCT. CORNER PIECES ARE USED TO ADD RIGIDITY TO THE FLANGE. HOLD THE DUCTWORK TOGETHER AND PROVIDE A SEALING SURFACE FOR THE GASKET. THE GASKET SHALL MAKE AN AIR TIGHT SEAL BETWEEN THE FLANGES. THE CLEAT ENSURES EVEN COMPRESSION OF THE GASKET ALONG THE LENGTH OF THE FLANGE.

- 3.1.14. ALL HANGERS SHALL BE 1/4" (6mm) RODS AND 1"x1"x1/4"(25x25x6mm) ANGLES.
- 3.1.15. INSTALL BREAKAWAY JOINTS IN DUCTWORK ON SIDES OF FIRE SEPARATION.
- 3.1.16. DUCT CONNECTIONS AT FAN COIL UNITS, HRV'S ETC. SHALL BE MADE WITH 150mm (6") LONG FLEXIBLE NEOPRENE, TO PREVENT TRANSMISSION OF VIBRATION. THE CONTRACTOR SHALL ENSURE THAT ALL CONNECTIONS ARE LEAKPROOF.
- 3.1.17. ALL DUCTS ASSOCIATED WITH FANS AND OTHER MACHINERY SHALL BE FITTED WITH CANVAS FLEXIBLE CONNECTIONS AT INLET AND OUTLET.

#### 3.2. DUCT INSULATION

- 3.2.1. ALL COVERINGS SHALL BE APPLIED IN A WORKMANLIKE MANNER BY A RED SEAL JOURNEYPAN INSULATION MECHANIC TO PRESENT A NEAT AND CLEAN APPEARANCE AT COMPLETION OF THE WORK TO THE SATISFACTION OF THE ENGINEER. INSULATION ASSEMBLIES SHALL COMPLY WITH CURRENT EDITION OF ALBERTA BUILDING REGULATIONS WITH FLAME SPREAD AND SMOKE DEVELOPED RATINGS NOT EXCEEDING 25 AND 50 RESPECTIVELY.
- 3.2.2. APPLY 25mm (1") THICK INTERNAL ACOUSTIC INSULATION ON SUPPLY, RETURN, AND EXHAUST AIR DUCTWORK WHERE SHOWN BY CROSS HATCHING OF DUCTWORK ON THE DRAWING.
- 3.2.3. APPLY 25mm (1") THICK FLEXIBLE FIBROUS GLASS EXTERNAL THERMAL INSULATION WITH FACTORY APPLIED VAPOUR BARRIER ON SUPPLY AND RETURN AIR DUCTWORK.
- 3.2.4. APPLY 50mm (2") THICK FLEXIBLE FIBROUS GLASS INSULATION WITH FACTORY APPLIED REINFORCED VAPOUR BARRIER ON COMBUSTION AND OUTSIDE AIR INTAKE DUCTWORK.
- 3.2.5. INSULATE ALL DUCTWORK LOCATED OUTDOORS OR SUBJECT TO OUTDOOR TEMPERATURE WITH 50mm (2") THICK RIGID FIBERGLASS FIBRE REFRIGERANT RESISTANT INTERNAL DUCT INSULATION. MINIMUM R-8 THERMAL VALUE. ENSURE ALL SEAMS AND JOINTS ARE SEALED WATERTIGHT.
- 3.2.6. INSULATE VENTILATION EQUIPMENT AND CABINET EXHAUST FAN CASINGS WITH 25mm (1") THICK RIGID FIBERGLASS INTERNAL DUCT INSULATION. INSULATION TO BE FACTORY INSTALLED.
- 3.2.7. ALL SUPPLY AND RETURN DUCTWORK SHALL BE LINED WITH 25mm (1") THICK INTERNAL ACOUSTIC INSULATION MINIMUM 3m (10 FEET) FROM EXTERIOR PENETRATION.
- 3.2.8. INSULATE THE FIRST 3m (10'-0") OF EXHAUST DUCTWORK FROM THE ROOF OR WALL TERMINAL WITHIN THE BUILDING WITH 1" THICK FLEXIBLE, FOIL FACED FIBERGLASS OR CANVAS EXTERIOR INCLUDING THE ATTIC SPACES. INSULATE ALL DUCTWORK FULL LENGTH RUNNING IN COLD SPACES.
- 3.2.9. INSULATION TO BE 25mm (1") THICK MINERAL FIBRE WITH VAPOUR BARRIER. INSULATE ALL SUPPLY AIR DUCTWORK. INSULATE EXHAUST DUCTWORK FOR A DISTANCE OF 1.5m (5'-0") UPSTREAM OF FAN.
- 3.2.10. ALL ADHESIVES, MASTICS, SEALANTS AND COATINGS USED INSIDE THE BUILDING WITH THE INSULATION SHALL BE FIRE RETARDING AND MEET ULC STANDARDS AND ALBERTA BUILDING CODE WITH A FLAME SPREAD RATING OF NOT OVER 25 AND SMOKE DEVELOPED CLASSIFICATION NOT OVER 50.

#### 3.3. VOLUME DAMPERS

- 3.3.1. INSTALL WHERE REQUIRED FOR BALANCING.
- 3.3.2. RECTANGULAR DUCTS SHALL HAVE OPPOSED BLADE VOLUME DAMPERS.
- 3.3.3. ROUND DUCTS SHALL HAVE SPLITTER DAMPERS OR BUTTERFLY DAMPERS.
- 3.3.4. HAND BALANCING DAMPERS SHALL BE FABRICATED OF GALVANIZED IRON, TWO GAUGES HEAVIER THAN THAT OF THE DUCT IN WHICH THE DAMPER IS TO BE INSTALLED.

#### 3.4. ACCESS

- 3.4.1. ACCESS SHALL BE PROVIDED TO ALL MECHANICAL EQUIPMENT, BALANCING DAMPERS, VALVES AND ALL OTHER ITEMS REQUIRING SERVICING ACCESS. ACCESS PANELS SHALL BE FIRE-RATED AS REQUIRED, TO MEET CEILING, WALL AND FLOOR RATINGS.

#### 3.5. AIR OUTLETS

- 3.5.1. PROVIDE ALL AIR OUTLETS COMPLETE WITH ACCESSORIES AS SPECIFIED HEREIN AND INDICATED ON THE DRAWINGS. COORDINATE LOCATIONS OF ALL AIR

OUTLETS WITH LIGHTING. THE POSITIONS INDICATED ARE APPROXIMATE ONLY. THIS CONTRACTOR SHALL CHECK THE LOCATION OF ALL OUTLETS AND SHALL MAKE SUCH ADJUSTMENTS IN POSITION AS NECESSARY TO CONFORM WITH ARCHITECTURAL FEATURES AT NO EXTRA COST TO OWNER.

#### 3.6. VIBRATION ISOLATION REQUIREMENTS

- 3.6.1. MOUNT MECHANICAL EQUIPMENT ON VIBRATION ISOLATORS TO MINIMIZE THE TRANSMISSION OF VIBRATION TO BUILDING STRUCTURE.
- 3.6.2. PROVIDE FLEXIBLE PIPE SECTIONS IN PIPING TO PREVENT THE TRANSMISSION OF VIBRATION TO THE BUILDING STRUCTURE.
- 3.6.3. INSTALL FLEXIBLE DUCT CONNECTIONS AT AIR HANDLING UNITS, SUPPLY AND EXHAUST FANS TO PREVENT VIBRATION TRANSMISSION TO DUCTWORK.

#### 3.7. AIR SYSTEM TESTING, BALANCING AND COMMISSIONING

- 3.7.1. AIR BALANCING SHALL BE CARRIED OUT BY AN INDEPENDENT AGENCY, REGISTERED WITH ASSOCIATED AIR BALANCE COUNCIL (AABC), SPECIALIZING IN THIS FORM OF WORK AND IN ACCORDANCE WITH GUIDELINES ESTABLISHED BY THE ASSOCIATED AIR BALANCE COUNCIL (AABC).
- 3.7.2. BALANCE SYSTEM FOR RATED AIR FLOW, AIR TEMPERATURE CONTROL AND CURRENT DRAW AFTER INSTALLATION IS COMPLETE AND IN FULL WORKING ORDER. ADJUST CONTROL FOR CONTINUOUS AIR CIRCULATION AND MINIMUM ENERGY CONSUMPTION. ADJUST FAN SPEED AS REQUIRED TO OBTAIN SPECIFIC PERFORMANCE. BALANCE SYSTEM FOR OUTSIDE AIR AS GIVEN IN UNIT PERFORMANCE. FAN SHEAVES SHALL BE ADJUSTED OR REPLACED AS REQUIRED, TO ACHIEVE DESIGN AIR FLOW.
- 3.7.3. PRIOR TO OCCUPANCY, BUT AFTER ALL INTERIOR CONSTRUCTION IS SUBSTANTIALLY COMPLETE AND ALL FINISHES HAVE BEEN INSTALLED, PERFORM A FULL SYSTEM FLUSH OF THE AIR WITHIN THE BUILDING BY RUNNING THE AIR HANDLER(S) (OR MAXIMUM SPEED IF A VARIABLE SPEED DEVICE) FOR A MINIMUM OF 48 HOURS (COMBINED OVER NOT MORE THAN 4 SESSIONS), AND PROVIDE NEW FILTERS IN THE AIR HANDLER(S) AFTER THE FLUSH IS COMPLETE.
- 3.7.4. THE MECHANICAL CONTRACTOR SHALL HIRE AND PAY FOR THE EQUIPMENT MANUFACTURER'S REPRESENTATIVE OR QUALIFIED REFRIGERATION MECHANIC TO STARTUP EACH FAN UNIT, CHECK OUT ALL ASSOCIATED CONTROLS AND SAFETY CUTOUTS, THIS INCLUDES THERMOSTATS, UNIT OUTSIDE AIR DAMPERS, FIRE STARTS, EXHAUST FAN INTERLOCKS ETC. THIS WORK SHALL BE COMPLETE AND ANY DEFICIENCIES RECTIFIED, PRIOR TO NOTIFYING THE BALANCING CONTRACTOR THAT THE SYSTEMS ARE READY TO BE BALANCED.
- 3.7.5. COMMISSION ENTIRE MECHANICAL SYSTEM. INCLUDE START UP REPORT IN MAINTENANCE MANUAL.
- 3.7.6. ALL LOW VELOCITY DUCT SYSTEMS, INCLUDING SUPPLY, RETURN AND EXHAUST SHALL BE CHECKED FOR TIGHTNESS. ALL LEAKS SHALL BE REPAIRED BEFORE DUCTS ARE FURRED IN TO ENSURE TOTAL OUTLET CAPACITY IS WITHIN 5% OF THE QUANTITY BEING SUPPLIED BY THE AIR SYSTEMS.
- 3.7.7. TO OBTAIN SPECIFIED AIR VOLUMES THIS CONTRACTOR SHALL MAKE ALL NECESSARY BELT AND SHEAVE CHANGES, ADD DAMPERS, VALVES, ETC. AS MAY BE REQUIRED AT NO ADDITIONAL COST TO THE CONTRACT.
- 3.7.8. PREPARE AND SUBMIT THREE (3) COPIES OF COMPLETED REPORTS FOR ALL AIR HANDLING SYSTEMS AS PER THE NATIONAL GUIDELINES.
- 3.7.9. TESTING OF LOW VELOCITY DUCTWORK SHALL COMPRISE REPAIRING AND/OR REPLACING ANY AND ALL AUDIBLE LEAKS OR THOSE THAT ARE NOTICEABLE BY FEEL.
- 3.7.10. MECHANICAL SYSTEMS SHALL NOT BE CONSIDERED READY FOR FINAL INSPECTION UNTIL BALANCING RESULTS ARE ACCEPTABLE TO CONSULTANT.

### 4. EQUIPMENT

#### 4.1. GENERAL

- 4.1.1. PROVIDE UNITS FROM MANUFACTURERS REGULARLY ENGAGED IN PRODUCTION OF SUCH UNITS AND WHO ISSUE CATALOGUE DATA ON SUCH PRODUCTS.
- 4.1.2. ANY EQUIPMENT THAT THE MECHANICAL CONTRACTOR WISHES TO INSTALL AS AN ALTERNATE MUST BE SUBMITTED FOR APPROVAL BY ENGINEER BEFORE ORDERING AND INSTALLATION. IF NOT APPROVED BEFORE INSTALLATION THE ENGINEER MAY DEEM IT NECESSARY TO REPLACE THE INSTALLED EQUIPMENT WITH THAT WHICH WAS SPECIFIED AT THE COST OF THE CONTRACTOR.
- 4.1.3. THE EQUIPMENT SPECIFIED IS TO BE MINIMUM STANDARD AND QUALITY REQUIRED, ANY ALTERNATE EQUIPMENT MUST MEET OR EXCEED THE STANDARD AND QUALITY OF THAT WHICH WAS SPECIFIED.
- 4.1.4. ALL ALTERNATES MUST BE SUBMITTED A MINIMUM OF SEVEN (7) DAYS PRIOR TO TENDER CLOSE.
- 4.1.5. EQUIPMENT ORIENTATION AND AIRFLOW ARRANGEMENT IS TO BE VERIFIED BY THE CONTRACTOR PRIOR TO ORDERING AND INSTALLATION. IF UNITS WITH THESE ARRANGEMENTS AS LAID OUT ARE NOT USED, THE CONTRACTOR IS RESPONSIBLE FOR ANY EXTRA COSTS INCURRED.
- 4.1.6. THE EQUIPMENT SUPPLIER(S) SHALL VISIT THE SITE AND INSPECT THE INSTALLATION OF ALL EQUIPMENT. THE SUPPLIER SHALL CONFIRM IN WRITING, TO THE CONSULTANT, THAT THE INSTALLATION AND OPERATION OF THIS EQUIPMENT MEETS SPECIFIED CONDITIONS, AND MANUFACTURER'S INSTALLATION AND OPERATION GUIDELINES.
- 4.1.7. WHEN APPLICABLE, THE CONTRACTOR IS TO PUT A LABEL ON THE EQUIPMENT, IN AN EASILY VISIBLE SPACE, WITH RECOMMENDED SET POINTS, BELT SIZES AND FILTER SIZE.

#### 4.2. DOMESTIC ELECTRIC TANK TYPE WATER HEATERS

- 4.2.1. VOLTAGE APPLIED TO THE HEATER SHOULD NOT VARY MORE THAN +5% TO -10% OF THE MODEL AND RATING PLATE MARKING FOR SATISFACTORY OPERATION.
- 4.2.2. WATER HEATERS SHALL HAVE MINIMUM RATED INPUTS, RECOVERY AND STORAGE CAPACITY NOT LESS THAN LISTED IN THE EQUIPMENT SCHEDULES.
- 4.2.3. THE TANK SHALL BE LINED WITH VITRAGLAS 9 VITREOUS ENAMEL AND SHALL HAVE A BOLTED HAND HOLE CLEANOUT.
- 4.2.4. THE WATER HEATER SHALL BE EQUIPPED WITH STAINLESS STEEL COLD WATER INLET.
- 4.2.5. THE HEATER SHALL BE INSULATED WITH NON CFC FOAM.
- 4.2.6. THE WATER HEATER SHALL BE EQUIPPED WITH AN ASME RATED TEMPERATURE AND PRESSURE RELIEF VALVE.
- 4.2.7. THE WATER HEATER SHALL BE FACTORY ASSEMBLED AND TESTED.
- 4.2.8. THE CONTROL SHALL BE AN ADJUSTABLE ELECTRONIC THERMOSTAT TO ANY TEMPERATURE UP TO 140°F (60°C). THE ENTIRE INSTALLATION SHALL BE MADE IN COMPLIANCE WITH PROVINCIAL AND LOCAL CODES AND BYLAWS INCLUDING NFPA 70, THE NATIONAL ELECTRICAL CODE.
- 4.2.9. DESIGN CERTIFIED TO CSA INTERNATIONAL FOR 140°F (60°C) APPLICATION, EITHER WITH OR WITHOUT A SEPARATE STORAGE TANK AND MUST COMPLY WITH PROVINCIAL AND LOCAL CODES INCLUDING NFPA 70, THE NATIONAL ELECTRICAL CODE.
- 4.2.10. PROVIDE MINIMUM 6" CLEARANCE AROUND UNIT FOR ACCESS TO REPLACEABLE PARTS INCLUDING THERMOSTAT, RELIEF AND DRAIN VALVE.
- 4.2.11. PROVIDE HEAT TRAPS AT BOTH THE HOT AND COLD WATER CONNECTIONS AS PER THE MOST CURRENT COPY OF ASHRAE 90.1.

#### 4.3. HEATING RECOVERY VENTILATION UNIT

- 4.3.1. HRV'S SHALL HAVE MINIMUM RATED INPUTS, AIRFLOW AT STATIC SHOWN, EFFICACY, AND SENSIBLE EFFECTIVENESS NOT LESS LISTED IN THE EQUIPMENT SCHEDULES.
- 4.3.2. COUNTER-FLOW HEAT RECOVERY CORE TRANSFERS HEAT BETWEEN THE TWO

AIRSTREAMS. EASILY REMOVED FOR CLEANING AND SERVICE.

- 4.3.3. HIGH EFFICIENCY ELECTRONIC COMMUTATED ECM MOTOR. EACH AIR STREAM HAS ONE CENTRIFUGAL BLOWER WITH MULTIPLE FAN SPEED OPERATION DRIVEN BY ONE DOUBLED SHAFT MOTOR.
- 4.3.4. WASHABLE FILTERS
- 4.3.5. THREADED INSERTS AT CORNER OF THE CABINET DESIGNED TO ACCEPT "S" HOOKS AND HANGING STRAPS SUPPLIED WITH THE UNIT.
- 4.3.6. RE-CIRCULATING DAMPER DEFROST SYSTEM
- 4.3.7. 20 GAUGE PRE-PAINTED GALVANIZED STEEL C/W INSULATION TO PREVENT EXTERIOR CONDENSATION.
- 4.3.8. CONDENSATE DRAIN CONNECTION TO BE LOCATED ON THE UNIT.
- 4.3.9. CONTROL INCLUDED WITH THE UNIT CAN BE WALL MOUNTED IN A CENTRAL LOCATION OF THE HOME. 2 WIRE 20 GAUGE MIN. 100FT LENGTH MAX FROM UNIT.
- 4.3.10. CONTROLS
  - 4.3.10.A. 5 SPEED OPERATION ON EACH MODE.
  - 4.3.10.B. 4 USER SELECTABLE OPERATIONAL MODES: CONTINUOUS, 20 ON/40 OFF, 20ON/40 RE-CIRCULATION, CONTINUOUS RE-CIRCULATION.

#### 4.4. FAN COIL UNIT

- 4.4.1. FAN COILS SHALL HAVE MINIMUM RATED INPUTS, AIRFLOW AT STATIC SHOWN, EFFICIENCY, AND SENSIBLE EFFECTIVENESS NOT LESS LISTED IN THE EQUIPMENT SCHEDULES.
- 4.4.2. HIGH EFFICIENCY ELECTRONIC COMMUTATED ECM MOTOR. ONE CENTRIFUGAL BLOWER WITH MULTIPLE FAN SPEED OPERATION DRIVEN BY ONE SHAFT MOTOR. FAN ASSEMBLY SHALL BE EASILY REMOVABLE FOR SERVICING AND CLEANING.
- 4.4.3. THROWAWAY FILTERS. FILTERS SHALL BE EASILY REMOVABLE FROM THE BOTTOM OF THE UNIT WITHOUT THE NEED FOR TOOLS.
- 4.4.5. THREADED INSERTS AT CORNER OF THE CABINET DESIGNED TO ACCEPT "S" HOOKS AND HANGING STRAPS SUPPLIED WITH THE UNIT.
- 4.4.6. 20 GAUGE PRE-PAINTED GALVANIZED STEEL C/W INSULATION TO PREVENT EXTERIOR CONDENSATION.
- 4.4.7. PRIMARY CONDENSATE DRAIN PANS SHALL BE SINGLE WALL HEAVY GAUGE GALVANIZED STEEL FOR CORROSION RESISTANCE, AND EXTEND UNDER THE ENTIRE COOLING COIL. DRAIN PANS SHALL BE OF ONE PIECE CONSTRUCTION AND BE DOUBLE SLOPED FOR CONDENSATE REMOVAL.
- 4.4.8. COILS SHALL BE AHRI 410 CERTIFIED AND TAGGED WITH AN AHRI 410 LABEL. COILS SHALL HAVE SEAMLESS COPPER TUBES AND SHALL BE MECHANICALLY EXPANDED TO PROVIDE AN EFFICIENT, PERMANENT BOND BETWEEN THE TUBE AND FIN.
- 4.4.9. UNITS SHALL BE FURNISHED WITH A SINGLE POINT POWER CONNECTION. PROVIDE AN ELECTRICAL JUNCTION BOX WITH TERMINAL STRIP FOR MOTOR AND OTHER ELECTRICAL TERMINATIONS.
- 4.4.10. CONTROLS
  - 4.4.10.A. PROVIDE TERMINAL WIRING BLOCK TO FACILITATE WIRING TERMINATIONS FOR THE ELECTRIC CONTROL VALVES AND THERMOSTATS.
  - 4.4.10.B. FAN MOTOR SHALL BE COMPLETE WITH SCR CONTROLLER.

### 5. CONTROLS

#### 5.1. GENERAL

- 5.1.1. PROVIDE SYSTEM COMPONENTS CONSISTING OF THERMOSTATS, CONTROL VALVES, DAMPERS, OPERATORS, INDICATING DEVICES AND INTERFACE EQUIPMENT AS REQUIRED TO OPERATE MECHANICAL SYSTEM AND TO PERFORM FUNCTIONS SPECIFIED.
- 5.1.2. ALL CONTROLS FOR MECHANICAL EQUIPMENT SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR. COORDINATE INSTALLATION WITH G.C. AND ELECTRICAL CONTRACTOR WHERE REQUIRED.
- 5.1.3. UNLESS OTHERWISE CALLED FOR, WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, THE PROVISION OF THERMOSTATS, CONTROLLERS, OPERATORS, SENSORS, CONTROL VALVES, TRANSFORMERS, INTERFACE EQUIPMENT, CONTROL RELAYS, AND ALL OTHER NECESSARY AUXILIARY DEVICES REQUIRED TO PERFORM FUNCTIONS IN REQUIRED SEQUENCES.
- 5.1.4. THE ELECTRICAL TRADE SHALL SUPPLY AND INSTALL ALL ELECTRICAL LINE VOLTAGE WIRING AND CONDUIT REQUIRED BY THE MECHANICAL TRADE. MECHANICAL CONTRACTOR IS TO COVER THIS SERVICE IN THEIR FEES.
- 5.1.5. INSTALLATION OF CONTROL WORK BY THE ELECTRICAL TRADE SHALL BE DONE UNDER THE SUPERVISION OF THE MECHANICAL TRADE.
- 5.1.6. CONTROL WIRING, CONDUIT AND ELECTRICAL DEVICES SHALL COMPLY WITH THE REQUIREMENTS OF DIVISION 16 OR 26 - ELECTRICAL. ALL CONTROL WIRING SHALL BE COLOUR CODED AND TAGGED FOR EASY IDENTIFICATION.
- 5.1.7. THERMOSTATS SHALL BE MOUNTED 1.5m (5 FEET) ABOVE THE FLOOR LEVEL AND ON LOOK SIDE OF DOORS (IF ADJACENT THERMO) VERTICALLY IN LINE WITH THE LIGHT SWITCH, UNLESS OTHERWISE SPECIFIED. THERMOSTATS MOUNTED ON OUTSIDE WALLS SHALL BE STOOD OFF FROM THE WALL BY INSULATED BLOCKS OR BRACKETS WHICH ALLOW FREE AIR MOVEMENT BEHIND THE THERMOSTAT.
- 5.1.8. IT IS THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO ENSURE THAT ALL CONTROL DEVICES SERVING MECHANICAL EQUIPMENT ARE INSTALLED CORRECTLY AND FUNCTION PROPERLY, AND THAT ALL MECHANICAL EQUIPMENT OPERATES AS DESIGNED AND SPECIFIED, IN CONJUNCTION WITH THE CONTROLS.
- 5.1.9. TAG AUTOMATIC CONTROLS, ELECTRIC SWITCHES, INSTRUMENTS AND RELAYS WITH LAMICOID LABELS WITH 15mm (1/2") LETTERS AND KEY WITH CONTROL SWITCHES.
- 5.1.10. CONTROL FOR ECONOMIZER SECTIONS, ALL OUTDOOR AND RELIEF DAMPERS TO BE ELECTRIC OR DOC. PROVIDE PROGRAMMABLE THERMOSTAT WITH LOCKABLE COVERGUARD.
- 5.1.11. INSTALL MOTOR DAMPERS ON OUTSIDE OF DUCT, NOT IN AIRSTREAM.

#### 5.2. SEQUENCE OF OPERATIONS

- 5.2.1. THE CONTROL SEQUENCES CONTAIN A GENERAL DESCRIPTION OF THE INTENT OF THE OPERATION OF THE SYSTEMS TO BE CONTROLLED. THE CONTRACTOR SHALL REVIEW INDIVIDUAL SYSTEMS TO ENSURE EQUIPMENT AND LIFE SAFETY INTERLOCKS ARE NOT OVERRIDDEN.
- 5.2.2. CONSULT WITH THE CONSULTANT DURING THE SHOP DRAWING STAGE TO FINALIZE THE CONTROL SEQUENCES AND CONTROL POINTS FOR EACH SYSTEM.
- 5.2.3. PROVIDE TEKMAR CONTROLLER FOR ALL HARDWARE POINTS LISTED FOR SYSTEM OPERATION TO MEET SPECIFICATION OPERATING SEQUENCES.

#### 5.3. FAN COIL UNITS

- 5.3.1. THE FAN COIL IS CALLED TO RUN BY THE SPACE THERMOSTAT. UPON A CALL FOR HEAT OR COOLING, THE FAN COIL ZONE VALVE OPENS TO ALLOW TEMPERED WATER TO FLOW THROUGH THE COIL AND THE COIL STARTS TO GENERATE HEATING OR COOLING BASED ON THE CALL. WHEN THE THERMOSTAT IS SATISFIED, THE FAN COIL SHALL SHUT DOWN AND THE ZONE VALVE SHALL CLOSE.
- 5.3.2. DIRECT ACTING LINE VOLTAGE ELECTRIC THERMOSTAT ENERGIZES THE ASSOCIATED FAN MOTOR WHEN THE SPACE TEMPERATURE IS BELOW SET POINT.

#### 5.6. PRIMARY FAN COIL WATER TEMPERATURE MONITORING

5.6.1. THE FOLLOWING TEMPERATURES WILL BE MONITORED:

- 5.6.1.a. PRIMARY HEATING WATER SUPPLY.
- 5.6.1.b. PRIMARY HEATING WATER RETURN.

### 6. APPROVED ALTERNATES

- 6.0.1. FAN COILS CARRIER, DAIKIN, TITUS, TRANE, PRICE
- 6.0.2. DOMESTIC WATER HEATERS A.O. SMITH, BRADFORD WHITE, LOCHINVAR
- 6.0.3. DIFFUSERS, GRILLES TITUS, E.H. PRICE, NALOR
- 6.0.4. HRV'S LENNOX, LIFE/BREATH, VANEI
- 6.0.5. PUMPS WILO, ARMSTRONG, GRUNDFOS, MYERS
- 6.0.6. DRAINS ZURN, WATTS, WADE
- 6.0.7. HYDRONIC EQUIPMENT ENGINEERED AIR, ROSEMEX, SIGMA
- 6.0.8. FOR PLUMBING FIXTURE ALTERNATES, REVIEW WITH OWNER AND CONSULTANT FOR ACCEPTANCE.



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**G.L. SMITH**

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2	2023-05-04	ISSUED FOR LORRD REVIEW	TW
1	2023-04-25	ISSUED FOR CLIENT REVIEW	TW

#### PROJECT TITLE:



KILDONAN CROSSING  
1616 REGENT AVE W  
WINNIPEG, MB  
R2C 5C6  
CRU # 4

#### REVISION

#	Date	Description	Dwn

#### DRAWING TITLE:

#### SPECIFICATIONS

PRINT DATE: 2023-05-18      SCALE: AS NOTED

DRAWN BY: TW      DRAWING NO:

CHECKED BY: JM

PROJECT NO: 23-1020

M6.2

LIGHTING LEGEND		
	NEW LIGHT FIXTURE	ASTRONOMICAL TIMECLOCK/GATEWAY PHILIPS CAT# ENVISIONGATEWAY CW SWI24-24-N-SC AC ADAPTER
	HATCHED LIGHT FIXTURE DENOTES EMERGENCY/NIGHT LIGHT	ANTUMBRABUTTON USER INTERFACE PHILIPS CAT# PA8PA-WW-X CW DACM COMMUNICATION MODULE
	CEILING OR WALL MOUNTED LIGHT FIXTURE TYPE AS INDICATED	NETWORK SECURITY CAMERA. (BY OTHERS)
	EMERGENCY EXIT SIGN "EXIT" DENOTES FACE, ARROWS DENOTE DIRECTION	DENOTES PANEL 'A', CIRCUIT No. 1 SWITCH No. 2
	EMERGENCY BATTERY UNIT. PROVIDE RECEPTACLE.	NOTE BUBBLE INDICATING THAT A DRAWING NOTE APPLIES. REFER TO NOTES.
	SURFACE MOUNTED SINGLE AND TWIN EMERGENCY LIGHTING FIXTURE	ROOM NUMBER (REFER TO ARCHITECTURAL DRAWINGS)
	WALL MOUNTED SINGLE AND TWIN EMERGENCY LIGHTING FIXTURE	AV SPEAKERS
	COMBINATION EMERGENCY LIGHTING AND BATTERY UNIT. PROVIDE RECEPTACLE.	SINGLE POLE SWITCH. 'B' DENOTES MULTI GANG SWITCH BANK(TWO)
	CEILING MOUNTED WIRELESS ACCESS POINT DEVICE (BY OTHERS)	3 WAY - LINE VOLTAGE LIGHT SWITCH
		WALL MOUNTED SINGLE POLE OCCUPANCY SENSOR SWITCH
		OCCUPANCY SENSOR - CEILING MOUNTED

NOTE: NOT ALL SYMBOLS APPLY. CONTRACTOR TO REFER TO FLOOR PLANS.

POWER LEGEND		
	WALL MOUNTED DUPLEX RECEPTACLE 120 VOLT, 15 AMP, CSA 5-15R OR AS NOTED	SURFACE MOUNTED POWER PANEL. PANEL DESIGNATION AS INDICATED
	WALL MOUNTED SPECIALTY RECEPTACLE. TYPE AS INDICATED IN PLAN	DENOTES PANEL 'A', CIRCUIT No. 1 SWITCH No. 2
	WALL MOUNTED DUPLEX RECEPTACLE 120 VOLT, 20 AMP, CSA 5-20R	HANDICAP ACCESS PUSHBUTTON. MOUNTING HEIGHT AS NOTED.
	WALL MOUNTED DUPLEX RECEPTACLE 120 VOLT, 15 AMP, CSA 5-15R, DEDICATED CIRCUIT	NOTE BUBBLE INDICATING THAT A DRAWING NOTE APPLIES. REFER TO NOTES.
	WALL MOUNTED RECEPTACLES 2 DUPLEX CSA 5-15R	PAC-POLE CONNECTION
	CEILING MOUNTED DUPLEX RECEPTACLE 120 VOLT, 15 AMP, CSA 5-15R	JUNCTION BOX
	CEILING MOUNTED QUAD RECEPTACLE 120 VOLT, 15 AMP, CSA 5-15R	CONNECTION TO MOTOR
	SPECIALTY RECEPTACLE. AS NOTED.	BUZZER
	WALL MOUNTED TELEPHONE OUTLET WITH 19mm (3/4") EMT TO TELEPHONE SERVICE BOARD	BELL
	WALL MTD. DATA OUTLET WITH 19mm (3/4") EMT TO CEILING UNLESS NOTED OTHERWISE	DISCONNECT SWITCH
	WALL MTD. DATA/VOICE OUTLET WITH 19mm (3/4") EMT TO CEILING UNLESS NOTED OTHERWISE.	DISCONNECT SWITCH (UNFUSED)
	WALL MTD. DATA/VOICE OUTLET WITH 19mm (3/4") EMT TO CEILING UNLESS NOTED OTHERWISE. 'W' DENOTES QUANTITY OF DATA DROPS	DISCONNECT SWITCH (FUSED)
	CABLE TV WALL MOUNTED ROUGH IN	CONNECTION TO ELECTRIFIED FURNITURE. LETTER DENOTES FEED LOCATION: W = WALL MOUNTED, F = FLOOR MOUNTED, WM = WIREMOLD, P = PAC POLE
	DIRECT CONNECTION.	
	DOOR CONTACT	AUTOMATIC DOOR OPERATOR
	ELECTRIC STRIKE	MOTOR CW DISCONNECT SWITCH

NOTE: NOT ALL SYMBOLS APPLY. CONTRACTOR TO REFER TO FLOOR PLANS.

FIRE ALARM SYSTEM		
	FIRE ALARM PULL STATION MANUAL PULL	FIRE ALARM EVACUATION SPEAKER - CEILING MOUNTED / WALL MOUNTED
	FIRE ALARM BELL	FIRE ALARM STROBE CEILING MOUNTED / WALL MOUNTED
	FIRE ALARM HEAT DETECTOR	FIRE ALARM EVACUATION SPEAKER AND STROBE COMBINATION - CEILING MOUNTED / WALL MOUNTED
	FIRE ALARM SMOKE DETECTOR	FIRE ALARM HORN/STROBE COMBINATION
	DUCT MOUNTED SMOKE DETECTOR/ HEAT DETECTOR	FIRE ALARM CONTROL PANEL / ANNUNCIATOR PANEL
	FIRE ALARM HOLD OPEN DEVICE - CONNECTION ONLY	FIRE ALARM END OF THE LINE RESISTOR
	FIRE ALARM HORN SINGLE	FIREMAN'S HANDSET

NOTE: NOT ALL SYMBOLS APPLY. CONTRACTOR TO REFER TO FLOOR PLANS.

DRAWING LIST	
DRAWING NO.	DRAWING NAME
E1.0	DRAWING LIST AND ELECTRICAL LEGENDS
E1.1	ELECTRICAL DETAILS & SINGLE LINE DIAGRAM
E2.0	LIGHTING PLAN
E3.0	POWER & SYSTEMS PLAN & RISER PANEL SCHEDULE
E4.0	ELECTRICAL DETAILS
E5.0	ELECTRICAL SPECIFICATIONS

ABBREVIATION LEGEND			
A	AMPS	MO	MOTOR OPERATED DAMPER
AC	ACCESS DOOR	MW	MICROWAVE
AFCI	ARC FAULT CIRCUIT INTERRUPTER	N	NEW
AFI	ABOVE FINISHED FLOOR	NC	NORMALLY CLOSED
BBH	BASEBOARD HEATER	NIC	NOT IN CONTRACT
BU	BATTERY UNIT	NL	NIGHT LIGHT
C	CONDUIT	NO	NORMALLY OPEN
CL	CEILING MOUNTED	OC	OVER COUNTER
COF	COFFEE MACHINE	OL	OBSTRUCTION LIGHT
CS	CHARGING STATION	P	PARABOLIC LOUVRE
CV	CONVENTIONAL STYLE DEVICE	PL	PATIENT LIFT
D	DEDICATED	R	REMOVED
DG	DEDICATED GROUND	RA	RANGE
DHW	DOMESTIC HOT WATER TANK	RC	REUSE EXISTING CIRCUIT
DNC	DEDICATED NEUTRAL + BOND	RH	RANGE HOOD
DR	LAUNDRY DRYER	RIC	ROUGH IN AND CONNECT
DW	DISH WASHER	RO	ROUGH IN ONLY
E	EXISTING TO REMAIN	RR	REMOVE AND REINSTALL
EF	EXHAUST FAN	SC	SEPARATE CIRCUIT
EM	EMERGENCY CIRCUIT	SF	SYSTEM FURNITURE
EP	ELECTRICAL SUITE PANEL	SP	SUITE ALARM PANEL
ER	EXISTING IN RELOCATED POSITION	SSP	SLAVE UNIT ALARM PANEL
F	FUTURE	TYP	TYPICAL
FR	REFRIGERATOR	U	USB RECEPTACLE
FF	FLOOR FEED	UC	UNDER CABINET MOUNTED
FFH	FORCE FLOW HEATER	UH	UNIT HEATER
FL	FLOOR MOUNTED	UPS	UNINTERRUPTIBLE POWER SUPPLY
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	V	VOLTS
GFI	GROUND FAULT INTERRUPTER	W	WATTS
GRD	GROUND	WA	LAUNDRY WASHER
HK	HOUSE KEEPING	WAP	WIRELESS ACCESS POINT
HMT	HARMONIC MITIGATING TRANSFORMER	WF	WALL FEED
ICE	ICE MACHINE	WP	WEATHERPROOF
IG	ISOLATED GROUND	X	EXPLOSION PROOF DEVICE + BACK BOX
JB	JUNCTION BOX	ZSC	ZERO SEQUENCE CURRENT TRANSFORMER
KW	KILOWATTS		
LV	LOW VOLTAGE		
MO	MOTOR OPERATED		

NOTE: NOT ALL ABBREVIATIONS APPLY. CONTRACTOR TO REFER TO FLOOR PLANS.

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PROJECT TITLE:



KILDONAN CROSSING  
1616 REGENT AVE W  
WINNIPEG, MB  
R2C 5C6  
CRU # 4

REVISION

#	Date	Description	Dwn

DRAWING LIST AND ELECTRICAL LEGENDS

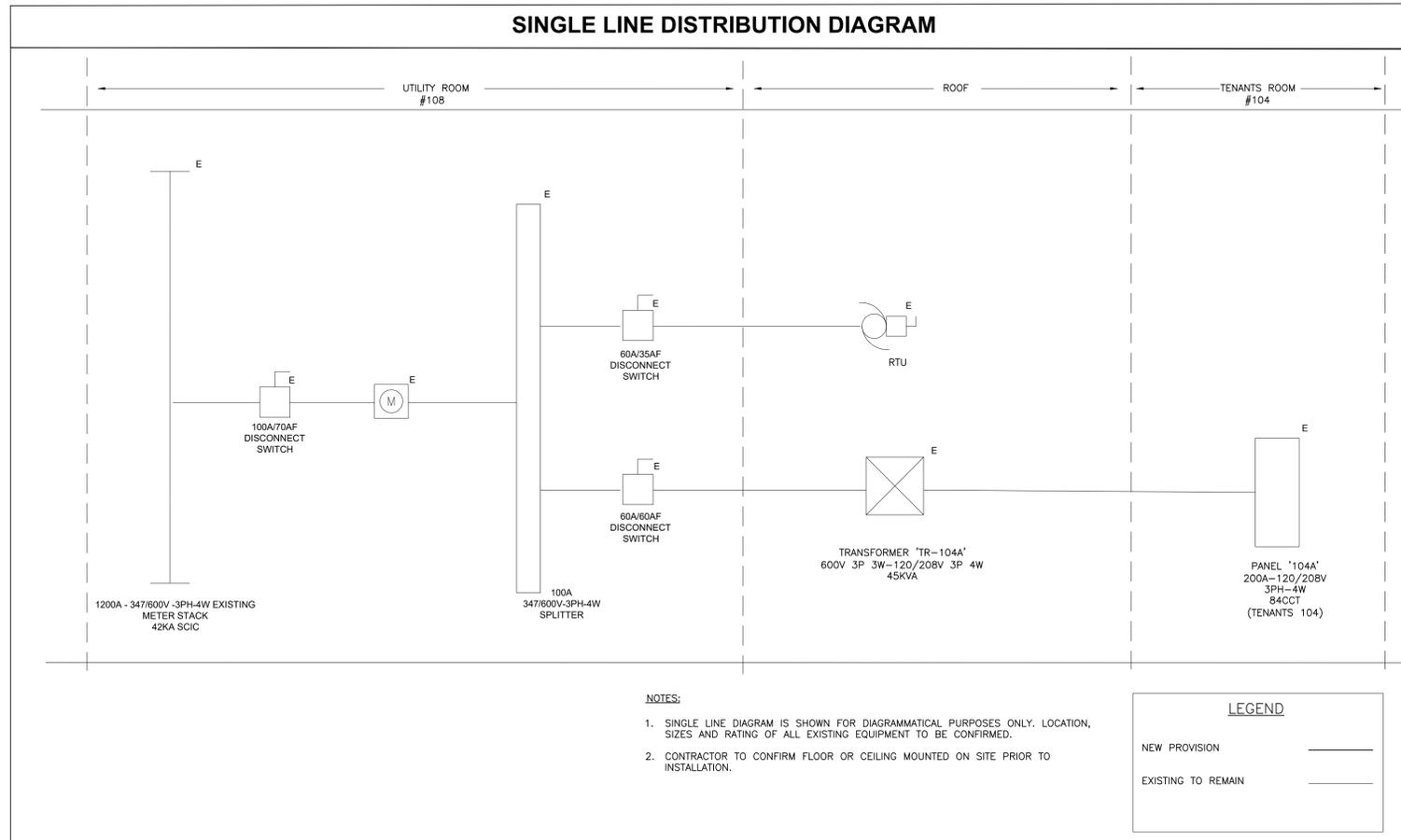
PRINT DATE: 2023-05-18 SCALE: AS NOTED

DRAWN BY: BA DRAWING NO:

CHECKED BY: ZH

PROJECT NO: 23-1020

**E1.0**



**1**  
E1.1 SINGLE LINE DIAGRAM  
SCALE: N.T.S.

LOAD CALCULATION SUMMARY								
DESCRIPTION	INTERIOR LIGHTING(WATTS)	EXTERIOR LIGHTING(WATTS)	SERVICE EQUIPMENT @ 60%(WATTS)	HOT WATER TANK(WATTS)	MISC @ 50%(WATTS)	HEATERS @ 70%(WATTS)	FAN COIL UNITS(WATTS)	TOTAL (208V-3Ø)( WATTS)
<b>CONNECTED LOAD</b>	2110	500	6000	3000	500	8000	100	20210
<b>DIVERSITY FACTOR</b>	100%	100%	60%	100%	50%	70%	100%	
<b>DEMAND LOAD</b>	2110	500	3600	3000	250	5600	100	15160

**2**  
E1.1 LOAD CALCULATION SUMMARY  
SCALE: N.T.S.

PANEL OPTIONS:		LOAD A [KW]:	5	PHASE VOLTAGE [V]:	120
<input type="checkbox"/> CSA ENCLOSURE RATING	<input type="checkbox"/> FLUSH	LOAD B [KW]:	5.5	LINE VOLTAGE [V]:	208
<input type="checkbox"/> FEED THROUGH	<input checked="" type="checkbox"/> SURFACE	LOAD C [KW]:	4.8	PHASE:	3Ø
<input type="checkbox"/> SUB-FEED	<input checked="" type="checkbox"/> BOLT-ON BREAKER	TOTAL [KW]:	15	WIRE:	4
<input checked="" type="checkbox"/> MAIN BREAKER	<input type="checkbox"/> SPD	CURRENT A [A]:	42	MAINS [A]:	225
<input type="checkbox"/> 200% RATED NEUTRAL BUS	<input type="checkbox"/>	CURRENT B [A]:	45	MAIN BREAKER [A]:	200
<input type="checkbox"/> ISOLATED GROUND BUS	<input type="checkbox"/>	CURRENT C [A]:	40	I.C. [A]:	10

DESCRIPTION	D.F [%]	CONN. LOAD [W]	DEMAND LOAD [W]	BKR [A]	CCT NO.	Ø	CCT NO.	BKR [A]	DEMAND LOAD [W]	CONN. LOAD [W]	D.F [%]	DESCRIPTION
LIGHTING(EXISTING)				15	1	A	2	15	500	500	100	EMERGENCY /NL LIGHT
POWER DOOR OPERATOR	50	500	250	15	3	B	4	15	255	255	100	PUBLIC LIGHT
RECEPTACLE(EXISTING)				15	5	C	6	15	500	500	100	EXTERIOR SIGNAGE
EXTERIOR SIGNAGE	100	500	500	15	7	A	8	15	240	240	100	TATOO RM #1 LIGHT
EXTERIOR SIGNAGE(EXISTING)				15	9	B	10	15	192	192	100	TATOO RM #2 LIGHT
GF WP T-SLOT RECEPTACLE(EXISTING)				20	11	C	12	15	192	192	100	TATOO RM #3 LIGHT
TATOO RM #1 RECP	60	700	420	20	13	A	14	15	192	192	100	PIERCING RM LIGHT
TATOO RM #2 RECP	60	700	420	20	15	B	16	15	192	192	100	STORAGE/WASH RM LIGHT
TATOO RM #3 RECP	60	700	420	20	17	C	18	15	50	50	100	
PIERCING RM RECP	60	700	420	20	19	A	20	15	50	50	100	EF-1
REPROCESSING RM RECP	60	500	300	20	21	B	22	20	1500	1500	100	EF-2
SALE AREA RECP	60	500	300	15	23	C	24	2P	1500	1500	100	H.W.T.
SALE AREA RECP	60	500	300	15	25	A	26	15	700	1000	70	FFH-1
P.O.S RECP	60	500	300	15	27	B	28	2P	700	1000	70	FFH-2
CORRIDOR RECP	60	500	300	15	29	C	30	15	700	1000	70	
W/R RECP	60	200	120	15	31	A	32	2P	700	1000	70	
STORAGE RM RECP	60	500	300	15	33	B	34	15	525	750	70	BBH-1
SPACE				35	36	C	36	2P	525	750	70	
SPACE				37	37	A	38	15	525	750	70	BBH-2
SPACE				47	38	B	40	2P	525	750	70	
SPACE				49	39	C	42	15	350	500	70	BBH-3
SPACE				43	40	A	44	2P	350	500	70	
SPACE				45	41	B	46					
SPACE				47	42	C	48					
SPACE				49	43	A	50					
SPACE				51	44	B	52					
SPACE				53	45	C	54					
SPACE				55	46	A	56					
SPACE				57	47	B	58					
SPACE				59	48	C	60					
SPACE				61	49	A	62					
SPACE				63	50	B	64					
SPACE				65	51	C	66					
SPACE				67	52	A	68					
SPACE				69	53	B	70					
SPACE				71	54	C	72					
SPACE				73	55	A	74					
SPACE				75	56	B	76					
SPACE				77	57	C	78					
SPACE				79	58	A	80					
SPACE				81	59	B	82					
SPACE				83	60	C	84					

**NOTES:**

- Panel Enclosure To Be Sprinklerproof.
- Panels greater than 84 circuits to be double tub.

**PANEL '104A'**  
(EXISTING)

PROJECT NAME: 23-1020  
LOCATION: 1616 REGENT AVE W WINNIPEG, MB  
R2C 5C6 CRU #4(UNIT104)  
FED FROM:

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**PROJECT TITLE:**



KILDONAN CROSSING  
1616 REGENT AVE W  
WINNIPEG, MB  
R2C 5C6  
CRU # 4

**REVISION**

#	Date	Description	Dwn

**DRAWING TITLE:**

SINGLE LINE DIAGRAM  
AND  
RISER PANEL SCHEDULES

PRINT DATE: 2023-05-18 SCALE: AS NOTED

DRAWN BY: BA DRAWING NO:

CHECKED BY: ZH

PROJECT NO: 23-1020

**E1.1**

- ### GENERAL NOTES
- LAMPS TO BE AS SPECIFIED ON LUMINAIRE SCHEDULE - NO EXCEPTIONS OR ALTERNATES WITHOUT APPROVAL BY CONSTRUCTION PROJECT MANAGER.
  - THE ELECTRICAL CONTRACTOR IS TO MEASURE THE ILLUMINATION OF THE FLOOR AT NIGHT WITH EMERGENCY LIGHTING ON ONLY, AND SEND A DRAWING SHOWING THE MAXIMUM AND MINIMUM LEVEL OF ILLUMINATION, TO THE CONSULTING ENGINEER, FOR REVIEW. PROVIDE WRITTEN CONFIRMATION THAT EMERGENCY LIGHTING HAS BEEN INSTALLED IN ACCORDANCE WITH CONTRACT DOCUMENTS AND LATEST EDITION OF THE ONTARIO BUILDING CODE SECTIONS 3.2.7.3 AND 3.2.7.4. LETTER TO BE INCLUDED AS PART OF CLOSE-OUT DOCUMENTS SUBMITTAL PACKAGE. INCLUDE FOR SUPPLY AND INSTALL OF AN ADDITIONAL 2 EXIT SIGNS FOLLOWING BUILDING INSPECTOR WALKTH-ROUGH.
  - THE ELECTRICAL CONTRACTOR IS TO ENSURE THAT ALL LIGHTING FIXTURES ARE CLEAN AND ILLUMINATED BY END OF PROJECT.
  - LIGHTING FIXTURES IDENTIFIED AS NIGHT LIGHT ARE TO REMAIN ON AT ALL TIMES.
  - ALL EXISTING LIGHTS MUST BE RELAMPED IN LED.
  - FINAL CONNECTION OF BX(AC-90) ARMORED CABLE FROM A CEILING OUTLET BOX TO A LIGHTING FIXTURE SHALL NOT EXCEED 3 METERS.
  - GC TO ENSURE ALL ELECTRICAL CABLING INSIDE FIXTURES AND MILLWORK ARE CONCEALED AND INTEGRATED FOR A CLEAN OVERALL APPEARANCE.

- ### DRAWING NOTES
- CONTRACTOR TO PROVIDE A LOCKALBE TYPE BREAKER FOR EMERGENCY AND NIGHT LIGHT CCTS.
  - ENSURE THAT SECURITY CAMERAS AND FIRE ALARMS ARE EMBEDDED IN THE CEILING OR ARE INSTALLED IN DISCRETE AREAS.
  - SPEAKERS ARE TO BE FLUSH RECESSED, TO MATCH ADJACENT CEILING/WALL AND TO BE A MIN 10" - 0" FROM ENTRANCE.
  - NEW FIRE ALARM SPEAKER/STROBES ARE TO BE NEW 8" TYPE. ALL WORK ASSOCIATED WITH THE FIRE ALARM SYSTEM IS TO BE COMPLETED BY THE BASE BUILDING FIRE ALARM CONTRACTOR AT THE TENANT'S EXPENSE.

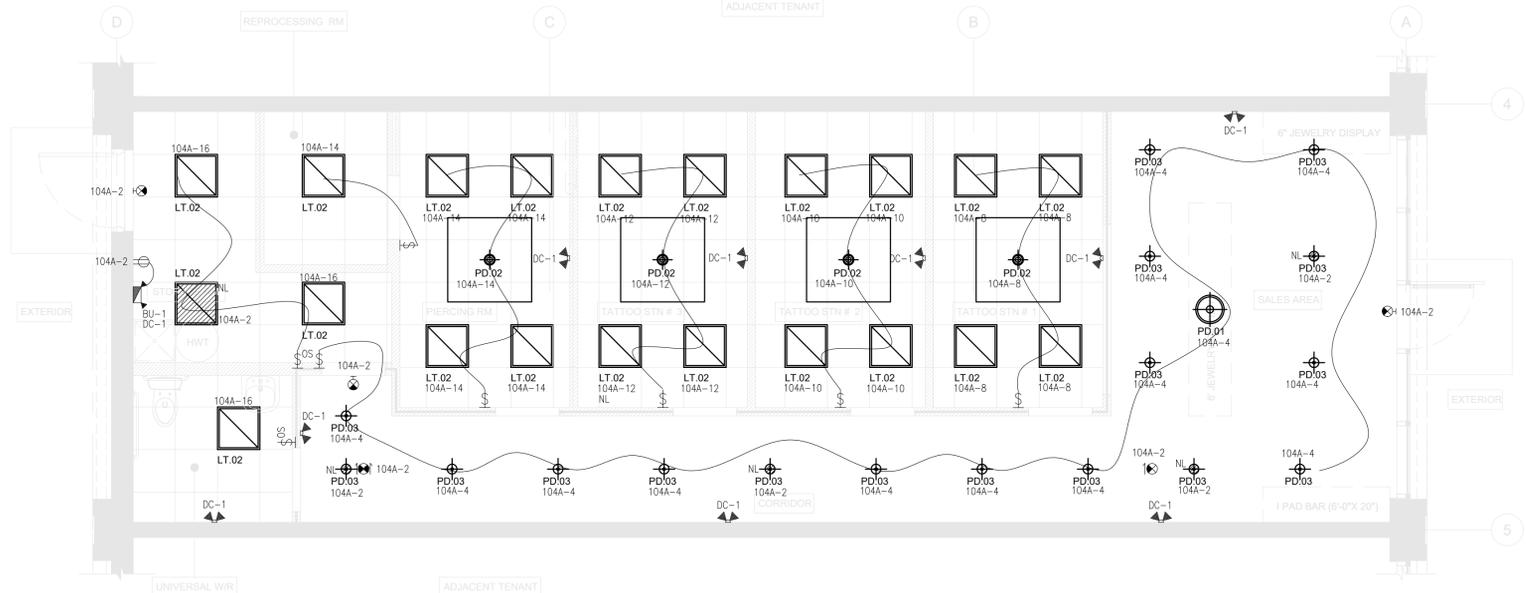
### EMERGENCY LIGHTING SCHEDULE

TAGS	MANUFACTURER/CAT. #	DESCRIPTION	VOLT	WATTS	REMARK
BATTERY UNIT	STAN-SLC12200-2N3WLJ-2H	DOUBLE HEAD EMERGENCY LIGHT WITH BATTERY PACK	12V	200W	
EXIT SIGN	STAN-RMS-0-WH-UDC	ILLUMINATED EXIT SIGN SINGLE FACE EXIT	120V	2W	SLIM LED
REMOTE HEADS	STAN-N2-06-12V4WLJ	STANPRO DOUBLE HEAD EMERGENCY LIGHT	12V	4W	

ENSURE MINIMUM 30MIN RUNTIME FOR ALL EMERGENCY LIGHTING

### LUMINAIRE SCHEDULE

	TYPE	DESCRIPTION	WATTS	LAMPS	REMARK
	LT.02	2' x 2' LED EDGE LIT FIXTURE. CAT# : FEIT ELECTRIC FP2X2/4WY/WH	48W	LED, 4,000K	
	PD.01	DECORATIVE PENDANT. CONFIRM FINISH WITH ARCHITECT BEFORE PLACING ORDER. CONFIRM WITH ARCHITECT EXACT QUANTITIES. CAT# : MODERN FORMS LIGHTING PD-24848-BK	107W	LED, 3,000K	SUSPENDED AT 7' AFF
	PD.02	DECORATIVE PENDANT. CONFIRM FINISH WITH ARCHITECT BEFORE PLACING ORDER. CONFIRM WITH ARCHITECT EXACT QUANTITIES. CAT# : KUZCO LIGHTING PD85548-BK	60W	LED, 3,000K	SUSPENDED AT 7' AFF
	PD.03	DECORATIVE PENDANT. CONFIRM FINISH WITH ARCHITECT BEFORE PLACING ORDER. CONFIRM WITH ARCHITECT EXACT QUANTITIES. CAT# : LIGHTOLIER 3DP-CY-BKST-LC-S-DI-BK-BK-E26-PAR38	15W	LED, 3,000K	SUSPENDED AT 9' AFF



**1 LIGHTING PLAN**  
SCALE: 1/4"=1'-0"

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ISSUE

#	Date	Description	Dwn
4	2023-05-18	ISSUED FOR TENDER	SW
3	2023-05-17	ISSUED FOR PERMIT	SW
2	2023-05-04	ISSUED FOR LLORD REVIEW	SW
1	2023-04-25	ISSUED FOR CLIENT REVIEW	SW

PROJECT TITLE:  
**STEEL INK**

KILDONAN CROSSING  
1616 REGENT AVE W  
WINNIPEG, MB  
R2C 5C6  
CRU # 4

REVISION

#	Date	Description	Dwn

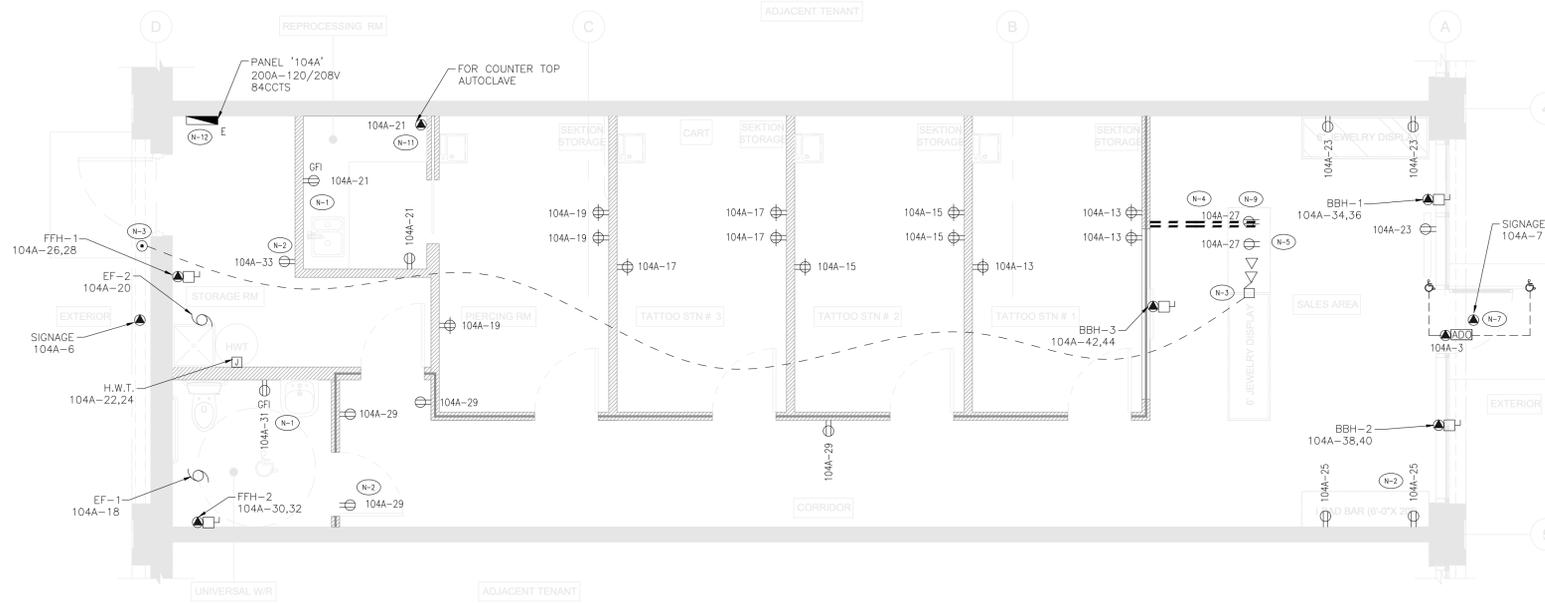
DRAWING TITLE:

### GENERAL NOTES

1. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE INTERIOR/ARCHITECT'S DRAWINGS FOR DIMENSIONS, HEIGHTS, CONSTRUCTION DETAILING, FINISHES AND COLOURS.
2. CIRCUITING SHOWN ARE FOR REFERENCE PURPOSES ONLY.
3. VERIFY THE EXACT POWER REQUIREMENTS AND RECEPTACLE TYPES FOR SPECIAL EQUIPMENT WITH MANUFACTURER PRIOR TO INSTALLATION.
4. CONTRACTOR SHALL VERIFY ALL EQUIPMENT CONNECTIONS PRIOR TO CLOSEOUTS.
5. THE ELECTRICAL CONTRACTOR IS TO MARK UP OUTLET AND DEVICE LOCATIONS AND OBTAIN APPROVAL BY THE DESIGN CONSULTANT, PRIOR TO INSTALLATION.
6. THE ELECTRICAL CONTRACTOR SHALL SUPPLY AND INSTALL SUITABLE LABELS ON ALL RECEPTACLES AND SYSTEM FURNITURE FEEDS. LABEL TO INCLUDE BOTH THE PANEL AND CIRCUIT DESIGNATION. REVIEW LABEL SIZE AND TYPE WITH CONSULTANT PRIOR TO INSTALLATION.
7. ALARM CABLING BY OTHERS. ALL OTHER CABLING UNLESS NOTED OTHERWISE TO BE BY G.C.
8. NEW POWER/VOICE/DATA RECEPTACLES ARE TO BE MOUNTED AT 16" AFF. TO THE CENTERLINE OF THE DEVICE UNLESS OTHERWISE NOTED. ALL SWITCHES ARE TO BE MOUNTED SO THAT THE CENTER LINE OF THE DEVICE ALIGNS WITH THE CENTERLINE OF THE DOOR HARDWARE. ALL CONDUIT AND WIRING IS TO BE CONCEALED WITHIN WALLS, ALSO COORDINATE WITH MILLWORK.
9. ALL CAT 6 CABLES TO BE TERMINATED (KEYSTONE PLATED) AND LABELED BY T.G.C.

### DRAWING NOTES

1. GFI RECEPTACLE MOUNTED 42" A.F.F
2. RECEPTACLE MOUNTED 9FT A.F.F.
3. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL DOOR BUZZER SYSTEM COMPLETE WITH BUZZER AS SHOWN.
4. G.C TO TRENCH AS NOTED C/W TWO(2) SEPARATE 3/4" DIAMETER CONDUITS. ONE FOR POWER AND ONE FOR COMMUNICATION. ALL SUPPLIED, INSTALLED & TERMINATED BY G.C. REFER DETAIL TO 1/E4.0.
5. NEW POWER/VOICE/DATA RECEPTACLES ARE TO BE MOUNTED AT 16" AFF. TO THE CENTERLINE OF THE DEVICE UNLESS OTHERWISE NOTED. ALL SWITCHES ARE TO BE MOUNTED SO THAT THE CENTER LINE OF THE DEVICE ALIGNS WITH THE CENTERLINE OF THE DOOR HARDWARE. ALL CONDUIT AND WIRING IS TO BE CONCEALED WITHIN WALLS, ALSO COORDINATE WITH MILLWORK.
7. POWER FOR TENANT SUPPLIED SIGN. POWER TO BE ON A TIME CLOCK.
8. CONTRACTOR TO SUPPLY AND INSTALL EMPTY CONDUIT, C/W PULL STRINGS, WIRING, CONNECTIONS AND BOXES FOR ALL SECURITY AND CABLE TELEVISION WIRING.
9. ALL CABLING TO BE CAT6.
10. ALARM CABLING BY OTHERS. ALL OTHER CABLING UNLESS NOTED OTHERWISE TO BE BY G.C.
11. DIRECT CONNECTION MOUNTED 42" A.F.F
12. CONTRACTOR SHALL CONFIRM WITH LANDLORD OF EXISTING DISTRIBUTION IN CRU #4



**1 POWER & SYSTEMS PLAN**  
SCALE: 1/4"=1'-0"

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PROJECT TITLE:



KILDONAN CROSSING  
1616 REGENT AVE W  
WINNIPEG, MB  
R2C 5C6  
CRU # 4

REVISION	DATE	DESCRIPTION	BY

#	Date	Description	Dwn

DRAWING TITLE:

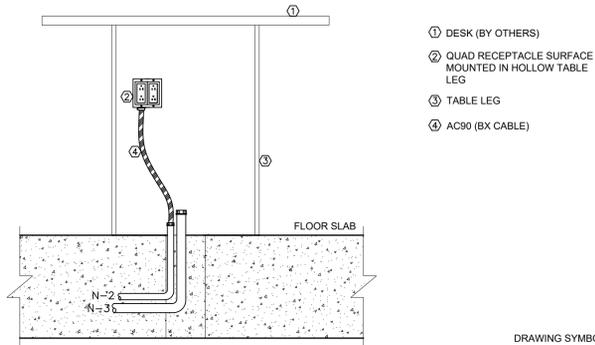
**POWER & SYSTEMS & RISER PANEL SCHEDULE**

PRINT DATE: 2023-05-18 SCALE: AS NOTED

DRAWN BY: BA DRAWING NO:

CHECKED BY: ZH **E3.0**

PROJECT NO: 23-1020

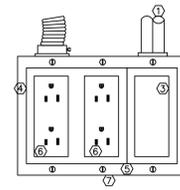


- ① DESK (BY OTHERS)
- ② QUAD RECEPTACLE SURFACE MOUNTED IN HOLLOW TABLE LEG
- ③ TABLE LEG
- ④ AC90 (BX CABLE)

DRAWING SYMBOL

NOTES:

1. COORDINATE EXACT LOCATIONS OF ALL STUB UP CONDUITS ON SITE PRIOR TO ROUGH-IN.
2. 3/4" POWER CONDUIT TO ELECTRICAL PANEL. PROVIDE QUAD RECEPTACLE MOUNTED ON BOARDROOM TABLE CW PLYWOOD BACKING. FINAL LOCATION TO BE DETERMINED ON SITE AND COORDINATED WITH GENERAL CONTRACTOR AND FURNITURE INSTALLER PRIOR TO ROUGH-IN.
3. 3/4" EMPTY CONDUIT BACK TO ACCESSIBLE CEILING SPACE ON SAME FLOOR FOR VOICE/DATA CABLING. PROVIDE CONNECTOR CW NYLON BUSHINGS FOR CONDUIT TERMINATION WITHIN TABLE LEG AND ACCESSIBLE CEILING SPACE.
4. REFER TO FLOOR PLANS FOR QUANTITIES OF TRENCHING LOCATIONS.
5. ALLOW FOR X-RAY, CORING, CHIPPING AND CHASING, AND PATCHING IN ACCORDANCE WITH BUILDING STANDARDS.
6. PROVIDE PULL STRINGS IN ALL EMPTY CONDUIT.
7. COORDINATE ROUTING AND TERMINATION POINTS OF ALL CONDUITS ON SITE WITH GENERAL CONTRACTOR.



DRAWING SYMBOL



- ① 25mm (1") CONDUIT TO ACCESSIBLE CEILING SPACE
- ② MULTI-CONDUCTOR AC-90 CABLE TO CEILING SPACE, AS PER ELECTRICAL SPECIFICATION
- ③ INSERT PLATE BY DIVISION 17
- ④ THREE GANG BACK BOX
- ⑤ BARRIER
- ⑥ DUPLEX RECEPTACLE
- ⑦ THREE GANG COVER PLATE

NOTES:

1. PROVIDE CONNECTOR, CW NYLON BUSHINGS FOR CONDUIT TERMINATIONS WITHIN ACCESSIBLE CEILING SPACE.
2. PROVIDE PULL STRINGS IN ALL EMPTY CONDUIT
3. COVER PLATES BY DIVISION 16.

1 CONDUIT TRENCHING DETAIL (POWER, COMMS.)  
E4.0 SCALE: N.T.S.

2 POWER AND COMMUNICATIONS OUTLET  
E4.0 SCALE: N.T.S.

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# Date Description Dwn

PROJECT TITLE:



KILDONAN CROSSING  
1616 REGENT AVE W  
WINNIPEG, MB  
R2C 5C6  
CRU # 4

REVISION


# Date Description Dwn

DRAWING TITLE:

ELECTRICAL DETAILS  
& SINGLE LINE DIAGRAM

PRINT DATE: 2023-05-18 SCALE: AS NOTED

DRAWN BY: BA DRAWING NO:

CHECKED BY: ZH

PROJECT NO: 23-1020

**E4.0**

# ELECTRICAL SPECIFICATIONS

## PART 1 - GENERAL

- THE GENERAL CONDITIONS AND INSTRUCTIONS TO BIDDERS AS SET FORTH IN THE GENERAL CONTRACT SPECIFICATIONS AND ALL ADDENDA THERETO SHALL APPLY TO, AND COVER ALL PORTIONS OF THE ELECTRICAL WORK.
- POINTS NOT SPECIFICALLY MENTIONED SHALL BE IN STRICT ACCORDANCE WITH THE CURRENT VERSION OF THE CANADIAN ELECTRICAL CODE AND REGULATIONS OF THE ELECTRICAL INSPECTION DEPARTMENT FROM WHICH THE PERMIT WAS OBTAINED.
- WHERE THE TERMS "FURNISH", "PROVIDE" OR "INSTALL" APPEAR IN THIS DIVISION, OR A MANUFACTURER IS INDICATED WITH ITEM OR PRODUCT CATALOG NUMBER LISTED, IT IS THE CONTRACTOR'S RESPONSIBILITY TO FURNISH AND INSTALL THE ITEM COMPLETE AND OPERATING FOR THE PURPOSE OR FUNCTION INTENDED, UNLESS OTHERWISE NOTED.
- WHERE THE TERM "WORK" APPEARS IN THIS DIVISION, IT INCLUDES ALL LABOUR, MATERIALS AND SERVICES REQUIRED AS DESCRIBED IN THE CONTRACT DOCUMENT.
- IN CASES OF CONFLICT(S) WITH THE DRAWINGS AND SPECIFICATIONS, THE SPECIFICATIONS SHALL GOVERN.
- PRIOR TO PROCEEDING WITH THE WORK, THE CONTRACTOR SHALL THOROUGHLY EXAMINE AND VERIFY DRAWINGS, SPECIFICATIONS AND AMENDMENTS FOR ANY ERRORS, INCONSISTENCIES AND DEVIATIONS WHICH MAY BE DISCLOSED BY SUCH EXAMINATIONS; THE CONTRACTOR SHALL NOT PROCEED WITH ANY WORK WHILE UNCERTAIN TO ANY INTERPRETATION ON THE DRAWINGS OR THE SPECIFICATIONS.

## PART 2 - CODES, PERMITS AND INSPECTIONS

- THE INSTALLATION SHALL COMPLY WITH THE REQUIREMENTS OF THE CURRENT EDITION OF THE CANADIAN ELECTRICAL CODE (AS AMENDED BY THE AUTHORITY HAVING JURISDICTION), LOCAL BUILDING CODE AND THE REGULATIONS OF THE ELECTRICAL INSPECTION DEPARTMENT HAVING JURISDICTION.
- THE ELECTRICAL TRADE SHALL OBTAIN ALL ELECTRICAL PERMITS REQUIRED AND, AFTER COMPLETION OF THE WORK, SHALL FURNISH TO THE ENGINEER A CERTIFICATE OF FINAL INSPECTION FROM THE INSPECTION DEPARTMENT.
- FEES FOR ALL PERMITS AND LICENSES REQUIRED FOR THE WORK SHALL BE INCLUDED BY THE ELECTRICAL CONTRACTOR.

## PART 3 - STANDARD OF ACCEPTANCE

- ALL MATERIALS SHALL BE NEW AND OF THE QUALITY SPECIFIED UNLESS SPECIFICALLY SHOWN AS EXISTING TO BE RE-USED IN THE CONTRACT DOCUMENTS. NEW MATERIALS SHALL CONFORM TO THE STANDARDS OF THE CSA AND THE ULG AND APPROVED BY THESE AGENCIES, WHERE APPLICABLE. FOR ANY MATERIALS NOT CSA APPROVED, THE CONTRACTOR SHALL OBTAIN THE APPROVAL OF THE LOCAL INSPECTION AUTHORITY AND SHALL BEAR ALL INSPECTION CHARGES LEVIED AND ANY MODIFICATION COSTS REQUIRED.
- ALL PHASES OF THE ELECTRICAL INSTALLATION SHALL BE EXECUTED IN A SATISFACTORY, WORKMANLIKE MANNER AND SHALL PRESENT A NEAT APPEARANCE WHEN COMPLETED. WORK NOT DEEMED SATISFACTORY TO THE ENGINEER SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.

## PART 4 - SETTING OUT THE WORK

- ELECTRICAL WORK IS TO BE CARRIED OUT BY QUALIFIED, LICENSED ELECTRICIANS WHO HOLD A VALID PROVINCIAL LICENSE IN ACCORDANCE WITH THE ELECTRICAL SAFETY AUTHORITY (ESA).
- THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR CORRECTING ALL WORK COMPLETED CONTRARY TO THE INTENT OF THE DRAWINGS AND SPECIFICATIONS AND SHALL BEAR ALL COSTS FOR SAME, WHERE THE INTENT OF THE DRAWINGS AND SPECIFICATIONS ARE NOT CLEAR, THE CONTRACTOR SHALL OBTAIN CLARIFICATION FROM THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK.
- WHERE ANY EQUIPMENT SUPPLIED BY THE ELECTRICAL TRADE MUST BE BUILT-IN WITH WORK OF OTHER CONTRACTORS, THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE SUPPLYING OF THE EQUIPMENT TO BE BUILT-IN OR MEASUREMENTS TO ALLOW NECESSARY OPENINGS TO BE LEFT SO AS NOT TO HOLD UP THE WORK.
- THE ELECTRICAL TRADE, IN SETTING OUT OF HIS WORK, SHALL MAKE REFERENCE TO ALL OTHER DISCIPLINES AND SPECIFICATIONS, THE ELECTRICAL CONTRACTOR SHALL CONSULT WITH THE RESPECTIVE TRADES IN SETTING OUT LOCATIONS FOR ALL EQUIPMENT AND WIRING SO THAT CONFLICTS ARE AVOIDED AND SYMMETRICAL SPACING IS MAINTAINED THROUGHOUT.
- BEFORE SUBMITTING TENDER, CAREFULLY EXAMINE THE SITE OF THE PROPOSED WORK SO AS TO ASCERTAIN ALL EXISTING CONDITIONS AFFECTING THE WORK. NO EXTRAS WILL BE ALLOWED FOR WORK DEFERRED BY CONDITIONS UNLESS EVIDENT ON THE SITE REPORT TO THE ENGINEER ANY CONDITIONS THAT MAY AFFECT THE PROPER COMPLETION OF THIS WORK.
- WHERE LIGHTING FIXTURES, SPEAKERS, ETC. OCCUR IN ACOUSTIC TILE TYPE CEILING, THE FIXTURE OR SPEAKER LOCATION SHALL BE COORDINATED WITH THE TILE PATTERN AND SHALL BE ADJUSTED, IF REQUIRED TO SUIT THE TILE PATTERN.
- WHERE RECEPTACLES ARE MOUNTED ABOVE COUNTERS, BENCHES, BACKSPASHES, ETC., LOCATION AND MOUNTING HEIGHTS SHALL BE COORDINATED WITH THE BUILT-IN UNITS AND ARCHITECTURAL DRAWINGS.
- MOUNTING HEIGHTS SHALL BE COORDINATED WITH ARCHITECTURAL DETAILS AND SHALL BE ADJUSTED, IF REQUIRED, TO SUIT PANELING, DADOS, MASONRY COURSE LINES, ETC.

## PART 5 - TESTING

- PERFORM MEGGER TESTS ON ALL FEEDERS TO ENSURE THAT THE C.E.C. REQUIREMENTS ARE MET. TAKE CURRENT READINGS ON ALL FEEDERS AND IF LOAD UNBALANCE EXCEEDS 15%, RECONNECT LOADS TO BRING WITHIN BALANCE.

## PART 6 - CO-ORDINATION AND CO-OPERATION

- COORDINATE WORK WITH ALL TRADES TO ENSURE A PROPER AND COMPLETE INSTALLATION. NOTIFY ALL TRADES FOR REQUIREMENTS FOR OPENINGS, SLEEVES, INSERTS AND OTHERS NECESSARY FOR THE INSTALLATION OF YOUR WORK, AND, WHERE YOUR WORK IS TO BE INTEGRATED WITH WORK OF TRADES, CAREFULLY COORDINATE ALL WORK PRIOR TO AND DURING INSTALLATION.
- COORDINATE AND PLAN EXACT LOCATIONS AND ROUTING OF SERVICES WITH ALL TRADES AFFECTED PRIOR TO INSTALLATION. GENERALLY, PIPING REQUIRING UNIFORM PITCH SHALL BE GIVEN RIGHT OF WAY, WITH OTHER SERVICES LOCATED AND ARRANGED TO SUIT.

## PART 7 - GUARANTEE/WARRANTY

- THE ELECTRICAL CONTRACTOR SHALL PROVIDE A WRITTEN GUARANTEE FOR THE FOLLOWING:
  - ALL WORK EXECUTED UNDER THIS CONTRACT WILL BE FREE FROM DEFECTS OF WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION.
  - CONTRACTOR AGREES THAT IT WILL, AT ITS OWN EXPENSE, REPAIR AND REPLACE ALL SUCH DEFECTIVE WORK AND OTHER WORK DAMAGED THEREBY WHICH FAILS OR BECOMES DEFECTIVE DURING THE TERM OF THE WARRANTY PERIOD PROVIDED SUCH FAILURE IS NOT A RESULT OF IMPROPER USAGE.
  - THE PERIOD OF THE GUARANTEE SPECIFIED SHALL IN NO WAY SUPPLANT ANY OTHER GUARANTEE OF A LONGER PERIOD, BUT SHALL BE BINDING ON WORK NOT OTHERWISE COVERED.

## PART 8 - INTERRUPTIONS TO AND SHUT DOWNS OF EXISTING SERVICES AND SYSTEM

- DO NOT SHUT DOWN OR DISCONNECT ANY EXISTING SERVICE OR SYSTEM WITHOUT THE OWNERS' APPROVAL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REQUIRED SHUT-DOWN AND INTERRUPTIONS OF EXISTING SERVICES. THE ACTUAL PERFORMANCE OF THE EXISTING SERVICE OR SYSTEM SHUT DOWN SHALL BE PERFORMED BY THE OWNERS' OWN AUTHORIZED PERSONNEL. ALL SHUT DOWNS SHALL BE COORDINATED WITH THE CONSULTANT ENGINEER AND THE OWNERS' REPRESENTATIVE.
- CONTRACTOR TO OBTAIN WRITTEN APPROVAL A MINIMUM OF FIVE (5) DAYS IN ADVANCE OF SHUT DOWNS AND INTERRUPTIONS. INCLUDE FOR ASSOCIATED COSTS OF WORK PERFORMED DURING NIGHTS, WEEKENDS OR TIMES OUTSIDE OF NORMAL WORKING HOURS, AS NECESSARY TO MAINTAIN SERVICES OPERATING WITH MINIMUM INTERRUPTIONS COMPLYING WITH THE OWNERS' REQUIREMENTS. TO AFTER HOURS FOR NIGHTS.

## PART 9 - RECORD DRAWINGS (AS-BUILTS)

- WHEN WORK BEGINS AT SITE ON A DAILY BASIS, CONTRACTOR TO CLEARLY AND ACCURATELY MARK ON A BOUND SET OF WHITE PRINTS OF CONTRACT DRAWINGS ALL CHANGES AND/OR DEVIATIONS INCLUDING THOSE MADE BY ADDENDAS, CHANGE ORDERS, AND SITE INSTRUCTIONS.

- MAINTAIN A COPY OF THE AS-BUILT WHITE PRINTS AT SITE FOR PERIODIC INSPECTION BY THE CONSULTANT ENGINEER THROUGHOUT THE DURATION OF WORK.
- AS-BUILT DRAWINGS ARE TO INCLUDE ROUTING OF ALL FEEDERS, EXCEPT FOR BRANCH CIRCUITS. LOCATION OF ALL JUNCTION BOXES ARE TO BE SHOWN, QUANTITY OF WIRES IN EACH CONDUIT, AND CIRCUIT NUMBERS OF WIRES IN EACH CONDUIT.
- PRIOR TO APPLYING FOR A CERTIFICATE OF SUBSTANTIAL PERFORMANCE OF WORK, CONTRACTOR TO SUBMIT THE FINAL "AS-BUILT" SITE DRAWING WHITE PRINTS FOR REVIEW BY THE ENGINEER. CONTRACTOR TO MAKE REVISIONS IF REQUESTED BY THE CONSULTANT ENGINEER.
- FINAL AS-BUILT PRINTS/PLOTS SHALL NOT CONTAIN MARKINGS OR CORRECTIONS BY HAND (i.e. PEN, PENCIL, MARKERS, AND ETC.) REFERENCES TO THE ARCHITECT/INTERIOR DESIGNER AND ENGINEER SHALL BE DELETED FROM THE DRAWINGS/PLANS. FINAL AS-BUILT DRAWINGS SHALL BE IN CAD FORMAT.

## PART 10 - IDENTIFICATION

- LABEL ALL PANELS, STARTERS, DISTRIBUTION CENTRES, LIGHTING CONTROLS, TRANSFORMERS WITH 13MM LAMCQID PLATES, PERMANENTLY ATTACHED TO THE EQUIPMENT.
- PROVIDE ADHESIVE LABELS FOR RECEPTACLE CIRCUIT NUMBERS AND VOICE/DATA JACK IDENTIFICATION.

## PART 11 - HAZARDOUS MATERIAL

- IF AT ANY TIME DURING THE COURSE OF WORK ASBESTOS MATERIALS ARE ENCOUNTERED OR SUSPECTED, CONTRACTOR TO CEASE WORK IN AREAS IN QUESTION AND IMMEDIATELY REPORT IN ACCORDANCE WITH ONTARIO REGULATION 65/048 (SECTION 85) TO THE CONSULTANT. DO NOT RESUME WORK IN AFFECTED AREA WITH APPROVAL FROM THE CONSULTANT.
- MATERIALS CONTAINING MERCURY SHALL BE PROPERLY DISPOSED FROM SITE IN ACCORDANCE WITH LOCAL GOVERNING AUTHORITY REGULATIONS.
- CONTRACTOR TO RETAIN THE SERVICES OF SPECIALTY FIRMS LICENSED BY THE LOCAL AUTHORITIES TO HANDLE SUCH HAZARDOUS MATERIALS AND TO ENSURE PROPER DISPOSAL TO A MINISTRY APPROVED SITE. CONTAIN AND SUBMIT COPIES OF PERMITS AND/OR APPROVALS.

## PART 12 - CLEAN-UP

- DURING THE COURSE OF THE CONSTRUCTION, CONTRACTOR SHALL KEEP THE SITE REASONABLY CLEAR OF RUBBISH AND WASTE MATERIALS, ON DAILY BASIS. UPON COMPLETION OF WORK, REMOVE RUBBISH AND DEBRIS, ARRANGE AND PAY FOR REPAIR OF DAMAGES CAUSED AND LEAVE PREMISES AND WORK IN GOOD ORDER.

## PART 13 - INSPECTION OF WORK

- CONSULTANTS SHALL HAVE ACCESS TO WORK SITE AT ALL TIMES, AND SHALL BE NOTIFIED AND AGREED UPON TIMES OF STAGES OF WORK.
- WHERE STANDARDS OF WORK ARE SPECIFIED OR IMPLIED AND WORK DOES NOT COMPLY WITH THE PERFORMANCE STANDARDS, SUCH DEFICIENCIES SHALL BE CORRECTED AS DIRECTED BY THE CONSULTANT. ANY CHARGES FOR OWNERS STAFF, CONSULTANT OR OTHER PERSONNEL(S) RELATED TO SUCH RETESTING SHALL ALSO BE AT THE EXPENSE OF THE CONTRACTOR.

## PART 14 - NOISE CONTROL

- WORK WHICH MAY CAUSE NOISE DISTURBANCES MUST BE SCHEDULED AT TIMES APPROVED BY THE CONSULTANT. COORDINATE WORK WITH TRADES TO MINIMIZE NOISE DISTURBANCES.

## PART 15 - CUTTING, PATCHING AND CORE DRILLING

- CUT, PATCH AND CORE DRILL OF EXISTING BUILDING REQUIRED FOR INSTALLATION. CUT ALL OPENINGS NO LARGER THAN IS REQUIRED FOR THE SERVICE. CORE DRILL FOR INDIVIDUAL SERVICES.
- PERFORM CUTTING IN NEAT FASHION WITH PROPER TOOLS AND EQUIPMENT TO OWNERS' APPROVAL.
- OBTAIN APPROVAL FROM THE STRUCTURAL CONSULTANT PRIOR TO CUTTING OR CORE DRILLING OF ANY OPENING IN CONCRETE OR REINFORCED CONCRETE.
- IN FIRE RATED CONSTRUCTION, PACK AND SEAL VOIDS BETWEEN OPENINGS AND CONDUITS FOR LENGTH OF OPENING WITH ASBESTOS FREE ELASTOMERIC AND INTUMESCENT ULC LISTED MATERIALS.
- INSTALL CORE DRILL AND SMOKE SEAL MATERIALS IN ACCORDANCE WITH ULG AND/OR THE GOVERNING BUILDING CODE REQUIREMENTS.
- DO NOT CUT OR DRILL EXISTING WORK WITHOUT OWNERS' APPROVAL. IN EXISTING AREAS ALL CUTTING, AND CORE DRILLING FOR INDIVIDUAL SERVICES IS PART OF THIS DIVISION WORK.
- UPON COMPLETION OF ALL SERVICES, PATCH ALL OPENINGS TO MATCH THE EXISTING FINISHES.
- ANY DAMAGES CAUSED TO THE EXISTING BUILDING AND SERVICES BY CUTTING AND/OR CORE DRILLING SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
- ALL ASSOCIATED COST OF CUTTING AND PATCHING IS INCLUDED IN THIS DIVISION.

## PART 16 - WIRING METHODS

- ALL WIRING TO BE COPPER, UNLESS OTHERWISE NOTED.
- ALL CABLING SHALL BE FT4 RATED EXCEPT IN PLENUM SPACES WHICH SHALL BE FT6 RATED. NOTE THAT THE TAB BAR CEILING SPACES FOR THIS PROJECT ARE PLENUM SPACES SO ALL WIRING WITHIN THAT SPACE SHALL BE FT6.
- FEEDERS SHALL BE SIZED WITH A MAXIMUM OF 2% VOLTAGE DROP.
- BRANCH CIRCUIT WIRING SHALL BE MINIMUM #12 AWG 90C RATED IN EMT OR AC-90 MAY BE USED, WHERE PERMITTED IN THEIR WORK FOR THE INSTALLATION OF YOUR WORK, AND, WHERE YOUR WORK IS TO BE INTEGRATED WITH WORK OF TRADES, CAREFULLY COORDINATE ALL WORK PRIOR TO AND DURING INSTALLATION.
- COORDINATE AND PLAN EXACT LOCATIONS AND ROUTING OF SERVICES WITH ALL TRADES AFFECTED PRIOR TO INSTALLATION. GENERALLY, PIPING REQUIRING UNIFORM PITCH SHALL BE GIVEN RIGHT OF WAY, WITH OTHER SERVICES LOCATED AND ARRANGED TO SUIT.

## PART 17 - WIRING DEVICES

- LIGHT SWITCHES SHALL BE COMMERCIAL GRADE, DECORA STYLE, 15 OR 20A AS REQUIRED, WHITE FINISH, UNLESS OTHERWISE NOTED.
- RECEPTACLES SHALL BE COMMERCIAL GRADE, DECORA STYLE, 15 OR 20A AS REQUIRED, WHITE FINISH, UNLESS OTHERWISE NOTED.
- COVER PLATES SHALL BE THERMOPLASTIC IN FINISHED AREAS WITH COLOUR TO MATCH DEVICES. PROVIDE STAMPED METAL COVER PLATES IN UNFINISHED AREAS AND WEATHERPROOF "IN-USE" COVERS FOR EXTERIOR RECEPTACLES.

## PART 18 - MOUNTING HEIGHTS

- MOUNTING HEIGHTS SHALL BE FROM THE FINISHED FLOOR TO THE CENTRE OF EQUIPMENT, UNLESS OTHERWISE NOTED. IF MOUNTING HEIGHT IS NOT SPECIFIED, VERIFY WITH ENGINEER PRIOR TO INSTALLATION.
- RECEPTACLES: 305MM (12 IN.)
- TELEPHONE/DATA/TELEVISION OUTLETS: 450MM (18 IN.)
- COUNTER-TOP OUTLETS: 1120MM (44 IN.)

## PART 19 - GENERAL CONDUIT AND CONDUCTOR INSTALLATION REQUIREMENTS

- INSTALL CONDUIT AND CONDUCTORS CONCEALED TO DEGREE MADE POSSIBLE BY FINISHES AND PROVIDE INSTALLATIONS IN ACCORDANCE WITH THE LOCAL ELECTRICAL SAFETY CODE (I.E. OESC) AND THE LOCAL GOVERNING STANDARDS.
- COORDINATE LOCATIONS AND ROUTING OF SERVICES WITH TRADES PRIOR TO INSTALLATION.
- WHERE CONDUITS AND/OR CONDUCTORS ARE EXPOSED, CONTRACTOR TO PREPARE DETAIL DRAWINGS AND SUBMIT TO CONSULTANT/ENGINEER FOR REVIEW PRIOR TO START OF WORK IN THE AFFECTED AREA.
- WHERE HORIZONTAL CONDUITS AND/OR CONDUCTORS ARE EXPOSED, INSTALL AS HIGH AS POSSIBLE. DO NOT INSTALL CONDUITS AND/OR CONDUCTORS WITHIN 6" (150mm) OF HOT PIPES OR EQUIPMENT, UNLESS THEY ARE ASSOCIATED WITH THE EQUIPMENT.
- CONDUITS AND/OR CONDUCTORS SHALL BE SUPPORT FROM THE CEILING/WALL STRUCTURE. DO NOT SUPPORT FROM CEILING HANGERS, DUCTWORK, PIPING, CABLE TRAYS, AND ETC.

- AT NO EXTRA COST, ALLOW FOR FINAL RELOCATIONS OF DEVICES UP TO 10' (3M) TO SUIT FINAL LOCATIONS PRIOR TO INSTALLATION OF WALL COVERINGS.
- GENERALLY, CONDUITS AND/OR CONDUCTORS ARE SIZED IN ELECTRICAL DRAWINGS, IN CASE OF THE TYPE AND SIZING BEING ABSENT IN DRAWINGS, SIZE CONDUITS AND/OR CONDUCTORS REQUIRED FOR THE INTENDED APPLICATION IN ACCORDANCE WITH THE APPLICABLE LOCAL ELECTRICAL SAFETY CODE (I.E. OESC) OR THE LOCAL GOVERNING AUTHORITY REQUIREMENTS.
- CONDUITS AND/OR CONDUCTORS AND/OR IN RAISED FLOOR AREAS SHALL COMPLY WITH THE LOCAL BUILDING CODE (I.E. OBC) AND THE LOCAL ELECTRICAL SAFETY CODE (I.E. OESC).
- IDENTIFY CONDUIT RUNS (I.E. TAG BOTH ENDS OF CONDUIT RUNS).
- 8X1/2" MAYBE USED IN CEILING SPACE FROM CEILING DISTRIBUTION BOX DOWN TO RECEPTACLES/DIRECT CONNECTION IN PARTITIONS. BX RUNS IN CEILING NOT TO EXCEED 6096MM(20'-0") IN LENGTH. DO NOT RUN BX CABLES INTO PANELBOARDS.

## PART 20 - CONDUITS

- INTERIOR CONDUITS SHALL BE GALVANIZED, ELECTRICAL METALLIC TUBING (EMT) IN ACCORDANCE WITH CSA C22.2 NO.83, COMPLETE WITH FACTORY MADE BENDS FOR CASES WHERE SITE BENDING IS NOT POSSIBLE, JOINTS AND TERMINATIONS MADE WITH SET SCREW TYPE CONNECTORS.
- FOR SHORT BRANCH CIRCUIT CONNECTORS TO MOTORIZED EQUIPMENT AND/OR TRANSFORMERS (MINIMUM LENGTH OF 18" (450mm), MAXIMUM LENGTH OF 24" (600mm) WITH 180 DEGREE LOOP WHERE POSSIBLE) PROVIDE GALVANIZED STEEL FLEXIBLE FLUID TIGHT METALLIC CONDUIT IN ACCORDANCE WITH CSA C22.2 NO. 56, COMPLETE WITH IDEAL "STEEL TOUGH" LIQUID TIGHT FLEXIBLE CONDUIT CONNECTORS AND TERMINATIONS.
- FOR EXPOSED EXTERIOR CONDUITS, AND FOR INTERIOR CONDUITS GREATER THAN 2" (50mm) IN DIAMETER AND FOR SURFACE MOUNTED CONDUIT AT HEIGHT LESS THAN 4" (100mm), PROVIDE RIGID GALVANIZED STEEL IN ACCORDANCE WITH CSA C22.2 NO. 45, COMPLETE WITH FITTINGS, CONNECTORS AND RIGID COUPLINGS.
- FOR UNDERGROUND APPLICATIONS, PROVIDE CSA APPROVED, RIGID PVC CONDUIT COMPLETE WITH ELBOWS, COUPLINGS, AND EXPANSION JOINTS AND ETC. AS REQUIRED.
- SUPPORT AND SECURE CONDUITS AS SPACING IN COMPLIANCE WITH THE LOCAL STANDARDS BY MEANS OF GALVANIZED PIPE STRAPS, RING BOLT TYPE HANGERS, CONDUIT CLIPS OR BY OTHER CSA APPROVED MANUFACTURED DEVICES.
- CONDUIT FITTINGS SHALL BE CONSTRUCTED OF THE SAME MATERIAL AS THE CONDUIT AND SUITABLE FOR THE APPLICATION.
- BEND CONDUITS AT FULL CONDUIT DIAMETER, FREE OF KINKING, FLAKING, OR CRACKING OF FINISHES.
- CONDUITS SHALL BE SUPPORTED INDEPENDENTLY OF THE CEILING GRID WITH THEIR OWN SUPPORT SYSTEM.
- FOR VIBRATING EQUIPMENT OR CONDUITS PASSING THROUGH FLOORS, ROOF SLABS, EQUIPMENT IN DRY AREAS, AND/OR FOR MOVABLE METAL PARTITIONS.
- USE LIQUID TIGHT FLEXIBLE METAL CONDUITS FOR CONNECTING MOTORS AND/OR VIBRATING EQUIPMENT TO CONDUITS PASSING THROUGH FLOORS, ROOF SLABS, EQUIPMENT IN DRY AREAS, AND/OR FOR MOVABLE METAL PARTITIONS. PROVIDE A JACKET WITH A FT6 RATING IN PLENUM SPACES, OTHERWISE PROVIDE A FT4 RATED JACKET.
- PROVIDE EMT CONDUITS FROM A RAISED FLOOR BRANCH CIRCUIT PANEL TO JUNCTION BOXES IN THE SUB-FLOOR, AND FROM JUNCTION BOXES TO OUTLET BOXES FOR EQUIPMENT CONNECTIONS IN SUB-FLOORS.
- WHERE SLEEVES OR FINISHING RINGS WITH BRUSHED ALUMINUM FACELATE, TO SUIT THE CONCRETE WALLS, BEAMS, AND SLAB TO SLAB PARTITIONS, CONSULTANT OR OTHER PERSONNEL(S) RELATED TO SUCH RETESTING SHALL ALSO BE AT THE EXPENSE OF THE CONTRACTOR.

## PART 21 - CONDUCTORS

- INTERIOR CONDUITS SHALL BE GALVANIZED, ELECTRICAL METALLIC TUBING (EMT) IN ACCORDANCE WITH CSA C22.2 NO.83, COMPLETE WITH FACTORY MADE BENDS FOR CASES WHERE SITE BENDING IS NOT POSSIBLE, JOINTS AND TERMINATIONS MADE WITH SET SCREW TYPE CONNECTORS.
- FOR SHORT BRANCH CIRCUIT CONNECTORS TO MOTORIZED EQUIPMENT AND/OR TRANSFORMERS (MINIMUM LENGTH OF 18" (450mm), MAXIMUM LENGTH OF 24" (600mm) WITH 180 DEGREE LOOP WHERE POSSIBLE) PROVIDE GALVANIZED STEEL FLEXIBLE FLUID TIGHT METALLIC CONDUIT IN ACCORDANCE WITH CSA C22.2 NO. 56, COMPLETE WITH IDEAL "STEEL TOUGH" LIQUID TIGHT FLEXIBLE CONDUIT CONNECTORS AND TERMINATIONS.
- FOR EXPOSED EXTERIOR CONDUITS, AND FOR INTERIOR CONDUITS GREATER THAN 2" (50mm) IN DIAMETER AND FOR SURFACE MOUNTED CONDUIT AT HEIGHT LESS THAN 4" (100mm), PROVIDE RIGID GALVANIZED STEEL IN ACCORDANCE WITH CSA C22.2 NO. 45, COMPLETE WITH FITTINGS, CONNECTORS AND RIGID COUPLINGS.
- FOR UNDERGROUND APPLICATIONS, PROVIDE CSA APPROVED, RIGID PVC CONDUIT COMPLETE WITH ELBOWS, COUPLINGS, AND EXPANSION JOINTS AND ETC. AS REQUIRED.
- SUPPORT AND SECURE CONDUITS AS SPACING IN COMPLIANCE WITH THE LOCAL STANDARDS BY MEANS OF GALVANIZED PIPE STRAPS, RING BOLT TYPE HANGERS, CONDUIT CLIPS OR BY OTHER CSA APPROVED MANUFACTURED DEVICES.
- CONDUIT FITTINGS SHALL BE CONSTRUCTED OF THE SAME MATERIAL AS THE CONDUIT AND SUITABLE FOR THE APPLICATION.
- BEND CONDUITS AT FULL CONDUIT DIAMETER, FREE OF KINKING, FLAKING, OR CRACKING OF FINISHES.

## PART 22 - LIGHTING

- THE ELECTRICAL CONTRACTOR SHALL SUPPLY AND INSTALL ALL LUMINAIRES NOTED ON THE DRAWINGS, COMPLETE WITH LAMPS, HANGERS, ACCESSORIES, ETC. FOR A COMPLETE AND OPERATIONAL INSTALLATION.
- LUMINAIRES SHALL BE LEFT CLEAN AT COMPLETION OF THE PROJECT WITH ALL LAMPS OPERATIONAL.
- CLEAN AND RELAMP RELOCATED LUMINAIRES. REPLACE DAMAGED AND/OR BROKEN LENSES AND FAULTY BALLASTS. FOR RELOCATED LUMINAIRES, CONFIRM LUMINAIRE ARE FULLY OPERATIONAL.
- REFER TO THE LUMINAIRE SCHEDULE FOR EACH TYPE REQUIRED TO MEET THE NEEDS OF THE PROJECT. ALTERNATES MAY BE CONSIDERED DURING THE TENDER PERIOD.

## PART 23 - PANELBOARDS

- PROVIDE EATON CUTLER-HAMMER TYPE "POW R LINE 1" FACTORY ASSEMBLED DEAD FRONT PANELBOARDS, 120/208V, 3PHASE, 4 WIRE, MANUFACTURED TO CSA STANDARD C22.2 NO. 29 AND OESC, AND DESIGNED FOR AN INTERRUPTING CAPACITY OF 10KA SYMMETRICAL AT 208V UNLESS OTHERWISE NOTED.
- INSTALL PANELBOARDS WHERE REQUIRED, COMPLETE WITH:
  - EEMAC 2 SPRINKLER-PROOF ENCLOSURE CONSTRUCTED OF CODE GAUGE GALVANIZED STEEL WITH REMOVABLE BOX ENDS, WIRING CUTTER SPACE ON SIDES, AND WHERE SURFACE MOUNTED, SURFACE MOUNTED TUBS SHALL BE FACTORY FINISHED WITH GREY BAKED ACRYLIC ENAMEL.

- TRIM FOR RECESSED OR SURFACE WALL MOUNTING AS SHOWN, CONSTRUCTED OF CODE GAUGE STEEL; DOORS COMPLETE WITH CONCEALED FASTENERS, CONCEALED HINGE, CHROME PLATED DOOR LATCH AND KEVED ALIKE LOCK WITH KEY, STEEL FRAME HINGE AND KEYS IN HEIGHT MATCH CASE BACK OF DOOR, AND NYLAR CIRCUIT BREAKER IDENTIFICATION STRIPS, FACTORY FINISHED WITH GREY BAKED ACRYLIC ENAMEL.
- HARD DRAWN ELECTRICAL GRADE COPPER BUS AND GROUND BUS.
- HIGH STRENGTH SET SCREW TYPE, ANTI TURNING WIRE CONNECTORS.
- CONDUIT FULL HEIGHT METALLIC CASE CIRCUIT BREAKERS.
- 200% CAPACITY NEUTRALS FOR PANELBOARDS AS SCHEDULED.
- MAIN BREAKER AND GREEN POWER "ON" INDICATOR LIGHT, WHERE SCHEDULED.
- INSTALL CIRCUIT BREAKERS IN PANELBOARDS PRIOR TO SHIPMENT.
- CONDUITS IN OPERATION OR WITH MINIMUM INTERRUPTIONS COMPLYING WITH THE OWNERS' REQUIREMENTS.
- TVSS PROTECTION AS REQUIRED.

## PART 29 - DISCONNECT SWITCHES

- PROVIDE EATON CUTLER-HAMMER, FUSIBLE (COMPLETE WITH FUSE CLIPS) OR NON-FUSIBLE, HEAVY DUTY, CSA APPROVED, FRONT OPERATED TYPE DISCONNECT SWITCHES, UNLESS OTHERWISE NOTED ON DRAWINGS.
- ENCLOSURE TO BE TYPE NEMA 3R SPRINKLER PROOF, AMP RATING, NUMBER OF POLES AND FUSE REQUIREMENTS AS INDICATED ON DRAWINGS.
- INCLUDE PROVISION FOR PADLOCKING IN ON-OFF SWITCH POSITION BY THREE LOCKS.
- MECHANICALLY INTERLOCKED DOOR TO PREVENT OPENING OF DOOR WHEN HANDLE IN OPERATIONAL POSITION.
- FUSE TYPE TO BE CLASS J, CURRENT LIMITING, SIZE AS INDICATED ON DRAWINGS.
- FUSE HOLDER TO BE WITHOUT ADAPTORS.
- PROVIDE DISCONNECTS TO BE OF QUICK-MAKE AND QUICK-BREAK TYPE.
- INCLUDE ON-OFF SWITCH POSITION ON SWITCH ENCLOSURE.
- PROVIDE EQUIPMENT IDENTIFICATION AND LOAD CONTROL NAMED PLATE, COORDINATE WITH THE LANDLORD.
- ACCEPTABLE MANUFACTURES INCLUDE: SIEMENS ELECTRIC AND SQUIRE D.

## PART 30 - FUSES

- PROVIDE EATON CUTLER-HAMMER, FUSIBLE (COMPLETE WITH FUSE CLIPS) OR NON-FUSIBLE, HEAVY DUTY, CSA APPROVED, FRONT OPERATED TYPE DISCONNECT SWITCHES, UNLESS OTHERWISE NOTED ON DRAWINGS.
- ENCLOSURE TO BE TYPE NEMA 3R SPRINKLER PROOF, AMP RATING, NUMBER OF POLES AND FUSE REQUIREMENTS AS INDICATED ON DRAWINGS.
- INCLUDE PROVISION FOR PADLOCKING IN ON-OFF SWITCH POSITION BY THREE LOCKS.
- MECHANICALLY INTERLOCKED DOOR TO PREVENT OPENING OF DOOR WHEN HANDLE IN ON POSITION.

- PROVIDE DOUBLE LUGGING TO EXISTING PANELBOARDS AS SHOWN AND AS REQUIRED.
- PROVIDE CABINET INDEPENDENT OF CONNECTING CONDUITS. TURN OVER TO CONSULTANT ENGINEER PRIOR TO APPLICATION FOR SUBSTANTIAL PERFORMANCE OR WORK, QUANTITY OF TWO (2) PANELBOARD CABINET KEYS PER PANELBOARD. IDENTIFY PANELBOARD BREAKERS IN PERMANENT MANNER, AND COMPLETE TYPED CIRCUIT DIRECTORY TO OWNERS' APPROVAL.
- PANELBOARDS TO HAVE THE FOLLOWING MINIMUM INTERRUPTING CAPACITY (KA) OR AS INDICATED ON DRAWINGS AND ELECTRICAL SCHEDULES:
  - 120/208V PANELBOARDS = 10KA
  - 347/600V PANELBOARDS = 22KA
- INSTALL SURFACE MOUNTED PANELBOARDS ON FIRE RATED PLYWOOD BACKBOARDS OR ON GALVANIZED UNISURF STAND-OFFS.
- PANEL BUSSING AND ALL ASSOCIATED CONDUCTORS SHALL BE COPPER.
- SHALL BE C/W INSULATED GROUND AND INSULATED GROUND BUS BAR IN ALL 120/208V DISTRIBUTION PANELS.
- ACCEPTABLE MANUFACTURES INCLUDE: SIEMENS ELECTRIC, EATON CUTLER-HAMMER AND AND SQUARE D.

## PART 24 - DEVICES FOR EXISTING PANELBOARDS

- PROVIDE BREAKERS, SWITCH & FUSE ASSEMBLY IN EXISTING PANELBOARDS OF TYPE TO MATCH EXISTING DEVICES, QUALITY AND STANDARD OF DEVICES SHALL MATCH EXISTING, CONFIRM REQUIREMENTS ON SITE PRIOR TO ORDERING.
- BREAKERS SHALL BE OF FULL HEIGHT MODULES UNLESS OTHERWISE SPECIFIED BY THE ENGINEER.
- PROVIDE FOR ALL MODIFICATIONS TO PANELBOARDS FOR DEVICES AND FEEDER INSTALLATIONS.
- REVISE PANEL BOARD DIRECTORY TO REFLECT ADDITIONAL LOADS.

## PART 25 - DRY TYPE TRANSFORMERS

- PROVIDE CSA APPROVED STAMPED GALVANIZED STEEL OUTLET BOXES IN ACCORDANCE WITH CSA C22.1. PROVIDE SQUARE OR LARGE OUTLET BOXES AS REQUIRED FOR SUPPLY DEVICES, REFER TO ELECTRICAL DRAWINGS.
- GANG BOXES FOR GROUPED WIRING DEVICES.
- PROVIDE BLANK COVER PLATES FOR BOXES WITHOUT WIRING DEVICES.
- PROVIDE 347V RATED BOXES FOR 347 SWITCHING DEVICES.
- BEND CONDUITS AT FULL CONDUIT DIAMETER, AND PLASTER RINGS AS REQUIRED TO FACILITATE CONDUIT/CONDUIT INSTALLATIONS. GENERALLY, PROVIDE CONDUIT RUNS EXCEEDING 100' (30M) IN LENGTH, OR WITH MORE THAN TWO (2) 90-DEGREE BEND WITH FULL BOX INSTALLED AT CONVENIENT AND ACCESSIBLE LOCATIONS.
- PROVIDE ELECTRO-GALVANIZED STEEL SINGLE AND MULTI-GANG FLUSH DEVICE BOXES FOR FLUSH INSTALLATION, MINIMUM SIZE OF 75mm X 50mm X 38mm (3"x2"x1-1/2") OR AS INDICATED. PROVIDE 100mm (4") SQUARE OUTLET BOXES WHEN MORE THAN ONE CONDUIT IS REQUIRED TO ENTER THE BOX AND PLASTER RINGS AS REQUIRED.
- PROVIDE ELECTRO-GALVANIZED STEEL UTILITY BOXES FOR SURFACE MOUNTED BOXES CONNECTED TO SURFACE MOUNTED EMT CONDUITS, MINIMUM SIZE OF 100mm X 54mm X 89mm (4"x2-1/8"x1-7/8").
- PROVIDE SQUARE OR OCTAGONAL OUTLET BOXES FOR LIGHTING FIXTURE OUTLETS.
- PROVIDE CONCRETE TIGHT ELECTRO-GALVANIZED SHEET STEEL FLOOR BOX WITH ADJUSTABLE FINISHING RINGS WITH BRUSHED ALUMINUM FACELATE, TO SUIT THE FLOOR FINISH. FOR RECEPTACLES MINIMUM DEPT OF 28mm (1-1/8") AND FOR COMMUNICATION EQUIPMENT A MINIMUM DEPT OF 73mm (2-7/8").
- 10" FOR NON-METALLIC SHEATHED CABLES, PROVIDE ELECTRO-GALVANIZED SHEET STEEL CONCRETE GANGLING BOXES OF MINIMUM SIZE 75mm X 50mm X 63.5mm (3"x2"x1-1/2") COMPLETE WITH TWO (2) DOUBLE CLAMPS.
- BOXES MUST BE ACCESSIBLE AFTER WORK IS COMPLETED, WHERE REQUIRED. SURFACE ACCESS DOORS OF MINIMUM NO.12 GAUGE PRIME COATED STEEL WITH HINGES AND FRAME TO PROVIDE ACCESS TO BOXES AND CONDUCTOR JOINTS AND OTHER SIMILAR ELECTRICAL WORK WHICH MAY NEED MAINTENANCE OR REPAIR, CONFIRM FINISHES WITH THE OWNER.
- 12" WITH BUSHINGS AND NYLON INSULATED THROAT CONNECTORS WITH KNOCK-OUT FILLERS FOR PREVENTING ENTRY OF DEBRIS, AND WITH DOUBLE LOCKNUTS AND INSULATED BUSHINGS ON SHEET METAL BOXES.
- 15" TRANSFORMER WINDINGS AND ALL ASSOCIATED CONDUCTORS SHALL BE COPPER.

## PART 26 - FASTENERS AND SECURING HARDWARE

- PROVIDE PROPER FASTENERS AND SIMILAR HARDWARE REQUIRED FOR CONDUITS, CONDUCTORS, AND FOR EQUIPMENT HANGER AND/OR SUPPORT MATERIAL. FASTENERS AND SUPPORT MATERIAL SHALL BE OF THE HEAVIEST TYPE NOT PERMITTED UNLESS SPECIFIC WRITTEN APPROVAL FOR THEIR USE AND TYPE HAS BEEN OBTAINED FROM THE CONSULTANT. UNDER NO CIRCUMSTANCES USE CEILING SUSPENSION HANGERS OR GRIDS FOR SUSPENSION OF CONDUITS AND/OR CONDUITS AND/OR CONDUCTORS.

## PART 27 - GROUNDING AND BONDING

- SUPPLY AND INSTALL COMPLETE GROUNDING AND BONDING SYSTEM AS INDICATED AND AS REQUIRED BY THE CURRENT EDITION OF THE CANADIAN ELECTRICAL CODE AND THE LOCAL INSPECTION DEPARTMENT. ALL COMPONENTS SHALL BE SECURELY AND ADEQUATELY GROUNDED AND WHERE REQUIRED TO ACCOMPLISH THIS, GROUNDING JUMPERS, GROUNDING STUDS AND BUSHINGS SHALL BE USED, ENSURE THAT ALL RACEWAYS, TERMINAL PANELS, ETC. FOR TELEPHONE, LOW VOLTAGE, FIRE ALARM, SOUND, ETC. ARE SECURELY AND ADEQUATELY GROUNDED AND PROVIDE GROUNDING CONDUCTOR TO WATER MAIN WHERE CALLED FOR OR WHERE REQUIRED.
- INSULATED SYSTEMS SHALL BE CONTINUOUS THROUGHOUT DISTRIBUTION SYSTEMS FROM POINT OF SUPPLY TO POINT OF UTILIZATION.
- ALL IG RECEPTACLES I.E. CASH REGISTERS, MONITORS AND OFFICE IG SHALL BE ON DEDICATED IG CIRCUITS.
- INSULATED GROUND WIRE IS TO BE RUN FROM THE RECEPTACLE TO THE PANELBOARD AND CONNECTED TO THE INSULATED/ISOLATED GROUND BUS IN PANEL. DO NOT CONNECT TO COMMON GROUND BUS IN PANEL.

## PART 28 - ELECTRICAL CONNECTIONS FOR MECHANICAL, OWNERS, ETC. EQUIPMENT

- PROVIDE REQUIRED ELECTRICAL CONNECTIONS TO EQUIPMENT SUPPLIED BY THE MECHANICAL DIVISION, OWNER AND AS PART OF OTHER DIVISIONS. MECHANICAL CONTRACTOR SHALL SUPPLY STARTERS FOR MOTORIZED EQUIPMENT.
- ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR:
  - COMPLETE INSTALLATION AND CONNECTION OF STARTERS AND PROVIDE "LINE" AND "LOAD" POWER CONNECTIONS AND INTERLOCKING AS REQUIRED.
  - PROVIDE MOTOR STARTER PANEL, CONSISTING OF NO.12 GAUGE STEEL BOLTED PANELS SIZED TO ACCOMMODATE STARTERS AND SUITABLE SPLITTER.
  - UNLESS OTHERWISE NOTED OR SHOWN ON DRAWINGS, MOUNT 1 PHASE STARTERS ADJACENT TO EQUIPMENT THEY SERVE AND CONNECT COMPLETE.
  - COORDINATE FEEDER ENTRIES TO STARTERS AND STARTER ASSEMBLIES WITH MECHANICAL DIVISION.
  - PROVIDE ADDITIONAL DISCONNECT SWITCHES (COMPLETE WITH IDENTIFICATION DETAILED ON DRAWINGS, REQUIRED BY CODE, OR FOR EQUIPMENT WHICH CANNOT BE SEEN FROM ITS STARTER OR IS IN ACCESS OF 30' (9M) FROM THE STARTER.

## PART 29 - DISCONNECT SWITCHES

- PROVIDE EATON CUTLER-HAMMER, FUSIBLE (COMPLETE WITH FUSE CLIPS) OR NON-FUSIBLE, HEAVY DUTY, CSA APPROVED, FRONT OPERATED TYPE DISCONNECT SWITCHES, UNLESS OTHERWISE NOTED ON DRAWINGS.
- ENCLOSURE TO BE TYPE NEMA 3R SPRINKLER PROOF, AMP RATING, NUMBER OF POLES AND FUSE REQUIREMENTS AS INDICATED ON DRAWINGS.
- INCLUDE PROVISION FOR PADLOCKING IN ON-OFF SWITCH POSITION BY THREE LOCKS.
- MECHANICALLY INTERLOCKED DOOR TO PREVENT OPENING OF DOOR WHEN HANDLE IN OPERATIONAL POSITION.
- FUSE TYPE TO BE CLASS J, CURRENT LIMITING, SIZE AS INDICATED ON DRAWINGS.
- FUSE HOLDER TO BE WITHOUT ADAPTORS.
- PROVIDE DISCONNECTS TO BE OF QUICK-MAKE AND QUICK-BREAK TYPE.
- INCLUDE ON-OFF SWITCH POSITION ON SWITCH ENCLOSURE.
- PROVIDE EQUIPMENT IDENTIFICATION AND LOAD CONTROL NAMED PLATE, COORDINATE WITH THE LANDLORD.
- ACCEPTABLE MANUFACTURES INCLUDE: SIEMENS ELECTRIC AND SQUIRE D.

## PART 30 - FUSES

- PROVIDE EATON CUTLER-HAMMER, FUSIBLE (COMPLETE WITH FUSE CLIPS) OR NON-FUSIBLE, HEAVY DUTY, CSA APPROVED, FRONT OPERATED TYPE DISCONNECT SWITCHES, UNLESS OTHERWISE NOTED ON DRAWINGS.
- ENCLOSURE TO BE TYPE NEMA 3R SPRINKLER PROOF, AMP RATING, NUMBER OF POLES AND FUSE REQUIREMENTS AS INDICATED ON DRAWINGS.
- INCLUDE PROVISION FOR PADLOCKING IN ON-OFF SWITCH POSITION BY THREE LOCKS.
- MECHANICALLY INTERLOCKED DOOR TO PREVENT OPENING OF DOOR WHEN HANDLE IN ON POSITION.

- FUSE TYPE TO BE CLASS J, CURRENT LIMITING, SIZE AS INDICATED ON DRAWINGS.
- FUSE HOLDER TO BE WITHOUT ADAPTORS.
- ALL FUSIBLE DISCONNECTS TO BE OF QUICK-MAKE AND QUICK-BREAK