METRIC

ALL DIMENSONS SHOWN ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE NOTED.

wsp

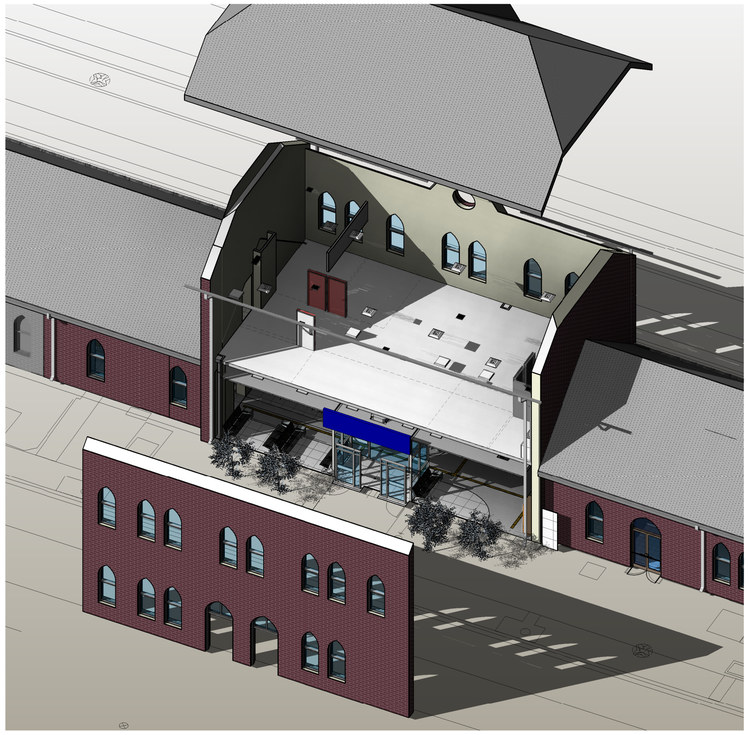
COVER PAGE

Cover Page last updated:

14/09/2023

PL

3D VIEW



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PROJEC INFORMATION

PROJECT NAME: NIAGARA FALLS TRAIN STATION UPGRADES

PROJECT ADDRESS: 4267 Bridge St, Niagara Falls, ON L2E 2R6

PROJECT NUMBER: BE20201016

CURRENT PHASE: ISSUED FOR TENDER

PROVISIONAL PRICING ITEMS:

PROVISIONAL ITEM#1
The removal & installations of new concrete/brick walkways shall be priced as a provisional cost item (Base Bid – existing walkways to remain)

PROVISIONAL ITEM#2
The supply & installation of indicated re-pointing of existing brick shall be priced as a provisional cost item (Base Bid – existing brick to remain in current condition)

PROVISIONAL ITEM#3
The supply & installation of indicated painting/repairs of existing soffits, fascia, lookouts & trims shall be priced as a provisional cost item (Base Bid – existing soffits, fascia, lookouts & trims to remain in current condition)

PROVISIONAL ITEM#4
The supply & installation of conc.sealer & epoxy floor shall be priced as a provisional cost item (Base Bid – existing room conditions to remain current condition)

PROVISIONAL ITEM#5
The supply & installations of the custom millwork charge stations shall be priced as a provisional cost item (Base Bid – show allow for the columns to be finished as per wall type W6 and painted)

REFERENCE DRAWINGS		ISSUE			REVISIONS		
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DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

DRAWN BY: P.LAPALIKAR 2023/09/22
DESIGNED BY: G.DANESHGAR 2023/04/21
CHECKED BY: S.CHERIAN 2023/09/22
APPROVED BY: S.CHERIAN 2023/09/22
SCALE: AS SHOWN FULL SIZE ONLY

ARCHITECTURE 49

PROJECT NO. BE20101016

ISSUED FOR TENDER

Niagara Region

NIAGARA FALLS TRAIN STATION UPGRADES
COVER SHEET

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A00

ASSEMBLIES

WALLS:

W1 — 102 mm DRYWALL PORCELAIN TILE BIG FORMAT WHITE- 2 SIDES
- 5.6mm PORCELAIN TILE 600mm X 600mm
- 13mm GYPSUM OR CEMENT BOARD ON WET SIDE
- 64mm METAL STUD WITH ACOUSTICAL BATT INSULATION
- 13mm GYPSUM OR CEMENT BOARD ON WET SIDE
- 5.6mm CERAMIC TILE 600mm X 600mm

W2 — 102 mm DRYWALL PORCELAIN TILE BIG FORMAT WHITE 1 SIDE AND PAINTED
- 5.6mm PORCELAIN TILE 600mm X 600mm
- MORTAR ADHESIVE
- 13mm GYPSUM BOARD
- 64mm METAL STUD WITH ACOUSTICAL BATT INSULATION
- 13mm GYPSUM BOARD
- PAINTED - SEE ROOM FINISH AND PAINTING SPECS

W3 — 82.6 mm 1 FACED STUD DRYWALL W/ PORCELAIN TILE BIG FORMAT WHITE
- 5.6mm PORCELAIN TILE 600mm X 600mm
- 13mm EXT GRADE SHEATHING OR CEMENT BOARD ON WET SIDE
- 64mm METAL STUD

W4 — EXISTING — 15 mm PORCELAIN TILE BIG FORMAT WHITE ON EXISTING WALL
- 6mm PORCELAIN TILE 600mm X 600mm
- CEMENT MORTAR

W5 — EXISTING — PLASTER PATCH AND PAINT ON EXISTING WALL- SEE NOTE 1

W5N — NEW — PLASTER AND PAINT ON NEW WALL - SEE SEE NOTE 1

W6 — 82.6 mm ONE FACED METAL STUD DRYWALL PAINTED
- 13mm GYPSUM BOARD (VANDAL RESIST @PUBLIC FACE). PAINTED.
- 64mm METAL STUD

W7 — 100mm HPL PANEL ASSEMBLY
- 10mm HPL PANEL
- 25mm HPL RAIL SYSTEM
- 64mm METAL STUD

W8 — 35mm HPL PANEL ASSEMBLY
- 10mm HPL PANEL
- 25mm HPL RAIL SYSTEM

W9 — 183mm INTERIOR CURTAIN WALL SYSTEM
- 183mm x 63.5mm CLEAR ANODIZED MULLIONS
- 25mm GLAZING SYSTEM
- 6mm CLEAR TEMPERED GLASS
- 12mm AIRSPACE
- 6mm CLEAR TEMPERED GLASS

W10 — 100mm INTERIOR CURTAIN WALL SYSTEM AT TICKET OFFICE
- 100mm x 50mm CLEAR ANODIZED MULLIONS
- 2mm X 6mm CLEAR TEMPERED GLASS

W11 — 90mm METAL STUD DRYWAL WITH FRP PANEL
- 13mm GYPSUM BOARD PAINTED TO PUBLIC SPACE
- 64mm METAL STUD
- 13mm GYPSUM BOARD
- FRP INTERIOR PANEL FROM FINISH FLOOR TO 1.5m

W11 IN JAN ROOM 109 - 1 HR FRR . USE 13mm TYPE X GYPSUM BOARD IN BOTHS SIDES AND ADD EXTRA LAYER IN THE INTERIOR SIDE AS PER TYPE S2g SB-3, OBC

W12 — 102 mm METAL STUD DRYWALL WITH CERAMIC TILE AND FRP PANEL
- 5.6mm CERAMIC TILE 600mm X 600mm
- MORTAR ADHESIVE
- 13mm GYPSUM BOARD
- 64mm METAL STUD
- 13mm GYPSUM BOARD
- PAINTED - SEE ROOM FINISH AND PAINTING SPECS
- FRP PANEL FROM FINISH FLOOR TO 1.5m

W13 — FRP PANEL FROM FINISH FLOOR TO 1.5m

W14
- PAINTED - SEE ROOM FINISH AND PAINTING SPECS
- 16 mm GYPSUM ACOUSTICAL PANEL
- 92 mm METAL STUD WITH ACOUSTICAL BATT INSULATION
- 16 mm GYPSUM BOARD
- PAINTED - SEE ROOM FINISH AND PAINTING SPECS

FLOORS:
(SEE NOTE 2)

F1
- PORCELAIN TILE LARGE FORMAT 600mm x 600mm (BEIGE COLOUR)
- DRYPACK
- SELF - LEVELING MORTAR

F2
- PORCELAIN TILE LARGE FORMAT 600mm x 600mm (WOOD TEXTURIZED)
- PLASTIC OR FOAM SHEET
- DRYPACK
- SELF - LEVELING MORTAR

F3
- LINEAR TACTILE TILE 600mm x 120mm (BLACK COLOUR)
- DRYPACK
- SELF - LEVELING MORTAR

F4
- PORCELAIN TILE LARGE FORMAT 600mm x 600mm (MARFIL COLOUR)
- DRYPACK
- SELF - LEVELING MORTAR

F5
- EPOXY PAINT
- CEMENT MORTAR
- SELF - LEVELING MORTAR

F6
- VINYL TILES 300mm x 300 mm.

F7
- CARPET TILE (GRAY COLOUR)
- ADHESIVE
- SELF - LEVELING MORTAR

F8
- PORCELAIN CERAMIC TILE BIG FORMAT 600mm X 600mm (MARFIL COLOUR)
- ADHESIVE MORTAR
- SELF - LEVELING MORTAR

CEILING:

C1 — ACOUSTIC CEILING 24" X 48" (WHITE COLOUR)

C2 — ACOUSTIC CEILING 24" X 48" VINYL COATED (WHITE COLOUR)

C3 — HPL PANELS ON CEILING

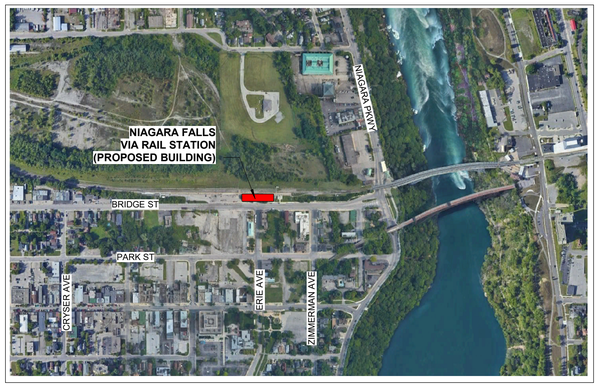
C4 — 2 LAYERS OF 16mm TYPE X GB AS PER OBC SB-3 F23a AND F4a ASSEMBLIES

ROOF:

R1 — EXISTING ROOF

ASSEMBLIES NOTES:
1. TO REPAIR EXISTING PLASTER AND ADD NEW PLASTER LAYER AS REQUIRED TO CREATE A FINISHED WALL SURFACE CONTINUOUS, FREE OF SURFACE BLEMISHES AND IRREGULARITIES.
2. NOTE: NEW FLOOR TO BE INSTALLED REPLACING EXISTING. NEW FLOOR THICKNESS SHOULD MATCH EXISTING THICKNESS.VARIATIONS IN GROUND FLOOR THICKNESS TO BE ABSORBED IN DOORS SILLS OUTSIDE. MAX. VARIATION 10mm. MAX. SLOPE 1 IN 20 (OR 5%)

LOCATION PLAN



OBC MATRIX

Ontario Building Code Data Matrix
Part 11 – Renovation of Existing Building

			Building Code Reference [1]
11	Building Code Version:	O. Reg. 332/12 Last Amendment O. Reg. 451/22	
11.01	Project Type:	☐ Addition ☑ Renovation ☐ Addition and renovation ☐ Change of use Description: Train Station Renovation	[A] 1.1.2.
11.02	Major Occupancy Classification:	Occupancy Use A.2	3.1.2.1.(1)
11.03	Superimposed Major Occupancies:	☐ No ☑ Yes Description: Second Level - D - Offices	3.2.2.7.
11.04	Building Area (m^2)	Description: Existing New Total Ground Level 667.58 0 0 Second Level 491.12 0 0 – 0 0 0 – 0 0 0 *Insert additional lines as needed* Total 1158.7 0 0	[A] 1.4.1.2.
11.05	Building Height	2 Storeys above grade 0 Storeys below grade 15.57 (m) Above grade	[A] 1.4.1.2. & 3.2.1.1.
11.06	Number of Streets/ Firefighter access	1 street(s)	3.2.2.10. & 3.2.5.
11.07	Building Size	☐ Small ☑ Medium ☐ Large ☐ > Large	T.11.2.1.1.B.-N.
11.08	Existing Building Classification:	Change in Major Occupancy: ☐ Yes ☐ Not Applicable (no change of major occupancy) Construction Index: 0 Hazard Index: 0 Importance Category : ☐ Low ☐ Normal ☐ High ☐ Post-disaster	11.2.1.1. T 11.2.1.1A T 11.2.1.1B to N 4.2.1.(3), 5.2.2.1.(2)
11.09	Renovation type:	☑ Basic Renovation ☐ Extensive Renovation	11.3.3.1. 11.3.3.2.
11.1	Occupant Load	Floor Level/Area — Occupancy Type — Based On — Occupant Load (Persons) GROUND - CBSA D GROUND - ACCESS TO 2nd D 2 GROUND - STATION A2 140 GROUND - O.T.S. D 2 GROUND - ACCESS TO 2nd D 1 SECOND - CBSA D SECOND - OFFICE D 27 SECOND - ACCESS TO Gr D 2 TOTAL 175 *Insert additional lines as needed*	3.1.17.
11.11	Plumbing Fixture Requirements	Ratio: M/F = 1/1 Except as otherwise noted Floor Level/Area — Occupant Load — OBC Reference — Fixtures Required — Fixtures Ground L.- Station 74 males 2 3 74 females 3 3 Second L.-Office 9 males 1 1 9 females 1 1 *Insert additional lines as needed*	3.7.4.
11.12	Barrier-free Design:	☑ Yes Explanation ☐ No	11.3.3.2.(2)
11.13	Reduction in Performance Level:	Structural: ☑ No ☐ Yes 11.4.2.1. By Increase in occupant load: ☑ No ☐ Yes 11.4.2.2. By change of major occupancy: ☑ No ☐ Yes 11.4.2.3. Plumbing: ☐ No ☑ Yes 11.4.2.4. Sewage-systems: ☐ No ☑ Yes 11.4.2.5. Extension of combustible construction: ☑ No ☐ Yes 11.4.2.6.	
11.14	Compensating Construction:	☐ No ☐ Yes (Describe) 11.4.3.1. Structural: ☐ No ☐ Yes (Describe) 11.4.3.2. Increase in occupant load: ☐ No ☐ Yes (Describe) 11.4.3.3. Change of major occupancy: ☐ No ☐ Yes (Describe) 11.4.3.4. Plumbing: ☐ No ☑ Yes Increase in washroom number 11.4.3.5. Sewage systems: ☐ No ☑ Yes Increase in washroom number 11.4.3.6. Extension of combustible construction: ☐ No ☐ Yes (Describe) 11.4.3.7.	
11.15	Compliance Alternatives Proposed:	☑ No ☐ Yes (list numbers and describe) (list numbers and describe) (list numbers and describe)	11.5.1.
11.16	Notes:	1- OBC 3.8.3.3. requires no less than 860mm clear width in a barrier-free path. Current exist doors do not comply and need to be changed *Insert additional lines as needed*	11.5.1.

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ONTARIO ASSOCIATION OF ARCHITECTS — SHERY KOZHIMALA CHERIAN — LICENCE 7610

ARCHITECTURE 49

PROJECT NO. BE20101016

ISSUED FOR TENDER

Niagara Region

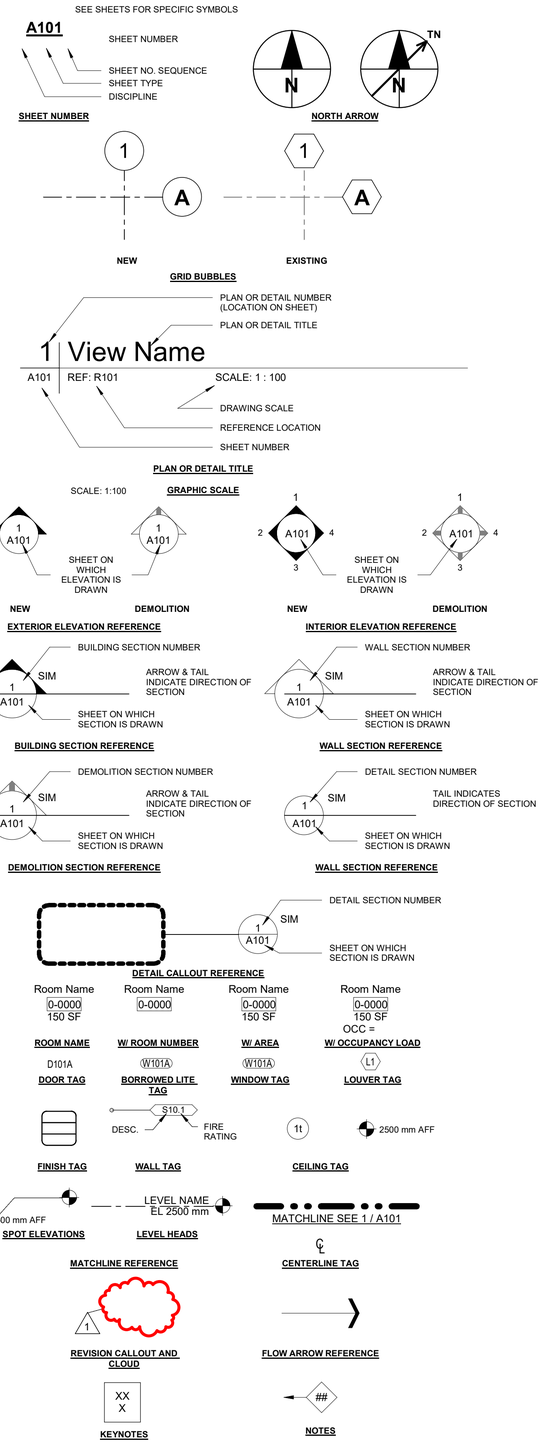
NIAGARA FALLS TRAIN STATION UPGRADES
BUILDING INFORMATION

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A0050

ABBREVIATIONS

--	NOT APPLICABLE
ACC	ACOUSTICAL
ACBF	ACOUSTIC SUSPENDED BAFFLES
ACPL	ACOUSTIC PANELS, FIXED
ACT	ACOUSTIC TILE
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AL, ALUM	ALUMINUM
ARC	ARCHITECTURE
ARGB	ABUSE RESISTANT GYPSUM BOARD
AV SCRN.	AUDIO VISUAL PROJECTOR SCREEN
B.F.	BARRIER FREE
BH	BULKHEAD
BL	BLIND
BLDG	BUILDING
BLK	BLOCK
BOT, BTM	BOTTOM
B.S.	BOOK SHELF
CB	CONCRETE BLOCK
CG	CORNER GUARD
CHD	CONCRETE FLOOR HARDENER
CJ	CONTROL JOINT
CL	CENTRE LINE
CLAN	CLEAR ANODIZED
CLG	CEILING
CLR	CLEAR
COIL. GRILLE	SIDE COILING GRILLE
COL	COLUMN
CONC.	CONCRETE
CONT.	CONTINUOUS
CPT	CARPET
CRB	CROSS BRACING
CS	COUNTER SHUTTER
CT	CERAMIC TILE
CTBD	CEMENT BOARD
CVB	COVE BASE
C/W	COMPLETE WITH
CWGL	CURTAIN WALL GLAZING
CWL	CURTAIN WALL
CKB	CHALK BOARD
DBL	DOUBLE
DET	DETAIL
DF	DRINKING FOUNTAIN
DN	DOWN
DT	DECORATIVE TRIM
DWG	DRAWING
EA	EACH
ED	EXISTING DOWNSPOUT
EG	EXISTING GUTTER
ELE, ELEC	ELECTRICAL
ELEV.	ELEVATION
EOS	EDGE OF SLAB
EQ.	EQUAL
EQPT, EQUIP	EQUIPMENT
ESG	EXISTING SNOWGUARDS
EXP	EXPOSED
EXT	EXTERIOR
FD	FLOOR DRAIN
F/F	DOUBLE SIDE BY SIDE FRIDGE/FREEZER UNIT
FIN, FNSH	FINISH
FLR, FL.	FLOOR
FRR	FIRE RESISTANCE RATING
FURN	FURNITURE
FUS	FOLDING UTILITY SHELF
FS	FRAME SIZE
GA	GAUGE
GALV	GALVANIZED
GB	GYPSUM BOARD
GBX	TYPE X GYPSUM BOARD
GL	GLAZING
GR	GUARD RAIL
HGT.	HEIGHT
HM	HOLLOW METAL (DOOR)
HORIZ.	HORIZONTAL
HR	HANDRAIL
HSS	HOLLOW STEEL SECTION
HT	HEIGHT
HTD	HAND TOWEL DISPENSERS
HP	HIGH POINT
IAL	INSULATED ALUMINUM
ID	INSIDE DIAMETER
I/F	INSIDE FACE
IFH	IN FLOOR RADIANT HEATING PANEL
IHM	INSULATED HOLLOW METAL (DOOR)
INSUL	INSULATED
INT	INTERIOR
IP	INSULATED PANEL (DOOR)
LG	LAMINATED GLASS
LIN	LINOLEUM
LNPL	LINER PANEL
M.	MALE
MATL	MATERIAL
MAX.	MAXIMUM
MECH.	MECHANICAL
MESH	WIRE MESH PARTITION
MIN.	MINIMUM
MISC.	MISCELLANEOUS
MLC	METAL PANEL SOFFIT
MP	MOVABLE PANEL
NB	NOTICE BOARD (TACK BOARD)
NTS	NOT TO SCALE
MIR	MIRROR
OC	ON CENTER
OCC	OPEN CELL CEILING
O/F	OUTSIDE FACE
O.H.	OVERHEAD
O.W.S.J.	OPEN WEB STEEL JOIST
PL	PLATE
PLAM	PLASTIC LAMINATE
PENT	PENTHOUSE
PLY	PLYWOOD
PREFIN	PREFINISHED
PS	PRESSED STEEL
PT	PAINT
RB	RUBBER BASE
RCB	RESILIENT COVE BASE
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
RFID	RADIO FREQUENCY IDENTIFICATION (SYSTEM)
RM	ROOM
RP	RADIANT CEILING PANEL
RSF	RESILIENT SHEET FLOORING
SCW	SOLID CORE WOOD
SD	SOAP DISPENSERS
SIM	SIMILAR
SPEC	SPECIFICATION
S.S.	STEEL STUD
ST, STL	STEEL
STLS	STAINLESS STEEL
STN	STONE
STOR	STORAGE
STRUC.	STRUCTURAL
SUPVR.'S	SUPERVISOR'S
SUSP	SUSPENDED
TO	TOP OF
TP1	FIBERGLASS SANDWICH PANEL-w/TRANSLUCENT PANEL
TR	TRASH RECEPTACLES
TP2	TRANSLUCENT PANEL GLAZING
TPTN	TOILET PARTITION
TPD	TOILET PAPER DISPENSERS
TYP	TYPICAL
U/C	UNDER COUNTER
U/F	UNDER FLOOR
UNO	UNLESS NOTED OTHERWISE
U/S	UNDERSIDE
US	UTILITY SHELVES
VB	VAPOUR BARRIER
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL
VEST	VESTIBULE
w/	WITH
WB	WHITEBOARD
WD	WOOD
WM	WIRE MESH
WP	WALL PANEL
WPT	WORK POINT
WR	WASHROOM
WRGB	WASTER RESISTANT GYPSUM BOARD
W/R	WASTE RECEPTACLE

SYMBOLOGY LEGEND



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NIAGARA FALLS TRAIN STATION UPGRADES

NOTES ABBREVIATIONS LEGENDS

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STATION RENOVATION		A	A0100

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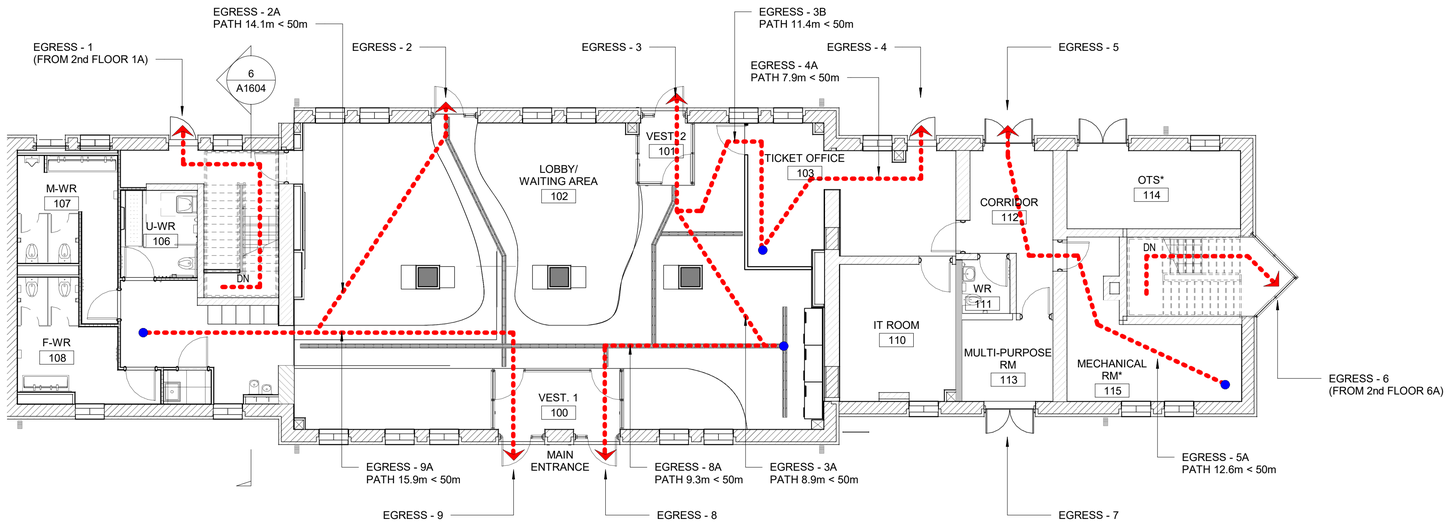
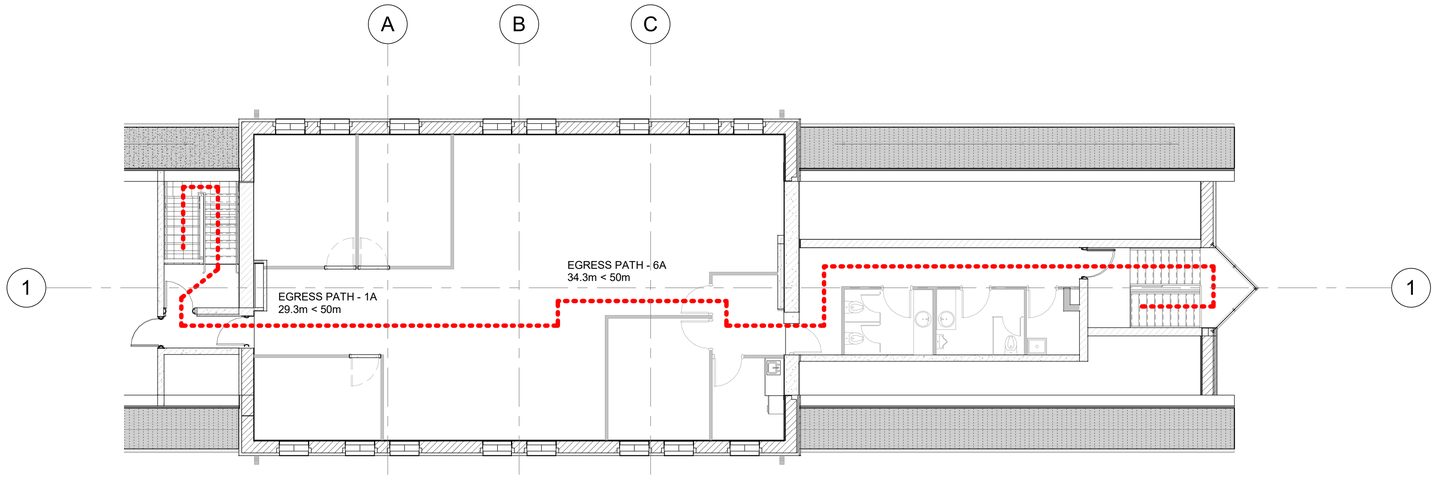


1 | LIFE SAFETY PLAN - GROUND FLOOR

A0200 SCALE: 1 : 100

LIFE SAFETY LEGEND

EGRESS PATH — 1.0m



2 | LIFE SAFETY PLAN - SECOND FLOOR

A0200 SCALE: 1 : 100

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NIAGARA FALLS TRAIN STATION UPGRADES
LIFE SAFETY PLANS

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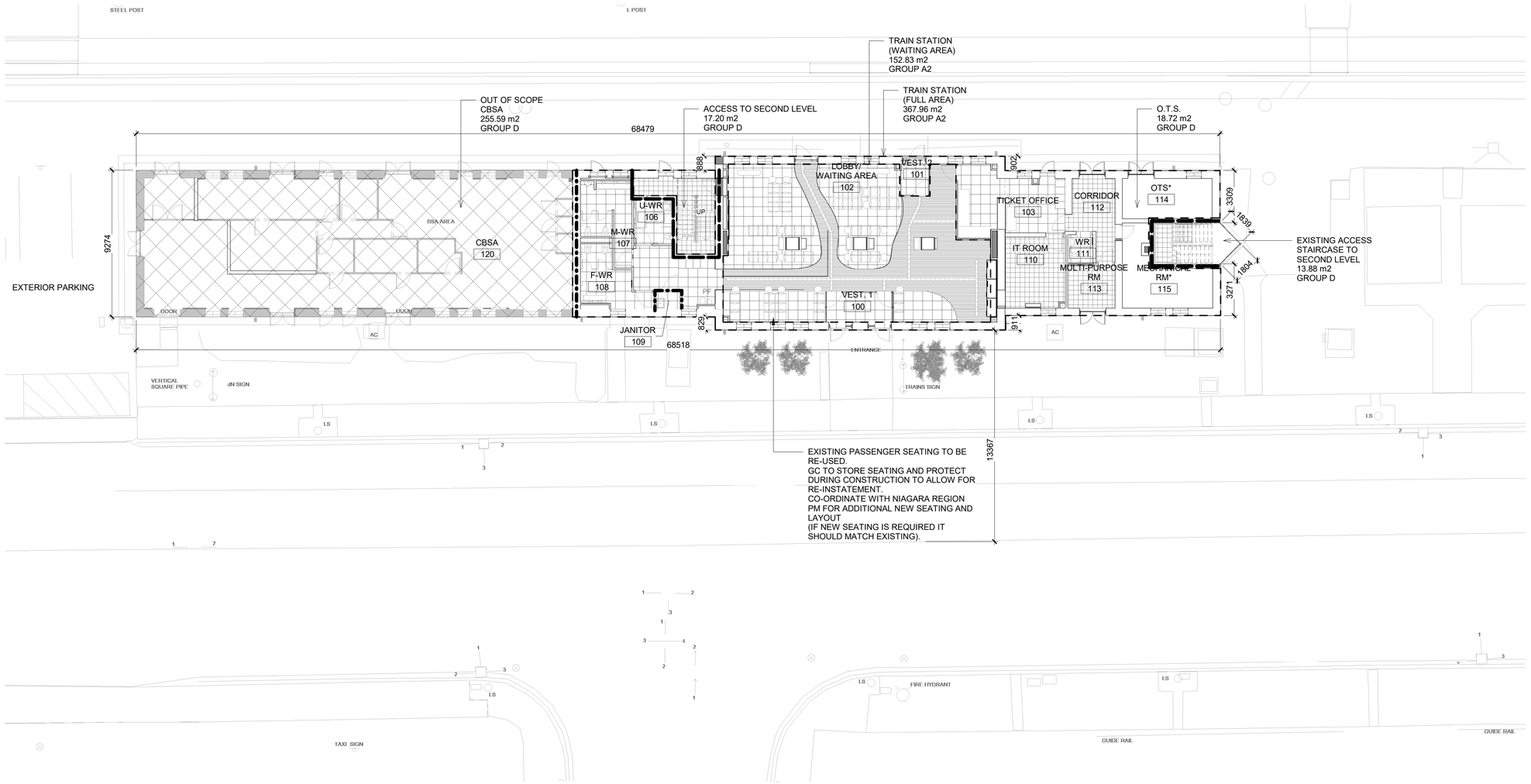
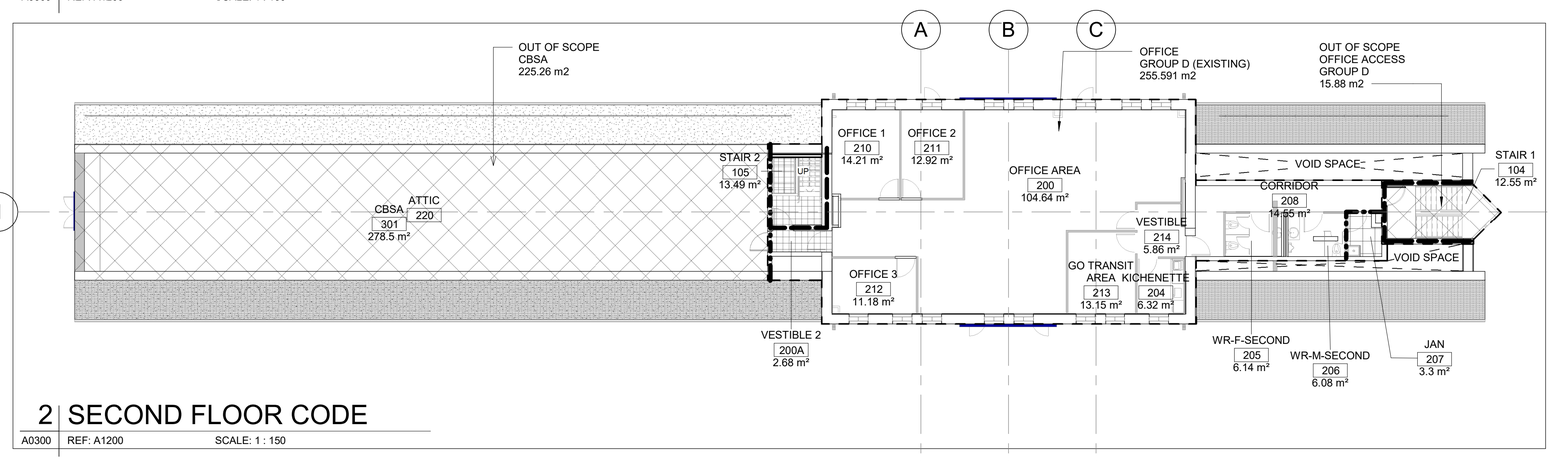
STATION RENOVATION		A	A0200



1 | GROUND & SITE CODE

A0300 | REF: A1200 | SCALE: 1 : 150



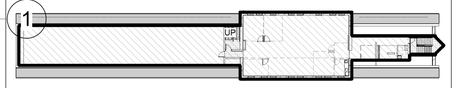
2 | SECOND FLOOR CODE

A0300 | REF: A1200 | SCALE: 1 : 150

AREA PLAN

667.58 m2 - GROUND FLOOR

491.12 m2 - SECOND FLOOR



BUILDING PERIMETER - m	160.083 m
LENGTH SOUTH STREET - m	70.269 m

FIRE RATING LEGEND

- 45min FIRE RATING
- 1 HRR FIRE RATING
- 2 HRR FIRE RATING

ALL EXISTING FIRE RATING SHOULD BE UNTOUCHED UNLESS OTHERWISE NOTED

METRIC

ALL DIMENSONS SHOWN ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE NOTED.

REFERENCE DRAWINGS		ISSUE			REVISIONS		
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DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

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DESIGNED BY: G.DANESHGAR 2023/04/21
CHECKED BY: S.CHERIAN 2023/09/22
APPROVED BY: S.CHERIAN 2023/09/22
SCALE: AS SHOWN FULL SIZE ONLY

ONTARIO ASSOCIATION OF ARCHITECTS
SHERY KOZHIMALA CHERIAN
LICENCE 7610

ARCHITECTURE 49

PROJECT NO. BE20101016

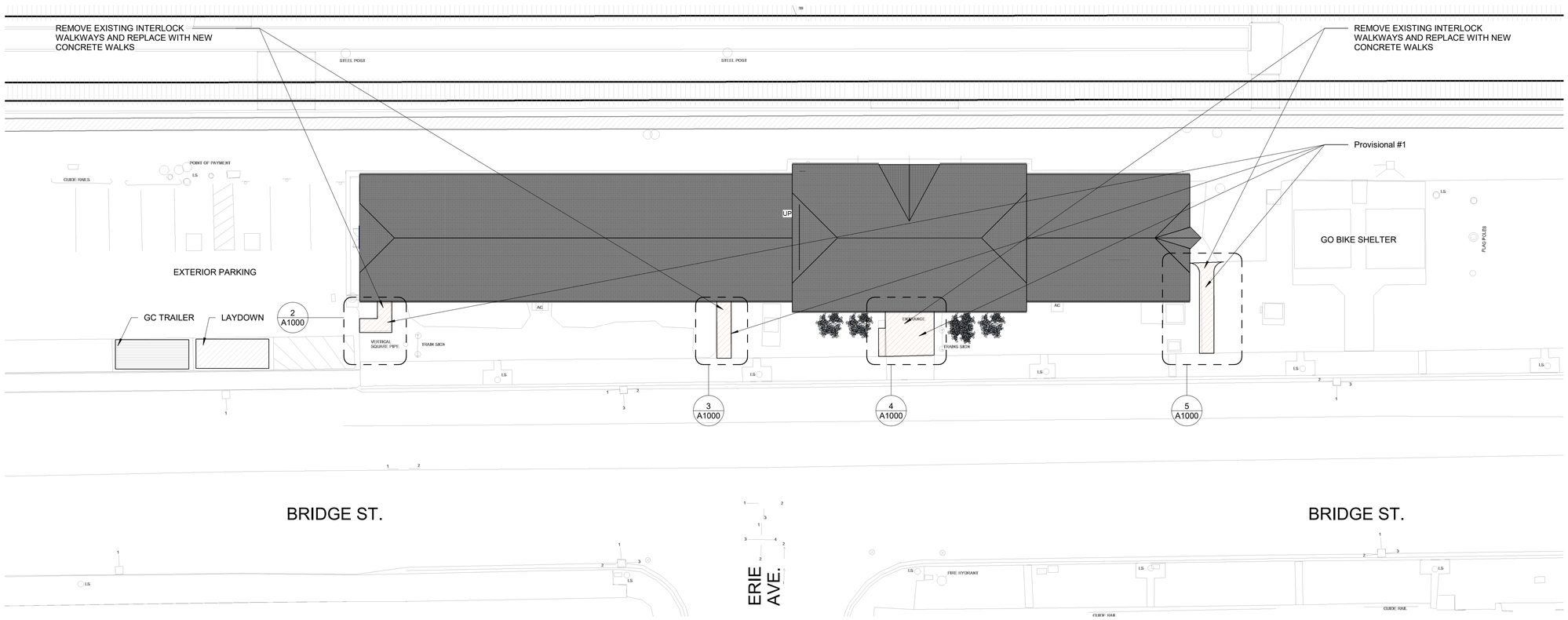
ISSUED FOR TENDER

Niagara Region

NIAGARA FALLS TRAIN STATION UPGRADES

BUILDING CODE SEPARATION PLANS

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A0300



1 | SITE PLAN

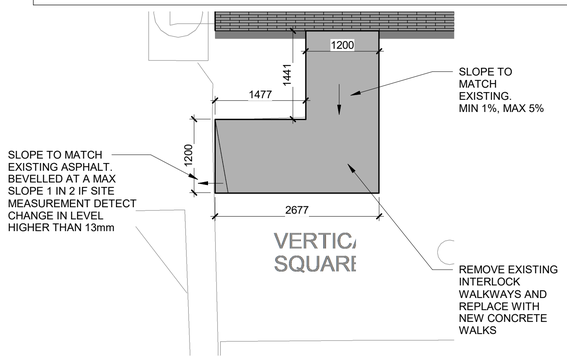
A1000 | REF: A1200 | SCALE: 1 : 200

METRIC

ALL DIMENSONS SHOWN ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE NOTED.

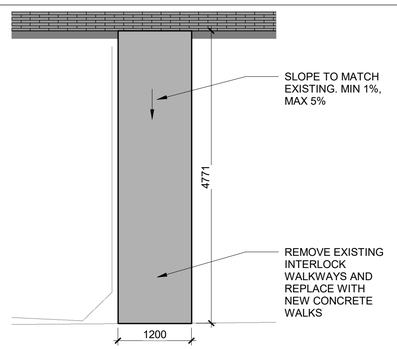
GENERAL CONSTRUCTION NOTES:

1.COORDINATE ALL WORK WITH MECHANICAL & ELECTRICAL DRAWINGS.
2.DO NOT SCALE DRAWINGS. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
3.THE CONTRACTOR IS TO REVIEW AND VERIFY THAT ALL DIMENSIONS, ELEVATIONS, DATUMS, AND INFORMATION SHOWN ARE CORRECT. VERIFY ALL DIMENSIONS ON SITE.
4.PRIOR TO COMMENCEMENT OF WORK, REPORT ANY DISCREPANCIES TO THE PROPERTY REPRESENTATIVE.
5.VARIATIONS AND MODIFICATIONS TO WORK SHOWN WILL NOT BE PERMITTED WITHOUT THE WRITTEN PERMISSION OF THE PROPERTY REPRESENTATIVE.
6.NO REPRODUCTION OF THE DRAWINGS MAY BE MADE WITHOUT THE WRITTEN CONSENT OF THE PROPERTY REPRESENTATIVE AND ALL REPRODUCTION MUST BEAR THE NAME OF THE PROPERTY REPRESENTATIVE.
7.COORDINATE WITH PROPERTY REPRESENTATIVE FOR ANY INTERRUPTIONS OF BUILDING SERVICES FOR THE DURATION OF THE PROJECT.
8.THE CONTRACTOR SHALL NOTIFY THE PROPERTY REPRESENTATIVE OF ANY EQUIPMENT OR ELECTRICAL APPARATUS WHICH MAY VARY FROM THAT INDICATED IN THE CONTRACT DOCUMENTS.
9.CONTRACTOR SHALL BE RESPONSIBLE FOR PERIODICALLY REMOVING ALL DEBRIS AND TO KEEP THE WORK AREA CLEAN AT ALL TIMES.
10.PROVIDE TEMPORARY PROTECTION TO ADJACENT SURFACES NOT AFFECTED BY DEMOLITION OR NEW CONSTRUCTION. ENSURE THAT DEBRIS IS REMOVED FROM EACH SPACE.
11.MAINTAIN THE INTEGRITY OF ALL LIFE/SAFETY SYSTEMS AND REQUIRED EXITS AT ALL TIMES THROUGHOUT THE DURATION OF THIS PROJECT.
12.PATCH, REPAIR, AND REFINISH DAMAGED SURFACES OR PENETRATIONS AS A RESULT OF NEW CONSTRUCTION, OR IN THE TRANSPORTATION OF MATERIALS AT THE SITE.
13.PROVIDE CONTINUOUS ISOLATION PROTECTION AT AND BETWEEN ALL DISSIMILAR METALS/BUILDING COMPONENTS
14. GC. TO REPAIR DAMAGES TO EXISTING HARDSCAPE AND SOFTSCAPE DUE TO CONSTRUCTION.



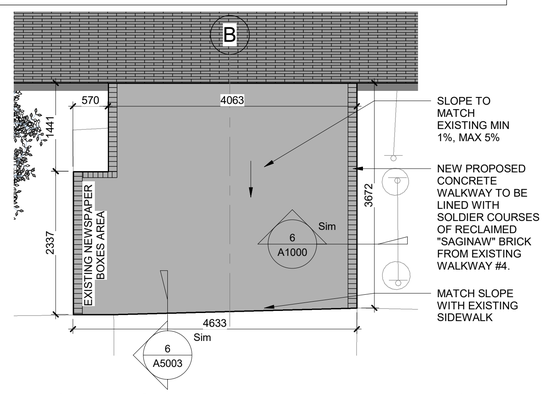
2 | SITE - SouthWest Pathway(P)

A1000 | REF: A1000 | SCALE: 1 : 50



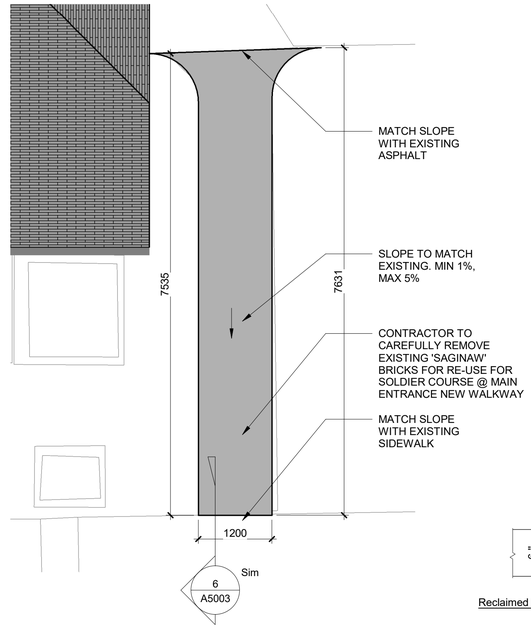
3 | SITE - SouthWest Pathway 2(P)

A1000 | REF: A1000 | SCALE: 1 : 50



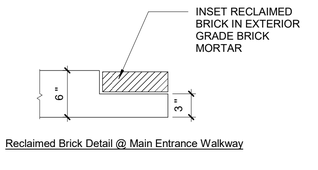
4 | SITE - South Entrance Pathway(P)

A1000 | REF: A1000 | SCALE: 1 : 50



5 | SITE - South East Pathway(P)

A1000 | REF: A1000 | SCALE: 1 : 50



Reclaimed Brick Detail @ Main Entrance Walkway

6 | Reclaimed Brick Detail(P)

A1000 | REF: A1000 | SCALE: 1 : 10

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ONTARIO ASSOCIATION OF ARCHITECTS
SHERY KOZHIMALA CHERIAN
LICENCE 7610

ARCHITECTURE 49

PROJECT NO. BE20101016

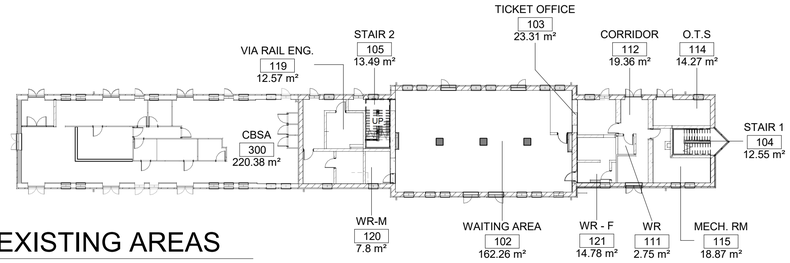
ISSUED FOR TENDER

Niagara Region

NIAGARA FALLS TRAIN STATION UPGRADES

SITE PLAN

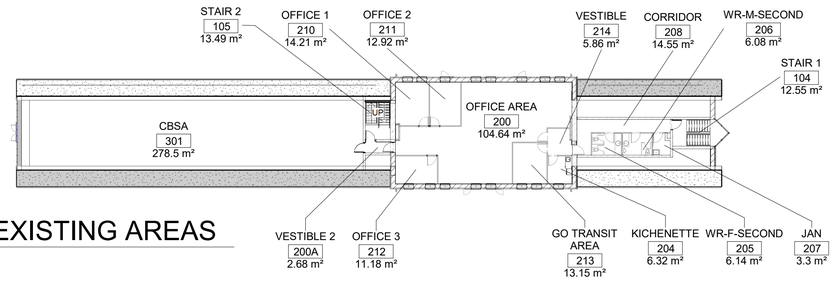
CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A1000



No color scheme assigned to view

2 | GROUND FLOOR EXISTING AREAS

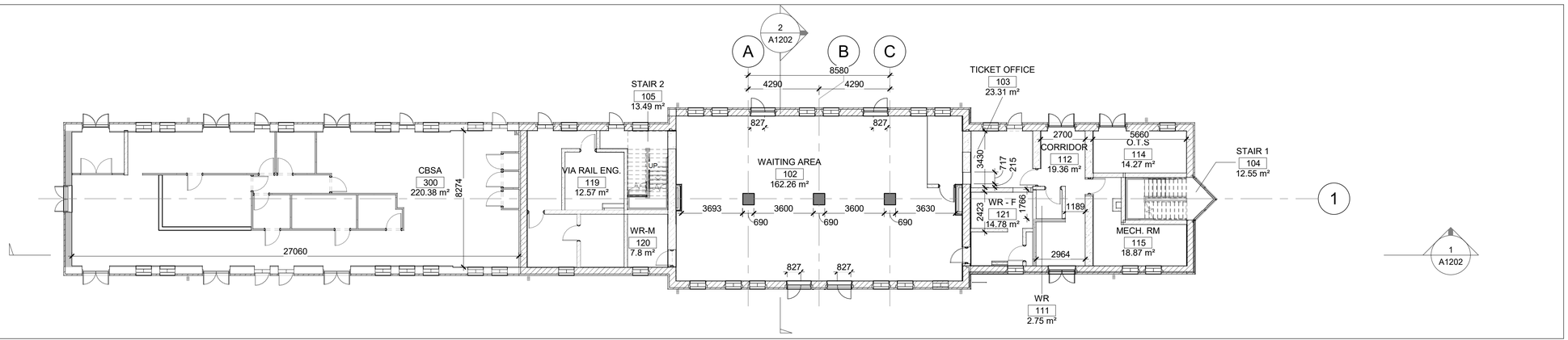
A1100 | REF: A1200 | SCALE: 1 : 300



No color scheme assigned to view

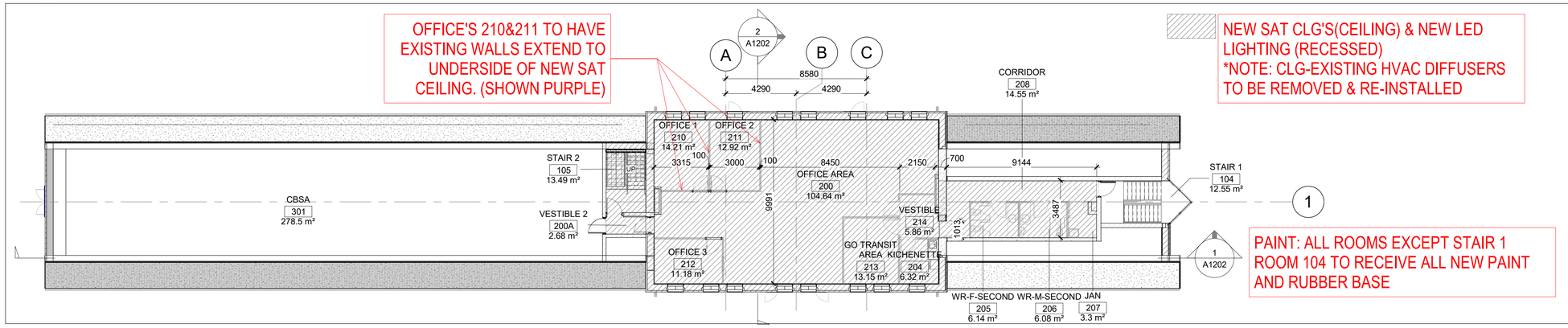
4 | SECOND FLOOR EXISTING AREAS

A1100 | REF: A1200 | SCALE: 1 : 300



1 | GROUND FLOOR EXISTING

A1100 | REF: A1200 | SCALE: 1 : 150



3 | SECOND FLOOR EXISTING

A1100 | REF: A1200 | SCALE: 1 : 150

METRIC

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LICENCE 7610

ARCHITECTURE | 49

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ISSUED FOR TENDER

Niagara Region

NIAGARA FALLS TRAIN STATION UPGRADES

EXISTING - FLOOR PLANS

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A1100

METRIC

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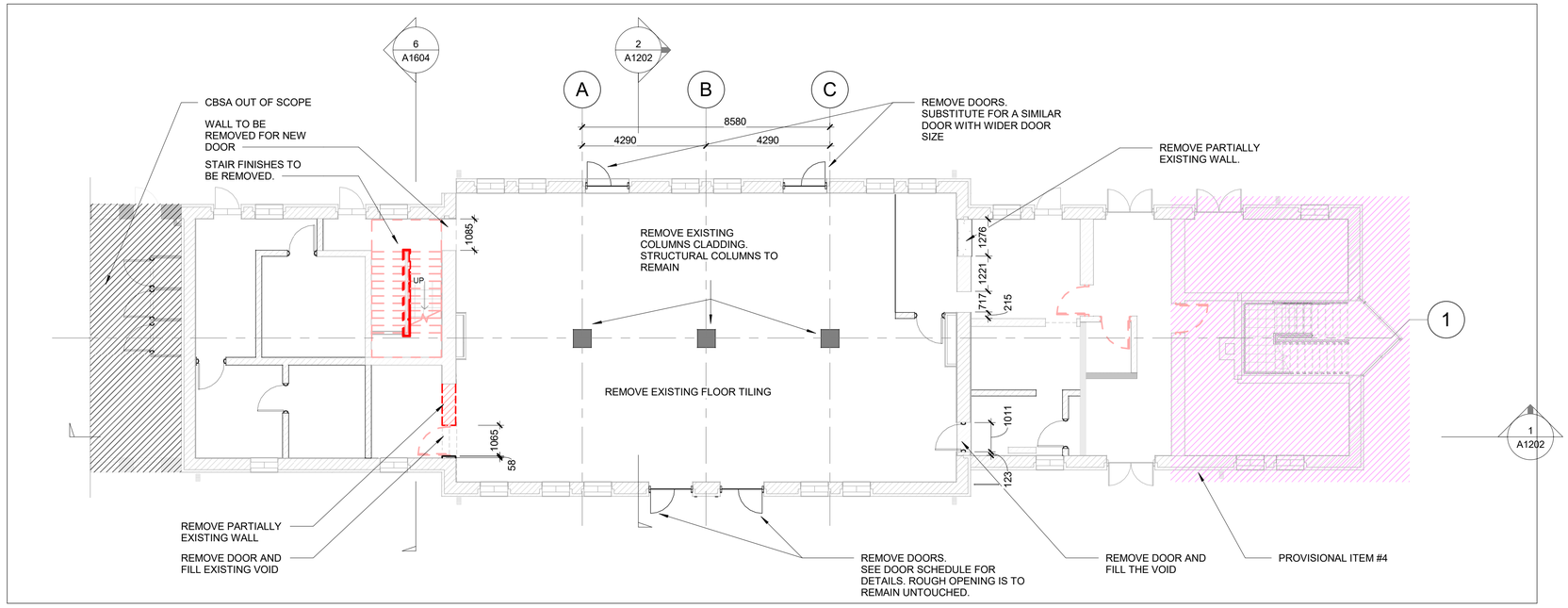
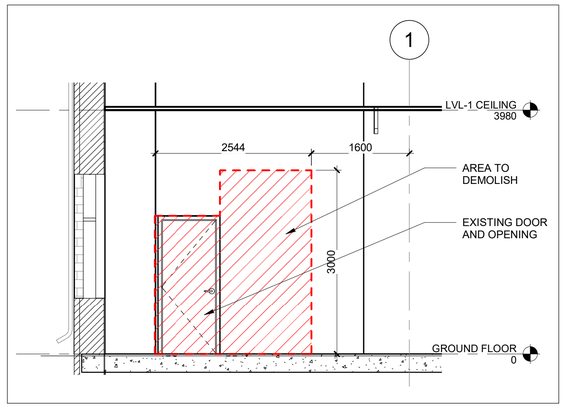


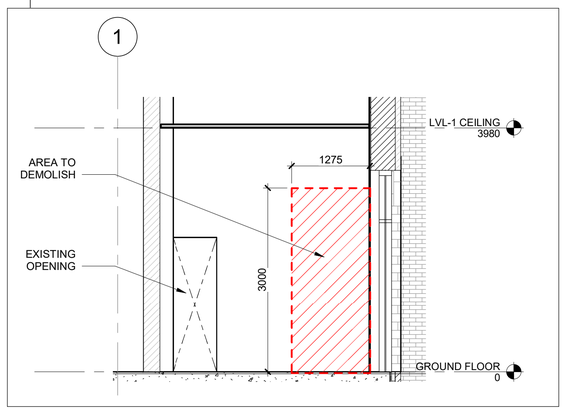
1 GROUND FLOOR DEMOLITION-BASE BID

A1200 | REF: A1200 | SCALE: 1 : 100



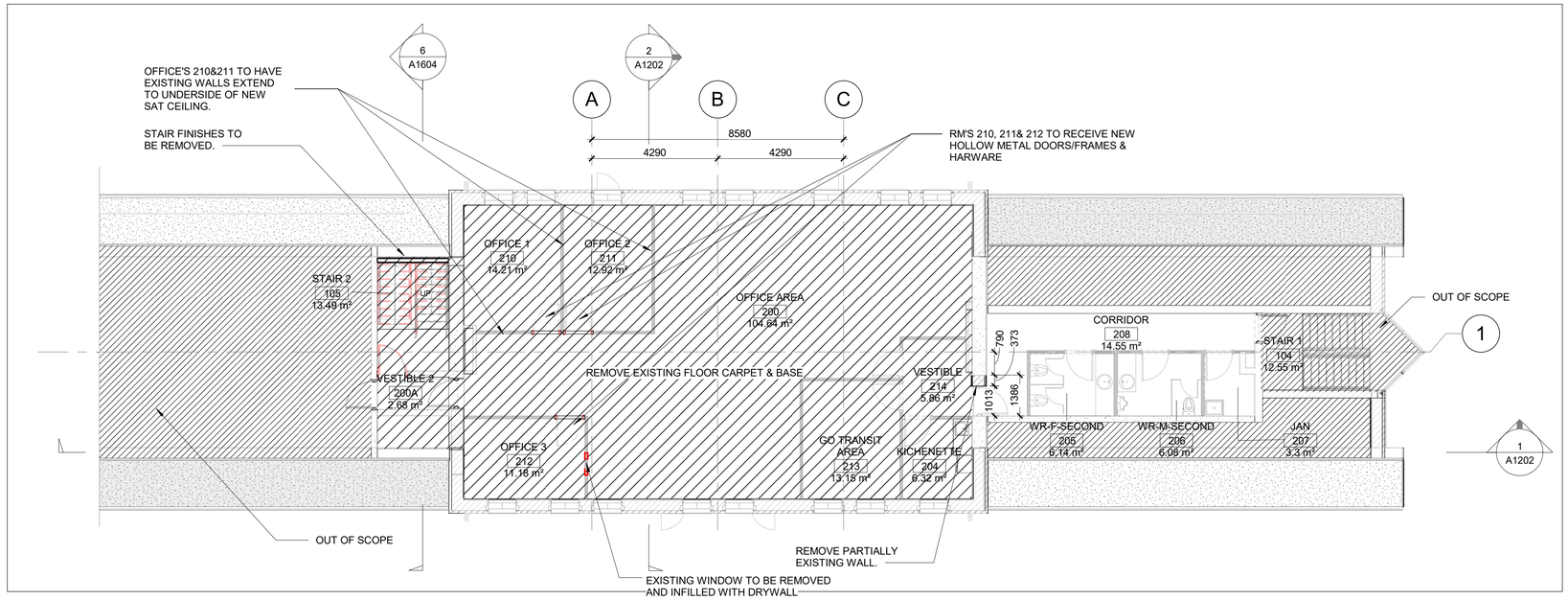
3 ELEVATION - WASHROOM ACCESS-BASE BID

A1200 | SCALE: 1 : 50



6 ELEVATION - TICKET OFFICE-BASE BID

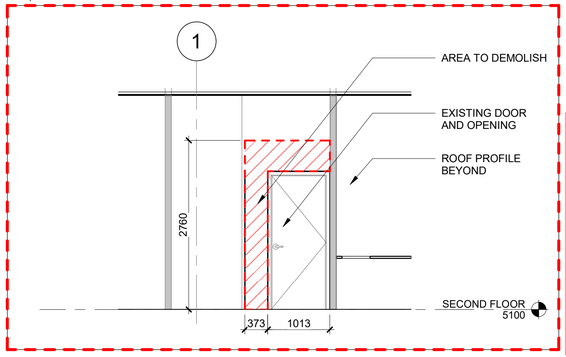
A1200 | REF: A1300 | SCALE: 1 : 50



CBSA
301
278.5 m²

2 SECOND FLOOR DEMOLITION

A1200 | REF: A1200 | SCALE: 1 : 100



PROVISIONAL ITEM #6

5 ELEVATION - SECOND FLOOR WSHR.

A1200 | SCALE: 1 : 50

LEGEND:

— — — IN RED ELEMENTS TO DEMOLISH

——— IN GREY ELEMENTS TO KEEP

NOTES:
1. MAKE GOOD ALL EXISTING SURFACES TO ALLOW FOR NEW WORKS.
2. MECH/ ELEC DEMO PLANS ARE TO BE READ INJUNCTION WITH THESE PLANS.

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Niagara Region

NIAGARA FALLS TRAIN STATION UPGRADES

DEMOLITION - FLOOR PLANS

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A1200

METRIC

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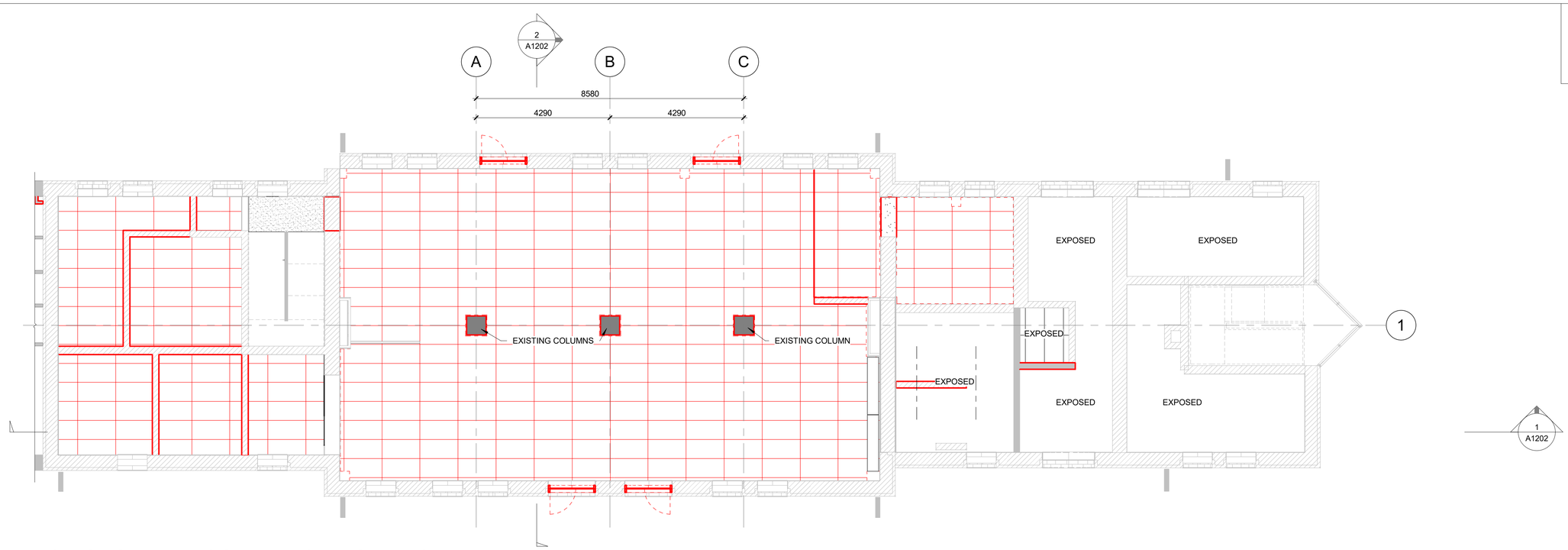
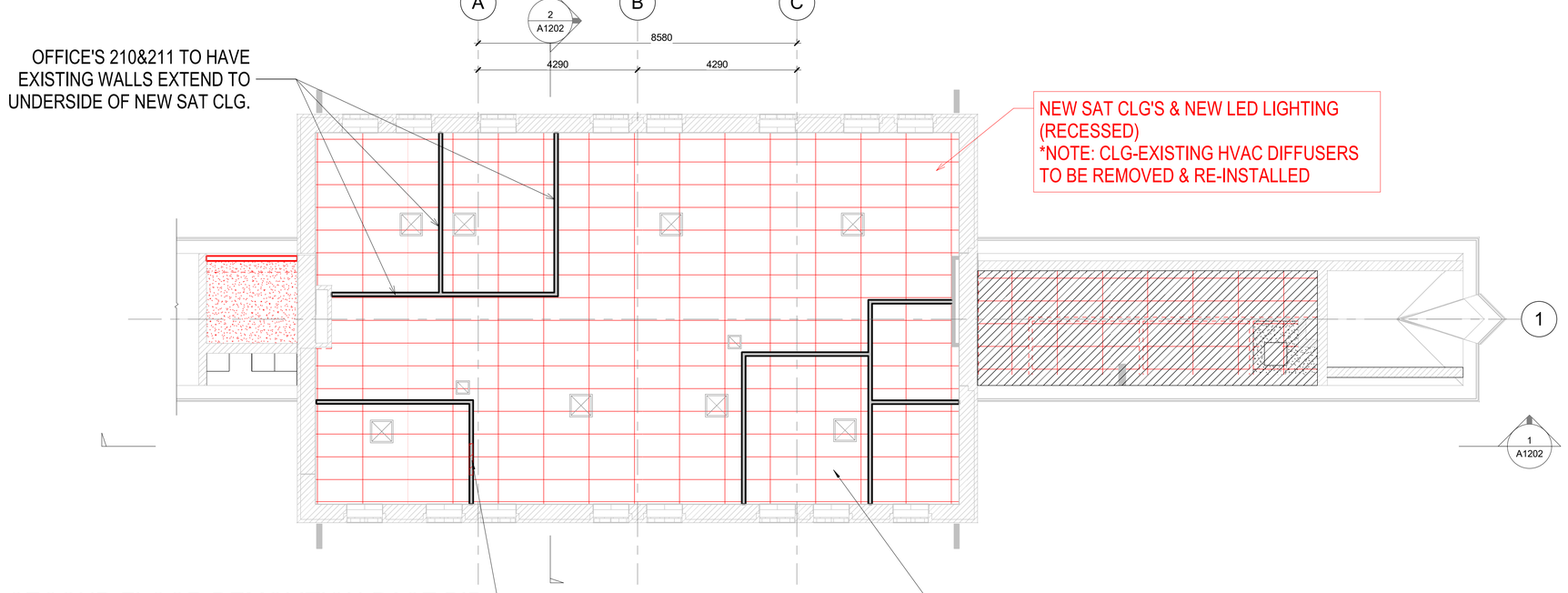


1 | RCP GROUND FLOOR DEMOLITION-BASE BID

A1201 | REF: A1200 | SCALE: 1 : 75



2 | RCP SECOND FLOOR DEMOLITION-BASE BID

A1201 | REF: A1200 | SCALE: 1 : 75

LEGEND:

- IN RED ELEMENTS TO DEMOLISH
- IN GREY ELEMENTS TO KEEP

NOTES:
1. MAKE GOOD ALL EXISTING SURFACES TO ALLOW FOR NEW WORKS.
2. MECH/ ELEC DEMO PLANS ARE TO BE READ INJUNCTION WITH THESE PLANS.

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NIAGARA FALLS TRAIN STATION UPGRADES

DEMOLITION - RCP

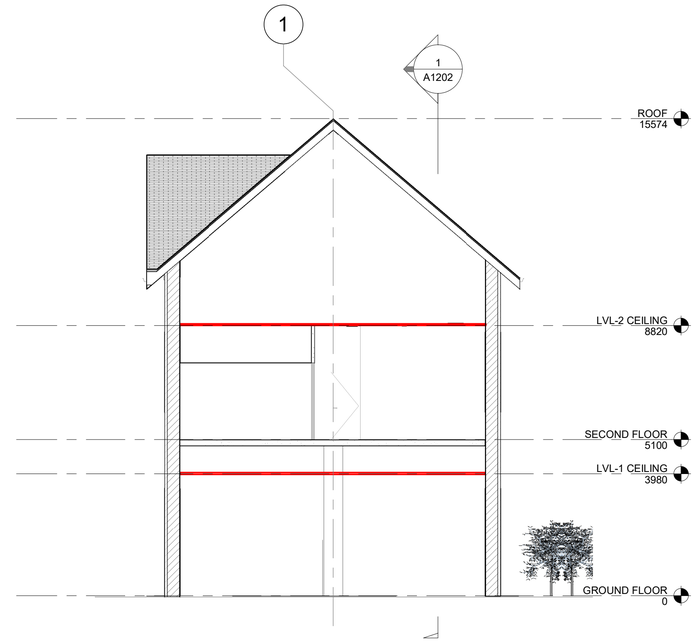
CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A1201

METRIC

ALL DIMENSONS SHOWN ARE
IN METRES AND/OR MILLIMETRES
UNLESS OTHERWISE NOTED.

1 | DEMOLITION LONGITUDINAL SECTION

A1202 | REF: A1100 SCALE: 1 : 100



2 | DEMOLITION TRANSVERSAL SECTION

A1202 | REF: A1100 SCALE: 1 : 100

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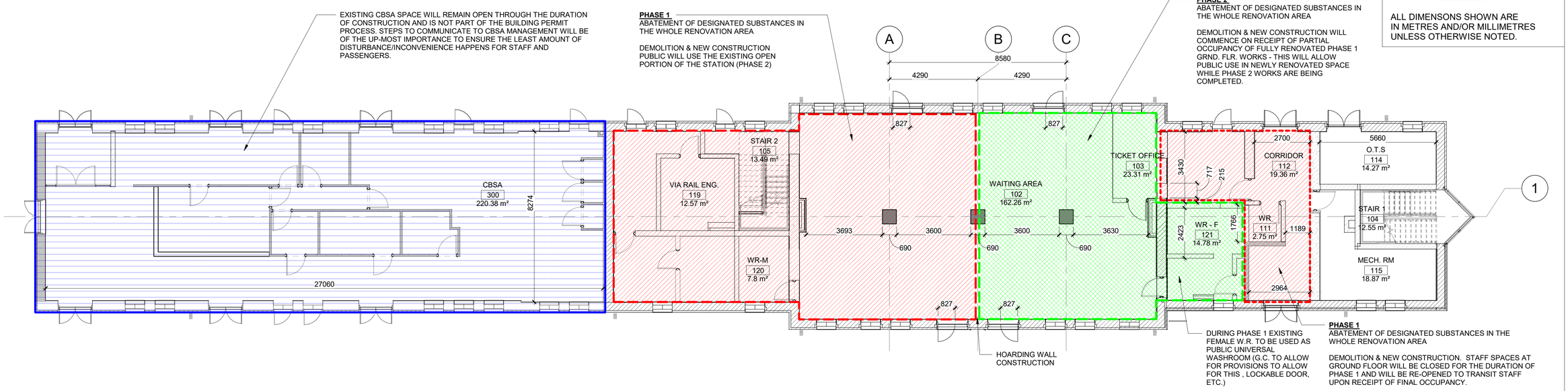
NIAGARA FALLS TRAIN STATION UPGRADES

DEMOLITION - BUILDING SECTIONS

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A1202

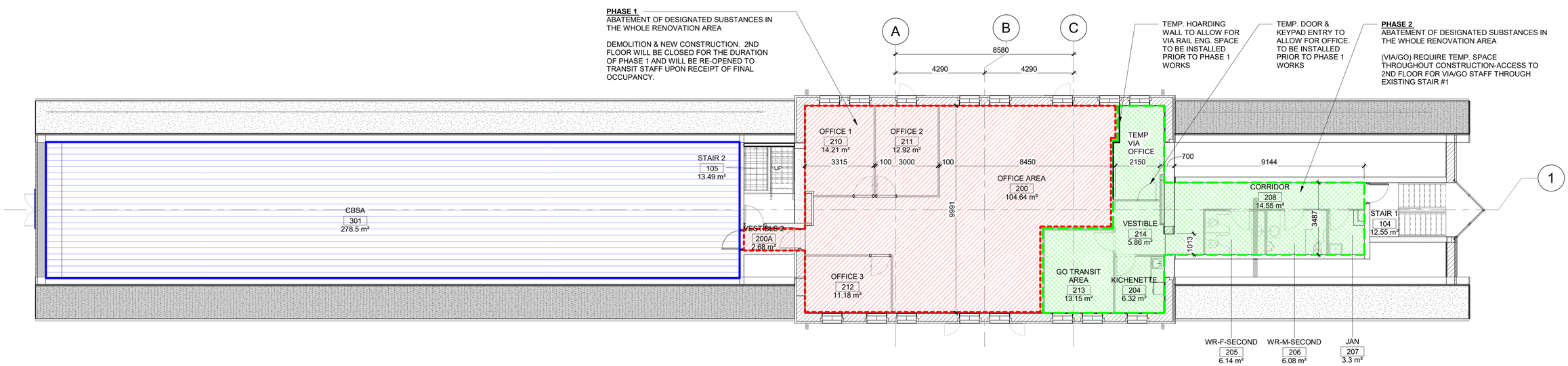
METRIC

ALL DIMENSONS SHOWN ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE NOTED.



1 | GROUND FLOOR EXISTING STAGING

A1251 | REF: A1200 SCALE: 1 : 100



2 | SECOND FLOOR EXISTING STAGING

A1251 | REF: A1200 SCALE: 1 : 100

STAGING NOTES:

1. **DURING ABATEMENT:** GENERAL CONTRACTOR (GC) MUST REMOVE ALL ASBESTOS CONTAINING MATERIALS (ACM) AS PER HAZARDOUS BUILDING MATERIALS ASSESSMENT PRIOR TO ALTERATION OR MAINTENANCE WORK. HE ALSO MUST:
   - A. PREPARE AN ASBESTOS MANAGEMENT PROGRAM (AMP)
   - B. REMOVE AND DISPOSE OF POLYCHLORINATED BIPHENYLS (PCB) BALLASTS AND MERCURY-CONTAINING ITEMS WHEN TAKEN OUT OF SERVICE AS PER DEMOLITION SPECS.
   - C. FOLLOW APPROPRIATE SAFE WORK PROCEDURES WHEN HANDLING OR DISTURBING ASBESTOS, LEAD, SILICA AND MOULD.
   - D. REMEDIATE THE MATERIALS AFFECTED BY MOULD AS RECOMMENDED IN HAZARDOUS BUILDING MATERIALS ASSESSMENT
2. DURING CONSTRUCTION **PHASES 1 AND 2** THE PUBLIC WILL CONTINUOUSLY HAVE ACCESS TO WASHROOMS AND REQUIRED PATH OF EXITS.

STAGING LEGEND

- STAGING PHASE 1 - PHASE FOR ABATEMENT DEMOLITION AND CONSTRUCTION
- STAGING PHASE 2 - PHASE FOR ABATEMENT DEMOLITION AND CONSTRUCTION. PHASE 2 CANNOT COMMENCE UNTIL PARTIAL OCCUPANCY REVIEW HAS BEEN GRANTED BY CITY FOR PHASE 1
- CBSA (NIC.)

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PROJECT NO. BE20101016

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Niagara Region

NIAGARA FALLS TRAIN STATION UPGRADES

STAGING

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A1251

METRIC

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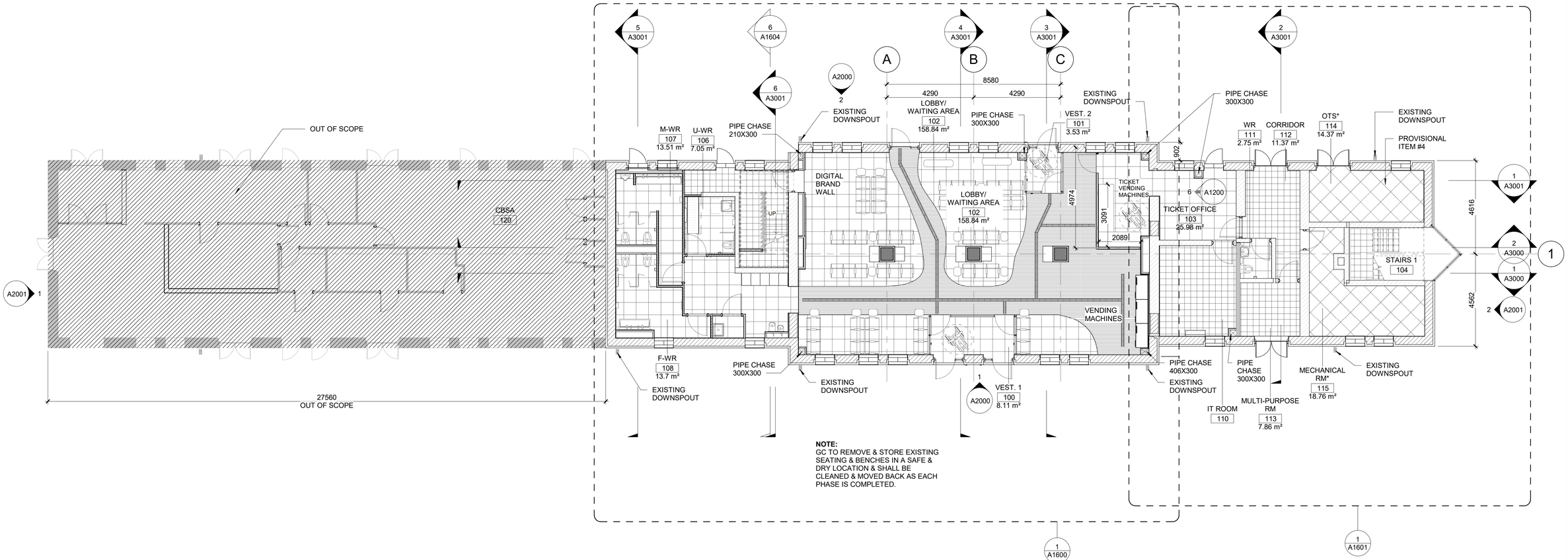

1 | GROUND FLOOR

A1300 | REF: A1200 SCALE: 1 : 100

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Niagara Region

NIAGARA FALLS TRAIN STATION UPGRADES

GROUND FLOOR PLAN

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A1300

METRIC

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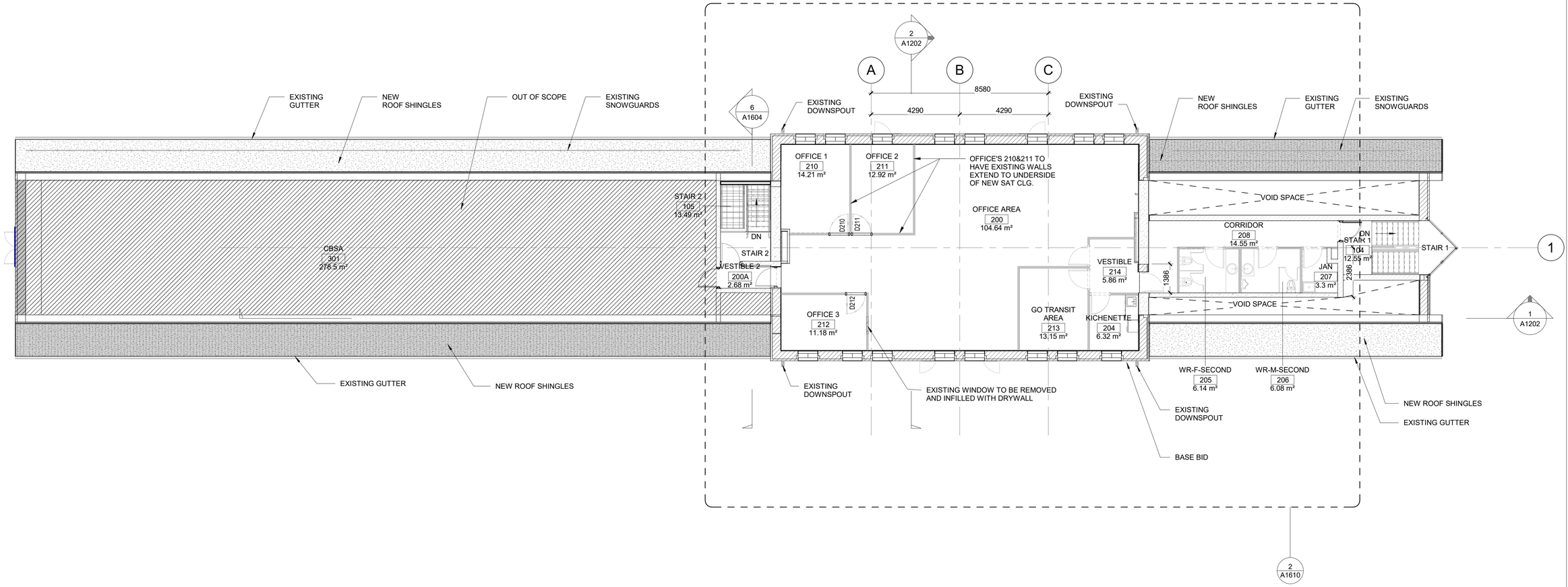

1 | SECOND FLOOR(P)

A1301 | REF: A1200 SCALE: 1 : 100

REFERENCE DRAWINGS		ISSUE			REVISIONS		
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DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

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7610

ARCHITECTURE 49

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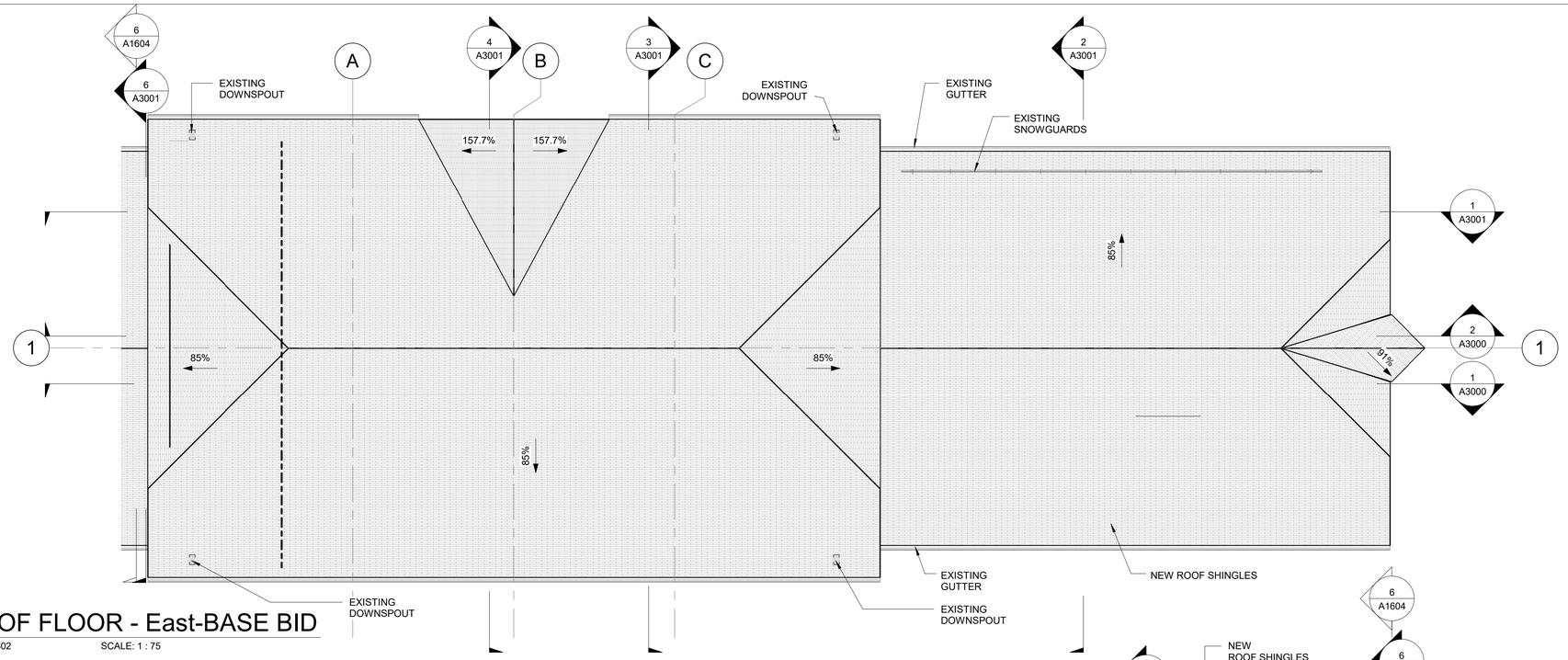
Niagara Region

NIAGARA FALLS TRAIN STATION UPGRADES

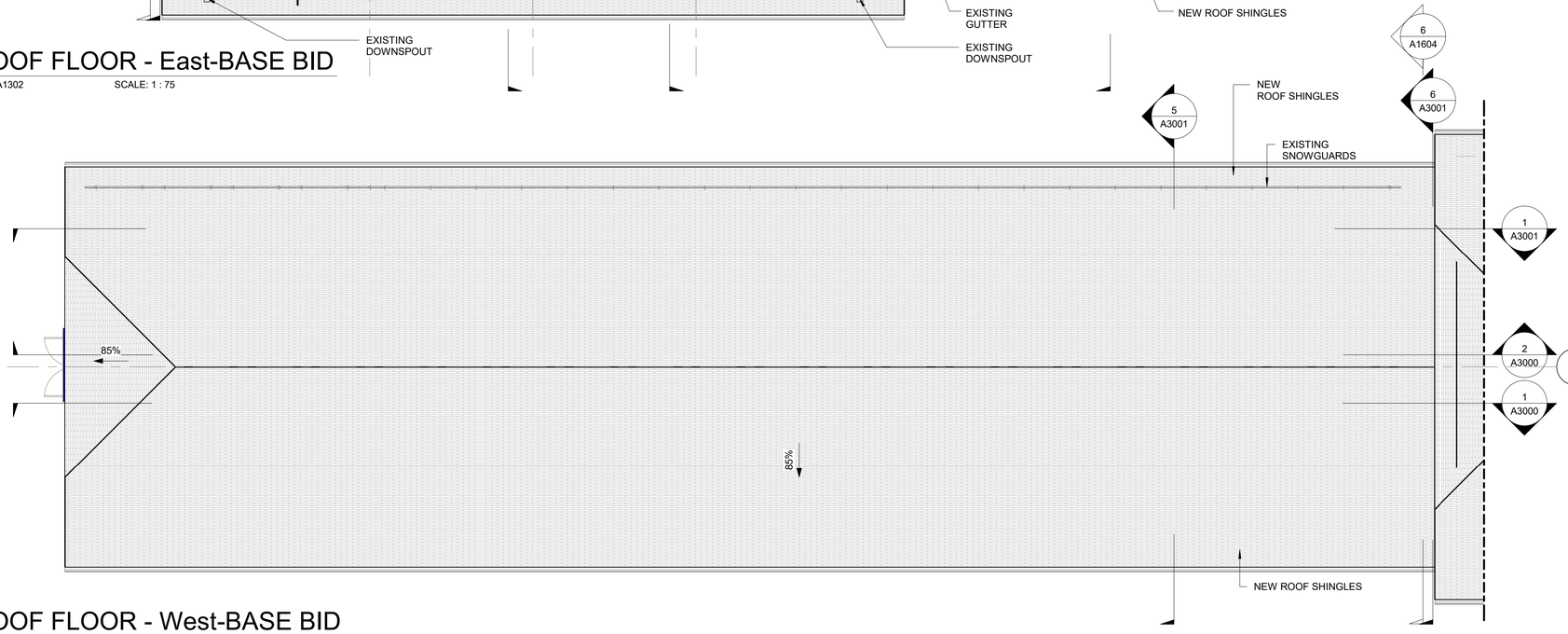
SECOND FLOOR PLAN

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A1301



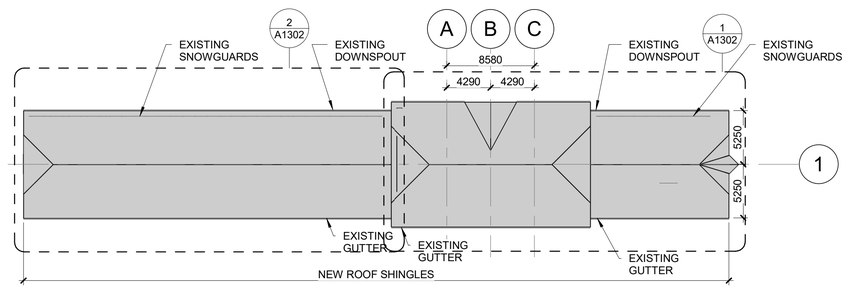
1 | ROOF FLOOR - East-BASE BID

A1302 | REF: A1302 | SCALE: 1 : 75



2 | ROOF FLOOR - West-BASE BID

A1302 | REF: A1302 | SCALE: 1 : 75



METRIC

ALL DIMENSONS SHOWN ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE NOTED.

ROOFING NOTES

1. NEW SHINGLES FULL ROOF AREA
2. EXISTING SNOWGUARDS TO BE REPLACED AT THE SAME LOCATIONS AFTER ROOFING WORKS.
3. GC TO PROVIDE A MIN, OF 3 SAMPLES OF ROOF SHINGLE TO ALLOW FOR CITY HERITAGE APPROVALS

REFERENCE DRAWINGS		ISSUE			REVISIONS		
		B	2024/02/08	ISSUED FOR TENDER			
		A	2023/04/24	ISSUED FOR BUILDING PERMIT			
DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

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CHECKED BY: S.CHERIAN 2023/09/22	APPROVED BY: S.CHERIAN 2023/09/22
SCALE: AS SHOWN	FULL SIZE ONLY

ONTARIO ASSOCIATION OF ARCHITECTS
SHERY KOZHIMALA CHERIAN
LICENCE
7610

ARCHITECTURE 49

PROJECT NO. BE20101016

ISSUED FOR TENDER

Niagara Region

NIAGARA FALLS TRAIN STATION UPGRADES

ROOF PLAN

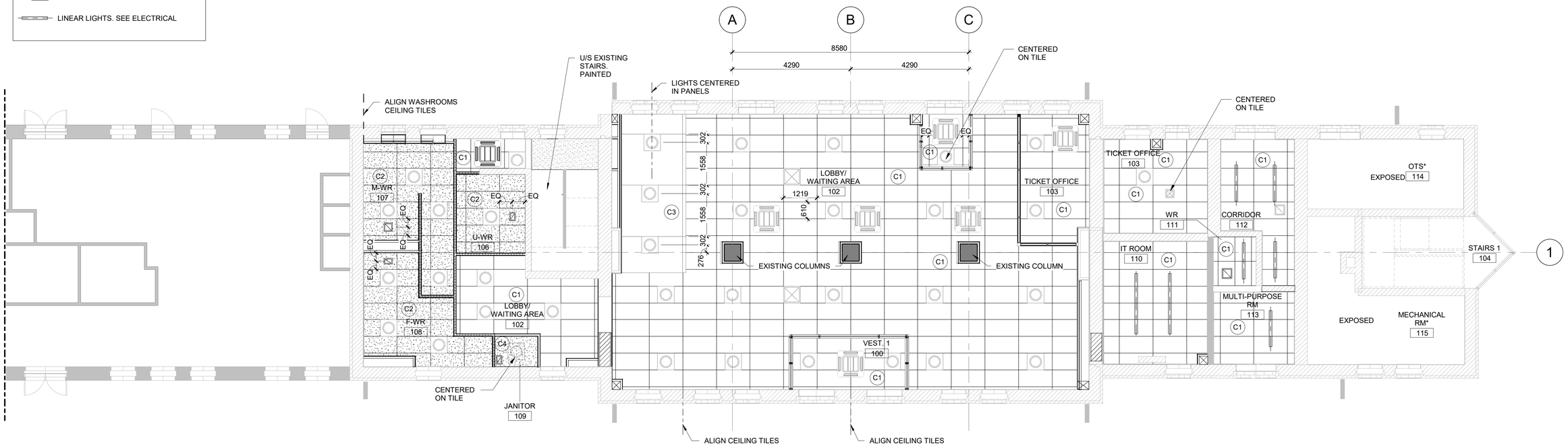
CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A1302

METRIC

ALL DIMENSONS SHOWN ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE NOTED.

LEGEND

- C1 ACOUSTIC CEILING TILE 24" x 48" (WHITE)
- C2 ACOUSTIC CEILING TILE 24" x 48" VINYL COATED (WHITE)
- C3 HPL PANELS ON CEILING
- C4 GWB CEILING
- EGGCRATE. SEE MECHANICAL
- CEILING CASSETTE. SEE MECHANICAL
- CONE DIFFUSER. SEE MECHANICAL
- LIGHT FIXTURES. SEE ELECTRICAL
- LINEAR LIGHTS. SEE ELECTRICAL



1 | RCP GROUND FLOOR-BASE BID

A1400 | REF: A1200 SCALE: 1 : 75

REFERENCE DRAWINGS		ISSUE			REVISIONS		
		B	2024/02/08	ISSUED FOR TENDER			
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DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

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NIAGARA FALLS TRAIN STATION UPGRADES

RCP GROUND FLOOR PLAN

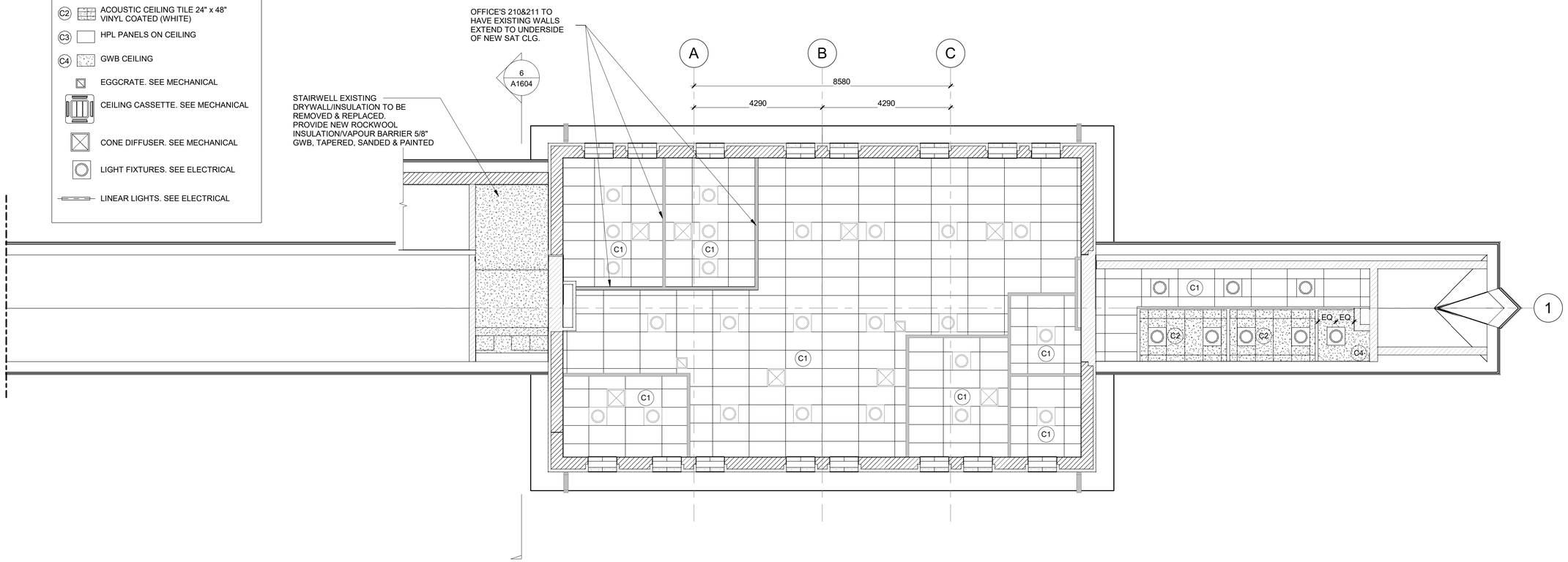
CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A1400

METRIC

ALL DIMENSONS SHOWN ARE
IN METRES AND/OR MILLIMETRES
UNLESS OTHERWISE NOTED.

LEGEND

- C1 — ACOUSTIC CEILING TILE 24" x 48" (WHITE)
- C2 — ACOUSTIC CEILING TILE 24" x 48" VINYL COATED (WHITE)
- C3 — HPL PANELS ON CEILING
- C4 — GWB CEILING
- EGGCRATE. SEE MECHANICAL
- CEILING CASSETTE. SEE MECHANICAL
- CONE DIFFUSER. SEE MECHANICAL
- LIGHT FIXTURES. SEE ELECTRICAL
- LINEAR LIGHTS. SEE ELECTRICAL



1 | RCP SECOND FLOOR-BASE BID

A1401 | REF: A1200 SCALE: 1 : 75

REFERENCE DRAWINGS		ISSUE			REVISIONS		
		B	2024/02/08	ISSUED FOR TENDER			
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DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

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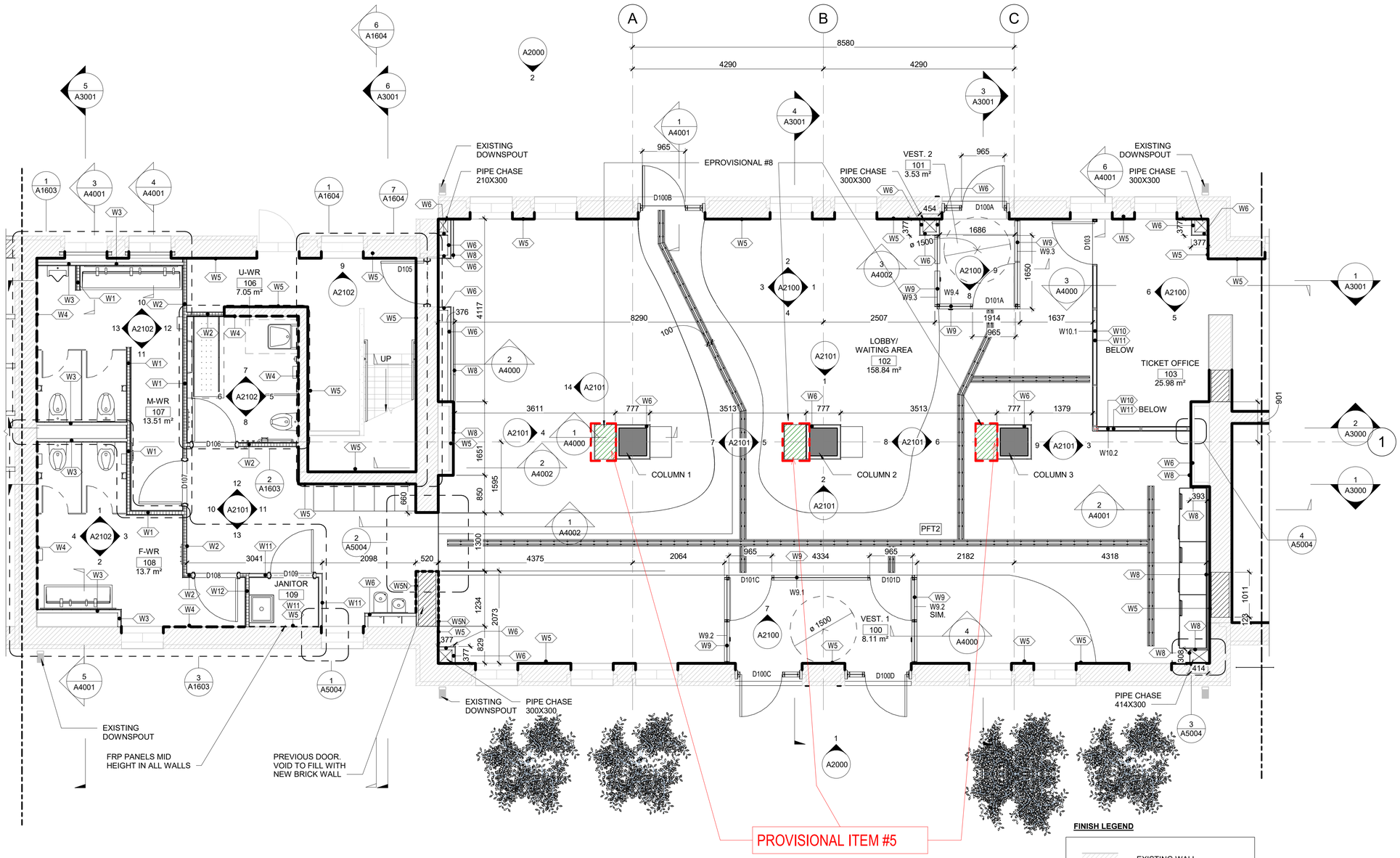
RCP SECOND FLOOR PLAN

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A1401

METRIC

ALL DIMENSONS SHOWN ARE
IN METRES AND/OR MILLIMETRES
UNLESS OTHERWISE NOTED.



FINISH LEGEND

- EXISTING WALL
- EXISTING WALL TO PATCH AND PAINT
- EXISTING WALL TO TILE
- EXISTING WALL WITH RFP CLADDING
- NEW WALL TO PATCH AND PAINT
- PROVISIONAL ITEM #4

1 | ENLARGED PLAN - GROUND FLOOR 1-BASE BID

A1600 | REF: A1300 | SCALE: 1 : 50

REFERENCE DRAWINGS		ISSUE			REVISIONS		
		B	2024/02/08	ISSUED FOR TENDER			
		A	2023/04/24	ISSUED FOR BUILDING PERMIT			
DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

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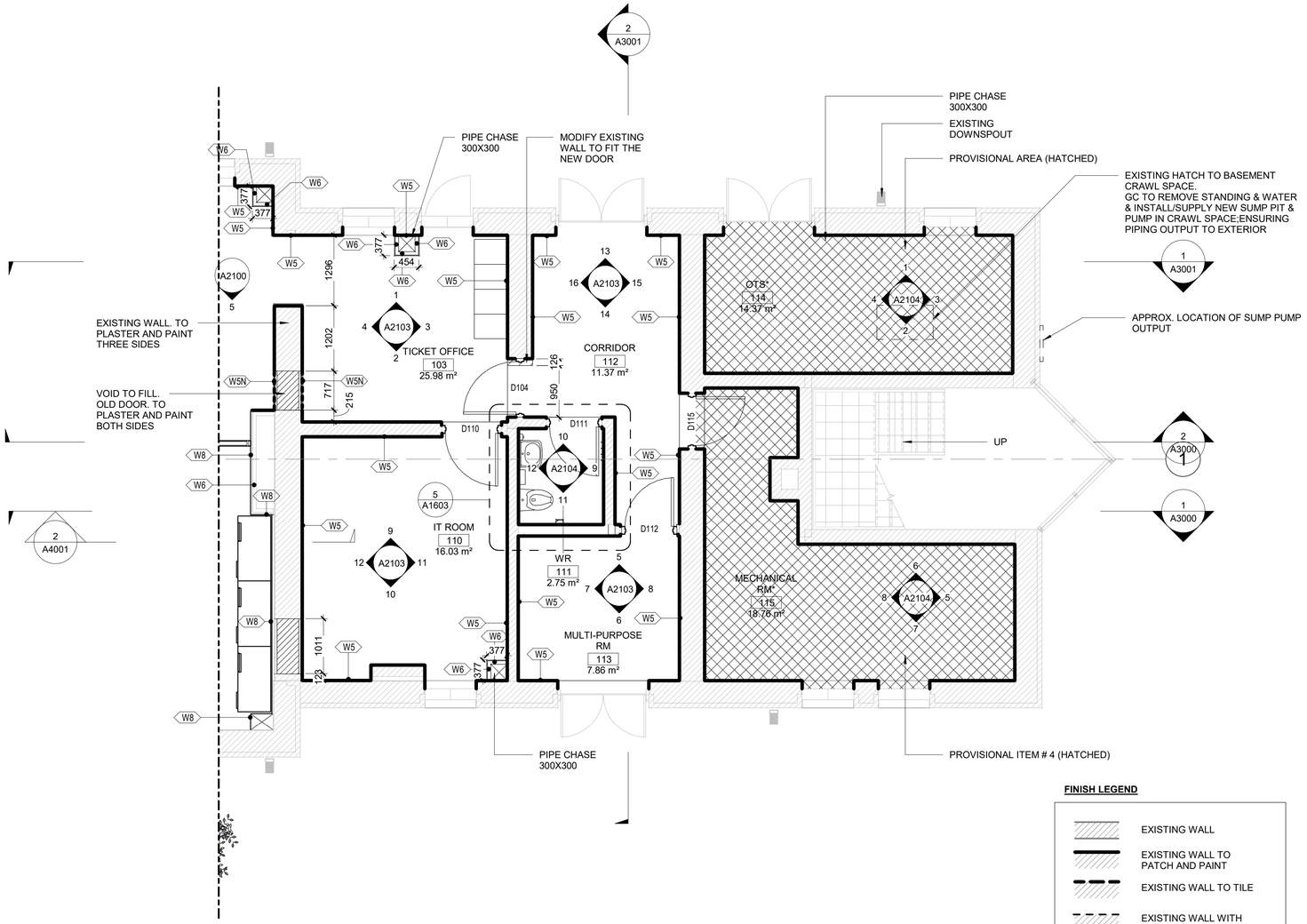
ENLARGED PLAN - GROUND FLOOR

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A1600

METRIC

ALL DIMENSONS SHOWN ARE
IN METRES AND/OR MILLIMETRES
UNLESS OTHERWISE NOTED.



FINISH LEGEND

- EXISTING WALL
- EXISTING WALL TO PATCH AND PAINT
- EXISTING WALL TO TILE
- EXISTING WALL WITH RFP CLADDING
- NEW WALL TO PATCH AND PAINT
- PROVISIONAL ITEM #4

1 | ENLARGED PLAN - GROUND FLOOR 2

A1601 | REF: A1300 SCALE: 1 : 50

REFERENCE DRAWINGS		ISSUE			REVISIONS		
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DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

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NIAGARA FALLS TRAIN STATION UPGRADES

ENLARGED PLAN - GROUND FLOOR 2

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A1601

METRIC

ALL DIMENSONS SHOWN ARE
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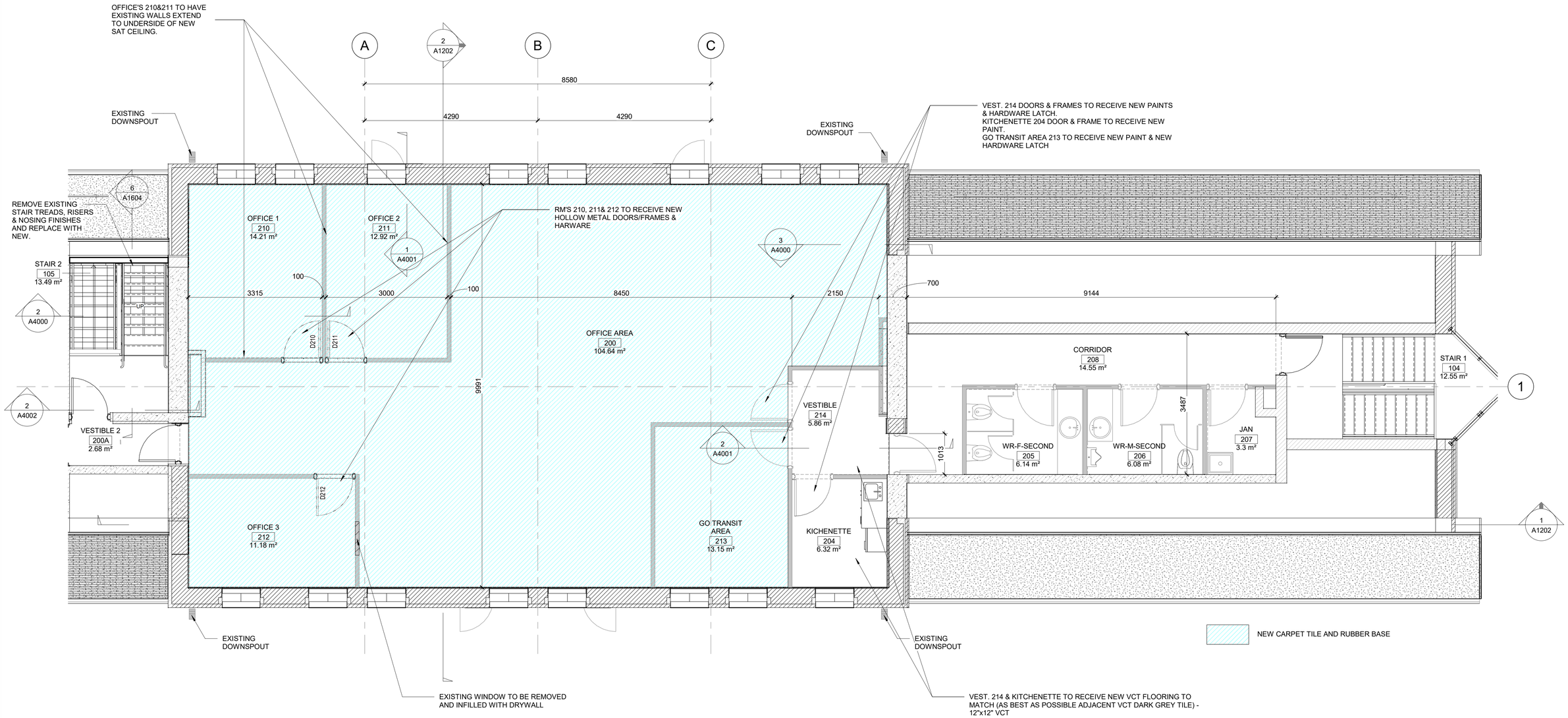
UNLESS OTHERWISE NOTED.



1 | SECOND FLOOR EXISTING-BASE BID

A1602 | REF: A1200 SCALE: 1 : 50

REFERENCE DRAWINGS		ISSUE			REVISIONS		
		B	2024/02/08	ISSUED FOR TENDER			
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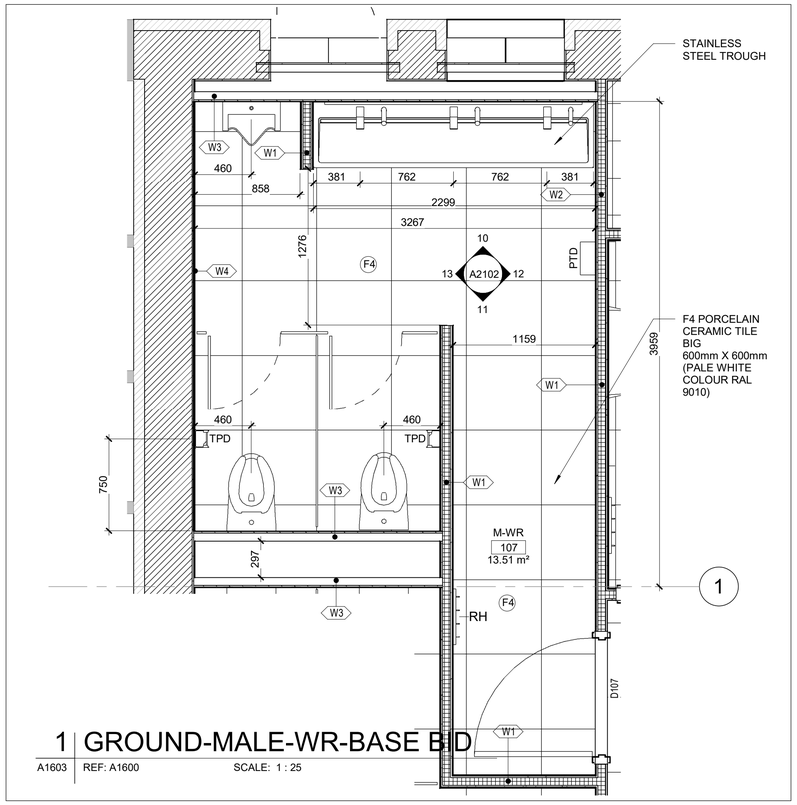
NIAGARA FALLS TRAIN STATION UPGRADES

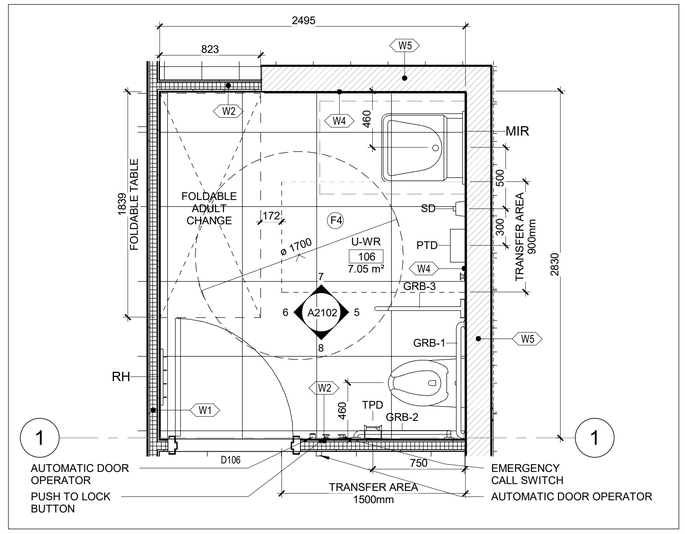
ENLARGED PLAN - SECOND FLOOR 2

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A1602



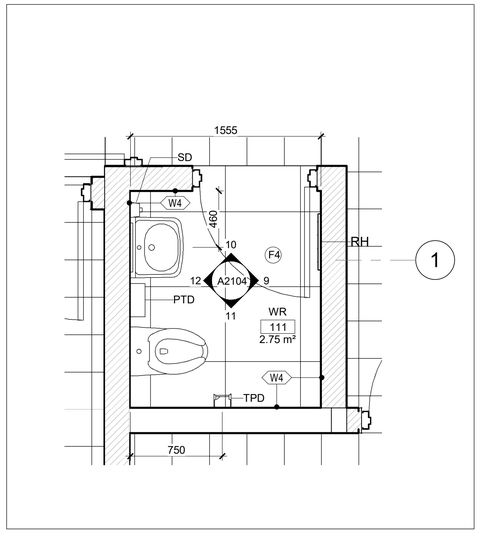
1 | GROUND-MALE-WR-BASE BID

A1603 | REF: A1600 | SCALE: 1 : 25



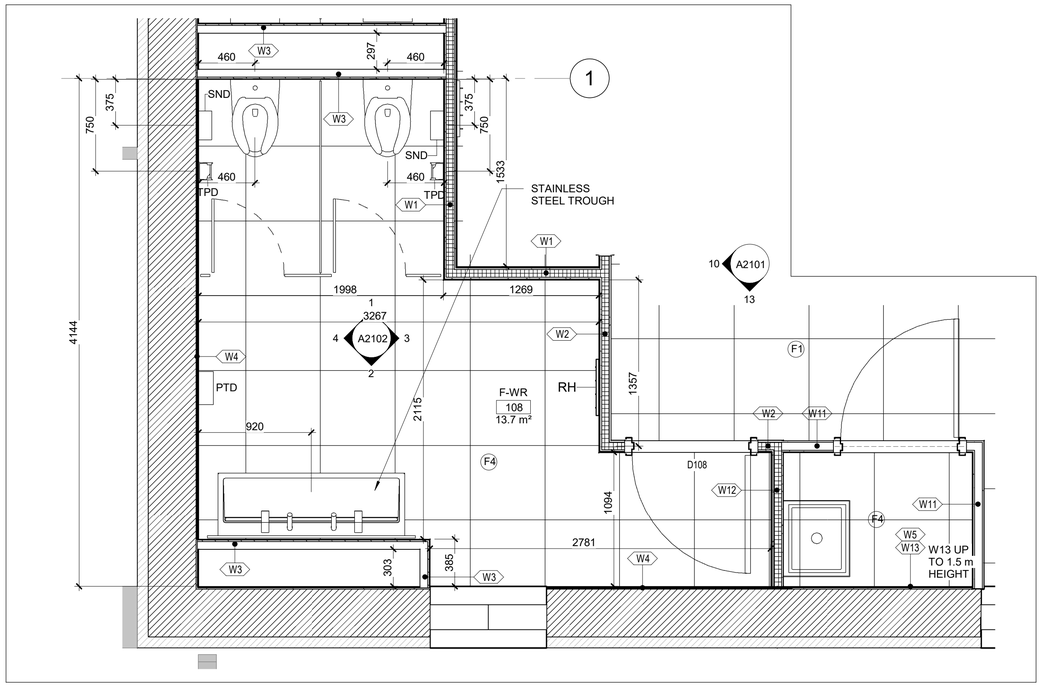
2 | ENL. PLAN - GROUND - UNIVERSAL WR-BASE BID

A1603 | REF: A1600 | SCALE: 1 : 25



5 | ENL. PLAN - GROUND - WR 111-BASE BID

A1603 | REF: A1601 | SCALE: 1 : 25



3 | ENLARGED PLAN - GROUND - F-WR-BASE BID

A1603 | REF: A1600 | SCALE: 1 : 25

WASHROOM SCHEDULE

MIR	- MIRROR
SD	- SOAP DISPENSER
PTD	- PAPER TOWEL DISPENSER
TPD	- TOILET PAPER DISPENSER
SND	- SANITARY NAPKIN DISPOSAL
GB1	- HORIZONTAL GRAB BAR
GB2	- L- SHAPED GRAB BAR
GB3	- SWING-UP GRAB BAR
RH	- ROBE HOOK

FLOOR TILE LEGEND

F1	PORCELAIN TILE 600mm X 600mm (CREAM COLOUR RAL 9001)
F2	PORCELAIN TILE 300mm X 1200mm WOOD TEXTURIZED
F3	DIRECTIONAL TACTILE TILE 600mm X 120mm (BLACK COLOUR)
F4	PORCELAIN TILE 600mm X 600m (PALE WHITE COLOUR RAL 9010)
F5	EPOXI PAINT(P)
F6	VYNIL TILES 300mm X 300m
F7	CARPET FLOOR (BASE BID)

WALL LEGEND

W1, W2, W3	600x600mm PORCELAIN TILE BIG FORMAT WHITE
W4	PORCELAIN TILE BIG FORMAT WHITE ON EXISTING WALL
W5	PLASTER PATCH AND PAINT ON EXISTING WALL
W5N	PLASTER AND PAINT ON NEW WALL
W6	DRYWALL PAINTED
W7, W8	HPL PANEL
W9	INTERIOR CURTAIN WALL
W10	INTERIOR CURTAIN WALL AT TICKET OFFICE
W11	FRP PANEL UP TO 1.5m & PAINTED
W12	FRP PANEL UP TO 1.5m & PORCELAIN TILE
W13	FRP PANEL UP TO 1.5m ON EXISTING WALL
W14	ACOUSTICAL DRYWALL ASSEMBLY

METRIC

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LICENCE 7610

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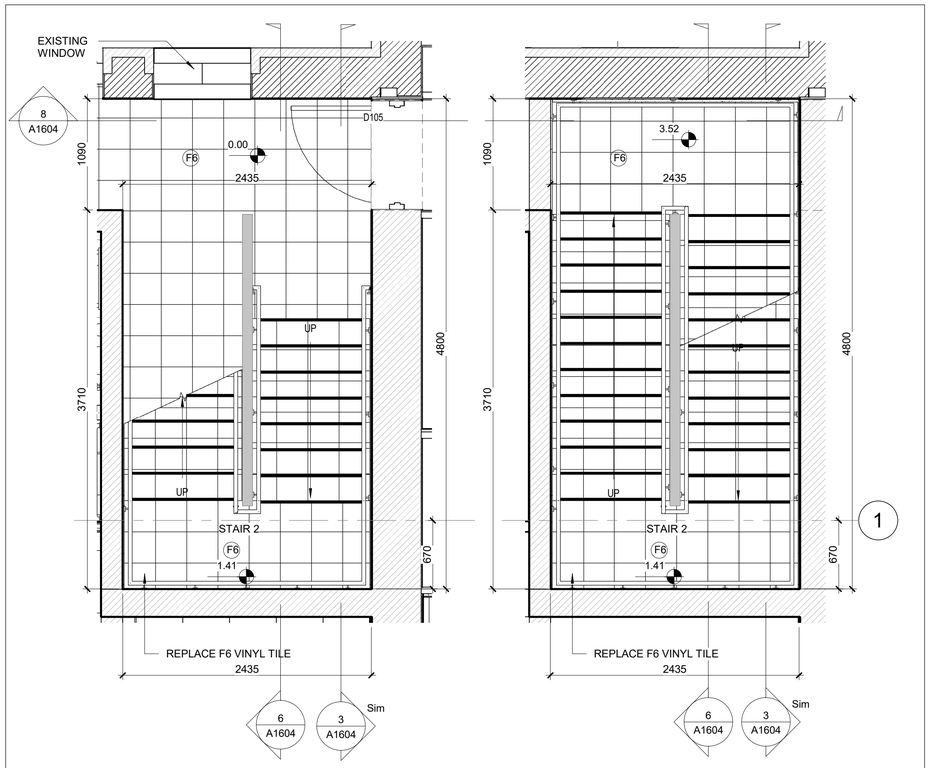
NIAGARA FALLS TRAIN STATION UPGRADES

ENLARGED PLAN - WASHROOMS

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A1603

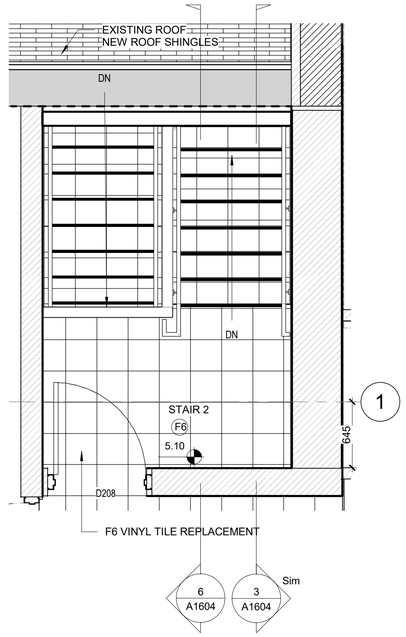


1 | GROUND FLOOR PLAN-BB

A1604 | REF: A1600 | SCALE: 1 : 30

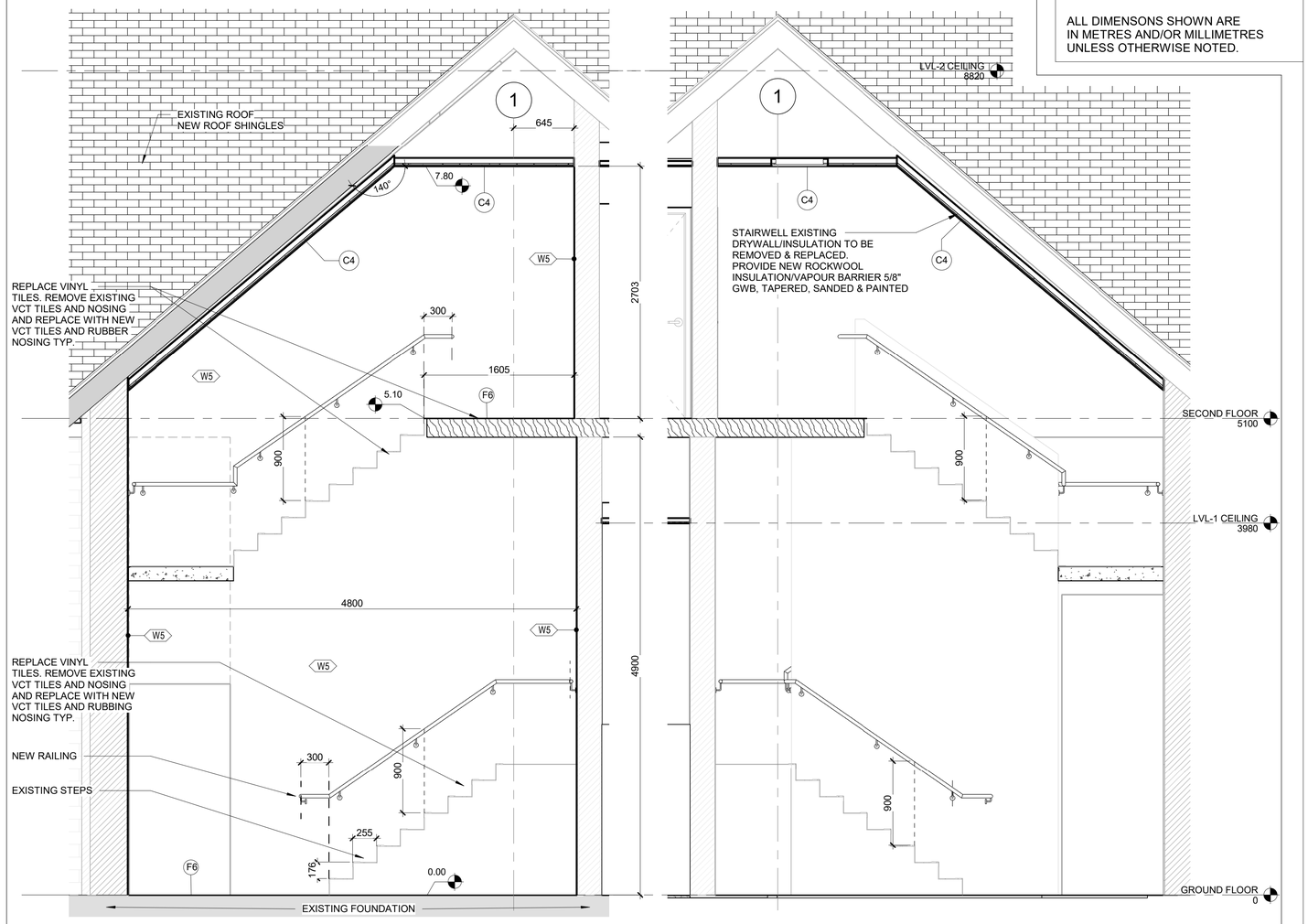
7 | INTERMEDIATE FLOOR PLAN-BB

A1604 | REF: A1600 | SCALE: 1 : 30



2 | 2nd FLOOR - STAIR 2-BB

A1604 | REF: A1602_obs | SCALE: 1 : 30

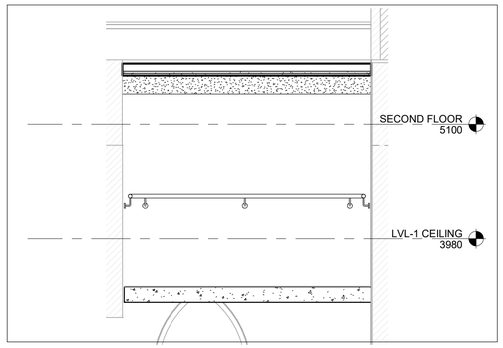


3 | ENLARGED SECTION - STAIR 2-BB

A1604 | REF: A1604 | SCALE: 1 : 30

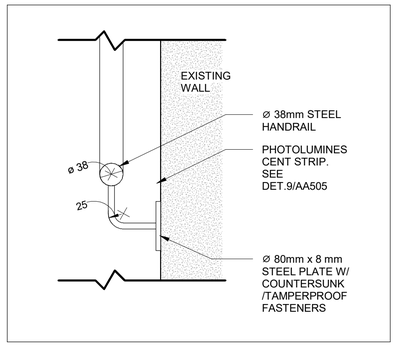
6 | ENLARGED SECTION 2 - STAIR 2-BB

A1604 | REF: A0200 | SCALE: 1 : 30



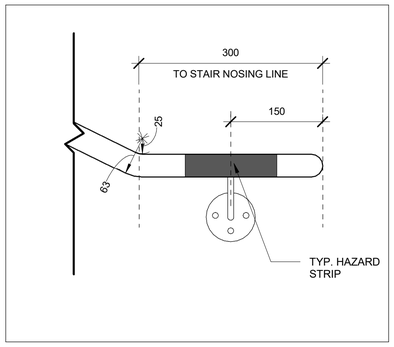
8 | ENLARGED SECTION 5 - STAIR 2-BB

A1604 | REF: A1604 | SCALE: 1 : 30



4 | SECTION HANDRAIL-BB

A1604 | SCALE: 1 : 5



5 | HANDRAIL EXTENSION-BB

A1604 | SCALE: 1 : 5

METRIC

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NIAGARA FALLS TRAIN STATION UPGRADES

STAIR 2 - PLAN & SECTION 1

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A1604

METRIC

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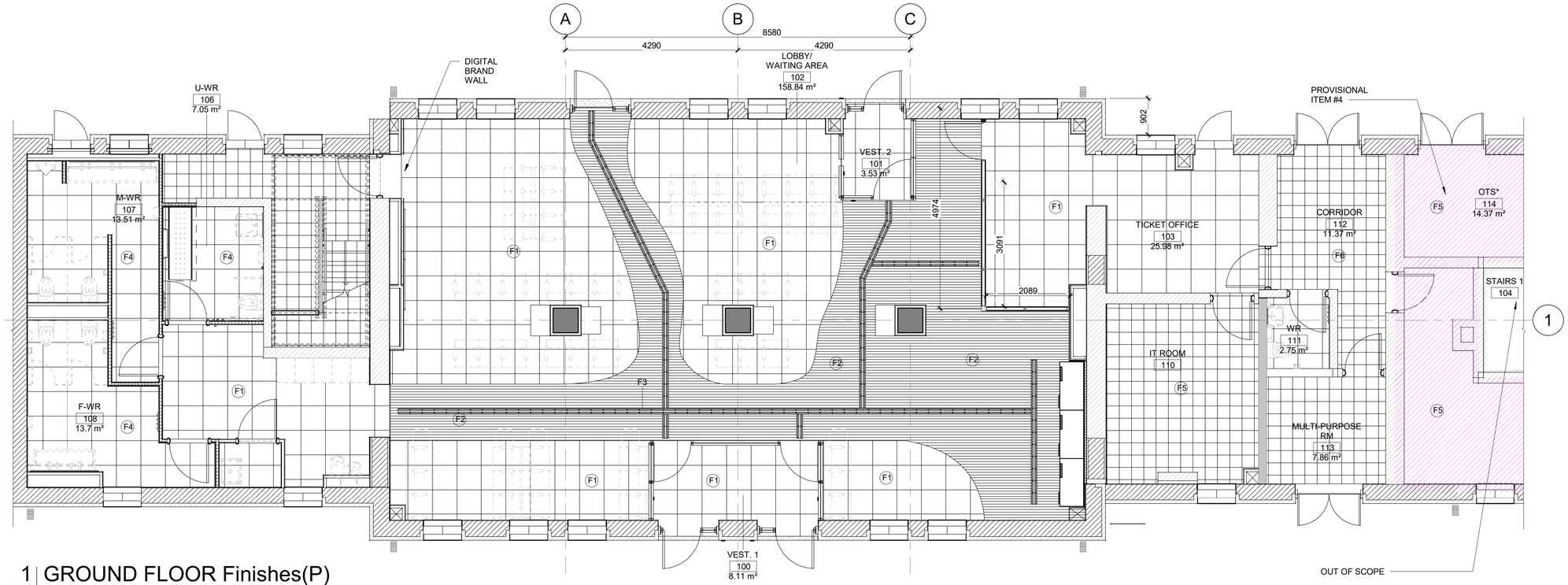
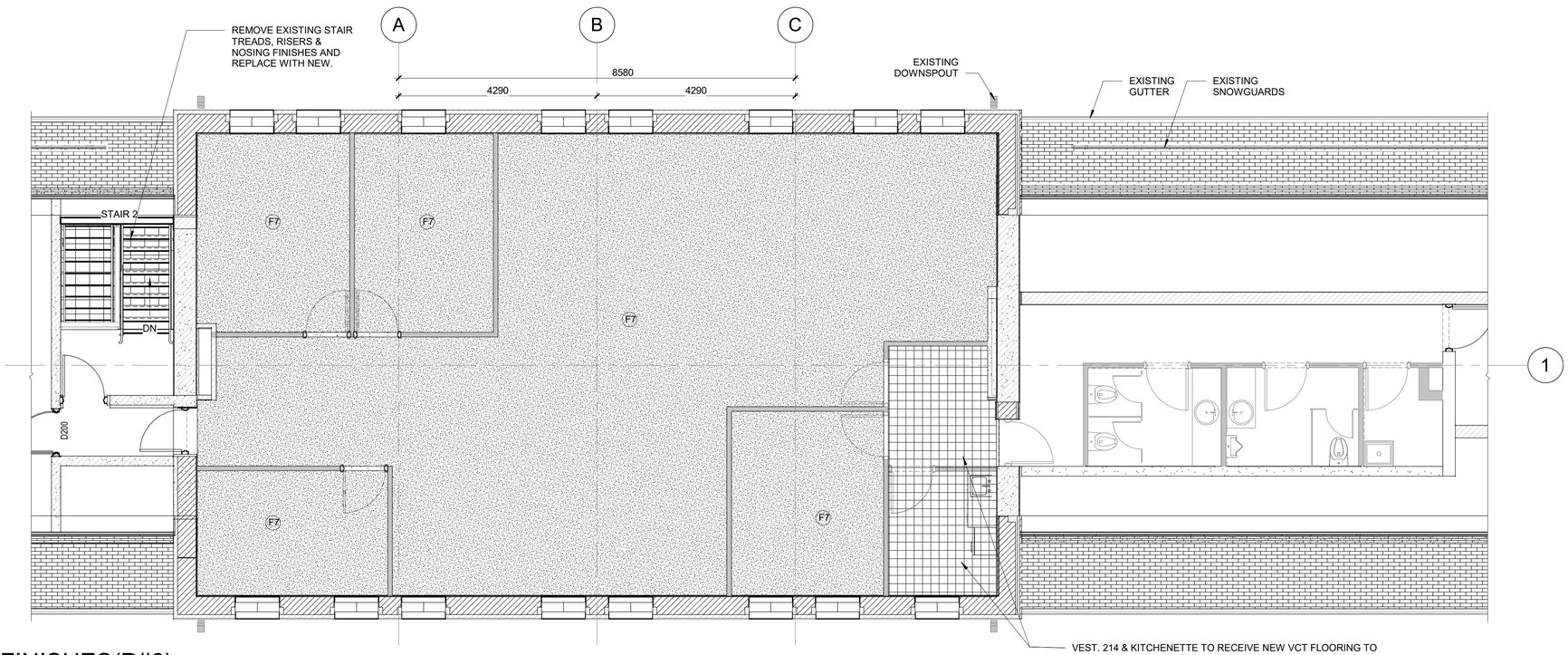


1 | GROUND FLOOR Finishes(P)

A1610 | REF: A1200 | SCALE: 1 : 60



2 | SECOND FLOOR FINISHES(P#6)

A1610 | REF: A1301 | SCALE: 1 : 60

FLOOR TILE LEGEND

F1	PORCELAIN TILE 600mm X 600mm (CREAM COLOUR RAL 9001)
F2	PORCELAIN TILE 300mm X 1200mm WOOD TEXTURIZED
F3	DIRECTIONAL TACTILE TILE 600mm X 120mm (BLACK COLOUR)
F4	PORCELAIN TILE 600mm X 600m (PALE WHITE COLOUR RAL 9010)
F5	EPOXI PAINT(P)
F6	VYNIL TILES 300mm X 300m
F7	CARPET FLOOR (BASE BID)

FLOOR TILE LEGEND

SCALE: 1 : 50

REFERENCE DRAWINGS		ISSUE			REVISIONS		
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NIAGARA FALLS TRAIN STATION UPGRADES

FLOOR FINISHES PLANS

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A1610

METRIC

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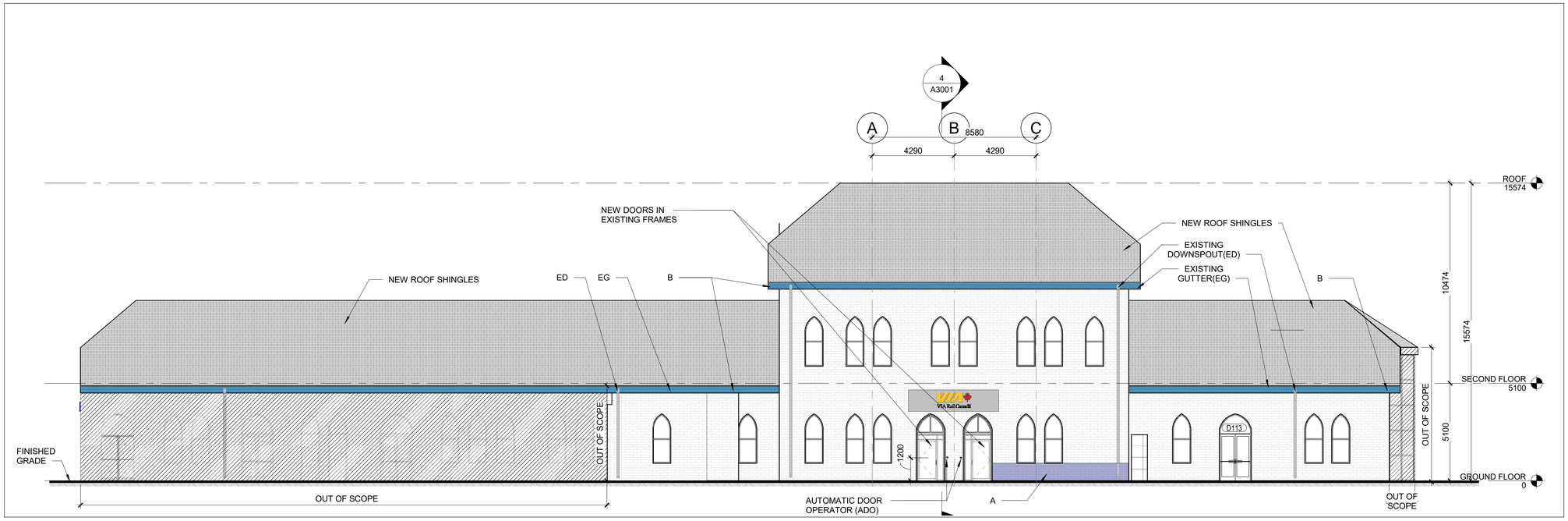
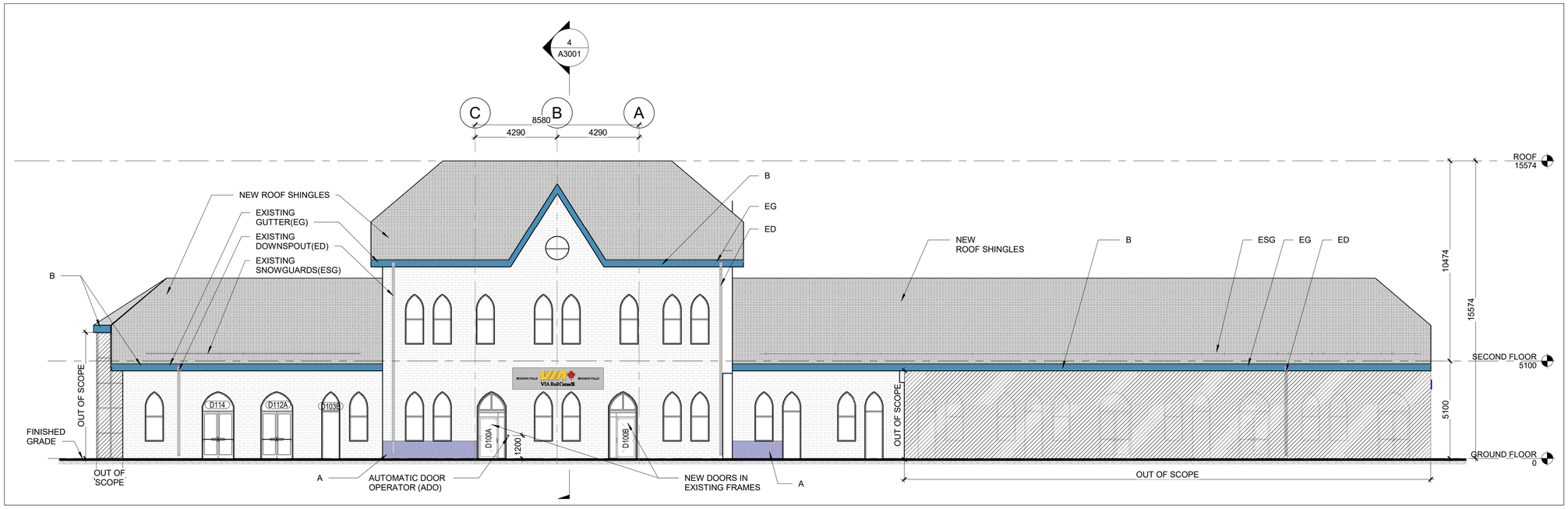


1 | SOUTH ELEVATION - EXISTING

A2000 | REF: A1300 | SCALE: 1 : 125



2 | NORTH ELEVATION - EXISTING

A2000 | REF: A1300 | SCALE: 1 : 125

A — PROVISIONAL ITEM #2: RE-POINTING OF BOTTOM 7 COURSES OF EXISTING BRICK AS NEEDED ALONG NORTH, SOUTH & WEST ELEVATION

B — PROVISIONAL ITEM #3: - GC TO REPAINT EXISTING HERITAGE ROOFING TRIMS (FASCIAS, SOFFITS, LOOKOUTS - PAINT COLOUR TO MATCH EXISTING - MISC. WOOD PATCHING AND REPAIRS MIGHT BE NEEDED; LIGHT SANDING AND SCRAPPING OFF OF LOOSE EXISTING PAINT SHALL BE PERFORMED PRIOR TO 2 NEW COATS OF EXTERIOR GRADE SPEC'S; AS PER THE SPECIFICATIONS TYP.
GC TO PATCH & REPAIR POOR WOOD SECTIONS & SCRAP PAINT OF EXISTING WOOD TRIMS.

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SHERY KOZHIMALA CHERIAN
LICENCE 7610

ARCHITECTURE 49

PROJECT NO. BE20101016

ISSUED FOR TENDER

Niagara Region

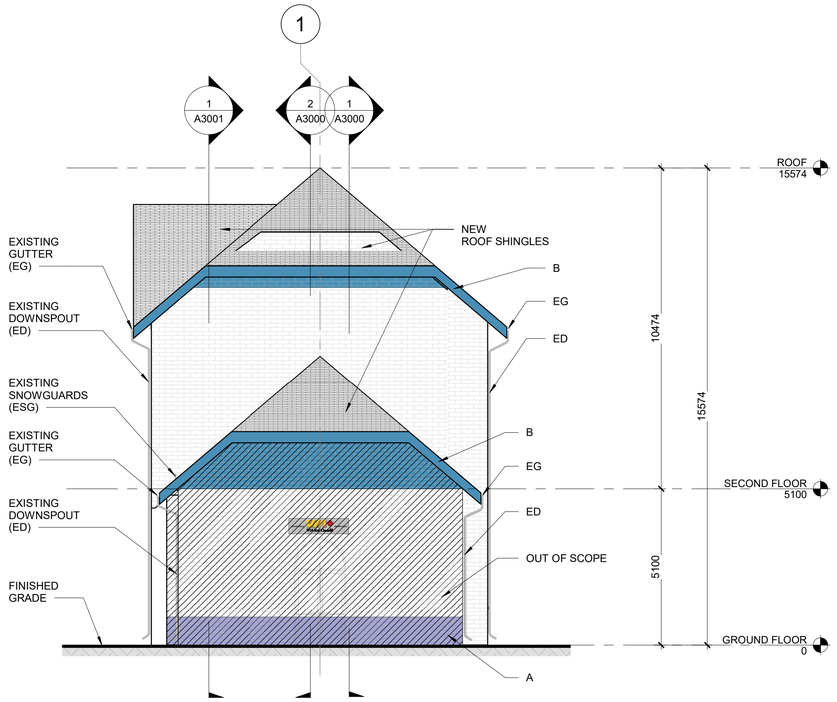
NIAGARA FALLS TRAIN STATION UPGRADES

ELEVATIONS NORTH SOUTH

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A2000

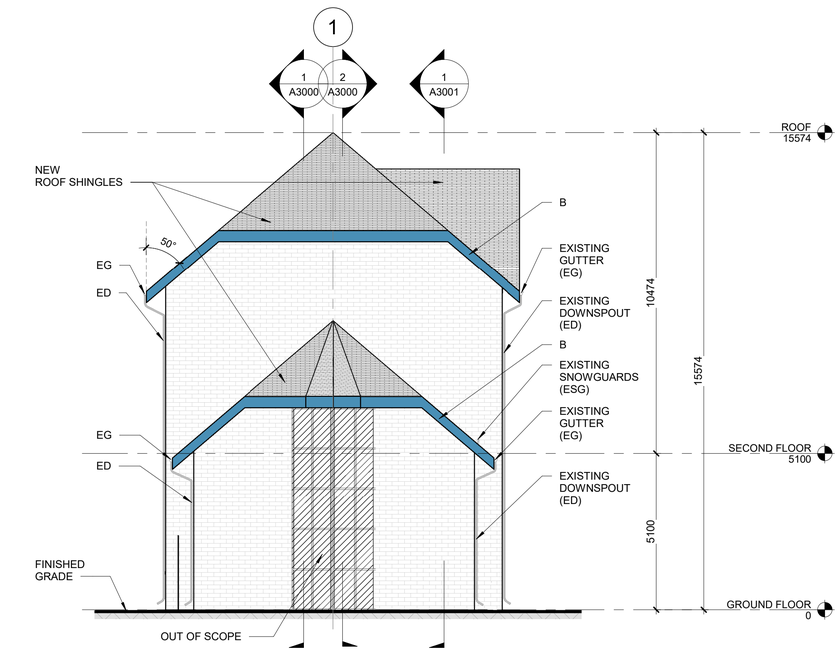
METRIC

ALL DIMENSONS SHOWN ARE
IN METRES AND/OR MILLIMETRES
UNLESS OTHERWISE NOTED.



1 | WEST ELEVATION - EXISTING

A2001 | REF: A1300 | SCALE: 1 : 100



2 | EAST ELEVATION - EXISTING

A2001 | REF: A1300 | SCALE: 1 : 100

A — PROVISIONAL ITEM #2: RE-POINTING OF BOTTOM 7 COURSES OF EXISTING BRICK AS NEEDED ALONG NORTH, SOUTH & WEST ELEVATION

B — PROVISIONAL ITEM #3: - GC TO REPAINT EXISTING HERITAGE ROOFING TRIMS (FASCIAS, SOFFITS, LOOKOUTS - PAINT COLOUR TO MATCH EXISTING - MISC. WOOD PATCHING AND REPAIRS MIGHT BE NEEDED; LIGHT SANDING AND SCRAPPING OFF OF LOOSE EXISTING PAINT SHALL BE PERFORMED PRIOR TO 2 NEW COATS OF EXTERIOR GRADE SPEC'S; AS PER THE SPECIFICATIONS TYP.
GC TO PATCH & REPAIR POOR WOOD SECTIONS & SCRAP PAINT OF EXISTING WOOD TRIMS.

REFERENCE DRAWINGS		ISSUE			REVISIONS		
		B	2024/02/08	ISSUED FOR TENDER			
		A	2023/04/24	ISSUED FOR BUILDING PERMIT			
DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

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CHECKED BY: S.CHERIAN 2023/09/22	APPROVED BY: S.CHERIAN 2023/09/22
SCALE: AS SHOWN	FULL SIZE ONLY

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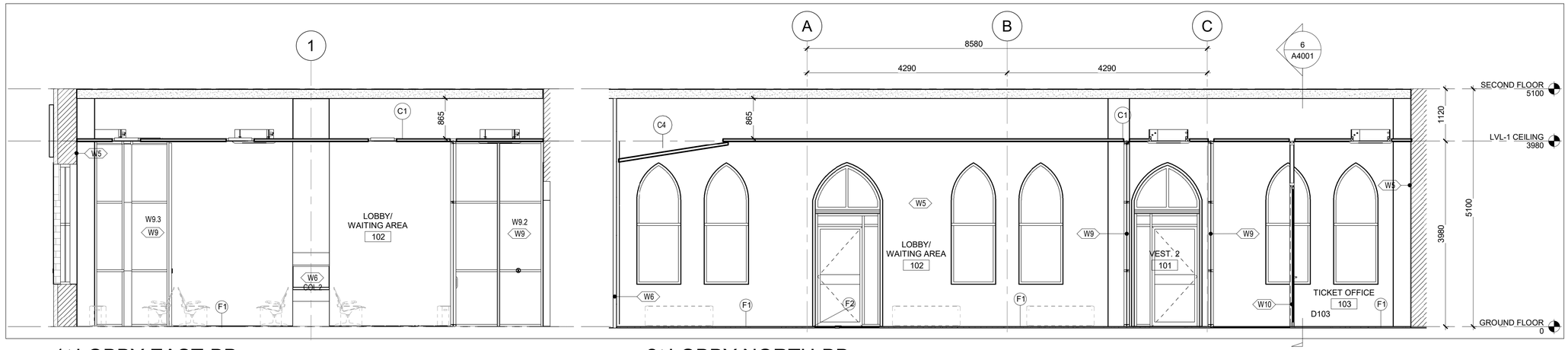
NIAGARA FALLS TRAIN STATION UPGRADES

ELEVATIONS EAST WEST

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A2001

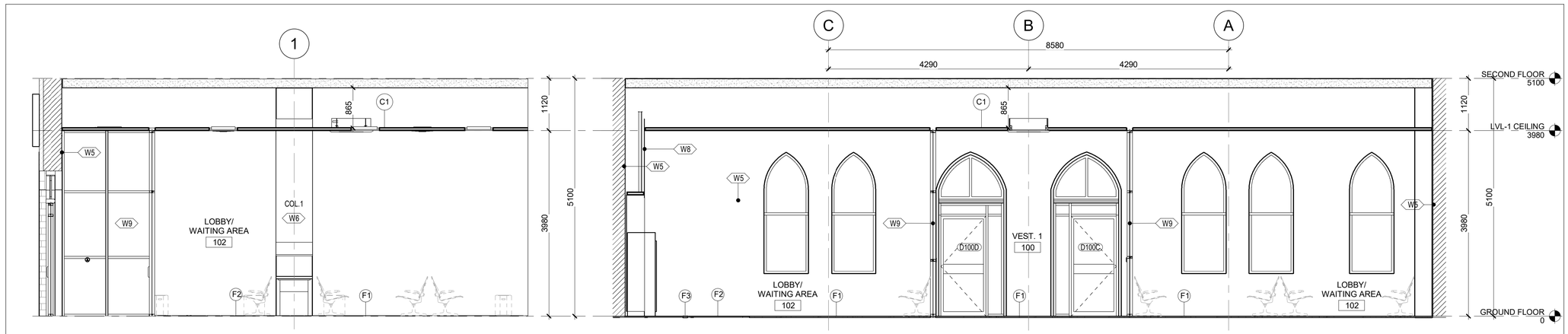


1 | LOBBY EAST-BB

A2100 | REF: A1600 | SCALE: 1 : 50

2 | LOBBY NORTH-BB

A2100 | REF: A1600 | SCALE: 1 : 50

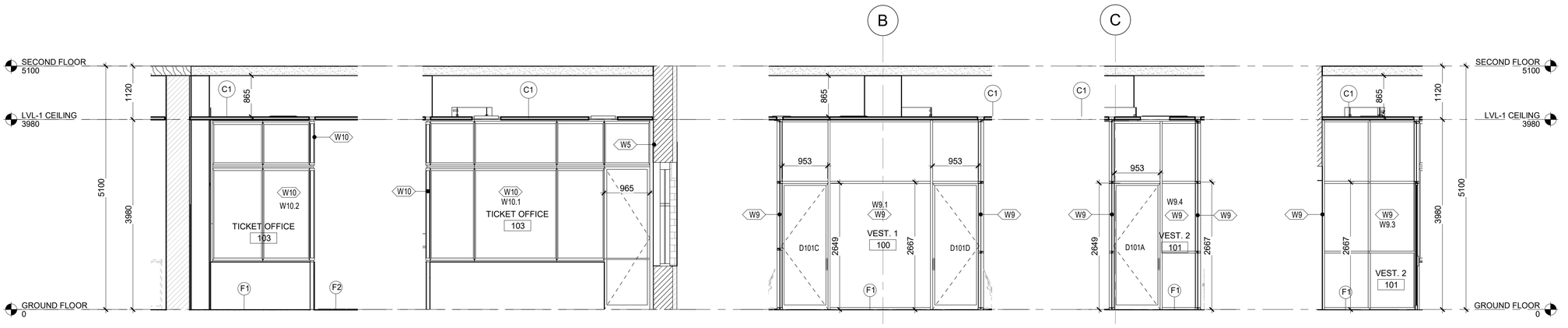


3 | LOBBY WEST-BB

A2100 | REF: A1600 | SCALE: 1 : 50

4 | LOBBY SOUTH-BB

A2100 | REF: A1600 | SCALE: 1 : 50



5 | TICKETS SOUTH-BB

A2100 | REF: A1600 | SCALE: 1 : 50

6 | TICKETS WEST-BB

A2100 | REF: A1600 | SCALE: 1 : 50

7 | VEST.1 NORTH-BB

A2100 | REF: A1600 | SCALE: 1 : 50

8 | VEST.2 SOUTH-BB

A2100 | REF: A1600 | SCALE: 1 : 50

9 | VEST.2 EAST-BB

A2100 | REF: A1600 | SCALE: 1 : 50

METRIC

ALL DIMENSONS SHOWN ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE NOTED.

FINISHES LEGEND

WALLS:

- W1, W2, W3 — 600x600mm PORCELAIN TILE BIG FORMAT WHITE
- W4 — PORCELAIN TILE BIG FORMAT WHITE ON EXISTING WALL
- W5 — PLASTER PATCH AND PAINT ON EXISTING WALL
- W5N — PLASTER AND PAINT ON NEW WALL
- W6 — DRYWALL PAINTED
- W7, W8 — HPL PANEL
- W9 — INTERIOR CURTAIN WALL
- W10 — INTERIOR CURTAIN WALL AT TICKET OFFICE
- W11, W12, W13 — FRP PANEL UP TO 1.5m
- W14 — ACOUSTICAL DRYWALL ASSEMBLY

FLOORS:

- F1, F8 — PORCELAIN TILE LARGE FORMAT 600mm x 600mm (BEIGE COLOUR)
- F2 — PORCELAIN TILE LARGE FORMAT 600mm x 600mm (WOOD TEXTURIZED)
- F3 — LINEAR TACTILE TILE 600mm x 120mm (BLACK COLOUR)
- F4 — PORCELAIN TILE LARGE FORMAT 600mm x 600mm (MARFIL COLOUR)
- F5 — EPOXY PAINT
- F6 — VINYL TILES REPLACEMENT
- F7 — CARPET TILE (GRAY COLOUR)

CEILING:

- C1 — ACOUSTIC CEILING 24" X 48" (WHITE COLOUR)
- C2 — ACOUSTIC CEILING 24" X 48" VINYL COATED (WHITE COLOUR)
- C3 — HPL PANELS ON CEILING

ROOF:

- R1 — EXISTING ROOF

INTERIOR ELEVATION NOTES

1. FURNITURE AND LOCKERS NOT INCLUDED. JUST FOR REFERENCE.
2. "BB" STANDS FOR BASE BID
3. P#,STANDS FOR PROVISIONAL ITEM #

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ARCHITECTURE 49

PROJECT NO. BE20101016

ISSUED FOR TENDER

Niagara Region

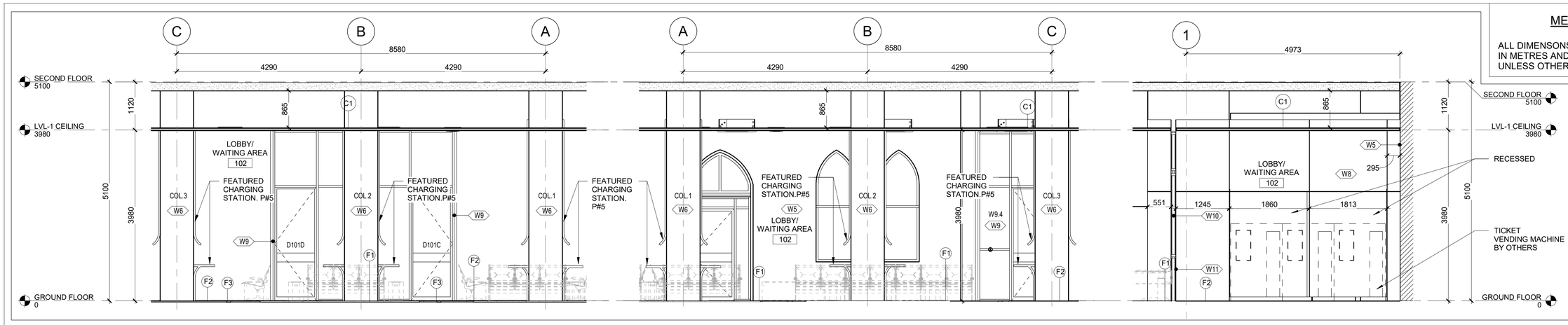
NIAGARA FALLS TRAIN STATION UPGRADES

INTERIOR ELEVATIONS 1

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A2100

METRIC

ALL DIMENSONS SHOWN ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE NOTED.



1 | INT. ELEV. - COLUMN SOUTH

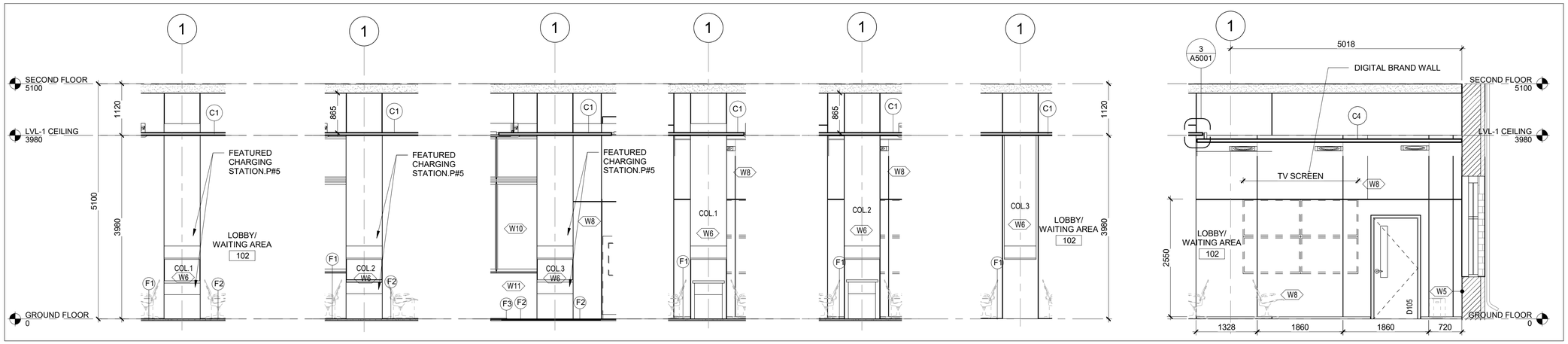
A2101 | REF: A1600 | SCALE: 1 : 50

2 | INT. ELEV. - COLUMN NORTH

A2101 | REF: A1600 | SCALE: 1 : 50

3 | INT. ELEV. - TICKET VENDING MACHINE EAST-BB

A2101 | REF: A1600 | SCALE: 1 : 50



4 | C.1 WEST

A2101 | REF: A1600 | SCALE: 1 : 50

5 | C.2 WEST

A2101 | REF: A1600 | SCALE: 1 : 50

6 | C.3 WEST

A2101 | REF: A1600 | SCALE: 1 : 50

7 | C.1 EAST-BB

A2101 | REF: A1600 | SCALE: 1 : 50

8 | C.2 EAST-BB

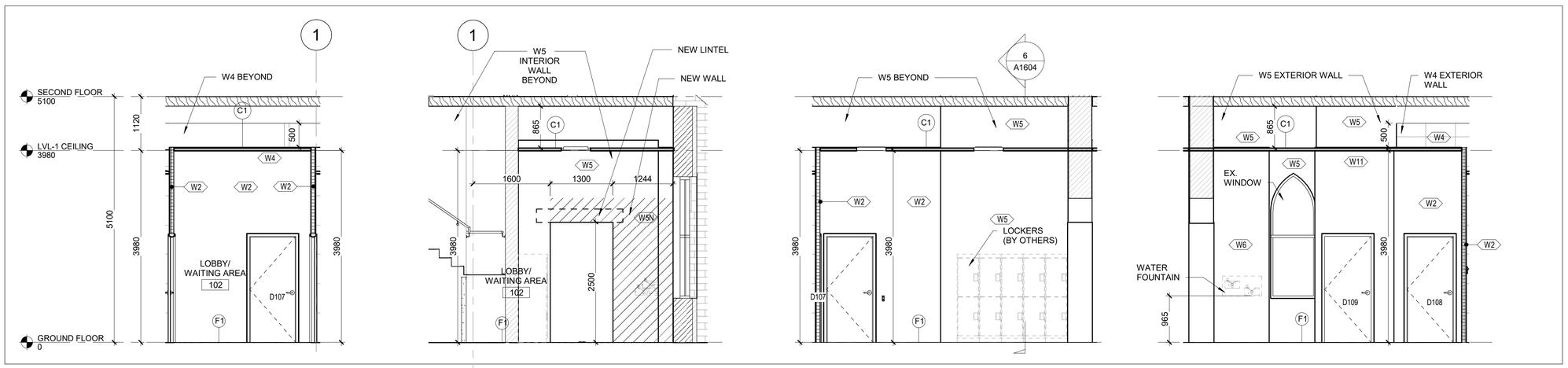
A2101 | REF: A1600 | SCALE: 1 : 50

9 | C.3 EAST-BB

A2101 | REF: A1600 | SCALE: 1 : 50

14 | DIGITAL BRAND WALL-BB

A2101 | REF: A1600 | SCALE: 1 : 50



10 | INT. ELEV. - WEST LOBBY W-BB

A2101 | REF: A1600 | SCALE: 1 : 50

11 | INT. ELEV. - WEST LOBBY E-BB

A2101 | REF: A1600 | SCALE: 1 : 50

12 | INT. ELEV. - WEST LOBBY N-BB

A2101 | REF: A1600 | SCALE: 1 : 50

13 | INT. ELEV. - WEST LOBBY S-BB

A2101 | REF: A1600 | SCALE: 1 : 50

FINISHES LEGEND

WALLS:

- W1, W2, W3 — 600x600mm PORCELAIN TILE BIG FORMAT WHITE
- W4 — PORCELAIN TILE BIG FORMAT WHITE ON EXISTING WALL
- W5 — PLASTER PATCH AND PAINT ON EXISTING WALL
- W5N — PLASTER AND PAINT ON NEW WALL
- W6 — DRYWALL PAINTED
- W7, W8 — HPL PANEL
- W9 — INTERIOR CURTAIN WALL
- W10 — INTERIOR CURTAIN WALL AT TICKET OFFICE
- W11, W12, W13 — FRP PANEL UP TO 1.5m
- W14 — ACOUSTICAL DRYWALL ASSEMBLY

FLOORS:

- F1, F8 — PORCELAIN TILE LARGE FORMAT 600mm x 600mm (BEIGE COLOUR)
- F2 — PORCELAIN TILE LARGE FORMAT 600mm x 600mm (WOOD TEXTURIZED)
- F3 — LINEAR TACTILE TILE 600mm x 120mm (BLACK COLOUR)
- F4 — PORCELAIN TILE LARGE FORMAT 600mm x 600mm (MARFIL COLOUR)
- F5 — EPOXY PAINT
- F6 — VINYL TILES REPLACEMENT
- F7 — CARPET TILE (GRAY COLOUR)

CEILING:

- C1 — ACOUSTIC CEILING 24" X 48" (WHITE COLOUR)
- C2 — ACOUSTIC CEILING 24" X 48" VINYL COATED (WHITE COLOUR)
- C3 — HPL PANELS ON CEILING

ROOF:

- R1 — EXISTING ROOF

INTERIOR ELEVATION NOTES

1. FURNITURE AND LOCKERS NOT INCLUDED. JUST FOR REFERENCE.
2. "BB" STANDS FOR BASE BID
3. P#,STANDS FOR PROVISIONAL ITEM #

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ARCHITECTURE 49

PROJECT NO. BE20101016

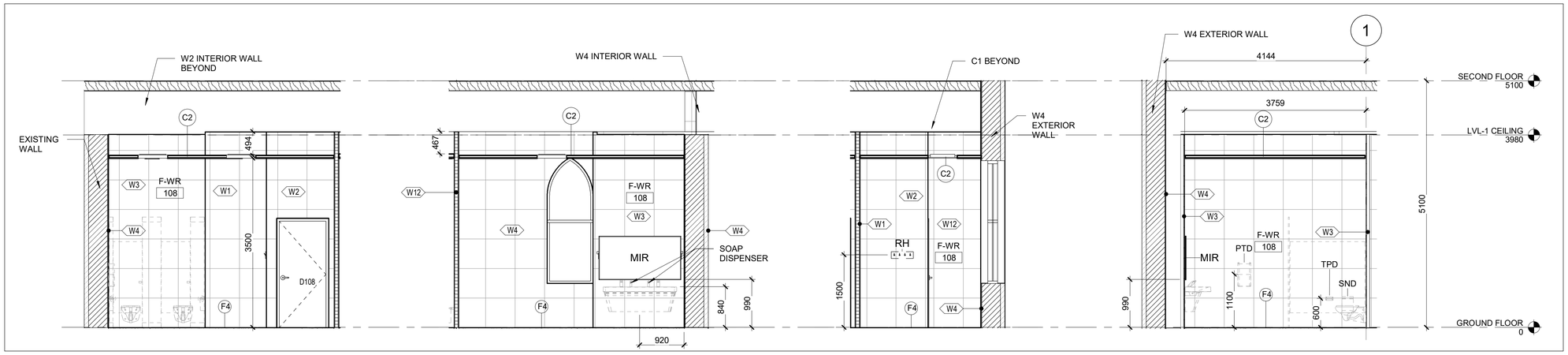
ISSUED FOR TENDER

Niagara Region

NIAGARA FALLS TRAIN STATION UPGRADES

INTERIOR ELEVATIONS 2

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A2101

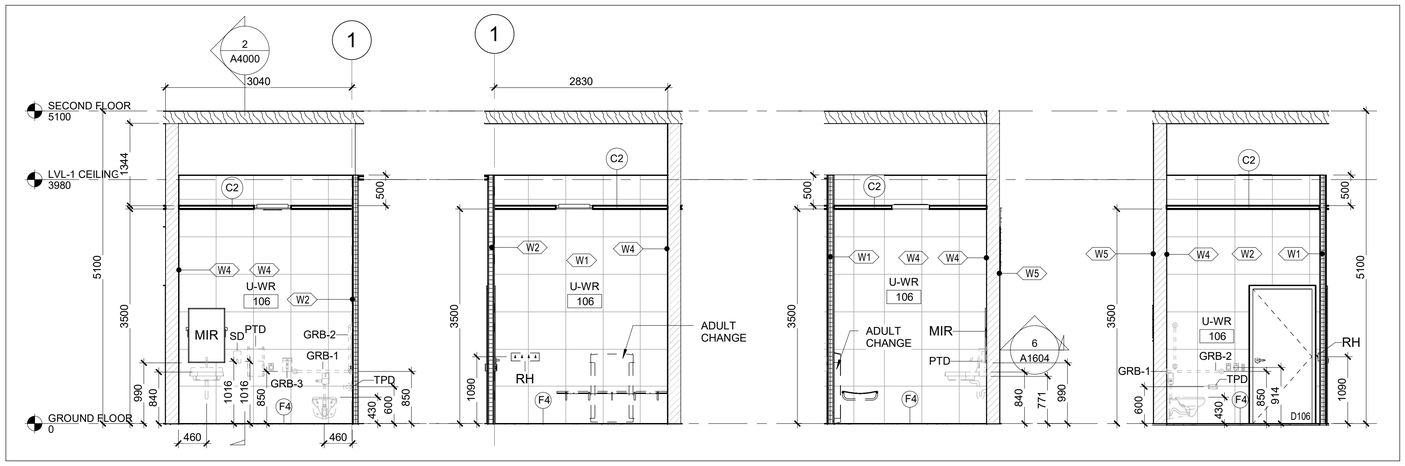


1 | INT. ELEV. - F - WR NORTH-BB
A2102 | REF: A1600 | SCALE: 1 : 50

2 | INT. ELEV. - F - WR SOUTH-BB
A2102 | REF: A1600 | SCALE: 1 : 50

3 | INT. ELEV. - F - WR EAST-BB
A2102 | REF: A1600 | SCALE: 1 : 50

4 | INT. ELEV. - F - WR WEST-BB
A2102 | REF: A1600 | SCALE: 1 : 50

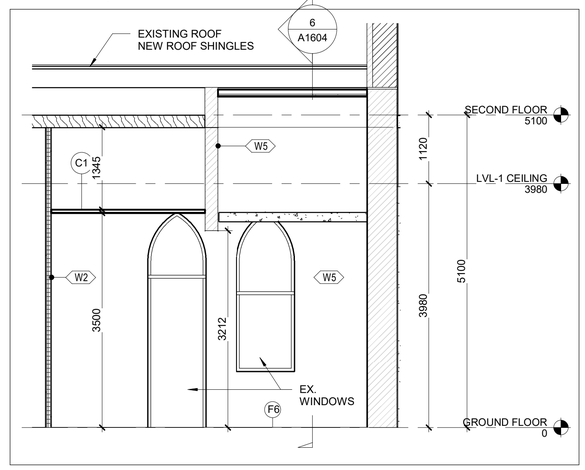


5 | UNIV. WR EAST-BB
A2102 | REF: A1600 | SCALE: 1 : 50

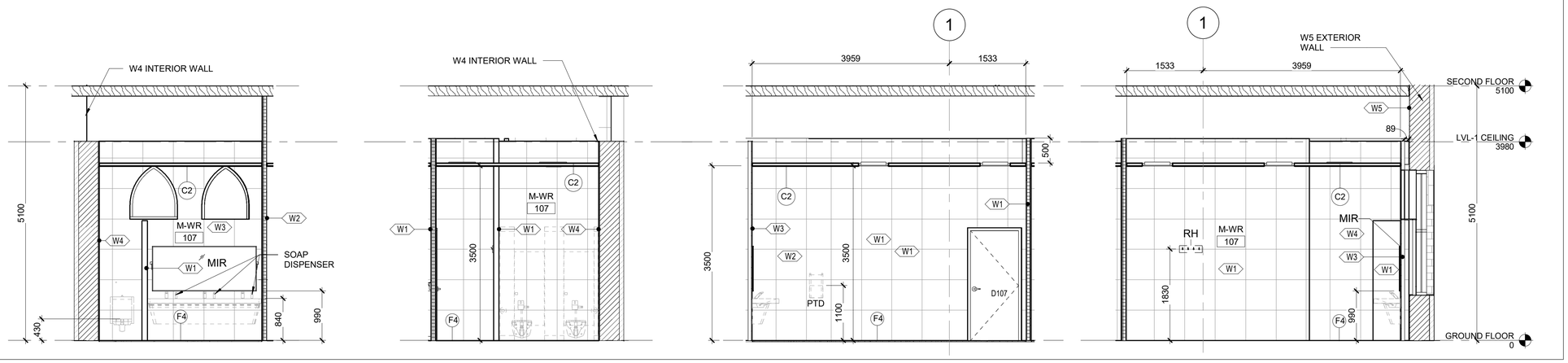
6 | UNIV. WR WEST-BB
A2102 | REF: A1600 | SCALE: 1 : 50

7 | UNIV. WR NORTH-BB
A2102 | REF: A1600 | SCALE: 1 : 50

8 | UNIV. WR SOUTH-BB
A2102 | REF: A1600 | SCALE: 1 : 50



9 | INT. ELEV. - WEST LOBBY N STAIR 2-BB
A2102 | REF: A1600 | SCALE: 1 : 50



10 | INT. ELEV. - M - WR NORTH-BB
A2102 | REF: A1600 | SCALE: 1 : 50

11 | INT. ELEV. - M - WR SOUTH-BB
A2102 | REF: A1600 | SCALE: 1 : 50

12 | INT. ELEV. - M - WR EAST-BB
A2102 | REF: A1600 | SCALE: 1 : 50

13 | INT. ELEV. - M - WR WEST-BB
A2102 | REF: A1600 | SCALE: 1 : 50

METRIC

ALL DIMENSONS SHOWN ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE NOTED.

FINISHES LEGEND

WALLS:

W1, W2, W3	600x600mm PORCELAIN TILE BIG FORMAT WHITE
W4	PORCELAIN TILE BIG FORMAT WHITE ON EXISTING WALL
W5	PLASTER PATCH AND PAINT ON EXISTING WALL
W5N	PLASTER AND PAINT ON NEW WALL
W6	DRYWALL PAINTED
W7, W8	HPL PANEL
W9	INTERIOR CURTAIN WALL
W10	INTERIOR CURTAIN WALL AT TICKET OFFICE
W11, W12, W13	FRP PANEL UP TO 1.5m
W14	ACOUSTICAL DRYWALL ASSEMBLY

FLOORS:

F1, F8	PORCELAIN TILE LARGE FORMAT 600mm x 600mm (BEIGE COLOUR)
F2	PORCELAIN TILE LARGE FORMAT 600mm x 600mm (WOOD TEXTURIZED)
F3	LINEAR TACTILE TILE 600mm x 120mm (BLACK COLOUR)
F4	PORCELAIN TILE LARGE FORMAT 600mm x 600mm (MARFIL COLOUR)
F5	EPOXY PAINT
F6	VINYL TILES REPLACEMENT
F7	CARPET TILE (GRAY COLOUR)

CEILING:

C1	ACOUSTIC CEILING 24" X 48" (WHITE COLOUR)
C2	ACOUSTIC CEILING 24" X 48" VINYL COATED (WHITE COLOUR)
C3	HPL PANELS ON CEILING

ROOF:

R1	EXISTING ROOF

INTERIOR ELEVATION NOTES

1. FURNITURE AND LOCKERS NOT INCLUDED. JUST FOR REFERENCE.
2. "BB" STANDS FOR BASE BID
3. P#,STANDS FOR PROVISIONAL ITEM #

REFERENCE DRAWINGS		ISSUE			REVISIONS		
		B	2024/02/08	ISSUED FOR TENDER			
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ARCHITECTURE 49

PROJECT NO. BE20101016

ISSUED FOR TENDER

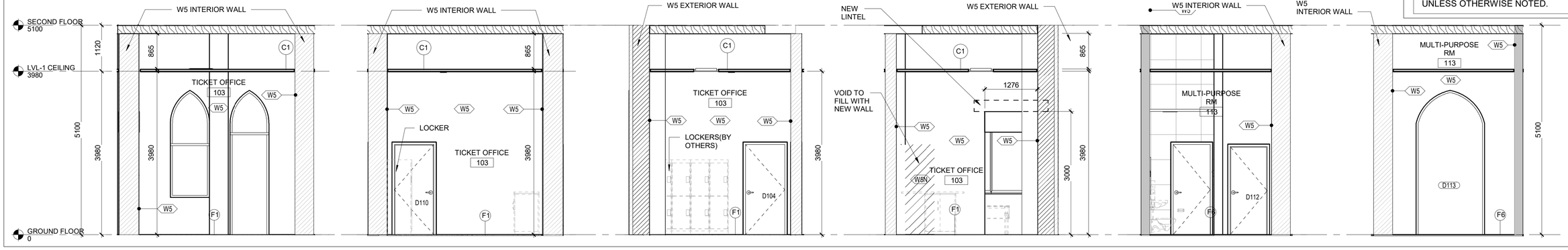
Niagara Region

NIAGARA FALLS TRAIN STATION UPGRADES
INTERIOR ELEVATIONS 3

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A2102

METRIC

ALL DIMENSONS SHOWN ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE NOTED.



1 | TICKET OFFICE NORTH-BB — A2103 | REF: A1600 | SCALE: 1 : 50

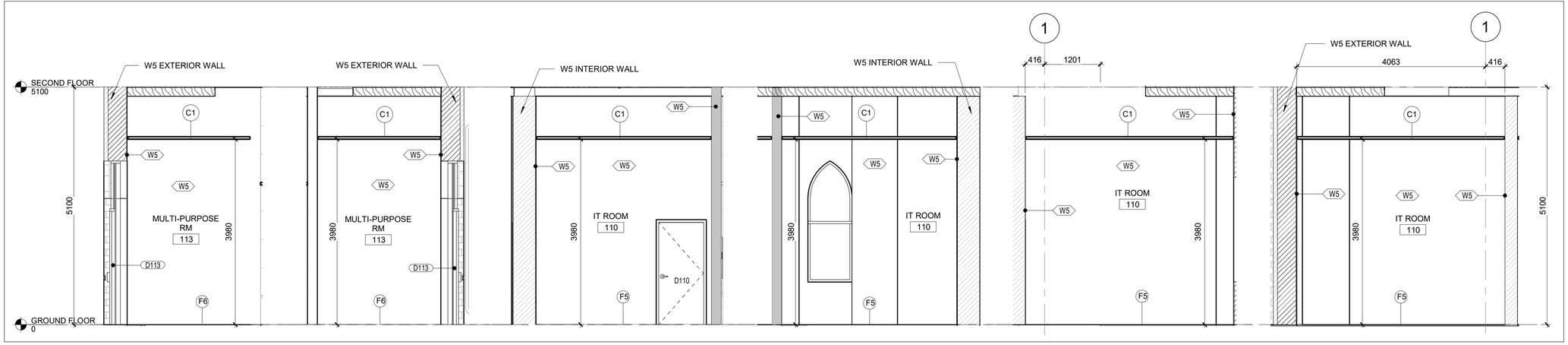
2 | TICKET OFFICE SOUTH-BB — A2103 | REF: A1600 | SCALE: 1 : 50

3 | TICKET OFFICE EAST-BB — A2103 | REF: A1601 | SCALE: 1 : 50

4 | TICKET OFFICE WEST-BB — A2103 | REF: A1601 | SCALE: 1 : 50

5 | MULTIP. NORTH-BB — A2103 | REF: A1601 | SCALE: 1 : 50

6 | MULTIP. SOUTH-BB — A2103 | REF: A1601 | SCALE: 1 : 50



7 | MULTIP. WEST-BB — A2103 | REF: A1601 | SCALE: 1 : 50

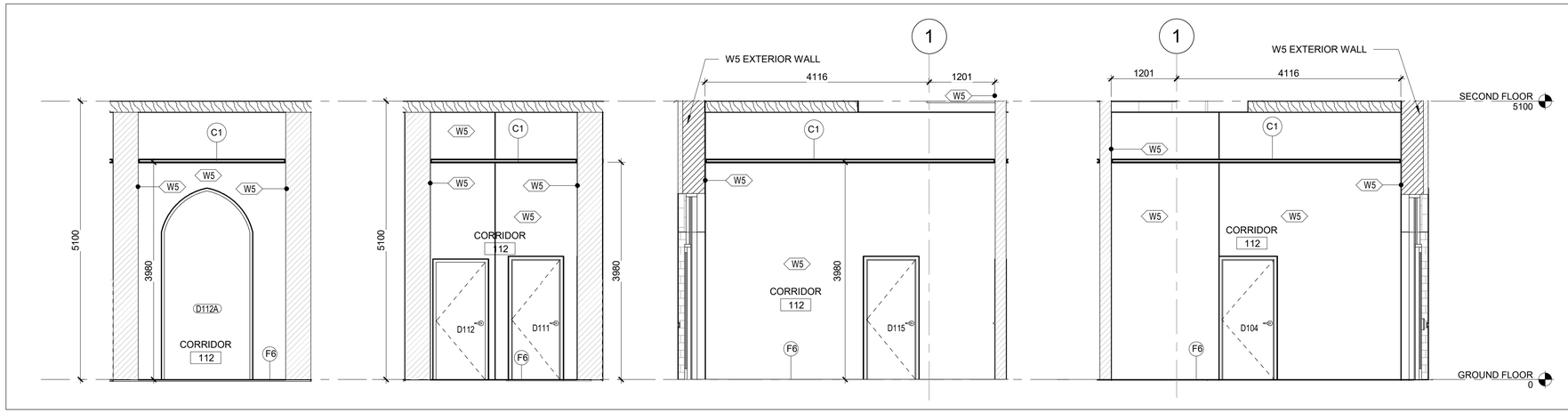
8 | M.P. RM. EAST-BB — A2103 | REF: A1601 | SCALE: 1 : 50

9 | IT RM. NORTH-BB — A2103 | REF: A1601 | SCALE: 1 : 50

10 | IT RM SOUTH-BB — A2103 | REF: A1601 | SCALE: 1 : 50

11 | IT ROOM EAST-BB — A2103 | REF: A1601 | SCALE: 1 : 50

12 | IT ROOM WEST-BB — A2103 | REF: A1601 | SCALE: 1 : 50



13 | EAST CORRIDOR N-BB — A2103 | REF: A1601 | SCALE: 1 : 50

14 | EAST CORRIDOR S-BB — A2103 | REF: A1601 | SCALE: 1 : 50

15 | EAST CORRIDOR E-BB — A2103 | REF: A1601 | SCALE: 1 : 50

16 | EAST CORRIDOR W-BB — A2103 | REF: A1601 | SCALE: 1 : 50

FINISHES LEGEND

WALLS:

- W1, W2, W3 — 600x600mm PORCELAIN TILE BIG FORMAT WHITE
- W4 — PORCELAIN TILE BIG FORMAT WHITE ON EXISTING WALL
- W5 — PLASTER PATCH AND PAINT ON EXISTING WALL
- W5N — PLASTER AND PAINT ON NEW WALL
- W6 — DRYWALL PAINTED
- W7, W8 — HPL PANEL
- W9 — INTERIOR CURTAIN WALL
- W10 — INTERIOR CURTAIN WALL AT TICKET OFFICE
- W11, W12, W13 — FRP PANEL UP TO 1.5m
- W14 — ACOUSTICAL DRYWALL ASSEMBLY

FLOORS:

- F1, F8 — PORCELAIN TILE LARGE FORMAT 600mm x 600mm (BEIGE COLOUR)
- F2 — PORCELAIN TILE LARGE FORMAT 600mm x 600mm (WOOD TEXTURIZED)
- F3 — LINEAR TACTILE TILE 600mm x 120mm (BLACK COLOUR)
- F4 — PORCELAIN TILE LARGE FORMAT 600mm x 600mm (MARFIL COLOUR)
- F5 — EPOXY PAINT
- F6 — VINYL TILES REPLACEMENT
- F7 — CARPET TILE (GRAY COLOUR)

CEILING:

- C1 — ACOUSTIC CEILING 24" X 48" (WHITE COLOUR)
- C2 — ACOUSTIC CEILING 24" X 48" VINYL COATED (WHITE COLOUR)
- C3 — HPL PANELS ON CEILING

ROOF:

- R1 — EXISTING ROOF

INTERIOR ELEVATION NOTES

1. FURNITURE AND LOCKERS NOT INCLUDED. JUST FOR REFERENCE.
2. "BB" STANDS FOR BASE BID
3. P#,STANDS FOR PROVISIONAL ITEM #

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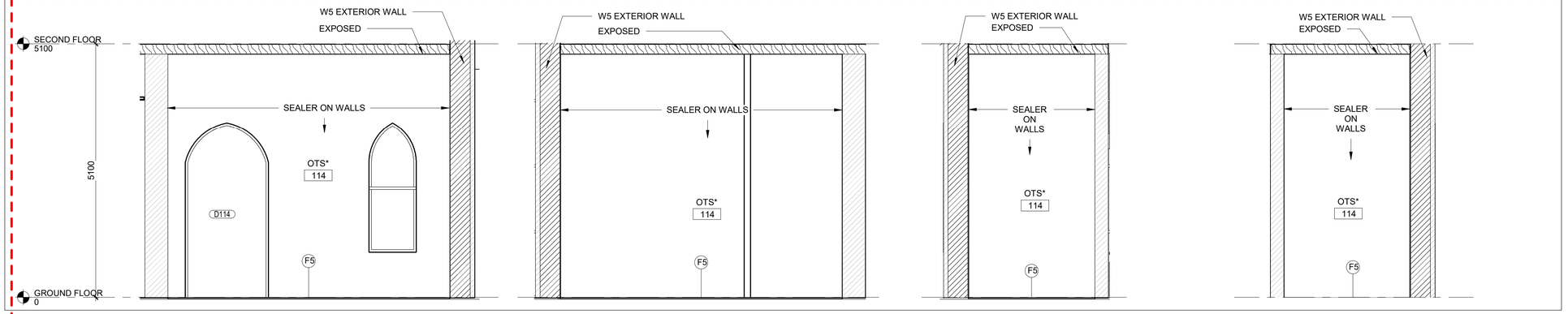
ISSUED FOR TENDER

Niagara Region

NIAGARA FALLS TRAIN STATION UPGRADES

INTERIOR ELEVATIONS 4

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A2103

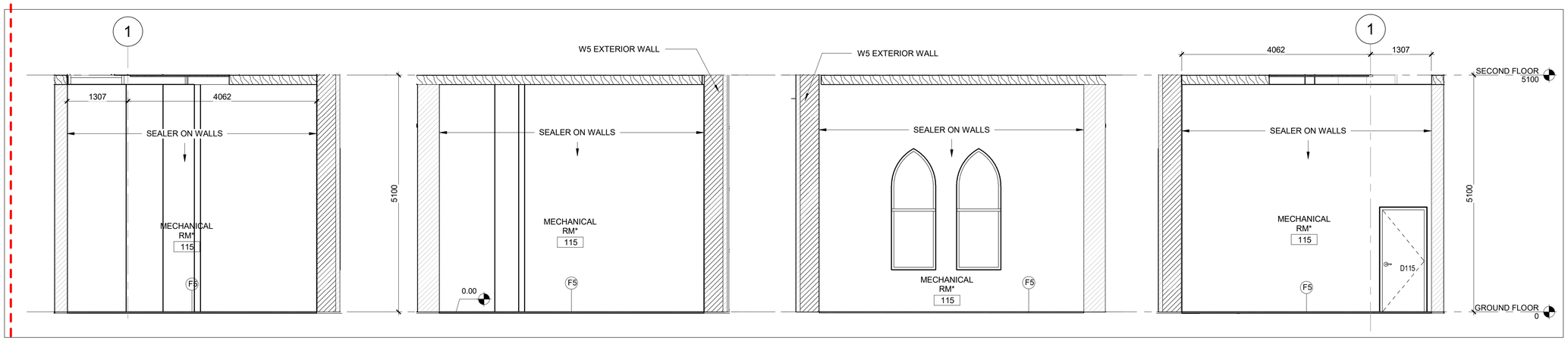


1 | INT. ELEV. - OTS NORTH(P #4)
A2104 | REF: A1601 | SCALE: 1 : 50

2 | INT. ELEV. - OTS SOUTH(P #4)
A2104 | REF: A1601 | SCALE: 1 : 50

3 | INT. ELEV. - OTS EAST(P #4)
A2104 | REF: A1601 | SCALE: 1 : 50

4 | INT. ELEV. - OTS WEST(P #4)
A2104 | REF: A1601 | SCALE: 1 : 50

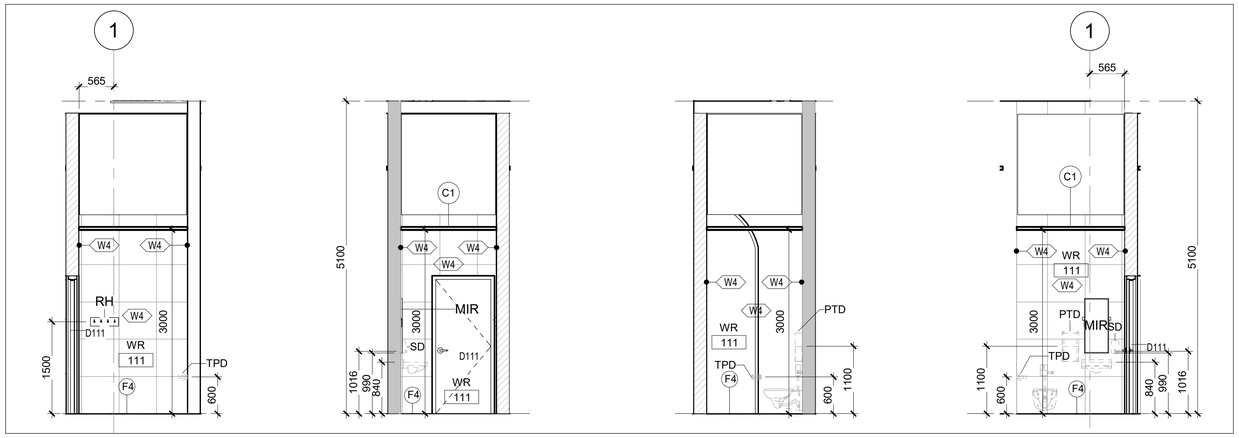


5 | INT. ELEV. - MECH. RM. EAST(P #4)
A2104 | REF: A1601 | SCALE: 1 : 50

6 | INT. ELEV. - MECH. RM. NORTH(P #4)
A2104 | REF: A1601 | SCALE: 1 : 50

7 | INT. ELEV. - MECH. RM. SOUTH(P #4)
A2104 | REF: A1601 | SCALE: 1 : 50

8 | INT. ELEV. - MECH. RM. WEST(P #4)
A2104 | REF: A1601 | SCALE: 1 : 50



9 | EAST WR E-BB
A2104 | REF: A1601 | SCALE: 1 : 50

10 | EAST WR N-BB
A2104 | REF: A1601 | SCALE: 1 : 50

11 | EAST WR S-BB
A2104 | REF: A1601 | SCALE: 1 : 50

12 | EAST WR W-BB
A2104 | REF: A1601 | SCALE: 1 : 50

PROVISIONAL ITEM #4

METRIC

ALL DIMENSONS SHOWN ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE NOTED.

FINISHES LEGEND

WALLS:

- W1, W2, W3 — 600x600mm PORCELAIN TILE BIG FORMAT WHITE
- W4 — PORCELAIN TILE BIG FORMAT WHITE ON EXISTING WALL
- W5 — PLASTER PATCH AND PAINT ON EXISTING WALL
- W5N — PLASTER AND PAINT ON NEW WALL
- W6 — DRYWALL PAINTED
- W7, W8 — HPL PANEL
- W9 — INTERIOR CURTAIN WALL
- W10 — INTERIOR CURTAIN WALL AT TICKET OFFICE
- W11, W12, W13 — FRP PANEL UP TO 1.5m
- W14 — ACOUSTICAL DRYWALL ASSEMBLY

FLOORS:

- F1, F8 — PORCELAIN TILE LARGE FORMAT 600mm x 600mm (BEIGE COLOUR)
- F2 — PORCELAIN TILE LARGE FORMAT 600mm x 600mm (WOOD TEXTURIZED)
- F3 — LINEAR TACTILE TILE 600mm x 120mm (BLACK COLOUR)
- F4 — PORCELAIN TILE LARGE FORMAT 600mm x 600mm (MARFIL COLOUR)
- F5 — EPOXY PAINT
- F6 — VINYL TILES REPLACEMENT
- F7 — CARPET TILE (GRAY COLOUR)

CEILING:

- C1 — ACOUSTIC CEILING 24" X 48" (WHITE COLOUR)
- C2 — ACOUSTIC CEILING 24" X 48" VINYL COATED (WHITE COLOUR)
- C3 — HPL PANELS ON CEILING

ROOF:

- R1 — EXISTING ROOF

INTERIOR ELEVATION NOTES

1. FURNITURE AND LOCKERS NOT INCLUDED. JUST FOR REFERENCE.
2. "BB" STANDS FOR BASE BID
3. P#,STANDS FOR PROVISIONAL ITEM #

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		A	2023/04/24	ISSUED FOR BUILDING PERMIT			
DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

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CHECKED BY: S.CHERIAN 2023/09/22	APPROVED BY: S.CHERIAN 2023/09/22
SCALE: AS SHOWN	FULL SIZE ONLY

ONTARIO ASSOCIATION OF ARCHITECTS
SHERY KOZHIMALA CHERIAN
LICENCE 7610

ARCHITECTURE 49

PROJECT NO. BE20101016

ISSUED FOR TENDER

Niagara Region

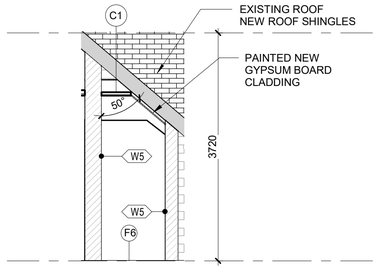
NIAGARA FALLS TRAIN STATION UPGRADES

INTERIOR ELEVATIONS 5

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A2104

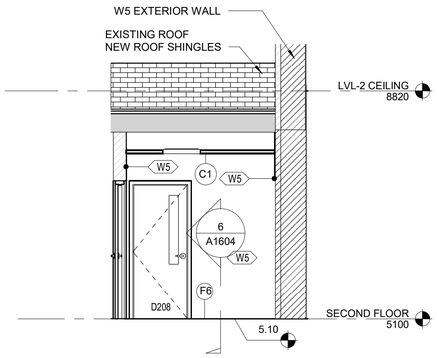
METRIC

ALL DIMENSONS SHOWN ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE NOTED.



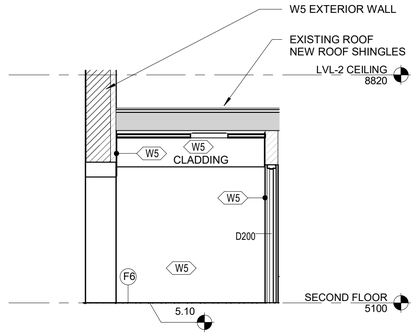
1 | CORRIDOR 2nd EAST-BB

A2105 | REF: D-0002 | SCALE: 1 : 50



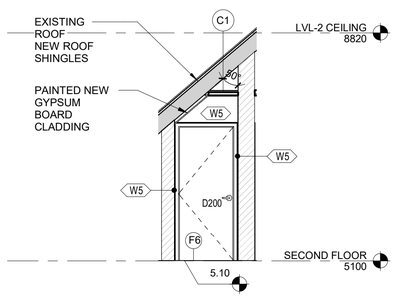
2 | CORRIDOR 2nd NORTH-BB

A2105 | REF: D-0002 | SCALE: 1 : 50



3 | STAIR 2 SOUTH-BB

A2105 | REF: D-0002 | SCALE: 1 : 50



4 | STAIR 2 WEST-BB

A2105 | REF: D-0002 | SCALE: 1 : 50

FINISHES LEGEND

WALLS:

- W1, W2, W3 — 600x600mm PORCELAIN TILE BIG FORMAT WHITE
- W4 — PORCELAIN TILE BIG FORMAT WHITE ON EXISTING WALL
- W5 — PLASTER PATCH AND PAINT ON EXISTING WALL
- W5N — PLASTER AND PAINT ON NEW WALL
- W6 — DRYWALL PAINTED
- W7, W8 — HPL PANEL
- W9 — INTERIOR CURTAIN WALL
- W10 — INTERIOR CURTAIN WALL AT TICKET OFFICE
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- F3 — LINEAR TACTILE TILE 600mm x 120mm (BLACK COLOUR)
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- F5 — EPOXY PAINT
- F6 — VINYL TILES REPLACEMENT
- F7 — CARPET TILE (GRAY COLOUR)

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- C1 — ACOUSTIC CEILING 24" X 48" (WHITE COLOUR)
- C2 — ACOUSTIC CEILING 24" X 48" VINYL COATED (WHITE COLOUR)
- C3 — HPL PANELS ON CEILING

ROOF:

- R1 — EXISTING ROOF

INTERIOR ELEVATION NOTES

1. FURNITURE AND LOCKERS NOT INCLUDED. JUST FOR REFERENCE.
2. "BB" STANDS FOR BASE BID
3. P#,STANDS FOR PROVISIONAL ITEM #

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SHERY KOZHIMALA CHERIAN
LICENCE 7610

ARCHITECTURE 49

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Niagara Region

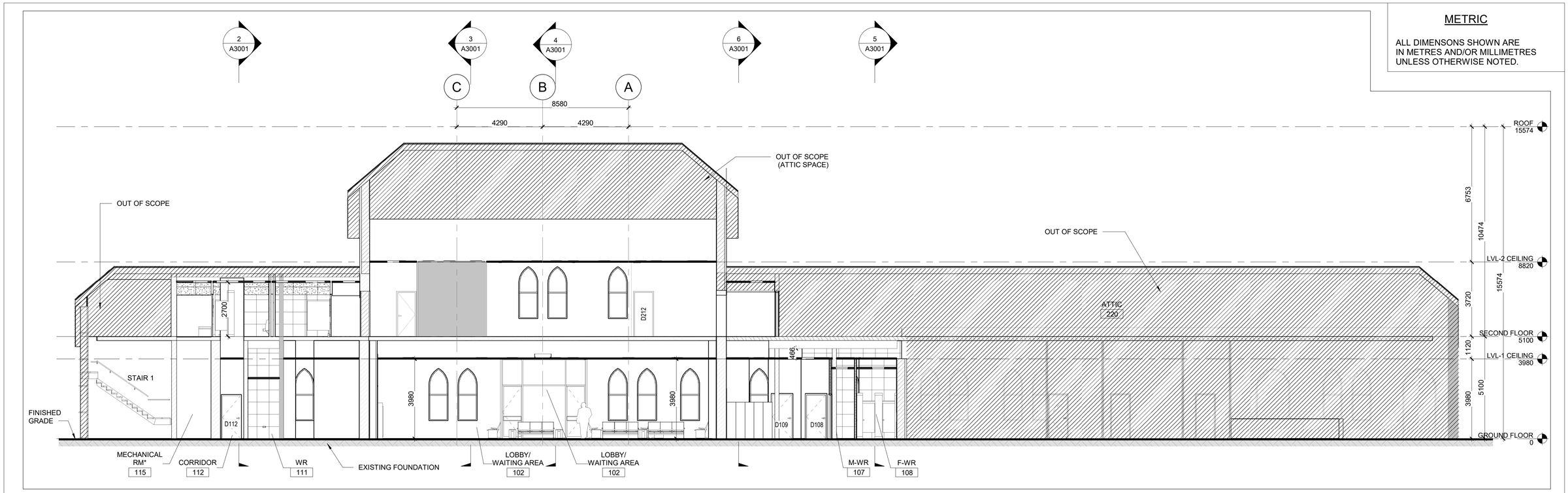
NIAGARA FALLS TRAIN STATION UPGRADES

INTERIOR ELEVATIONS 6

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A2105

METRIC

ALL DIMENSONS SHOWN ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE NOTED.



1 | BUILDING SECTION 1

A3000 | REF: A1300 | SCALE: 1 : 100

2 | BUILDING SECTION 2

A3000 | REF: A1300 | SCALE: 1 : 100

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NIAGARA FALLS TRAIN STATION UPGRADES

BUILDING SECTIONS 1

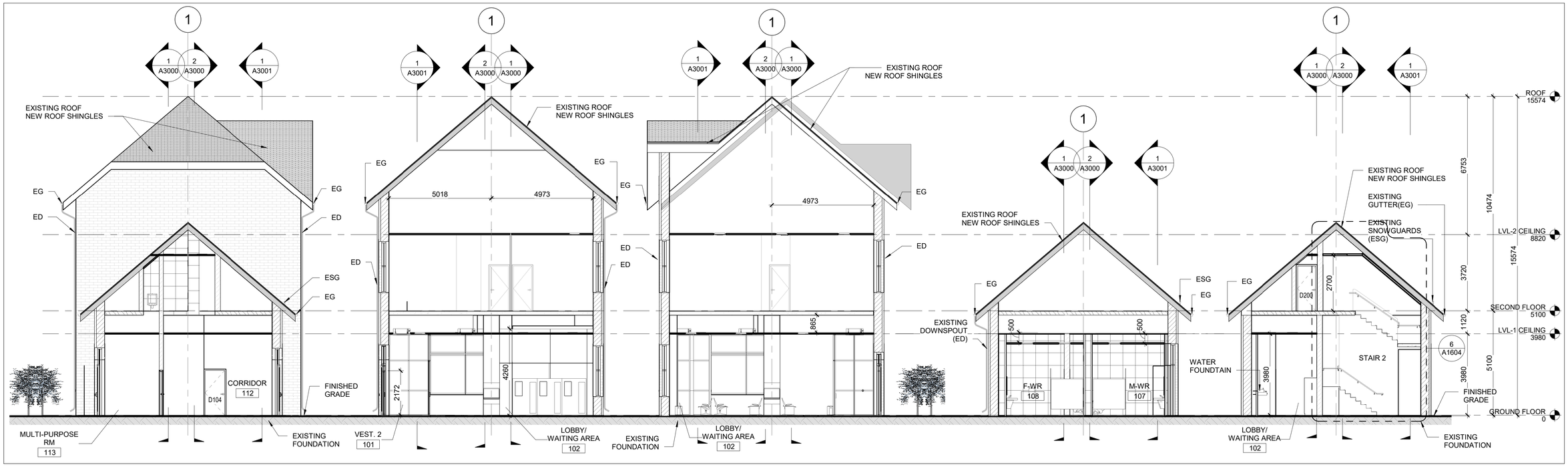
CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A3000

METRIC

ALL DIMENSONS SHOWN ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE NOTED.

1 | BUILDING SECTION 3(P #6)

A3001 | REF: A1300 | SCALE: 1 : 100



2 | BUILDING SECTION 4-BB

A3001 | REF: A1300 | SCALE: 1 : 100

3 | BUILDING SECTION 5(P #6)

A3001 | REF: A1300 | SCALE: 1 : 100

4 | BUILDING SECTION 6(P #6)

A3001 | REF: A1300 | SCALE: 1 : 100

5 | BUILDING SECTION 7-BB

A3001 | REF: A1300 | SCALE: 1 : 100

6 | BUILDING SECTION 8-BB

A3001 | REF: A1300 | SCALE: 1 : 100

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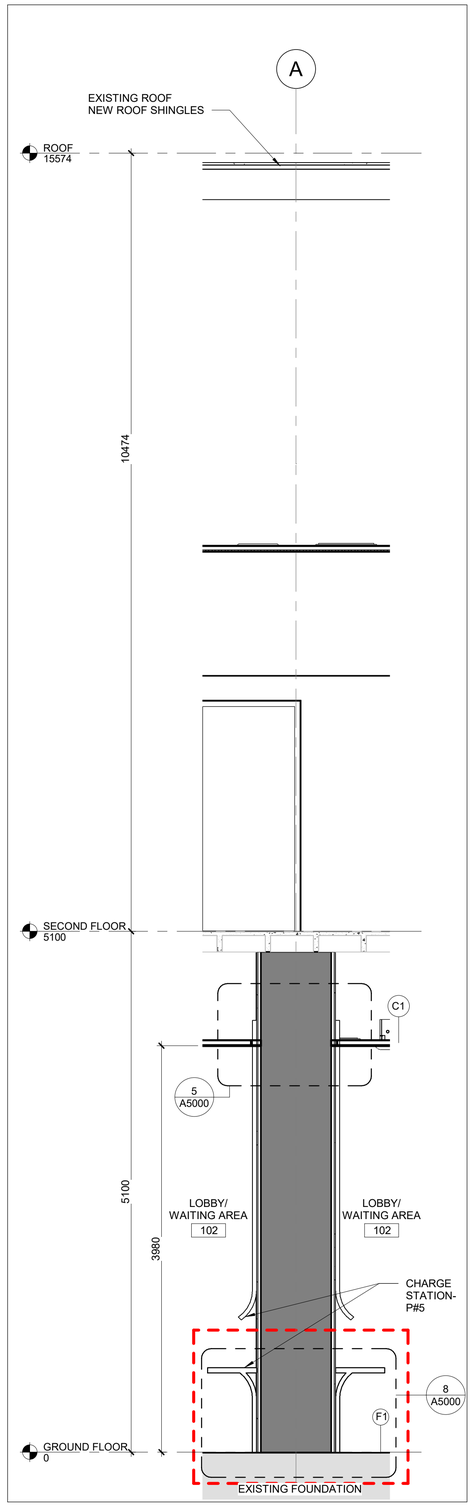
NIAGARA FALLS TRAIN STATION UPGRADES

BUILDING SECTIONS 2

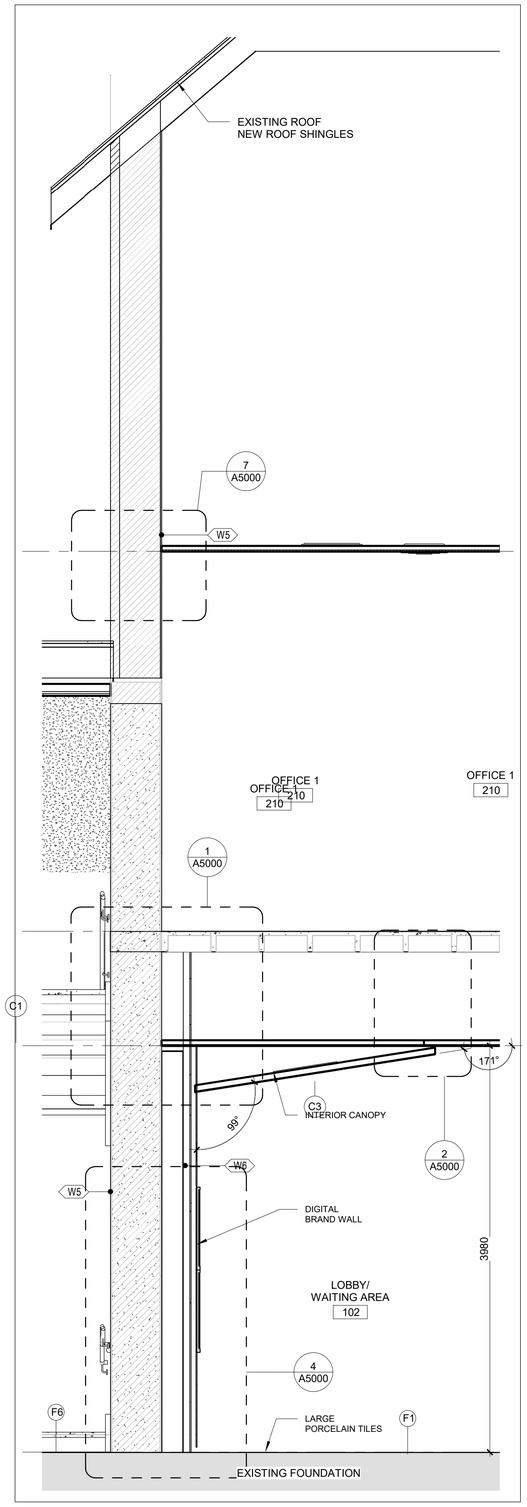
CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A3001



1 | WALL SECTION - COLUMN

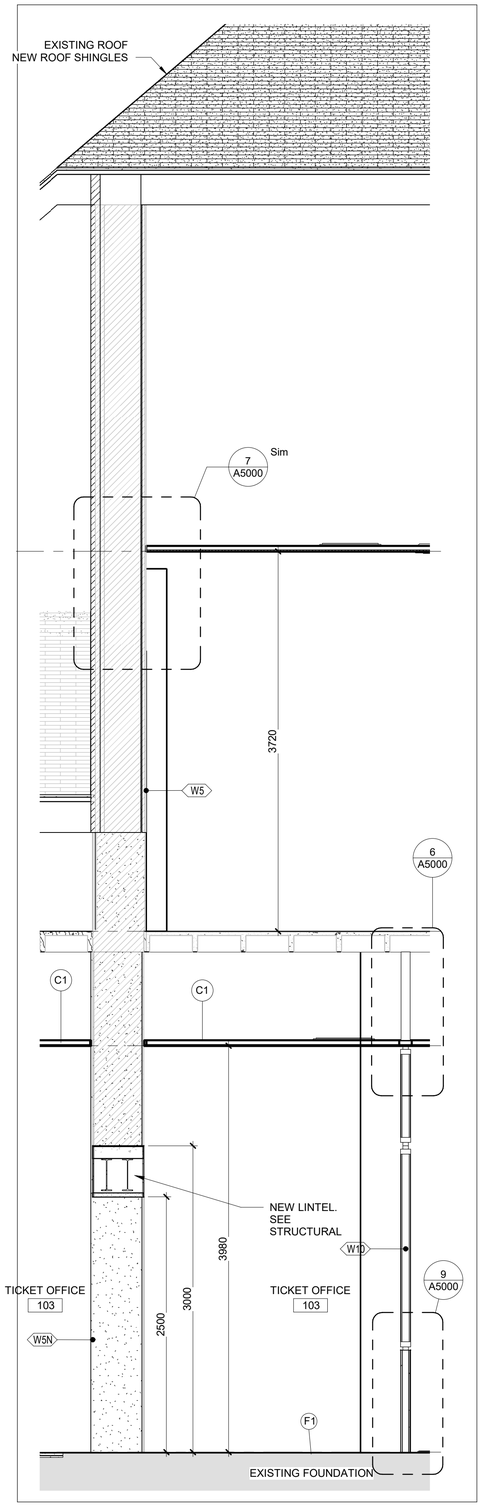
A4000 | REF: A1600 | SCALE: 1 : 30

PROVISIONAL ITEM #5



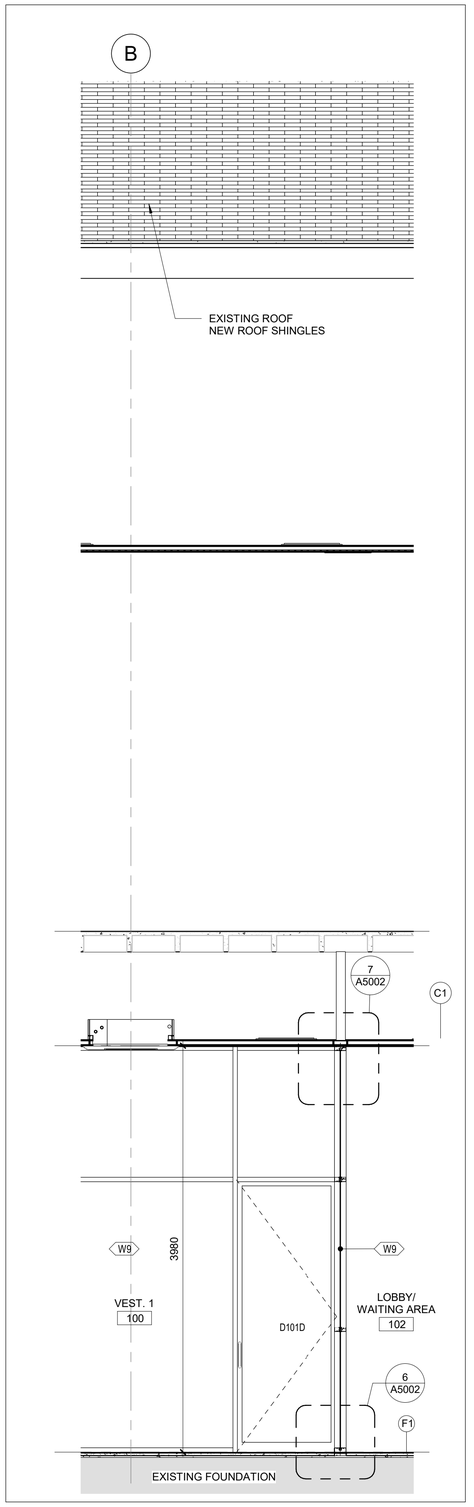
2 | WALL SECTION - PANNEL-BB

A4000 | REF: A1600 | SCALE: 1 : 30



3 | WALL SECTION - TICKETS-BB

A4000 | REF: A1600 | SCALE: 1 : 30



4 | WALL SECTION - VESTIBULE 1-BB

A4000 | REF: A1600 | SCALE: 1 : 30

METRIC

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Niagara Region

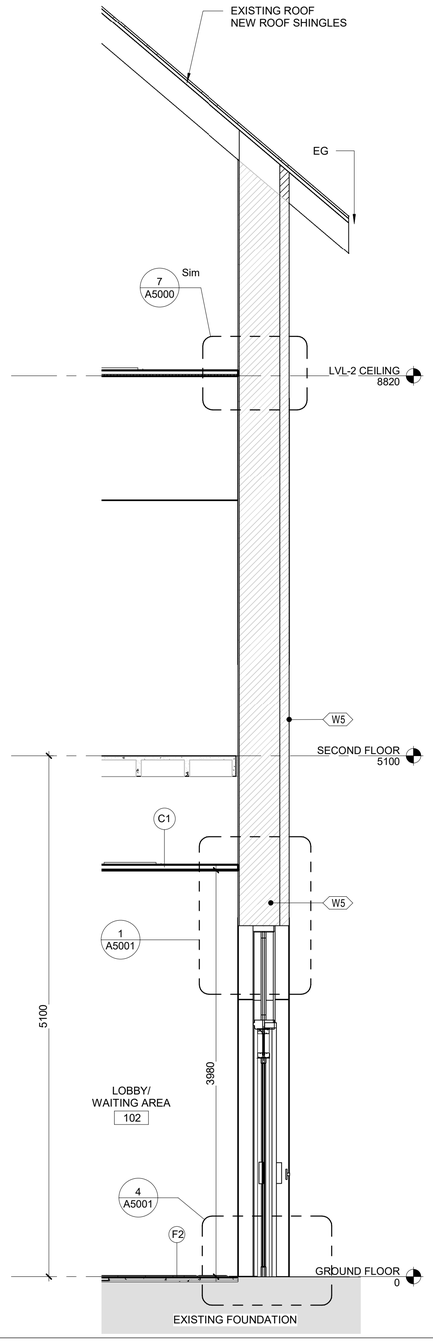
NIAGARA FALLS TRAIN STATION UPGRADES

WALL SECTIONS 1

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A4000

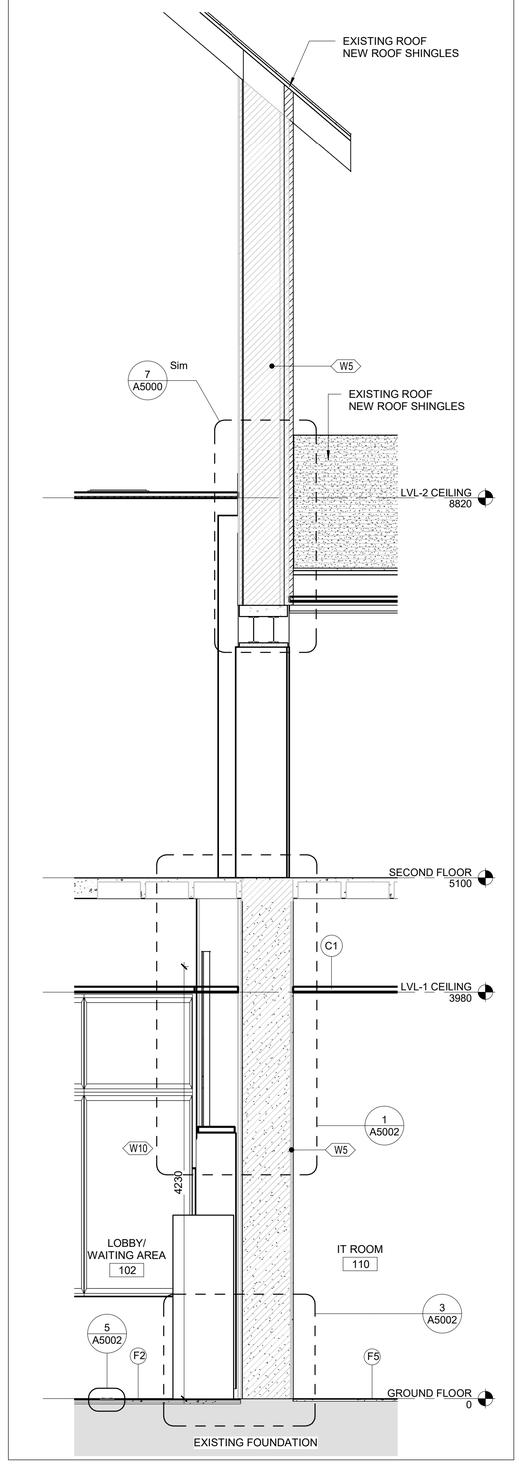
METRIC

ALL DIMENSONS SHOWN ARE
IN METRES AND/OR MILLIMETRES
UNLESS OTHERWISE NOTED.



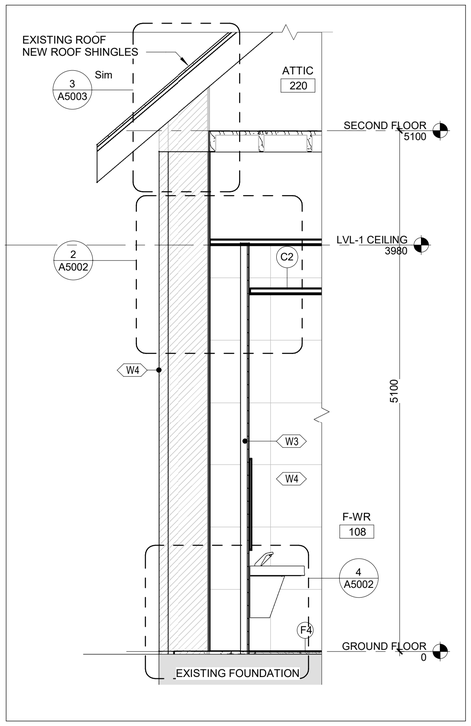
1 | NORTH LOBBY-BB

A4001 | REF: A1600 | SCALE: 1 : 30



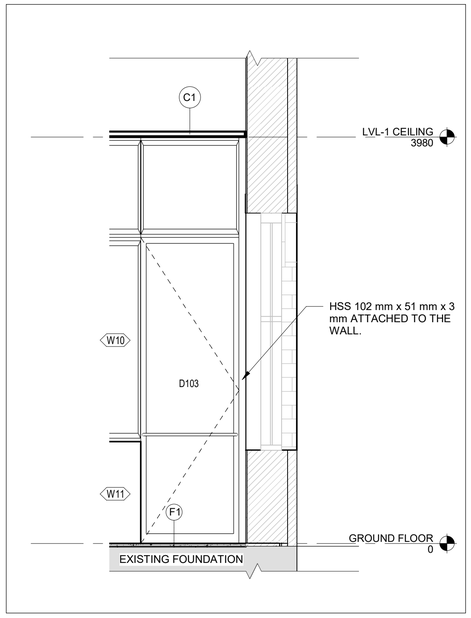
2 | IT ROOM-BB

A4001 | REF: A1600 | SCALE: 1 : 30



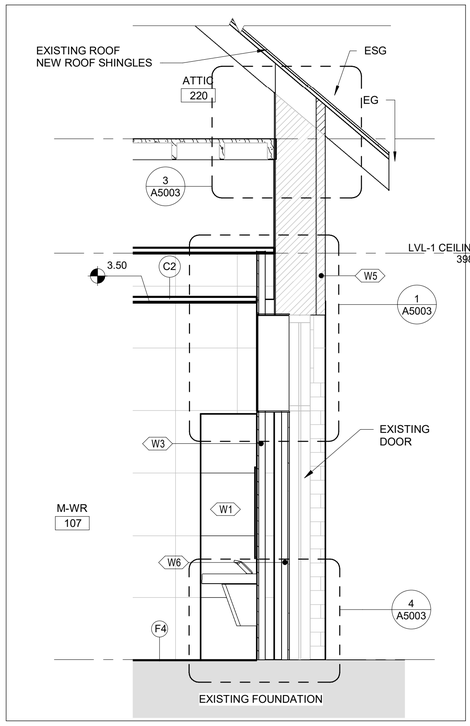
5 | FEMALE-WR-BB

A4001 | REF: A1600 | SCALE: 1 : 30



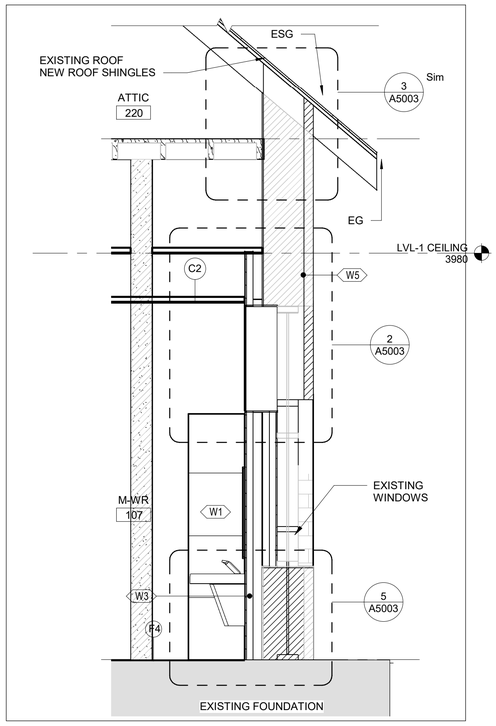
6 | TICKET OFFICE W WINDOW-BB

A4001 | REF: A1600 | SCALE: 1 : 30



3 | MALE-WR 1-BB

A4001 | REF: A1600 | SCALE: 1 : 30



4 | MALE-WR 2-BB

A4001 | REF: A1600 | SCALE: 1 : 30

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WALL SECTIONS 2

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A4001

METRIC

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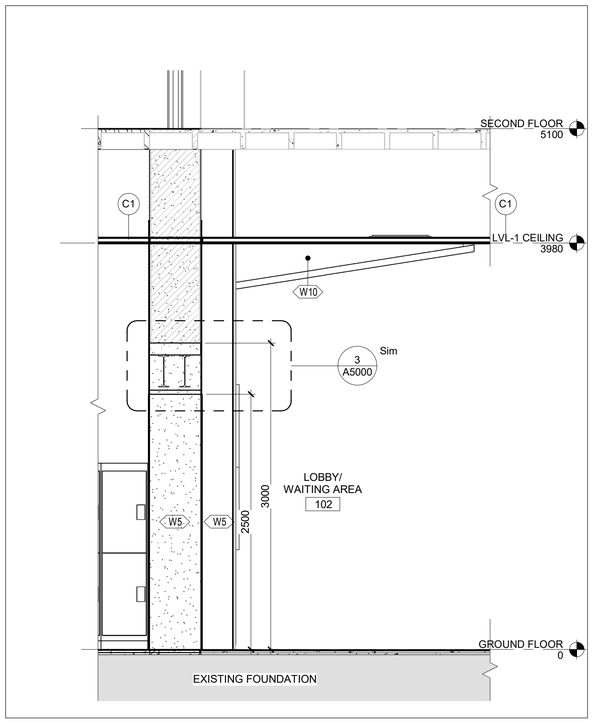
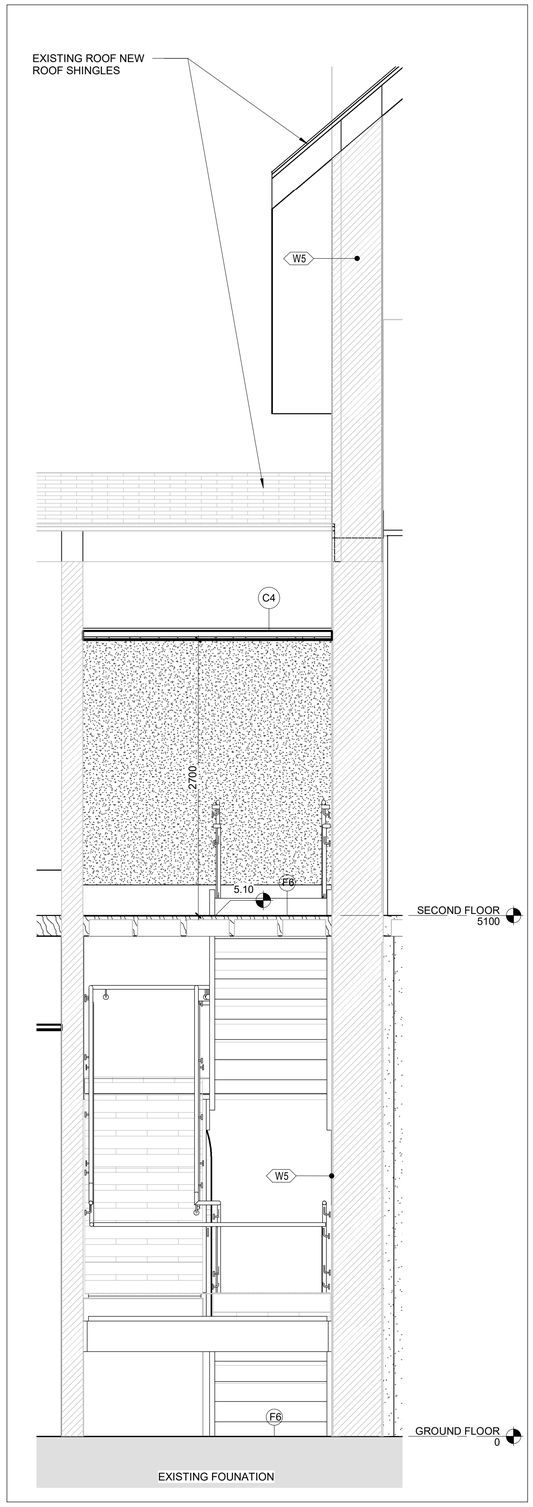


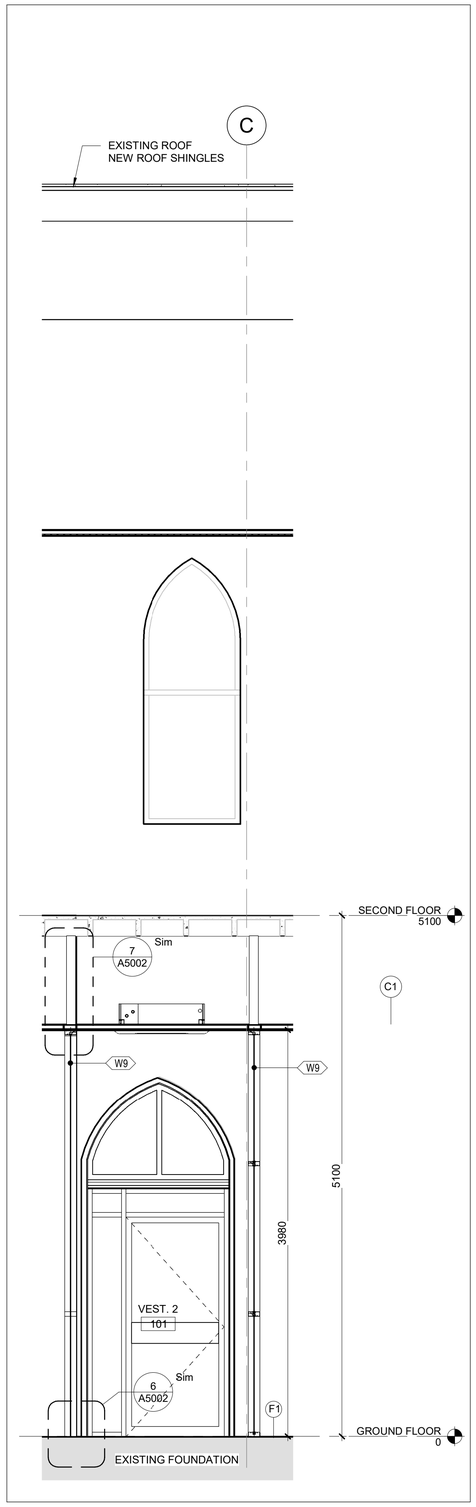
1 | WALL SECTION - OP.EAST-BB

A4002 | REF: A1600 | SCALE: 1 : 30



2 | STAIR 2-BB

A4002 | REF: A1600 | SCALE: 1 : 30



3 | VESTIBULE 2-BB

A4002 | REF: A1600 | SCALE: 1 : 30

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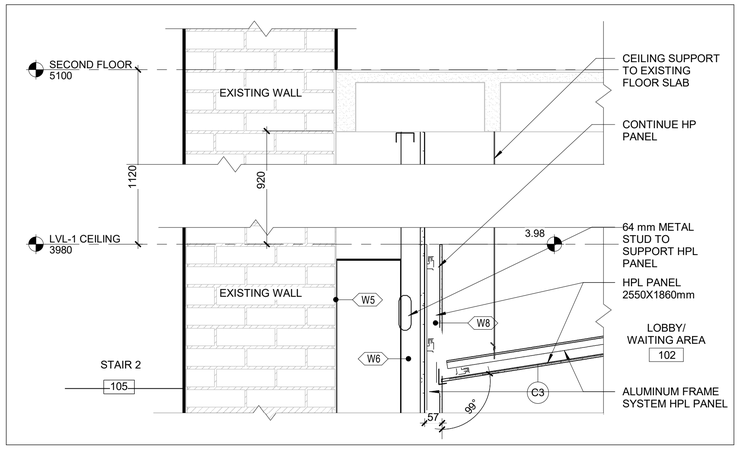
NIAGARA FALLS TRAIN STATION UPGRADES

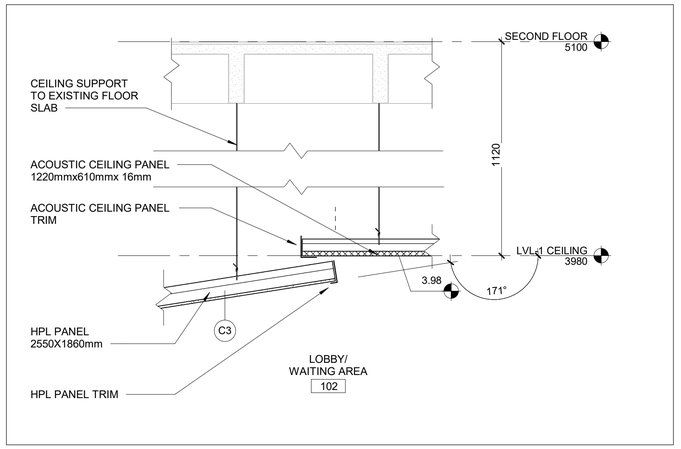
WALL SECTIONS 3

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A4002



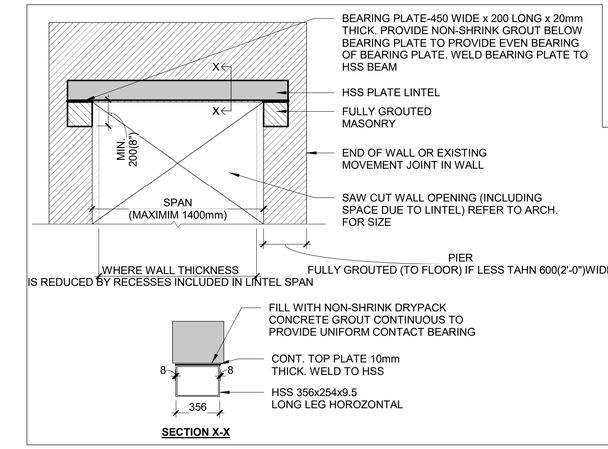
1 | SECTION DETAIL - SCREENS WALL TOP-BB

A5000 | REF: A4000 | SCALE: 1 : 10



2 | SECTION DETAIL - PANNEL AND C1-BB

A5000 | REF: A4000 | SCALE: 1 : 10



3 | TYPICAL STEEL LINTEL DETAIL OVER NEW OPENING IN EX. MASONRY

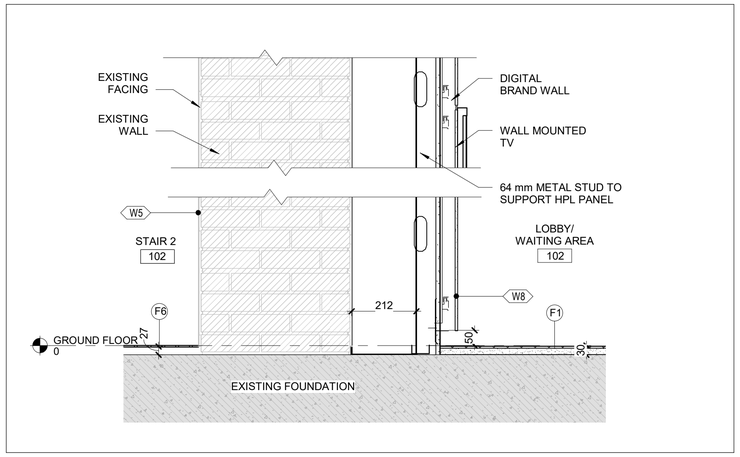
A5000 | REF: A4002 | SCALE: 1 : 25

METRIC

ALL DIMENSONS SHOWN ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE NOTED.

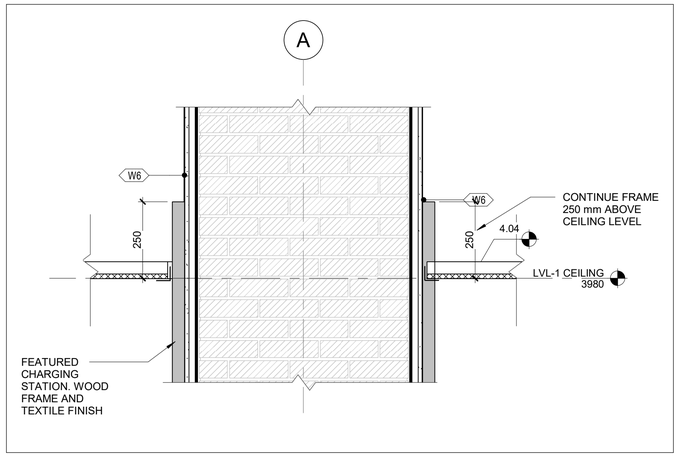
NOTES:

1. REFER TO ARCHITECTURAL PLANS, SECTIONS AND ELEVATIONS FOR OPENING LOCATION AND SIZES.
2. CONTRACTOR TO FIELD VERIFY EXISTING WALL CONSTRUCTION PRIOR TO LINTEL INSTALLATION. LINTEL DESIGN IS BASED ON THE ASSUMPTION OF AN EXISTING 500mm THICK SOLID OR GROUTED BRICK WALL. IF THIS CONDITION IS NOT SATISFIED, NOTIFY THE ARCHITECT/ENGINEER BEFORE PROCEEDING. THE LINTEL AND BEARING PLATE DETAILS MAY NEED TO BE ADJUSTED TO SUIT.
3. IDENTIFY EXISTING MOVEMENT JOINTS. IF LOCATED LESS THAN 900mm (3'-0") FROM FACE OF NEW OPENING NOTIFY THE CONSULTANT AND DO NOT CUT BEFORE RECEIVING FURTHER INSTRUCTIONS.
4. CONTRACTOR TO DESIGN AND PROVIDE TEMPORARY SHORING AS REQUIRED TO SAFELY SUPPORT EXISTING LOADS.



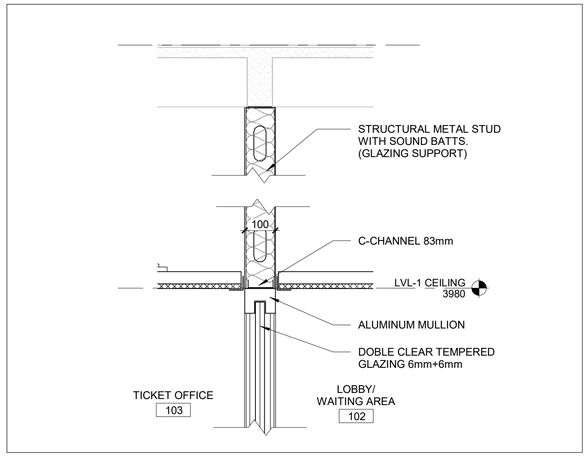
4 | SECTION DETAIL - SCREENS WALL BASE-BB

A5000 | REF: A4000 | SCALE: 1 : 10



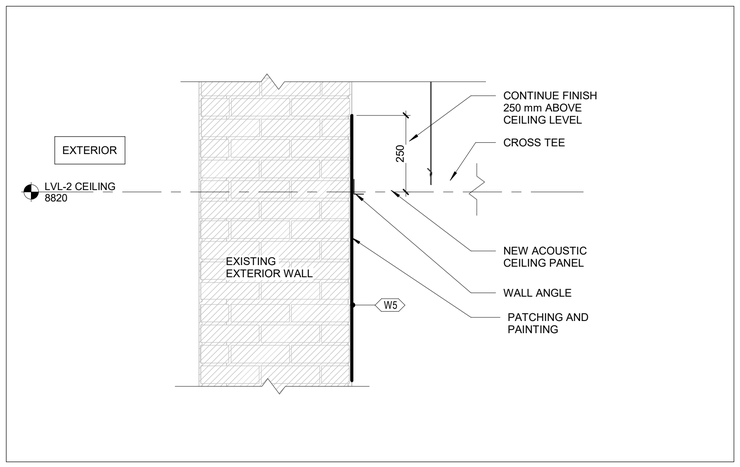
5 | SECTION DETAIL - COLUMN AND C1-BB

A5000 | REF: A4000 | SCALE: 1 : 10



6 | WALL SECTION - TICKETS - HEAD-BB

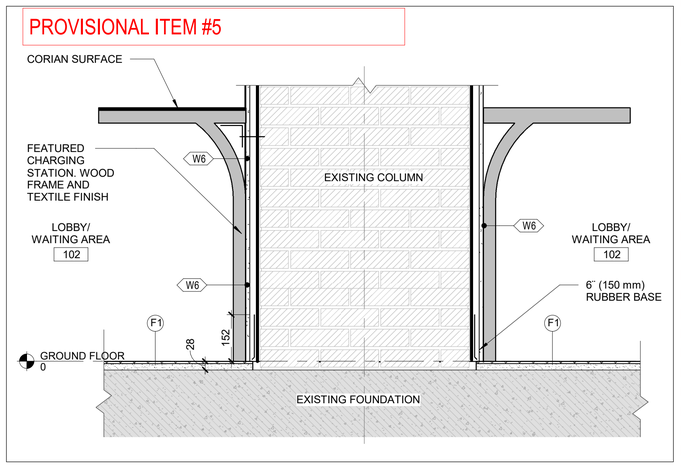
A5000 | REF: A4000 | SCALE: 1 : 10



7 | SECTION DETAIL - ROOF AND W5-BB

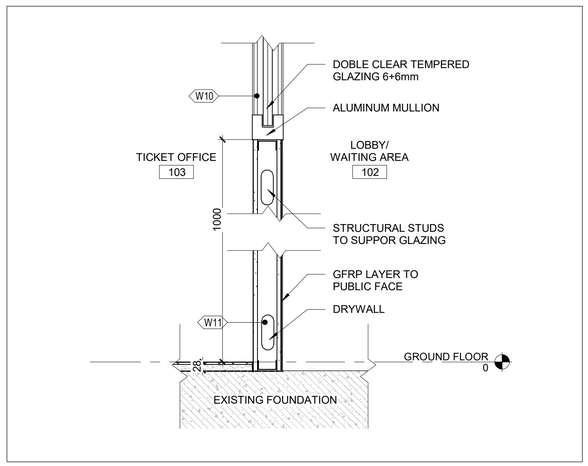
A5000 | REF: A4000 | SCALE: 1 : 10

PROVISIONAL ITEM #5



8 | SECTION DETAIL - COLUMN AND FLOOR

A5000 | REF: A4000 | SCALE: 1 : 10



9 | SECTION DETAIL - TICKETS PANEL-BB

A5000 | REF: A4000 | SCALE: 1 : 10

REFERENCE DRAWINGS		ISSUE			REVISIONS		
		B	2024/02/08	ISSUED FOR TENDER			
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DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

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CHECKED BY: S.CHERIAN 2023/09/22	APPROVED BY: S.CHERIAN 2023/09/22
SCALE: AS SHOWN	FULL SIZE ONLY

ONTARIO ASSOCIATION OF ARCHITECTS
SHERY KOZHIMALA CHERIAN
LICENCE 7610

ARCHITECTURE 49

PROJECT NO. BE20101016

ISSUED FOR TENDER

Niagara Region

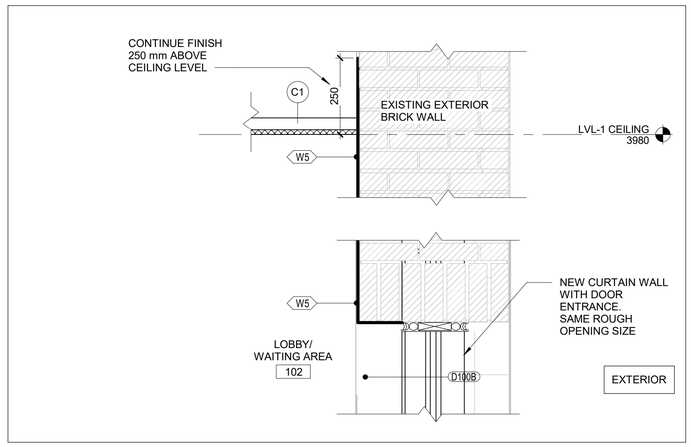
NIAGARA FALLS TRAIN STATION UPGRADES

SECTION DETAILS 1

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A5000

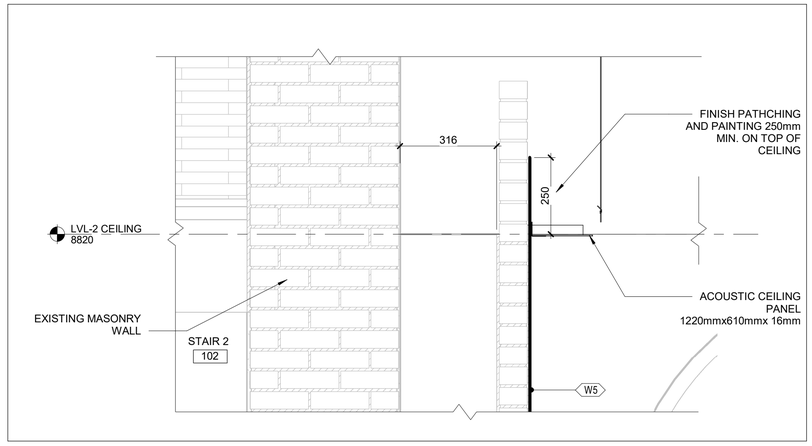
METRIC

ALL DIMENSONS SHOWN ARE
IN METRES AND/OR MILLIMETRES
UNLESS OTHERWISE NOTED.



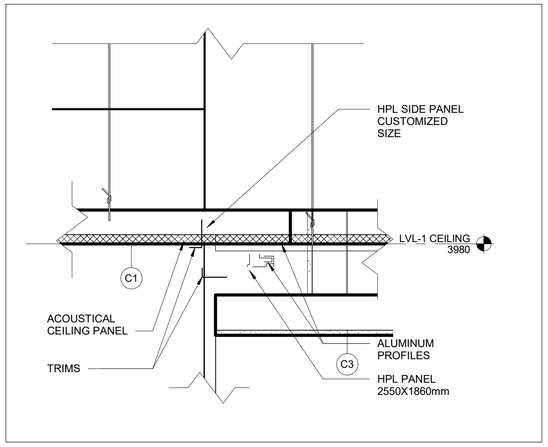
1 | WALL SECTION - NORTH LOBBY -HEAD-BB

A5001 | REF: A4001 | SCALE: 1 : 10



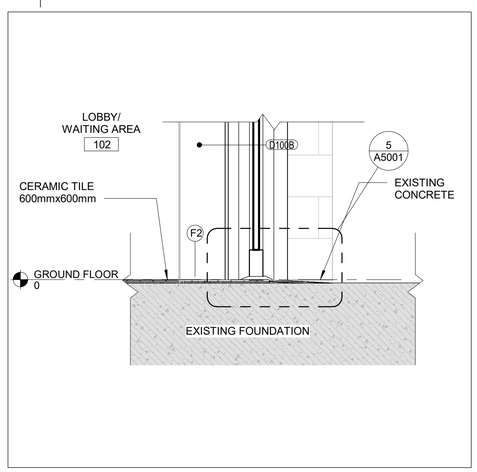
2 | SECTION DETAIL - LUNCH-BB

A5001 | SCALE: 1 : 10



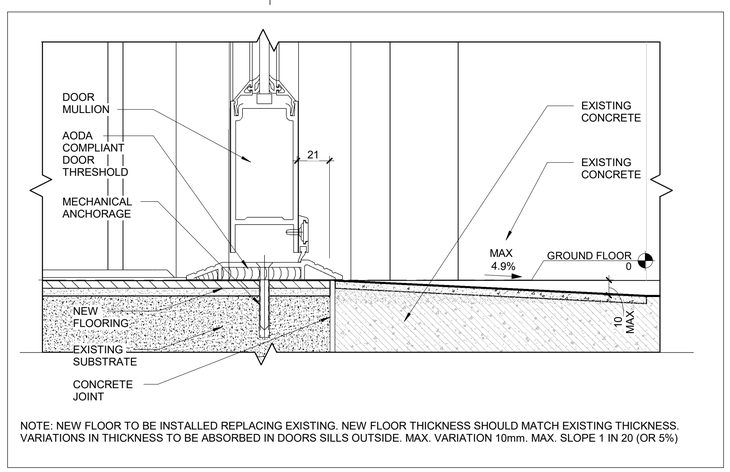
3 | C1-C3 TRANSITION-BB

A5001 | REF: A2101 | SCALE: 1 : 5



4 | SECTION DETAIL - LOBBY F2-BB

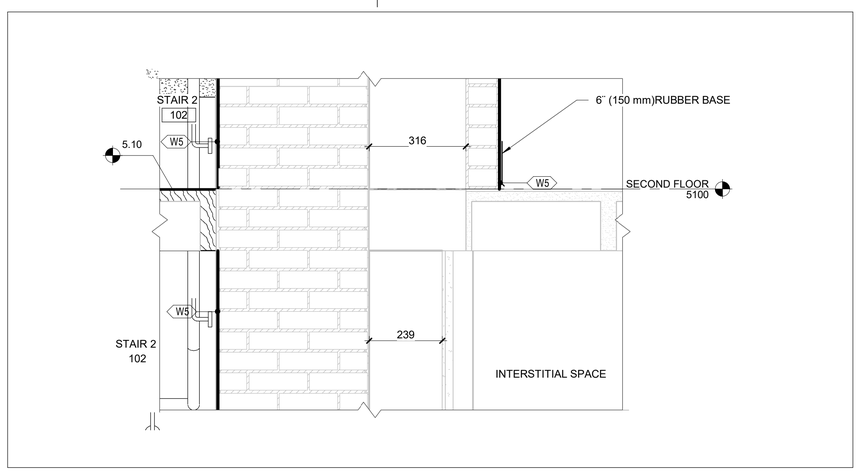
A5001 | REF: A4001 | SCALE: 1 : 10



NOTE: NEW FLOOR TO BE INSTALLED REPLACING EXISTING. NEW FLOOR THICKNESS SHOULD MATCH EXISTING THICKNESS. VARIATIONS IN THICKNESS TO BE ABSORBED IN DOORS SILLS OUTSIDE. MAX. VARIATION 10mm. MAX. SLOPE 1 IN 20 (OR 5%)

5 | SILL DETAIL-BB

A5001 | REF: A5001 | SCALE: 1 : 2



6 | SECTION DETAIL - LOBBY W7-BB

A5001 | SCALE: 1 : 10

REFERENCE DRAWINGS		ISSUE			REVISIONS		
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DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

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LICENCE 7610

ARCHITECTURE 49

PROJECT NO. BE20101016

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Niagara Region

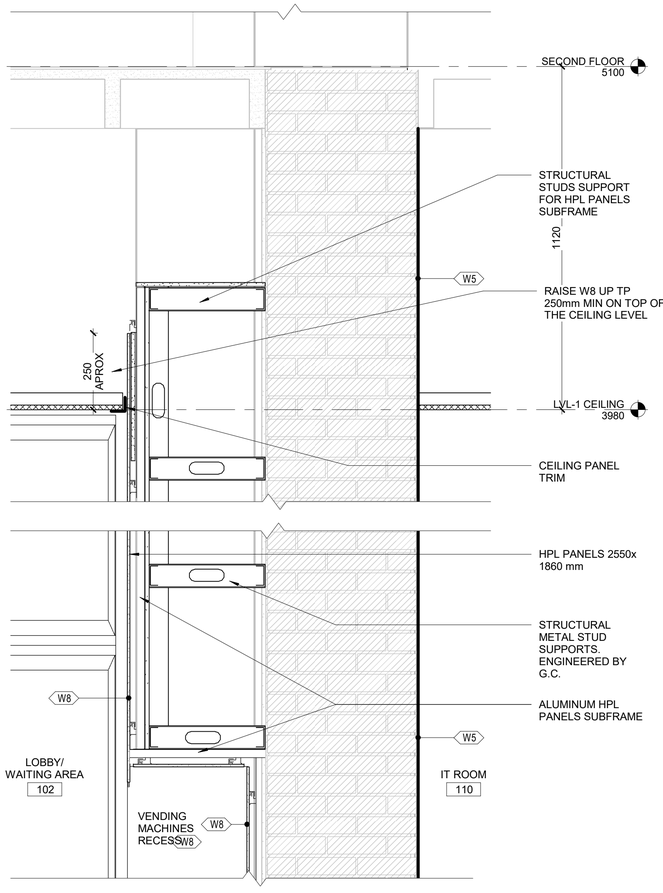
NIAGARA FALLS TRAIN STATION UPGRADES

SECTION DETAILS 2

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A5001

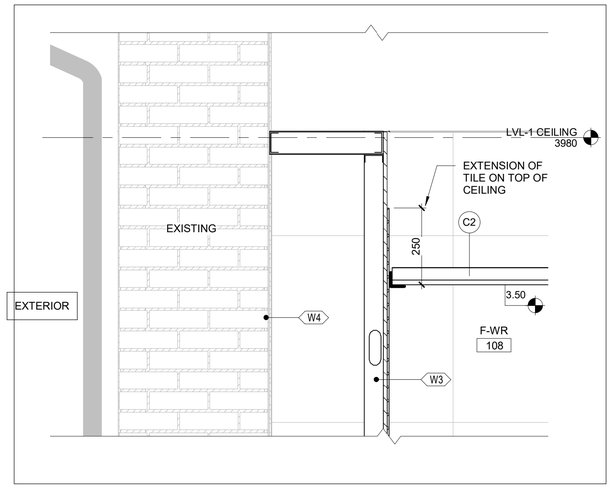
METRIC

ALL DIMENSONS SHOWN ARE
IN METRES AND/OR MILLIMETRES
UNLESS OTHERWISE NOTED.



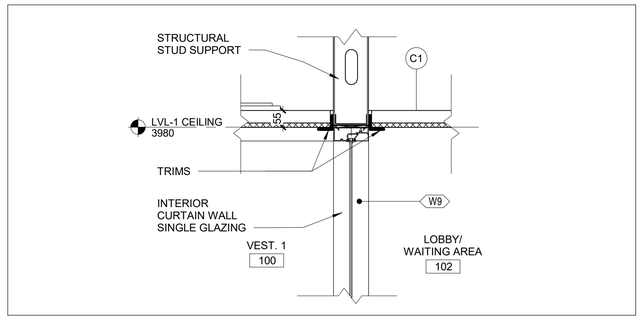
1 | WALL SECTION - TICKETS MACHINE-BB

A5002 | REF: A4001 | SCALE: 1 : 10



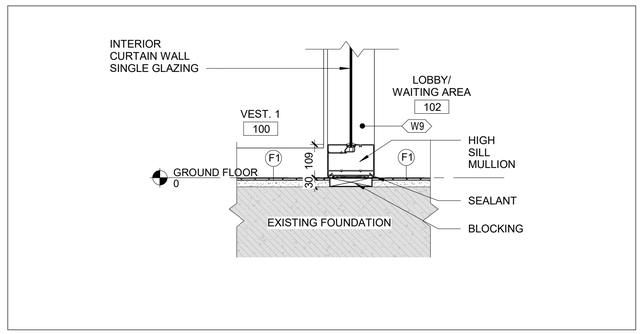
2 | SECTION DETAIL- FEMALE WR. HEAD-BB

A5002 | REF: A4001 | SCALE: 1 : 10



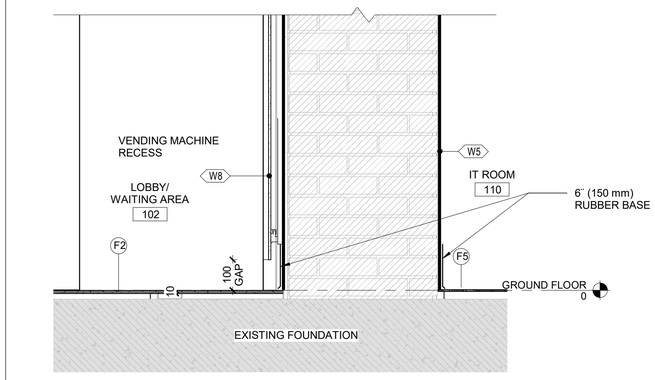
7 | SECT. DET. - VEST.1 W9-BB

A5002 | REF: A4000 | SCALE: 1 : 10



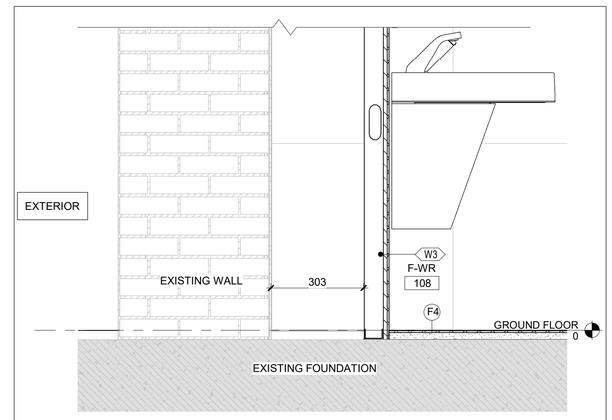
6 | SECT. DET. - VEST.1 F1-BB

A5002 | REF: A4000 | SCALE: 1 : 10



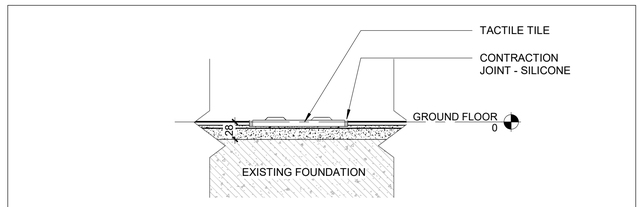
3 | SECT. DET. - TICKETS MACHINES - BASE-BB

A5002 | REF: A4001 | SCALE: 1 : 10



4 | SECTION DETAIL - FEMALE WR. VOID BASE-BB

A5002 | REF: A4001 | SCALE: 1 : 10



5 | SECT. DET. - TACTILE TILE-BB

A5002 | REF: A4001 | SCALE: 1 : 5

REFERENCE DRAWINGS		ISSUE			REVISIONS		
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ONTARIO ASSOCIATION OF ARCHITECTS
SHERY KOZHIMALA CHERIAN
LICENCE
7610

ARCHITECTURE 49

PROJECT NO. BE20101016

ISSUED FOR TENDER

Niagara Region

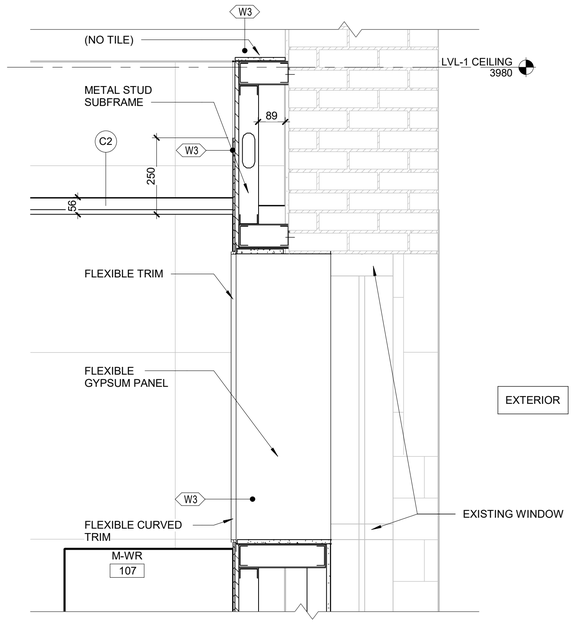
NIAGARA FALLS TRAIN STATION UPGRADES

SECTION DETAILS 3

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A5002

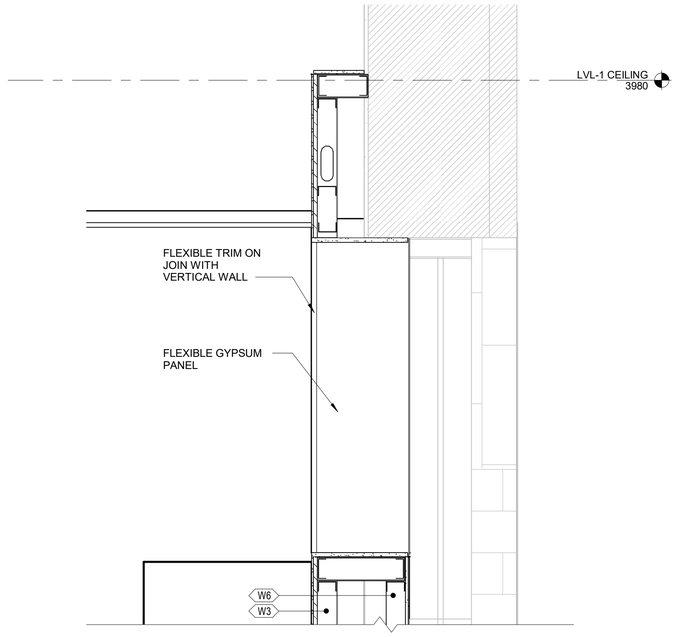
METRIC

ALL DIMENSONS SHOWN ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE NOTED.



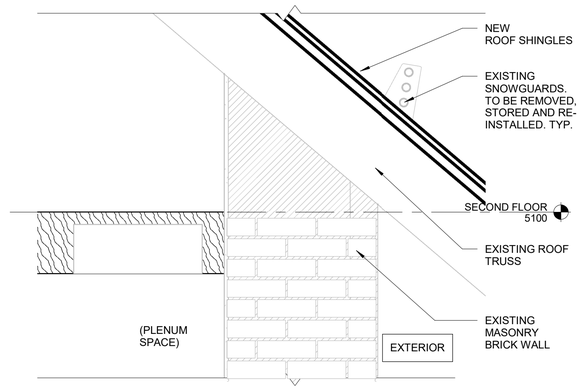
1 | SECTION DETAIL - MALE WR. DOOR TOP-BB

A5003 | REF: A4001 | SCALE: 1 : 10



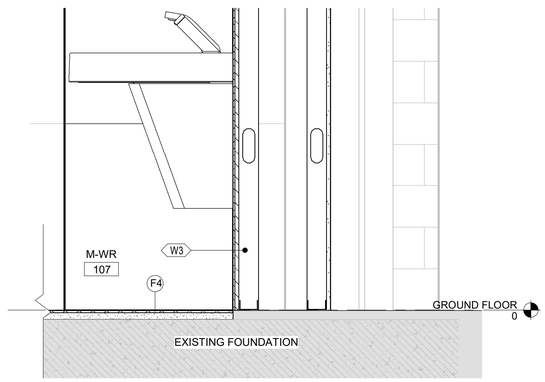
2 | SECTION DETAIL - MALE WR. WINDOW TOP-BB

A5003 | REF: A4001 | SCALE: 1 : 10



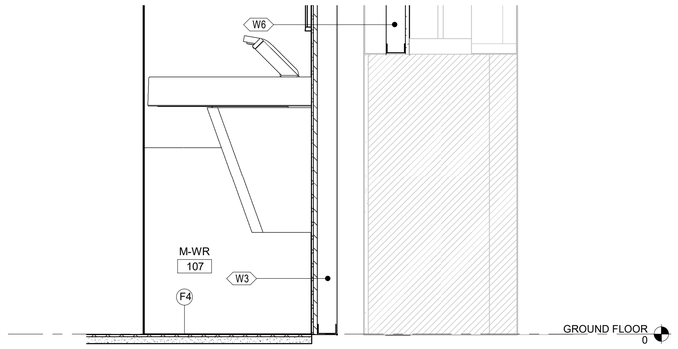
3 | SECTION DETAIL - M-WR-BB

A5003 | REF: A4001 | SCALE: 1 : 10



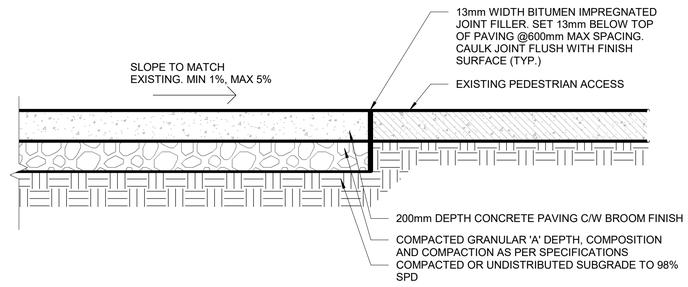
4 | SECTION DETAIL - MALE WR. DOOR BASE-BB

A5003 | REF: A4001 | SCALE: 1 : 10



5 | SECTION DETAIL - MALE WR. WINDOW BASE-BB

A5003 | REF: A4001 | SCALE: 1 : 10



6 | SECTION-TYPICAL WALKWAY(P #1)

A5003 | REF: A1000 | SCALE: 1 : 20

PROVISIONAL ITEM #1

REFERENCE DRAWINGS		ISSUE			REVISIONS		
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NIAGARA FALLS TRAIN STATION UPGRADES

SECTION DETAILS 4

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A5003

METRIC

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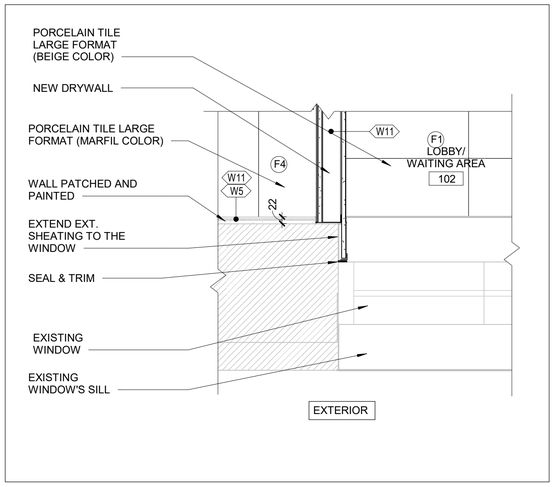
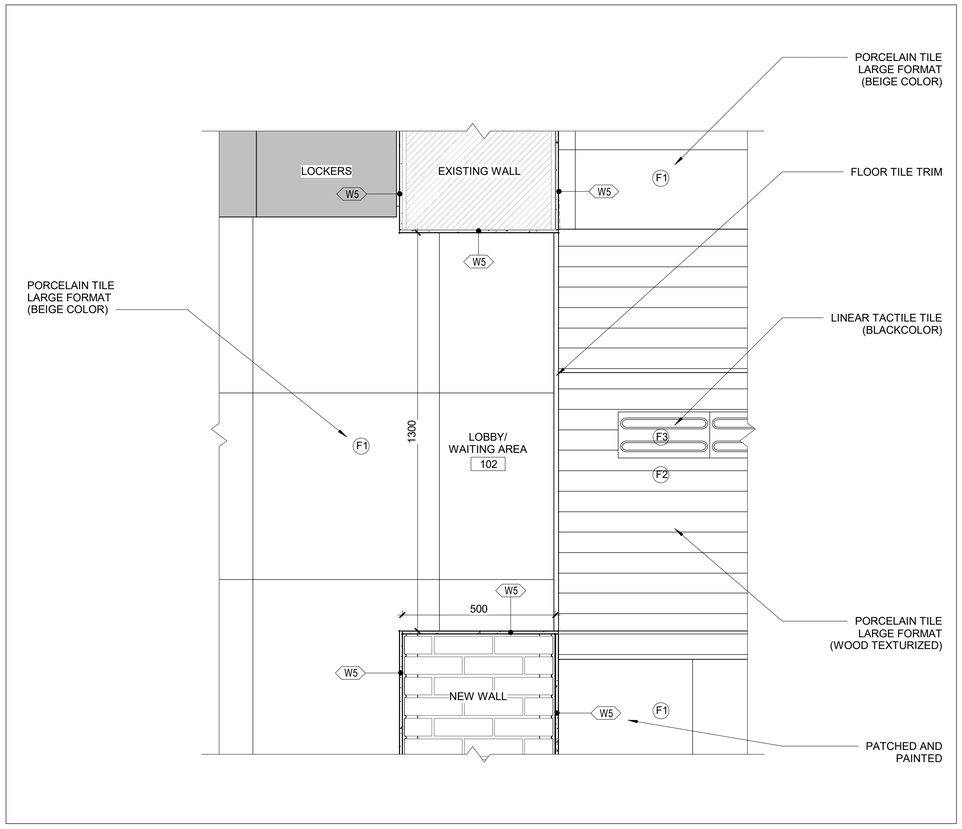


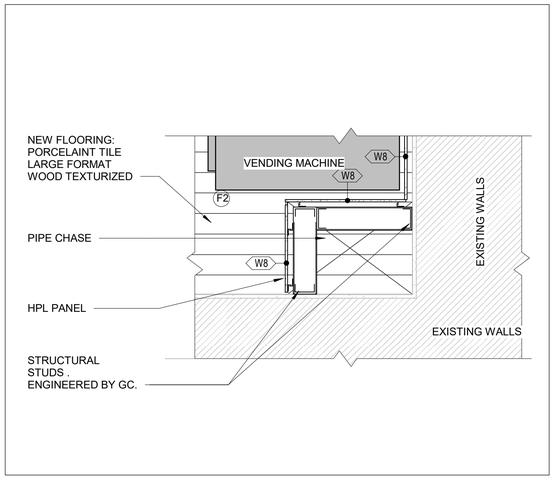
1 | PLAN DETAIL - DRYWALL EXISTING-BB

A5004 | REF: A1600 | SCALE: 1 : 10



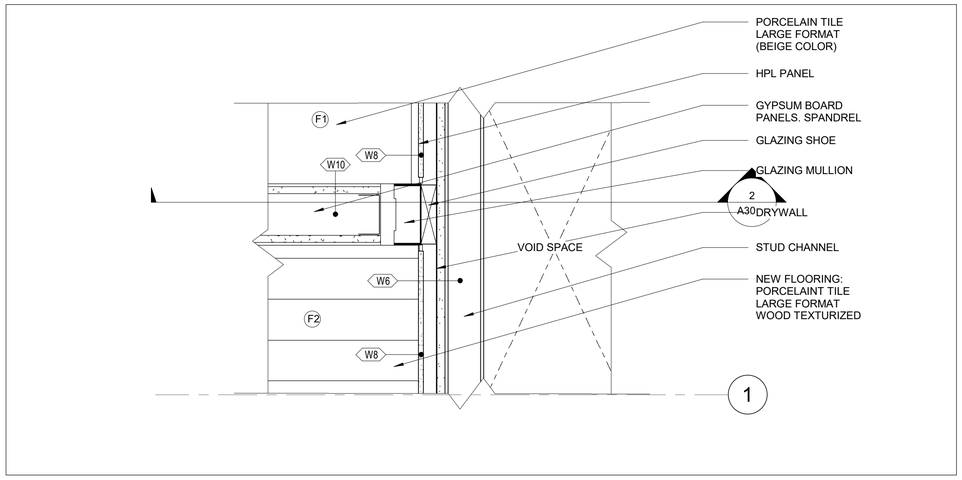
2 | PLAN DETAIL- GROUND -NEW OP WEST JAMB-BB

A5004 | REF: A1600 | SCALE: 1 : 10



3 | PD- GR - TICKETS MACH CORNER-BB

A5004 | REF: A1600 | SCALE: 1 : 10



4 | PD - GR - TICKETS SHAFT-BB

A5004 | REF: A1600 | SCALE: 1 : 5

REFERENCE DRAWINGS		ISSUE			REVISIONS		
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DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

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NIAGARA FALLS TRAIN STATION UPGRADES

PLAN DETAILS 1

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A5004

DOOR/OPENING SCHEDULE

	WT													FRAME					
No.	TYPE	LEAFS	WIDTH	WIDTH*	PANEL WIDTH*	HEIGHT	THICKNESS	MATERIAL	INSULATED	UNDERCUT	FINISH	LOUVRE	GLASS	TYPE	MATERIAL	DEPTH	FINISH	HARDWARE GROUP	COMMENTS
D100A	H2G	1	965	965	965	2150	45	AL	√				TEMP. LAM	-	AL		AL		
D100B	H2G	1	965	965	965	2150	45	AL	√				TEMP. LAM	-	AL		AL		
D100C	H2G	1	965	965	965	2150	45	AL	√				TEMP. LAM	-	AL		AL		
D100D	H2G	1	965	965	965	2150	45	AL	√				TEMP. LAM	-	AL		AL		
D101A	H2G	1	965	984	984	2667	45	AL					TEMP. LAM	-	AL		AL		
D101C	H2G	1	965	984	984	2667	45	AL					TEMP. LAM	-	AL		AL		
D101D	H2G	1	965	984	984	2667	45	AL					TEMP. LAM	-	AL		AL		
D103	FGA	1	965	965	965	3000	45	AL					TEMP. LAM	-	AL		AL		
D104	F	1	965	965	965	2200	45	HM						F01	PS	146			
D105	NL1	1	965	965	965	2200	45	HM						F01	PS	146			45 min FRR
D106	F	1	965	965	965	2200	45	HM						F01	PS	146			
D107	F	1	965	965	965	2200	45	HM						F01	PS	146			
D108	F	1	965	965	965	2200	45	HM						F01	PS	146			
D109	F	1	965	965	965	2200	45	HM						F01	PS	146			
D110	F	1	965	965	965	2200	45	HM						F01	PS	146			
D111	F	1	900	900	900	2200	45	HM						F01	PS	146			
D112	F	1	900	900	900	2150	45	HM						F01	PS	146			
D115	F	1	900	900	900	2200	45	HM						F01	PS	146			
D200	F	1	900	900	900	2200	45	HM						F01	PS	146			1 HRR FRR
D208	NL1	1	900	900	900	2200	45	HM						F01	PS	146			45 min FRR
D210	F	1	900	900	900	2200	45	HM						F05	PS	146			
D211	F	1	900	900	900	2200	45	HM						F05	PS	146			
D212	F	1	900	900	900	2200	45	HM						F05	PS	146			

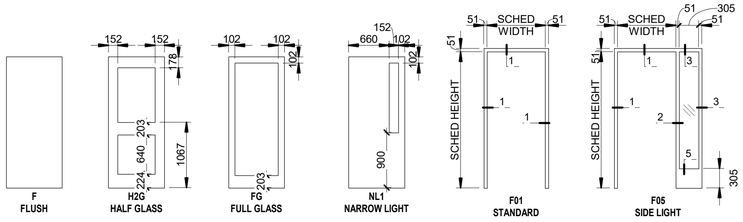
DOOR/OPENING SCHEDULES ABBREVIATIONS

AL	ALUMINUM
HM	HOLLOW METAL
TEMP. LAM	TEMPERED LAMINATED

METRIC

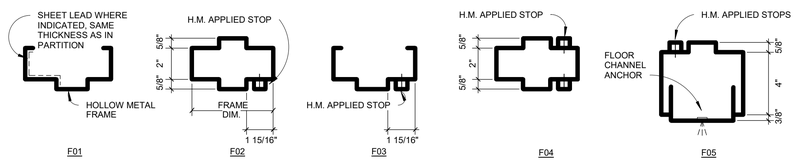
ALL DIMENSONS SHOWN ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE NOTED.

DOOR / OPENING SCHEDULES



DOOR PANEL TYPES

DOOR FRAME TYPES



HOLLOW METAL FRAME PROFILES

GENERAL NOTES:

1. FRAMES ARE TO BE WELDED UNLESS NOTED OTHERWISE.
2. FRAME INFO SHOWN IS TYP. UNLESS NOTED OTHERWISE BY SPECIFIC DETAIL REFERENCE OR FRAME, PROFILE REFERENCE.

DOOR PANEL AND FRAME TYPES

HOLLOW METAL FRAME PROFILES

GENERAL NOTES

1. ALL NEW FRAMES & DOORS TO BE INSTALLED IN EXISTING EXTERIOR OR INTERIOR ROUGH-OPENINGS TO BE SITE MEASURED PRIOR TO FABRICATION.
2. * PROVISIONAL ITEM #6

ROOM FINISH SCHEDULE

	LOCATION	FLOOR			WALLS								CEILING					
					NORTH		SOUTH		EAST		WEST							
No.	ROOM NAME	MATL	FNSH	BASE	MATL	FNSH	MATL	FNSH	MATL	FNSH	MATL	FNSH	MATL	FNSH	HGT	COMMENTS	No.	Construction phase
100	VEST. 1	EX.CONC	POT	POT	CW	GLZ	CW	GLZ / CB PT	CW	GLZ	CW	GLZ	ACT	-	3980			New
101	VEST. 2	EX.CONC	POT	POT	CW	GLZ / CB PT	CW	GLZ	CW	GLZ	CW	GLZ	ACT	-	3980			New
102	LOBBY/ WAITING AREA	EX.CONC	POT/ WYF	POT	EX MS BR	GP PT	EX MS BR	GP PT	EX MS BR	GP PT	EX MS BR	GP PT	ACT	-	3980			New
103	TICKET OFFICE	EX.CONC	POT	POT	EX MS BR	GP PT	EX MS BR	GP PT	CW	GLZ	EX MS BR	GP PT	ACT	-	3980			New
104	STAIRS 1	EX.CONC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	-	7800			New
106	U-WR	EX.CONC	POT	POT	EX MS BR / DRW	POT	DRW	POT	EX MS BR	POT	DRW	POT	ACT WSH	-	3500			New
107	M-WR	EX.CONC	POT	POT	EX MS BR / DRW	POT	DRW	POT	DRW	POT	EX MS BR	POT	ACT WSH	-	3500			New
108	F-WR	EX.CONC	POT	POT	DRW	POT	DRW	POT	DRW	POT	EX MS BR	POT	ACT WSH	-	3500			New
109	JANITOR	EX.CONC	VT	RUB	DRW	GB PT / FRP	EX MS BR	GP PT / FRP	DRW	GB PT / FRP	DRW	GB PT / FRP	ACT WSH	-	3500			New
110	IT ROOM	EX.CONC	VT	RUB	EX MS BR	GP PT	EX MS BR	GP PT	EX MS BR	GP PT	EX MS BR	GP PT	EXP	-	4900			New
111	WR	EX.CONC	POT	POT	EX MS BR	POT	EX MS BR	POT	EX MS BR	POT	EX MS BR	POT	ACT WSH	-	4900			New
112	CORRIDOR	EX.CONC	VT	RUB	EX MS BR	GP PT	EX MS BR	GP PT	EX MS BR	GP PT	EX MS BR	GP PT	EXP	-	4900			New
113	MULTI-PURPOSE RM	EX.CONC	VT	RUB	EX MS BR	GP PT	EX MS BR	GP PT	EX MS BR	GP PT	EX MS BR	GP PT	EXP	-	4900			New
114	OTS*	EX.CONC	CONC.PT	N/A	EX MS BR	SLR*	EX MS BR	SLR*	EX MS BR	SLR*	EX MS BR	SLR*	EXP	-	4900			New
115	MECHANICAL RM*	EX.CONC	CONC.PT	EX.CONC	EX MS BR	SLR	EX MS BR	SLR	EX MS BR	SLR	EX MS BR	SLR	EXP	-	4900			New
200	OFFICE AREA	EX.WD	CARP TILE	RUB	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	ACT	-	3720			Existing
204	KITCHENETTE	EX.WD	VT	RUB	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	ACT	-	3720			Existing
205	WR-F-SECOND	EX.WD	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	ACT WSH	-	2700			Existing
206	WR-M-SECOND	EX.WD	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	ACT WSH	-	2700			Existing
207	JAN	EX.WD	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	FRR GYP	PT	2700			Existing
208	CORRIDOR	EX.WD	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	ACT	-	2700			Existing
210	OFFICE 1	EX.WD	CARP TILE	RUB	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	ACT	-	3720			Existing
211	OFFICE 2	EX.WD	CARP TILE	RUB	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	ACT	-	3720			Existing
212	OFFICE 3	EX.WD	CARP TILE	RUB	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	ACT	-	3720			Existing
213	GO TRANSIT AREA	EX.WD	CARP TILE	RUB	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	ACT	-	3720			Existing
214	VESTIBULE	EX.WD	VT	RUB	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	EXISTING	ACT	-	3720			Existing

FINISH SCHEDULES ABBREVIATIONS

ACT	ACOUSTIC CEILING TILES
AL	ALUMINUM
AP	ACOUSTIC PANEL
BR	BRICK
CARP	CARPET
CB	CEMENT BOARD
CHD	CONCRETE HARDENER
CLAN	CLEAR ANODIZED
CONC	CONCRETE
CT	CERAMIC TILE
CW	CURTAIN WALL
DRW	DRYWALL
EPX	EPOXY
ESD	ELECTROSTATIC DISCHARGE
EX	EXISTING
EXP	EXPOSED
FRP	FIBERGLASS REINFORCED PLASTIC PANEL
GB	GYPSUM BOARD
GLZ	GLAZING
GP	GYPSUM PLASTER
HM	HOLLOW METAL
IAL	INSULATED ALUMINUM
LG1	INSULATED GLASS
LG2	LAMINATED GLASS
LMSF	LAMINATE SHEET FLOORING
MCW	MINERAL CORE WOOD
MS	MASONRY
POT	PORCELAIN TILE
PT	PAINTED
PTCH	PATCHED
PTRS	PAINTED RESINE
RUB	RUBBER
SCW	SOLID CORE WOOD
ST	STEEL
SLR	SEALER
TMP	TEMPERED
U/S	UNDERSIDE
VT	VINYL TILE
WD	WOOD
WDP	WOOD PANEL
WSH	WASHABLE
WYF	WAYFINDING FLOOR

REFERENCE DRAWINGS

DWG NO.	TITLE

ISSUE

NO.	DATE	ISSUED FOR
B	2024/02/08	ISSUED FOR TENDER
A	2023/04/24	ISSUED FOR BUILDING PERMIT

REVISIONS

REV.	DATE	

DRAWN BY: P.LAPALIKAR 2023/09/22
DESIGNED BY: G.DANESHGAR 2023/04/21
CHECKED BY: S.CHERIAN 2023/09/22
APPROVED BY: S.CHERIAN 2023/09/22
SCALE: AS SHOWN FULL SIZE ONLY

ONTARIO ASSOCIATION OF ARCHITECTS
SHERY KOZHIMALA CHERIAN
LICENCE 7610

ARCHITECTURE 49

PROJECT NO. BE20101016

ISSUED FOR TENDER

Niagara Region

NIAGARA FALLS TRAIN STATION UPGRADES

DOOR AND ROOM SCHEDULES

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A6000

METRIC

ALL DIMENSONS SHOWN ARE
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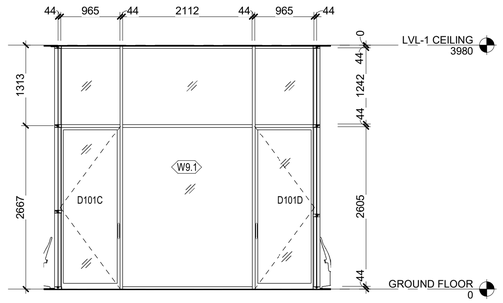
UNLESS OTHERWISE NOTED.



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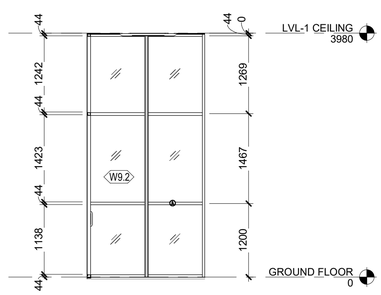

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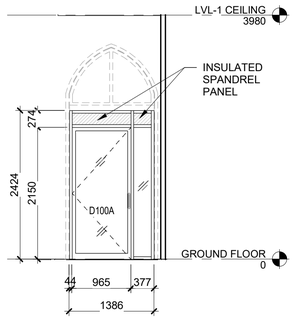

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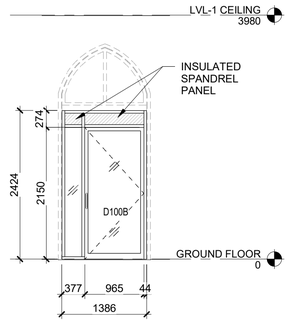

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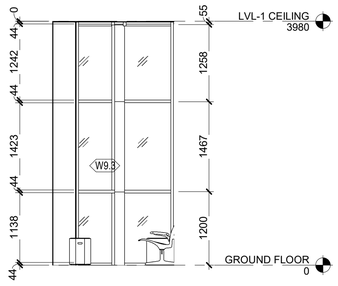

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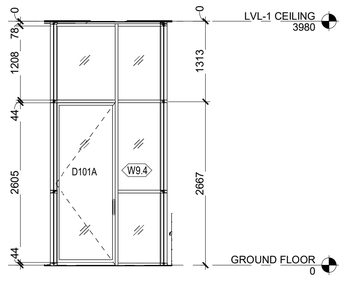

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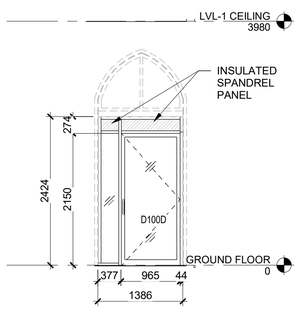

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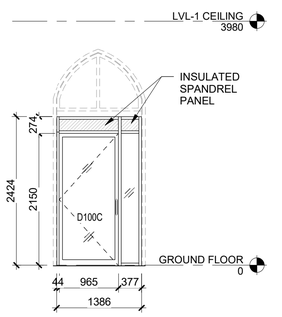

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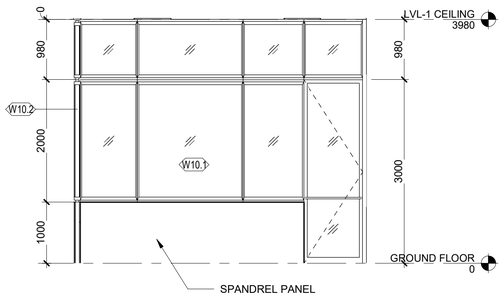

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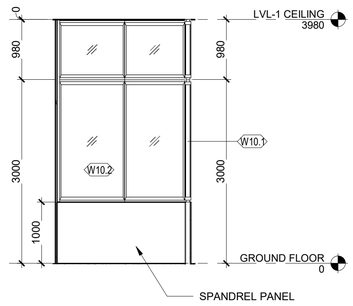

6 | GLAZING TYPE W10.2-BB

A6001 | REF: D-0002 | SCALE: 1 : 50

GLAZING AND WINDOWS NOTES

1. ALL NEW FRAMES & DOORS TO BE INSTALLED IN EXISTING EXTERIOR OR INTERIOR ROUGH-OPENINGS TO BE SITE MEASURED PRIOR TO FABRICATION.

REFERENCE DRAWINGS		ISSUE			REVISIONS		
		B	2024/02/08	ISSUED FOR TENDER			
		A	2023/04/24	ISSUED FOR BUILDING PERMIT			
DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

DRAWN BY: P.LAPALIKAR 2023/09/22	DESIGNED BY: G.DANESHGAR 2023/04/21
CHECKED BY: S.CHERIAN 2023/09/22	APPROVED BY: S.CHERIAN 2023/09/22
SCALE: AS SHOWN	FULL SIZE ONLY

ONTARIO ASSOCIATION OF ARCHITECTS
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7610

ARCHITECTURE 49

PROJECT NO. BE20101016

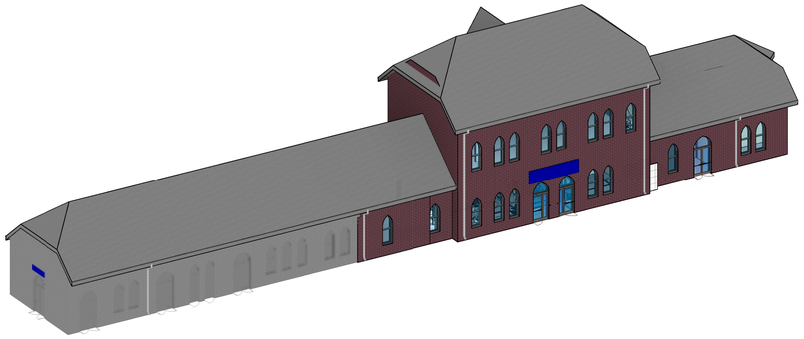
ISSUED FOR TENDER

Niagara Region

NIAGARA FALLS TRAIN STATION UPGRADES

GLAZING SCHEDULE

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A6001



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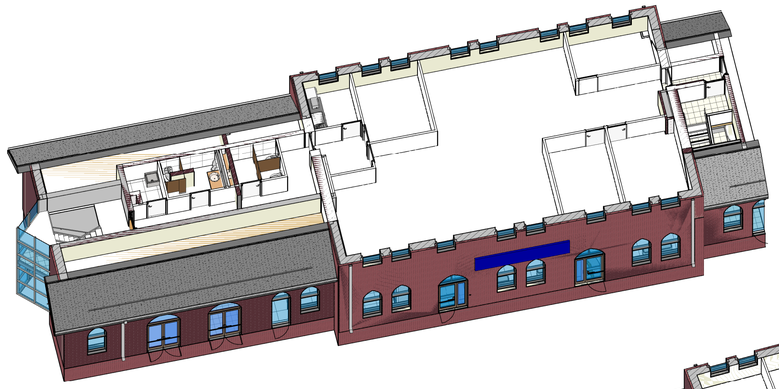
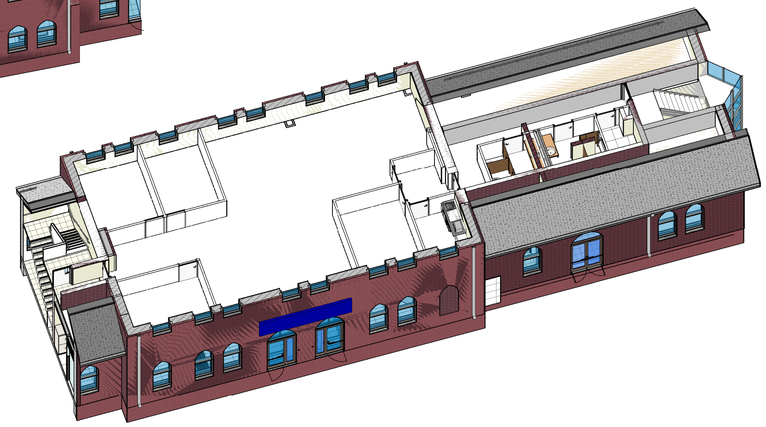
A9000 | SCALE:



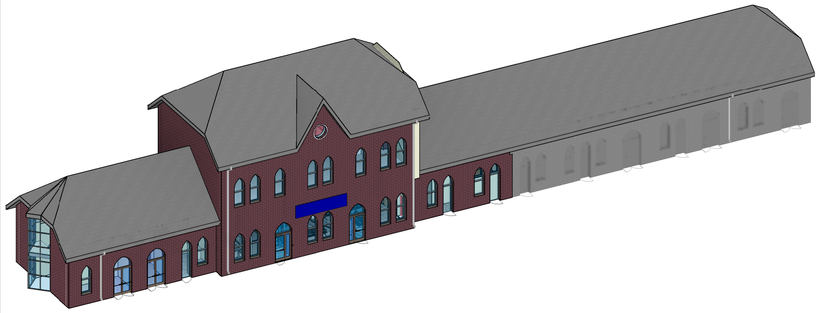


2 | NORTH VIEW_SECOND FLOOR

A9000 | SCALE:

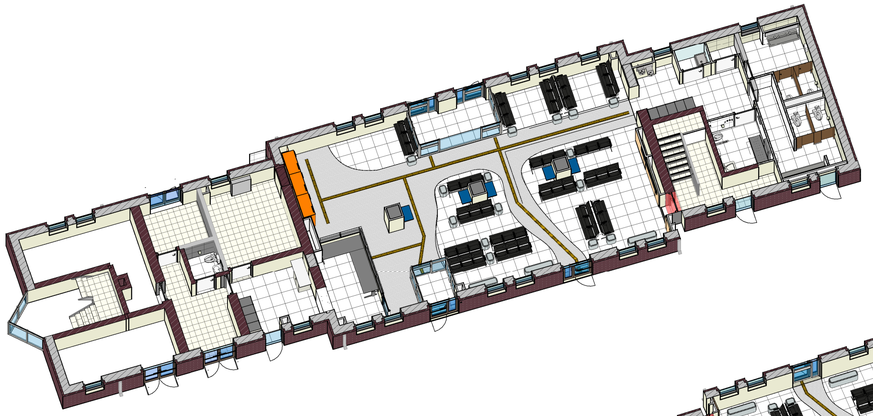
3 | SOUTH VIEW_SECOND FLOOR

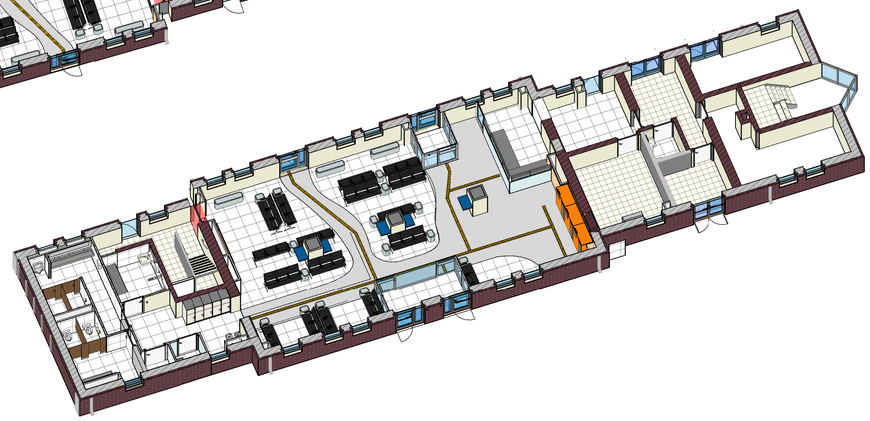
A9000 | SCALE:



4 | NIAGARA FALLS VIA RAIL STATION (SOUTH VIEW)

A9000 | SCALE:





5 | NORTH VIEW_GROUND FLOOR

A9000 | SCALE:

6 | SOUTH VIEW_GROUND FLOOR

A9000 | SCALE:

METRIC

ALL DIMENSONS SHOWN ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE NOTED.

REFERENCE DRAWINGS		ISSUE			REVISIONS		
		B	2024/02/08	ISSUED FOR TENDER			
		A	2023/04/24	ISSUED FOR BUILDING PERMIT			
DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

DRAWN BY: P.LAPALIKAR 2023/09/22	DESIGNED BY: G.DANESHGAR 2023/04/21
CHECKED BY: S.CHERIAN 2023/09/22	APPROVED BY: S.CHERIAN 2023/09/22
SCALE: AS SHOWN	FULL SIZE ONLY

ONTARIO ASSOCIATION OF ARCHITECTS
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7610

ARCHITECTURE 49

PROJECT NO. BE20101016

ISSUED FOR TENDER

Niagara Region

NIAGARA FALLS TRAIN STATION UPGRADES

3D VIEWS

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION		A	A9000

METRIC

ALL DIMENSONS SHOWN ARE
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UNLESS OTHERWISE NOTED.

HEATING, VENTILATION & AIR CONDITIONING	SYMBOL
HEATING WATER SUPPLY	HWS
HEATING WATER RETURN	HWR
EXISTING HEATING WATER SUPPLY	HWS(E)
EXISTING HEATING WATER RETURN	HWR(E)
EXISTING HEATING WATER SUPPLY TO BE REMOVED	HWS(D)
EXISTING HEATING WATER RETURN TO BE REMOVED	HWR(D)
REFRIGERANT PIPING (SUCTION AND LIQUID)	R
REFRIGERANT SUCTION PIPING	RS
REFRIGERANT LIQUID PIPING	RL
FRESH AIR \ SUPPLY AIR	
EXHAUST AIR \ RETURN AIR	
BALANCING DAMPER	BD
FIRE DAMPER	FD
MOTORIZED DAMPER	MD
BACKDRAFT DAMPER	BDD
DOOR GRILLE	DG
TEMPERATURE SENSOR	S
THERMOSTAT ELECTRIC (120 VAC)	TE
THERMOSTAT ELECTRIC (24 VAC, PROGRAMABLE)	T
REVERSE ACTING THERMOSTAT	TR
EXISTING THERMOSTAT ELECTRIC (120 VAC)	TE E
NEW DUCTWORK IN PENTHOUSE	
NEW DUCTWORK ON 7TH FLOOR	
EXISTING DUCTWORK TO BE REMOVED	
DUCTWORK SIZE in mm (WIDTH x HEIGHT)	200 x 100
CEILING DIFFUSER WITH FLEXIBLE DUCT (ACOUSTIC)	
GRILLE (R=RETURN, E=EXHAUST, E (PREFIX)=EXISTING, R (PREFIX)=RELOCATED) AIR FLOW (l/s)	E# / #
DIFFUSER (S=SUPPLY, E (PREFIX)=EXISTING, R (PREFIX)=RELOCATED) OUTDOOR AIR FLOW (l/s) SUPPLY AIR FLOW (l/s)	S# / # / #

PLUMBING	SYMBOL
EXISTING DOMESTIC COLD WATER	DCW (E)
EXISTING DOMESTIC HOT WATER	DHW (E)
EXISTING DOMESTIC HOT WATER RECIRCULATION	DHWR (E)
DOMESTIC COLD WATER	DCW
DOMESTIC HOT WATER	DHW
EXISTING DOMESTIC HOT WATER RECIRCULATION	DHWR
SANITARY PIPING (UNDERSLAB) (EXISTING TO REMAIN)	SAN (E)
VENT PIPING (EXISTING TO REMAIN)	V (E)
SANITARY PIPING (ABOVE FLOOR)	SAN
SANITARY PIPING (UNDERSLAB)	SAN
VENT PIPING	V
NATURAL GAS PIPING	G
CONDENSATE DRAIN PIPING	COND
TRAP PRIMER PIPING	TP
TRAP PRIMER VALVE	TPV
FLOOR DRAIN	FD
FUNNEL FLOOR DRAIN	FFD
CLEANOUT (WALL MOUNTED)	WCO
CLEANOUT (ABOVE FLOOR)	CO
CLEANOUT (IN FLOOR)	CO
RUNNING TRAP	CO CO RT

GENERAL LEGEND	SYMBOL
2-WAY CONTROL VALVE	
AUTOMATIC AIR VENT	AAV
BALANCING/SHUT-OFF VALVE	
BALL VALVE	
FLANGE	
GATE VALVE	
GLOBE VALVE	
PIPE ELBOW - TURNED DOWN	
PIPE ELBOW - TURNED UP	
PIPE TEE - OUTLET DOWN	
PIPE TEE - OUTLET UP	
CONNECT TO EXISTING (TIE IN POINT TO EXISTING SYSTEM)	C
TRIPLE DUTY VALVE	
UNION	
ROOM NUMBER	#
TRANSFORMER (TRIM INFRARED SENSORS)	CT

ABBREVATIONS	SYMBOL
DRINKING FOUNTAIN	DF-#
LAVATORY	L-#
MOP SINK	MPS-#
URINAL	U-#
WATER CLOSET	WC-#
AIR CONDITIONING UNIT	AC-#
BASEBOARD HEATER	BBH-#
CEILING CASSETTE HEAT PUMP	CCHP-#
CONDENSING UNIT	CU-#
ENERGY RECOVERY VENTILATOR	ERV-#
EXHAUST FAN	EF-#
FAN COIL	FC-#
VENTILATION WALL CAP	VWC-#
NOMINAL PIPE SIZE	NPS
NORMALLY OPEN POSITION	N.O.
NORMALLY CLOSED POSITION	N.C.
EXHAUST AIR	E/A
OUTDOOR AIR	O/A
RETURN AIR	R/A
SUPPLY AIR	S/A

REFERENCE DRAWINGS		ISSUE			REVISIONS		
		D	2023/12/06	ISSUED FOR TENDER			
		C	2023/07/25	REISSUED FOR BUILDING PERMIT			
		B	2023/04/24	ISSUED FOR BUILDING PERMIT			
		A	2022/11/11	PRELIMINARY DESIGN SUBMISSION			
DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

DRAWN BY: E.M.
DESIGNED BY: A.A.
CHECKED BY: G.W.
APPROVED BY: S.C.
SCALE: AS SHOWN FULL SIZE ONLY

PROJECT NO. BE20101016

ISSUED FOR TENDER

Niagara Region

NIAGARA REGION PROJECT NO. xxxxxxx

NIAGARA FALLS TRAIN STATION UPGRADES

MECHANICAL LEGENDS & NOTES

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION	M-0001	D	M-0001

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REFRIGERANT PIPING (SUCTION AND LIQUID)	R
REFRIGERANT SUCTION PIPING	RS
REFRIGERANT LIQUID PIPING	RL
FRESH AIR \ SUPPLY AIR	
EXHAUST AIR \ RETURN AIR	
BALANCING DAMPER	BD
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TEMPERATURE SENSOR	S
THERMOSTAT ELECTRIC (120 VAC)	TE
THERMOSTAT ELECTRIC (24 VAC, PROGRAMABLE)	T
REVERSE ACTING THERMOSTAT	TR
EXISTING THERMOSTAT ELECTRIC (120 VAC)	TE E
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DIFFUSER (S=SUPPLY, E (PREFIX)=EXISTING, R (PREFIX)=RELOCATED) OUTDOOR AIR FLOW (l/s) SUPPLY AIR FLOW (l/s)	S# / # / #

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DOMESTIC COLD WATER	DCW
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SANITARY PIPING (ABOVE FLOOR)	SAN
SANITARY PIPING (UNDERSLAB)	SAN
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NATURAL GAS PIPING	G
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TRAP PRIMER VALVE	TPV
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CLEANOUT (WALL MOUNTED)	WCO
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CLEANOUT (IN FLOOR)	CO
RUNNING TRAP	CO CO RT

GENERAL LEGEND	SYMBOL
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AUTOMATIC AIR VENT	AAV
BALANCING/SHUT-OFF VALVE	
BALL VALVE	
FLANGE	
GATE VALVE	
GLOBE VALVE	
PIPE ELBOW - TURNED DOWN	
PIPE ELBOW - TURNED UP	
PIPE TEE - OUTLET DOWN	
PIPE TEE - OUTLET UP	
CONNECT TO EXISTING (TIE IN POINT TO EXISTING SYSTEM)	C
TRIPLE DUTY VALVE	
UNION	
ROOM NUMBER	#
TRANSFORMER (TRIM INFRARED SENSORS)	CT

ABBREVATIONS	SYMBOL
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LAVATORY	L-#
MOP SINK	MPS-#
URINAL	U-#
WATER CLOSET	WC-#
AIR CONDITIONING UNIT	AC-#
BASEBOARD HEATER	BBH-#
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CONDENSING UNIT	CU-#
ENERGY RECOVERY VENTILATOR	ERV-#
EXHAUST FAN	EF-#
FAN COIL	FC-#
VENTILATION WALL CAP	VWC-#
NOMINAL PIPE SIZE	NPS
NORMALLY OPEN POSITION	N.O.
NORMALLY CLOSED POSITION	N.C.
EXHAUST AIR	E/A
OUTDOOR AIR	O/A
RETURN AIR	R/A
SUPPLY AIR	S/A

REFERENCE DRAWINGS		ISSUE			REVISIONS		
		D	2023/12/06	ISSUED FOR TENDER			
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		B	2023/04/24	ISSUED FOR BUILDING PERMIT			
		A	2022/11/11	PRELIMINARY DESIGN SUBMISSION			
DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

DRAWN BY: E.M.
DESIGNED BY: A.A.
CHECKED BY: G.W.
APPROVED BY: S.C.
SCALE: AS SHOWN FULL SIZE ONLY

PROJECT NO. BE20101016

ISSUED FOR TENDER

Niagara Region

NIAGARA REGION PROJECT NO. xxxxxxx

NIAGARA FALLS TRAIN STATION UPGRADES

MECHANICAL LEGENDS & NOTES

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION	M-0001	D	M-0001

METRIC

ALL DIMENSONS SHOWN ARE
IN METRES AND/OR MILLIMETRES
UNLESS OTHERWISE NOTED.

GENERAL MECHANICAL NOTES:

1. OBTAIN, ARRANGE AND PAY FOR ALL REQUIRED PERMITS AND INSPECTIONS.
2. THE CONTRACTOR AND ITS SUB-TRADES SHALL ATTEND SITE MEETINGS AS DEFINED IN THE SPECIFICATION.
3. OBTAIN AND REVIEW THE DESIGNATED SUBSTANCE REPORT FROM THE CLIENT AND COORDINATE ANY DESIGNATED SUBSTANCE ISSUES WITH THE CLIENT PRIOR TO ANY WORK BEING DONE.
4. PROVIDE SHOP DRAWINGS ELECTRONICALLY IN PDF FORMAT TO CONSULTANT FOR REVIEW. ALL SHOP DRAWINGS MUST BE REVIEWED, STAMPED AND SIGNED BY THE MECHANICAL CONTRACTOR PRIOR TO SUBMITTING TO THE CONSULTANT. REVIEW SHALL INCLUDE BUT NOT BE LIMITED TO: VERIFYING UNIT VOLTAGE WITH ELECTRICIAN AND/OR SITE, EQUIPMENT PERFORMANCE, DIMENSIONS AND CLEARANCES.
5. THOROUGHLY REVIEW AND COORDINATE WITH SITE CONDITIONS AND COMPLETE DRAWING SET PRIOR TO PRICING AND INSTALLATION.
6. INSTALL ALL WORK IN CONFORMANCE WITH MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS.
7. DO NOT USE ANY NEW PERMANENT EQUIPMENT FOR TEMPORARY USE DURING CONSTRUCTION WITHOUT WRITTEN APPROVAL. WHERE SYSTEMS ARE USED AND ARE CONTAMINATED BY DUST OR DIRT, THE CONTRACTOR SHALL CLEAN IN A MANNER ACCEPTABLE TO THE CONSULTANT.
8. MAINTAIN RECORD DRAWINGS ON AN ON-GOING BASIS. DRAWINGS SHALL BE AVAILABLE FOR PERIODIC REVIEW BY THE CONSULTANT DURING CONSTRUCTION.
9. ALL WORK SHALL COMPLY WITH APPLICABLE CODES.
10. REMOVE ALL REDUNDANT EQUIPMENT, MATERIALS AND GARBAGE FROM SITE AND DISPOSE OF IN AN APPROVED MANNER. REDUNDANT EQUIPMENT AND MATERIALS SHALL NOT BE ABANDONED IN PLACE.
11. ALL CUTTING AND CORING SHALL BE BY THIS CONTRACTOR. COORDINATE PATCHING WITH GENERAL CONTRACTOR. ALL SAW CUTTING AND RESTORATION OF CONCRETE FLOOR BY GENERAL CONTRACTOR. COORDINATE WITH SAME.
12. COORDINATE ROOFING FOR DUCT AND PIPE ROOF PENETRATIONS WITH GENERAL CONTRACTOR AS REQUIRED.
13. MAINTAIN REQUIRED ACCESS AND CLEARANCE TO ALL EQUIPMENT AND SYSTEMS AS REQUIRED BY CODE AND AS PER MANUFACTURER'S REQUIREMENTS.
14. TAG ALL EQUIPMENT WITH LAMACOID NAMEPLATES. TAG ALL VALVES WITH LAMACOID NAMEPLATES OR BRASS TAGS ON CHAINS.
15. LABEL ALL EXISTING AND NEW PIPING IN AREA OF WORK WITH SERVICE AND FLOW ARROWS EVERY 10'(3m) AND ON EITHER SIDE OF WALLS.
16. THE CONTRACTOR SHALL ARRANGE FOR INSPECTIONS BY THE ENGINEER PRIOR TO CEILINGS AND WALLS BEING CLOSED IN. WHERE THIS HAS NOT BEEN ARRANGED IT IS THE CONTRACTOR'S RESPONSIBILITY TO REMOVE CEILING TILES OR ACCESS DOORS FOR INSPECTION AT THE DIRECTION OF THE CONSULTANT.
17. PERFORM TESTING AND START UP OF ALL SYSTEMS AS REQUIRED BY CODE, THE CONSULTANT, MANUFACTURER'S REQUIREMENTS, AND AUTHORITIES HAVING JURISDICTION. SUBMIT REPORTS TO THE CONSULTANT.
18. INSTRUCT AND TRAIN THE OWNER ON PROPER OPERATION OF THE SYSTEM. RECORD AND SUBMIT A TRAINING LOG DATED AND SIGNED BY ALL ATTENDEES INCLUDING THE TRAINERS.
19. UPON COMPLETION OF THE PROJECT THE CONSULTANT WILL DO A FINAL REVIEW. UPON RECEIVING THE FINAL INSPECTION REPORT, THE CONTRACTOR MUST CORRECT AND SIGN BACK THE INSPECTION REPORT INDICATING ALL DEFICIENCIES ARE COMPLETED. A RE-INSPECTION WILL ONLY BE DONE ONCE THE CONSULTANT RECEIVES THIS IN WRITING. WHERE THE CONSULTANT PERFORMS THE RE-INSPECTION AND THE WORK IS NOT COMPLETE, THE CONTRACTOR IS RESPONSIBLE FOR REIMBURSING THE CONSULTANT FOR THE FIELD REVIEW. THE FEE FOR ADDITIONAL REVIEWS WILL BE AT THE CONSULTANT'S HOURLY RATES PLUS MILEAGE AND APPLICABLE TAXES TO BE PAID DIRECTLY TO THE CONSULTANT PRIOR TO PERFORMING THE NEXT FIELD REVIEW.
20. PROVIDE ONE (1) YEAR WARRANTY ON ALL MATERIAL AND LABOUR FROM THE DATE OF SUBSTANTIAL COMPLETION.
21. PAYMENT AMOUNTS FOR MANUAL AND AS-BUILT DRAWINGS TO BE IN ACCORDANCE WITH PAYMENT TERMS GOVERNED BY THE GENERAL CONTRACT. TOTAL AMOUNT SHALL REMAIN UNBILLED UNTIL MANUALS AND AS-BUILT DRAWINGS HAVE BEEN SUBMITTED AND APPROVED.
22. PROVIDE OF ONE (1) ELECTRONIC COPY MAINTENANCE MANUALS ON USB. MANUAL SHALL INCLUDE TABLE OF CONTENTS, CONTRACTOR INFORMATION, WARRANTY LETTER, SHOP DRAWINGS, O&Ms, INSPECTION & TEST REPORTS, AND AS-BUILT DRAWINGS. AS-BUILT DRAWINGS SHALL INCLUDE COMPLETE MECHANICAL DRAWING SET WITH ANY CHANGES MARKED CLEARLY AND NEATLY IN COLOUR. AS-BUILTS SHALL BE STAMPED ACCORDINGLY BY THE CONTRACTOR (ALL DRAWINGS). DRAWINGS SHALL BE SUBMITTED HARD COPY IN FULL SIZE. SUBSTANTIAL COMPLETION WILL NOT BE AWARDED UNTIL THE MANUALS AND AS-BUILTS HAVE BEEN SUBMITTED TO THE CONSULTANT AND THE CONSULTANT HAS APPROVED.

HVAC NOTES:

1. CONCEAL ALL SERVICES IN CEILING SPACES AND FURRED CONSTRUCTION UNLESS INSTALLED IN UNFINISHED OR EXPOSED AREAS OR IF SPECIFICALLY NOTED TO BE EXPOSED.
2. COORDINATE INSTALLATION WITH ALL OTHER TRADES.
3. REFER TO REFLECTED CEILING PLAN TO CONFIRM EXACT LOCATION OF GRILLES AND DIFFUSERS AND COORDINATE WITH LIGHTING PLAN FOR EXACT LOCATIONS. LIGHTING TAKES PRECEDENCE.
4. PROVIDE A CONTINUOUS ANTI-VIBRATION RUBBER GASKET BETWEEN ROOF CURBS AND EQUIPMENT UNIT RAILS.
5. PROVIDE 100mm (4") FLEXIBLE CONNECTIONS AT ALL DUCT CONNECTIONS TO AIR HANDLING EQUIPMENT.
6. PROVIDE ACOUSTIC INSULATION IN FIRST 1.5m (5') OF SUPPLY AND RETURN DUCTS OFF AIR HANDLING UNITS, ALL TRANSFER DUCTS AND AS INDICATED ON DRAWINGS. SEAL ALL EXPOSED ENDS OF INSULATION.
7. SEAL ALL JOINTS ON ALL SUPPLY & RETURN AIR DUCTS WITH DURODYNE DUCT SEALER IN CONFORMANCE TO CLASS 'C' ASHRAE 90.1 AND SMACNA STANDARDS.
8. BRANCH DUCTWORK TO DIFFUSERS TO BE SAME SIZE AS DIFFUSER NECK.
9. PROVIDE TURNING VANES IN ALL SQUARE ELBOWS AND SHORT RADIUS ELBOWS FOR SUPPLY AIR DUCTS.
10. TEMPORARILY SEAL ALL OPEN DUCTS THROUGHOUT CONSTRUCTION TO PROTECT FROM DUST AND DIRT ENTERING THE SYSTEM. WHERE THE CONTRACTOR DOES NOT CONFORM THEY ARE RESPONSIBLE FOR CLEANING OF THE SYSTEMS IN A MANNER APPROVED BY THE CONSULTANT.
11. PROVIDE AIR BALANCING DAMPERS ON ALL BRANCH DUCTS CLOSE TO MAIN TAKE-OFF. REVIEW WITH BALANCING CONTRACTOR TO CONFIRM LOCATIONS OF ALL BALANCE DAMPERS PRIOR TO CONSTRUCTION.
12. PROVIDE FIRE DAMPERS AT ALL FIRE SEPARATIONS. FIRE DAMPERS SHALL BE c/w LINKAGE OUT OF THE AIR STREAM. FIRE DAMPER RATING TO MATCH THE RATING OF THE SEPARATION CROSSED. INSTALLATION MUST CONFORM TO LATEST NFPA/CUA 90A SPECIFICATIONS. ONLY USE ULC APPROVED EQUIPMENT. PROVIDE DUCT ACCESS DOORS AND BREAK AWAY FLANGES FOR ALL FIRE DAMPERS IN CONFORMANCE WITH CODE AND INSTALLATION INSTRUCTIONS. ACCESS DOORS SHALL BE TWIST LOCK TYPE - SCREWED PANELS ARE NOT ACCEPTABLE.
13. INCLUDE FOR THE SUPPLY AND INSTALLATION OF TWO(2) EXTRA BALANCE DAMPERS, PENDING BALANCING RESULTS AND COMMENTS.
14. FLEXIBLE DUCT SHALL ONLY BE USED IN SUPPLY AIR APPLICATIONS FOR CONNECTIONS TO DIFFUSERS IN DROPPED CEILING. FLEXIBLE DUCT SHALL BE MAXIMUM 1.8m (6') IN LENGTH AND SHALL BE SECURELY FASTENED TO DUCTS AND DIFFUSERS. PROVIDE HANGERS AND FLEXIBLE DUCTWORK WITHOUT SHARP 90°s, SAGGING, OR CRUSHING OF DUCT. FLEXIBLE DUCT IS NOT ACCEPTABLE IN ANY OTHER APPLICATION.
15. PROVIDE EXTERNAL INSULATION ON ALL SUPPLY AIR DUCTS, ALL OUTSIDE AIR DUCTS AND ON ALL EXHAUST DUCTS WITHIN 2.4m (8') OF OUTSIDE WALL/ROOF INCLUDING RIGID AND FLEXIBLE DUCT.
16. CONFIRM EXACT LOCATIONS OF THERMOSTATS/SENSORS WITH ENGINEER AND OWNER. MOUNT THERMOSTATS/SENSORS AT 1200mm (47") AFF. ENSURE THAT THERMOSTAT/SENSOR LOCATIONS WILL NOT BE AFFECTED BY DIRECT SUNLIGHT, COLD WALLS OR MILLWORK.
17. ALL INDOOR CONTROL WIRING SHALL BE RUN IN EMT CONDUIT OR FT6 (EMT SHALL BE USED IN EXPOSED AREAS). LAST 900mm (3') SHALL BE BX WHEN USING CONDUIT. ALL OUTDOOR CONTROL WIRING SHALL BE RUN IN LIQUID TIGHT. ALL CONTROL WIRING SHALL RUN PARALLEL TO BUILDING LINES AND TIGHT TO ROOF DECK OR WALLS. ALL CONTROL WIRING PASSING THROUGH WALLS SHALL BE RUN IN EMT CONDUIT C/W BUSHINGS AT EACH END.
18. PROVIDE SLEEVES FOR PIPES THROUGH ALL NEW BLOCK WALLS. FILL VOIDS AROUND PIPES. ENSURE NO CONTACT BETWEEN DISSIMILAR METALS.
19. SUPPLY DRYWALL ACCESS DOORS FOR CONCEALED FIRE AND BALANCE DAMPERS AND ANY OTHER CONCEALED DEVICES AND TURN OVER TO THE GENERAL CONTRACTOR FOR INSTALLATION. DOORS ARE TO MATCH WALL AND CEILING SURFACE AND COLOUR EXCEPT USE STAINLESS STEEL IN WASHROOMS. DOORS SHALL BE RATED WHERE INSTALLED IN FIRE SEPARATIONS.
20. DRAIN HEATING SYSTEMS AS REQUIRED FOR NEW WORK. FILL, FLUSH, TEST AND TREAT (CHEMICAL TREATMENT) AFTER WORK IS COMPLETE. PROVIDE ALL PORTS, VALVES AND GAUGES AS REQUIRED. SUBMIT CHEMICAL TREATMENT REPORT TO ENGINEER. FREEZING OF PIPING TO ALLOW ISOLATION OF WORK AREA IS ACCEPTABLE IN LIEU OF DRAINING.
21. ALL CIRCUIT BALANCING VALVES SHALL BE MOUNTED WITH PORTS IN HORIZONTAL (90°) POSITION.
22. PROVIDE EXTERNAL INSULATION ON ANY NEW HEATING PIPING.
23. PROVIDE FIRE STOPPING AROUND ALL EXISTING AND NEW PIPING THROUGH FIRE SEPARATIONS.
24. LABEL ALL EXISTING AND NEW HEATING PIPING IN AREAS OF WORK COMPLETE WITH FLOW ARROWS. LABELS SHALL BE MAX 3m(10') SPACING AND ON EITHER SIDE OF WALLS. LABELING MUST BE COMPLETE PRIOR TO NEW CEILING BEING INSTALLED OTHERWISE IT IS THE CONTRACTORS RESPONSIBILITY TO REMOVE CEILING TILES FOR INSPECTION AT THE DIRECTION OF THE CONSULTANT.
25. LABEL CEILING TILE WITH PERMANENT ADHESIVE LABELS OR LAMACOID NAMEPLATES FOR ACCESS TO MECHANICAL ITEMS.
26. PROVIDE CONDENSATE DRAINS c/w TRAPS FOR NEW INDOOR AIR HANDLING EQUIPMENT AND RUN TO CLOSEST PLUMBING DRAIN WITH INDIRECT DRAIN CONNECTION IN A VISIBLE AND ACCESSIBLE LOCATION (CEILING SPACE NOT ACCEPTABLE). PROVIDE CONDENSATE PUMP WHERE GRAVITY DRAINAGE IS NOT POSSIBLE.
27. OBTAIN THE SERVICES OF A 3rd PARTY ACCREDITED BALANCING COMPANY TO BALANCE THE COMPLETE HVAC SYSTEM. PROVIDE REPORT TO ENGINEER FOR REVIEW. REFER TO SPECIFICATIONS FOR APPROVED AGENTS.
28. PROVIDE TESTING AND STARTUP OF ALL NEW EQUIPMENT AND PROVIDE REPORTS TO THE ENGINEER FOR REVIEW.
29. HYDRONIC SYSTEM BALANCING: BALANCE THE WHOLE HYDRONIC HEATING SYSTEM AS PART OF THE NEW SYSTEM TAB PROCEDURE IS REQUIRED AND SHALL BE EXECUTED WHEN THE NEW SYSTEM IS COMPLETE IN ORDER THE SECTIONS OF THE EXISTING SYSTEM NOT LOSE ITS CURRENT PERFORMANCE. IN GENERAL, THE NEW HEATING SYSTEM WOULD BE REPLACEMENT OF OLD HEATING ELEMENTS IN THE EXISTING SYSTEM WITH NEW ONES OF EQUIVALENT CAPACITY.
30. THE PROPOSED ALTERATION TO THE EXISTING HYDRONIC SYSTEM WILL NOT AFFECT THE PERFORMANCE OF OTHER SECTIONS OF THE EXISTING HYDRONIC SYSTEM THAT ARE NOT IN THE SCOPE OF THIS PERMIT APPLICATION.

REFERENCE DRAWINGS		ISSUE			REVISIONS		
		D	2023/12/06	ISSUED FOR TENDER			
		C	2023/07/25	REISSUED FOR BUILDING PERMIT			
		B	2023/04/24	ISSUED FOR BUILDING PERMIT			
		A	2022/11/11	PRELIMINARY DESIGN SUBMISSION			
DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

DRAWN BY: E.M.	DESIGNED BY: A.A.
CHECKED BY: G.W.	APPROVED BY: S.C.
SCALE: AS SHOWN	FULL SIZE ONLY

wsp

PROJECT NO. BE20101016

ISSUED FOR TENDER

Niagara Region

NIAGARA REGION PROJECT NO. xxxxxxx

NIAGARA FALLS TRAIN STATION UPGRADES

GENERAL MECHANICAL & HVAC NOTES

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION	M-0002	D	M-0002

METRIC

ALL DIMENSONS SHOWN ARE
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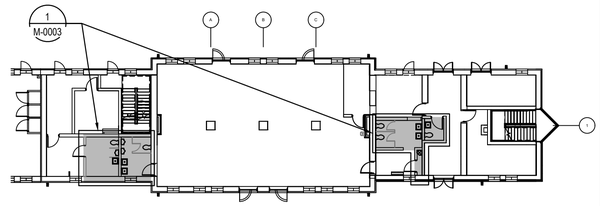
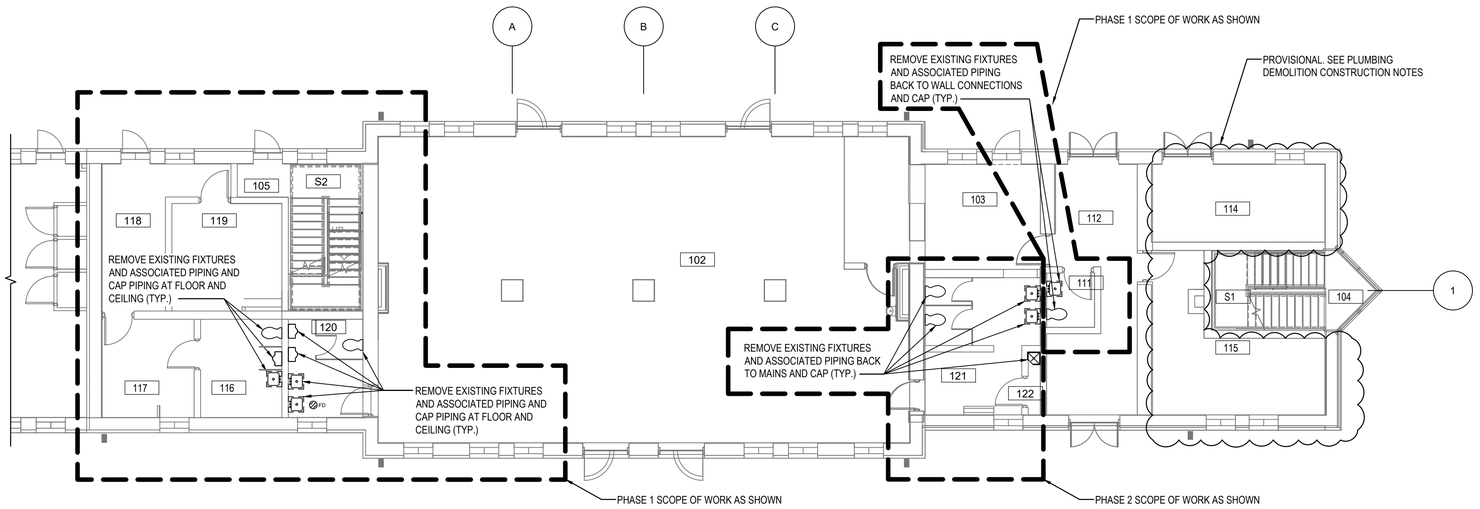


PLUMBING DEMOLITION FIRST FLOOR KEY PLAN

SCALE: 1:250



1 / M-0003 PLUMBING DEMOLITION FIRST FLOOR PLAN

SCALE: 1:100

ROOM #	ROOM NAME
102	WAITING AREA
103	TICKETING ROOM
111	WASHROOM
112	CORRIDOR
114	O.T.S.
115	MECHANICAL ROOM
116	WASHROOM
117	ROOM
118	CORRIDOR
119	VIA RAIL ENG.
120	WASHROOM - MALE
121	WASHROOM - FEMALE
122	JANITOR

PLUMBING DEMOLITION CONSTRUCTION NOTES:

1. AS PER CLIENT'S SOW AND BUDGET PLAN, THE ROOM 114 IS NOT PART OF THIS CONTRACT AND IS SUBJECT FOR CONSTRUCTION IN THE PROJECT'S NEXT STAGE. ROOM 115 (MECHANICAL ROOM) IS NOT PAT OF THIS PROJECT AND ITS SOW.

PLUMBING DEMOLITION NOTES:

1. THE CONTRACTOR SHALL ALLOW FOR DETAILED SITE INVESTIGATION TO CONFIRM ALL SERVICES PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES TO THE ENGINEER.
2. SCOPE/CAMERA EXISTING UNDERGROUND SANITARY AND STORM PIPING THROUGH WORK AREA TO CONFIRM CONDITION OF PIPE, ROUTING AND INVERTS. SUBMIT REPORT AND VIDEO ON USB UPON REQUEST.
3. SCAN FLOOR PRIOR TO FLOOR CUTS AND UNDERGROUND PIPING INSTALLATION.
4. DISCONNECT AND REMOVE ALL REDUNDANT EQUIPMENT, FIXTURES, DUCTWORK, PIPING AND OTHER REDUNDANT SERVICES THROUGHOUT SPACE AS NOTED.
5. LABEL AND ABANDON ANY UNUSED UNDERGROUND SERVICES AND CAP FLUSH WITH FLOOR IN ACCORDANCE AND AS REQUIRED WITHIN THE DESIGN AND DIRECTIONS SHOWN ON THE DRAWINGS. REMOVE UNDERGROUND SERVICES WHERE REQUIRED TO SUIT NEW UNDERGROUND SERVICES.
6. REMOVE OBSOLETE ABOVEGROUND SERVICES BACK TO SOURCE/MAINS AND CAP.
7. EXISTING MECHANICAL ITEMS NOT SHOWN, INCLUDING HYDRONIC PIPING AND STORM DRAINAGE, SHALL REMAIN UNLESS OTHERWISE NOTED.
8. ANY REDUNDANT RISERS CAN REMAIN WITHIN EXISTING WALLS (WHERE WALLS ARE SCHEDULED TO REMAIN) BUT SERVICES SHALL BE CUT AND CAPPED WITHIN WALL SO FACE OF WALL CAN BE PATCHED AND FINISHED SMOOTH.
9. MAINTAIN VENT PIPING FOR REUSE WHERE POSSIBLE AND REMOVE ANY REDUNDANT.
10. COORDINATE WITH GENERAL CONTRACTOR TO ENSURE ANY COMBUSTIBLE MATERIAL IS REMOVED FROM CEILING PLENUM PRIOR TO COMPLETION OF CONSTRUCTION.

REFERENCE DRAWINGS		ISSUE			REVISIONS		
		C	2023/12/06	ISSUED FOR TENDER			
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DRAWN BY: E.M. | DESIGNED BY: A.A.

CHECKED BY: G.W. | APPROVED BY: S.C.

SCALE: AS SHOWN FULL SIZE ONLY

PROJECT NO. BE20101016

ISSUED FOR TENDER

Niagara Region

NIAGARA REGION PROJECT NO. xxxxxxx

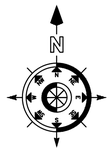
NIAGARA FALLS TRAIN STATION UPGRADES

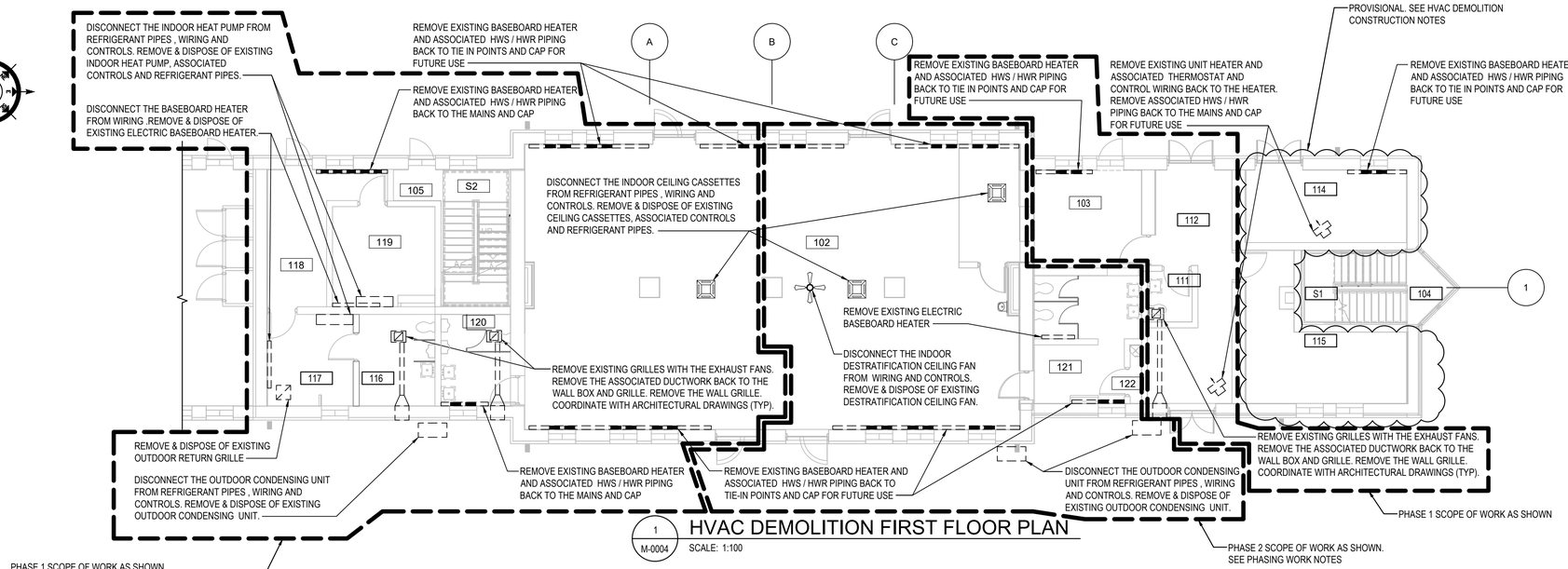
PLUMBING DEMOLITION PLANS

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION	M-0003	C	M-0003

METRIC

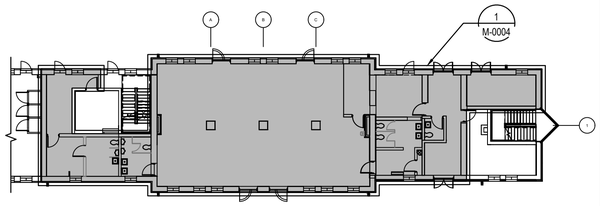
ALL DIMENSONS SHOWN ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE NOTED.





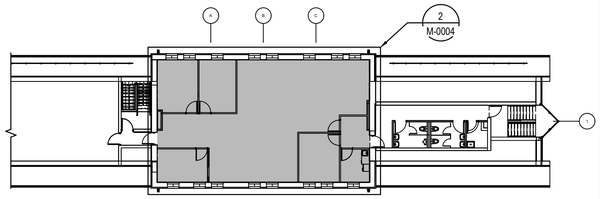
1 M-0004 HVAC DEMOLITION FIRST FLOOR PLAN

SCALE: 1:100



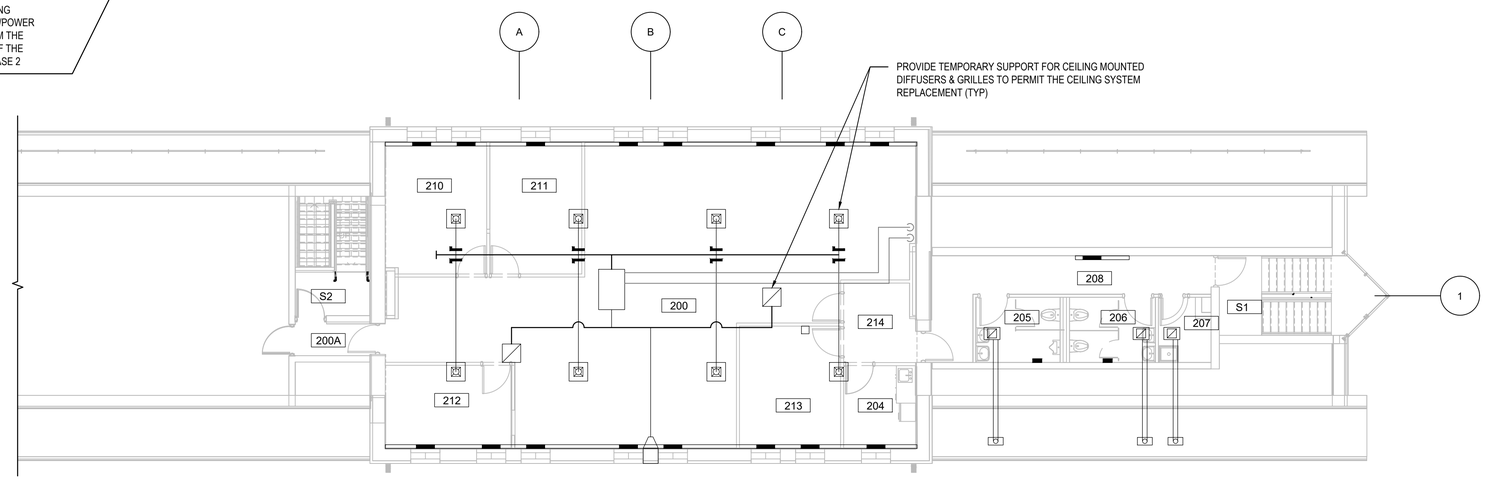
HVAC DEMOLITION FIRST FLOOR KEY PLAN

SCALE: 1:250



HVAC DEMOLITION SECOND FLOOR KEY PLAN

SCALE: 1:250



2 M-0004 HVAC DEMOLITION SECOND FLOOR PLAN

SCALE: 1:100

ROOM #	ROOM NAME
102	WAITING AREA
103	TICKETING ROOM
111	WASHROOM
112	CORRIDOR
114	O.T.S.
115	MECHANICAL ROOM
116	WASHROOM
117	ROOM
118	CORRIDOR
119	VIA RAIL ENG.
120	WASHROOM - MALE
121	WASHROOM - FEMALE
122	JANITOR
200	OFFICE AREA
200A	VESTIBULE 2
204	KITCHETTE
205	WASHROOM - MALE
206	WASHROOM - FEMALE
207	JANITOR
208	CORRIDOR
210	OFFICE 1
211	OFFICE 2
212	OFFICE 3
213	GO TRANSIT AREA
214	VESTIBULE
S1 (104)	STAIR 1
S2 (105)	STAIR 2

PHASING WORK NOTES:

DISCONNECT AND REMOVE OUTDOOR CONDENSING UNITS OF THE REFRIGERANT SYSTEMS AFTER ALL THE INDOOR UNITS ARE DEMOLISHED, INCLUDING BUT NOT LIMITED TO POWER/CONTROL WIRING, REFRIGERANT PIPES AND ACCESSORIES.

HVAC DEMOLITION CONSTRUCTION NOTES:

1. AS PER CLIENT'S SOW AND BUDGET PLAN, THE ROOM 114 IS NOT PART OF THIS CONTRACT AND IS SUBJECT FOR CONSTRUCTION IN THE PROJECT'S NEXT STAGE. ROOM 115 (MECHANICAL ROOM) IS NOT PAT OF THIS PROJECT AND ITS SOW.

REFERENCE DRAWINGS		ISSUE			REVISIONS		
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		B	2023/04/24	ISSUED FOR BUILDING PERMIT			
		A	2022/11/11	PRELIMINARY DESIGN SUBMISSION			
DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

DRAWN BY: E.M. | DESIGNED BY: A.A.

CHECKED BY: G.W. | APPROVED BY: S.C.

SCALE: AS SHOWN FULL SIZE ONLY

PROJECT NO. BE20101016

ISSUED FOR TENDER

NIAGARA REGION PROJECT NO. xxxxxxx

NIAGARA FALLS TRAIN STATION UPGRADES

HVAC DEMOLITION PLANS

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION	M-0004	C	M-0004

METRIC

ALL DIMENSONS SHOWN ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE NOTED.

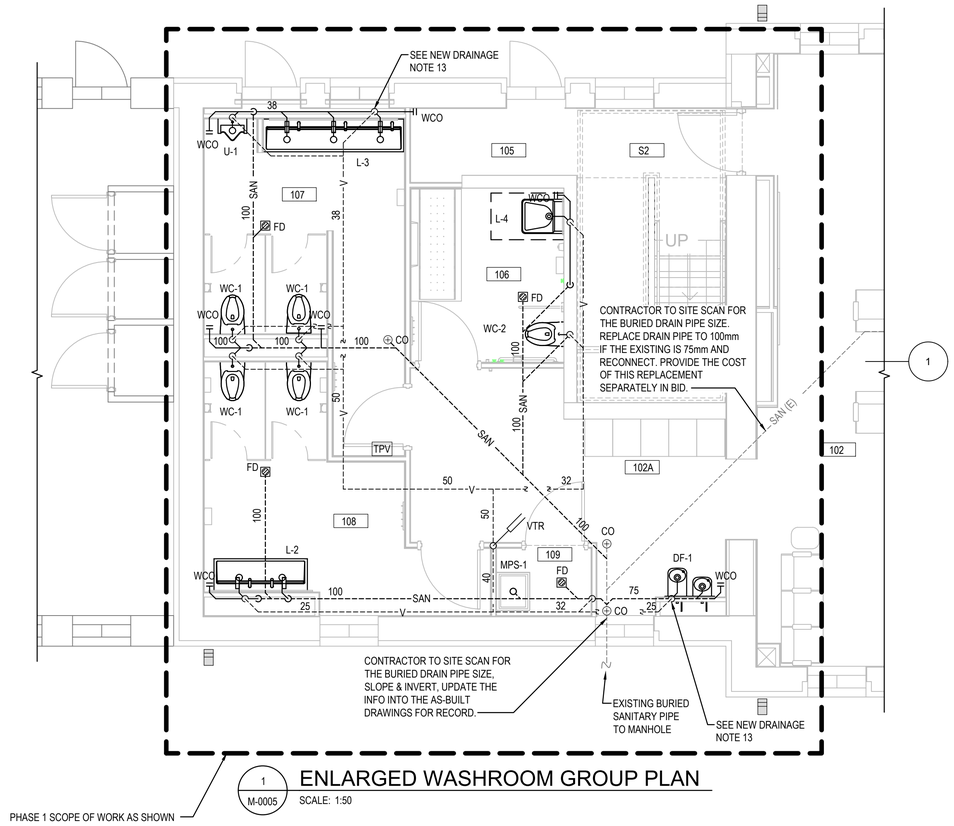
N

NEW DRAINAGE CONSTRUCTION NOTES:

1. AS PER CLIENT'S SOW AND BUDGET PLAN, THE ROOM 114 IS NOT PART OF THIS CONTRACT AND IS SUBJECT FOR CONSTRUCTION IN THE PROJECT'S NEXT STAGE. ROOM 115 (MECHANICAL ROOM) IS NOT PART OF THIS PROJECT AND ITS SOW.

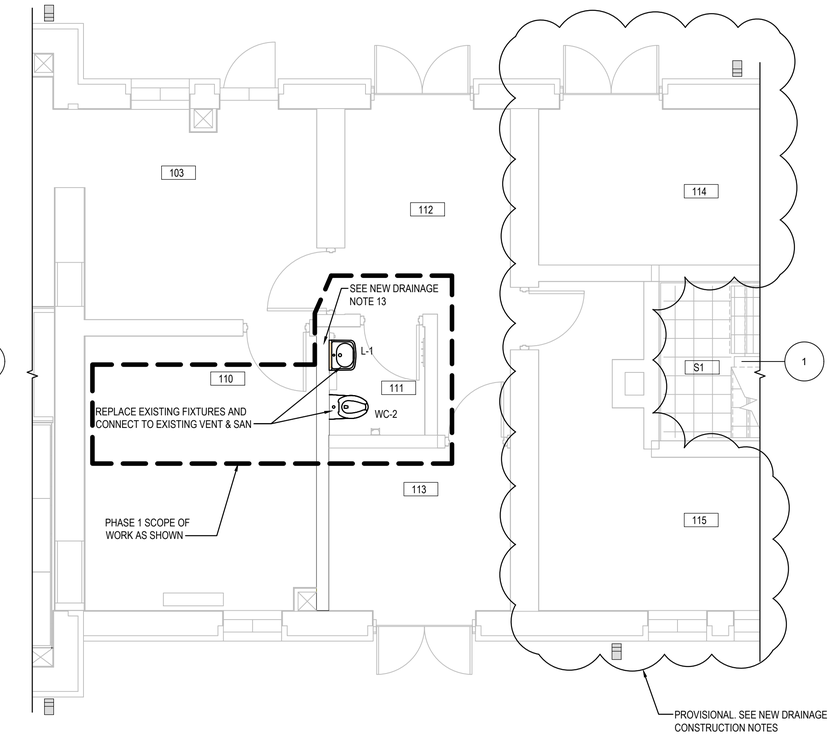
NEW DRAINAGE NOTES:

1. THE CONTRACTOR SHALL INVESTIGATE AND VERIFY SERVICES ON SITE PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES TO CONSULTANT. ALL NEW SANITARY DRAIN AND DRAIN VENT ON 2nd FLOOR SHALL RUN CONCEALED WITHIN CEILING SPACE OF GROUND FLOOR.
2. SCOPE/CAMERA EXISTING UNDERGROUND SANITARY AND STORM PIPING THROUGH WORK AREA TO CONFIRM CONDITION OF PIPE, ROUTING AND INVERTS. SUBMIT REPORT AND VIDEO ON USB.
3. SCAN FLOOR PRIOR TO FLOOR CUTS AND UNDERGROUND PIPING INSTALLATION.
4. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING HEIGHTS TO ENSURE ALL SERVICES ARE CONCEALED WITHIN AVAILABLE CEILING SPACE.
5. PREPARE INTERFERENCE DRAWINGS AND COORDINATE ALL SERVICES WITH ALL TRADES PRIOR TO INSTALLATION.
6. 100mm SANITARY DRAIN PIPE TO HAVE 1% SLOPE.
7. ALL PIPE SIZES ARE SHOWN IN MILLIMETERS (mm).
8. INSULATE AND LABEL ALL NEW AND EXISTING PIPING WITHIN CEILING SPACE INCLUDING WATER AND STORM.
9. PROVIDE NEW PLUMBING VENTS THROUGH ROOF AS REQUIRED OR TIE INTO EXISTING WHERE POSSIBLE. SUPPLY AND INSTALL ROOF VENTS AS PER SPECIFICATIONS. ALL ROOFING WORK INCLUDING CUTTING, FLASHING AND MODIFICATIONS TO ROOF MEMBRANE SHALL BE BY GENERAL CONTRACTOR. COORDINATE WITH SAME.
10. FIRE STOP ALL EXISTING AND NEW PIPING THROUGH RATED WALLS (REFER TO ARCHITECTURAL DRAWINGS FOR FIRE RATINGS).
11. LABEL CEILING GRID AT ACCESS TO EQUIPMENT AND VALVES.
12. THE CONTRACTOR SHALL FLUSH, SCOPE, AND PROVIDE VIDEO INSPECTION OF THE SANITARY SYSTEM AFTER COMPLETION OF WORK AND PRIOR TO SUBSTANTIAL COMPLETION. FLUSHING, SCOPING AND VIDEO SHALL INCLUDE AREA OF WORK TO WHERE IT TIES INTO THE MAIN. SUBMIT REPORT AND VIDEO ON USB.
13. EACH CONDENSATE DRAIN PIPE FROM FAN COILS, ERVs, AND CEILING CASSETTES SHALL RUN INDEPENDENTLY TO POINT OF THE INDIRECTLY CONNECTION w/ BUILDING SANITARY SYSTEM. REFER SCHEDULES ON DRAWINGS M-0014 & M-0015 FOR DRAINAGE AND CONDENSATE PUMP REQUIREMENTS.



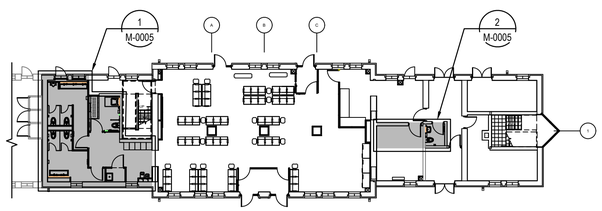
1 M-0005 ENLARGED WASHROOM GROUP PLAN

SCALE: 1:50



2 M-0005 ENLARGED ROOM 111 PLAN

SCALE: 1:50



DRAINAGE FIRST FLOOR KEY PLAN

SCALE: 1:250

ROOM #	ROOM NAME
100	VESTIBULE 1
101	VESTIBULE 2
102	LOBBY / WAITING AREA
102A	CORRIDOR
103	TICKETING ROOM
S1 (104)	STAIR 1
S2 (105)	STAIR 2
106	UNIVERSAL WASHROOM
107	MALE WASHROOM
108	FEMALE WASHROOM
109	JANITOR
110	IT ROOM
111	WASHROOM
112	CORRIDOR
113	MULTI-PURPOSE ROOM
114	O.T.S.
115	MECHANICAL ROOM

REFERENCE DRAWINGS		ISSUE			REVISIONS		
		E	2023/12/06	ISSUED FOR TENDER			
		D	2023/08/10	REISSUED FOR BUILDING PERMIT			
		C	2023/07/25	REISSUED FOR BUILDING PERMIT			
		B	2023/04/24	ISSUED FOR BUILDING PERMIT			
		A	2022/11/11	PRELIMINARY DESIGN SUBMISSION			
DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

DRAWN BY: E.M. | DESIGNED BY: A.A.

CHECKED BY: G.W. | APPROVED BY: S.C.

SCALE: AS SHOWN FULL SIZE ONLY

wsp

PROJECT NO. BE20101016

ISSUED FOR TENDER

Niagara Region

NIAGARA REGION PROJECT NO. xxxxxxx

NIAGARA FALLS TRAIN STATION UPGRADES

DRAINAGE PLANS

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION	M-0005	E	M-0005

METRIC

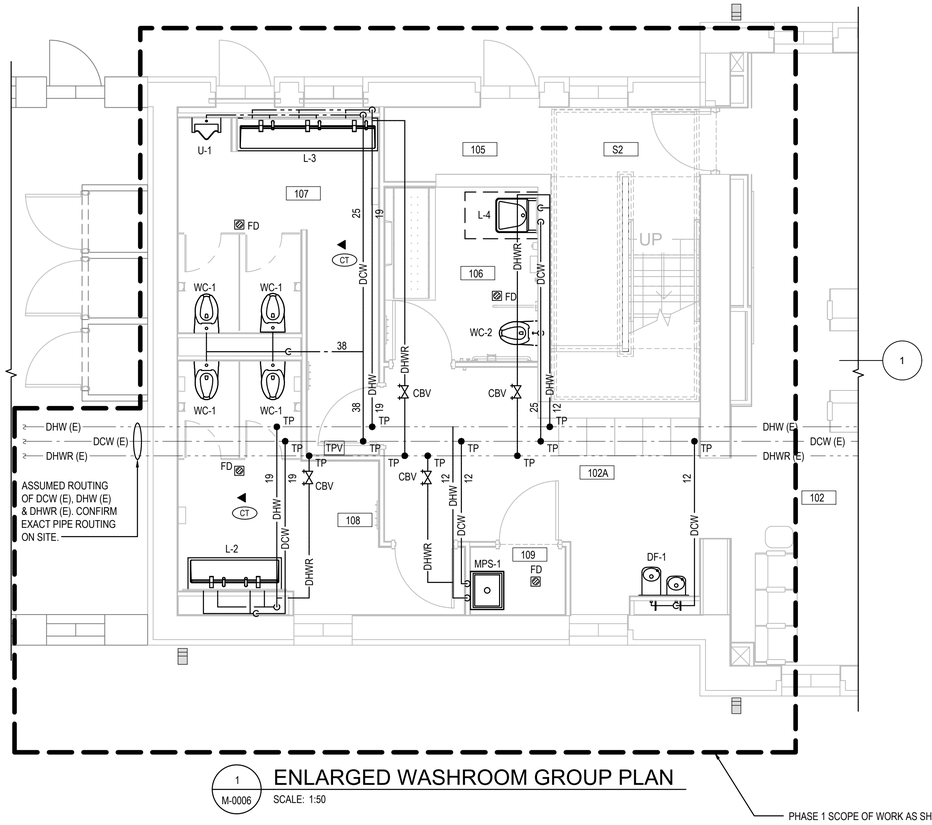
ALL DIMENSONS SHOWN ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE NOTED.

NEW PLUMBING CONSTRUCTION NOTES:

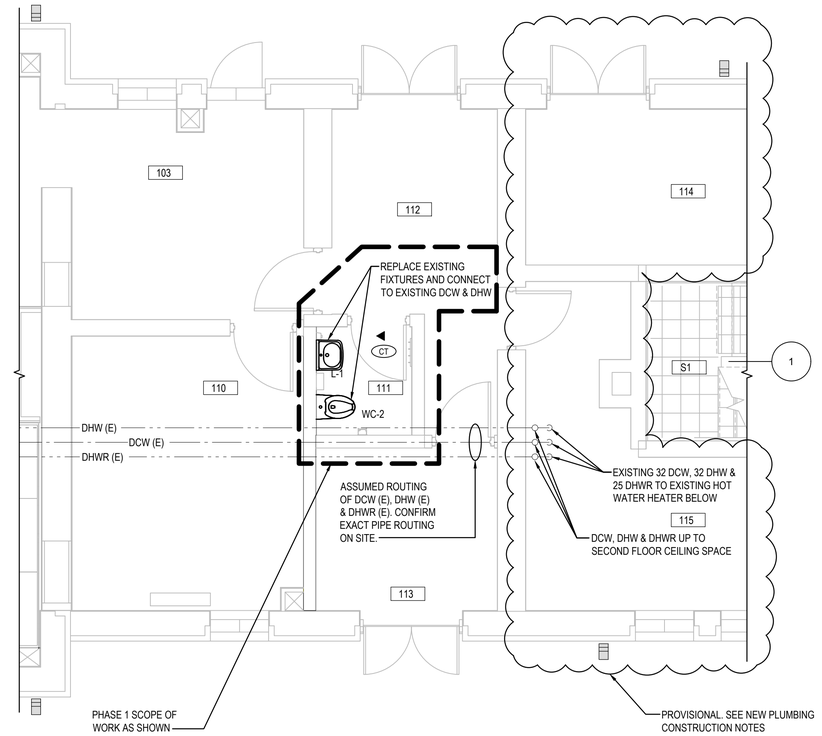
1. DCW, DHW AND DHWR PIPELINES MODIFICATIONS AND TIE-IN POINT LOCATIONS WITHIN THE MECHANICAL ROOM AS REQUIRED TO BE VERIFIED AND CONFIRMED ON SITE.
2. AS PER CLIENT'S SOW AND BUDGET PLAN, THE RM.114 IS NOT PART OF THIS CONTRACT AND IS SUBJECT FOR CONSTRUCTION IN THE PROJECT'S NEXT STAGE. ROOM 115 (MECHANICAL ROOM) IS NOT PAT OF THIS PROJECT AND ITS SOW, EXCEPT THE PIPELINE TIE-INS AND PIPELINE MODIFICATIONS TO DCW, DHW AND DHWR MAINS AS REQUIRED

NEW PLUMBING NOTES:

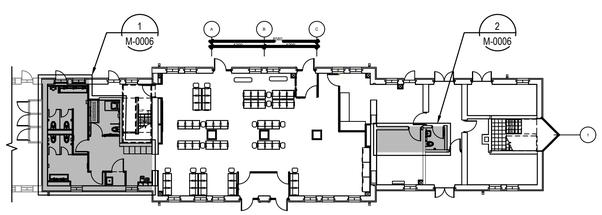
1. THE CONTRACTOR SHALL INVESTIGATE AND CONFIRM SERVICES ON SITE PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES TO CONSULTANT. ALL NEW SERVICES SHALL RUN CONCEALED WITHIN CEILING SPACE.
2. SCAN FLOOR PRIOR TO FLOOR CUTS AND UNDERGROUND PIPING INSTALLATION.
3. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING HEIGHTS TO ENSURE ALL SERVICES ARE CONCEALED WITHIN AVAILABLE CEILING SPACE.
4. PREPARE INTERFERENCE DRAWINGS AND COORDINATE ALL SERVICES WITH ALL TRADES PRIOR TO INSTALLATION.
5. PROVIDE CLEANOUTS AS REQUIRED BY CODE. SIZE OF CLEANOUTS TO BE SAME SIZE AS SANITARY LINES.
6. PROVIDE ALL TRENCHING, EXCAVATING AND BACKFILL FOR UNDERGROUND PLUMBING. ALL SAW CUTTING AND RESTORATION OF CONCRETE FLOOR IS BY GENERAL CONTRACTOR. COORDINATE WITH SAME.
7. INSULATE ALL NEW DOMESTIC HOT, COLD AND RECIRCULATED WATER PIPING WITH 25mm (1") INSULATION. PROVIDE PVC JACKET OVER INSULATION IN EXPOSED AREAS.
8. PROVIDE BALANCING VALVES AT START OF EACH BRANCH OF ALL HOT OR TEMPERED WATER RECIRCULATION LOOPS.
9. PROVIDE SLEEVES FOR PIPES THROUGH ALL NEW BLOCK WALLS. FILL VOIDS AROUND PIPES. ENSURE NO CONTACT BETWEEN DISSIMILAR METALS.
10. COORDINATE EXACT LOCATION OF NEW FLOOR DRAINS WITH GENERAL CONTRACTOR TO SUIT FLOOR SLOPE.
11. PROVIDE TRAP SEAL PRIMER FOR ALL FLOOR DRAINS USING PRIMER SPECIFIED IN PLUMBING FIXTURE SCHEDULE. PRIMERS SHALL BE CONCEALED. MOUNT IN CEILING SPACE AND RUN LINE CONCEALED DOWN WALL AND UNDER FLOOR TO DRAIN.
12. LABEL ALL EXISTING AND NEW PIPING COMPLETE WITH SERVICE AND FLOW ARROWS. LABELS SHALL BE MAX 3m(10') SPACING AND ON EITHER SIDE OF WALLS.
13. SUPPLY ACCESS DOORS WHERE REQUIRED AND TURN OVER TO GENERAL CONTRACTOR FOR INSTALLATION. REFER TO PLUMBING FIXTURE SCHEDULE.
14. PROVIDE ESCUTCHEONS AROUND WATER AND SANITARY PIPING THROUGH WALL, FLOOR OR MILLWORK AT ALL FIXTURES.
15. ALL PIPE SIZES ARE SHOWN IN MILLIMETERS (mm).
16. INSULATE AND LABEL ALL NEW AND EXISTING PIPING WITHIN CEILING SPACE INCLUDING WATER AND STORM.
17. FIRE STOP ALL EXISTING AND NEW PIPING THROUGH RATED WALLS (REFER TO ARCHITECTURAL DRAWINGS FOR FIRE RATINGS).
18. LABEL CEILING GRID AT ACCESS TO EQUIPMENT AND VALVES.
19. PROVIDE ISOLATION VALVES AT ALL FIXTURES.
20. PROVIDE NEW LEAD FREE CIRCUIT BALANCING VALVES ON DOMESTIC HOT WATER RECIRCULATION PIPES AS INDICATED. BALANCE TO 5.7 l/min.



1 M-0006 ENLARGED WASHROOM GROUP PLAN
SCALE: 1:50



2 M-0006 ENLARGED ROOM 111 PLAN
SCALE: 1:50



PLUMBING FIRST FLOOR KEY PLAN
SCALE: 1:250

ROOM #	ROOM NAME
100	VESTIBULE 1
101	VESTIBULE 2
102	LOBBY / WAITING AREA
102A	CORRIDOR
103	TICKETING ROOM
S1 (104)	STAIR 1
S2 (105)	STAIR 2
106	UNIVERSAL WASHROOM
107	MALE WASHROOM
108	FEMALE WASHROOM
109	JANITOR
110	IT ROOM
111	WASHROOM
112	CORRIDOR
113	MULTI-PURPOSE ROOM
114	O.T.S.
115	MECHANICAL ROOM

REFERENCE DRAWINGS		ISSUE			REVISIONS		
		D	2023/12/06	ISSUED FOR TENDER			
		C	2023/07/25	REISSUED FOR BUILDING PERMIT			
		B	2023/04/24	ISSUED FOR BUILDING PERMIT			
		A	2022/11/11	PRELIMINARY DESIGN SUBMISSION			
DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

DRAWN BY: E.M.	DESIGNED BY: A.A.
CHECKED BY: D.R.	APPROVED BY: S.C.
SCALE: AS SHOWN	FULL SIZE ONLY

PROJECT NO. BE20101016

ISSUED FOR TENDER

NIAGARA REGION PROJECT NO. xxxxxxx

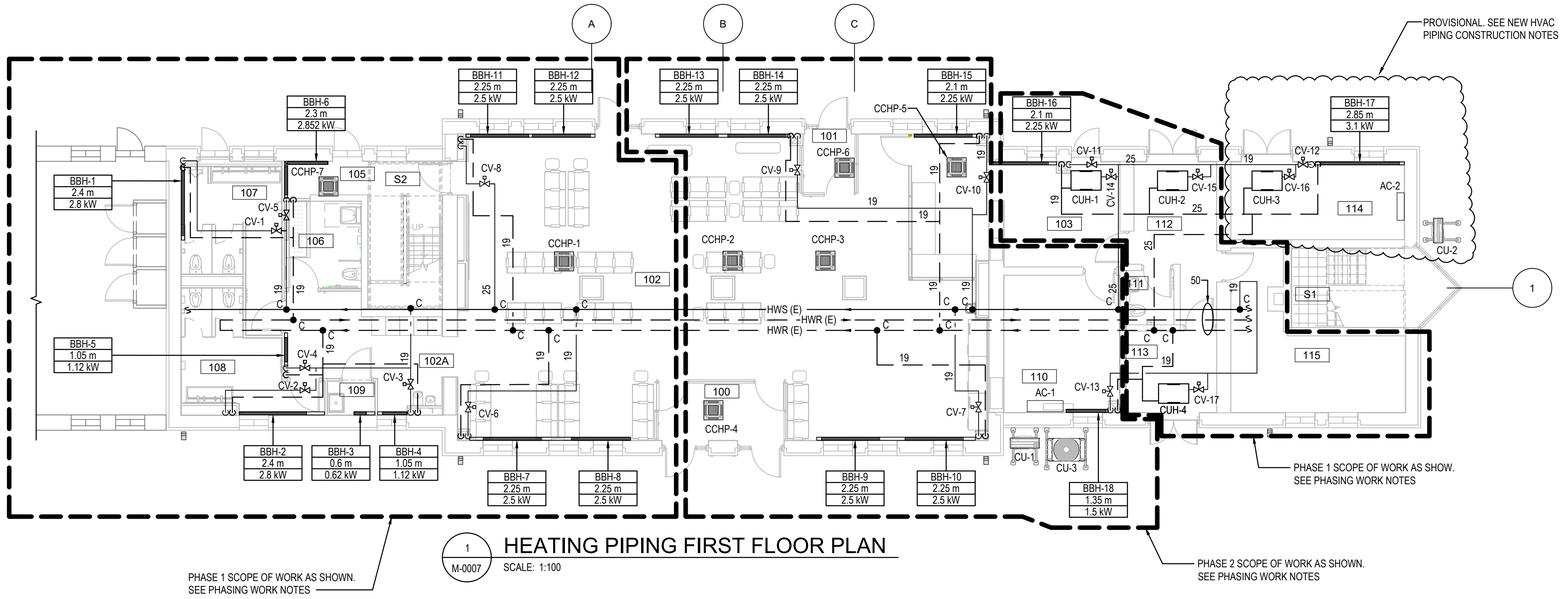
NIAGARA FALLS TRAIN STATION UPGRADES

PLUMBING PLANS

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION	M-0006	D	M-0006

METRIC

ALL DIMENSONS SHOWN ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE NOTED.



1 / M-0007 HEATING PIPING FIRST FLOOR PLAN

SCALE: 1:100

PHASING WORK NOTES:

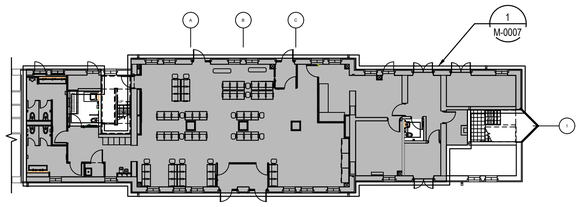
PHASE 1 & 2 SCOPES OF WORK INCLUDE INSTALLATION AND HEATING WATER FLOW BALANCING AND CONTROL VALVE COMMISSIONING

NEW HEATING PIPING CONSTRUCTION NOTES:

1. HWS AND HWR PIPELINES MODIFICATIONS AND TIE-IN POINT LOCATIONS WITHIN THE MECHANICAL ROOM AS REQUIRED TO BE VERIFIED AND CONFIRMED ON SITE.
2. AS PER CLIENT'S SOW AND BUDGET PLAN, ROOM 114 IS NOT PART OF THIS CONTRACT AND IS SUBJECT FOR CONSTRUCTION IN THE PROJECT'S NEXT STAGE. ROOM 115 (MECHANICAL ROOM) IS NOT PART OF THIS PROJECT AND ITS SOW, EXCEPT THE PIPELINE TIE-INS AND MODIFICATIONS TO HWS AND HWR MAINS AS REQUIRED.

NEW HEATING PIPING NOTES:

1. REFER TO DRAWING M-0002 FOR HVAC NOTES.
2. REFER TO DRAWING M-0008 FOR HVAC PIPING PLANS.
3. ALL NEW HEATING PIPE IS 19mm (NPS 3/4) UNO.



HEATING PIPING FIRST FLOOR KEY PLAN

SCALE: 1:250

ROOM #	ROOM NAME
100	VESTIBULE 1
101	VESTIBULE 2
102	LOBBY / WAITING AREA
102A	CORRIDOR
103	TICKETING ROOM
S1 (104)	STAIR 1
S2 (105)	STAIR 2
106	UNIVERSAL WASHROOM
107	MALE WASHROOM
108	FEMALE WASHROOM
109	JANITOR
110	IT ROOM
111	WASHROOM
112	CORRIDOR
113	MULTI-PURPOSE ROOM
114	O.T.S.
115	MECHANICAL ROOM

REFERENCE DRAWINGS		ISSUE			REVISIONS		
		C	2023/12/06	ISSUED FOR TENDER			
		B	2023/04/24	ISSUED FOR BUILDING PERMIT			
		A	2022/11/11	PRELIMINARY DESIGN SUBMISSION			
DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

DRAWN BY: E.M.	DESIGNED BY: A.A.
CHECKED BY: G.W.	APPROVED BY: S.C.
SCALE: AS SHOWN FULL SIZE ONLY	

PROJECT NO. BE20101016

ISSUED FOR TENDER

Niagara Region

NIAGARA REGION PROJECT NO. xxxxxxx

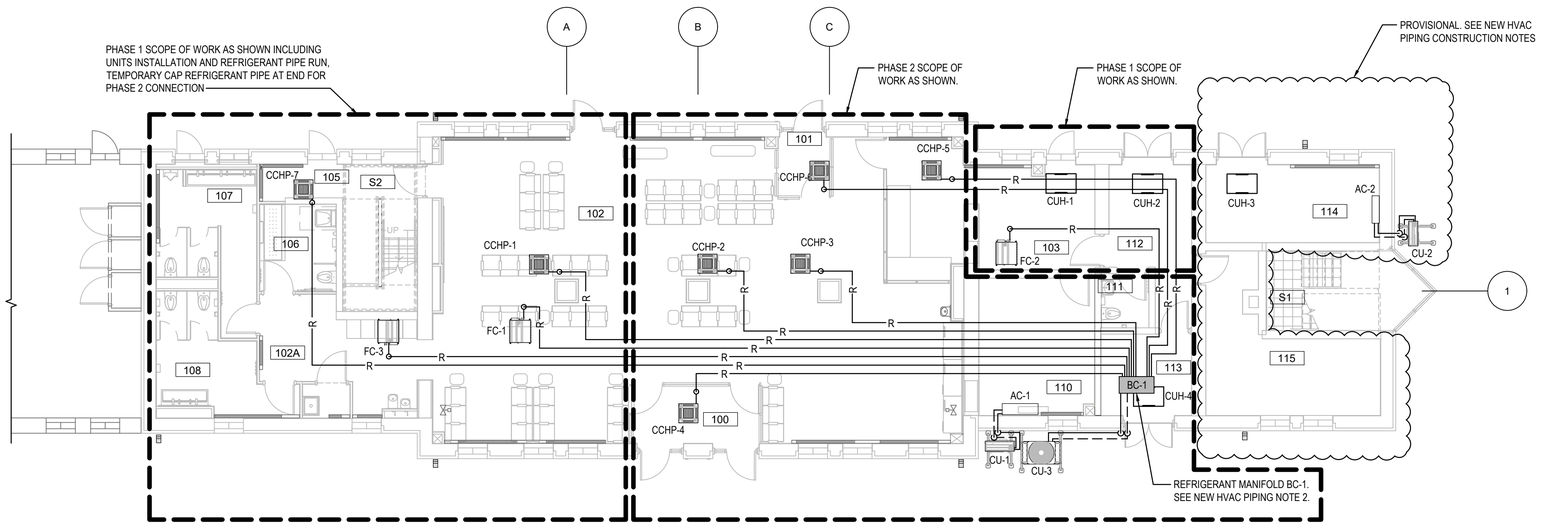
NIAGARA FALLS TRAIN STATION UPGRADES

HEATING PIPING PLANS

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION	M-0007	C	M-0007

METRIC

ALL DIMENSONS SHOWN ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE NOTED.



1 / M-0008 HVAC PIPING FIRST FLOOR PLAN

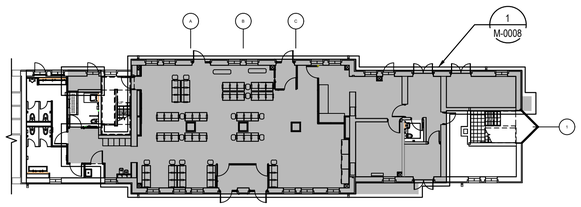
SCALE: 1:100

NEW HVAC PIPING CONSTRUCTION NOTES:

1. AS PER CLIENT'S SOW AND BUDGET PLAN, ROOM 114 IS NOT PART OF THIS CONTRACT AND IS SUBJECT FOR CONSTRUCTION IN THE PROJECT'S NEXT STAGE. ROOM 115 (MECHANICAL ROOM) IS NOT PART OF THIS PROJECT AND ITS SOW.

NEW HVAC PIPING NOTES:

1. REFER TO DRAWING M-0002 FOR HVAC NOTES.
2. THE CONTRACTOR IS TO DETERMINE ON SITE THE FINAL LOCATION FOR INSTALLATION OF THE "BC-1" UNIT AND ASSOCIATED REFRIGERANT PIPE ROUTING AND CONNECTIONS. ENSURE FINAL BC-1 UNIT IS INSTALLED w/ SERVICE AND MAINTENANCE CLEARANCES TO THE MANUFACTURER'S RECOMMENDATIONS AND THE UNIT DOES NOT ADVERSELY INFLUENCE OTHER SERVICE OR EQUIPMENT.



HVAC PIPING FIRST FLOOR KEY PLAN

SCALE: 1:250

ROOM #	ROOM NAME
100	VESTIBULE 1
101	VESTIBULE 2
102	LOBBY / WAITING AREA
102A	CORRIDOR
103	TICKETING ROOM
S1 (104)	STAIR 1
S2 (105)	STAIR 2
106	UNIVERSAL WASHROOM
107	MALE WASHROOM
108	FEMALE WASHROOM
109	JANITOR
110	IT ROOM
111	WASHROOM
112	CORRIDOR
113	MULTI-PURPOSE ROOM
114	O.T.S.
115	MECHANICAL ROOM

REFERENCE DRAWINGS		ISSUE			REVISIONS		
		C	2023/12/06	ISSUED FOR TENDER			
		B	2023/04/24	ISSUED FOR BUILDING PERMIT			
		A	2022/11/11	PRELIMINARY DESIGN SUBMISSION			
DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

DRAWN BY: E.M. | DESIGNED BY: G.W.

CHECKED BY: E.M. | APPROVED BY: S.C.

SCALE: AS SHOWN FULL SIZE ONLY

wsp

PROJECT NO. BE20101016

ISSUED FOR TENDER

Niagara Region

NIAGARA REGION PROJECT NO. xxxxxxx

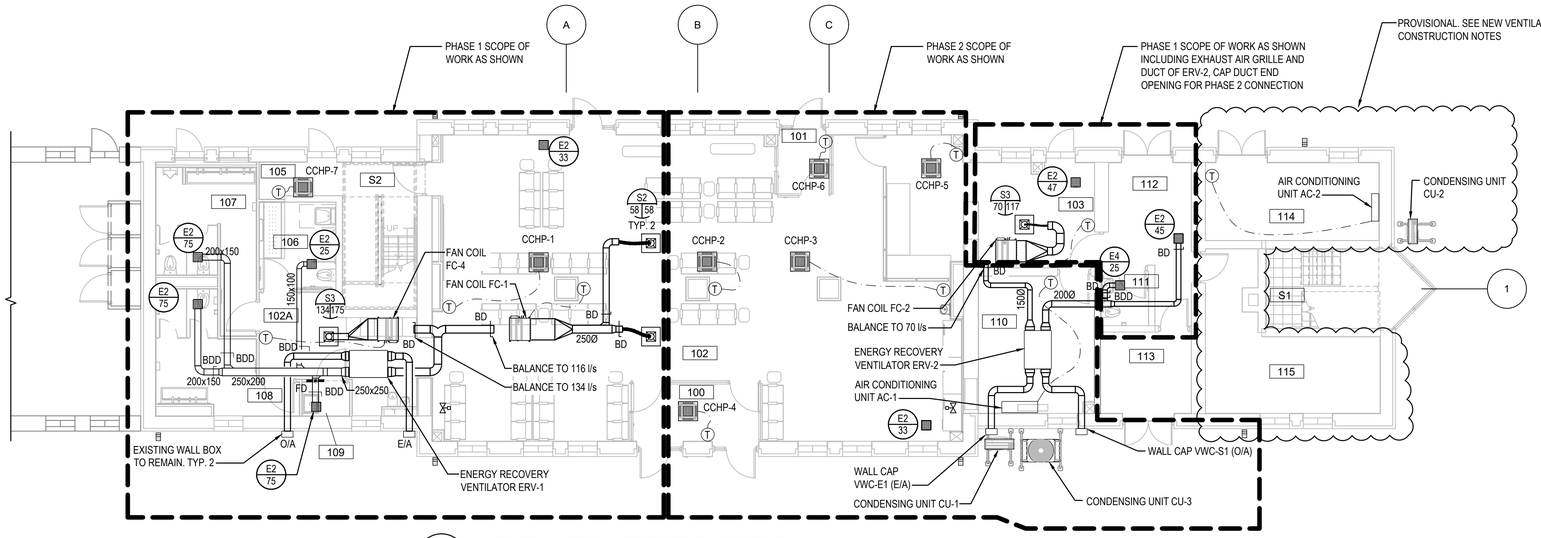
NIAGARA FALLS TRAIN STATION UPGRADES

HVAC PIPING PLANS

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION	M-0008	C	M-0008

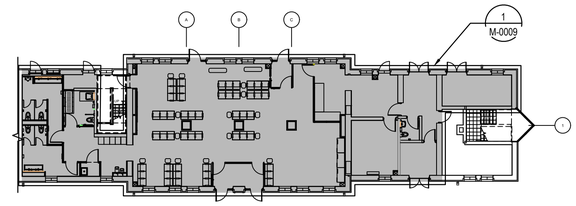
METRIC

ALL DIMENSONS SHOWN ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE NOTED.



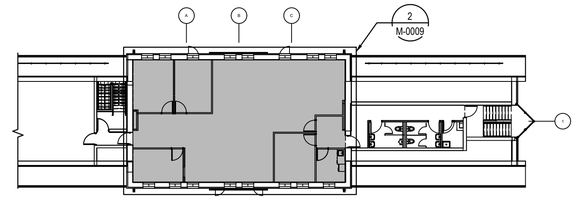
1 M-0009 VENTILATION FIRST FLOOR PLAN

SCALE: 1:100



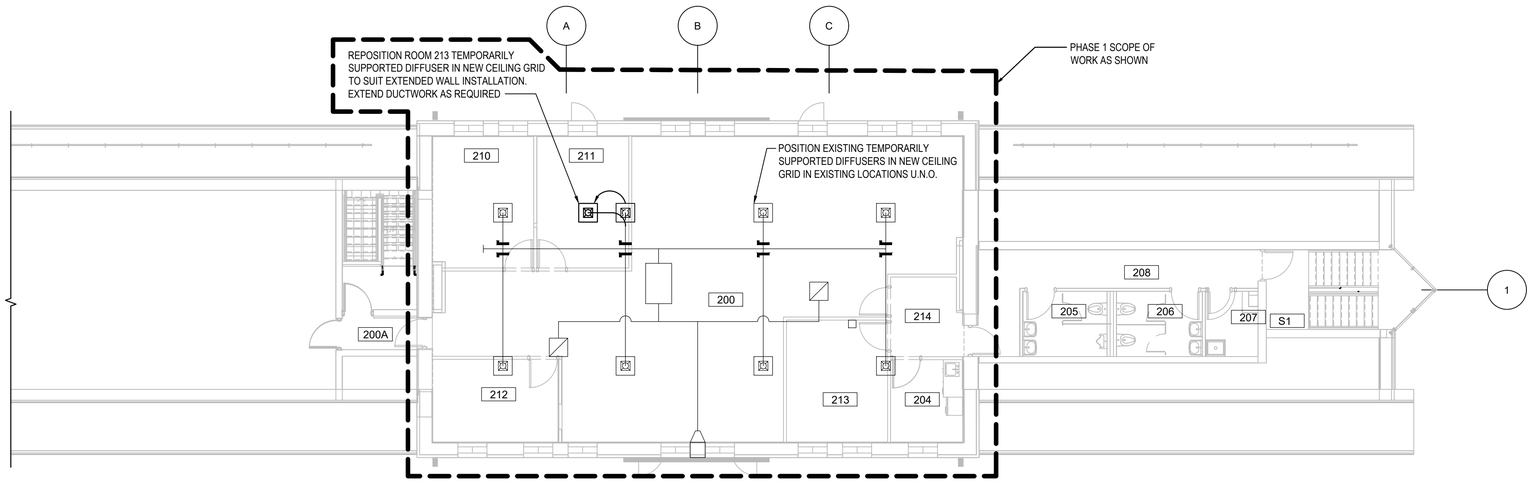
VENTILATION FIRST FLOOR KEY PLAN

SCALE: 1:250



VENTILATION SECOND FLOOR KEY PLAN

SCALE: 1:250



2 M-0009 VENTILATION SECOND FLOOR PLAN

SCALE: 1:100

NEW VENTILATION CONSTRUCTION NOTES:

1. AS PER CLIENT'S SOW AND BUDGET PLAN, ROOM 114 IS NOT PART OF THIS CONTRACT AND IS SUBJECT FOR CONSTRUCTION IN THE PROJECT'S NEXT STAGE. ROOM 115 (MECHANICAL ROOM) IS NOT PART OF THIS PROJECT AND ITS SOW, EXCEPT THE PIPELINE TIE-INS AND MODIFICATIONS TO HWS AND HWR MAINS AS REQUIRED.

NEW VENTILATION NOTES:

1. REFER TO DRAWING M-0002 FOR HVAC NOTES.

ROOM #	ROOM NAME
100	VESTIBULE 1
101	VESTIBULE 2
102	LOBBY / WAITING AREA
102A	CORRIDOR
103	TICKETING ROOM
S1 (104)	STAIR 1
S2 (105)	STAIR 2
106	UNIVERSAL WASHROOM
107	MALE WASHROOM
108	FEMALE WASHROOM
109	JANITOR
110	IT ROOM
111	WASHROOM
112	CORRIDOR
113	MULTI-PURPOSE ROOM
114	O.T.S.
115	MECHANICAL ROOM
200	OFFICE AREA
200A	VESTIBULE 2
204	KITCHETTE
205	WASHROOM - MALE
206	WASHROOM - FEMALE
207	JANITOR
208	CORRIDOR
210	OFFICE 1
211	OFFICE 2
212	OFFICE 3
213	GO TRANSIT AREA
214	VESTIBULE
S1 (104)	STAIR 1
S2 (105)	STAIR 2

REFERENCE DRAWINGS		ISSUE			REVISIONS		
		C	2023/12/06	ISSUED FOR TENDER			
		B	2023/07/25	REISSUED FOR BUILDING PERMIT			
		A	2023/04/24	ISSUED FOR BUILDING PERMIT			
DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

DRAWN BY: E.M.
DESIGNED BY: A.A.
CHECKED BY: G.W.
APPROVED BY: S.C.
SCALE: AS SHOWN FULL SIZE ONLY

PROJECT NO. BE20101016

ISSUED FOR TENDER

NIAGARA REGION PROJECT NO. xxxxxxx

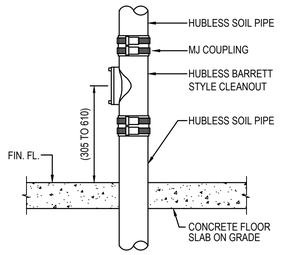
NIAGARA FALLS TRAIN STATION UPGRADES

VENTILATION PLANS

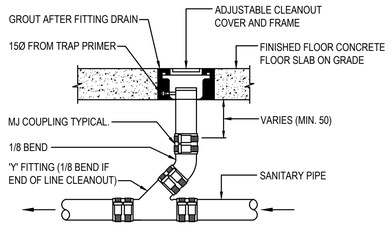
CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION	M-0009	C	M-0009

METRIC

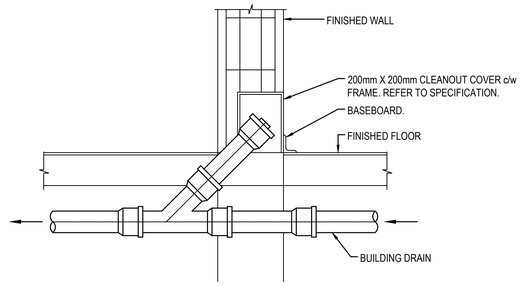
ALL DIMENSONS SHOWN ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE NOTED.



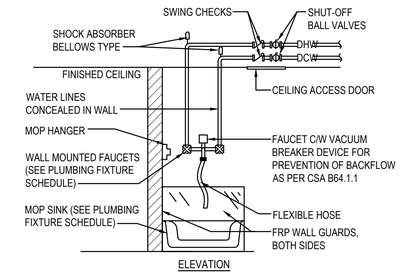
1 - TYPICAL EXPOSED CLEANOUT
SCALE: NTS



2 - TYPICAL FLOOR CLEANOUT
SCALE: NTS

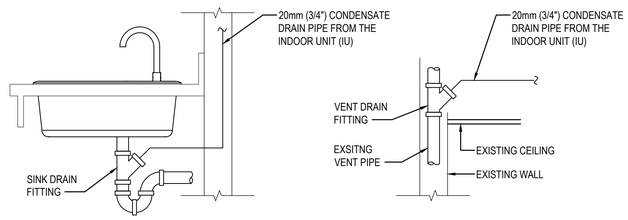


3 - TYPICAL CLEANOUT WALL COVER
SCALE: NTS



ELEVATION

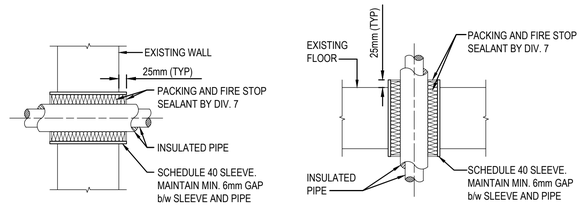
4 - JANITOR SERVICE SINK (JS-1) HOOK-UP
SCALE: NTS



CONDENSATE TO SINK

CONDENSATE TO VENT

5 - TYPICAL CONDENSATE DRAIN DETAIL
SCALE: NTS



PIPING THROUGH WALL

PIPING THROUGH FLOOR

6 - PIPE PENETRATION DETAIL
SCALE: NTS

REFERENCE DRAWINGS		ISSUE			REVISIONS		
		B	2023/12/06	ISSUED FOR TENDER			
		A	2023/04/24	ISSUED FOR BUILDING PERMIT			
DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

DRAWN BY: E.M.
DESIGNED BY: A.A.
CHECKED BY: D.R.
APPROVED BY: S.C.
SCALE: AS SHOWN FULL SIZE ONLY

wsp
PROJECT NO. BE20101016
ISSUED FOR TENDER

Niagara Region
NIAGARA REGION PROJECT NO. xxxxxxx

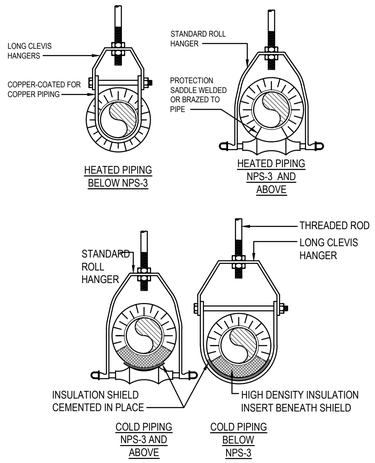
NIAGARA FALLS TRAIN STATION UPGRADES

MECHANICAL DETAILS
1 OF 3

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION	M-0010	B	M-0010

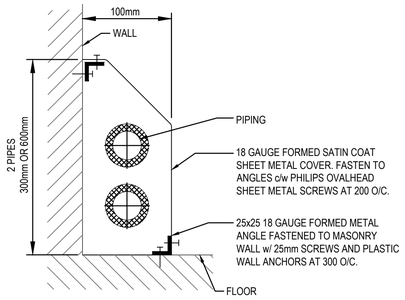
METRIC

ALL DIMENSONS SHOWN ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE NOTED.



PIPE SUPPORT HANGER TYPES

SCALE: NTS

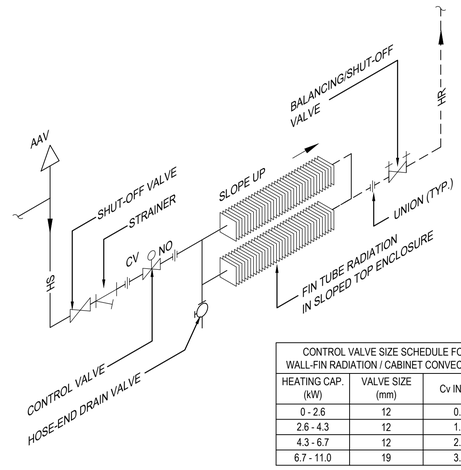


NOTE:

1. MECHANICAL CONTRACTOR TO SUPPLY AND INSTALL PIPE CHASE COVER.

PIPE ENCLOSURE DETAIL

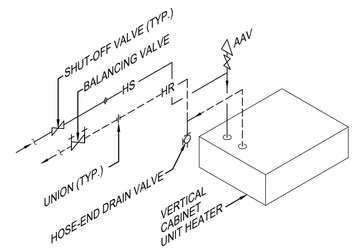
SCALE: NTS



CONTROL VALVE SIZE SCHEDULE FOR WALL-FIN RADIATION / CABINET CONVECTORS		
HEATING CAP. (kW)	VALVE SIZE (mm)	Cv INDEX
0 - 2.6	12	0.9
2.6 - 4.3	12	1.5
4.3 - 6.7	12	2.3
6.7 - 11.0	19	3.8

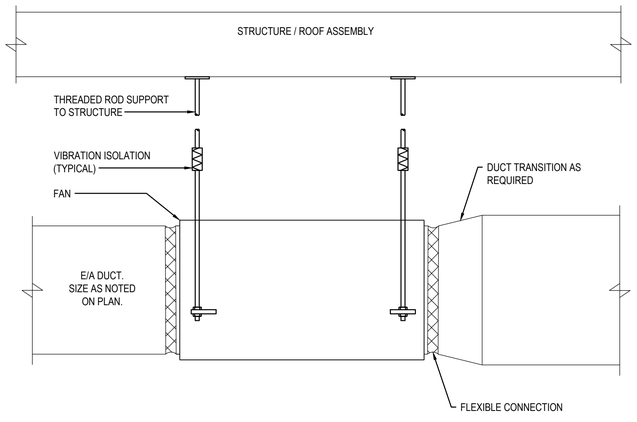
WALL FIN BASEBOARD RADIATOR PIPING SCHEMATIC

SCALE: NTS



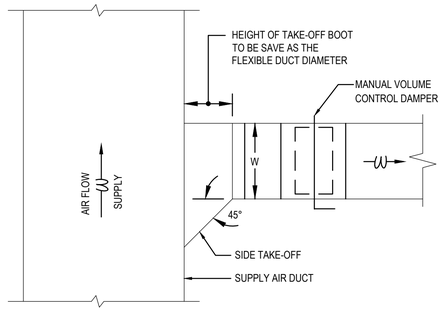
TYPICAL CABINET HEATER PIPING

SCALE: NTS



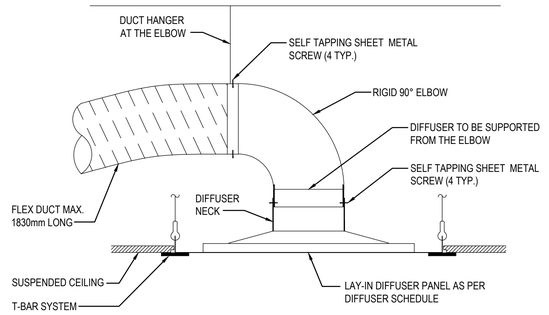
SUSPENDED INLINE EXHAUST FAN DETAIL

SCALE: NTS



BRANCH TAKE-OFF DETAIL

SCALE: NTS



CEILING DIFFUSER DETAIL

SCALE: NTS

REFERENCE DRAWINGS		ISSUE			REVISIONS		
		C	2023/12/06	ISSUED FOR TENDER			
		B	2023/04/24	ISSUED FOR BUILDING PERMIT			
		A	2022/11/11	PRELIMINARY DESIGN SUBMISSION			
DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

DRAWN BY: E.M.	DESIGNED BY: A.A.
CHECKED BY: G.W.	APPROVED BY: S.C.
SCALE: AS SHOWN	FULL SIZE ONLY

PROJECT NO. BE20101016

ISSUED FOR TENDER

Niagara Region

NIAGARA REGION PROJECT NO. xxxxxxx

NIAGARA FALLS TRAIN STATION UPGRADES

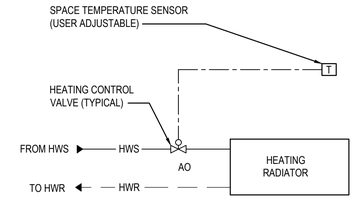
MECHANICAL DETAILS

2 OF 3

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION	M-0011	C	M-0011

METRIC

ALL DIMENSONS SHOWN ARE
IN METRES AND/OR MILLIMETRES
UNLESS OTHERWISE NOTED.

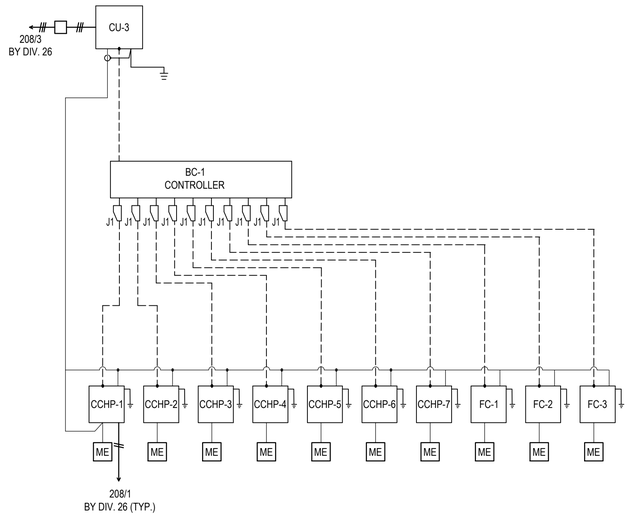


SEQUENCE OF OPERATIONS

1. CONTROL VALVE WILL MODULATE TO MAINTAIN ROOM TEMPERATURE SETPOINT OF 21 DEGC (70 DEGF) (ADJUSTABLE) IN HEATING.
2. ROOM TEMPERATURE SENSOR WILL BE THE HEAT PUMP/CEILING CASSETTE/FAN COIL UNIT'S PROGRAMMABLE THERMOSTAT. PROVIDE ROOM TEMPERATURE SENSOR IF PROGRAMMABLE THERMOSTAT IS NOT AVAILABLE IN THE ROOM.

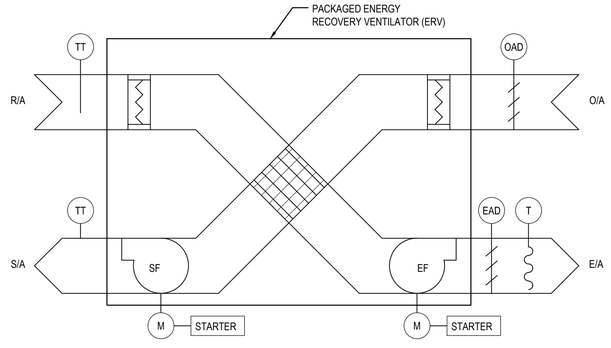
WALL FIN BASEBOARD HEATER CONTROLS

SCALE: NTS



MITSUBISHI A/C UNITS & FAN COIL UNITS CONTROL WIRING DIAGRAM

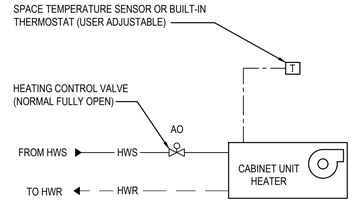
SCALE: NTS



NOTE:
1. FOR CONTROL OF EACH ERV UNIT, PROVIDE AND INSTALL A TC7D SERIES DIGITAL TIME CLOCK (OR APPROVAL EQUIVALENT).
2. ALL ERVS SHOULD OPERATE CONTINUOUSLY DURING REVENUE HOURS DEFINED BY OWNER.

ENERGY RECOVERY VENTILATOR CONTROLS

SCALE: NTS



SEQUENCE OF OPERATIONS

1. CONTROL VALVE WILL REMAIN FULLY OPEN IN HEATING.
2. CABINET UNIT HEATER BUILT-IN BLOWER START TO RUN WHEN THE ROOM TEMP DROP BELOW THE SET POINT 21°C (ADJUSTABLE).
3. CABINET UNIT HEATER BUILT-IN BLOWER WILL REMAIN ON (OR OFF) STATUS AT LEAST 15 MINUTES AFTER IT TURNS ON (OR OFF).
4. ROOM TEMPERATURE SENSOR WILL BE THE HEAT PUMP/CEILING CASSETTE/FAN COIL UNIT'S PROGRAMMABLE THERMOSTAT. PROVIDE ROOM TEMPERATURE SENSOR IF PROGRAMMABLE THERMOSTAT IS NOT AVAILABLE IN THE ROOM.

CABINET HEATER CONTROLS

SCALE: NTS

REFERENCE DRAWINGS		ISSUE			REVISIONS		
		C	2023/12/06	ISSUED FOR TENDER			
		B	2023/04/24	ISSUED FOR BUILDING PERMIT			
		A	2022/11/11	PRELIMINARY DESIGN SUBMISSION			
DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

DRAWN BY: E.M.	DESIGNED BY: G.W.
CHECKED BY: D.R.	APPROVED BY: S.C.
SCALE: AS SHOWN	FULL SIZE ONLY

wsp

PROJECT NO. BE20101016

ISSUED FOR TENDER

Niagara Region

NIAGARA REGION PROJECT NO. xxxxxxx

NIAGARA FALLS TRAIN STATION UPGRADES

MECHANICAL DETAILS

3 OF 3

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION	M-0012	C	M-0012

METRIC

ALL DIMENSONS SHOWN ARE
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FIXTURE SCHEDULE

ITEM	PIPE CONNECTION (QTY)				DESCRIPTION
	DCW	DHW	SANITARY	VENT	
WC-1	25	-	75	38	WATER CLOSET - WALL HUNG, FLUSH VALVE, BARRIER FREE
WC-2	25	-	75	38	WATER CLOSET - FLOOR MOUNTED, FLUSH TANK, BARRIER FREE
U-1	12	-	50	38	URINAL - WALL HUNG
L-1	12	12	32	32	LAVATORY - WALL HUNG
L-2	12 (2)	12 (2)	32	32	LAVATORY - WALL HUNG, 2 - FAUCET, 1500mm LONG
L-3	12 (3)	12 (3)	32	32	LAVATORY - WALL HUNG, 3 - FAUCET, 2290mm LONG
L-4	12	12	32	32	LAVATORY - WALL HUNG, BARRIER FREE
MPS-1	12	12	75	38	MOP SINK, FLOOR MOUNTED, 600x500mm
DF-1	12 (2)	-	50	38	DRINKING FOUNTAIN, WALL HUNG, 2 STATIONS
FD-1	-	-	75	-	FLOOR DRAIN

CONTROL VALVE SCHEDULE

No.	LOCATION (ROOM #)	SERVICE	PIPE SIZE (NPS)	SIZE (NPS)	FLOW (L/S)	PRESSURE DROP (kPA)	Cv	REMARKS
CV-1	107	BBH-1	3/4	1/2	0.28		4.2	TWO WAY VALVE
CV-2	108	BBH-2	3/4	1/2	0.23		4.2	TWO WAY VALVE
CV-3	102A	BBH-3 & BBH-4	3/4	1/2	0.02		4.2	TWO WAY VALVE
CV-4	102A	BBH-5	3/4	1/2	0.01		4.2	TWO WAY VALVE
CV-5	105	BBH-6	3/4	1/2	0.01		4.2	TWO WAY VALVE
CV-6	102	BBH-7 & BBH 8	3/4	1/2	0.05		4.2	TWO WAY VALVE
CV-7	102	BBH-9 & BBH-10	3/4	1/2	0.21	4.3	4.2	TWO WAY VALVE
CV-8	102	BBH-11 & BBH-12	3/4	1/2	0.02		4.2	TWO WAY VALVE
CV-9	102	BBH-13 & BBH-14	3/4	1/2	0.02		4.2	TWO WAY VALVE
CV-10	103	BBH-15	3/4	1/2	0.04		4.2	TWO WAY VALVE
CV-11	103	BBH-16	3/4	1/2	0.11		4.2	TWO WAY VALVE
CV-12	114	BBH-17	3/4	1/2	0.11		4.2	TWO WAY VALVE
CV-13	110	BBH-18	3/4	1/2	0.10	0.8	4.2	TWO WAY VALVE
CV-14	103	CUH-1	3/4	1/2	0.02		4.2	TWO WAY VALVE
CV-15	112	CUH-2	3/4	1/2	0.02		4.2	TWO WAY VALVE
CV-16	114	CUH-3	3/4	1/2	0.02		4.2	TWO WAY VALVE
CV-17	113	CUH-4	3/4	1/2	0.02		4.2	TWO WAY VALVE

UNIT HEATER AND CABINET HEATER SCHEDULE

UNIT TAG	LOCATION	MAKE / MODEL	MOUNTING HEIGHT (m)	RATING (kW)	AIR FLOW (l/s)	E.A.T. °C	E.W.T. °C	L.W.T. °C	FLOW (lps)	P.D. (kPa)	MOTOR AMPS	MOTOR CAPACITY (W)	ELECTRICAL V/P/H	REMARKS
CUH-1	ROOM 103	MODINE CW - SIZE 002	2.7	2.9	118	18	82	71	0.03	3.05	0.7	22.7	115/1/60	HORIZONTAL, CEILING RECESSED
CUH-2	ROOM 112	MODINE CW - SIZE 002	2.7	2.9	118	18	82	71	0.03	3.05	0.7	22.7	115/1/60	HORIZONTAL, CEILING RECESSED
CUH-3	ROOM 114	MODINE CW - SIZE 002	2.7	2.9	118	18	82	71	0.03	3.05	0.7	22.7	115/1/60	HORIZONTAL, CEILING RECESSED
CUH-4	ROOM 113	MODINE CW - SIZE 002	2.7	2.9	118	18	82	71	0.03	3.05	0.7	22.7	115/1/60	HORIZONTAL, CEILING RECESSED

NOTE: ALTERNATE MANUFACTURERS THAT MEET THE SPECIFICATION SHALL BE ACCEPTED.

PROVISIONAL. SEE DRAWING M-0007 NEW HEATING PIPING CONSTRUCTION NOTES

BASEBOARD RADIATION SCHEDULE

No.	ROOM (LOCATION)	FIN TUBE LENGTH (mm)	CABINET HEIGHT (mm)	CABINET WIDTH (mm)	ROWS/ PASSES	CAP. (W/m)	CAPACITY (kW)	WATER TEMP. °C		TUBE SIZE (mm)	REMARKS
								ENTERING	LEAVING		
BBH-1	107	2400	355	100	2	1140	2.8	82	71	25	SLOPED TOP, 82x82 ALUMINUM FIN (164 FINS/m) c/w ENDCAPS. TRANE HYDRONIC WALL FIN (TYPE S).
BBH-2	108	2400	355	100	2	1140	2.8	82	71	25	SLOPED TOP, 82x82 ALUMINUM FIN (164 FINS/m) c/w ENDCAPS. TRANE HYDRONIC WALL FIN (TYPE S).
BBH-3	109	600	355	100	2	1140	0.62	82	71	25	SLOPED TOP, 82x82 ALUMINUM FIN (164 FINS/m) c/w ENDCAPS. TRANE HYDRONIC WALL FIN (TYPE S).
BBH-4	102A (SOUTH)	1050	355	100	2	1140	1.12	82	71	25	SLOPED TOP, 82x82 ALUMINUM FIN (164 FINS/m) c/w ENDCAPS. TRANE HYDRONIC WALL FIN (TYPE S).
BBH-5	102A (WEST)	1050	355	100	2	1140	1.12	82	71	25	SLOPED TOP, 82x82 ALUMINUM FIN (164 FINS/m) c/w ENDCAPS. TRANE HYDRONIC WALL FIN (TYPE S).
BBH-6	105	1050/1350 L-SHAPED	355	100	2	1140	2.85	82	71	25	SLOPED TOP, 82x82 ALUMINUM FIN (164 FINS/m) c/w ENDCAPS. TRANE HYDRONIC WALL FIN (TYPE S).
BBH-7	102 (SOUTH)	2250	355	100	2	1140	2.5	82	71	25	SLOPED TOP, 82x82 ALUMINUM FIN (164 FINS/m) c/w ENDCAPS. TRANE HYDRONIC WALL FIN (TYPE S).
BBH-8	102 (SOUTH)	2250	355	100	2	1140	2.5	82	71	25	SLOPED TOP, 82x82 ALUMINUM FIN (164 FINS/m) c/w ENDCAPS. TRANE HYDRONIC WALL FIN (TYPE S).
BBH-9	102 (SOUTH)	2250	355	100	2	1140	2.5	82	71	25	SLOPED TOP, 82x82 ALUMINUM FIN (164 FINS/m) c/w ENDCAPS. TRANE HYDRONIC WALL FIN (TYPE S).
BBH-10	102 (SOUTH)	2250	355	100	2	1140	2.5	82	71	25	SLOPED TOP, 82x82 ALUMINUM FIN (164 FINS/m) c/w ENDCAPS. TRANE HYDRONIC WALL FIN (TYPE S).
BBH-11	102 (NORTH)	2250	355	100	2	1140	2.5	82	71	25	SLOPED TOP, 82x82 ALUMINUM FIN (164 FINS/m) c/w ENDCAPS. TRANE HYDRONIC WALL FIN (TYPE S).
BBH-12	102 (NORTH)	2250	355	100	2	1140	2.5	82	71	25	SLOPED TOP, 82x82 ALUMINUM FIN (164 FINS/m) c/w ENDCAPS. TRANE HYDRONIC WALL FIN (TYPE S).
BBH-13	102 (NORTH)	2250	355	100	2	1140	2.5	82	71	25	SLOPED TOP, 82x82 ALUMINUM FIN (164 FINS/m) c/w ENDCAPS. TRANE HYDRONIC WALL FIN (TYPE S).
BBH-14	102 (NORTH)	2250	355	100	2	1140	2.5	82	71	25	SLOPED TOP, 82x82 ALUMINUM FIN (164 FINS/m) c/w ENDCAPS. TRANE HYDRONIC WALL FIN (TYPE S).
BBH-15	103	2100	355	100	2	1140	2.3	82	71	25	SLOPED TOP, 82x82 ALUMINUM FIN (164 FINS/m) c/w ENDCAPS. TRANE HYDRONIC WALL FIN (TYPE S).
BBH-16	103	2100	355	100	2	1140	2.3	82	71	25	SLOPED TOP, 82x82 ALUMINUM FIN (164 FINS/m) c/w ENDCAPS. TRANE HYDRONIC WALL FIN (TYPE S).
BBH-17	114	2850	355	100	2	1140	3.1	82	71	25	SLOPED TOP, 82x82 ALUMINUM FIN (164 FINS/m) c/w ENDCAPS. TRANE HYDRONIC WALL FIN (TYPE S).
BBH-18	110	1350	355	100	2	1140	1.5	82	71	25	SLOPED TOP, 82x82 ALUMINUM FIN (164 FINS/m) c/w ENDCAPS. TRANE HYDRONIC WALL FIN (TYPE S).

NOTE: ALTERNATE MANUFACTURERS THAT MEET THE SPECIFICATION SHALL BE ACCEPTED.

REFERENCE DRAWINGS		ISSUE			REVISIONS		
		C	2023/12/06	ISSUED FOR TENDER			
		B	2023/07/25	REISSUED FOR BUILDING PERMIT			
		A	2023/04/24	ISSUED FOR BUILDING PERMIT			
DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

DRAWN BY: E.M.	DESIGNED BY: A.A.
CHECKED BY: G.W.	APPROVED BY: S.C.
SCALE: AS SHOWN	FULL SIZE ONLY

wsp

PROJECT NO. BE20101016

ISSUED FOR TENDER

Niagara Region

NIAGARA REGION PROJECT NO. xxxxxxx

NIAGARA FALLS TRAIN STATION UPGRADES

MECHANICAL SCHEDULES

1 OF 3

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION	M-0013	C	M-0013

METRIC

ALL DIMENSONS SHOWN ARE
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GRILLE, DIFFUSER AND REGISTER SCHEDULE

UNIT TAG	DESCRIPTION	NECK DIA. (mm)	FACE SIZE (mmXmm)	MAX. FLOW RATE (l/s)	REMARKS
S1	SQUARE CONE DIFFUSER	150Ø	300x300	50	c/w DAMPER, T-BAR MOUNTED
S2	SQUARE CONE DIFFUSER	200Ø	610x610	100	c/w DAMPER, T-BAR MOUNTED
S3	SQUARE CONE DIFFUSER	250Ø	610x610	182	c/w DAMPER, T-BAR MOUNTED
E1	EGG CRATE FACE RETURN		610x250	300	c/w DAMPER, T-BAR MOUNTED
E2	EGG CRATE FACE RETURN		300x300	150	c/w DAMPER, T-BAR MOUNTED
E3	EGG CRATE FACE RETURN		300x300	150	c/w DAMPER, DUCT MOUNTED

LOUVRE & VENTILATION WALL CAP SCHEDULE

UNIT TAG	LOCATION / SERVICES	TYPE	OPENING SIZE WIDTH x HEIGHT/ LENGTH (mm) (mm)	OVERALL SIZE WIDTH x HEIGHT x DEPTH (mm) (mm) (mm)	AIRFLOW (l/s)	VELOCITY (m/s)	REMARKS
VWC-S1	ERV-2	INTAKE	200Ø	380 x 370 x 205	50	0.5	c/w INSECT SCREEN & BACKDRAFT DAMPER
VWC-E1	ERV-2	EXHAUST	200Ø	380 x 370 x 205	100	0.5	c/w BIRD SCREEN

ENERGY RECOVERY VENTILATOR SCHEDULE

UNIT TAG	LOCATION	MANUFACTURER / MODEL	TYPE	INSTALLATION	MOUNTING	AIR FLOW RATE (l/s)	AIR CONDITIONS SUMMER				AIR CONDITIONS WINTER				SUPPLY AIR ESP (Pa)	EXHAUST AIR ESP (Pa)	MOTOR (HP)	ELECTRICAL				DIMENSION WxDxH (mm)	WEIGHT (kg)	REMARKS
							O/A (°C)	R/A (°C)	S/A (°C)	TOTAL EFFECTIVENESS (%)	O/A (°C)	R/A (°C)	S/A (°C)	TOTAL EFFECTIVENESS (%)				FLA (A)	MCA (A)	MOCP (A)	VOLTAGE			
ERV-1	Rm. 102A - CORRIDOR	RenewAire / HE-1X	STATIC PLATE	HORIZONTAL	SUSPENDED AND SUPPORTED IN THE CEILING CAVITY	250	31.4	24.0	25.8	58.7	-20.0	21.0	10.8	74.8	366	356	2 x 0.75	1.7 - 2.3	5.2	15	208/3/60	886x1248x553	125	INDOOR UNIT, MOTORIZED DAMPERS BOTH STREAMS, MERV 13 FILTERS ON OUTSIDE AIR AND RETURN AIR, & CONDENSATE PUMP (RUN CONCEALED PIPE TO DF-1 SAN (RM 102A))
ERV-2	Rm. 110 - IT	RenewAire / EV Premium M	STATIC PLATE	HORIZONTAL	SUSPENDED AND SUPPORTED IN THE CEILING CAVITY	70	31.4	24.0	26.2	47.7	-20.0	21.0	8.4	65.5	101	101	2 x 0.11	1.22	10.0	10	120/1/60	648x572x340	16.3	INDOOR UNIT, VARIABLE SPEED EC MOTORIZED IMPELLERS, MERV 13 FILTERS ON OUTSIDE AIR AND RETURN AIR, & CONDENSATE PUMP (RUN CONCEALED PIPE TO L-1 SAN PIPE (RM 111))

NOTE:
1. ALTERNATIVE MANUFACTURER AND MODEL ARE ACCPETED AFTER REVIEW AND APPROVAL.
2. INSTALL EACH ERV UNIT WITH ADEQUATE CLEARANCE FOR SERVICE AND MAINTENANCE REQUIRED BY UNIT MANUFACTURER.
3. PLACE EACH ERV UNIT IN THE CEILING SPACE TO AVOID UNIT SUPPLY AIR DIRECTLY BLOW ON ANY DOMESTIC COLD WATER PIPE.
4. PROVIDE TC7D SERIES DIGITAL TIME CLOCK (OR APPROVAL EQUIVALENT) FOR UNIT CONTROL AND ALL ERV SHOULD KEEP ON RUNNING DURING REVENUE HOURS DEFINDED BY OWNER.

NOTE: ALTERNATE MANUFACTURERS THAT MEET THE SPECIFICATION SHALL BE ACCEPTED.

REFERENCE DRAWINGS		ISSUE			REVISIONS		
		C	2023/12/06	ISSUED FOR TENDER			
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		A	2023/04/24	ISSUED FOR BUILDING PERMIT			
DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

DRAWN BY: E.M.
DESIGNED BY: A.A.
CHECKED BY: G.W.
APPROVED BY: S.C.
SCALE: AS SHOWN FULL SIZE ONLY

wsp
PROJECT NO. BE20101016

ISSUED FOR TENDER

Niagara Region
NIAGARA REGION PROJECT NO. xxxxxxx

NIAGARA FALLS TRAIN STATION UPGRADES

MECHANICAL SCHEDULES
2 OF 3

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION	M-0014	C	M-0014

METRIC

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FAN COIL SCHEDULE

UNIT TAG	LOCATION	MANUFACTURER / MODEL	TYPE	AIR FLOW RATE L - M - H (l/s)	COOLING CAPACITY (kW)	HEATING CAPACITY (kW)	ESP RANGE (Pa)	FAN MOTOR OUTPUT (W)	ELECTRICAL REQUIREMENTS			DIMENSION WxDxH (mm)	WEIGHT (kg)	FIELD DRAIN PIPE (mm)	SEER	SERVED BY CU	REFRIG.	LIQUID LINE (O.D.) (mm) (NPS)	SUCTION LINE (O.D.) (mm) (NPS)	REMARKS
									MCA	MOCP	ELEC.									
FC-1	Rm. 102 - LOBBY WAITING AREA- INDOORS	MITSUBISHI / PEFY-P06NMSU-E	CEILING MOUNTED DUCTED	83-100-117	1.8	2.0	5-50	96	0.5	15	208/1/60	790x700x200	19	32	-	CU-3	R410A	6.53 (1/4)	12.7 (1/2)	c/w PROGRAMMABLE THERMOSTAT, 2 - SIROCCO FANS WITH DC BRUSHLESS MOTORS, BUILT-IN CONDENSATE PUMP (RUN CONCEALED PIPE TO DF-1 SAN (RM 102A))
FC-2	Rm. 103 - TICKETING ROOM	MITSUBISHI / PEFY-P06NMSU-E	CEILING MOUNTED DUCTED	83-100-117	1.8	2.0	5-50	96	0.5	15	208/1/60	790x700x200	19	32	-		R410A	6.53 (1/4)	12.7 (1/2)	c/w PROGRAMMABLE THERMOSTAT, 2 x SIROCCO FANS w/ DC BRUSHLESS MOTORS, AIR FILTER, BUILT-IN CONDENSATE PUMP (RUN CONCEALED PIPE TO L-1 SAN PIPE (RM 111))
FC-3	Rm. 102A - CORRIDOR	MITSUBISHI / PEFY-P12NFMU-E	DUCTED CEILING SUSPENDED AND SUPPORTED IN THE CEILING CAVITY	100-133-175	3.5	4.0	5-50	96	0.68	15	208/1/60	790x700x200	20	32	-		R410A	6.53 (1/4)	12.7 (1/2)	c/w PROGRAMMABLE THERMOSTAT, 2 x SIROCCO FANS WITH DC MOTORS, AIR FILTER, BUILT IN CONDENSATE PUMP (RUN CONCEALED PIPE TO DF-1 SAN (RM 102A))

NOTE
1. ALTERNATIVE MANUFACTURER AND MODEL ARE ACCEPTED AFTER REVIEW AND APPROVAL.
2. PROGRAMMABLE THERMOSTAT TO KEEP ALL FAN COIL UNIT'S FAN CONTINUE TO RUN THROUGH OUT REVENUE HOURS EVEN AFTER HEATING OR COOLING IS NOT DEMANDED ON FAN COIL UNITS.
3. INSTALL EACH FAN COIL UNIT WITH ADEQUATE CLEARANCE FOR SERVICE AND MAINTENANCE REQUIRED BY UNIT MANUFACTURER.
4. REFRIGERANT PIPE SIZES SHOWING IN THE SCHEDULE ARE FOR PRICING PURPOSE. CONTRACTOR TO DOUBLE CHECK AND RE-SIZE THE REFRIGERANT LIQUID AND GAS PIPE ACCORDING TO THE FINAL LAYOUT OF THE INDOOR AND OUTDOOR UNITS AS WELL AS PIPE ROUTING ON SITE. CONTRACTOR TO VERITY THE FINAL PIPE SIZE WITH UNIT SUPPLIER.
5. ALL FAN COIL UNITS SHALL BE OPERATED IN SUCH WAY: ALL FAN COIL UNIT'S FAN SHALL OPERATE ALL THE TIME DURING REVENUE HOURS DEFINED BY END USER EVEN WHEN THE UNITS ARE NOT IN HEATING OR COOLING MODE.

CONDENSING UNIT SCHEDULE

UNIT TAG	LOCATION	MANUFACTURER / MODEL	TYPE	AIR FLOW RATE (l/s)	COOLING CAPACITY (kW)	HEATING CAPACITY (kW)	FAN MOTOR OUTPUT (W)	ELECTRICAL REQUIREMENTS			DIMENSION WxDxH (mm)	WEIGHT (kg)	SEER	REFRIG.	LIQUID LINE (O.D.) (mm) (NPS)	SUCTION LINE (O.D.) (mm) (NPS)	REMARKS
								MCA	MOCP	ELEC.							
CU-1	EXTERIOR - SOUTH SIDE OF BUILDING	MITSUBISHI / PUZ-A24NHA7	MOUNTED ON GROUND SUPPORT	916	7.0	7.6	75	19	26	208/1/60	800x330x600	75	17	R410A	- (-)	- (-)	SERVES AC-1 c/w REVERSE CYCLE DEFROST, LINEAR EXPANSION VALVE REFRIGERANT CONTROL
CU-2	EXTERIOR - EAST SIDE OF BUILDING	MITSUBISHI / PUY-A12NKA7	MOUNTED ON GROUND SUPPORT	1590	3.5	-	46	11	28	208/1/60	871x300x630	41	21	R410A	- (-)	- (-)	SERVES AC-2
CU-3	EXTERIOR - SOUTH SIDE OF BUILDING	MITSUBISHI / PURY-P96TNU-A	MOUNTED ON GROUND SUPPORT	3,917	28.1	30.2	920	44	70	208/3/60	1250x745x1818	300	-	R410A	19.05 (3/4)	22.2 (7/8)	SERVES CSHP-1 THRU CCHP-7, FC-1, FC-2 & FC-4 c/w BC CONTROLLER (CMB-P1012NU-JA1), INVERTER DRIVEN SCROLL COMPRESSOR, 1 x PROPELLER FANS w/ INVERTER-CONTROL BRUSHLESS DC MOTOR

PROVISIONAL. SEE DRAWING M-0008 NEW HVAC PIPING CONSTRUCTION NOTES

NOTE
1. ALTERNATIVE MANUFACTURER AND MODEL ARE ACCEPTED AFTER REVIEW AND APPROVAL.
2. PROVIDE CONCRETE PATIO FOR OUTDOOR UNITS INSTALLATION, SECURE GALVANIZED UNI-STRUST SUPPORTING RACK ON CONCRETE PATIO FOR OUTDOOR UNITS SUPPORT, KEEP THE OUTDOOR UNIT AT MIN 450 MM ABOVE GROUND. MAINTAIN THE SERVICE AND MAINTENANCE CLEARANCE AROUND THE OUTDOOR UNIT AS PER RECOMMENDATION BY UNIT SUPPLIER.
3. REFRIGERANT PIPE SIZES SHOWING IN THE SCHEDULE ARE FOR PRICING PURPOSE. CONTRACTOR TO DOUBLE CHECK AND RE-SIZE THE REFRIGERANT LIQUID AND GAS PIPE ACCORDING TO THE FINAL LAYOUT OF THE INDOOR AND OUTDOOR UNITS AS WELL AS PIPE ROUTING ON SITE. CONTRACTOR TO VERITY THE FINAL PIPE SIZE WITH UNIT SUPPLIER.

AIR CONDITIONER AND CEILING CASSETTE SCHEDULE

UNIT TAG	LOCATION	MANUFACTURER / MODEL	TYPE	AIR FLOW RATE L - M - H (l/s)	COOLING CAPACITY (kW)	HEATING CAPACITY (kW)	MOISTURE REMOVAL (l/hr)	FAN MOTOR OUTPUT (W)	ELECTRICAL REQUIREMENTS			DIMENSION WxDxH (mm)	WEIGHT (kg)	FIELD DRAIN PIPE (mm)	SERVED BY CU	REFRIG.	LIQUID LINE (O.D.) (mm) (NPS)	SUCTION LINE (O.D.) (mm) (NPS)	REMARKS
									MCA	MOCP	ELEC.								
AC-1	Rm. 110 - IT	MITSUBISHI / PKA-A24KA4	WALL MOUNT	300-333-366	7.0	7.6	2.37	56	1	15	208/1/60	1170x295x365	21	16	CU-1	R410A	9.52 (3/8)	15.8 (5/8)	c/w PROGRAMMABLE THERMOSTAT
AC-2	Rm. 114 - O.T.S. (INDOORS)	MITSUBISHI / PKA-A12LA-TH	WALL MOUNT	125-153-182	3.5	N/A	1.28	30	1	15	208/1/60	898x237x299	12.7	16	CU-2	R410A	6.53 (1/4)	12.7 (1/2)	c/w PROGRAMMABLE THERMOSTAT
CCHP-1	Rm. 102 - LOBBY WAITING AREA (WEST)	MITSUBISHI / PLFY-P15NFMU-E	CEILING MOUNTED CASSETTE	125-149-184	4.4	5.0	-	50	0.35	15	208/1/60	570x570x208	14.2 + 2.4	32		R410A	6.53 (1/4)	12.7 (1/2)	c/w PROGRAMMABLE THERMOSTAT, 1 x TURBO FAN DIRECT DRIVEN, AIR FILTER, BUILT IN CONDENSATE PUMP (RUN CONCEALED PIPE TO DF-1 SAN (RM 102A))
CCHP-2	Rm. 102 - LOBBY WAITING AREA (MIDDLE)	MITSUBISHI / PLFY-P15NFMU-E	CEILING MOUNTED CASSETTE	125-149-184	4.4	5.0	-	50	0.35	15	208/1/60	570x570x208	14.2 + 2.4	32		R410A	6.53 (1/4)	12.7 (1/2)	c/w PROGRAMMABLE THERMOSTAT, 1 x TURBO FAN DIRECT DRIVEN, AIR FILTER, BUILT IN CONDENSATE PUMP (RUN CONCEALED PIPE TO DF-1 SAN (RM 102A))
CCHP-3	Rm. 102 - LOBBY WAITING AREA (EAST)	MITSUBISHI / PLFY-P15NFMU-E	CEILING MOUNTED CASSETTE	125-149-184	4.4	5.0	-	50	0.35	15	208/1/60	570x570x208	14.2 + 2.4	32		R410A	6.53 (1/4)	12.7 (1/2)	c/w PROGRAMMABLE THERMOSTAT, 1 x TURBO FAN DIRECT DRIVEN, AIR FILTER, BUILT IN CONDENSATE PUMP PIPED (RUN CONCEALED PIPE TO L-1 SAN PIPE (RM 111))
CCHP-4	Rm. 100 - VESTIBULE 1	MITSUBISHI / PLFY-P12NFMU-E	CEILING MOUNTED CASSETTE	116-132-158	3.5	4.0	-	50	0.29	15	208/1/60	570x570x208	14.2 + 2.4	32	CU-3	R410A	6.53 (1/4)	12.7 (1/2)	c/w PROGRAMMABLE THERMOSTAT, BUILT IN CONDENSATE PUMP (RUN CONCEALED PIPE TO DF-1 SAN (RM 102A))
CCHP-5	Rm. 103 - TICKETING ROOM	MITSUBISHI / PLFY-P12NFMU-E	CEILING MOUNTED CASSETTE	116-132-158	3.5	4.0	-	50	0.29	15	208/1/60	570x570x208	14.2 + 2.4	32		R410A	6.53 (1/4)	12.7 (1/2)	c/w PROGRAMMABLE THERMOSTAT, 1 x TURBO FAN DIRECT DRIVEN, AIR FILTER, BUILT IN CONDENSATE PUMP (RUN CONCEALED PIPE TO L-1 SAN PIPE (RM 111))
CCHP-6	Rm. 101 - VESTIBULE 2	MITSUBISHI / PLFY-P05NFMU-E	CEILING MOUNTED CASSETTE	109-125-133	1.5	1.6	-	50	0.24	15	208/1/60	570x570x208	13 + 2.4	32		R410A	6.53 (1/4)	12.7 (1/2)	c/w PROGRAMMABLE THERMOSTAT, 1 x TURBO FAN DIRECT DRIVEN, AIR FILTER, BUILT IN CONDENSATE PUMP (RUN CONCEALED PIPE TO L-1 SAN PIPE (RM 111))
CCHP-7	Rm. S1 (105) - STAIR 1	MITSUBISHI / PLFY-P05NFMU-E	CEILING MOUNTED CASSETTE	109-125-133	1.5	1.6	-	50	0.24	15	208/1/60	570x570x208	13 + 2.4	32		R410A	6.53 (1/4)	12.7 (1/2)	c/w PROGRAMMABLE THERMOSTAT, 1 x TURBO FAN DIRECT DRIVEN, AIR FILTER, BUILT IN CONDENSATE PUMP(RUN CONCEALED PIPE TO L-3 SAN PIPE (RM 107))

PROVISIONAL. SEE DRAWING M-0008 NEW HVAC PIPING CONSTRUCTION NOTES

NOTE
1. ALTERNATIVE MANUFACTURER AND MODEL ARE ACCEPTED AFTER REVIEW AND APPROVAL.
2. INSTALL EACH HEAT PUMP UNIT WITH ADEQUATE CLEARANCE FOR SERVICE AND MAINTENANCE REQUIRED BY UNIT MANUFACTURER.
3. REFRIGERANT PIPE SIZES SHOWING IN THE SCHEDULE ARE FOR PRICING PURPOSE. CONTRACTOR TO DOUBLE CHECK AND RE-SIZE THE REFRIGERANT LIQUID AND GAS PIPE ACCORDING TO THE FINAL LAYOUT OF THE INDOOR AND OUTDOOR UNITS AS WELL AS PIPE ROUTING ON SITE. CONTRACTOR TO VERITY THE FINAL PIPE SIZE WITH UNIT SUPPLIER.

REFERENCE DRAWINGS		ISSUE			REVISIONS		
		C	2023/12/06	ISSUED FOR TENDER			
		B	2023/07/25	REISSUED FOR BUILDING PERMIT			
		A	2023/04/24	ISSUED FOR BUILDING PERMIT			
DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

DRAWN BY: E.M. | DESIGNED BY: A.A.
CHECKED BY: G.W. | APPROVED BY: S.C.
SCALE: AS SHOWN FULL SIZE ONLY

wsp
PROJECT NO. BE20101016

ISSUED FOR TENDER

Niagara Region
NIAGARA REGION PROJECT NO. xxxxxxx

NIAGARA FALLS TRAIN STATION UPGRADES

MECHANICAL SCHEDULES
3 OF 3

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION	M-0015	C	M-0015

METRIC

ALL DIMENSONS SHOWN ARE
IN METRES AND/OR MILLIMETRES
UNLESS OTHERWISE NOTED.

GENERAL MECHANICAL NOTES:

1. OBTAIN, ARRANGE AND PAY FOR ALL REQUIRED PERMITS AND INSPECTIONS.
2. THE CONTRACTOR AND ITS SUB-TRADES SHALL ATTEND SITE MEETINGS AS DEFINED IN THE SPECIFICATION.
3. OBTAIN AND REVIEW THE DESIGNATED SUBSTANCE REPORT FROM THE CLIENT AND COORDINATE ANY DESIGNATED SUBSTANCE ISSUES WITH THE CLIENT PRIOR TO ANY WORK BEING DONE.
4. PROVIDE SHOP DRAWINGS ELECTRONICALLY IN PDF FORMAT TO CONSULTANT FOR REVIEW. ALL SHOP DRAWINGS MUST BE REVIEWED, STAMPED AND SIGNED BY THE MECHANICAL CONTRACTOR PRIOR TO SUBMITTING TO THE CONSULTANT. REVIEW SHALL INCLUDE BUT NOT BE LIMITED TO: VERIFYING UNIT VOLTAGE WITH ELECTRICIAN AND/OR SITE, EQUIPMENT PERFORMANCE, DIMENSIONS AND CLEARANCES.
5. THOROUGHLY REVIEW AND COORDINATE WITH SITE CONDITIONS AND COMPLETE DRAWING SET PRIOR TO PRICING AND INSTALLATION.
6. INSTALL ALL WORK IN CONFORMANCE WITH MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS.
7. DO NOT USE ANY NEW PERMANENT EQUIPMENT FOR TEMPORARY USE DURING CONSTRUCTION WITHOUT WRITTEN APPROVAL. WHERE SYSTEMS ARE USED AND ARE CONTAMINATED BY DUST OR DIRT, THE CONTRACTOR SHALL CLEAN IN A MANNER ACCEPTABLE TO THE CONSULTANT.
8. MAINTAIN RECORD DRAWINGS ON AN ON-GOING BASIS. DRAWINGS SHALL BE AVAILABLE FOR PERIODIC REVIEW BY THE CONSULTANT DURING CONSTRUCTION.
9. ALL WORK SHALL COMPLY WITH APPLICABLE CODES.
10. REMOVE ALL REDUNDANT EQUIPMENT, MATERIALS AND GARBAGE FROM SITE AND DISPOSE OF IN AN APPROVED MANNER. REDUNDANT EQUIPMENT AND MATERIALS SHALL NOT BE ABANDONED IN PLACE.
11. ALL CUTTING AND CORING SHALL BE BY THIS CONTRACTOR. COORDINATE PATCHING WITH GENERAL CONTRACTOR. ALL SAW CUTTING AND RESTORATION OF CONCRETE FLOOR BY GENERAL CONTRACTOR. COORDINATE WITH SAME.
12. COORDINATE ROOFING FOR DUCT AND PIPE ROOF PENETRATIONS WITH GENERAL CONTRACTOR AS REQUIRED.
13. MAINTAIN REQUIRED ACCESS AND CLEARANCE TO ALL EQUIPMENT AND SYSTEMS AS REQUIRED BY CODE AND AS PER MANUFACTURER'S REQUIREMENTS.
14. TAG ALL EQUIPMENT WITH LAMACOID NAMEPLATES. TAG ALL VALVES WITH LAMACOID NAMEPLATES OR BRASS TAGS ON CHAINS.
15. LABEL ALL EXISTING AND NEW PIPING IN AREA OF WORK WITH SERVICE AND FLOW ARROWS EVERY 10'(3m) AND ON EITHER SIDE OF WALLS.
16. THE CONTRACTOR SHALL ARRANGE FOR INSPECTIONS BY THE ENGINEER PRIOR TO CEILINGS AND WALLS BEING CLOSED IN. WHERE THIS HAS NOT BEEN ARRANGED IT IS THE CONTRACTOR'S RESPONSIBILITY TO REMOVE CEILING TILES OR ACCESS DOORS FOR INSPECTION AT THE DIRECTION OF THE CONSULTANT.
17. PERFORM TESTING AND START UP OF ALL SYSTEMS AS REQUIRED BY CODE, THE CONSULTANT, MANUFACTURER'S REQUIREMENTS, AND AUTHORITIES HAVING JURISDICTION. SUBMIT REPORTS TO THE CONSULTANT.
18. INSTRUCT AND TRAIN THE OWNER ON PROPER OPERATION OF THE SYSTEM. RECORD AND SUBMIT A TRAINING LOG DATED AND SIGNED BY ALL ATTENDEES INCLUDING THE TRAINERS.
19. UPON COMPLETION OF THE PROJECT THE CONSULTANT WILL DO A FINAL REVIEW. UPON RECEIVING THE FINAL INSPECTION REPORT, THE CONTRACTOR MUST CORRECT AND SIGN BACK THE INSPECTION REPORT INDICATING ALL DEFICIENCIES ARE COMPLETED. A RE-INSPECTION WILL ONLY BE DONE ONCE THE CONSULTANT RECEIVES THIS IN WRITING. WHERE THE CONSULTANT PERFORMS THE RE-INSPECTION AND THE WORK IS NOT COMPLETE, THE CONTRACTOR IS RESPONSIBLE FOR REIMBURSING THE CONSULTANT FOR THE FIELD REVIEW. THE FEE FOR ADDITIONAL REVIEWS WILL BE AT THE CONSULTANT'S HOURLY RATES PLUS MILEAGE AND APPLICABLE TAXES TO BE PAID DIRECTLY TO THE CONSULTANT PRIOR TO PERFORMING THE NEXT FIELD REVIEW.
20. PROVIDE ONE (1) YEAR WARRANTY ON ALL MATERIAL AND LABOUR FROM THE DATE OF SUBSTANTIAL COMPLETION.
21. PAYMENT AMOUNTS FOR MANUAL AND AS-BUILT DRAWINGS TO BE IN ACCORDANCE WITH PAYMENT TERMS GOVERNED BY THE GENERAL CONTRACT. TOTAL AMOUNT SHALL REMAIN UNBILLED UNTIL MANUALS AND AS-BUILT DRAWINGS HAVE BEEN SUBMITTED AND APPROVED.
22. PROVIDE OF ONE (1) ELECTRONIC COPY MAINTENANCE MANUALS ON USB. MANUAL SHALL INCLUDE TABLE OF CONTENTS, CONTRACTOR INFORMATION, WARRANTY LETTER, SHOP DRAWINGS, O&Ms, INSPECTION & TEST REPORTS, AND AS-BUILT DRAWINGS. AS-BUILT DRAWINGS SHALL INCLUDE COMPLETE MECHANICAL DRAWING SET WITH ANY CHANGES MARKED CLEARLY AND NEATLY IN COLOUR. AS-BUILTS SHALL BE STAMPED ACCORDINGLY BY THE CONTRACTOR (ALL DRAWINGS). DRAWINGS SHALL BE SUBMITTED HARD COPY IN FULL SIZE. SUBSTANTIAL COMPLETION WILL NOT BE AWARDED UNTIL THE MANUALS AND AS-BUILTS HAVE BEEN SUBMITTED TO THE CONSULTANT AND THE CONSULTANT HAS APPROVED.

HVAC NOTES:

1. CONCEAL ALL SERVICES IN CEILING SPACES AND FURRED CONSTRUCTION UNLESS INSTALLED IN UNFINISHED OR EXPOSED AREAS OR IF SPECIFICALLY NOTED TO BE EXPOSED.
2. COORDINATE INSTALLATION WITH ALL OTHER TRADES.
3. REFER TO REFLECTED CEILING PLAN TO CONFIRM EXACT LOCATION OF GRILLES AND DIFFUSERS AND COORDINATE WITH LIGHTING PLAN FOR EXACT LOCATIONS. LIGHTING TAKES PRECEDENCE.
4. PROVIDE A CONTINUOUS ANTI-VIBRATION RUBBER GASKET BETWEEN ROOF CURBS AND EQUIPMENT UNIT RAILS.
5. PROVIDE 100mm (4") FLEXIBLE CONNECTIONS AT ALL DUCT CONNECTIONS TO AIR HANDLING EQUIPMENT.
6. PROVIDE ACOUSTIC INSULATION IN FIRST 1.5m (5') OF SUPPLY AND RETURN DUCTS OFF AIR HANDLING UNITS, ALL TRANSFER DUCTS AND AS INDICATED ON DRAWINGS. SEAL ALL EXPOSED ENDS OF INSULATION.
7. SEAL ALL JOINTS ON ALL SUPPLY & RETURN AIR DUCTS WITH DURODYNE DUCT SEALER IN CONFORMANCE TO CLASS 'C' ASHRAE 90.1 AND SMACNA STANDARDS.
8. BRANCH DUCTWORK TO DIFFUSERS TO BE SAME SIZE AS DIFFUSER NECK.
9. PROVIDE TURNING VANES IN ALL SQUARE ELBOWS AND SHORT RADIUS ELBOWS FOR SUPPLY AIR DUCTS.
10. TEMPORARILY SEAL ALL OPEN DUCTS THROUGHOUT CONSTRUCTION TO PROTECT FROM DUST AND DIRT ENTERING THE SYSTEM. WHERE THE CONTRACTOR DOES NOT CONFORM THEY ARE RESPONSIBLE FOR CLEANING OF THE SYSTEMS IN A MANNER APPROVED BY THE CONSULTANT.
11. PROVIDE AIR BALANCING DAMPERS ON ALL BRANCH DUCTS CLOSE TO MAIN TAKE-OFF. REVIEW WITH BALANCING CONTRACTOR TO CONFIRM LOCATIONS OF ALL BALANCE DAMPERS PRIOR TO CONSTRUCTION.
12. PROVIDE FIRE DAMPERS AT ALL FIRE SEPARATIONS. FIRE DAMPERS SHALL BE c/w LINKAGE OUT OF THE AIR STREAM. FIRE DAMPER RATING TO MATCH THE RATING OF THE SEPARATION CROSSED. INSTALLATION MUST CONFORM TO LATEST NFPA/CUA 90A SPECIFICATIONS. ONLY USE ULC APPROVED EQUIPMENT. PROVIDE DUCT ACCESS DOORS AND BREAK AWAY FLANGES FOR ALL FIRE DAMPERS IN CONFORMANCE WITH CODE AND INSTALLATION INSTRUCTIONS. ACCESS DOORS SHALL BE TWIST LOCK TYPE - SCREWED PANELS ARE NOT ACCEPTABLE.
13. INCLUDE FOR THE SUPPLY AND INSTALLATION OF TWO(2) EXTRA BALANCE DAMPERS, PENDING BALANCING RESULTS AND COMMENTS.
14. FLEXIBLE DUCT SHALL ONLY BE USED IN SUPPLY AIR APPLICATIONS FOR CONNECTIONS TO DIFFUSERS IN DROPPED CEILING. FLEXIBLE DUCT SHALL BE MAXIMUM 1.8m (6') IN LENGTH AND SHALL BE SECURELY FASTENED TO DUCTS AND DIFFUSERS. PROVIDE HANGERS AND FLEXIBLE DUCTWORK WITHOUT SHARP 90°s, SAGGING, OR CRUSHING OF DUCT. FLEXIBLE DUCT IS NOT ACCEPTABLE IN ANY OTHER APPLICATION.
15. PROVIDE EXTERNAL INSULATION ON ALL SUPPLY AIR DUCTS, ALL OUTSIDE AIR DUCTS AND ON ALL EXHAUST DUCTS WITHIN 2.4m (8') OF OUTSIDE WALL/ROOF INCLUDING RIGID AND FLEXIBLE DUCT.
16. CONFIRM EXACT LOCATIONS OF THERMOSTATS/SENSORS WITH ENGINEER AND OWNER. MOUNT THERMOSTATS/SENSORS AT 1200mm (47") AFF. ENSURE THAT THERMOSTAT/SENSOR LOCATIONS WILL NOT BE AFFECTED BY DIRECT SUNLIGHT, COLD WALLS OR MILLWORK.
17. ALL INDOOR CONTROL WIRING SHALL BE RUN IN EMT CONDUIT OR FT6 (EMT SHALL BE USED IN EXPOSED AREAS). LAST 900mm (3') SHALL BE BX WHEN USING CONDUIT. ALL OUTDOOR CONTROL WIRING SHALL BE RUN IN LIQUID TIGHT. ALL CONTROL WIRING SHALL RUN PARALLEL TO BUILDING LINES AND TIGHT TO ROOF DECK OR WALLS. ALL CONTROL WIRING PASSING THROUGH WALLS SHALL BE RUN IN EMT CONDUIT C/W BUSHINGS AT EACH END.
18. PROVIDE SLEEVES FOR PIPES THROUGH ALL NEW BLOCK WALLS. FILL VOIDS AROUND PIPES. ENSURE NO CONTACT BETWEEN DISSIMILAR METALS.
19. SUPPLY DRYWALL ACCESS DOORS FOR CONCEALED FIRE AND BALANCE DAMPERS AND ANY OTHER CONCEALED DEVICES AND TURN OVER TO THE GENERAL CONTRACTOR FOR INSTALLATION. DOORS ARE TO MATCH WALL AND CEILING SURFACE AND COLOUR EXCEPT USE STAINLESS STEEL IN WASHROOMS. DOORS SHALL BE RATED WHERE INSTALLED IN FIRE SEPARATIONS.
20. DRAIN HEATING SYSTEMS AS REQUIRED FOR NEW WORK. FILL, FLUSH, TEST AND TREAT (CHEMICAL TREATMENT) AFTER WORK IS COMPLETE. PROVIDE ALL PORTS, VALVES AND GAUGES AS REQUIRED. SUBMIT CHEMICAL TREATMENT REPORT TO ENGINEER. FREEZING OF PIPING TO ALLOW ISOLATION OF WORK AREA IS ACCEPTABLE IN LIEU OF DRAINING.
21. ALL CIRCUIT BALANCING VALVES SHALL BE MOUNTED WITH PORTS IN HORIZONTAL (90°) POSITION.
22. PROVIDE EXTERNAL INSULATION ON ANY NEW HEATING PIPING.
23. PROVIDE FIRE STOPPING AROUND ALL EXISTING AND NEW PIPING THROUGH FIRE SEPARATIONS.
24. LABEL ALL EXISTING AND NEW HEATING PIPING IN AREAS OF WORK COMPLETE WITH FLOW ARROWS. LABELS SHALL BE MAX 3m(10') SPACING AND ON EITHER SIDE OF WALLS. LABELING MUST BE COMPLETE PRIOR TO NEW CEILING BEING INSTALLED OTHERWISE IT IS THE CONTRACTORS RESPONSIBILITY TO REMOVE CEILING TILES FOR INSPECTION AT THE DIRECTION OF THE CONSULTANT.
25. LABEL CEILING TILE WITH PERMANENT ADHESIVE LABELS OR LAMACOID NAMEPLATES FOR ACCESS TO MECHANICAL ITEMS.
26. PROVIDE CONDENSATE DRAINS c/w TRAPS FOR NEW INDOOR AIR HANDLING EQUIPMENT AND RUN TO CLOSEST PLUMBING DRAIN WITH INDIRECT DRAIN CONNECTION IN A VISIBLE AND ACCESSIBLE LOCATION (CEILING SPACE NOT ACCEPTABLE). PROVIDE CONDENSATE PUMP WHERE GRAVITY DRAINAGE IS NOT POSSIBLE.
27. OBTAIN THE SERVICES OF A 3rd PARTY ACCREDITED BALANCING COMPANY TO BALANCE THE COMPLETE HVAC SYSTEM. PROVIDE REPORT TO ENGINEER FOR REVIEW. REFER TO SPECIFICATIONS FOR APPROVED AGENTS.
28. PROVIDE TESTING AND STARTUP OF ALL NEW EQUIPMENT AND PROVIDE REPORTS TO THE ENGINEER FOR REVIEW.
29. HYDRONIC SYSTEM BALANCING: BALANCE THE WHOLE HYDRONIC HEATING SYSTEM AS PART OF THE NEW SYSTEM TAB PROCEDURE IS REQUIRED AND SHALL BE EXECUTED WHEN THE NEW SYSTEM IS COMPLETE IN ORDER THE SECTIONS OF THE EXISTING SYSTEM NOT LOSE ITS CURRENT PERFORMANCE. IN GENERAL, THE NEW HEATING SYSTEM WOULD BE REPLACEMENT OF OLD HEATING ELEMENTS IN THE EXISTING SYSTEM WITH NEW ONES OF EQUIVALENT CAPACITY.
30. THE PROPOSED ALTERATION TO THE EXISTING HYDRONIC SYSTEM WILL NOT AFFECT THE PERFORMANCE OF OTHER SECTIONS OF THE EXISTING HYDRONIC SYSTEM THAT ARE NOT IN THE SCOPE OF THIS PERMIT APPLICATION.

REFERENCE DRAWINGS		ISSUE			REVISIONS		
		D	2023/12/06	ISSUED FOR TENDER			
		C	2023/07/25	REISSUED FOR BUILDING PERMIT			
		B	2023/04/24	ISSUED FOR BUILDING PERMIT			
		A	2022/11/11	PRELIMINARY DESIGN SUBMISSION			
DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

DRAWN BY: E.M.	DESIGNED BY: A.A.
CHECKED BY: G.W.	APPROVED BY: S.C.
SCALE: AS SHOWN	FULL SIZE ONLY

wsp

PROJECT NO. BE20101016

ISSUED FOR TENDER

Niagara Region

NIAGARA REGION PROJECT NO. xxxxxxx

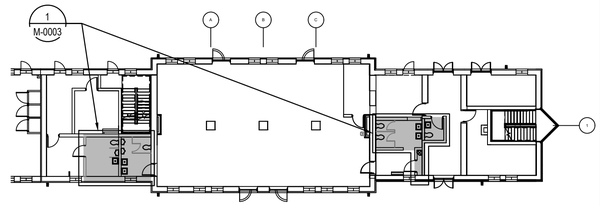
NIAGARA FALLS TRAIN STATION UPGRADES

GENERAL MECHANICAL & HVAC NOTES

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION	M-0002	D	M-0002

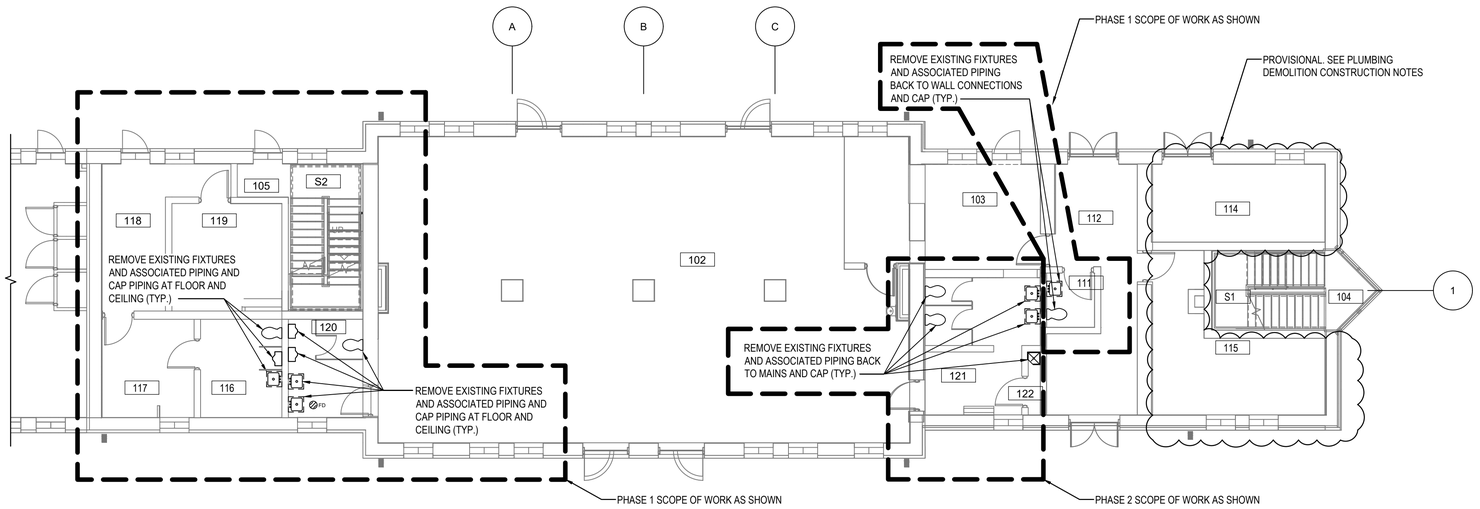
METRIC

ALL DIMENSONS SHOWN ARE
IN METRES AND/OR MILLIMETRES
UNLESS OTHERWISE NOTED.



PLUMBING DEMOLITION FIRST FLOOR KEY PLAN

SCALE: 1:250



1 / M-0003 PLUMBING DEMOLITION FIRST FLOOR PLAN

SCALE: 1:100

ROOM #	ROOM NAME
102	WAITING AREA
103	TICKETING ROOM
111	WASHROOM
112	CORRIDOR
114	O.T.S.
115	MECHANICAL ROOM
116	WASHROOM
117	ROOM
118	CORRIDOR
119	VIA RAIL ENG.
120	WASHROOM - MALE
121	WASHROOM - FEMALE
122	JANITOR

PLUMBING DEMOLITION CONSTRUCTION NOTES:

1. AS PER CLIENT'S SOW AND BUDGET PLAN, THE ROOM 114 IS NOT PART OF THIS CONTRACT AND IS SUBJECT FOR CONSTRUCTION IN THE PROJECT'S NEXT STAGE. ROOM 115 (MECHANICAL ROOM) IS NOT PAT OF THIS PROJECT AND ITS SOW.

PLUMBING DEMOLITION NOTES:

1. THE CONTRACTOR SHALL ALLOW FOR DETAILED SITE INVESTIGATION TO CONFIRM ALL SERVICES PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES TO THE ENGINEER.
2. SCOPE/CAMERA EXISTING UNDERGROUND SANITARY AND STORM PIPING THROUGH WORK AREA TO CONFIRM CONDITION OF PIPE, ROUTING AND INVERTS. SUBMIT REPORT AND VIDEO ON USB UPON REQUEST.
3. SCAN FLOOR PRIOR TO FLOOR CUTS AND UNDERGROUND PIPING INSTALLATION.
4. DISCONNECT AND REMOVE ALL REDUNDANT EQUIPMENT, FIXTURES, DUCTWORK, PIPING AND OTHER REDUNDANT SERVICES THROUGHOUT SPACE AS NOTED.
5. LABEL AND ABANDON ANY UNUSED UNDERGROUND SERVICES AND CAP FLUSH WITH FLOOR IN ACCORDANCE AND AS REQUIRED WITHIN THE DESIGN AND DIRECTIONS SHOWN ON THE DRAWINGS. REMOVE UNDERGROUND SERVICES WHERE REQUIRED TO SUIT NEW UNDERGROUND SERVICES.
6. REMOVE OBSOLETE ABOVEGROUND SERVICES BACK TO SOURCE/MAINS AND CAP.
7. EXISTING MECHANICAL ITEMS NOT SHOWN, INCLUDING HYDRONIC PIPING AND STORM DRAINAGE, SHALL REMAIN UNLESS OTHERWISE NOTED.
8. ANY REDUNDANT RISERS CAN REMAIN WITHIN EXISTING WALLS (WHERE WALLS ARE SCHEDULED TO REMAIN) BUT SERVICES SHALL BE CUT AND CAPPED WITHIN WALL SO FACE OF WALL CAN BE PATCHED AND FINISHED SMOOTH.
9. MAINTAIN VENT PIPING FOR REUSE WHERE POSSIBLE AND REMOVE ANY REDUNDANT.
10. COORDINATE WITH GENERAL CONTRACTOR TO ENSURE ANY COMBUSTIBLE MATERIAL IS REMOVED FROM CEILING PLENUM PRIOR TO COMPLETION OF CONSTRUCTION.

REFERENCE DRAWINGS		ISSUE			REVISIONS		
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DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

DRAWN BY: E.M. | DESIGNED BY: A.A.

CHECKED BY: G.W. | APPROVED BY: S.C.

SCALE: AS SHOWN FULL SIZE ONLY

PROJECT NO. BE20101016

ISSUED FOR TENDER

Niagara Region

NIAGARA REGION PROJECT NO. xxxxxxx

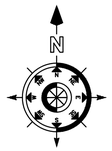
NIAGARA FALLS TRAIN STATION UPGRADES

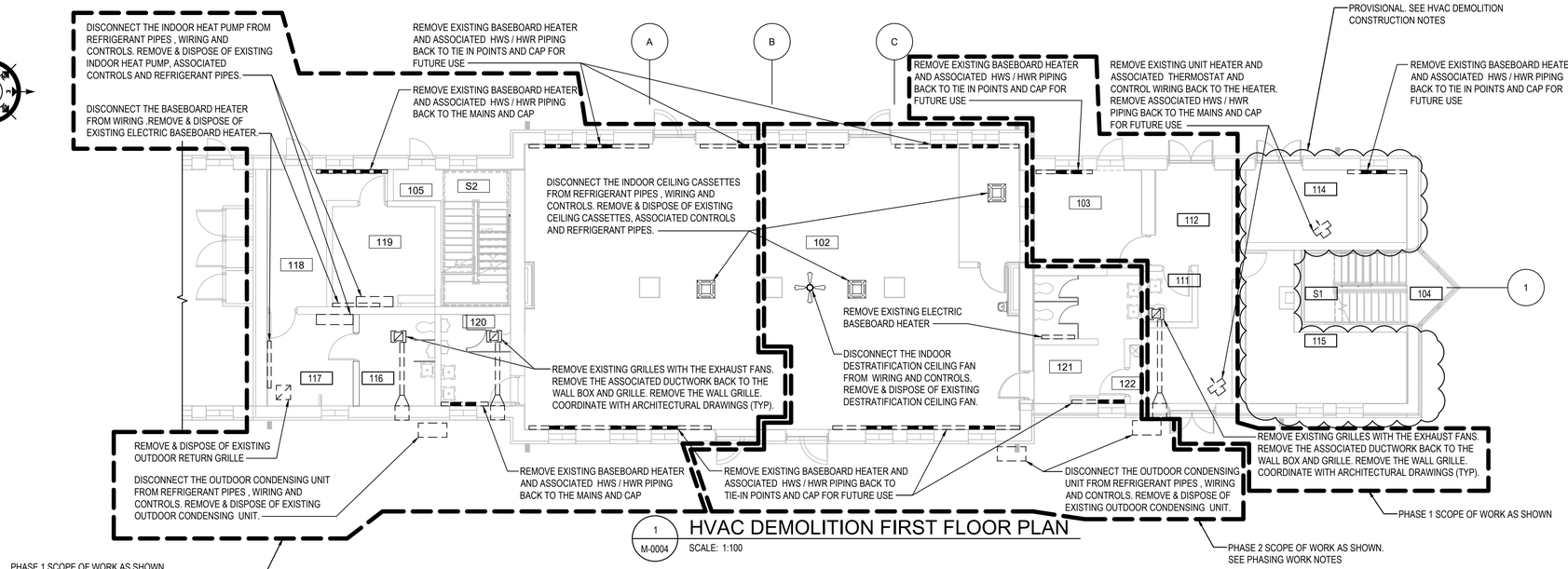
PLUMBING DEMOLITION PLANS

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION	M-0003	C	M-0003

METRIC

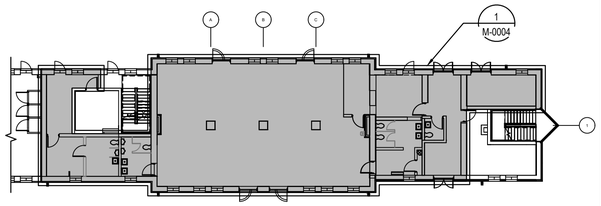
ALL DIMENSONS SHOWN ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE NOTED.





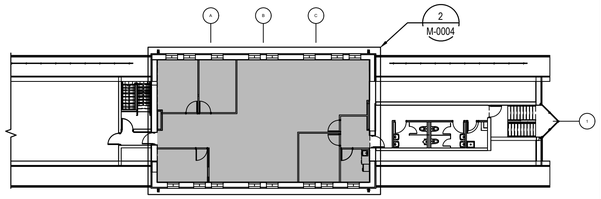
1 M-0004 HVAC DEMOLITION FIRST FLOOR PLAN

SCALE: 1:100



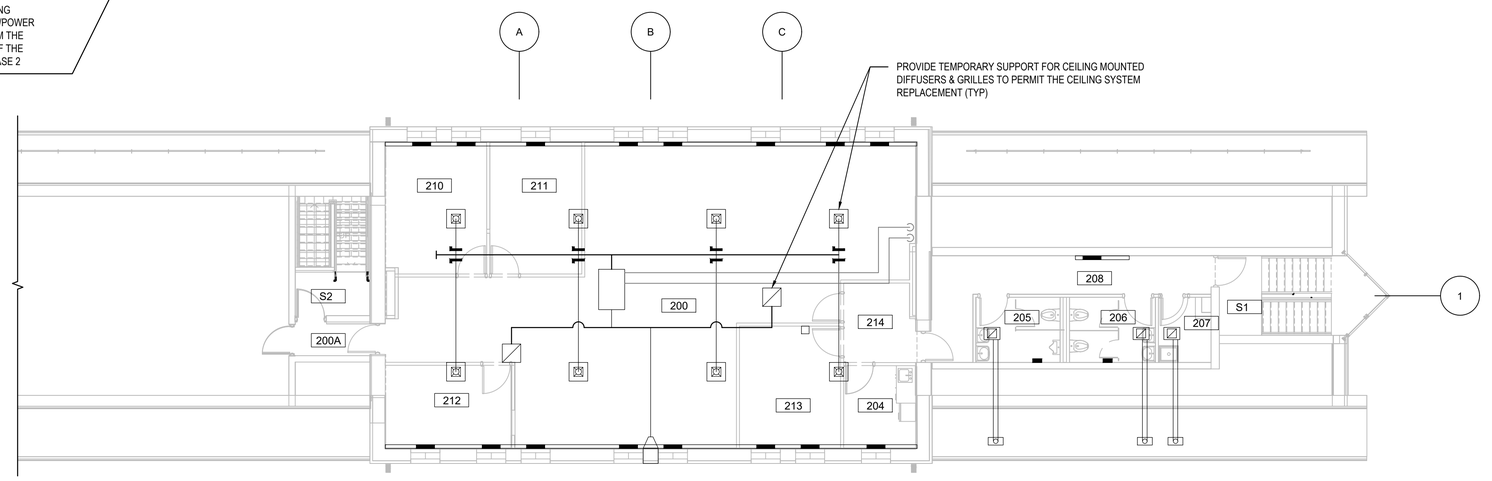
HVAC DEMOLITION FIRST FLOOR KEY PLAN

SCALE: 1:250



HVAC DEMOLITION SECOND FLOOR KEY PLAN

SCALE: 1:250



2 M-0004 HVAC DEMOLITION SECOND FLOOR PLAN

SCALE: 1:100

ROOM #	ROOM NAME
102	WAITING AREA
103	TICKETING ROOM
111	WASHROOM
112	CORRIDOR
114	O.T.S.
115	MECHANICAL ROOM
116	WASHROOM
117	ROOM
118	CORRIDOR
119	VIA RAIL ENG.
120	WASHROOM - MALE
121	WASHROOM - FEMALE
122	JANITOR
200	OFFICE AREA
200A	VESTIBULE 2
204	KITCHETTE
205	WASHROOM - MALE
206	WASHROOM - FEMALE
207	JANITOR
208	CORRIDOR
210	OFFICE 1
211	OFFICE 2
212	OFFICE 3
213	GO TRANSIT AREA
214	VESTIBULE
S1 (104)	STAIR 1
S2 (105)	STAIR 2

PHASING WORK NOTES:

DISCONNECT AND REMOVE OUTDOOR CONDENSING UNITS OF THE REFRIGERANT SYSTEMS AFTER ALL THE INDOOR UNITS ARE DEMOLISHED, INCLUDING BUT NOT LIMITED TO POWER/CONTROL WIRING, REFRIGERANT PIPES AND ACCESSORIES.

HVAC DEMOLITION CONSTRUCTION NOTES:

1. AS PER CLIENT'S SOW AND BUDGET PLAN, THE ROOM 114 IS NOT PART OF THIS CONTRACT AND IS SUBJECT FOR CONSTRUCTION IN THE PROJECT'S NEXT STAGE. ROOM 115 (MECHANICAL ROOM) IS NOT PAT OF THIS PROJECT AND ITS SOW.

REFERENCE DRAWINGS		ISSUE			REVISIONS		
		C	2023/12/06	ISSUED FOR TENDER			
		B	2023/04/24	ISSUED FOR BUILDING PERMIT			
		A	2022/11/11	PRELIMINARY DESIGN SUBMISSION			
DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

DRAWN BY: E.M. | DESIGNED BY: A.A.

CHECKED BY: G.W. | APPROVED BY: S.C.

SCALE: AS SHOWN FULL SIZE ONLY

PROJECT NO. BE20101016

ISSUED FOR TENDER

NIAGARA REGION PROJECT NO. xxxxxxx

NIAGARA FALLS TRAIN STATION UPGRADES

HVAC DEMOLITION PLANS

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION	M-0004	C	M-0004

METRIC

ALL DIMENSONS SHOWN ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE NOTED.

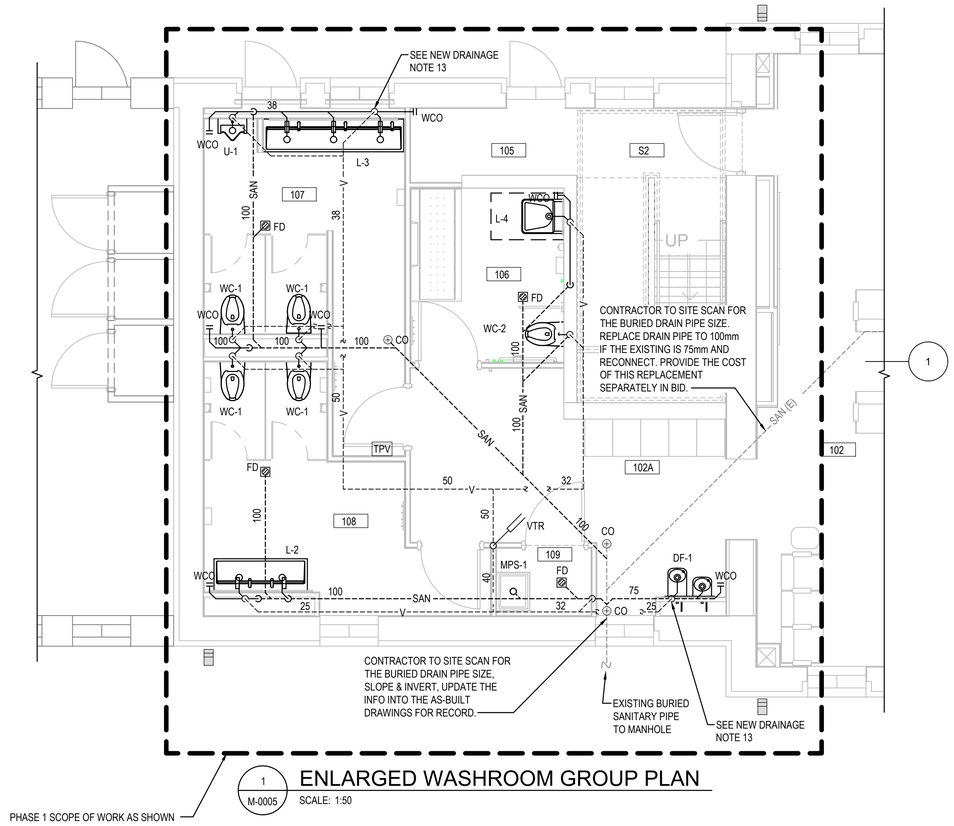
N

NEW DRAINAGE CONSTRUCTION NOTES:

1. AS PER CLIENT'S SOW AND BUDGET PLAN, THE ROOM 114 IS NOT PART OF THIS CONTRACT AND IS SUBJECT FOR CONSTRUCTION IN THE PROJECT'S NEXT STAGE. ROOM 115 (MECHANICAL ROOM) IS NOT PART OF THIS PROJECT AND ITS SOW.

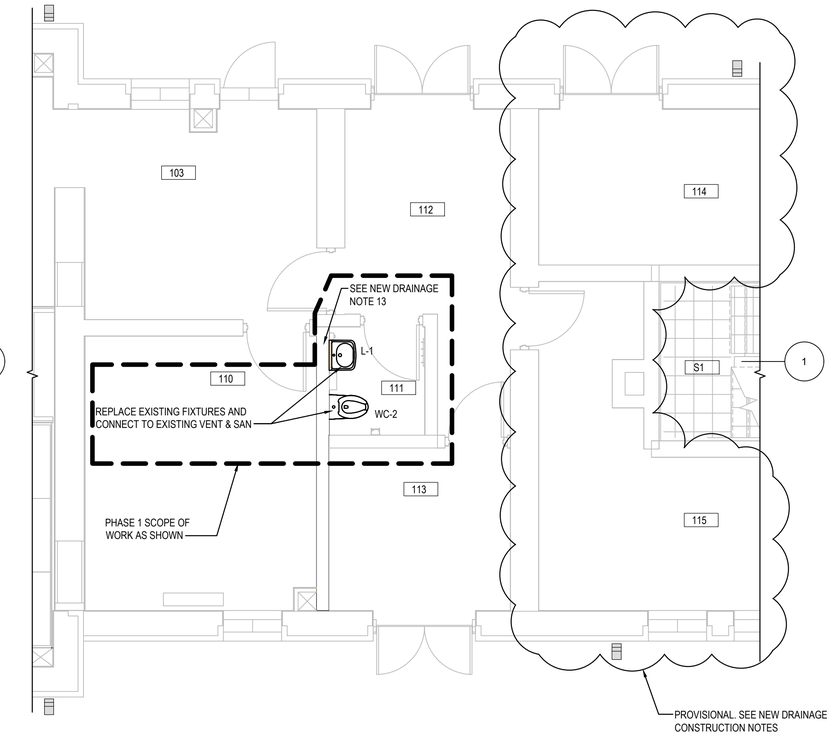
NEW DRAINAGE NOTES:

1. THE CONTRACTOR SHALL INVESTIGATE AND VERIFY SERVICES ON SITE PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES TO CONSULTANT. ALL NEW SANITARY DRAIN AND DRAIN VENT ON 2nd FLOOR SHALL RUN CONCEALED WITHIN CEILING SPACE OF GROUND FLOOR.
2. SCOPE/CAMERA EXISTING UNDERGROUND SANITARY AND STORM PIPING THROUGH WORK AREA TO CONFIRM CONDITION OF PIPE, ROUTING AND INVERTS. SUBMIT REPORT AND VIDEO ON USB.
3. SCAN FLOOR PRIOR TO FLOOR CUTS AND UNDERGROUND PIPING INSTALLATION.
4. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING HEIGHTS TO ENSURE ALL SERVICES ARE CONCEALED WITHIN AVAILABLE CEILING SPACE.
5. PREPARE INTERFERENCE DRAWINGS AND COORDINATE ALL SERVICES WITH ALL TRADES PRIOR TO INSTALLATION.
6. 100mm SANITARY DRAIN PIPE TO HAVE 1% SLOPE.
7. ALL PIPE SIZES ARE SHOWN IN MILLIMETERS (mm).
8. INSULATE AND LABEL ALL NEW AND EXISTING PIPING WITHIN CEILING SPACE INCLUDING WATER AND STORM.
9. PROVIDE NEW PLUMBING VENTS THROUGH ROOF AS REQUIRED OR TIE INTO EXISTING WHERE POSSIBLE. SUPPLY AND INSTALL ROOF VENTS AS PER SPECIFICATIONS. ALL ROOFING WORK INCLUDING CUTTING, FLASHING AND MODIFICATIONS TO ROOF MEMBRANE SHALL BE BY GENERAL CONTRACTOR. COORDINATE WITH SAME.
10. FIRE STOP ALL EXISTING AND NEW PIPING THROUGH RATED WALLS (REFER TO ARCHITECTURAL DRAWINGS FOR FIRE RATINGS).
11. LABEL CEILING GRID AT ACCESS TO EQUIPMENT AND VALVES.
12. THE CONTRACTOR SHALL FLUSH, SCOPE, AND PROVIDE VIDEO INSPECTION OF THE SANITARY SYSTEM AFTER COMPLETION OF WORK AND PRIOR TO SUBSTANTIAL COMPLETION. FLUSHING, SCOPING AND VIDEO SHALL INCLUDE AREA OF WORK TO WHERE IT TIES INTO THE MAIN. SUBMIT REPORT AND VIDEO ON USB.
13. EACH CONDENSATE DRAIN PIPE FROM FAN COILS, ERVs, AND CEILING CASSETTES SHALL RUN INDEPENDENTLY TO POINT OF THE INDIRECTLY CONNECTION w/ BUILDING SANITARY SYSTEM. REFER SCHEDULES ON DRAWINGS M-0014 & M-0015 FOR DRAINAGE AND CONDENSATE PUMP REQUIREMENTS.



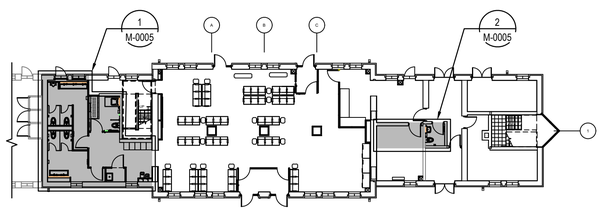
1 M-0005 ENLARGED WASHROOM GROUP PLAN

SCALE: 1:50



2 M-0005 ENLARGED ROOM 111 PLAN

SCALE: 1:50



DRAINAGE FIRST FLOOR KEY PLAN

SCALE: 1:250

ROOM #	ROOM NAME
100	VESTIBULE 1
101	VESTIBULE 2
102	LOBBY / WAITING AREA
102A	CORRIDOR
103	TICKETING ROOM
S1 (104)	STAIR 1
S2 (105)	STAIR 2
106	UNIVERSAL WASHROOM
107	MALE WASHROOM
108	FEMALE WASHROOM
109	JANITOR
110	IT ROOM
111	WASHROOM
112	CORRIDOR
113	MULTI-PURPOSE ROOM
114	O.T.S.
115	MECHANICAL ROOM

REFERENCE DRAWINGS		ISSUE			REVISIONS		
		E	2023/12/06	ISSUED FOR TENDER			
		D	2023/08/10	REISSUED FOR BUILDING PERMIT			
		C	2023/07/25	REISSUED FOR BUILDING PERMIT			
		B	2023/04/24	ISSUED FOR BUILDING PERMIT			
		A	2022/11/11	PRELIMINARY DESIGN SUBMISSION			
DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

DRAWN BY: E.M. | DESIGNED BY: A.A.

CHECKED BY: G.W. | APPROVED BY: S.C.

SCALE: AS SHOWN FULL SIZE ONLY

wsp

PROJECT NO. BE20101016

ISSUED FOR TENDER

Niagara Region

NIAGARA REGION PROJECT NO. xxxxxxx

NIAGARA FALLS TRAIN STATION UPGRADES

DRAINAGE PLANS

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION	M-0005	E	M-0005

METRIC

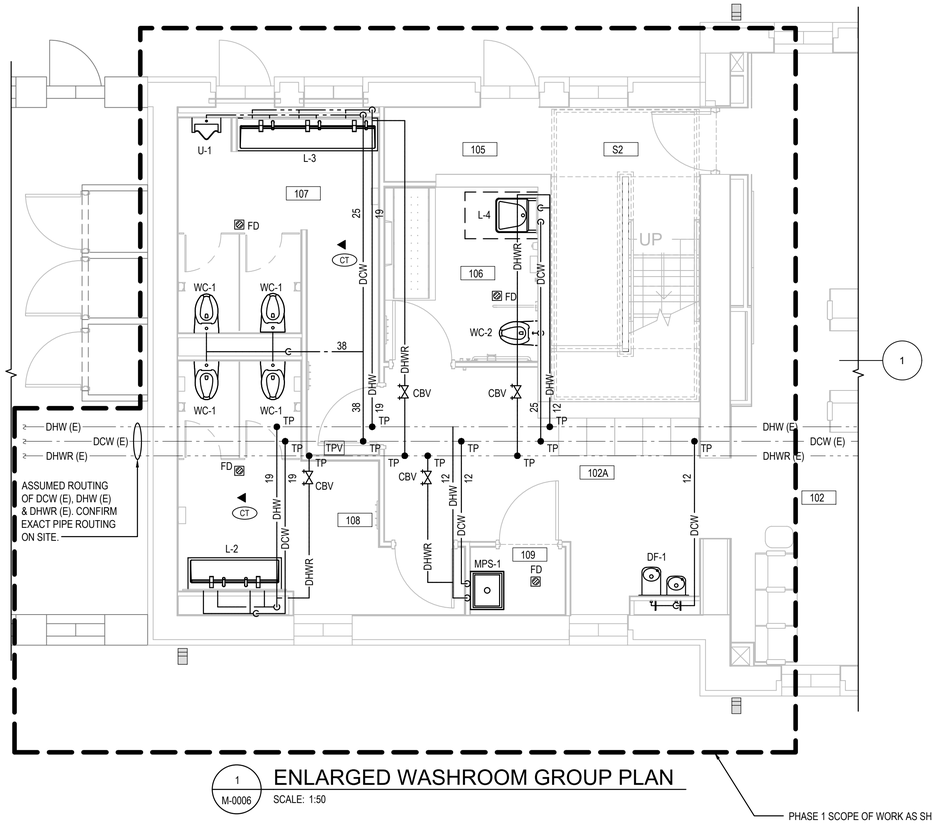
ALL DIMENSONS SHOWN ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE NOTED.

NEW PLUMBING CONSTRUCTION NOTES:

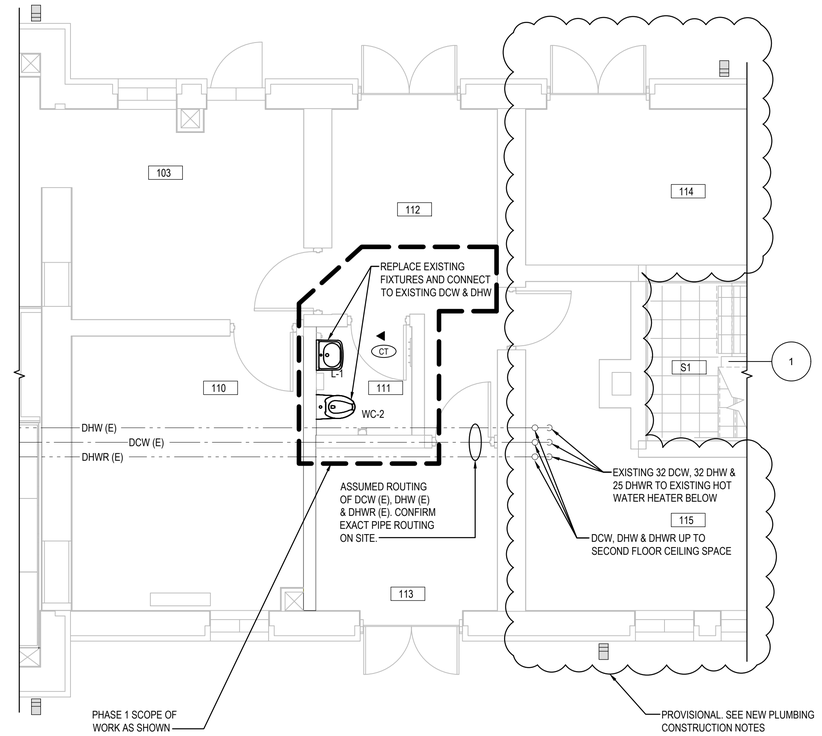
1. DCW, DHW AND DHWR PIPELINES MODIFICATIONS AND TIE-IN POINT LOCATIONS WITHIN THE MECHANICAL ROOM AS REQUIRED TO BE VERIFIED AND CONFIRMED ON SITE.
2. AS PER CLIENT'S SOW AND BUDGET PLAN, THE RM.114 IS NOT PART OF THIS CONTRACT AND IS SUBJECT FOR CONSTRUCTION IN THE PROJECT'S NEXT STAGE. ROOM 115 (MECHANICAL ROOM) IS NOT PAT OF THIS PROJECT AND ITS SOW, EXCEPT THE PIPELINE TIE-INS AND PIPELINE MODIFICATIONS TO DCW, DHW AND DHWR MAINS AS REQUIRED

NEW PLUMBING NOTES:

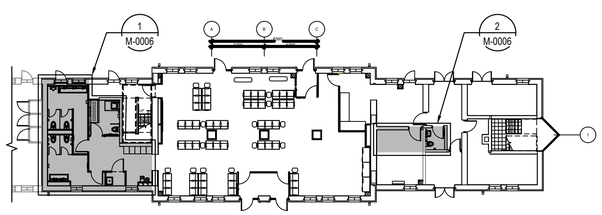
1. THE CONTRACTOR SHALL INVESTIGATE AND CONFIRM SERVICES ON SITE PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES TO CONSULTANT. ALL NEW SERVICES SHALL RUN CONCEALED WITHIN CEILING SPACE.
2. SCAN FLOOR PRIOR TO FLOOR CUTS AND UNDERGROUND PIPING INSTALLATION.
3. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING HEIGHTS TO ENSURE ALL SERVICES ARE CONCEALED WITHIN AVAILABLE CEILING SPACE.
4. PREPARE INTERFERENCE DRAWINGS AND COORDINATE ALL SERVICES WITH ALL TRADES PRIOR TO INSTALLATION.
5. PROVIDE CLEANOUTS AS REQUIRED BY CODE. SIZE OF CLEANOUTS TO BE SAME SIZE AS SANITARY LINES.
6. PROVIDE ALL TRENCHING, EXCAVATING AND BACKFILL FOR UNDERGROUND PLUMBING. ALL SAW CUTTING AND RESTORATION OF CONCRETE FLOOR IS BY GENERAL CONTRACTOR. COORDINATE WITH SAME.
7. INSULATE ALL NEW DOMESTIC HOT, COLD AND RECIRCULATED WATER PIPING WITH 25mm (1") INSULATION. PROVIDE PVC JACKET OVER INSULATION IN EXPOSED AREAS.
8. PROVIDE BALANCING VALVES AT START OF EACH BRANCH OF ALL HOT OR TEMPERED WATER RECIRCULATION LOOPS.
9. PROVIDE SLEEVES FOR PIPES THROUGH ALL NEW BLOCK WALLS. FILL VOIDS AROUND PIPES. ENSURE NO CONTACT BETWEEN DISSIMILAR METALS.
10. COORDINATE EXACT LOCATION OF NEW FLOOR DRAINS WITH GENERAL CONTRACTOR TO SUIT FLOOR SLOPE.
11. PROVIDE TRAP SEAL PRIMER FOR ALL FLOOR DRAINS USING PRIMER SPECIFIED IN PLUMBING FIXTURE SCHEDULE. PRIMERS SHALL BE CONCEALED. MOUNT IN CEILING SPACE AND RUN LINE CONCEALED DOWN WALL AND UNDER FLOOR TO DRAIN.
12. LABEL ALL EXISTING AND NEW PIPING COMPLETE WITH SERVICE AND FLOW ARROWS. LABELS SHALL BE MAX 3m(10') SPACING AND ON EITHER SIDE OF WALLS.
13. SUPPLY ACCESS DOORS WHERE REQUIRED AND TURN OVER TO GENERAL CONTRACTOR FOR INSTALLATION. REFER TO PLUMBING FIXTURE SCHEDULE.
14. PROVIDE ESCUTCHEONS AROUND WATER AND SANITARY PIPING THROUGH WALL, FLOOR OR MILLWORK AT ALL FIXTURES.
15. ALL PIPE SIZES ARE SHOWN IN MILLIMETERS (mm).
16. INSULATE AND LABEL ALL NEW AND EXISTING PIPING WITHIN CEILING SPACE INCLUDING WATER AND STORM.
17. FIRE STOP ALL EXISTING AND NEW PIPING THROUGH RATED WALLS (REFER TO ARCHITECTURAL DRAWINGS FOR FIRE RATINGS).
18. LABEL CEILING GRID AT ACCESS TO EQUIPMENT AND VALVES.
19. PROVIDE ISOLATION VALVES AT ALL FIXTURES.
20. PROVIDE NEW LEAD FREE CIRCUIT BALANCING VALVES ON DOMESTIC HOT WATER RECIRCULATION PIPES AS INDICATED. BALANCE TO 5.7 l/min.



1 M-0006 ENLARGED WASHROOM GROUP PLAN
SCALE: 1:50



2 M-0006 ENLARGED ROOM 111 PLAN
SCALE: 1:50



PLUMBING FIRST FLOOR KEY PLAN
SCALE: 1:250

ROOM #	ROOM NAME
100	VESTIBULE 1
101	VESTIBULE 2
102	LOBBY / WAITING AREA
102A	CORRIDOR
103	TICKETING ROOM
S1 (104)	STAIR 1
S2 (105)	STAIR 2
106	UNIVERSAL WASHROOM
107	MALE WASHROOM
108	FEMALE WASHROOM
109	JANITOR
110	IT ROOM
111	WASHROOM
112	CORRIDOR
113	MULTI-PURPOSE ROOM
114	O.T.S.
115	MECHANICAL ROOM

REFERENCE DRAWINGS		ISSUE			REVISIONS		
		D	2023/12/06	ISSUED FOR TENDER			
		C	2023/07/25	REISSUED FOR BUILDING PERMIT			
		B	2023/04/24	ISSUED FOR BUILDING PERMIT			
		A	2022/11/11	PRELIMINARY DESIGN SUBMISSION			
DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

DRAWN BY: E.M.	DESIGNED BY: A.A.
CHECKED BY: D.R.	APPROVED BY: S.C.
SCALE: AS SHOWN	FULL SIZE ONLY

PROJECT NO. BE20101016

ISSUED FOR TENDER

NIAGARA REGION PROJECT NO. xxxxxxx

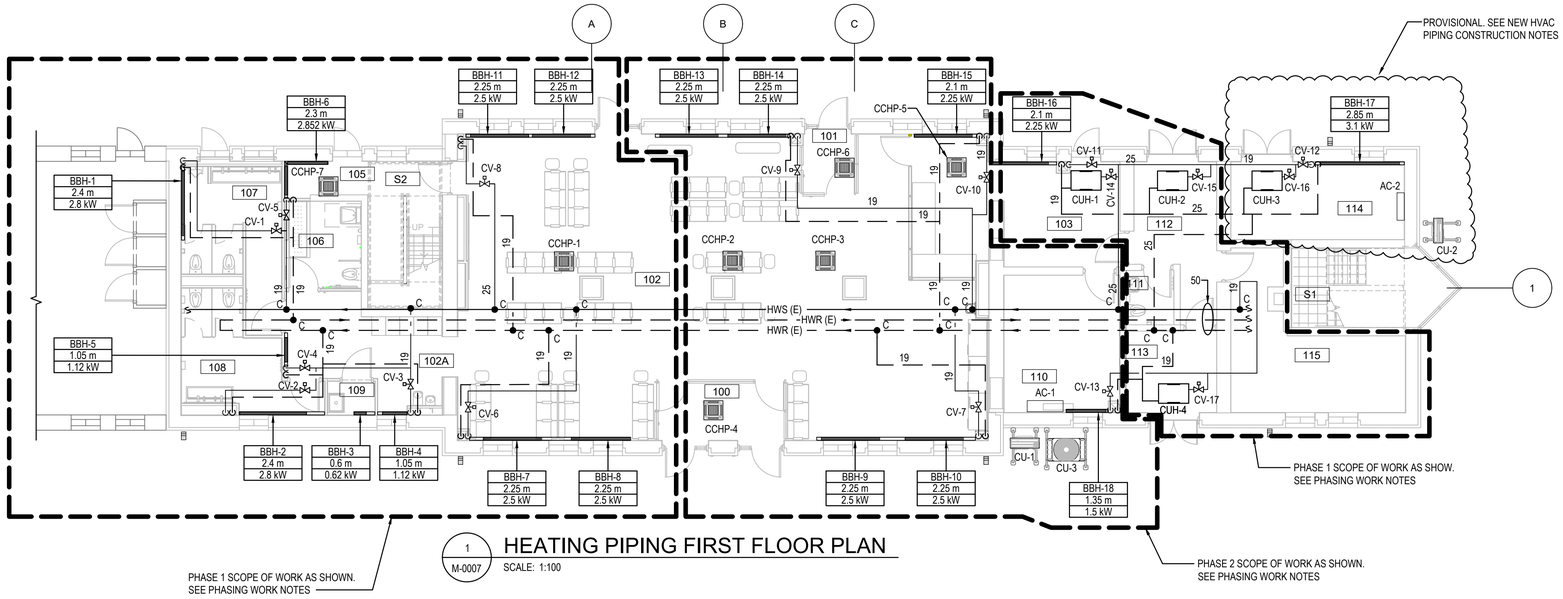
NIAGARA FALLS TRAIN STATION UPGRADES

PLUMBING PLANS

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION	M-0006	D	M-0006

METRIC

ALL DIMENSONS SHOWN ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE NOTED.



1 / M-0007 HEATING PIPING FIRST FLOOR PLAN

SCALE: 1:100

PHASING WORK NOTES:

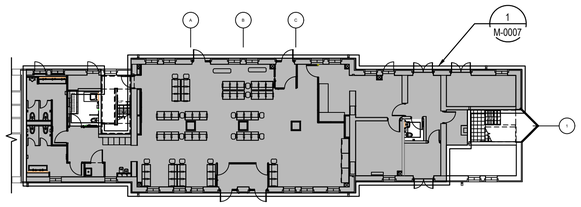
PHASE 1 & 2 SCOPES OF WORK INCLUDE INSTALLATION AND HEATING WATER FLOW BALANCING AND CONTROL VALVE COMMISSIONING

NEW HEATING PIPING CONSTRUCTION NOTES:

1. HWS AND HWR PIPELINES MODIFICATIONS AND TIE-IN POINT LOCATIONS WITHIN THE MECHANICAL ROOM AS REQUIRED TO BE VERIFIED AND CONFIRMED ON SITE.
2. AS PER CLIENT'S SOW AND BUDGET PLAN, ROOM 114 IS NOT PART OF THIS CONTRACT AND IS SUBJECT FOR CONSTRUCTION IN THE PROJECT'S NEXT STAGE. ROOM 115 (MECHANICAL ROOM) IS NOT PART OF THIS PROJECT AND ITS SOW, EXCEPT THE PIPELINE TIE-INS AND MODIFICATIONS TO HWS AND HWR MAINS AS REQUIRED.

NEW HEATING PIPING NOTES:

1. REFER TO DRAWING M-0002 FOR HVAC NOTES.
2. REFER TO DRAWING M-0008 FOR HVAC PIPING PLANS.
3. ALL NEW HEATING PIPE IS 19mm (NPS 3/4) UNO.



HEATING PIPING FIRST FLOOR KEY PLAN

SCALE: 1:250

ROOM #	ROOM NAME
100	VESTIBULE 1
101	VESTIBULE 2
102	LOBBY / WAITING AREA
102A	CORRIDOR
103	TICKETING ROOM
S1 (104)	STAIR 1
S2 (105)	STAIR 2
106	UNIVERSAL WASHROOM
107	MALE WASHROOM
108	FEMALE WASHROOM
109	JANITOR
110	IT ROOM
111	WASHROOM
112	CORRIDOR
113	MULTI-PURPOSE ROOM
114	O.T.S.
115	MECHANICAL ROOM

REFERENCE DRAWINGS		ISSUE			REVISIONS		
		C	2023/12/06	ISSUED FOR TENDER			
		B	2023/04/24	ISSUED FOR BUILDING PERMIT			
		A	2022/11/11	PRELIMINARY DESIGN SUBMISSION			
DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

DRAWN BY: E.M.	DESIGNED BY: A.A.
CHECKED BY: G.W.	APPROVED BY: S.C.
SCALE: AS SHOWN FULL SIZE ONLY	

PROJECT NO. BE20101016

ISSUED FOR TENDER

Niagara Region

NIAGARA REGION PROJECT NO. xxxxxxx

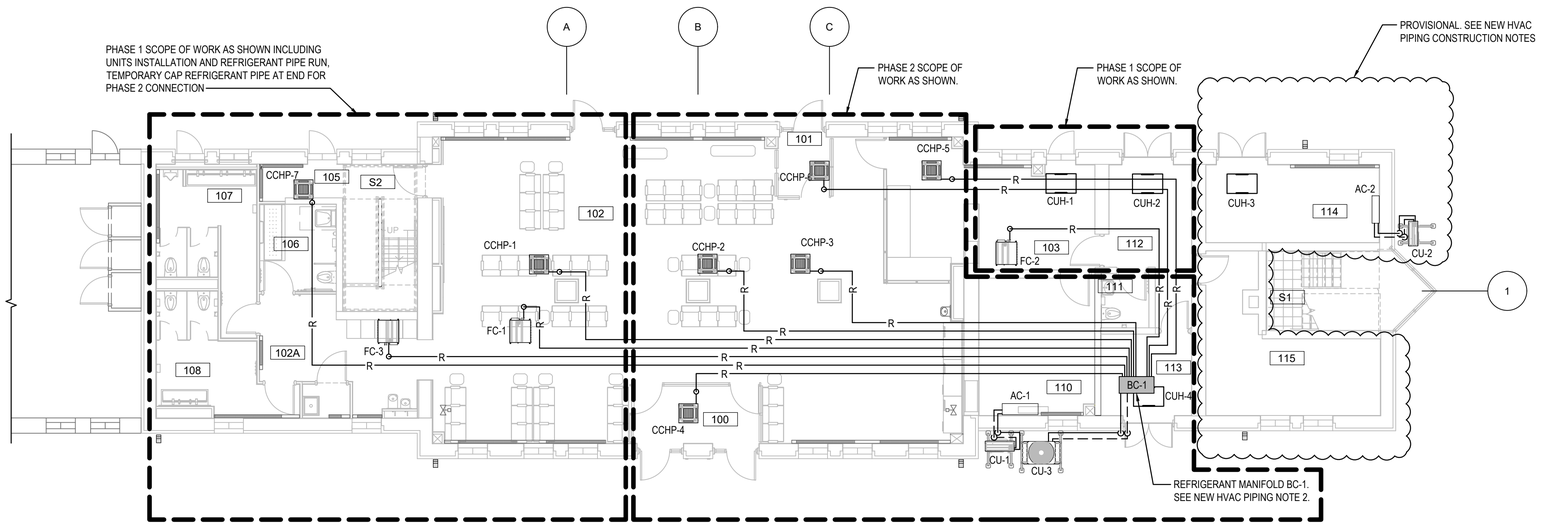
NIAGARA FALLS TRAIN STATION UPGRADES

HEATING PIPING PLANS

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION	M-0007	C	M-0007

METRIC

ALL DIMENSONS SHOWN ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE NOTED.



1 / M-0008 HVAC PIPING FIRST FLOOR PLAN

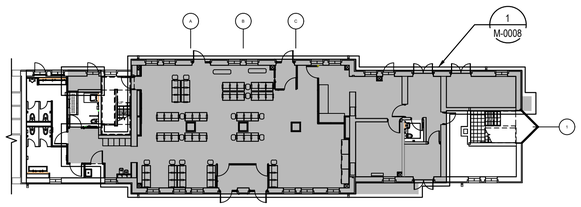
SCALE: 1:100

NEW HVAC PIPING CONSTRUCTION NOTES:

1. AS PER CLIENT'S SOW AND BUDGET PLAN, ROOM 114 IS NOT PART OF THIS CONTRACT AND IS SUBJECT FOR CONSTRUCTION IN THE PROJECT'S NEXT STAGE. ROOM 115 (MECHANICAL ROOM) IS NOT PART OF THIS PROJECT AND ITS SOW.

NEW HVAC PIPING NOTES:

1. REFER TO DRAWING M-0002 FOR HVAC NOTES.
2. THE CONTRACTOR IS TO DETERMINE ON SITE THE FINAL LOCATION FOR INSTALLATION OF THE "BC-1" UNIT AND ASSOCIATED REFRIGERANT PIPE ROUTING AND CONNECTIONS. ENSURE FINAL BC-1 UNIT IS INSTALLED w/ SERVICE AND MAINTENANCE CLEARANCES TO THE MANUFACTURER'S RECOMMENDATIONS AND THE UNIT DOES NOT ADVERSELY INFLUENCE OTHER SERVICE OR EQUIPMENT.



HVAC PIPING FIRST FLOOR KEY PLAN

SCALE: 1:250

ROOM #	ROOM NAME
100	VESTIBULE 1
101	VESTIBULE 2
102	LOBBY / WAITING AREA
102A	CORRIDOR
103	TICKETING ROOM
S1 (104)	STAIR 1
S2 (105)	STAIR 2
106	UNIVERSAL WASHROOM
107	MALE WASHROOM
108	FEMALE WASHROOM
109	JANITOR
110	IT ROOM
111	WASHROOM
112	CORRIDOR
113	MULTI-PURPOSE ROOM
114	O.T.S.
115	MECHANICAL ROOM

REFERENCE DRAWINGS		ISSUE			REVISIONS		
		C	2023/12/06	ISSUED FOR TENDER			
		B	2023/04/24	ISSUED FOR BUILDING PERMIT			
		A	2022/11/11	PRELIMINARY DESIGN SUBMISSION			
DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

DRAWN BY: E.M. | DESIGNED BY: G.W.

CHECKED BY: E.M. | APPROVED BY: S.C.

SCALE: AS SHOWN FULL SIZE ONLY

wsp

PROJECT NO. BE20101016

ISSUED FOR TENDER

Niagara Region

NIAGARA REGION PROJECT NO. xxxxxxx

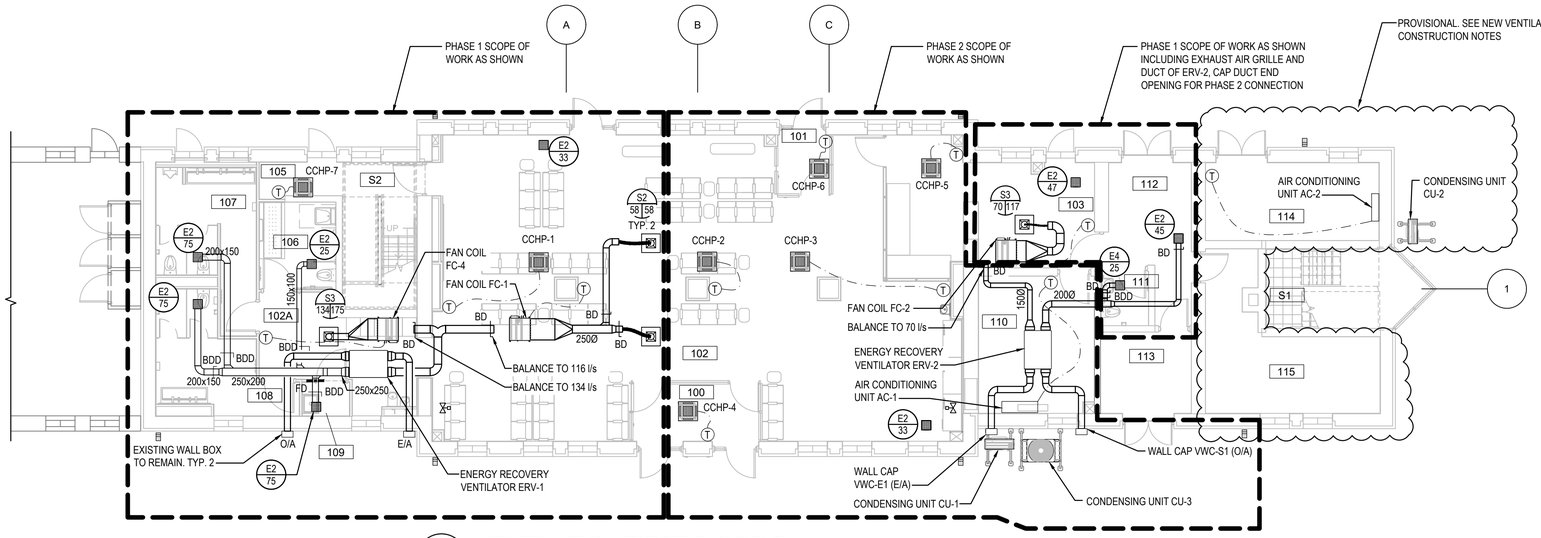
NIAGARA FALLS TRAIN STATION UPGRADES

HVAC PIPING PLANS

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION	M-0008	C	M-0008

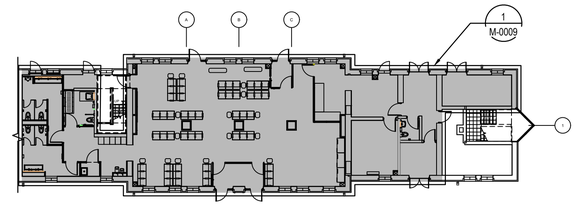
METRIC

ALL DIMENSONS SHOWN ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE NOTED.



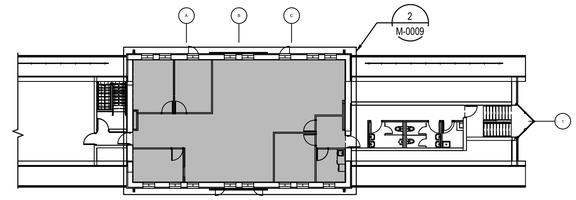
1 M-0009 VENTILATION FIRST FLOOR PLAN

SCALE: 1:100



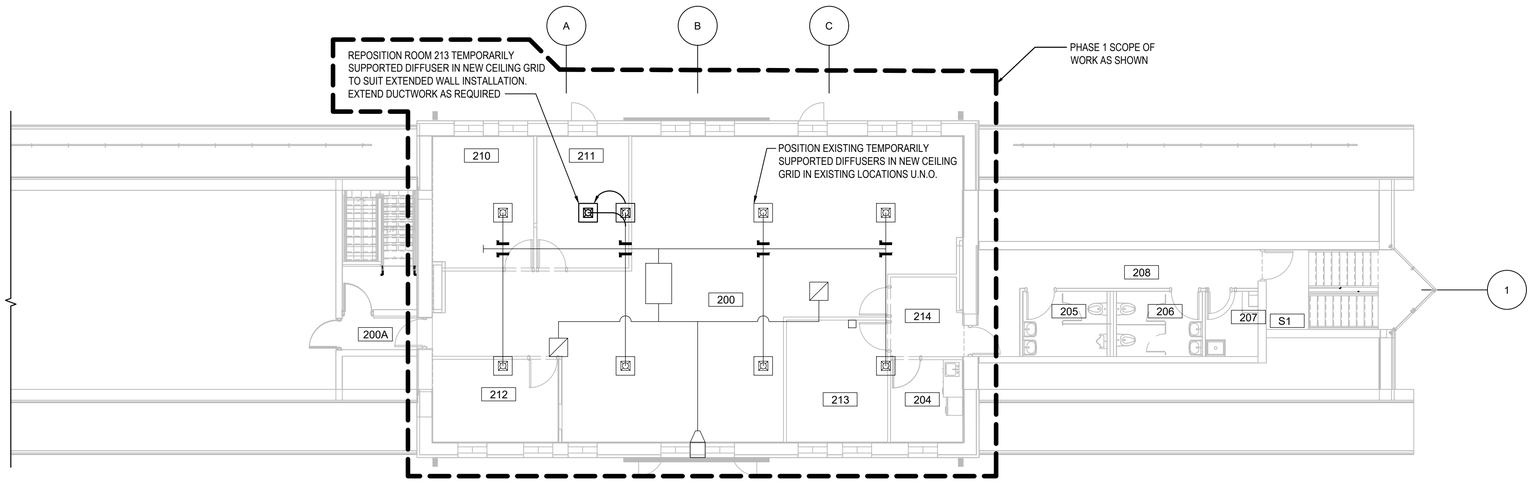
VENTILATION FIRST FLOOR KEY PLAN

SCALE: 1:250



VENTILATION SECOND FLOOR KEY PLAN

SCALE: 1:250



2 M-0009 VENTILATION SECOND FLOOR PLAN

SCALE: 1:100

NEW VENTILATION CONSTRUCTION NOTES:

1. AS PER CLIENT'S SOW AND BUDGET PLAN, ROOM 114 IS NOT PART OF THIS CONTRACT AND IS SUBJECT FOR CONSTRUCTION IN THE PROJECT'S NEXT STAGE. ROOM 115 (MECHANICAL ROOM) IS NOT PART OF THIS PROJECT AND ITS SOW, EXCEPT THE PIPELINE TIE-INS AND MODIFICATIONS TO HWS AND HWR MAINS AS REQUIRED.

NEW VENTILATION NOTES:

1. REFER TO DRAWING M-0002 FOR HVAC NOTES.

ROOM #	ROOM NAME
100	VESTIBULE 1
101	VESTIBULE 2
102	LOBBY / WAITING AREA
102A	CORRIDOR
103	TICKETING ROOM
S1 (104)	STAIR 1
S2 (105)	STAIR 2
106	UNIVERSAL WASHROOM
107	MALE WASHROOM
108	FEMALE WASHROOM
109	JANITOR
110	IT ROOM
111	WASHROOM
112	CORRIDOR
113	MULTI-PURPOSE ROOM
114	O.T.S.
115	MECHANICAL ROOM
200	OFFICE AREA
200A	VESTIBULE 2
204	KITCHETTE
205	WASHROOM - MALE
206	WASHROOM - FEMALE
207	JANITOR
208	CORRIDOR
210	OFFICE 1
211	OFFICE 2
212	OFFICE 3
213	GO TRANSIT AREA
214	VESTIBULE
S1 (104)	STAIR 1
S2 (105)	STAIR 2

REFERENCE DRAWINGS		ISSUE			REVISIONS		
		C	2023/12/06	ISSUED FOR TENDER			
		B	2023/07/25	REISSUED FOR BUILDING PERMIT			
		A	2023/04/24	ISSUED FOR BUILDING PERMIT			
DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

DRAWN BY: E.M.
DESIGNED BY: A.A.
CHECKED BY: G.W.
APPROVED BY: S.C.
SCALE: AS SHOWN FULL SIZE ONLY

PROJECT NO. BE20101016

ISSUED FOR TENDER

NIAGARA REGION PROJECT NO. xxxxxxx

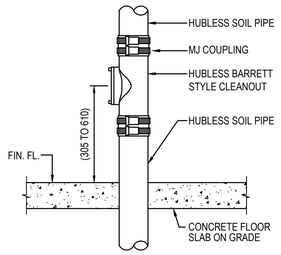
NIAGARA FALLS TRAIN STATION UPGRADES

VENTILATION PLANS

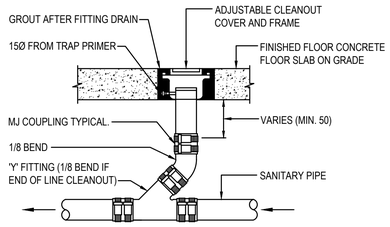
CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION	M-0009	C	M-0009

METRIC

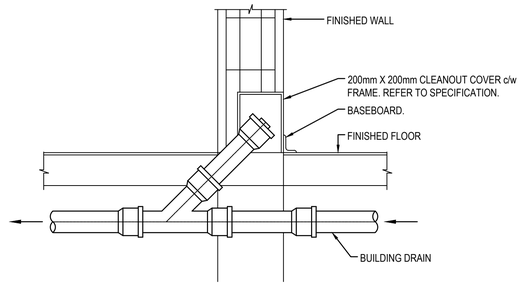
ALL DIMENSONS SHOWN ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE NOTED.



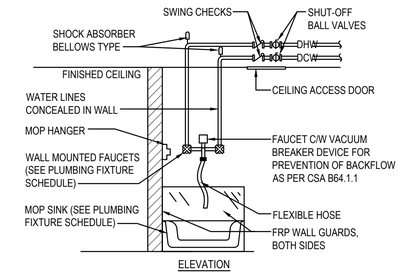
1 - TYPICAL EXPOSED CLEANOUT
SCALE: NTS



2 - TYPICAL FLOOR CLEANOUT
SCALE: NTS

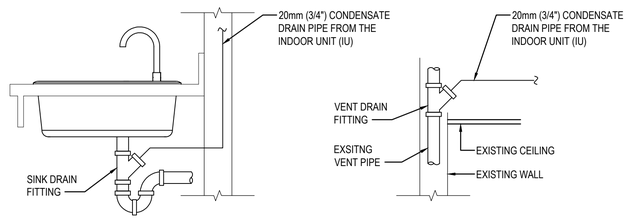


3 - TYPICAL CLEANOUT WALL COVER
SCALE: NTS



ELEVATION

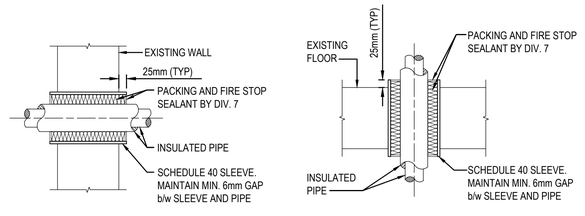
4 - JANITOR SERVICE SINK (JS-1) HOOK-UP
SCALE: NTS



CONDENSATE TO SINK

CONDENSATE TO VENT

5 - TYPICAL CONDENSATE DRAIN DETAIL
SCALE: NTS



PIPING THROUGH WALL

PIPING THROUGH FLOOR

6 - PIPE PENETRATION DETAIL
SCALE: NTS

REFERENCE DRAWINGS		ISSUE			REVISIONS		
		B	2023/12/06	ISSUED FOR TENDER			
		A	2023/04/24	ISSUED FOR BUILDING PERMIT			
DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

DRAWN BY: E.M.
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PROJECT NO. BE20101016
ISSUED FOR TENDER

Niagara Region
NIAGARA REGION PROJECT NO. xxxxxxx

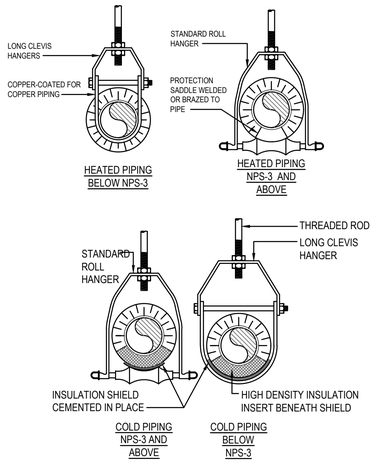
NIAGARA FALLS TRAIN STATION UPGRADES

MECHANICAL DETAILS
1 OF 3

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION	M-0010	B	M-0010

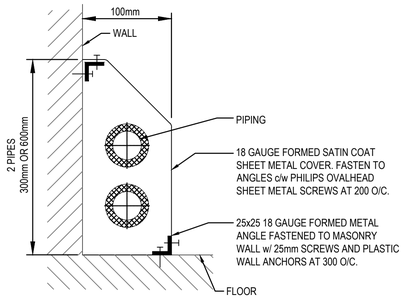
METRIC

ALL DIMENSONS SHOWN ARE IN METRES AND/OR MILLIMETRES UNLESS OTHERWISE NOTED.



PIPE SUPPORT HANGER TYPES

SCALE: NTS

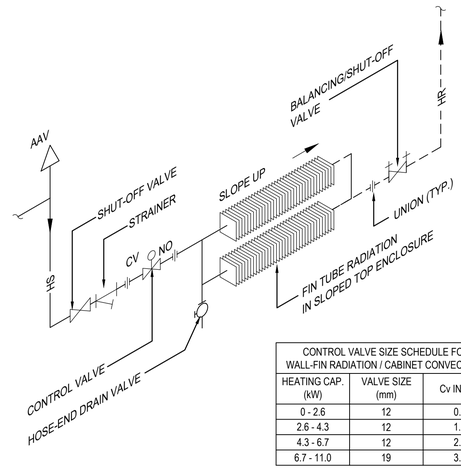


NOTE:

1. MECHANICAL CONTRACTOR TO SUPPLY AND INSTALL PIPE CHASE COVER.

PIPE ENCLOSURE DETAIL

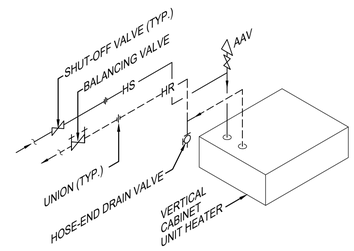
SCALE: NTS



CONTROL VALVE SIZE SCHEDULE FOR WALL-FIN RADIATION / CABINET CONVECTORS		
HEATING CAP. (kW)	VALVE SIZE (mm)	Cv INDEX
0 - 2.6	12	0.9
2.6 - 4.3	12	1.5
4.3 - 6.7	12	2.3
6.7 - 11.0	19	3.8

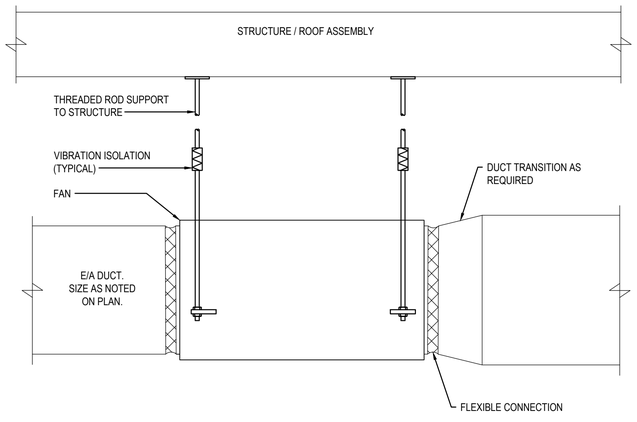
WALL FIN BASEBOARD RADIATOR PIPING SCHEMATIC

SCALE: NTS



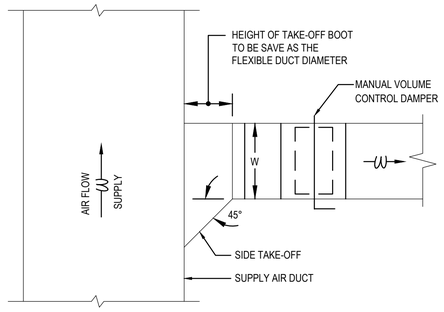
TYPICAL CABINET HEATER PIPING

SCALE: NTS



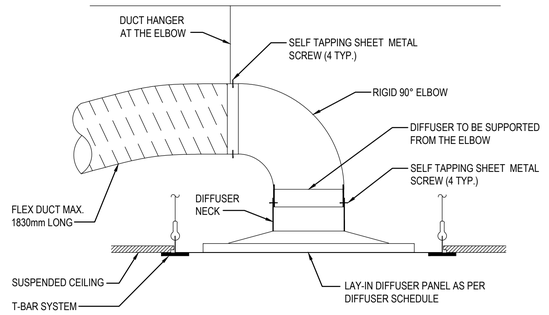
SUSPENDED INLINE EXHAUST FAN DETAIL

SCALE: NTS



BRANCH TAKE-OFF DETAIL

SCALE: NTS



CEILING DIFFUSER DETAIL

SCALE: NTS

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DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

DRAWN BY: E.M.	DESIGNED BY: A.A.
CHECKED BY: G.W.	APPROVED BY: S.C.
SCALE: AS SHOWN	FULL SIZE ONLY

PROJECT NO. BE20101016

ISSUED FOR TENDER

Niagara Region

NIAGARA REGION PROJECT NO. xxxxxxx

NIAGARA FALLS TRAIN STATION UPGRADES

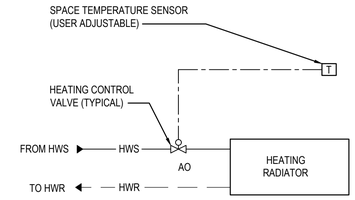
MECHANICAL DETAILS

2 OF 3

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION	M-0011	C	M-0011

METRIC

ALL DIMENSONS SHOWN ARE
IN METRES AND/OR MILLIMETRES
UNLESS OTHERWISE NOTED.

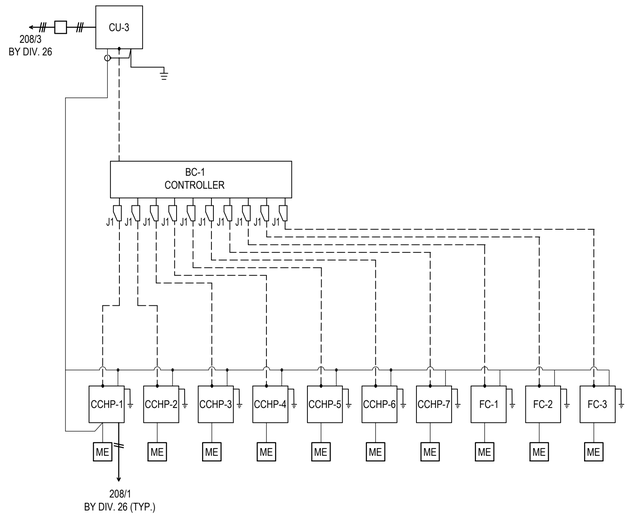


SEQUENCE OF OPERATIONS

1. CONTROL VALVE WILL MODULATE TO MAINTAIN ROOM TEMPERATURE SETPOINT OF 21 DEGC (70 DEGF) (ADJUSTABLE) IN HEATING.
2. ROOM TEMPERATURE SENSOR WILL BE THE HEAT PUMP/CEILING CASSETTE/FAN COIL UNIT'S PROGRAMMABLE THERMOSTAT. PROVIDE ROOM TEMPERATURE SENSOR IF PROGRAMMABLE THERMOSTAT IS NOT AVAILABLE IN THE ROOM.

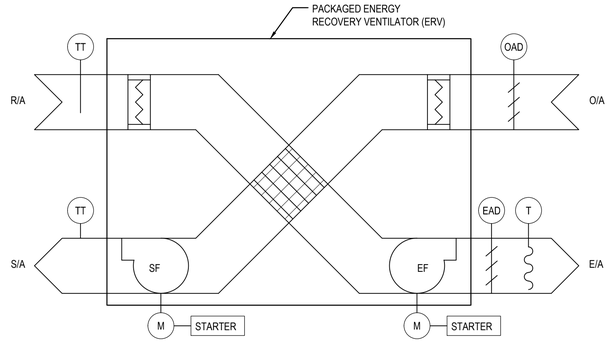
WALL FIN BASEBOARD HEATER CONTROLS

SCALE: NTS



MITSUBISHI A/C UNITS & FAN COIL UNITS CONTROL WIRING DIAGRAM

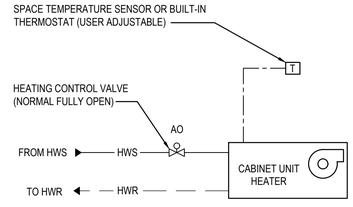
SCALE: NTS



NOTE:
1. FOR CONTROL OF EACH ERV UNIT, PROVIDE AND INSTALL A TC7D SERIES DIGITAL TIME CLOCK (OR APPROVAL EQUIVALENT).
2. ALL ERVS SHOULD OPERATE CONTINUOUSLY DURING REVENUE HOURS DEFINED BY OWNER.

ENERGY RECOVERY VENTILATOR CONTROLS

SCALE: NTS



SEQUENCE OF OPERATIONS

1. CONTROL VALVE WILL REMAIN FULLY OPEN IN HEATING.
2. CABINET UNIT HEATER BUILT-IN BLOWER START TO RUN WHEN THE ROOM TEMP DROP BELOW THE SET POINT 21°C (ADJUSTABLE).
3. CABINET UNIT HEATER BUILT-IN BLOWER WILL REMAIN ON (OR OFF) STATUS AT LEAST 15 MINUTES AFTER IT TURNS ON (OR OFF).
4. ROOM TEMPERATURE SENSOR WILL BE THE HEAT PUMP/CEILING CASSETTE/FAN COIL UNIT'S PROGRAMMABLE THERMOSTAT. PROVIDE ROOM TEMPERATURE SENSOR IF PROGRAMMABLE THERMOSTAT IS NOT AVAILABLE IN THE ROOM.

CABINET HEATER CONTROLS

SCALE: NTS

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		C	2023/12/06	ISSUED FOR TENDER			
		B	2023/04/24	ISSUED FOR BUILDING PERMIT			
		A	2022/11/11	PRELIMINARY DESIGN SUBMISSION			
DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

DRAWN BY: E.M.	DESIGNED BY: G.W.
CHECKED BY: D.R.	APPROVED BY: S.C.
SCALE: AS SHOWN	FULL SIZE ONLY

wsp

PROJECT NO. BE20101016

ISSUED FOR TENDER

Niagara Region

NIAGARA REGION PROJECT NO. xxxxxxx

NIAGARA FALLS TRAIN STATION UPGRADES

MECHANICAL DETAILS

3 OF 3

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION	M-0012	C	M-0012

METRIC

ALL DIMENSONS SHOWN ARE
IN METRES AND/OR MILLIMETRES
UNLESS OTHERWISE NOTED.

FIXTURE SCHEDULE

ITEM	PIPE CONNECTION (QTY)				DESCRIPTION
	DCW	DHW	SANITARY	VENT	
WC-1	25	-	75	38	WATER CLOSET - WALL HUNG, FLUSH VALVE, BARRIER FREE
WC-2	25	-	75	38	WATER CLOSET - FLOOR MOUNTED, FLUSH TANK, BARRIER FREE
U-1	12	-	50	38	URINAL - WALL HUNG
L-1	12	12	32	32	LAVATORY - WALL HUNG
L-2	12 (2)	12 (2)	32	32	LAVATORY - WALL HUNG, 2 - FAUCET, 1500mm LONG
L-3	12 (3)	12 (3)	32	32	LAVATORY - WALL HUNG, 3 - FAUCET, 2290mm LONG
L-4	12	12	32	32	LAVATORY - WALL HUNG, BARRIER FREE
MPS-1	12	12	75	38	MOP SINK, FLOOR MOUNTED, 600x500mm
DF-1	12 (2)	-	50	38	DRINKING FOUNTAIN, WALL HUNG, 2 STATIONS
FD-1	-	-	75	-	FLOOR DRAIN

CONTROL VALVE SCHEDULE

No.	LOCATION (ROOM #)	SERVICE	PIPE SIZE (NPS)	SIZE (NPS)	FLOW (L/S)	PRESSURE DROP (kPA)	Cv	REMARKS
CV-1	107	BBH-1	3/4	1/2	0.28		4.2	TWO WAY VALVE
CV-2	108	BBH-2	3/4	1/2	0.23		4.2	TWO WAY VALVE
CV-3	102A	BBH-3 & BBH-4	3/4	1/2	0.02		4.2	TWO WAY VALVE
CV-4	102A	BBH-5	3/4	1/2	0.01		4.2	TWO WAY VALVE
CV-5	105	BBH-6	3/4	1/2	0.01		4.2	TWO WAY VALVE
CV-6	102	BBH-7 & BBH 8	3/4	1/2	0.05		4.2	TWO WAY VALVE
CV-7	102	BBH-9 & BBH-10	3/4	1/2	0.21	4.3	4.2	TWO WAY VALVE
CV-8	102	BBH-11 & BBH-12	3/4	1/2	0.02		4.2	TWO WAY VALVE
CV-9	102	BBH-13 & BBH-14	3/4	1/2	0.02		4.2	TWO WAY VALVE
CV-10	103	BBH-15	3/4	1/2	0.04		4.2	TWO WAY VALVE
CV-11	103	BBH-16	3/4	1/2	0.11		4.2	TWO WAY VALVE
CV-12	114	BBH-17	3/4	1/2	0.11		4.2	TWO WAY VALVE
CV-13	110	BBH-18	3/4	1/2	0.10	0.8	4.2	TWO WAY VALVE
CV-14	103	CUH-1	3/4	1/2	0.02		4.2	TWO WAY VALVE
CV-15	112	CUH-2	3/4	1/2	0.02		4.2	TWO WAY VALVE
CV-16	114	CUH-3	3/4	1/2	0.02		4.2	TWO WAY VALVE
CV-17	113	CUH-4	3/4	1/2	0.02		4.2	TWO WAY VALVE

UNIT HEATER AND CABINET HEATER SCHEDULE

UNIT TAG	LOCATION	MAKE / MODEL	MOUNTING HEIGHT (m)	RATING (kW)	AIR FLOW (l/s)	E.A.T. °C	E.W.T. °C	L.W.T. °C	FLOW (lps)	P.D. (kPa)	MOTOR AMPS	MOTOR CAPACITY (W)	ELECTRICAL V/P/H	REMARKS
CUH-1	ROOM 103	MODINE CW - SIZE 002	2.7	2.9	118	18	82	71	0.03	3.05	0.7	22.7	115/1/60	HORIZONTAL, CEILING RECESSED
CUH-2	ROOM 112	MODINE CW - SIZE 002	2.7	2.9	118	18	82	71	0.03	3.05	0.7	22.7	115/1/60	HORIZONTAL, CEILING RECESSED
CUH-3	ROOM 114	MODINE CW - SIZE 002	2.7	2.9	118	18	82	71	0.03	3.05	0.7	22.7	115/1/60	HORIZONTAL, CEILING RECESSED
CUH-4	ROOM 113	MODINE CW - SIZE 002	2.7	2.9	118	18	82	71	0.03	3.05	0.7	22.7	115/1/60	HORIZONTAL, CEILING RECESSED

NOTE: ALTERNATE MANUFACTURERS THAT MEET THE SPECIFICATION SHALL BE ACCEPTED.

PROVISIONAL. SEE DRAWING M-0007 NEW HEATING PIPING CONSTRUCTION NOTES

BASEBOARD RADIATION SCHEDULE

No.	ROOM (LOCATION)	FIN TUBE LENGTH (mm)	CABINET HEIGHT (mm)	CABINET WIDTH (mm)	ROWS/ PASSES	CAP. (W/m)	CAPACITY (kW)	WATER TEMP. °C		TUBE SIZE (mm)	REMARKS
								ENTERING	LEAVING		
BBH-1	107	2400	355	100	2	1140	2.8	82	71	25	SLOPED TOP, 82x82 ALUMINUM FIN (164 FINS/m) c/w ENDCAPS. TRANE HYDRONIC WALL FIN (TYPE S).
BBH-2	108	2400	355	100	2	1140	2.8	82	71	25	SLOPED TOP, 82x82 ALUMINUM FIN (164 FINS/m) c/w ENDCAPS. TRANE HYDRONIC WALL FIN (TYPE S).
BBH-3	109	600	355	100	2	1140	0.62	82	71	25	SLOPED TOP, 82x82 ALUMINUM FIN (164 FINS/m) c/w ENDCAPS. TRANE HYDRONIC WALL FIN (TYPE S).
BBH-4	102A (SOUTH)	1050	355	100	2	1140	1.12	82	71	25	SLOPED TOP, 82x82 ALUMINUM FIN (164 FINS/m) c/w ENDCAPS. TRANE HYDRONIC WALL FIN (TYPE S).
BBH-5	102A (WEST)	1050	355	100	2	1140	1.12	82	71	25	SLOPED TOP, 82x82 ALUMINUM FIN (164 FINS/m) c/w ENDCAPS. TRANE HYDRONIC WALL FIN (TYPE S).
BBH-6	105	1050/1350 L-SHAPED	355	100	2	1140	2.85	82	71	25	SLOPED TOP, 82x82 ALUMINUM FIN (164 FINS/m) c/w ENDCAPS. TRANE HYDRONIC WALL FIN (TYPE S).
BBH-7	102 (SOUTH)	2250	355	100	2	1140	2.5	82	71	25	SLOPED TOP, 82x82 ALUMINUM FIN (164 FINS/m) c/w ENDCAPS. TRANE HYDRONIC WALL FIN (TYPE S).
BBH-8	102 (SOUTH)	2250	355	100	2	1140	2.5	82	71	25	SLOPED TOP, 82x82 ALUMINUM FIN (164 FINS/m) c/w ENDCAPS. TRANE HYDRONIC WALL FIN (TYPE S).
BBH-9	102 (SOUTH)	2250	355	100	2	1140	2.5	82	71	25	SLOPED TOP, 82x82 ALUMINUM FIN (164 FINS/m) c/w ENDCAPS. TRANE HYDRONIC WALL FIN (TYPE S).
BBH-10	102 (SOUTH)	2250	355	100	2	1140	2.5	82	71	25	SLOPED TOP, 82x82 ALUMINUM FIN (164 FINS/m) c/w ENDCAPS. TRANE HYDRONIC WALL FIN (TYPE S).
BBH-11	102 (NORTH)	2250	355	100	2	1140	2.5	82	71	25	SLOPED TOP, 82x82 ALUMINUM FIN (164 FINS/m) c/w ENDCAPS. TRANE HYDRONIC WALL FIN (TYPE S).
BBH-12	102 (NORTH)	2250	355	100	2	1140	2.5	82	71	25	SLOPED TOP, 82x82 ALUMINUM FIN (164 FINS/m) c/w ENDCAPS. TRANE HYDRONIC WALL FIN (TYPE S).
BBH-13	102 (NORTH)	2250	355	100	2	1140	2.5	82	71	25	SLOPED TOP, 82x82 ALUMINUM FIN (164 FINS/m) c/w ENDCAPS. TRANE HYDRONIC WALL FIN (TYPE S).
BBH-14	102 (NORTH)	2250	355	100	2	1140	2.5	82	71	25	SLOPED TOP, 82x82 ALUMINUM FIN (164 FINS/m) c/w ENDCAPS. TRANE HYDRONIC WALL FIN (TYPE S).
BBH-15	103	2100	355	100	2	1140	2.3	82	71	25	SLOPED TOP, 82x82 ALUMINUM FIN (164 FINS/m) c/w ENDCAPS. TRANE HYDRONIC WALL FIN (TYPE S).
BBH-16	103	2100	355	100	2	1140	2.3	82	71	25	SLOPED TOP, 82x82 ALUMINUM FIN (164 FINS/m) c/w ENDCAPS. TRANE HYDRONIC WALL FIN (TYPE S).
BBH-17	114	2850	355	100	2	1140	3.1	82	71	25	SLOPED TOP, 82x82 ALUMINUM FIN (164 FINS/m) c/w ENDCAPS. TRANE HYDRONIC WALL FIN (TYPE S).
BBH-18	110	1350	355	100	2	1140	1.5	82	71	25	SLOPED TOP, 82x82 ALUMINUM FIN (164 FINS/m) c/w ENDCAPS. TRANE HYDRONIC WALL FIN (TYPE S).

NOTE: ALTERNATE MANUFACTURERS THAT MEET THE SPECIFICATION SHALL BE ACCEPTED.

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		B	2023/07/25	REISSUED FOR BUILDING PERMIT			
		A	2023/04/24	ISSUED FOR BUILDING PERMIT			
DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

DRAWN BY: E.M.	DESIGNED BY: A.A.
CHECKED BY: G.W.	APPROVED BY: S.C.
SCALE: AS SHOWN	FULL SIZE ONLY

wsp

PROJECT NO. BE20101016

ISSUED FOR TENDER

Niagara Region

NIAGARA REGION PROJECT NO. xxxxxxx

NIAGARA FALLS TRAIN STATION UPGRADES

MECHANICAL SCHEDULES

1 OF 3

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION	M-0013	C	M-0013

METRIC

ALL DIMENSONS SHOWN ARE
IN METRES AND/OR MILLIMETRES
UNLESS OTHERWISE NOTED.

GRILLE, DIFFUSER AND REGISTER SCHEDULE

UNIT TAG	DESCRIPTION	NECK DIA. (mm)	FACE SIZE (mmXmm)	MAX. FLOW RATE (l/s)	REMARKS
S1	SQUARE CONE DIFFUSER	150Ø	300x300	50	c/w DAMPER, T-BAR MOUNTED
S2	SQUARE CONE DIFFUSER	200Ø	610x610	100	c/w DAMPER, T-BAR MOUNTED
S3	SQUARE CONE DIFFUSER	250Ø	610x610	182	c/w DAMPER, T-BAR MOUNTED
E1	EGG CRATE FACE RETURN		610x250	300	c/w DAMPER, T-BAR MOUNTED
E2	EGG CRATE FACE RETURN		300x300	150	c/w DAMPER, T-BAR MOUNTED
E3	EGG CRATE FACE RETURN		300x300	150	c/w DAMPER, DUCT MOUNTED

LOUVRE & VENTILATION WALL CAP SCHEDULE

UNIT TAG	LOCATION / SERVICES	TYPE	OPENING SIZE WIDTH x HEIGHT/ LENGTH (mm) (mm)	OVERALL SIZE WIDTH x HEIGHT x DEPTH (mm) (mm) (mm)	AIRFLOW (l/s)	VELOCITY (m/s)	REMARKS
VWC-S1	ERV-2	INTAKE	200Ø	380 x 370 x 205	50	0.5	c/w INSECT SCREEN & BACKDRAFT DAMPER
VWC-E1	ERV-2	EXHAUST	200Ø	380 x 370 x 205	100	0.5	c/w BIRD SCREEN

ENERGY RECOVERY VENTILATOR SCHEDULE

UNIT TAG	LOCATION	MANUFACTURER / MODEL	TYPE	INSTALLATION	MOUNTING	AIR FLOW RATE (l/s)	AIR CONDITIONS SUMMER				AIR CONDITIONS WINTER				SUPPLY AIR ESP (Pa)	EXHAUST AIR ESP (Pa)	MOTOR (HP)	ELECTRICAL				DIMENSION WxDxH (mm)	WEIGHT (kg)	REMARKS
							O/A (°C)	R/A (°C)	S/A (°C)	TOTAL EFFECTIVENESS (%)	O/A (°C)	R/A (°C)	S/A (°C)	TOTAL EFFECTIVENESS (%)				FLA (A)	MCA (A)	MOCP (A)	VOLTAGE			
ERV-1	Rm. 102A - CORRIDOR	RenewAire / HE-1X	STATIC PLATE	HORIZONTAL	SUSPENDED AND SUPPORTED IN THE CEILING CAVITY	250	31.4	24.0	25.8	58.7	-20.0	21.0	10.8	74.8	366	356	2 x 0.75	1.7 - 2.3	5.2	15	208/3/60	886x1248x553	125	INDOOR UNIT, MOTORIZED DAMPERS BOTH STREAMS, MERV 13 FILTERS ON OUTSIDE AIR AND RETURN AIR, & CONDENSATE PUMP (RUN CONCEALED PIPE TO DF-1 SAN (RM 102A))
ERV-2	Rm. 110 - IT	RenewAire / EV Premium M	STATIC PLATE	HORIZONTAL	SUSPENDED AND SUPPORTED IN THE CEILING CAVITY	70	31.4	24.0	26.2	47.7	-20.0	21.0	8.4	65.5	101	101	2 x 0.11	1.22	10.0	10	120/1/60	648x572x340	16.3	INDOOR UNIT, VARIABLE SPEED EC MOTORIZED IMPELLERS, MERV 13 FILTERS ON OUTSIDE AIR AND RETURN AIR, & CONDENSATE PUMP (RUN CONCEALED PIPE TO L-1 SAN PIPE (RM 111))

NOTE:
1. ALTERNATIVE MANUFACTURER AND MODEL ARE ACCPETED AFTER REVIEW AND APPROVAL.
2. INSTALL EACH ERV UNIT WITH ADEQUATE CLEARANCE FOR SERVICE AND MAINTENANCE REQUIRED BY UNIT MANUFACTURER.
3. PLACE EACH ERV UNIT IN THE CEILING SPACE TO AVOID UNIT SUPPLY AIR DIRECTLY BLOW ON ANY DOMESTIC COLD WATER PIPE.
4. PROVIDE TC7D SERIES DIGITAL TIME CLOCK (OR APPROVAL EQUIVALENT) FOR UNIT CONTROL AND ALL ERV SHOULD KEEP ON RUNNING DURING REVENUE HOURS DEFINDED BY OWNER.

NOTE: ALTERNATE MANUFACTURERS THAT MEET THE SPECIFICATION SHALL BE ACCEPTED.

REFERENCE DRAWINGS		ISSUE			REVISIONS		
		C	2023/12/06	ISSUED FOR TENDER			
		B	2023/07/25	REISSUED FOR BUILDING PERMIT			
		A	2023/04/24	ISSUED FOR BUILDING PERMIT			
DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

DRAWN BY: E.M.
DESIGNED BY: A.A.
CHECKED BY: G.W.
APPROVED BY: S.C.
SCALE: AS SHOWN FULL SIZE ONLY

wsp
PROJECT NO. BE20101016

ISSUED FOR TENDER

Niagara Region
NIAGARA REGION PROJECT NO. xxxxxxx

NIAGARA FALLS TRAIN STATION UPGRADES

MECHANICAL SCHEDULES
2 OF 3

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION	M-0014	C	M-0014

METRIC

ALL DIMENSONS SHOWN ARE
IN METRES AND/OR MILLIMETRES
UNLESS OTHERWISE NOTED.

FAN COIL SCHEDULE

UNIT TAG	LOCATION	MANUFACTURER / MODEL	TYPE	AIR FLOW RATE L - M - H (l/s)	COOLING CAPACITY (kW)	HEATING CAPACITY (kW)	ESP RANGE (Pa)	FAN MOTOR OUTPUT (W)	ELECTRICAL REQUIREMENTS			DIMENSION WxDxH (mm)	WEIGHT (kg)	FIELD DRAIN PIPE (mm)	SEER	SERVED BY CU	REFRIG.	LIQUID LINE (O.D.) (mm) (NPS)	SUCTION LINE (O.D.) (mm) (NPS)	REMARKS
									MCA	MOCP	ELEC.									
FC-1	Rm. 102 - LOBBY WAITING AREA- INDOORS	MITSUBISHI / PEFY-P06NMSU-E	CEILING MOUNTED DUCTED	83-100-117	1.8	2.0	5-50	96	0.5	15	208/1/60	790x700x200	19	32	-	CU-3	R410A	6.53 (1/4)	12.7 (1/2)	c/w PROGRAMMABLE THERMOSTAT, 2 - SIROCCO FANS WITH DC BRUSHLESS MOTORS, BUILT-IN CONDENSATE PUMP (RUN CONCEALED PIPE TO DF-1 SAN (RM 102A))
FC-2	Rm. 103 - TICKETING ROOM	MITSUBISHI / PEFY-P06NMSU-E	CEILING MOUNTED DUCTED	83-100-117	1.8	2.0	5-50	96	0.5	15	208/1/60	790x700x200	19	32	-		R410A	6.53 (1/4)	12.7 (1/2)	c/w PROGRAMMABLE THERMOSTAT, 2 x SIROCCO FANS w/ DC BRUSHLESS MOTORS, AIR FILTER, BUILT-IN CONDENSATE PUMP (RUN CONCEALED PIPE TO L-1 SAN PIPE (RM 111))
FC-3	Rm. 102A - CORRIDOR	MITSUBISHI / PEFY-P12NFMU-E	DUCTED CEILING SUSPENDED AND SUPPORTED IN THE CEILING CAVITY	100-133-175	3.5	4.0	5-50	96	0.68	15	208/1/60	790x700x200	20	32	-		R410A	6.53 (1/4)	12.7 (1/2)	c/w PROGRAMMABLE THERMOSTAT, 2 x SIROCCO FANS WITH DC MOTORS, AIR FILTER, BUILT IN CONDENSATE PUMP (RUN CONCEALED PIPE TO DF-1 SAN (RM 102A))

NOTE
1. ALTERNATIVE MANUFACTURER AND MODEL ARE ACCEPTED AFTER REVIEW AND APPROVAL.
2. PROGRAMMABLE THERMOSTAT TO KEEP ALL FAN COIL UNIT'S FAN CONTINUE TO RUN THROUGH OUT REVENUE HOURS EVEN AFTER HEATING OR COOLING IS NOT DEMANDED ON FAN COIL UNITS.
3. INSTALL EACH FAN COIL UNIT WITH ADEQUATE CLEARANCE FOR SERVICE AND MAINTENANCE REQUIRED BY UNIT MANUFACTURER.
4. REFRIGERANT PIPE SIZES SHOWING IN THE SCHEDULE ARE FOR PRICING PURPOSE. CONTRACTOR TO DOUBLE CHECK AND RE-SIZE THE REFRIGERANT LIQUID AND GAS PIPE ACCORDING TO THE FINAL LAYOUT OF THE INDOOR AND OUTDOOR UNITS AS WELL AS PIPE ROUTING ON SITE. CONTRACTOR TO VERITY THE FINAL PIPE SIZE WITH UNIT SUPPLIER.
5. ALL FAN COIL UNITS SHALL BE OPERATED IN SUCH WAY: ALL FAN COIL UNIT'S FAN SHALL OPERATE ALL THE TIME DURING REVENUE HOURS DEFINED BY END USER EVEN WHEN THE UNITS ARE NOT IN HEATING OR COOLING MODE.

CONDENSING UNIT SCHEDULE

UNIT TAG	LOCATION	MANUFACTURER / MODEL	TYPE	AIR FLOW RATE (l/s)	COOLING CAPACITY (kW)	HEATING CAPACITY (kW)	FAN MOTOR OUTPUT (W)	ELECTRICAL REQUIREMENTS			DIMENSION WxDxH (mm)	WEIGHT (kg)	SEER	REFRIG.	LIQUID LINE (O.D.) (mm) (NPS)	SUCTION LINE (O.D.) (mm) (NPS)	REMARKS
								MCA	MOCP	ELEC.							
CU-1	EXTERIOR - SOUTH SIDE OF BUILDING	MITSUBISHI / PUZ-A24NHA7	MOUNTED ON GROUND SUPPORT	916	7.0	7.6	75	19	26	208/1/60	800x330x600	75	17	R410A	- (-)	- (-)	SERVES AC-1 c/w REVERSE CYCLE DEFROST, LINEAR EXPANSION VALVE REFRIGERANT CONTROL
CU-2	EXTERIOR - EAST SIDE OF BUILDING	MITSUBISHI / PUY-A12NKA7	MOUNTED ON GROUND SUPPORT	1590	3.5	-	46	11	28	208/1/60	871x300x630	41	21	R410A	- (-)	- (-)	SERVES AC-2
CU-3	EXTERIOR - SOUTH SIDE OF BUILDING	MITSUBISHI / PURY-P96TNU-A	MOUNTED ON GROUND SUPPORT	3,917	28.1	30.2	920	44	70	208/3/60	1250x745x1818	300	-	R410A	19.05 (3/4)	22.2 (7/8)	SERVES CSHP-1 THRU CCHP-7, FC-1, FC-2 & FC-4 c/w BC CONTROLLER (CMB-P1012NU-JA1), INVERTER DRIVEN SCROLL COMPRESSOR, 1 x PROPELLER FANS w/ INVERTER-CONTROL BRUSHLESS DC MOTOR

PROVISIONAL. SEE DRAWING M-0008 NEW HVAC PIPING CONSTRUCTION NOTES

NOTE
1. ALTERNATIVE MANUFACTURER AND MODEL ARE ACCEPTED AFTER REVIEW AND APPROVAL.
2. PROVIDE CONCRETE PATIO FOR OUTDOOR UNITS INSTALLATION, SECURE GALVANIZED UNI-STRUST SUPPORTING RACK ON CONCRETE PATIO FOR OUTDOOR UNITS SUPPORT, KEEP THE OUTDOOR UNIT AT MIN 450 MM ABOVE GROUND. MAINTAIN THE SERVICE AND MAINTENANCE CLEARANCE AROUND THE OUTDOOR UNIT AS PER RECOMMENDATION BY UNIT SUPPLIER.
3. REFRIGERANT PIPE SIZES SHOWING IN THE SCHEDULE ARE FOR PRICING PURPOSE. CONTRACTOR TO DOUBLE CHECK AND RE-SIZE THE REFRIGERANT LIQUID AND GAS PIPE ACCORDING TO THE FINAL LAYOUT OF THE INDOOR AND OUTDOOR UNITS AS WELL AS PIPE ROUTING ON SITE. CONTRACTOR TO VERITY THE FINAL PIPE SIZE WITH UNIT SUPPLIER.

AIR CONDITIONER AND CEILING CASSETTE SCHEDULE

UNIT TAG	LOCATION	MANUFACTURER / MODEL	TYPE	AIR FLOW RATE L - M - H (l/s)	COOLING CAPACITY (kW)	HEATING CAPACITY (kW)	MOISTURE REMOVAL (l/hr)	FAN MOTOR OUTPUT (W)	ELECTRICAL REQUIREMENTS			DIMENSION WxDxH (mm)	WEIGHT (kg)	FIELD DRAIN PIPE (mm)	SERVED BY CU	REFRIG.	LIQUID LINE (O.D.) (mm) (NPS)	SUCTION LINE (O.D.) (mm) (NPS)	REMARKS
									MCA	MOCP	ELEC.								
AC-1	Rm. 110 - IT	MITSUBISHI / PKA-A24KA4	WALL MOUNT	300-333-366	7.0	7.6	2.37	56	1	15	208/1/60	1170x295x365	21	16	CU-1	R410A	9.52 (3/8)	15.8 (5/8)	c/w PROGRAMMABLE THERMOSTAT
AC-2	Rm. 114 - O.T.S. (INDOORS)	MITSUBISHI / PKA-A12LA-TH	WALL MOUNT	125-153-182	3.5	N/A	1.28	30	1	15	208/1/60	898x237x299	12.7	16	CU-2	R410A	6.53 (1/4)	12.7 (1/2)	c/w PROGRAMMABLE THERMOSTAT
CCHP-1	Rm. 102 - LOBBY WAITING AREA (WEST)	MITSUBISHI / PLFY-P15NFMU-E	CEILING MOUNTED CASSETTE	125-149-184	4.4	5.0	-	50	0.35	15	208/1/60	570x570x208	14.2 + 2.4	32		R410A	6.53 (1/4)	12.7 (1/2)	c/w PROGRAMMABLE THERMOSTAT, 1 x TURBO FAN DIRECT DRIVEN, AIR FILTER, BUILT IN CONDENSATE PUMP (RUN CONCEALED PIPE TO DF-1 SAN (RM 102A))
CCHP-2	Rm. 102 - LOBBY WAITING AREA (MIDDLE)	MITSUBISHI / PLFY-P15NFMU-E	CEILING MOUNTED CASSETTE	125-149-184	4.4	5.0	-	50	0.35	15	208/1/60	570x570x208	14.2 + 2.4	32		R410A	6.53 (1/4)	12.7 (1/2)	c/w PROGRAMMABLE THERMOSTAT, 1 x TURBO FAN DIRECT DRIVEN, AIR FILTER, BUILT IN CONDENSATE PUMP (RUN CONCEALED PIPE TO DF-1 SAN (RM 102A))
CCHP-3	Rm. 102 - LOBBY WAITING AREA (EAST)	MITSUBISHI / PLFY-P15NFMU-E	CEILING MOUNTED CASSETTE	125-149-184	4.4	5.0	-	50	0.35	15	208/1/60	570x570x208	14.2 + 2.4	32		R410A	6.53 (1/4)	12.7 (1/2)	c/w PROGRAMMABLE THERMOSTAT, 1 x TURBO FAN DIRECT DRIVEN, AIR FILTER, BUILT IN CONDENSATE PUMP PIPED (RUN CONCEALED PIPE TO L-1 SAN PIPE (RM 111))
CCHP-4	Rm. 100 - VESTIBULE 1	MITSUBISHI / PLFY-P12NFMU-E	CEILING MOUNTED CASSETTE	116-132-158	3.5	4.0	-	50	0.29	15	208/1/60	570x570x208	14.2 + 2.4	32	CU-3	R410A	6.53 (1/4)	12.7 (1/2)	c/w PROGRAMMABLE THERMOSTAT, BUILT IN CONDENSATE PUMP (RUN CONCEALED PIPE TO DF-1 SAN (RM 102A))
CCHP-5	Rm. 103 - TICKETING ROOM	MITSUBISHI / PLFY-P12NFMU-E	CEILING MOUNTED CASSETTE	116-132-158	3.5	4.0	-	50	0.29	15	208/1/60	570x570x208	14.2 + 2.4	32		R410A	6.53 (1/4)	12.7 (1/2)	c/w PROGRAMMABLE THERMOSTAT, 1 x TURBO FAN DIRECT DRIVEN, AIR FILTER, BUILT IN CONDENSATE PUMP (RUN CONCEALED PIPE TO L-1 SAN PIPE (RM 111))
CCHP-6	Rm. 101 - VESTIBULE 2	MITSUBISHI / PLFY-P05NFMU-E	CEILING MOUNTED CASSETTE	109-125-133	1.5	1.6	-	50	0.24	15	208/1/60	570x570x208	13 + 2.4	32		R410A	6.53 (1/4)	12.7 (1/2)	c/w PROGRAMMABLE THERMOSTAT, 1 x TURBO FAN DIRECT DRIVEN, AIR FILTER, BUILT IN CONDENSATE PUMP (RUN CONCEALED PIPE TO L-1 SAN PIPE (RM 111))
CCHP-7	Rm. S1 (105) - STAIR 1	MITSUBISHI / PLFY-P05NFMU-E	CEILING MOUNTED CASSETTE	109-125-133	1.5	1.6	-	50	0.24	15	208/1/60	570x570x208	13 + 2.4	32		R410A	6.53 (1/4)	12.7 (1/2)	c/w PROGRAMMABLE THERMOSTAT, 1 x TURBO FAN DIRECT DRIVEN, AIR FILTER, BUILT IN CONDENSATE PUMP(RUN CONCEALED PIPE TO L-3 SAN PIPE (RM 107))

PROVISIONAL. SEE DRAWING M-0008 NEW HVAC PIPING CONSTRUCTION NOTES

NOTE
1. ALTERNATIVE MANUFACTURER AND MODEL ARE ACCEPTED AFTER REVIEW AND APPROVAL.
2. INSTALL EACH HEAT PUMP UNIT WITH ADEQUATE CLEARANCE FOR SERVICE AND MAINTENANCE REQUIRED BY UNIT MANUFACTURER.
3. REFRIGERANT PIPE SIZES SHOWING IN THE SCHEDULE ARE FOR PRICING PURPOSE. CONTRACTOR TO DOUBLE CHECK AND RE-SIZE THE REFRIGERANT LIQUID AND GAS PIPE ACCORDING TO THE FINAL LAYOUT OF THE INDOOR AND OUTDOOR UNITS AS WELL AS PIPE ROUTING ON SITE. CONTRACTOR TO VERITY THE FINAL PIPE SIZE WITH UNIT SUPPLIER.

REFERENCE DRAWINGS		ISSUE			REVISIONS		
		C	2023/12/06	ISSUED FOR TENDER			
		B	2023/07/25	REISSUED FOR BUILDING PERMIT			
		A	2023/04/24	ISSUED FOR BUILDING PERMIT			
DWG NO.	TITLE	NO.	DATE	ISSUED FOR	REV.	DATE	

DRAWN BY: E.M. | DESIGNED BY: A.A.
CHECKED BY: G.W. | APPROVED BY: S.C.
SCALE: AS SHOWN FULL SIZE ONLY

wsp
PROJECT NO. BE20101016

ISSUED FOR TENDER

Niagara Region
NIAGARA REGION PROJECT NO. xxxxxxx

NIAGARA FALLS TRAIN STATION UPGRADES

MECHANICAL SCHEDULES
3 OF 3

CONTRACT NO.	DWG. NO.	REV.	SHEET
STATION RENOVATION	M-0015	C	M-0015

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Drawing Type:
ACUITY CONTROLS
DRAWING PACKAGE
COVER SHEET

Prepared For:
WSP /MMM MARKHAM

Revision	Date
A	11/9/2023
Date:	11/7/2023
Scale:	NOT TO SCALE
Drawn By:	M.R
Project #:	23-24860
DWG Ref:	
Sheet:	LC0.0

Disclaimer

THIS CONTROLS SYSTEM LAYOUT DIAGRAM IS NOT A PROFESSIONAL ENGINEERING DRAWING, AND IS PROVIDED ONLY FOR INFORMATIONAL PURPOSES AND TO HELP THE CUSTOMER OR END-USER (AS APPLICABLE) UNDERSTAND HOW VARIOUS CONTROLS DEVICES ARE ARRANGED AND CONNECT TO EACH OTHER. THIS CONTROLS SYSTEM LAYOUT DIAGRAM IS STRICTLY BASED ON THE INFORMATION PROVIDED TO ACUITY BRANDS, AND IS PROVIDED WITHOUT WARRANTY AS TO ACCURACY, COMPLETENESS, RELIABILITY OR OTHERWISE. IF THE INFORMATION (INCLUDING BUT NOT LIMITED TO FLOOR-PLANS, REFLECTED CEILING PLANS, ELECTRICAL PLANS AND SPECIFICATIONS) PROVIDED TO ACUITY BRANDS IS INCOMPLETE OR NOT CURRENT (I.E., NEWER VERSIONS EXIST), THE ACCURACY OF THE LAYOUT DIAGRAM MAY BE ADVERSELY AFFECTED. ONCE THIS CONTROLS SYSTEM LAYOUT DIAGRAM IS RECEIVED BY THE CUSTOMER OR END-USER (AS APPLICABLE), IT IS THE OBLIGATION OF THE CUSTOMER OR END-USER (AS APPLICABLE) TO CONSULT WITH A PROFESSIONAL ENGINEERING ADVISOR TO DETERMINE WHETHER THE PROPOSED DESIGN MEETS THE APPLICABLE PROJECT REQUIREMENTS FOR THE CONTROLS SYSTEM'S PERFORMANCE, CODE COMPLIANCE, SAFETY, SUITABILITY AND EFFECTIVENESS FOR USE IN A PARTICULAR APPLICATION. IN NO EVENT WILL ACUITY BRANDS BE RESPONSIBLE FOR ANY LOSS RESULTING FROM ANY USE OF THIS CONTROLS SYSTEM LAYOUT DIAGRAM.

General System Notes

ON DIGITAL SYSTEMS, ALL DEVICES TO BE CONNECTED IN A DAISY CHAIN PATTERN SO THAT THE FIRST AND LAST DEVICE IN THE CHAIN HAS AN OPEN PORT.

ON DIGITAL SYSTEMS, CONTRACTOR SHALL NOTE AND LABEL ADDRESS AND LOCATION OF EACH DEVICE ON THE SYSTEM ONE-LINE DIAGRAMS OR SYSTEM LAYOUT DRAWINGS AT TIME OF INSTALLATION.

ONE-LINE DIAGRAMS INDICATE THE REQUIRED GROUPING OF WIRES, NOT THE NUMBER OR SIZE OF CONDUITS.

WIRING SHALL CONFORM TO THE NATIONAL ELECTRICAL CODE (NEC) AND APPLICABLE LOCAL CODES, INCLUDING PROVISION OF EQUIPMENT GROUNDING AS REQUIRED BY THE NEC.

POWER CONDUCTORS SHALL BE SIZED PER THE NEC AMPACITY TABLES (ARTICLE 310), INCLUDING ADJUSTMENT FACTOR AND NEUTRAL CONDUCTOR REQUIREMENTS (FEED AND BRANCH NEUTRAL CONDUCTORS MUST BE COUNTED AS CURRENT CARRYING CONDUCTORS). RUN SEPARATE NEUTRAL CONDUCTORS FOR EACH DIMMED LOAD CIRCUIT.

FOR 0-10VDC DIMMING SYSTEMS, VIOLET AND GRAY CONDUCTORS ARE FOR 0-10VDC LOW VOLTAGE TERMINATIONS ONLY. NEVER TERMINATE LINE VOLTAGE (120/230/277VAC) TO VIOLET AND GRAY.

CONTRACTOR IS RESPONSIBLE FOR ALL CONTROL TERMINATIONS. NO SPLICES ARE PERMITTED IN CONTROL WIRING.

POWER AND CONTROL CONDUCTORS MUST NOT SHARE THE SAME RACEWAY OR CONDUIT.

LIGHTING CONTROL EQUIPMENT MUST BE INSTALLED, MAINTAINED, AND OPERATED IN AN "OFFICE CLEAN" DRY ENVIRONMENT, INDOOR DRY LOCATIONS ONLY, 10% - 90% RELATIVE HUMIDITY; AMBIENT TEMPERATURE 0°- 40°C (32°- 104°F) - 0°- 35°C (32°- 95°F) RECOMMENDED.

SENSORS IN ELECTRICAL/MECHANICAL LOCATIONS NEED TO BE VERIFIED WITH AUTHORITY HAVING JURISDICTION. REFER TO NEC 110.26.D.

RELAY AND DIMMER PANEL SCHEDULES SHOULD CONTAIN BREAKER PANEL INPUTS AS WELL AS ZONES/AREAS CONTROLLED.

VERIFY MAXIMUM CABLE LENGTHS BASED ON CONTROL SYSTEM. MANUFACTURER IS NOT RESPONSIBLE FOR SYSTEMS EXCEEDING CABLING PARAMETERS.

LOW VOLTAGE CABLE MUST BE INSTALLED AT LEAST 12 INCHES FROM ALL LINE VOLTAGE CONDUCTORS EXCEPT TO CROSS OR MAKE TERMINATIONS. CAT. 5 CABLE MUST BE KEPT AWAY FROM ALL EMF DEVICES SUCH AS BALLASTS OR TRANSFORMERS.

nLight System Notes

EVERY NLIGHT ENABLED DEVICE (INCLUDING NLIGHT EANABLED FIXTURES) IS FURNISHED WITH (1) PERMANENTLY ADHERED ID TAG AND (1) MATCHING, PARTIALLY ADHERED ID TAG TO BE PLACED ON THE RISER DIAGRAM SHEET, OR THE LIGHTING CONTROL LAYOUT SHEET, PROVIDED AS PART OF AN NLIGHT SUBMITTAL. THIS SHALL BE DONE DURING INSTALLATION AND PRIOR TO FACTORY STARTUP. FAILURE TO COMPLY MAY RESULT IN STARTUP DELAYS AND ADDITIONAL COSTS AT THE CONTRACTOR'S EXPENSE. DO NOT PLACE DEVICE ID STICKERS ON FLOOR PLAN UNLESS REQUIRED TO EXECUTE NFLOORPLAN OR ENVYSION SERVICES, REFERENCE NFLOORPLAN SERVICE NOTES OR ENVYSION SERVICE NOTES ON THIS SHEET FOR SPECIFIC REQUIREMENTS.

ONE RELAY PACK OR NLIGHT ENABLED FIXTURE IS NEEDED PER CIRCUIT/ZONE TO BE CONTROLLED AND CAN RESIDE WITHIN SENSORS, WALLPODS, OR RELAY PACKS. POWER PACK PLACEMENT ON DRAWINGS IS FOR COUNTING ONLY; FINAL PLACEMENT IS UP TO DISCRETION OF CONTRACTOR/ENGINEER. PLEASE RECHECK COUNTS TO VERIFY THE NUMBER OF RELAYS NEEDED TO SWITCH ALL DESIRED LOADS. RELAY PACKS AND POWER SUPPLIES REQUIRE A CONSTANT HOT. AN UNSWITCHED HOT BEING SUPPLIED TO RELAY PACKS MAY RESULT IN COMMUNICATION LOSS WHEN POWER IS NOT AVAILABLE.

BRIDGES, RELAYS, POWER PACKS, WALLPODS, AND SENSORS ON DRAWINGS WERE PLACED WITH INFORMATION PROVIDED AT TIME OF DESIGN. ADDITIONAL BRIDGES AND/OR SENSORS MAY BE REQUIRED DEPENDING ON BUILDING CHANGES, FINAL PARTITION HEIGHT/PLACEMENT, FURNITURE PLACEMENT, EQUIPMENT HEIGHT/PLACEMENT AND SHELVING HEIGHT/PLACEMENT.

THE LAYOUT OF THE NETWORK BACKBONE (BRIDGES AND GATEWAYS) HAS BEEN PLACED IN A SEPARATE TREE DIAGRAM AND NOT ON THE ACTUAL LAYOUT. FINAL PLACEMENT OF THE BRIDGE(S) AND GATEWAY(S) DEVICES SHALL BE AT THE CONTRACTOR/ENGINEER DISCRETION.

ALL DEVICES HAVE RJ-45 FEMALE PORTS. MAKING NETWORK CONTROL CABLES IS REQUIRED, T568B TERMINATIONS ARE RECOMMENDED. IT IS IMPERATIVE THAT ALL NETWORK CONTROL CABLES BE TESTED WITH A LAN CABLE TESTER TO VERIFY PROPER TERMINATIONS.

DAISY-CHAINED DEVICES SHOULD BE POWERED UP AND WORKING ON DEFAULT PROGRAMMING PRIOR TO CONNECTION TO BRIDGE OR GATEWAYS.

LOW VOLTAGE NETWORK CONTROL CABLE (CAT5/5E/6) RUNS FOR LOCAL ZONES, HOMERUNS AND BACKBONE SHOULD BE WHITE WITH CABLES LABELED.

CONTRACTOR TO VERIFY BLINK/DIAGNOSTIC CODES (VISIT HTTP://NLIGHTCONTROLS.COM/WP-CONTENT/UPLOADS/NLIGHT_POCKET_GUIDE.PDF) WHEN CONNECTING GATEWAYS/BRIDGES TO ZONES.

MAXIMUM CABLE LENGTH FROM START DEVICE TO END DEVICE IS 1500' INCLUDING HOMERUN TO BRIDGE DEVICE, IF PRESENT MANUFACTURER IS NOT RESPONSIBLE FOR SYSTEMS EXCEEDING CABLING PARAMETERS.

SSI Notes

ONE POWER PACK IS NEEDED PER CIRCUIT/ZONE TO BE CONTROLLED BY A MAXIMUM OF 14 LOW VOLTAGE SENSORS. POWER PACK PLACEMENT ON DRAWINGS IS FOR COUNTING ONLY. FINAL PLACEMENT OF POWER PACK IS UP TO CONTRACTOR/ENGINEER. PLEASE RECHECK COUNTS TO VERIFY THE NUMBER OF POWER PACKS NEEDED TO MAKE A COMPLETE SYSTEM. THE MAXIMUM NUMBER OF POWER PACKS THAT CAN BE CONTROLLED BY A GROUP OF SENSORS IS 5. IF YOU HAVE MORE THEN 5 CIRCUITS CONTROLLING A SPACE YOU WILL EITHER HAVE TO BREAK UP THE SPACE INTO ZONES OR USE ONE POWER PACK PER LIGHTING CONTACTOR TO PULL IN THE CIRCUITS.

SENSOR PLACEMENT AND TYPES WERE PLACED WITH CURRENT PROJECT INFORMATION. ADDITIONAL SENSORS AND TYPES OF SENSORS MAY BE REQUIRED TO PROVIDE COMPLETE COVERAGE DEPENDING ON DRAWING CHANGES, EMS/BMS, FINAL PARTITION HEIGHT/PLACEMENT, FURNITURE PLACEMENT, EQUIPMENT HEIGHT/PLACEMENT AND SHELVING HEIGHT/PLACEMENT.

FOR MAXIMUM DISTANCE USING CEILING MOUNTED 360° SENSORS ROTATE THE SENSOR CLOCKWISE SO THAT THE SCREW AXIS IS POSITIONED 7.5° OFF THE ENTRANCE AXIS. WHEN WALKING ACROSS A SENSOR'S BEAM, DETECTION WILL OCCUR AT APPROXIMATELY LONGEST DISTANCE. (REFER TO SPECIFICATION SHEET FOR PICTORIAL OF ALIGNMENT)

SENSOR MASKING KITS MAY BE REQUIRED TO LIMIT COVERAGE DEPENDING ON YOUR REQUIREMENTS.

MAXIMUM CABLE LENGTH FROM START DEVICE TO END DEVICE IS 1800'. MANUFACTURER IS NOT RESPONSIBLE FOR SYSTEMS EXCEEDING CABLING PARAMETERS.

Load Types

LINE VOLTAGE INCANDESCENT - NON-PHASE DEPENDENT FOR DIMMING.

MAGNETIC LOW VOLTAGE INCANDESCENT - ALLOWABLE IN FORWARD PHASE CONTROL MODE ONLY. TRANSFORMER MUST BE RATED FOR DIMMING BY ITS MANUFACTURER. ADD 25% TO LAMP WATTAGE TO ALLOW FOR TRANSFORMER LOSS AND TO CALCULATE TOTAL LOAD.

FLUORESCENT - ALLOWABLE WITH 2-WIRE BALLAST, 0-10VDC BALLASTS, SOME 3-WIRE AND SWITCHED DEPENDING ON SYSTEM COMPATIBILITY. VERIFY CONTROL TYPES WITH YOUR REGIONAL SUPPORT TEAM.

LED - DIMMING ALLOWED PER LED DRIVER MANUFACTURER SPECIFICATIONS. VERIFY CONTROL TYPES WITH YOUR REGIONAL SUPPORT TEAM.

NEON and COLD CATHODE - ALLOWABLE IN FORWARD PHASE CONTROL MODE ONLY. BALLAST MUST BE RATED FOR DIMMING BY ITS MANUFACTURER AND BE NORMAL (LOW) POWER FACTOR. CONNECTED LOAD MUST NOT EXCEED 50% OF THE DIMMER'S NOMINAL RATING.

MOTORS - NO DIMMING ALLOWED. SWITCHED CONTROL SOURCE ONLY.

ELECTRONIC LOW VOLTAGE INCANDESCENT - ALLOWABLE, NORMALLY IN REVERSE PHASE CONTROL MODE ONLY. ELV TRANSFORMER MUST BE RATED FOR DIMMING BY ITS MANUFACTURER.

HID - DIMMING NOT ALLOWED UNLESS WITH DIMMABLE HID DRIVER. OTHERWISE, MUST BE ON SWITCHED CONTROL SOURCE.

EMERGENCY - PLEASE CONTACT YOUR REGIONAL SUPPORT TEAM TO VERIFY EMERGENCY CONTROLS NECESSARY BASED ON SYSTEM REQUIREMENTS.

FOR ADDITIONAL TECH SUPPORT AND INSTALLATION INFORMATION PLEASE CALL 1.800.535.2465

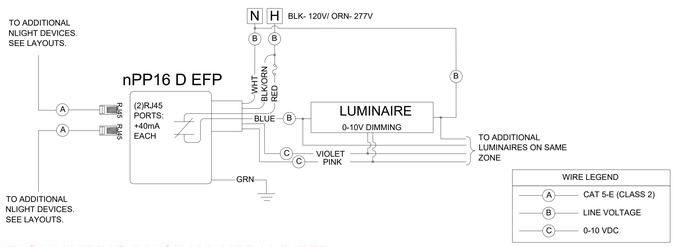
AcuityBrands®

Niagara Falls Train Station Upgrades

Drawing Type: SYSTEM NOTES

Prepared For: WSP MMM MARKHAM

Revision	Date
A	11/9/2023
Date:	11/7/2023
Scale:	NOT TO SCALE
Drawn By:	M.R
Project #:	23-24860
DWG Ref:	
Sheet:	LC0.1

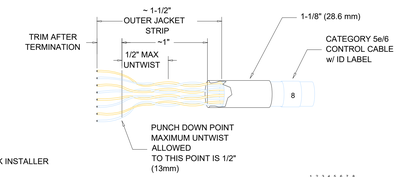


TYPICAL WIRING DIAGRAM: NPP16 D EFP

N.T.S.

TIA / EIA-568-B CABLING STANDARD TERMINATION

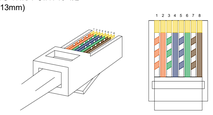
Function	PAIR #	PIN OUT (T568B)	Wire Color
(T1)	1	5	WHITE w/ BLUE
(R1)		4	BLUE
Tx + (T2)	2	1	WHITE w/ ORANGE
Tx - (R2)		2	ORANGE
Rx + (T3)	3	3	WHITE w/ GREEN
Rx - (R3)		6	GREEN
(T4)	4	7	WHITE w/ BROWN
(R4)		8	BROWN



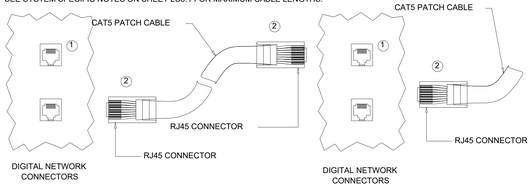
TERMINATION & TESTING OF CAT5 CABLES MUST BE DONE BY A QUALIFIED NETWORK INSTALLER

Cable termination requirements :

1. Strip off outer jacket - approximately 1-1/2" (37.6 mm)
2. Terminate approximately 1/2" (12.2 mm) from end of conductors on type 110 punch down block or connector per schedule (t568b) - maximum untwist of conductors to terminations is 1/2" (12.2 mm) - trim excess leads.



SEE SYSTEM SPECIFIC NOTES ON SHEET LC0.1 FOR MAXIMUM CABLE LENGTHS.



1. WHITE w/ ORANGE
2. ORANGE
3. WHITE w/ GREEN
4. BLUE
5. WHITE w/ BLUE
6. GREEN
7. WHITE w/ BROWN
8. BROWN

Notes:

Daisy-chain CAT5 patch cable with RJ45 connectors from digital device to digital device.

Refer to manufacturers instructions for long distance runs between digital devices.

Crimp and test each cable with a LAN circuit tester prior to installation.

① RJ45 FEMALE CONNECTOR

② RJ45 MALE CONNECTORS. ALL CABLES SUPPLIED BY CONTRACTOR.

CAT5E/6 CABLE TERMINATION

N.T.S.

AcuityBrands®

Niagara Falls Train Station Upgrades

Drawing Type: Details

Prepared For: WSP /MMM MARKHAM

Revision	Date
A	11/9/2023
Date:	11/7/2023
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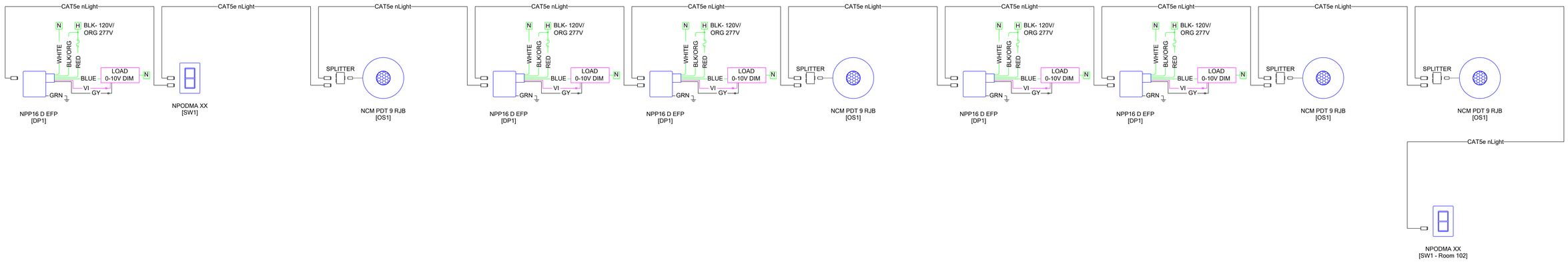
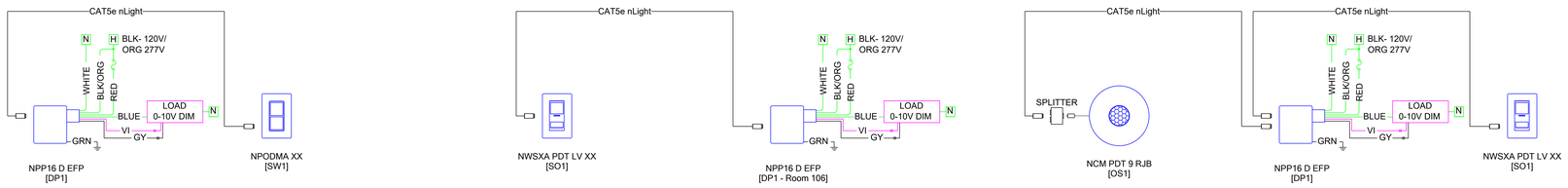
DWG Ref:	

Sheet: Details 1



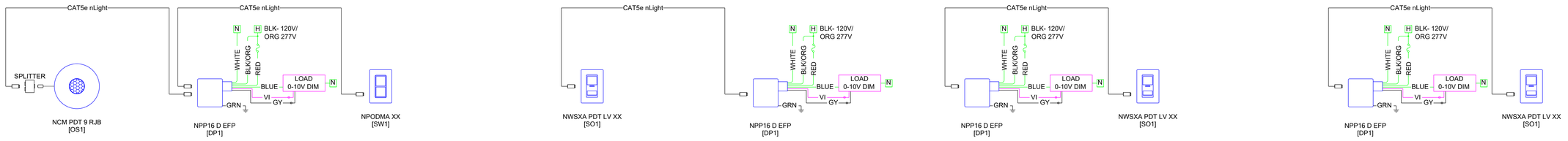
2 nLight - Room 102
E-0005



3 nLight - Room 103
E-0005

4 nLight - Room 106
E-0005

5 nLight - Room 107
E-0005

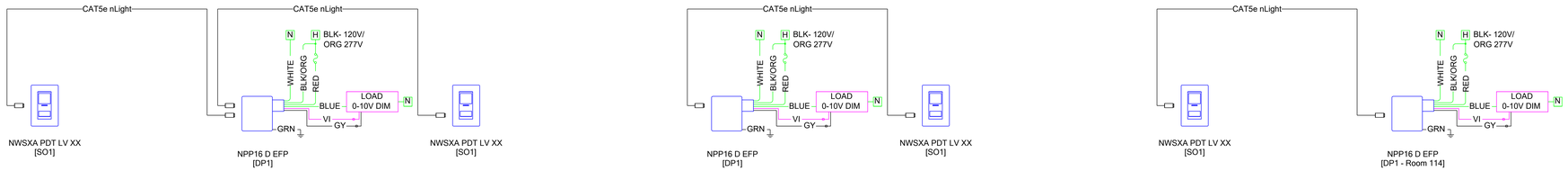


6 nLight - Room 108
E-0005

7 nLight - Room 109
E-0005

8 nLight - Room 110
E-0005

9 nLight - Room 111
E-0005



10 nLight - Room 112
E-0005

11 nLight - Room 113
E-0005

12 nLight - Room 114
E-0005

Niagara Falls Train Station Upgrades

Drawing Type: Riser	Prepared For: WSP /MMM MARKHAM
Revision	Date
A	11/9/2023
Date:	11/7/2023
Scale:	NOT TO SCALE
Drawn By:	M.R
Project #:	23-24860
DWG Ref:	
Sheet:	Riser 1