

Specifications and drawings for

**Daniel J. MacDonald Modernization**

are amended as follows:

**SPECIFICATIONS**

**1.1 REVISED SPECIFICATIONS**

- .1 The following revised specifications issued with this addendum supersede previously issued specifications of the same title and number
  - .1 Section No. 00 01 10\_R4, Table of Contents.
  - .2 Section No. 01 61 10\_R1, List of Materials.
  - .3 Section No. 06 40 00\_R1, Architectural Woodwork
  - .4 Section No. 10 00 00\_R1, Manufactured Specialties
  - .5 Section No. 10 23 26\_R1, Glass Partition System.
  - .6 Section No. 25 05 02\_R1, EMCS Submittals and Review Process.
  - .7 Section No. 26 05 05\_R1, Selective Demolition for Electrical.
  - .8 Section No. 26 32 13.01\_R1, Power Generation Diesel.

**DRAWINGS**

**1.2 REVISED DRAWINGS**

- .1 The following Drawings are revised and re-issued with this addendum. Revisions are shown in bubbled areas on drawings. The following descriptions of revisions are for convenience only and do not define or limit the extent of actual revisions indicated on drawings:
  - .1 Drawing A01-07 – WALL ASSEMBLIES
    - .1 Wall Type 3.1 revised to show GS-1 glass partition system with laminated glass.
  - .2 Drawing A03-01 – DOOR TYPES & DETAILS
    - .1 Frame Type 1 revised to show targeted dimension sizes for glass lites.
    - .2 Frame Type D1 & E2 revised to show new glass lite dimensions.
  - .3 Drawing A21-05 - FIFTH FLOOR PARTITION PLAN
    - .1 Millwork Tag and Hatch MW 5-3 removed in Room 5-04
  - .4 Drawing A53-01 – STAGE DETAILS
    - .1 Remove reference to biofilter wall.

- .5 Drawing A93-05 - FIFTH FLOOR FURNITURE & EQUIPMENT PLAN
  - .1 Millwork Hatch removed in Room 5-04, and new furniture tag (ST-11) added

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| <b>DIVISION 25</b> | <b>INTEGRATED AUTOMATION</b>                                                      |                                |                                  |              |
|                    | 25 01 11 EMCS: Start-up, Verification and Commissioning                           | M                              | 27 May 2022                      | 7            |
|                    | 25 01 12 EMCS: Training                                                           | M                              | 27 May 2022                      | 3            |
|                    | 25 05 01 EMCS: General Requirements                                               | M                              | 27 May 2022                      | 8            |
|                    | 25 05 02_R1 EMCS: Submittals and Review Process                                   | M                              | <del>27 May</del> 18<br>Jul 2022 | 4            |
|                    | 25 05 03 – EMCS: Project Record Documents                                         | M                              | 27 May 2022                      | 3            |
|                    | 25 05 54 EMCS: Identification                                                     | M                              | 27 May 2022                      | 2            |
|                    | 25 05 60 EMCS: Field Installation                                                 | M                              | 27 May 2022                      | 10           |
|                    | 25 08 20 EMCS: Warranty and Maintenance                                           | M                              | 27 May 2022                      | 4            |
|                    | 25 10 01 EMCS: Local Area Network (LAN)                                           | M                              | 27 May 2022                      | 2            |
|                    | 25 10 02 EMCS: Operator Work Station (OWS)                                        | M                              | 27 May 2022                      | 11           |
|                    | 25 30 01 EMCS: Building Controllers                                               | M                              | 27 May 2022                      | 10           |
|                    | 25 30 02 EMCS: Field Control Devices                                              | M                              | 27 May 2022                      | 16           |
|                    | 25 90 01 EMCS: Site Requirements, Applications And Systems Sequences Of Operation | M                              | 27 May 2022                      | 3            |
|                    | 25 90 01_CS401 Domestic Cold Water System                                         | M                              | 27 May 2022                      | 1            |
|                    | 25 90 01_CS401 Domestic Cold Water System – Control Points List                   | M                              | 27 May 2022                      | 1            |
|                    | 25 90 01_CS402_R1 Domestic Hot Water System                                       | M                              | 08 Jul 2022                      | 1            |
|                    | 25 90 01_CS402_R1 Domestic Hot Water System – Control Points List                 | M                              | 08 Jul 2022                      | 1            |
|                    | 25 90 01_CS411 Sanitary, Storm and Elevator Sump Pumps                            | M                              | 27 May 2022                      | 1            |
|                    | 25 90 01_CS411 Sanitary, Storm and Elevator Sump Pumps – Control Points List      | M                              | 27 May 2022                      | 1            |
|                    | 25 90 01_CS601 Heat Recovery Chillers                                             | M                              | 27 May 2022                      | 3            |
|                    | 25 90 01_CS601_R1 Heat Recovery Chillers – Control Points List                    | M                              | 29 Jun 2022                      | 1            |

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|                 | 25 90 01_CS611 Chilled Water Distribution System                                                             | M                              | 27 May 2022 | 2            |
|                 | 25 90 01_CS611_R1 Chilled Water Distribution System – Control Points List                                    | M                              | 29 Jun 2022 | 1            |
|                 | 25 90 01_CS621 Heating Water Distribution System                                                             | M                              | 27 May 2022 | 2            |
|                 | 25 90 01_CS621_R1 Heating Water Distribution System – Control Points List                                    | M                              | 29 Jun 2022 | 1            |
|                 | 25 90 01_CS701 Make-Up Air Dedicated Outdoor Air System with Energy Recovery                                 | M                              | 27 May 2022 | 3            |
|                 | 25 90 01_CS701_R1 Make-Up Air Dedicated Outdoor Air System with Energy Recovery System – Control Points List | M                              | 29 Jun 2022 | 1            |
|                 | 25 90 01_CS722 Unit Heaters Hydronic                                                                         | M                              | 27 May 2022 | 1            |
|                 | 25 90 01_CS722 Unit Heaters Hydronic – Control Points List                                                   | M                              | 27 May 2022 | 1            |
|                 | 25 90 01_CS731 Wallfin Convectors Hydronic                                                                   | M                              | 27 May 2022 | 1            |
|                 | 25 90 01_CS731_R1 Wallfin Convectors Hydronic – Control Points List                                          | M                              | 29 Jun 2022 | 1            |
|                 | 25 90 01_CS732 Forced Flow Heaters Hydronic                                                                  | M                              | 27 May 2022 | 1            |
|                 | 25 90 01_CS732_R1 Forced Flow Heaters Hydronic – Control Points List                                         | M                              | 29 Jun 2022 | 1            |
|                 | 25 90 01_CS737 Fan Coil Units                                                                                | M                              | 27 May 2022 | 1            |
|                 | 25 90 01_CS737_R1 Fan Coil Units – Control Points List                                                       | M                              | 29 Jun 2022 | 1            |
|                 | 25 90 01_CS801 Washroom Exhaust                                                                              | M                              | 27 May 2022 | 1            |
|                 | 25 90 01_CS801 Washroom Exhaust – Control Points List                                                        | M                              | 27 May 2022 | 1            |
|                 | 25 90 01_CS805 Elevator Room Ventilation                                                                     | M                              | 27 May 2022 | 1            |
|                 | 25 90 01_CS805 Elevator Room Ventilation – Control Points List                                               | M                              | 27 May 2022 | 1            |
|                 | 25 90 01_CS809 Parking Garage Ventilation                                                                    | M                              | 27 May 2022 | 1            |
|                 | 25 90 01_CS809_R1 Parking Garage Ventilation – Control Points List                                           | M                              | 29 Jun 2022 | 1            |

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|                 | 25 90 01_CS810 Mechanical Room Ventilation                                                       | M                              | 27 May 2022 | 2            |
|                 | 25 90 01_CS810_R1 Mechanical Room Ventilation – Control Points List                              | M                              | 29 Jun 2022 | 1            |
|                 | 25 90 01_CS812 Destratification Fans System                                                      | M                              | 27 May 2022 | 1            |
|                 | 25 90 01_CS812 Destratification Fans System – Control Points List                                | M                              | 27 May 2022 | 1            |
|                 | 25 90 01_CS821 Fan Powered VAV Dedicated Outdoor Air System                                      | M                              | 27 May 2022 | 2            |
|                 | 25 90 01_CS821_R1 Fan Powered VAV Dedicated Outdoor Air System – Control Points List             | M                              | 29 Jun 2022 | 1            |
|                 | 25 90 01_CS824 Demand Control Ventilation VAV with Active Chilled Beams                          | M                              | 27 May 2022 | 2            |
|                 | 25 90 01_CS824_R1 Demand Control Ventilation VAV with Active Chilled Beams – Control Points List | M                              | 29 Jun 2022 | 1            |
|                 | 25 90 01_CS825 Demand Control Ventilation VAV with Fan Coil Units                                | M                              | 27 May 2022 | 2            |
|                 | 25 90 01_CS825_R1 Demand Control Ventilation VAV with Fan Coil Units– Control Points List        | M                              | 29 Jun 2022 | 1            |
|                 | 25 90 01_CS831 Humidification System                                                             | M                              | 27 May 2022 | 1            |
|                 | 25 90 01_CS831_R1 Humidification System – Control Points List                                    | M                              | 29 Jun 2022 | 1            |
|                 | 25 90 01_CS832 Glycol Make-up System                                                             | M                              | 27 May 2022 | 1            |
|                 | 25 90 01_CS832 Glycol Make-up System – Control Points List                                       | M                              | 27 May 2022 | 1            |
|                 | 25 90 01_CS901 Geothermal Field Management System                                                | M                              | 27 May 2022 | 2            |
|                 | 25 90 01_CS901 Geothermal Field Management System – Control Points List                          | M                              | 27 May 2022 | 1            |
|                 | 25 90 01_CS910 Miscellaneous Equipment                                                           | M                              | 08 Jul 2022 | 1            |
|                 | 25 90 01_CS910 Miscellaneous Equipment – Control Points List                                     | M                              | 08 Jul 2022 | 1            |
|                 | 25 90 01_CS912 Lighting System                                                                   | M                              | 08 Jul 2022 | 1            |

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| <u>DIVISION</u>    | <u>SECTION</u>                                                       | <u>DOCUMENT<br/>RESPONSIBILITY</u> | <u>DATE</u>                           | <u>PAGES</u> |
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|                    | 25 90 01_CS912 Lighting System – Control Points List                 | M                                  | 08 Jul 2022                           | 1            |
| <b>DIVISION 26</b> | <b>ELECTRICAL</b>                                                    |                                    |                                       |              |
|                    | 26 05 00 Common Work Results for Electrical                          | E                                  | 27 May 2022                           | 12           |
|                    | 26 05 04 Existing Building – Modifications                           | E                                  | 27 May 2022                           | 3            |
|                    | 26 05 05_R1 Selective Demolition for Electrical                      | E                                  | <del>27 May 2022</del><br>18 Jul 2022 | 5            |
|                    | 26 05 20 Wire and Box Connectors (0-1000 V)                          | E                                  | 27 May 2022                           | 2            |
|                    | 26 05 21 Wires and Cables (0-1000 V)                                 | E                                  | 27 May 2022                           | 5            |
|                    | 26 05 22 Connectors and Terminations                                 | E                                  | 27 May 2022                           | 2            |
|                    | 26 05 28 Grounding – Secondary                                       | E                                  | 27 May 2022                           | 4            |
|                    | 26 05 29 Hangers and Supports for Electrical Systems                 | E                                  | 27 May 2022                           | 2            |
|                    | 26 05 31 Splitters, Junction, Pull Boxes and Cabinets                | E                                  | 27 May 2022                           | 2            |
|                    | 26 05 32 Outlet Boxes, Conduit Boxes and Fittings                    | E                                  | 27 May 2022                           | 2            |
|                    | 26 05 34 Conduits, Conduit Fastenings and Conduit Fittings           | E                                  | 27 May 2022                           | 4            |
|                    | 26 05 36 Cable Trays for Electrical Systems                          | E                                  | 27 May 2022                           | 2            |
|                    | 26 05 37 Wireways and Auxiliary Gutters                              | E                                  | 27 May 2022                           | 2            |
|                    | 26 05 48 Vibration and Seismic Controls                              | E                                  | 27 May 2022                           | 6            |
|                    | 26 08 02 Field Testing and Commissioning – Low Voltage Installations | E                                  | 27 May 2022                           | 7            |
|                    | 26 09 13 Power Monitoring                                            | E                                  | 08 Jul 2022                           | 7            |
|                    | 26 09 43 Network Lighting Controls                                   | E                                  | 27 May 2022                           | 16           |
|                    | 26 12 16.01 Dry Type Transformers Up To 600 V Primary                | E                                  | 27 May 2022                           | 3            |
|                    | 26 22 19 Control and Signal Transformers                             | E                                  | 27 May 2022                           | 2            |
|                    | 26 24 13 Switchboards                                                | E                                  | 27 May 2022                           | 5            |
|                    | 26 24 16.01 Panelboards Breaker Type                                 | E                                  | 27 May 2022                           | 3            |
|                    | 26 27 26 Wiring Devices                                              | E                                  | 27 May 2022                           | 3            |

| <u>DIVISION</u>    | <u>SECTION</u>                                                              | <u>DOCUMENT RESPONSIBILITY</u> | <u>DATE</u>                          | <u>PAGES</u> |
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|                    | 26 28 13.01 Fuses – Low Voltage                                             | E                              | 27 May 2022                          | 2            |
|                    | 26 28 16.02 Moulded Case Circuit Breakers                                   | E                              | 27 May 2022                          | 2            |
|                    | 26 28 18 Ground Fault Equipment Protection                                  | E                              | 27 May 2022                          | 3            |
|                    | 26 28 20 Ground Fault Circuit Interrupters - Class A                        | E                              | 27 May 2022                          | 2            |
|                    | 26 28 23 Disconnect Switches - Fused and Non-Fused                          | E                              | 27 May 2022                          | 2            |
|                    | 26 29 01 Contactors                                                         | E                              | 27 May 2022                          | 3            |
|                    | 26 29 03 Control Devices                                                    | E                              | 27 May 2022                          | 4            |
|                    | 26 29 10 Motor Starters to 600 V                                            | E                              | 27 May 2022                          | 5            |
|                    | 26 32 13.01 <b>R1</b> Power Generation Diesel                               | E                              | <del>27 May</del> <b>18 Jul</b> 2022 | 14           |
|                    | 26 36 23 Automatic Transfer Switches                                        | E                              | 27 May 2022                          | 7            |
|                    | 26 50 00 Lighting                                                           | E                              | 27 May 2022                          | 3            |
|                    | 26 52 13.13 Emergency Lighting                                              | E                              | 27 May 2022                          | 3            |
|                    | 26 52 13.16 Exit Signs                                                      | E                              | 27 May 2022                          | 2            |
| <b>DIVISION 27</b> | <b>COMMUNICATIONS</b>                                                       |                                |                                      |              |
|                    | 27 05 00 Common Work Results for Communications                             | E                              | 27 May 2022                          | 9            |
|                    | 27 51 19 Sound Masking System                                               | E                              | 27 May 2022                          | 8            |
| <b>DIVISION 28</b> | <b>ELECTRONIC SAFETY AND SECURITY</b>                                       |                                |                                      |              |
|                    | 28 10 00 Access Control, Intrusion Detection and Video Surveillance Systems | E                              | 27 May 2022                          | 32           |
|                    | 28 31 00.02 Multiplex Fire Alarm and Voice Communication Systems            | E                              | 27 May 2022                          | 14           |
| <b>DIVISION 31</b> | <b>EARTHWORK</b>                                                            |                                |                                      |              |
|                    | 31 00 00 Earthwork                                                          | C                              | 27 May 2022                          | 8            |
| <b>DIVISION 32</b> | <b>EXTERIOR IMPROVEMENTS</b>                                                |                                |                                      |              |
|                    | 32 01 90.23 – Pruning                                                       | L                              | 27 May 2022                          | 4            |



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| <u>DIVISION</u>      | <u>SECTION</u>                                                                                                                    | <u>DOCUMENT RESPONSIBILITY</u> | <u>DATE</u> | <u>PAGES</u> |
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|                      | 32 01 90.33 - Tree and Shrub Preservation                                                                                         | L                              | 27 May 2022 | 4            |
|                      | 32 12 16 Asphalt Paving                                                                                                           | C                              | 27 May 2022 | 4            |
| <b>VOLUME 3 OF 3</b> |                                                                                                                                   |                                |             |              |
| <b>APPENDIX 1</b>    | <b>DESIGNATED SUBSTANCES AND HAZARDOUS BUILDING MATERIALS</b>                                                                     |                                |             |              |
|                      | Hazardous Materials Assessment Report, prepared by All-Tech Environmental Services Limited                                        | Info                           | 04 Jan 2021 | 68           |
|                      | Data Gap Analysis & Intrusive Asbestos Survey, prepared by Englobe                                                                | Info                           | 28 Jun 2019 | 37           |
|                      | DRAFT - Identification, Quantification and Abatement Estimates for Asbestos-Containing Materials - Letter, prepared by Englobe    | Info                           | 22 Mar 2019 | 4            |
|                      | Halocarbon Standard Operating Procedure, prepared by MCW Maricor                                                                  | Info                           | Oct 2012    | 50           |
| <b>APPENDIX 2</b>    | <b>BUILDING CONDITION REPORTS</b>                                                                                                 |                                |             |              |
|                      | Building Condition Report 2017                                                                                                    | Info                           | 26 Apr 2017 | 103          |
| <b>APPENDIX 3</b>    | <b>GEOTECHNICAL INVESTIGATION</b>                                                                                                 |                                |             |              |
|                      | EastTech Geotechnical Report - Daniel J. MacDonald Building Charlottetown, PEI, prepared by EastTech Engineering Consultants Inc. | Info                           | 21 May 2020 | 18           |
|                      | Charlottetown - DJM Building Phase II Soil Investigation, prepared by Jacques, Whitford & Associated Ltd.                         | Info                           | 15 Aug 1980 | 25           |

**LEGEND TO DOCUMENTS RESPONSIBILITY**

- .1 A - Denotes documents prepared by Architect.
- .2 HS – Denotes documents prepared by Health & Safety Advisor, PSPC Human Resources Branch, Construction & Maintenance.
- .3 SC - Denotes documents prepared by Sustainability Consultant.

- .4 Cx – Denotes documents prepared by Commissioning Agent.
- .5 Env - Denotes documents prepared by PSPC Environmental Group.
- .6 S - Denotes documents prepared by Structural Engineer.
- .7 H - Denotes documents prepared by Architectural Hardware Consultant.
- .8 AV - Denotes documents prepared by Audio Visual Consultant
- .9 M - Denotes documents prepared by Mechanical Engineer.
- .10 E - Denotes documents prepared by Electrical Engineer.
- .11 C – Denotes documents prepared by Civil Engineer
- .12 L - Landscape documents prepared by PSPC
- .13 Info - Denotes Information Documents prepared by various entities.

**END OF SECTION**

NOTE: The application / location for the materials indicated is not limited to the list below and is to be used in conjunction with and may be supplemented by the Specifications, Schedules, and Drawings. Refer to Specifications, Schedules, and Drawings for full extent of material application and additional material types.


| CODE | ITEM | DESCRIPTION | APPLICATION / LOCATION |
|------|------|-------------|------------------------|
|------|------|-------------|------------------------|

Where a product is indicated with a particular colour, texture, or pattern, that product is the basis for matching the colour, texture, or pattern in the Work.

#### DIVISION 03 - CONCRETE

|                |                                  |                                                                                                                                                                                 |                |
|----------------|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| <b>CSLR-1</b>  | <b>Concrete Sealer</b>           | Silane Sealer                                                                                                                                                                   | Parking Garage |
| <b>C-TOP-1</b> | <b>Polished Concrete Topping</b> | Fast-setting, high strength, cementitious, non-shrink, polishable tinted architectural topping, fully banded.<br><br>Polish to Medium Gloss Finish<br>Colour to match Tile CT-1 | Atrium         |




#### DIVISION 04 - MASONRY

|              |                       |                                                                                                                                                                                                                                      |                                                                                                                        |
|--------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| <b>BRK-1</b> | <b>Brick Cladding</b> | Salvaged brick from onsite exterior wall demolition.<br><br>Or<br><br>New Brick to Match Existing as required. Provide samples to Departmental Representative for Approval. New brick to be mixed with salvaged brick proportionally | Exterior;<br>Interior (lobby)<br> |
|--------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|


#### DIVISION 05 – METALS

|               |                                            |                                                                                                                                                                                   |                                                                                                                                                |
|---------------|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>MET-A1</b> | <b>Metal Finish - Prefinished Aluminum</b> | Shop Applied Anodized Coating for Aluminum<br><br>AAMA Class 1<br><br>Exterior Grade<br><br>Min Film Thickness +0.7mils<br><br>Colour: Light Bronze<br>RGB Colour Code: 110-95-64 | Curtain Wall Sections - CW-3, CW-4<br>Entrance Canopy<br> |
|---------------|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|

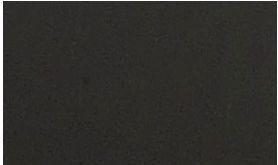

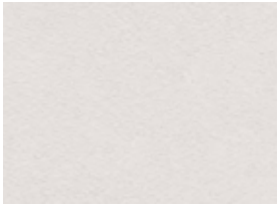
NOTE: The application / location for the materials indicated is not limited to the list below and is to be used in conjunction with and may be supplemented by the Specifications, Schedules, and Drawings. Refer to Specifications, Schedules, and Drawings for full extent of material application and additional material types.

| CODE   | ITEM                                               | DESCRIPTION                                                                                                                                                                                                                                                        | APPLICATION / LOCATION                                                                                                                                                                                                        |
|--------|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MET-A2 | <b>Metal Finish -<br/>Prefinished<br/>Aluminum</b> | Shop Applied 3-coat Fluoropolymer<br>Coating for Aluminum<br><br>Dry Film Thickness (nominal)<br>ASTM D1400<br><br>0.20-0.30 mil primer coat<br>0.70-0.80 mil colour coat<br>0.30-0.40 mil clear topcoat<br><br>Colour: Light Bronze<br>RGB Colour Code: 110-95-64 | Cap flashing and<br>aluminum cladding.<br>Applied for colour<br>matching building<br>elements having<br>panels <b>MTL-PNL1</b><br><br>     |
| MET-A3 | <b>Metal Finish -<br/>Prefinished<br/>Aluminum</b> | Shop Applied Anodized Coating for<br>Aluminum<br><br>AAMA Class 1<br><br>Exterior Grade<br><br>Min Film Thickness +0.7mils<br><br>Colour: Dark Bronze<br>RGB Colour Code: 24-17-9                                                                                  | Curtain wall CW-1,<br>CW-2 sections.<br><br>                                                                                             |
| MET-A4 | <b>Metal Finish -<br/>Prefinished<br/>Aluminum</b> | Shop Applied 3-coat Fluoropolymer<br>Coating for Aluminum<br><br>Dry Film Thickness (nominal)<br>ASTM D1400<br><br>0.20-0.30 mil primer coat<br>0.70-0.80 mil colour coat<br>0.30-0.40 mil clear topcoat<br><br>Colour: Dark Bronze<br>RGB Colour Code: 24-17-9    | Cap flashing and<br>aluminum cladding.<br>Applied for colour<br>matching building<br>elements having<br>panels <b>MTL-PNL3</b> .<br><br> |

NOTE: The application / location for the materials indicated is not limited to the list below and is to be used in conjunction with and may be supplemented by the Specifications, Schedules, and Drawings. Refer to Specifications, Schedules, and Drawings for full extent of material application and additional material types.

| CODE          | ITEM                                               | DESCRIPTION                                                                                                                                                                                                                                                                 | APPLICATION / LOCATION                                                                                                                                                                           |
|---------------|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>MET-A5</b> | <b>Metal Finish -<br/>Prefinished<br/>Aluminum</b> | Shop Applied 3-coat Fluoropolymer<br>Coating for Aluminum<br><br>Dry Film Thickness (nominal)<br>ASTM D1400<br><br>0.20-0.30 mil primer coat<br>0.70-0.80 mil colour coat<br>0.30-0.40 mil clear topcoat<br><br>Colour: Black                                               | Custom Atrium<br>Acoustic Panel:<br><br><br><small>Solids — UC40577</small><br><small>Black - UC40577</small> |
| <b>MET-S1</b> | <b>Prefinished Steel</b>                           | Architecturally Exposed Structural Steel<br>(AESS):<br>Category 3, Feature Elements<br><br>Paint: Coating System: Three (3) Coat<br>System, Orzn /Epoxy /Pu<br><br>Refer to Section 05 12 48 Coatings for<br>Architecturallt Exposed Structural Steel                       | Front Canopy;<br>Column as the Atrium;<br>Exposed Seismic<br>Bracing                                                                                                                             |
| <b>MET-S2</b> | <b>Metal Finish -<br/>Prefinished Steel</b>        | Shop Applied 4-coat Fluoropolymer<br>Coating for Steel<br><br>Dry Film Thickness (nominal)<br>ASTM D1400<br><br>0.20 mil primer coat<br>0.75 mil protection coat<br>0.75 mil color coat<br>0.50 mil clear topcoat<br><br>Colour: Light Bronze<br>RGB Colour Code: 110-95-64 | Atrium Stage:<br>Bench Seat/ Edge<br>Banding/ Railings                                                                                                                                           |

NOTE: The application / location for the materials indicated is not limited to the list below and is to be used in conjunction with and may be supplemented by the Specifications, Schedules, and Drawings. Refer to Specifications, Schedules, and Drawings for full extent of material application and additional material types.

| CODE   | ITEM                  | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | APPLICATION / LOCATION                                                                                                           |
|--------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| MET-S4 | Prefinished Steel     | Bluing of Acoustic Panel's Steel Frame<br><br>Shop Applied Transparent Black Acrylic Lacquer Coating<br><br>Dry Film Thickness .3-.5 mils<br><br>Color: Black Matte<br>RGB Colour Code: 39 39 45                                                                                                                                                                                                                                                                                                       | Custom Atrium Acoustic Panel:<br>             |
| MET-Z1 | Flat Lock Zinc Panels | Pre-patinated Titanium Zinc Panel<br><br>FlatLock Panels<br>Thickness - 0.65mm<br>on 16mm plywood substrate<br><br>Note: All corners to be continuous, no exterior corner flashing to be used<br>Width: 230mm with ~280mm elongation on sloped stair ceiling surfaces (to match 230mm width on vertical faces)<br>Height: Typically 575mm, as needed around edges and corners<br>Colour: Pre-patinated<br>Pigmented brown-grey to complement natural limestone STN-1.<br>Provide samples to consultant | Interior Atrium Stair E, guard post roof<br> |
| CRBT-1 | Carborundum Tape      | Self Adhered Anti-Slip Tape<br><br>Peel Adhesion: MIL-D-17951E(SH):<br>Adhesive strength 0.75 lbs. (minimum)<br><br>Width: 51mm<br>Colour: White                                                                                                                                                                                                                                                                                                                                                       | Atrium Stair E nosing<br>                   |




NOTE: The application / location for the materials indicated is not limited to the list below and is to be used in conjunction with and may be supplemented by the Specifications, Schedules, and Drawings. Refer to Specifications, Schedules, and Drawings for full extent of material application and additional material types.

| CODE | ITEM                                                                     | DESCRIPTION                                                                                                                                | APPLICATION / LOCATION |
|------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| TS-1 | <b>Transition Strip</b><br>- Carpet, LVT to Tile                         | SS Transition Strip<br>Material: Stainless steel Type 304<br>Height: Match tile thickness                                                  |                        |
| TS-2 | <b>Transition Strip</b><br>- Carpet, LVT, Tile to SDT                    | Sloped SS Transition Strip<br>Material: Stainless Steel Type 304<br>Height: To Match both adjacent floor thickness                         |                        |
| TS-3 | <b>Transition Strip</b><br>- Carpet, LVT, SDT to Painted Epoxy/ Concrete | Product: Rubber Transition Strips<br>Colour: Charcoal Grey<br>Material: Rubber<br>Gauge to be coordinated with flooring material thickness |                        |
| TS-4 | <b>Transition Strip</b><br>- Tile to Painted Epoxy/ Concrete             | Sloped SS Transition Strip<br>Material: Stainless Steel Type 304<br>Height: Tile thickness to Painted epoxy/ concrete flooring             |                        |

**DIVISION 06 – WOOD, PLASTICS AND COMPOSITES**




|       |        |                                            |               |
|-------|--------|--------------------------------------------|---------------|
| FAB-1 | Fabric | RESERVED<br>Fire Rating: NFPA 260, Class 1 | Bench seating |
|-------|--------|--------------------------------------------|---------------|

NOTE: The application / location for the materials indicated is not limited to the list below and is to be used in conjunction with and may be supplemented by the Specifications, Schedules, and Drawings. Refer to Specifications, Schedules, and Drawings for full extent of material application and additional material types.




| CODE  | ITEM                       | DESCRIPTION                                                                                                                                                                                     | APPLICATION / LOCATION                                                                                                                           |
|-------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| HDW-1 | <b>Decorative hardware</b> | Product: Silver Handle<br>Material: Metal<br>Colour: Nickel<br>Size: 160mm center to center<br>Width: 10mm<br>Projection: 35mm<br>Description: Square Edge D pull                               | Millwork: Security Console<br>Drawer and Cupboard Pulls<br>   |
| HDW-2 | <b>Decorative hardware</b> | Product: Black Metal Handle<br>Material: Metal<br>Colour: Black<br>Finish: Matte<br>Size: 160mm center to center<br>Width: 13mm<br>Projection: 33mm<br>Description: Hexagon Square Edges D Pull | Millwork: Kitchenette<br>Drawer and Cupboard Pulls<br>      |
| HDW-3 | <b>Decorative hardware</b> | Product: Dark Grey Handle<br>Material: Metal<br>Colour: Dark Grey<br>Size: 160mm center to center<br>Projection: 35mm<br>Description: Square Edge D pull                                        | Millwork: Business Centers<br>Drawer and Cupboard Pulls<br> |



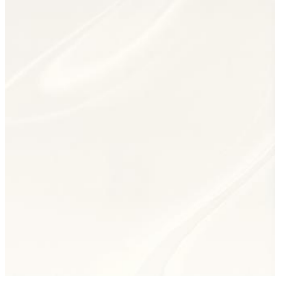
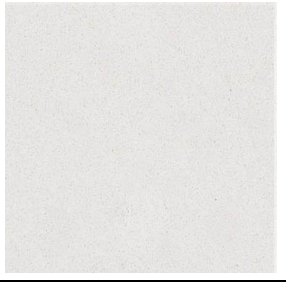
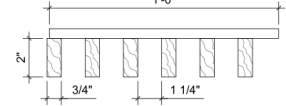

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| CODE          | ITEM                            | DESCRIPTION                                                                                                                                                                                                                                                                      | APPLICATION / LOCATION                                                                                                                        |
|---------------|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| PLAM-1        | <b>Plastic Laminate<br/>HPL</b> | Product: High Pressure Laminate<br>Colour: Medium Brown Wood Pattern<br>Material: High Pressure Laminate<br>Finish: Smooth Texture<br>Finish: Hi-Brite                                                                                                                           | Security Desk / Refer to Millwork details for location<br> |
| PLAM-2        | <b>Plastic Laminate<br/>HPL</b> | Product: High Pressure Laminate<br>Colour/ Wood look: Walnut Wood look with amber, light browns, greys, and taupes.<br>Design Repeat: 1295mm L x 647mm W<br>Material: Scratch Resistant High Pressure Laminate<br>Finish: Soft Grain                                             | Kitchenette/ Business Center/Vertical Surfaces<br>       |
| PLAM-3        | <b>Plastic Laminate<br/>HPL</b> | Product: High Pressure Laminate<br>Colour/Wood look: Wood laminate design with mix of Teak and Framire, and African Oak. Mid-toned brown with tints and shades.<br>Design Repeat: 1092mm L x 774mm W<br>Material: Scratch Resistant High Pressure Laminate<br>Finish: Soft Grain | Doors<br>                                                |
| <u>PLAM-4</u> | <u>Plastic Laminate<br/>HPL</u> | <u>Product: High Pressure Laminate</u><br><u>Colour/Wood look: Wood laminate design with mix of Teak and Framire, and African Oak. Mid-toned brown with tints and shades.</u>                                                                                                    | <u>Window Sills and Trim</u>                                                                                                                  |



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| CODE                | ITEM                          | DESCRIPTION                                                                                                                                                                                                              | APPLICATION / LOCATION                                                                                                                            |
|---------------------|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
|                     |                               | <p><u>Design Repeat: 1092mm L x 774mm W</u></p> <p><u>Material: Scratch Resistant High Pressure Laminate</u></p> <p><u>Finish: Soft Grain</u></p>                                                                        |                                                                |
| <p><b>SSF-1</b></p> | <p><b>Solid Surfacing</b></p> | <p>Product: Quartz Countertop</p> <p>Material: Quartz</p> <p>Colour: White ground with touches of gray and pale beige, feather look</p> <p>Finish: Polished</p> <p>Thickness:30 mm</p> <p>Edge Profile: Mitered Edge</p> | <p>Security Desk/ Refer to millwork details for location</p>  |
| <p><b>SSF-2</b></p> | <p><b>Solid Surfacing</b></p> | <p>Product: Quartz Countertop</p> <p>Material: Quartz</p> <p>Colour: Snow White with icy look</p> <p>Finish: Polished</p> <p>Thickness: 30 mm</p> <p>Edge Profile: Mitered Edge</p>                                      | <p>Countertop/ Washroom</p>                                  |

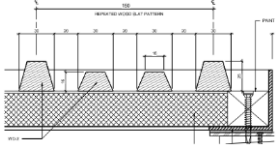
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| CODE     | ITEM                           | DESCRIPTION                                                                                                                                                                                                                                                                                                                                     | APPLICATION / LOCATION                                                                                                                                                                                                             |
|----------|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SSF-3    | <b>Solid Surfacing</b>         | Product: Solid Surface Countertop<br>Colour: White with veining<br>Material: 1/3 acrylic resin and 2.3 natural materials<br>Finish: Polished<br>Thickness: 12mm<br>Edge Profile: Mitered Edge                                                                                                                                                   | Countertop/ Business Center<br>                                                                                                                 |
| SSF-4    | <b>Solid Surface</b>           | Product: Quartz Countertop<br>Colour: Organic Speckled White<br>Finish: Polished<br>Material: Quartz<br>Thickness: 13mm<br>Edge Profile: Mitered Edge                                                                                                                                                                                           | Countertop/ Kitchenette<br>                                                                                                                    |
| WD-PNL-1 | <b>Solid Wood Grille Panel</b> | Linear Wood Blade Panel<br>Panel Size 460mm x 1220mm<br>Blade Size 50 x 19 mm<br>Number of Blades: 6<br>Blade Material: Solid Wood White Oak<br>Finish: Clear Stain – Matte Finish<br>Backer: Cross Wood Backer, fire-rated, painted Black @ 305 O.C.<br>Acoustic Backer: Black Acoustic Wovem Material, Exterior Rated<br>Fire Rating: Class A | Grafton Street Entrance - Exterior Canopy Soffit<br><br> |

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| CODE     | ITEM                                                | DESCRIPTION                                                                                                                                                                                                                                                                                                               | APPLICATION / LOCATION                                                                                                                                            |
|----------|-----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| WD-PNL-2 | <b>Solid Wood Grille Panel – Acoustic Composite</b> | Custom Acoustic Panel<br>Solid Wood Slats in steel angle frame<br>Wood: White Oak; Rift Cut: Natural<br>Fire Rating: Class A<br><u>Associated Materials:</u><br>MET-S4 (on steel frame)<br>WD-2 (Fire Treated solid wood)<br>MET-A5 (Flashing and Closures)<br>AWP-3 (acoustic board)                                     | Custom Atrium Acoustic Panel:                                                                                                                                     |
| WD-PNL-3 | <b>Solid Wood Grille Panel</b>                      | Custom Solid Wood Slats in steel frame at ceiling<br>Wood: White Oak; Rift Cut: Natural<br>Core Material: Solid Wood White Oak<br>Finish: White Oak; Rift Cut, Natural – Match WD-PNL1<br>Backer: Cross Wood Backer painted Black<br>Blade Size: 50mm x 152mm length varies depending on location<br>Fire Rating: Class A | Wellness Room Ceiling/ Kitchenette Level 2-5/ Elevator Lobbies Level 1-5<br> |
| WD-PNL-4 | <b>Wood Panel Solid</b>                             | Custom Wood Panel System<br>Wood: White Oak; Rift Cut: Natural<br><u>Slip Matched</u><br>Core Material: Solid Wood White Oak<br>Finish: White Oak; Rift Cut, Natural – Match WD-PNL1<br>Fire Rating: Class A<br>Size: Refer to architectural drawings for details<br>*Applied to wall and ceiling                         | Kitchenette 1-20, Locker end panels, Huddle Booths<br>                       |

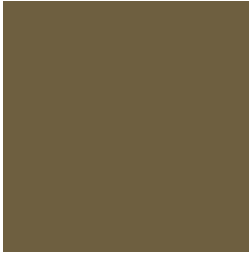
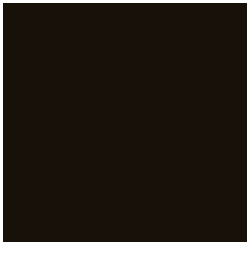
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| CODE | ITEM            | DESCRIPTION                                                                                                                                                                                                                                                                                                                          | APPLICATION / LOCATION                                                                                                            |
|------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| WD-1 | Wood Throughout | Wood Throughout<br>Wood: White Oak; Rift Cut: Natural<br><u>Slip Matched</u><br>Core Material: Solid Wood White Oak<br>Finish: White Oak; Rift Cut, Natural – Match WD-PNL1<br>Flame Spread Rating: Class A<br>Size: Refer to millwork shop drawings for sizing.                                                                     | Wall/ Ceiling Panel<br>Ground Floor<br>Kitchenette/ Locker<br>End Panels/ Huddle<br>Booths, <del>Window Sills</del><br>throughout |
| WD-2 | Solid Wood      | Wood: White Oak; Rift Cut: Natural<br>Core Material: Solid Wood White Oak<br>Finish: Clear Stain – Matte Finish Match WD-PNL1<br><br>Fire Treatment:<br>Water-base intumescent fire retardant wood treatment<br><br>Wet Film Thickness: 1ml /coat, 3ml after 3 coats<br><br>Class A<br>Flame Spread: 20<br>Smoke Development: 95-105 | Custom Atrium Acoustic Panel:<br>             |

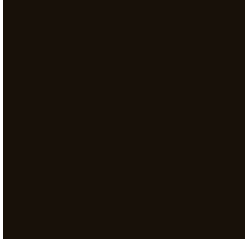
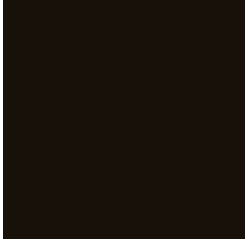
**DIVISION 07 – THERMAL AND MOISTURE PROTECTION**

|          |                         |                                                                                                                                                                |                                                                                                                 |
|----------|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| MTL-PNL1 | Aluminum Cladding Panel | High Strength, Low Weight Aluminum Alloy Sheet<br>Sheet Thickness - 3mm<br>Panel Thickness – min 25mm<br>Finish & Colour: MET-A1<br>Framing System Attachment: | Grafton St Column Covers/ Grafton St Entrance Canopy/ Atrium and Grafton St Ground Level Bases at Curtain Walls |
|----------|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|

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| CODE            | ITEM                           | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                        | APPLICATION / LOCATION                                                                                                                                                                         |
|-----------------|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 |                                | Vertical support fastened to thermally broken clip system off structural girts.<br>Rear Ventilated Rainscreen<br>Pressure-Equalized<br>Vertical Joints to be open and minimized to 3mm                                                                                                                                                                             |                                                                                                             |
| <b>MTL-PNL2</b> | <b>Aluminum Cladding Panel</b> | High Strength, Low Weight Aluminum Alloy Sheet<br>Sheet Thickness - 3mm<br>Panel Thickness – min 25mm<br><br>Finish and Colour: MET-A2<br>Framing System Attachment:<br><br>Vertical support fastened to thermally broken clip system off structural girts.<br>Rear Ventilated Rainscreen<br>Pressure-Equalized<br>Vertical Joints to be open and minimized to 3mm | Entrance Vestibules/<br>Atrium Fascia/ 4 <sup>th</sup><br>Floor Metal Cladding at Atrium CW-3 Base<br><br> |
| <b>MTL-PNL3</b> | <b>Aluminum Cladding Panel</b> | High Strength, Low Weight Aluminum Alloy Sheet<br>Sheet Thickness - 3mm<br>Panel Thickness – min 25mm<br><br>Finish and Colour: MET-A4<br>Framing System Attachment:<br>Vertical support fastened to thermally broken clip system off structural girts.                                                                                                            | 2 <sup>nd</sup> through 5 <sup>th</sup> Floor<br>Metal Cladding at<br>Ribbon Windows<br><br>              |

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| CODE            | ITEM                           | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                        | APPLICATION / LOCATION                                                                                                                                  |
|-----------------|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 |                                | Rear Ventilated Rainscreen<br>Pressure-Equalized<br>Vertical Joints to be open and minimized to 3mm                                                                                                                                                                                                                                                                                                                |                                                                                                                                                         |
| <b>MTL-PNL4</b> | <b>Aluminum Cladding Panel</b> | High Strength, Low Weight Aluminum Alloy Sheet<br>Sheet Thickness - 3mm<br>Panel Thickness – min 25mm<br><br>Finish and Colour: MET-A4<br>Framing System Attachment:<br>Vertical support fastened to thermally broken clip system off structural girts.<br>Rear Ventilated Rainscreen<br>Pressure-Equalized<br>Vertical Joints to be open and minimized to 3mm                                                     | Ground and 2 <sup>nd</sup> Floor Cladding at Ribbon Windows<br><br> |
| <b>MTL-PNL5</b> | <b>Aluminum Cladding Panel</b> | High Strength, Low Weight Aluminum Alloy Sheet<br>Sheet Thickness - 3mm bonded to abuse resistant backer<br>Panel Thickness – min 25mm<br>Finish and Colour: MET-A3 (Anodized Dark Bronze)<br>Framing System Attachment:<br>Vertical support fastened to thermally broken clip system off structural girts.<br>Rear Ventilated Rainscreen<br>Pressure-Equalized<br>Vertical Joints to be open and minimized to 3mm | Ground Floor Bases at CW-1 (Kent St)<br><br>                       |

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| <b>CODE</b>  | <b>ITEM</b>             | <b>DESCRIPTION</b>                                                                                                                                                                                                                                                                                                                        | <b>APPLICATION / LOCATION</b>          |
|--------------|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|
| <b>INS-1</b> | <b>Insulation</b>       | Closed Sell Spray Foam                                                                                                                                                                                                                                                                                                                    |                                        |
| <b>INS-2</b> | <b>Insulation</b>       | Extruded Polystyrene – Foam Board                                                                                                                                                                                                                                                                                                         |                                        |
| <b>INS-3</b> | <b>Insulation</b>       | Mineral Wool Insulation                                                                                                                                                                                                                                                                                                                   | Exterior                               |
| <b>RT-1</b>  | <b>Roofing Assembly</b> | Inverted roof<br>40 Ballast<br>Filter fabric<br>10 Drainage Board<br>2x76 INS-2<br>Leak detection system -Conductor Wire<br>2 Ply modified bitumen roof membrane<br>Leak detection system - Measurement grid<br>Sloped insulation<br>Self adhesive Vapour Retarder<br>16 Exterior Sheathing Board<br>Galv Metal deck<br><br>Colour: White | At New Atrium Roof                     |
| <b>RT-2</b>  | <b>Roofing Assembly</b> | Canopy roof<br><br>2 Ply Modified Bitumen roof membrane<br>Sloped insulation as required to form roof slope<br>13 Exterior Sheathing Board<br>38 Galv. Metal deck<br><br>Colour: white                                                                                                                                                    | Grafton Street canopy / revolving door |

#### **DIVISION 08 – OPENINGS**

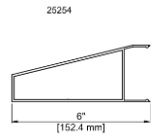
|             |                            |                                                                                                             |                          |
|-------------|----------------------------|-------------------------------------------------------------------------------------------------------------|--------------------------|
| <b>CW-1</b> | <b>Curtain Wall System</b> | Thermal Broken Curtain Wall System<br>Material: Aluminum Alloy – 6603<br><br>Mullion Size: 63.5mm x 133.4mm | Ground Floor Kent Street |
|-------------|----------------------------|-------------------------------------------------------------------------------------------------------------|--------------------------|



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| CODE        | ITEM                                             | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | APPLICATION / LOCATION                                                                                                   |
|-------------|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
|             |                                                  | <p>profile 63.5mm x 101.6mm profile at existing columns</p> <p>25mm cap at end of field locations.</p> <p>Structural Silicone Glazing (SSG) at all vertical joints.</p> <p>Finish: MET-A3</p>                                                                                                                                                                                                                                                                                                                                           |                                                                                                                          |
| <b>CW-2</b> | <b>Window System</b>                             | <p>Flush Front Glazed Fixed Window System</p> <p>Material: Aluminum Alloy - 6003</p> <p>Mullion Size: 19mm x 127mm + 19mm setting block</p> <p>Finish: MET-A3</p>                                                                                                                                                                                                                                                                                                                                                                       | Ground, 2 <sup>nd</sup> , 3 <sup>rd</sup> , 4 <sup>th</sup> and 5 <sup>th</sup> floors.                                  |
| <b>CW-3</b> | <b>Curtain Wall System – High Span</b>           | <p>Thermal Broken Curtain Wall System</p> <p>Material: Aluminum Alloy – 6603</p> <p>Final dimensions of system per CW engineering requirements</p> <p>Mullion Size: 63.5mm x 254mm profile everywhere except 63.5mm x 133.4mm profile at Atrium clerestory horizontal mullions at 5<sup>th</sup> floor level</p> <p>25mm cap at end of field locations.</p> <p>4-sided Structural Silicone Glazing (SSG).</p> <p>Finish: MET-A1 Provide exterior knife blades as required to support CW-VS1 vertical sunshade at Atrium clerestory.</p> | <p>Atrium/ Grafton St Entrance</p>  |
| <b>CW-4</b> | <b>Curtain Wall System South Block 3rd floor</b> | <p>Thermal Broken Curtain Wall System</p> <p>Material: Aluminum Alloy – 6603</p> <p>Mullion Size: 63.5mm x 254mm tapered profile at end of field locations , 63.5mm</p>                                                                                                                                                                                                                                                                                                                                                                 | <p>South Block 3rd Floor</p> <p>Special Surround</p> <p>Mullion Cap 25254</p>                                            |

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| CODE          | ITEM                                         | DESCRIPTION                                                                                                                                                                                                                                                                                           | APPLICATION / LOCATION                                                              |
|---------------|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|               |                                              | x 168.3mm rect. profile at middle vertical mullions. Structural Silicone Glazing (SSG) at all vertical joints..<br>Colour: MET-A1                                                                                                                                                                     |  |
| <b>CW-VS1</b> | <b>Curtain Wall System Vertical Sunshade</b> | Vertical Sunshade –<br>Material: Aluminum Alloy – 6603<br>Sunshade size: 63mm x 305mm<br>Fastened to the CW-3 curtain wall framing.<br>Colour: MET-A2 (light bronze)                                                                                                                                  |                                                                                     |
| <b>FLM-1</b>  | <b>Glazing Film</b>                          | Standard of Acceptance: 3M<br>Product: Dusted Crystal<br>Code: 7725SE-314                                                                                                                                                                                                                             | Glass Fronts<br>*Refer to Signage Package                                           |
| <b>FLM-2</b>  | <b>Glazing Film</b>                          | Standard of Acceptance: 3M<br>Product: Dusted Crystal<br>Code: 7725SE-314                                                                                                                                                                                                                             | Bike Storage Glass Front<br>*Refer to Signage Package                               |
| <b>GL-BL</b>  | <b>Ballistic Glass</b>                       | Type: Laminated Ballistic<br>Thickness: 32mm = 3mm + 0.6 urethane interlayer +25mm + 0.6 urethane interlayer +3mm<br><br>Glass 1 (3mm): Mar-Resistant Polycarbonate<br>Interlayer: .060 Urethane<br>Glass 2 (25mm): Acrylic<br>Interlayer: 0.60Urethane<br>Glass 1 (3mm): Mar-Resistant Polycarbonate | At Security Desks                                                                   |

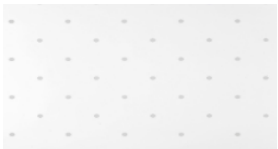
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| CODE                | ITEM                                                      | DESCRIPTION                                                                                                                                                                                                                                                           | APPLICATION / LOCATION                                                   |
|---------------------|-----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|
|                     |                                                           | Mullion Size:<br>45mmx100mm Ballistic Aluminum Frame<br>Assembly Rated: ULC-752-3                                                                                                                                                                                     |                                                                          |
| <b>GL-FR1</b>       | <b>Fire Rated Glass</b>                                   | Clear laminated ceramic glazing material<br>Thickness: 8mm                                                                                                                                                                                                            |                                                                          |
| <b>GL-L1</b>        | <b>Laminated Tempered Glass</b>                           | Type: Laminated Float Glass<br>Thickness: 13mm<br>Glass 1 (6mm): Clear Float Glass<br>Interlayer: 0.60 PVB interlayer<br>Glass 2 (6mm): Clear Float Glass                                                                                                             | Building Entrances                                                       |
| <b>GL-L2</b>        | <b>Laminated Tempered Glass</b>                           | Type: Laminated Safety<br>Thickness: 21 mm<br>Glass 1 (10mm): Clear Tempered Glass<br>Interlayer: 0.80 PVB interlayer<br>Glass 2 (10mm): Clear Tempered Glass<br>2mm chamfer on all glass edges                                                                       | Bridge and Stair Guards                                                  |
| <b><u>GL-T1</u></b> | <b><u>Tempered Safety Glass</u></b>                       | <b><u>Type: Tempered Glass, impact resistant</u></b><br><br><b><u>Thickness: 6 mm</u></b>                                                                                                                                                                             | <b><u>Doors, as per Door/Hardware Schedule indicated on drawings</u></b> |
| <b>GS-1</b>         | <b>Glass Partition System</b><br><br><b>Single Glazed</b> | Aluminum Framed Full Height Glazed Partition System<br><br>Glass:<br>Glass 1 (4mm): Tempered Glass<br>Laminate 1: 0.8 PVB laminate<br>Glass 2 (4mm) Tempered Glass<br><br>Mullion Size:<br>45mmx95mm - Horizontal Mullions, End of Range Terminations and Door Frames | All interior <b><u>Single Glazed</u></b> Glass Fronts                    |

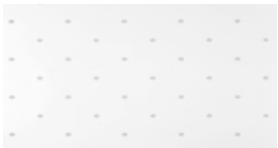
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| CODE | ITEM                                                      | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | APPLICATION / LOCATION             |
|------|-----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
|      |                                                           | 90mmx95mm - Perpendicular Butt Joint Walls,<br>Extra Clear Silicone butt joints all remaining vertical locations<br>Frame Colour: Dark Grey / Graphite<br>RGB Colour Code: 60,61,6<br>Doors: Wood doors by Division 8. See Door/Hardware Schedule                                                                                                                                                                                                                                                                                                                                                                                      |                                    |
| GS-2 | <b>Glass Partition System</b><br><br><b>Double Glazed</b> | Aluminum Framed Full Height Glazed Partition System<br><br>Glass: 9.5mm + Airspace + 9.5mm<br><br>Glass 1 (4mm): Tempered Glass<br>Laminate 1: 0.8 PVB laminate<br>Glass 2 (4mm): Float Glass<br>Gap 1:<br>Glass 3 (4mm): Float Glass<br>Laminate 2: 0.8 PVB laminate<br>Glass 4 (4mm): Tempered Glass<br><br>Mullion Size:<br>45mmx95mm - Horizontal Mullions, End of Range Terminations and Door Frames<br>90mmx95mm - Perpendicular Butt Joint Walls,<br>Extra Clear Silicone butt joints all remaining vertical locations<br><br>Frame Colour: Dark Grey / Graphite<br>RGB Colour Code: 60,61,6<br>Doors: Wood doors by Division 8 | All interior Glass Fronts (STC 45) |


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| CODE    | ITEM                                                                                                                       | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | APPLICATION / LOCATION                                                                                             |
|---------|----------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| GS-3    | <p><b>Glass Partition System</b></p> <p><b>Double Glazed</b></p>                                                           | <p>Aluminum Framed Full Height Glazed Partition System</p> <p>Glass: 12.5mm + Airspace + 12.5mm</p> <p>Glass 1 (5mm): Tempered Glass<br/>Laminate 1: 2.3 PVB laminate<br/>Glass 2 (5mm): Float Glass<br/>Gap 1:<br/>Glass 3 (5mm): Float Glass<br/>Laminate 2: 2.3 PVB laminate<br/>Glass 4 (5mm): Tempered Glass</p> <p>Mullion Size:<br/>45mmx165mm - Horizontal Mullions, End of Range Terminations and Door Frames<br/>90mmx165mm - Perpendicular Butt Joint Walls,<br/>Extra Clear Silicone butt joints all remaining vertical locations</p> <p>Colour: Dark Grey / Graphite<br/>RGB Colour Code: 60,61,6<br/>Doors: Wood doors by Division 8</p> | <p>All interior Glass Fronts (STC 52)</p>                                                                          |
| IGU-1V1 | <p><b>Insulated Glass Vision Glazing</b></p> <p><b>Double Glazed</b></p> <p><b>Bird Friendly to meet (CSA) A460:19</b></p> | <p>VISIBLE LIGHT<br/>Transmittance - 68 %<br/>Reflectance outside - 11 %<br/>Reflectance inside - 12 %<br/>General Color Rendering Index (CRI) - 95.4</p> <p>ULTRAVIOLET<br/>Transmittance UV - 30 %</p> <p>SOLAR ENERGY<br/>Solar transmittance - 33 %<br/>Reflectance outside - 33 %<br/>Reflectance inside - 36 %<br/>Solar absorptance - 34 %<br/>SHGC - 0.37</p>                                                                                                                                                                                                                                                                                  | <p>On CW-2 at Floors 3-5</p>  |

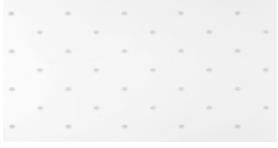
NOTE: The application / location for the materials indicated is not limited to the list below and is to be used in conjunction with and may be supplemented by the Specifications, Schedules, and Drawings. Refer to Specifications, Schedules, and Drawings for full extent of material application and additional material types.

| CODE                  | ITEM                                                                                                                       | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | APPLICATION / LOCATION                                                                                                        |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
|                       |                                                                                                                            | <p>Shading Coefficient - 0.43<br/> <b>THERMAL PROPERTIES</b><br/>                     Winter night U-Value - 0.245<br/>                     Summer day U-value - 0.220<br/>                     Light to Solar Gain - 1.82</p> <p>25mm IGU = 6 mm + 13mm air space + 6 mm.</p> <p>Glass 1 (6mm): Clear Float Glass w/ #1 Bird Friendly Acid Etch Pattern No. 17</p> <p>Gap 1 (13mm): Required min 0.25U Argon filled, Warm Edge spacer, black</p> <p>Glass 2 (6mm): Clear Float Glass w/ #2 Low-e Coating</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                               |
| <p><b>IGU-1V2</b></p> | <p><b>Insulated Glass Vision Glazing</b></p> <p><b>Double Glazed</b></p> <p><b>Bird Friendly to meet (CSA) A460:19</b></p> | <p><b>VISIBLE LIGHT</b><br/>                     Transmittance - 68 %<br/>                     Reflectance outside - 11 %<br/>                     Reflectance inside - 12 %<br/>                     General Color Rendering Index (CRI) - 95.4</p> <p><b>ULTRAVIOLET</b><br/>                     Transmittance UV - 30 %</p> <p><b>SOLAR ENERGY</b><br/>                     Solar transmittance - 33 %<br/>                     Reflectance outside - 33 %<br/>                     Reflectance inside - 36 %<br/>                     Solar absorptance - 34 %<br/>                     SHGC - 0.37<br/>                     Shading Coefficient - 0.43</p> <p><b>THERMAL PROPERTIES</b><br/>                     Winter night U-Value - 0.245<br/>                     Summer day U-value - 0.220<br/>                     Light to Solar Gain - 1.82</p> <p>25mm IGU = 6 mm + 9mm air space + 10 mm.</p> <p>Glass 1 (6mm): Clear Float Glass w/ #1</p> | <p>On CW-3 &amp; CW-4 at Floors 3-5</p>  |

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| CODE    | ITEM                                                                                                                                                           | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | APPLICATION / LOCATION                                                                                                               |
|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
|         |                                                                                                                                                                | Bird Friendly Acid Etch Pattern No. 17<br>Gap 1 (9mm): Required min 0.25U<br>Argon filled, Warm Edge spacer, black<br>Glass 2 (10mm): Clear Float Glass w/ #2<br>Low-e Coating                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                      |
| IGU-2V1 | Insulated Glass<br>Vision Glazing<br><br>Double Glazed<br><br>Bird Friendly to meet<br>(CSA) A460:19<br><br>Security Interlayer to<br>comply with ULC-<br>S332 | VISIBLE LIGHT<br>Transmittance - 68 %<br>Reflectance outside - 11 %<br>Reflectance inside - 12 %<br>General Color Rendering Index (CRI) -<br>95.4<br>ULTRAVIOLET<br>Transmittance UV - 30 %<br>SOLAR ENERGY<br>Solar transmittance - 33 %<br>Reflectance outside - 33 %<br>Reflectance inside - 36 %<br>Solar absorptance - 34 %<br>SHGC - 0.37<br>Shading Coefficient - 0.43<br>THERMAL PROPERTIES<br>Winter night U-Value - 0.245<br>Summer day U-value - 0.220<br>Light to Solar Gain - 1.82<br><br>25mm IGU = 6 mm + 9mm air space + 5<br>mm + .060 PVB interlayer + 5 mm.<br><br>Glass 1 (6mm): Clear Float Glass w/ #1<br>Bird Friendly Acid Etch Pattern No. 17<br>Gap 1 (9mm): Required min 0.25U<br>Argon filled, Warm Edge spacer, black<br>Glass 2 (5mm): Clear Float Glass w/ #2<br>Low-e Coating<br><br>Interlayer: 060 PVB interlayer<br>Glass 3 (5mm): Clear Float Glass | On CW-1 & CW-3 at<br>Ground and 2nd Floor<br><br> |

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| CODE    | ITEM                                                                                                                                                                                 | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | APPLICATION / LOCATION                                                                                                      |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| IGU-2V2 | <p><b>Insulated Glass Vision Glazing</b></p> <p><b>Double Glazed</b></p> <p><b>Bird Friendly to meet (CSA) A460:19</b></p> <p><b>Security Interlayer to comply with ULC-S332</b></p> | <p><b>VISIBLE LIGHT</b><br/>                     Transmittance - 68 %<br/>                     Reflectance outside - 11 %<br/>                     Reflectance inside - 12 %<br/>                     General Color Rendering Index (CRI) - 95.4</p> <p><b>ULTRAVIOLET</b><br/>                     Transmittance UV - 30 %</p> <p><b>SOLAR ENERGY</b><br/>                     Solar transmittance - 33 %<br/>                     Reflectance outside - 33 %<br/>                     Reflectance inside - 36 %<br/>                     Solar absorptance - 34 %<br/>                     SHGC - 0.37<br/>                     Shading Coefficient - 0.43</p> <p><b>THERMAL PROPERTIES</b><br/>                     Winter night U-Value - 0.245<br/>                     Summer day U-value - 0.220<br/>                     Light to Solar Gain - 1.82</p> <p>25mm IGU = 4 mm + 12mm air space + 5 mm + .060 PVB interlayer + 4 mm.</p> <p>Glass 1 (4mm): Clear Float Glass w/ #1 Bird Friendly Acid Etch Pattern No. 17<br/>                     Gap 1 (12mm): Required min 0.25U Argon filled, Warm Edge spacer, black<br/>                     Glass 2 (5mm): Clear Float Glass w/ #2 Low-e Coating<br/>                     Interlayer: 060 PVB interlayer<br/>                     Glass 3 (4mm): Clear Float Glass</p> | <p>On CW-2 at Ground and 2nd Floor.</p>  |



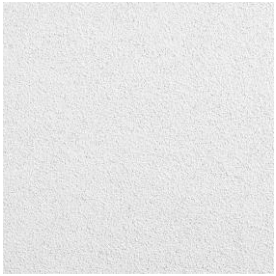
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| CODE   | ITEM                                                                                                                                                    | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | APPLICATION / LOCATION |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| IGU-1S | <p><b>Insulated Glass Shadow Box</b></p> <p><b>Match IGU-1V glass</b></p> <p><b>Double Glazed</b></p> <p><b>Bird Friendly to meet (CSA) A460:19</b></p> | <p><b>VISIBLE LIGHT</b><br/>                     Transmittance - 68 %<br/>                     Reflectance outside - 11 %<br/>                     Reflectance inside - 12 %<br/>                     General Color Rendering Index (CRI) - 95.4</p> <p><b>ULTRAVIOLET</b><br/>                     Transmittance UV - 30 %</p> <p><b>SOLAR ENERGY</b><br/>                     Solar transmittance - 33 %<br/>                     Reflectance outside - 33 %<br/>                     Reflectance inside - 36 %<br/>                     Solar absorptance - 34 %<br/>                     SHGC - 0.37<br/>                     Shading Coefficient - 0.43</p> <p><b>THERMAL PROPERTIES</b><br/>                     Winter night U-Value - 0.245<br/>                     Summer day U-value - 0.220<br/>                     Light to Solar Gain - 1.82</p> <p>25mm IGU = 6 mm + 13mm air space + 6 mm.</p> <p>Glass 1 (6mm): Clear Float Glass w/ #1 Bird Friendly Acid Etch Pattern No. 17</p> <p>Gap 1 (13mm): Required min 0.25U Argon filled, Warm Edge spacer, black</p> <p>Glass 2 (6mm): Clear Float Glass w/ #2 Low-e Coating</p> <p>Insulation: 102mm INS-3Gun Welded Stick Pins – 1 per 0.1m2</p> <p>Linear Back Panel: Galvanized sheet metal</p> |                        |


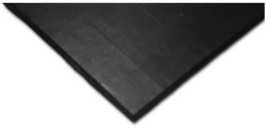
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| <b>CODE</b>  | <b>ITEM</b>                    | <b>DESCRIPTION</b>                                                                                                                                                                                                                                                                                                                                                                                          | <b>APPLICATION / LOCATION</b>                                                       |
|--------------|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| <b>MIR-1</b> | <b>Fixed Position Mirror</b>   | <p>Product: Fixed-Position Mirror</p> <p>Material: Mirror Frame should be 18-8, Type-430, heavy-gauge stainless steel. 13 x 13 mm angle with vertical-grain satin finish. Wall Frame should be 18-8, Type-430, heavy-gauge stainless steel with satin finish. Mirror should be No.1 quality, 6mm select float glass.</p> <p>All mirror edges should be polished and protected by plastic filler strips.</p> |  |
| <b>MIR-2</b> | <b>Mirror - Washrooms</b>      | <p>Refer to Washroom Elevations for more information</p> <p>Frame Finish: Satin Stainless Steel</p>                                                                                                                                                                                                                                                                                                         | <b>NO IMAGE</b>                                                                     |
| <b>MIR-3</b> | <b>Mirror – Fitness Center</b> | <p>Refer to Fitness Center for more information</p> <p>Frame Finish: Satin Stainless Steel</p>                                                                                                                                                                                                                                                                                                              | <b>NO IMAGE</b>                                                                     |

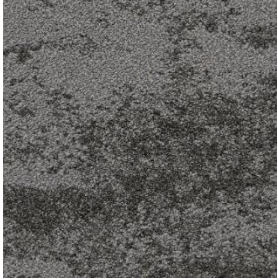
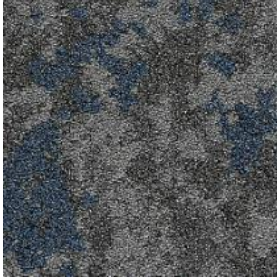
#### **DIVISION 09 - FINISHES**

|              |                              |                                                                                                                                                                                                                          |                                                                                                      |
|--------------|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| <b>ACT-1</b> | <b>Acoustic Ceiling Tile</b> | <p>Product: Acoustic Ceiling Tile</p> <p>Edge: Tegular</p> <p>Colour: White</p> <p>Size: 500x1500mm</p> <p>NRC Rating: 0.75</p> <p>CAC rating: 35</p> <p>Fire Class: Class A (UL)</p> <p>Grid: 9/16" Suprafine White</p> | <p>General</p>  |
|--------------|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|

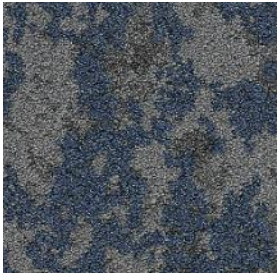
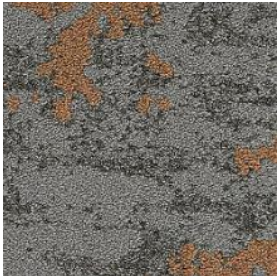
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| CODE  | ITEM                                     | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                        | APPLICATION / LOCATION                                                                                                                                                                 |
|-------|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AWP-2 | <b>Acoustical Wall Panel - Suspended</b> | <p>Product: Acoustical Wall Panel</p> <p>Material: 100% polyester, approximately 50% should be recycled water/soda bottles</p> <p>Colour: TBD</p> <p>Pattern: Custom Cut to Match Selected Film Pattern</p> <p>Size: Review floor plan locations for sizes</p> <p>Thickness: 1/2" (12mm)</p> <p>Hardware: Cable suspension at floor (carpet tile on slab) and ceiling (T-bar). No top and bottom rails.</p> <p>*Refer to Signage Package for more information.</p> | <p>Various – Refer to <del>Floor Plan</del> <u>Furniture and Equipment Plans</u> for Locations</p>  |
| AWP-3 | <b>Acoustic Board</b>                    | <p>Semi-rigid glass fibre sound attenuation board insulation with a black glass fibre mat surface.</p> <p>Thickness 25mm</p> <p>NRC = 0.70</p> <p>Compliance:<br/>Type I ASTM C553<br/>Type I ASTM C612</p> <p>Fire Flame Spread &lt;25; Smoke Developed &lt;50 CAN/ULC-S102</p>                                                                                                                                                                                   | <p>Custom Atrium Acoustic Panel:</p>  <p><b>Superior Acoustical Performance</b></p>               |

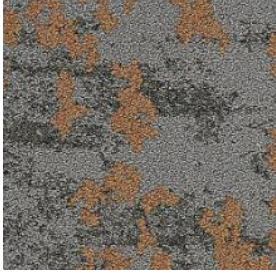
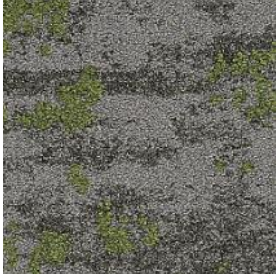
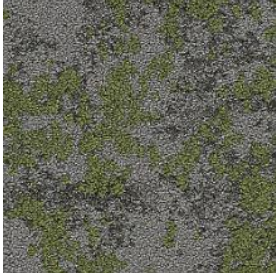
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| CODE   | ITEM        | DESCRIPTION                                                                                                                                                                                                                                                                                                          | APPLICATION / LOCATION                                                                                                   |
|--------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| CPTT-1 | Carpet Tile | Product: Grey Carpet Tile<br>Material: 100% recycled nylon fiber<br>Dye Method: 100% solution dyed<br>Colour: Blend of gray tones to coordinate with CPTT-2<br>Size: 305 mm x 914 mm<br>Construction: Textured Pattern Multi-Colours Loop<br>Installation Method: Half Lap<br>*Water-based releasable adhesive       | Corridors/ Locker Rooms<br>NO IMAGE                                                                                      |
| CPTT-2 | Carpet Tile | Product: Grey Carpet Tile<br>Material: 100% recycled nylon fiber<br>Dye Method: 100% solution dyed<br>Colour: Grey tone blend<br>Size: 305 mm x 914 mm<br>Construction: Textured Patterned Multi-Coloured Loop<br>Pattern: Bark look<br>Installation Method: Half Lap<br>*Water-based releasable adhesive            | General Open Workstation<br>        |
| CPTT-3 | Carpet Tile | Product: Grey/Blue Carpet Tile<br>Material: 100% recycled nylon fiber<br>Dye Method: 100% solution dyed<br>Colour: Blend of two grey tones and a small amount of indigo blue<br>Size: 305 mm x 914 mm<br>Construction: Textured Patterned Multi-Coloured Loop<br>Pattern: Bark look<br>Installation Method: Half Lap | Accent Open Workstation Floor 1<br> |

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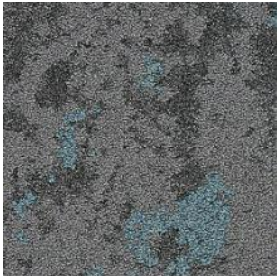
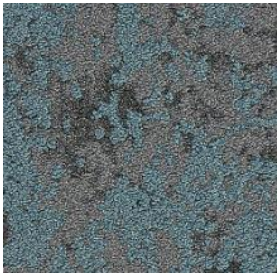
| CODE   | ITEM        | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                  | APPLICATION / LOCATION                                                                                                      |
|--------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
|        |             | *Water-based releasable adhesive                                                                                                                                                                                                                                                                                                                             |                                                                                                                             |
| CPTT-4 | Carpet Tile | Product: Grey/Blue Carpet Tile<br>Material: 100% recycled nylon fiber<br>Dye Method: 100% solution dyed<br>Colour: Blend of two grey tones and indigo blue<br>Pattern: Bark look varying with colour<br>Size: 305 mm x 9104 mm<br>Construction: Textured Patterned Multi-Coloured Loop<br>Installation Method: Half Lap<br>*Water-based releasable adhesive  | Enclosed Rooms<br>Floor 1<br>            |
| CPTT-5 | Carpet Tile | Product: Grey/ Terracotta Carpet Tile<br>Material: 100% recycled nylon fiber<br>Dye Method: 100% solution dyed<br>Colour: Blend of two grey tones and small amount of terracotta<br>Pattern: Bark look<br>Size: 305 mm x 914 mm<br>Construction: Textured Patterned Multi-Coloured Loop<br>Installation Method: Half Lap<br>*Water-based releasable adhesive | Accent Open<br>Workstation Floor 2<br> |

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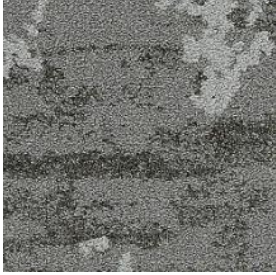
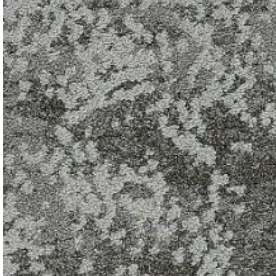

| CODE   | ITEM        | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                      | APPLICATION / LOCATION                                                                                                      |
|--------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| CPTT-6 | Carpet Tile | Product: Grey/ Terracotta Carpet Tile<br>Material: 100% recycled nylon fiber<br>Dye Method: 100% solution dyed<br>Colour: Blend of two grey tones and terracotta<br>Pattern: Bark look varying with colour<br>Size: 305 mm x 914 mm<br>Construction: Textured Patterned Multi-Coloured Loop<br>Installation Method: Half Lap<br>*Water-based releasable adhesive | Enclosed Rooms<br>Floor 2<br>            |
| CPTT-7 | Carpet Tile | Product: Green and Grey Carpet Tile<br>Material: 100% recycled nylon fiber<br>Dye Method: 100% solution dyed<br>Colour: Blend of two grey tones with a small amount of green<br>Pattern: Bark look<br>Size: 305 mm x 914 mm<br>Construction: Textured Patterned Multi-Coloured Loop<br>Installation Method: Half Lap<br>*Water-based releasable adhesive         | Accent Open<br>Workstation Floor 3<br> |
| CPTT-8 | Carpet Tile | Product: Green, and Grey Carpet Tile<br>Material: 100% recycled nylon fiber<br>Dye Method: 100% solution dyed<br>Colour: Blend of two grey tones with green<br>Pattern: Bark look varying with colour<br>Size: 305 mm x 914 mm<br>Construction: Textured Patterned Multi-                                                                                        | Enclosed Rooms<br>Floor 3<br>          |



NOTE: The application / location for the materials indicated is not limited to the list below and is to be used in conjunction with and may be supplemented by the Specifications, Schedules, and Drawings. Refer to Specifications, Schedules, and Drawings for full extent of material application and additional material types.

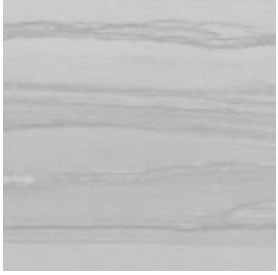

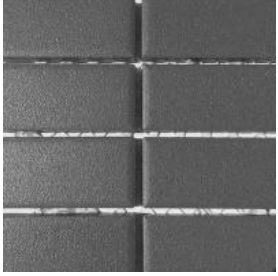
| CODE           | ITEM               | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                          | APPLICATION / LOCATION                                                                                                 |
|----------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
|                |                    | Coloured Loop<br>Installation Method : Half Lap<br>*Water-based releasable adhesive                                                                                                                                                                                                                                                                                  |                                                                                                                        |
| <b>CPTT-9</b>  | <b>Carpet Tile</b> | Product: Light Blue and Grey Carpet Tile<br>Material: 100% recycled nylon fiber<br>Dye Method: 100% solution dyed<br>Colour: Blend of two grey tones with a small amount of light blue<br>Pattern: Bark look<br>Size: 305 mm x 914 mm<br>Construction: Textured Patterned Multi-Coloured Loop<br>Installation Method: Half Lap<br>*Water-based releasable adhesive   | Accent Open Workstation Floor 4<br> |
| <b>CPTT-10</b> | <b>Carpet Tile</b> | Product: Light Blue and Grey Carpet Tile<br>Material: 100% recycled nylon fiber<br>Dye Method: 100% solution dyed<br>Colour: Blend of two grey tones with light blue<br>Pattern: Bark look varying with colour<br>Size: 305 mm x 914 mm<br>Construction: Textured Patterned Multi-Coloured Loop<br>Installation Method: Half Lap<br>*Water-based releasable adhesive | Enclosed Rooms Floor 4<br>        |

NOTE: The application / location for the materials indicated is not limited to the list below and is to be used in conjunction with and may be supplemented by the Specifications, Schedules, and Drawings. Refer to Specifications, Schedules, and Drawings for full extent of material application and additional material types.




| CODE    | ITEM           | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                  | APPLICATION / LOCATION                                                                                                 |
|---------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| CPTT-11 | Carpet Tile    | Product: Blue and Grey Carpet Tile<br>Material: 100% recycled nylon fiber<br>Dye Method: 100% solution dyed<br>Colour: Blend of two grey tones with a small amount of light grey<br>Pattern: Bark look<br>Size: 305 mm x 914 mm<br>Construction: Textured Patterned Multi-Coloured Loop<br>Installation Method: Half Lap<br>*Water-based releasable adhesive | Accent Open Workstation Floor 5<br> |
| CPTT-12 | Carpet Tile    | Product: Beige and Grey Carpet Tile<br>Material: 100% recycled nylon fiber<br>Dye Method: 100% solution dyed<br>Colour: Blend of three tones of grey<br>Pattern: Bark look varying with colour<br>Size: 305 mm x 914 mm<br>Construction: Textured Patterned Multi-Coloured Loop<br>Installation Method: Half Lap<br>*Water-based releasable adhesive         | Enclosed Rooms Floor 5<br>        |
| CT-1    | Porcelain Tile | Product : Porcelain Tile, rectified<br>Colour : White<br>Finish : Matte RT<br>Size : 750x1500 mm<br>Thickness : 9mm<br>Grout Joint width : 2mm<br>Slip Resistance: >=0.42                                                                                                                                                                                    | Floor Tile/Corridor & Atrium<br>  |






NOTE: The application / location for the materials indicated is not limited to the list below and is to be used in conjunction with and may be supplemented by the Specifications, Schedules, and Drawings. Refer to Specifications, Schedules, and Drawings for full extent of material application and additional material types.

| CODE  | ITEM                  | DESCRIPTION                                                                                                                                                                            | APPLICATION / LOCATION                                                                                                 |
|-------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| CT-2  | Porcelain Tile        | Product : Porcelain Tile, rectified<br>Colour: Various gray shades with veining<br>Finish: Matte<br>Size: 300mm x 600mm<br>Thickness: 9.5mm<br>Grout Joint width: 2mm                  | Wall Tile/ Washroom<br>             |
| CT-3  | Porcelain Tile        | Product : Porcelain Tile, rectified<br>Colour: Grey<br>Finish: Matte<br>Size: 300mm x 600mm<br>Thickness: 10mm<br>Grout Joint width: 2mm<br>Slip Resistance: 0.62                      | Wall & Floor Tile/<br>Washroom<br> |
| CT-3A | Porcelain Tile Mosaic | Product : Porcelain Tile Mosaic, rectified<br>Colour: Gray to match CT-3 wall colour<br>Finish: Matte<br>Size: 23x48 mm/300x300 mm meshed<br>Thickness: 10mm<br>Grout Joint width: 2mm | Locker Room Showers<br>           |




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| <b>CODE</b>  | <b>ITEM</b>           | <b>DESCRIPTION</b>                                                                                                                                                                    | <b>APPLICATION / LOCATION</b>                                                                                                                              |
|--------------|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>CT-4</b>  | <b>Porcelain Tile</b> | Product : Porcelain Tile, rectified<br>Colour: White with gray variation<br>Finish: Matte<br>Size: 800 x 800 mm<br>Thickness: 10mm<br>Grout Joint width: 2mm<br>Slip Resistance: 0.71 | Floor Tile/<br>Kitchenette/Lounge<br>                                   |
| <b>CT-5</b>  | <b>Ceramic Tile</b>   | Product : Ceramic Tile<br>Colour: White<br>Finish: Gloss<br>Size: 50mmx300mm<br>Installation : Stacked<br>Thickness: 8mm<br>Grout Joint width: 2mm                                    | Wall Tile/<br>Kitchenette/Lounge<br>                                   |
| <b>CT-6</b>  | <b>Porcelain Tile</b> | Product : Porcelain Tile , rectified<br>Colour: Pearl<br>Finish: Matte RT<br>Size : 750x1500 mm<br>Thickness : 9mm<br>Grout Joint width: 2mm<br>Slip Resistance: >=0.42               | Floor Tile /<br>Kitchenette Ground<br>Floor & Elevator<br>Lobbies<br> |
| <b>CTB-1</b> | <b>Wall Base</b>      | Product : Porcelain stoneware wall base<br>Colour: White<br>Finish: Matte RT<br>Size: 100mm High                                                                                      | Wall Base/ Corridor &<br>Atrium                                                                                                                            |

NOTE: The application / location for the materials indicated is not limited to the list below and is to be used in conjunction with and may be supplemented by the Specifications, Schedules, and Drawings. Refer to Specifications, Schedules, and Drawings for full extent of material application and additional material types.




| <b>CODE</b>  | <b>ITEM</b>              | <b>DESCRIPTION</b>                                                                                                                                                                                     | <b>APPLICATION / LOCATION</b>                                                                                                                         |
|--------------|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
|              |                          | Thickness:9mm<br>Grout Joint width:2mm                                                                                                                                                                 |                                                                    |
| <b>CTB-2</b> | <b>Wall Base</b>         | Product : Porcelain stone wall base<br>Colour: White with gray variation<br><br>Finish: Matte<br>Size: 100mm High<br>Thickness: 9.5mm<br>Grout Joint width: 2mm                                        | Wall Base/<br>Kitchenette/Lounge<br>                              |
| <b>CTB-3</b> | <b>Wall Base</b>         | Product : Porcelain stoneware wall base<br>Colour: Pearl<br>Finish: Matte RT<br>Size: 100mm high<br><br>Thickness: 9mm<br>Grout Joint width: 2mm                                                       | Wall Base/ Kitchenette<br>Ground Floor &<br>Elevator Lobbies<br> |
| <b>LVT-1</b> | <b>Luxury Vinyl Tile</b> | Product: Luxury Vinyl Tile<br>Tile Size: 250 mm x 1000 mm<br>Thickness: 4.5mm<br>Colour/ Finish: Light Oak colour with antiqued wood grain texture<br>Construction: High performance Luxury Vinyl Tile | Atrium Stage                                                                                                                                          |

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| CODE  | ITEM              | DESCRIPTION                                                                                                                                                                                                                                                                                                                          | APPLICATION / LOCATION                                                                                              |
|-------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
|       |                   | Class: Class III Printed Vinyl Plank<br>Wear Layer Thickness: 22mil<br><br>Installation: Ashlar, in Full Adhesive                                                                                                                                                                                                                    |                                  |
| LVT-2 | Luxury Vinyl Tile | Product: Luxury Vinyl Tile<br>Tile Size: 500 mm x 500 mm<br>Thickness: 4.5mm<br>Colour/Finish: Blend of cool and warm grays/ Textured stone polished cement look<br>Construction: High performance Luxury Vinyl Tile<br>Class: Class III Printed Vinyl Tile<br>Wear Layer Thickness: 22mil<br><br>Installation Type: Non-Directional | Storage Rooms<br><br>           |
| PT-1  | Paint             | Product: Off White Paint<br>RGB Code: (229,227,220)<br>Finish: Varies based on application                                                                                                                                                                                                                                           | General/ Ceiling paint<br><br> |
| PT-2  | Accent Paint      | Product: Charcoal Grey<br>RGB Code: (101,101,98)<br>Finish: Dependant on application                                                                                                                                                                                                                                                 | Accent Walls –<br>Kitchenettes, Business Centers, Meeting Rooms, Open Collab                                        |

~~27 May~~ 18 Jul 2022

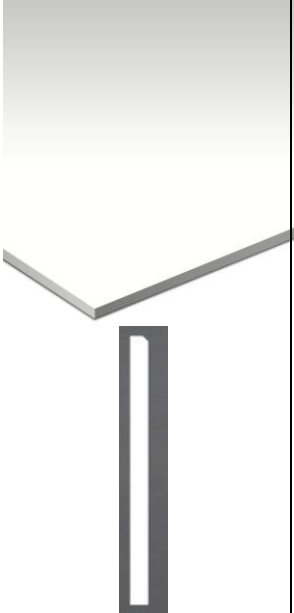
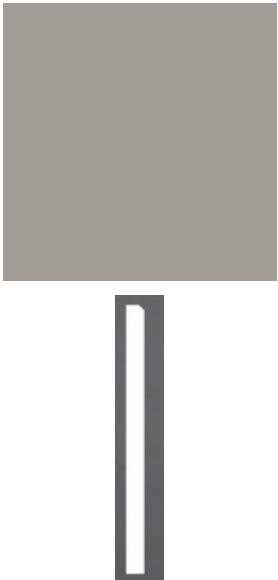
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| CODE        | ITEM                | DESCRIPTION                                           | APPLICATION / LOCATION                                                                                                                                                          |
|-------------|---------------------|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             |                     |                                                       | Workpoints Painted<br>Exposed Ceilings<br>                                                   |
| <b>PT-3</b> | <b>Paint</b>        | Product: Light Grey Paint<br>RGB Code: (207,205,203)  | Accent Walls –<br>Wellness Center,<br>Focus Rooms, Phone<br>Rooms, Reflection<br>Rooms<br> |
| <b>PT-4</b> | <b>Accent Paint</b> | Product: Medium Grey Paint<br>RGB Code: (183,181,179) | Accent Wall – Work<br>Rooms, Project Rooms<br>                                             |




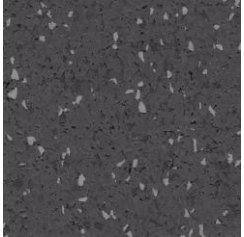
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| CODE   | ITEM                              | DESCRIPTION                                                                                                                                                                                                                | APPLICATION / LOCATION                                                                                             |
|--------|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| PT-5   | Accent Paint                      | Product: Dusty Grey Paint<br>RGB Code: (159,160,158)                                                                                                                                                                       | Accent Wall – SPS spaces<br>    |
| PT-6   | Writeable Surface Paint           | Product: Dry Erase Top Coat<br>Finish: Clear Gloss Coating<br>Material: Waterbased Polyurethane<br>Allow only for standard dry erase marker writing to be removed using a dry cotton cloth or dry eraser.                  | ITIM & Admin Application Management – Innovation Lab<br><br><b>NO IMAGE</b>                                        |
| PT-EP1 | Epoxy Paint                       | Product:<br>Two-component water based epoxy, VOC less than 50 g/l, gloss level 3<br>Application:<br>two (2) coats, 3.0 mils DFT per coat                                                                                   | Basement, Janitor Closets<br> |
| PT-SPC | Spray-on Cementitious Wall Finish | Water based acrylic coating with integral quartz aggregates providing lustrous metallic finish<br><br>COATING THICKNESS<br>2 coats combined - 1.5 mm<br><br>Colour: TBD to complement adjacent Titanium Zinc Stair panels. | Atrium Stair E Wall Surfaces                                                                                       |

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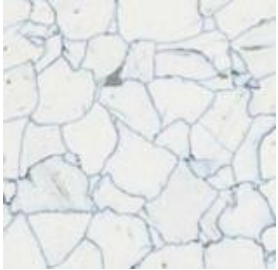


| CODE               | ITEM                           | DESCRIPTION                                                                                                                                                                                                                    | APPLICATION / LOCATION                                                                                                                       |
|--------------------|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>RB-1</b></p> | <p><b>Rubber Wall Base</b></p> | <p>Product: Rubber Wall Base<br/>                     Colour: White<br/>                     Style: Millworkbase with eased edge<br/>                     Size: 100mm high<br/>                     Material: Rubber</p>       | <p>Varies, refer to floor finish plan for location</p>   |
| <p><b>RB-2</b></p> | <p><b>Rubber Wall Base</b></p> | <p>Product: Rubber Wall Base<br/>                     Colour: Silver Grey<br/>                     Style: Millworkbase with eased edge<br/>                     Size: 100mm high<br/>                     Material: Rubber</p> | <p>Varies, refer to floor finish plan for location</p>  |

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| CODE         | ITEM                         | DESCRIPTION                                                                                                                                                   | APPLICATION / LOCATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>RB-3</b>  | <b>Rubber Wall Base</b>      | Product: Rubber Wall Base<br>Colour: Grey<br>Style: Millworkbase with eased edge<br>Size: 100mm high<br>Material: Rubber                                      | Varies, refer to floor finish plan for location<br><br>                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>RST-1</b> | <b>Rubber stair tread</b>    | Product: Rubber Stair Tread with integral 50mm colour contrast strip at the nosing to conform to CSA B651-18 Article 5.4.2<br>Material: Rubber<br>Colour: TBD | Stairs A, B C & D<br><br><small>                         Rubber Stair Treads<br/>                         PVRH-XX-RD   Round Pattern - Square Nose<br/>                         PVRH-XX-SQ   Square Pattern - Square Nose<br/>                         PVRTR-XX-RD   Rubber Tread &amp; Riser - Round Pattern - Square Nose<br/>                         PVRTR-XX-SQ   Rubber Tread &amp; Riser - Square Pattern - Square Nose<br/>                         PVRTR-XX   Rubber Tread &amp; Riser - Chamfered Pattern - Square Nose                     </small> |
| <b>RSF-1</b> | <b>Rubber Sheet Flooring</b> | Product : Roll good Rubber Flooring<br>Colour : Dark grey with light grey specks<br>Thickness : 4mm<br>Material : Rubber                                      | Floor Tile/ Wellness Center<br>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |



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| CODE  | ITEM                           | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                          | APPLICATION / LOCATION                                                                                                                                                                                                                                                                                |
|-------|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| SDT-1 | <b>Static Dissipative Tile</b> | <p>Product: Static Dissipative Vinyl Tile with Copper Grounding Straps</p> <p>Material: Dissipative Vinyl, copper grounding strips.</p> <p>Colour: Finish should be white and grey marble finish</p> <p>Dimension of tile: 610mm x 610mm x 3mm THK</p> <p>Dimensions of Copper Strip should be 25.4mm wide, 45.7mm long and 0.1mm thick.</p>                                                                                                                         | <p>Data, Electrical Room</p>                                                                                                                                                                                       |
| STN-1 | <b>Natural Limestone</b>       | <p>Native Canadian Limestone originating in Wiarton / Owen Sound, Ontario with a fleuri pattern.</p> <p>Vertical Faces: Vein Cut</p> <p>Horizontal Faces: Fleuri Cut</p> <p>Finish: Honed</p> <p>Thickness: 19mm</p> <p>Grout Joint: 1/8", colour to match</p> <p>Epoxy Quirk Mitre Corners, Pencile round edges. Shadow reveal cut at base</p> <p>Size 100mm height (TBD)– Font, layout.</p> <p>Stone joint spacing in coordination / alignment with floor tile</p> | <p>Atrium – Stage</p> <p>Vertical Face (front sides):</p> <p>Vein Cut</p>  <p>Horizontal Face (Top):</p> <p>Fleuri Cut</p>  |
| VWC-1 | <b>Vinyl Wallcovering</b>      | <p>Continuous Graphics throughout</p> <p>* Refer to Signage Package for Specification.</p>                                                                                                                                                                                                                                                                                                                                                                           | <p>Parking Garage</p>                                                                                                                                                                                                                                                                                 |

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| <b>CODE</b>   | <b>ITEM</b>               | <b>DESCRIPTION</b>                                                           | <b>APPLICATION / LOCATION</b> |
|---------------|---------------------------|------------------------------------------------------------------------------|-------------------------------|
| <b>VWC-2</b>  | <b>Vinyl Wallcovering</b> | * Refer to Signage Package for Specification.                                | Wellness Center Interior      |
| <b>VWC-3</b>  | <b>Vinyl Wallcovering</b> | * Refer to Signage Package for Specification.                                | Wellness Center Exterior      |
| <b>VWC-4</b>  | <b>Vinyl Wallcovering</b> | Different Graphic Per Floor<br>* Refer to Signage Package for Specification. | Washroom Core                 |
| <b>VWC-5</b>  | <b>Vinyl Wallcovering</b> | * Refer to Signage Package for Specification.                                | Corridor 120                  |
| <b>VWC-6</b>  | <b>Vinyl Wallcovering</b> | Different Graphic Per Floor<br>* Refer to Signage Package for Specification. | Adjacent to Elevator Lobbies  |
| <b>VWC-7</b>  | <b>Vinyl Wallcovering</b> | * Refer to Signage Package for Specification.                                | Museum                        |
| <b>VWC-8</b>  | <b>Vinyl Wallcovering</b> | RESERVED                                                                     |                               |
| <b>VWC-9</b>  | <b>Vinyl Wallcovering</b> | RESERVED                                                                     |                               |
| <b>VWC-10</b> | <b>Vinyl Wallcovering</b> | Different Graphic Per Floor<br>* Refer to Signage Package for Specification. | Locker Core                   |


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| <b>CODE</b>   | <b>ITEM</b>               | <b>DESCRIPTION</b>                                                           | <b>APPLICATION / LOCATION</b> |
|---------------|---------------------------|------------------------------------------------------------------------------|-------------------------------|
| <b>VWC-11</b> | <b>Vinyl Wallcovering</b> | Different Graphic Per Floor<br>* Refer to Signage Package for Specification. | Locker Core 2                 |
| <b>VWC-12</b> | <b>Vinyl Wallcovering</b> | Different Graphic Per Floor<br>* Refer to Signage Package for Specification. | Washroom Cores – South Block  |
| <b>VWC-13</b> | <b>Vinyl Wallcovering</b> | * Refer to Signage Package for Specification.                                | Meeting Room 2-86 Exterior    |
| <b>VWC-14</b> | <b>Vinyl Wallcovering</b> | * Refer to Signage Package for Specification.                                | Locker 3-70 Exterior          |
| <b>VWC-15</b> | <b>Vinyl Wallcovering</b> | * Refer to Signage Package for Specification.                                | Open Workspace 5-14           |
| <b>VWC-16</b> | <b>Vinyl Wallcovering</b> | Different Graphic Per Floor<br>* Refer to Signage Package for Specification. | Elevator Lobbies              |


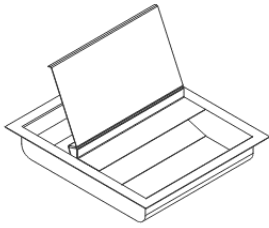

#### **DIVISION 10 – SPECIALTIES**

|              |                                   |                                                                                                                                                                         |                 |
|--------------|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| <b>BFL-1</b> | <b>Bottle Filler</b>              | Supplied and installed under Division 22, Plumbing                                                                                                                      |                 |
| <b>BP-1</b>  | <b>Fiberglass Ballistic Panel</b> | Product: Bullet-Resistant Fiberglass<br>Thickness: 12mm<br>Must have ballistic rating of UL 752, Level 3 and N.I.J 0108.01 Level IIIA<br>Panels must be rated ULC-752-3 | Security Office |


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| CODE | ITEM         | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | APPLICATION / LOCATION                                                              |
|------|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| CH-1 | Coat Hook    | <p>Product: Surface-Mounted Coat Hook</p> <p>Materials: Flange and Support Arm are 18-8, Type-304, 22-gauge (0.8mm) stainless steel.</p> <p>Concealed wall plate should be 18-8, Type-304, 16-gauge (1.6mm) stainless steel</p> <p>Cap should be 18-8, Type-304, 10-gauge (3.6mm) stainless steel</p> <p>Size: Flange is 50 x 50mm. Hook 13mm wide, projects 40mm from wall.</p> <p>Finish: Satin stainless steel</p> <p>Supplier/Installer: Contractor supplied/ Contractor Installed</p> |  |
| CH-2 | Coat Hook    | Supplied and installed by Toilet Compartment Manufacturer                                                                                                                                                                                                                                                                                                                                                                                                                                  | NO IMAGE                                                                            |
| CG-1 | Corner Guard | <p>Product: Stainless Steel Corner Guard</p> <p>Material: Type 304 Stainless Steel</p> <p>Finish: #4 Satin Finish</p> <p>Size: 50mm x 1219mm x 50mm (WxHxD)</p> <p>Installation: Mastic Construction Adhesive</p>                                                                                                                                                                                                                                                                          | NO IMAGE                                                                            |



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| CODE         | ITEM                       | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                   | APPLICATION / LOCATION                                                                                                                        |
|--------------|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>BCT-1</b> | <b>Baby Changing Table</b> | <p>Product: Horizontal Stainless Steel Wall Mounted Baby Changing Table</p> <p>Size:<br/>Unit Dimensions: 892 mm x 508 mm<br/>Depth (closed): 102 mm<br/>Extension (open): 483 mm</p> <p>Material: 18 gauge, Type-304 satin stainless steel exterior finish with blow molded high-density grey polyethylene</p> <p>Finish: Stainless Steel</p> <p>Minimum holding capacity: 22.68 kg</p> <p>Supplier/Installer: Contractor supplied/ Contractor Installed</p> |                                                            |
| <b>DT-1</b>  | <b>Deal Tray</b>           | <p>Product: Recessed Flip Lid Currency Tray</p> <p>Material: 18 ga Stainless Steel with welded connections</p> <p>Should be bullet-proof.</p> <p>Dimensions: 368mm x 419mm x 70mm</p> <p>Standard of Acceptance: Total Security Solutions</p> <p>Product: Recessed Flip Lid Deal Tray 368mm x 419mm x 70mm</p> <p>Rated ULC-752-3</p>                                                                                                                         |                                                          |
| <b>GRB-1</b> | <b>Grab Bar</b>            | <p>Product: 32mm Diameter Stainless Steel Grab Bars with Snap Flange</p> <p>Clearance from wall : 38mm</p> <p>Length : 610mm</p> <p>Material : 18-1, Type-304, 18-Gauge (1.2mm) Stainless steel tubing with a</p>                                                                                                                                                                                                                                             | <p>Barrier Free WR/Stalls &amp; Universal Washrooms</p>  |


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| CODE         | ITEM                              | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | APPLICATION / LOCATION                                                                                                                        |
|--------------|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
|              |                                   | <p>satin finish and slip resistant surface.</p> <p>Mounting flanges to be 18-8, Type-304, 11-gauge (3.2mm) thick, Stainless steel plates.</p> <p>Snap Flange Covers to be 18-8, Type-304, 22-gauge (0.8mm) drawn stainless steel with satin finish.</p> <p>Strength : 408 kg</p> <p>Supplier/Installer: Contractor supplied/ Contractor Installed</p>                                                                                                                                                                |                                                                                                                                               |
| <b>GRB-2</b> | <b>Grab Bar L-Shaped</b>          | <p>Product: 32mmDiameter Stainless Steel Grab Bars with Snap Flange</p> <p>Clearance from wall : 38mm</p> <p>Material : Grab bar to be 18-1, Type-304, 18-Gauge (1.2mm) Stainless steel tubing with a satin finish and slip resistant surface.</p> <p>Mounting flanges to be 18-8, Type-304, 11-gauge (3.2mm) thick, Stainless steel plates.</p> <p>Snap Flange Covers to be 18-8, Type-304, 22-gauge (0.8mm) drawn stainless steel with satin finish.</p> <p>Strength : 408 kg</p> <p>Dimension : 760mm x 760mm</p> | <p>Barrier Free WR/Stalls &amp; Universal Washrooms</p>  |
| <b>GRB-3</b> | <b>Grab Bar – L-Shaped Shower</b> | <p>Product: 32mm Diameter Stainless Steel Grab Bars with Snap Flange</p> <p>Clearance from wall : 38mm</p>                                                                                                                                                                                                                                                                                                                                                                                                           | <p>Barrier Free Shower – Vertical Installation</p>                                                                                            |

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| CODE         | ITEM            | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | APPLICATION / LOCATION                                                                                                                                  |
|--------------|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
|              |                 | <p>Length : 750mm</p> <p>Material : Grab bar to be 18-1, Type-304, 18-Gauge (1.2mm) Stainless steel tubing with a satin finish and slip resistant surface.</p> <p>Mounting flanges to be 18-8, Type-304, 11-gauge (3.2mm) thick, Stainless steel plates.</p> <p>Snap Flange Covers to be 18-8, Type-304, 22-gauge (0.8mm) drawn stainless steel with satin finish.</p> <p>Strength : 408 kg</p> <p>Supplier/Installer: Contractor supplied/ Contractor Installed</p>                                        |                                                                      |
| <b>GRB-4</b> | <b>Grab Bar</b> | <p>Product: 32mm Diameter Stainless Steel Grab Bars with Snap Flange</p> <p>Clearance from wall : 38mm</p> <p>Length : 1000mm</p> <p>Material : Grab bar to be 18-1, Type-304, 18-Gauge (1.2mm) Stainless steel tubing with a satin finish and slip resistant surface.</p> <p>Mounting flanges to be 18-8, Type-304, 11-gauge (3.2mm) thick, Stainless steel plates.</p> <p>Snap Flange Covers to be 18-8, Type-304, 22-gauge (0.8mm) drawn stainless steel with satin finish.</p> <p>Strength : 408 kg</p> | <p>Barrier Free Shower – Vertical and Horizontal Installation</p>  |

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| CODE          | ITEM                                      | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                  | APPLICATION / LOCATION                                                                                 |
|---------------|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|
|               |                                           | Supplier/Installer: Contractor supplied/ Contractor Installed                                                                                                                                                                                                                                                                                                                |                                                                                                        |
| <b>OP-1</b>   | <b>Operable Partitions</b>                | Product: Moveable Wall Partitions<br>STC: 47<br>Panel Type: Full height marker board<br>Size: Refer to Architectural Drawings for sizing – equal panel sizing as required to suite opening.<br>Thickness: 76mm<br>Frame: Roll Formed & Welded 16 Gage Steel<br>Seals: Top: Fixed Sweep Bottom: 2" Automatic,                                                                 | Teaching Centre<br> |
| <b>PTDD-1</b> | <b>Paper Towel Dispenser and Disposal</b> | Surface Mounted Paper Towel/ Waste Receptacle<br><br>Supplied/Installed: Owner Supplied/ Contractor Installed                                                                                                                                                                                                                                                                | <b>NO IMAGE</b>                                                                                        |
| <b>PTN-1</b>  | <b>Toilet Partition</b>                   | Product: Full Height Toilet Compartments<br>Solid colour partitions<br>Colour - metallic stainless steel<br>Material: HDPE<br>Waterproof and nonabsorbent, with self-lubricating surface, resistant to marks by pens, pencils, markers, and other writing instruments.<br>Partition thickness: 25mm.<br>Finish: #4 Brushed Stainless Steel<br>Supplier/Installer: Contractor | <b>NO IMAGE</b>                                                                                        |




NOTE: The application / location for the materials indicated is not limited to the list below and is to be used in conjunction with and may be supplemented by the Specifications, Schedules, and Drawings. Refer to Specifications, Schedules, and Drawings for full extent of material application and additional material types.

| CODE          | ITEM                  | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                           | APPLICATION / LOCATION                                                                |
|---------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|               |                       | supplied/ Contractor Installed                                                                                                                                                                                                                                                                                                                                                                        |                                                                                       |
| <b>SD-1</b>   | <b>Soap Dispenser</b> | Automatic Wall-Mounted Foam Soap Dispenser<br>Supplier/Installer: Owner supplied/ Contractor Installed                                                                                                                                                                                                                                                                                                | <b>NO IMAGE</b>                                                                       |
| <b>SD-2</b>   | <b>Soap Dispenser</b> | Automatic Wall-Mounted Foam Soap Dispenser<br>Supplier/Installer: Owner supplied/ Contractor Installed                                                                                                                                                                                                                                                                                                | <b>NO IMAGE</b>                                                                       |
| <b>SD-3</b>   | Recessed Soap Shelf   | RESERVED<br>Supplier/Installer: Contractor supplied/ Contractor Installed                                                                                                                                                                                                                                                                                                                             | Showers/ Locker Room                                                                  |
| <b>SHCU-1</b> | <b>Shower Curtain</b> | Product: Vinyl Shower Curtain<br><br>Materials : Curtain should be an opaque, vinyl material that is 0.2mm thick.<br><br>Curtain should have HDPE grommets every 150mm.<br><br>Standard of Acceptance: Bobrick<br>Product: B-204-2<br>Size: To suite shower opening<br>Colour: TBD<br><br>*Provide B-204-01 shower curtain hooks<br><br>Supplier/Installer: Contractor supplied/ Contractor Installed |  |
| <b>SHR-1</b>  | <b>Shower Rod</b>     | Product: Heavy Duty Shower Curtain Rod with Concealed Mounting and Stainless Steel Shower Curtain Hooks<br><br>Size: To suite shower opening<br><br>Material : Curtain Rod to be 18-8,                                                                                                                                                                                                                |  |

NOTE: The application / location for the materials indicated is not limited to the list below and is to be used in conjunction with and may be supplemented by the Specifications, Schedules, and Drawings. Refer to Specifications, Schedules, and Drawings for full extent of material application and additional material types.

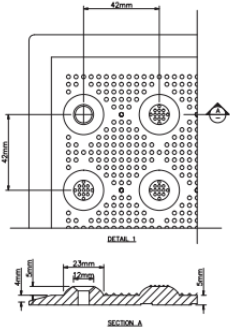
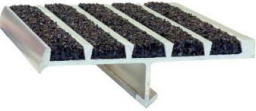
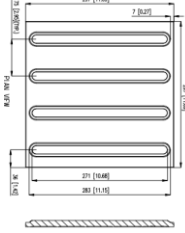
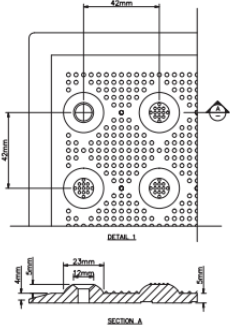
| CODE          | ITEM                            | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | APPLICATION / LOCATION                                                                |
|---------------|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|               |                                 | <p>Type-304, 20-gauge (1.0mm) stainless steel tubing with satin finish, 25mm outside diameter,</p> <p>Flanges to be 35mm diameter, chrome-plated plastic. Bright polished finish.</p> <p>Concealed mounting brackets to be Aluminum.</p> <p>Size: To suite shower opening</p> <p>Finish: Satin Finishes Stainless Steel</p> <p>Supplier/Installer: Contractor supplied/ Contractor Installed</p>                                                                                                                                                                                                    |                                                                                       |
| <b>SHST-1</b> | <b>Shower Seat</b>              | <p>Product: Reversible Folding Shower Seat</p> <p>Seat should be durable, water-resistant, ivory-coloured 13mm thick solid phenolic.</p> <p>Frame and mounting brackets are type 304 stainless steel with satin finish, and should have self-locking mechanisms.</p> <p>Must support up to 163kg.</p> <p>Seat dimensions are 840mm wide and projects 565mm from the wall when in use.</p> <p>Standard of Acceptance: Bobrick</p> <p>Product: B-5181</p> <p>Finish: Satin stainless steel and matter antique white phenolic</p> <p>Supplier/Installer: Contractor supplied/ Contractor Installed</p> |  |
| <b>SND-1</b>  | <b>Sanitary Napkin Disposal</b> | <p>Surface-Mounted Sanitary Napkin Disposal</p> <p>Supplier/Installer: Owner supplied/</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>NO IMAGE</b>                                                                       |

NOTE: The application / location for the materials indicated is not limited to the list below and is to be used in conjunction with and may be supplemented by the Specifications, Schedules, and Drawings. Refer to Specifications, Schedules, and Drawings for full extent of material application and additional material types.


| CODE         | ITEM                             | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | APPLICATION / LOCATION                                                              |
|--------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|              |                                  | Contractor Installed                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                     |
| <b>SND-2</b> | <b>Sanitary Napkin Dispenser</b> | Semi Recessed - Mounted Sanitary Napkin Dispenser Flat door design with 90° return.<br><br>Size: 330mm W x 711mm H.<br><br>Material: 18-8, Type-304, 18-gauge (1.2mm) stainless steel. All-welded construction<br><br>Finish: Satin Stainless steel<br><br>Projection: 100mm<br><br>Operation:<br>Push-Button Operation and two tumbler door locks keyed<br><br>Capacity: Holds 30 tampons, 20 napkins<br><br>Supplier/ Installer: Contractor supplied/ Contractor installed |  |
| <b>TBR-1</b> | <b>Toilet Backrests</b>          | Refer to Mechanical Schedules for Specification<br><br>Supplier/Installer: Contractor supplied/ Contractor Installed                                                                                                                                                                                                                                                                                                                                                         | <b>NO IMAGE</b>                                                                     |
| <b>TPH-1</b> | <b>Toilet Paper Holder</b>       | Surface-Mounted Multi-Roll Toilet Tissue Dispenser<br><br>Supplier/Installer: Owner supplied/ Contractor Installed                                                                                                                                                                                                                                                                                                                                                           | <b>NO IMAGE</b>                                                                     |

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| CODE  | ITEM                               | DESCRIPTION                                                                                                                                                                         | APPLICATION / LOCATION                                                                |
|-------|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| TWS-1 | <b>Tactile Attention Indicator</b> | 610mm x 610mm Tile<br>Colour Contrasting Surface formed of Truncated Domes of 4mm height arranged in a square grid to conform to CSA B651-18 Article 4.3.5.3.1                      |    |
| TWS-2 | <b>Stair Nosing</b>                | 75 Deep x 12mm H Colour Contrast Carborundum Strips with integral mounting hooks                                                                                                    |    |
| TWS-3 | <b>Tactile Direction Indicator</b> | 305x305 Tile<br>Colour Contrasting Surface formed of Truncated Bars of 4mm height and 270mm length arranged in a square grid to conform to CSA B651-18 Article 4.3.5.4.1            |  |
| TWS-4 | <b>Tactile Attention Indicator</b> | Surface Applied 610mm Deep x Stair Width<br>Colour Contrasting Surface formed of Truncated Dome of 4mm height arranged in a square grid to conform to CSA B651-18 Article 4.3.5.3.1 |  |



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| CODE   | ITEM    | DESCRIPTION                                                                                  | APPLICATION / LOCATION                                                              |
|--------|---------|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| LECT-1 | Lectern | Metal, height adjustable, accessible base with cable pass through<br><br>Finish: Ebony Black |  |

**DIVISION 12 – FURNISHINGS**

|            |                        |                                                                                                                                                                                                                                                                                                                                                    |                                                                                      |
|------------|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| FG-1       | Entrance Floor Grille  | Aluminum Floor Grille<br><br>30 mm deep Aluminum Backpan<br><br>9.5 x 3 x 25mm Aluminum T-shaped Profile Bars Striated every 25mm with AntiSlip surface both directions<br><br>Concealed Aluminum Integral Mounting Tracks at 100mm O.C.<br>Bars Oriented perpendicular to travel direction<br><br>Material: Aluminum Alloy 6061-T6<br>Mill Finish |  |
| WTR-M-RS-1 | Roller Shades - Manual | Product: Manual shades with pull chains<br><br>Must have reverse roll fabric drop and concealed hembar<br><br>Pull chains should be located at exterior edges of shade only.<br><br>Fabric: White basket-weave design<br>manual shade in standard pocket;                                                                                          | South Block 3 <sup>rd</sup> Floor<br>New Windows                                     |

NOTE: The application / location for the materials indicated is not limited to the list below and is to be used in conjunction with and may be supplemented by the Specifications, Schedules, and Drawings. Refer to Specifications, Schedules, and Drawings for full extent of material application and additional material types.

| CODE                     | ITEM                                    | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                     | APPLICATION / LOCATION                                                                                                                  |
|--------------------------|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
|                          |                                         | <p>reverse roll fabric drop;<br/>                     concealed, fabric-wrapped hembar;<br/>                     width to cover window opening in maximum 2 sections<br/>                     chains to be at outside edges only, no chains in the middle<br/>                     Fabric: TBD<br/>                     Openness: 5%<br/>                     Casing to match CW-4 mullion finish</p>                                           |                                                     |
| <p><b>WTR-A-RS-2</b></p> | <p><b>Roller Shades - Motorized</b></p> | <p>Product: Concealed Motorized Roller Shade Scrim<br/>                     Product: MagnaShade by Mecho;<br/>                     Must include stiffened concealed hembar, channel tracks in jamb and sill, and base channel to receive and lock stiffened concealed hembar;<br/>                     Casing to match CW-1 mullion finish<br/>                     Fabric: White basket-weave design<br/>                     Openness: 5%</p> | <p>Ground Floor Kent St Façade Privacy Screen</p>  |

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NOTE: The application / location for the materials indicated is not limited to the list below and is to be used in conjunction with and may be supplemented by the Specifications, Schedules, and Drawings. Refer to Specifications, Schedules, and Drawings for full extent of material application and additional material types.

| CODE              | ITEM                                 | DESCRIPTION                                                                                                                                                                                                                                                | APPLICATION / LOCATION |
|-------------------|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| <b>WTR-M-RS-3</b> | <b>Roller Shades – Strip Windows</b> | Product: Manual shades with pull chains<br>Must have reverse roll fabric drop and concealed hembar<br>Fabric: White basket-weave design<br>Surface mounted manual shade;<br>reverse roll fabric drop;<br>concealed, fabric-wrapped hembar;<br>Openness: 5% | Strip Windows          |

END OF SECTION

**Part 1            General**

**1.1                RELATED SECTIONS**

- .1    Section 06 05 73 - Wood Treatment.
- .2    Section 06 20 00 - Finish Carpentry.
- .3    Section 06 61 16 – Solid Surfacing Fabrications.
- .4    Section 07 92 00- Joint Sealants.

**1.2                REFERENCE STANDARDS**

- .1    American National Standards Institute (ANSI)
  - .1    ANSI/BHMA A156.9-2010, Cabinet Hardware.
  - .2    ANSI/BHMA A156.11-2014, Cabinet Locks.
  - .3    ANSI/NPA A208.1-09, Particleboard.
  - .4    ANSI A208.2-2016, Medium Density Fiberboard (MDF) for Interior Applications.
- .2    Architectural Woodwork Manufacturers Association of Canada (AWMAC)
  - .1    North American Architectural Woodwork Standards 4.0, 2021(NAAWS).
- .3    ASTM International
  - .1    ASTM F1667-21 Standard Specification for Driven Fasteners: Nails, Spikes and Staples.
- .4    Canadian General Standards Board (CGSB)
  - .1    CAN/CGSB-71.20-M88, Adhesive, Contact, Brushable.
- .5    CSA Group (CSA)
  - .1    CSA B111-1974 (R2003), Wire Nails, Spikes and Staples.
  - .2    CSA O121-17, Douglas Fir Plywood.
  - .3    CSA O151-17, Canadian Softwood Plywood.
  - .4    CSA O153-19, Poplar Plywood.
- .6    Forest Stewardship Council (FSC)
  - .1    FSC-STD-01-001-V5-2 2018, FSC Principle and Criteria for Forest Stewardship.
  - .2    FSC Accredited Certified Bodies.
- .7    GB Initiative Canada
  - .1    GREEN GLOBES Canada Design for New Construction and Major Retrofits v.2, <http://www.greenglobes.com>
- .8    Hardwood Plywood & Veneer Association (HPVA)
  - .1    ANSI/HPVA HP-1-2016 Standards



- .9 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1 Safety Data Sheets (SDS).
- .10 National Electrical Manufacturers Association (NEMA)
  - .1 ANSI/NEMA LD-3-05, High-Pressure Decorative Laminates (HPDL).
- .11 National Lumber Grades Authority (NLGA)
  - .1 NLGA Standard Grading Rules for Canadian Lumber 2017.
- .12 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI. Source Specific Standards
  - .1 SCAQMD Rule 1168-A2005, Adhesives and Sealants Applications.
- .13 Sustainable Forestry Initiative (SFI)
  - .1 SFI-2015-2019 Standard.
- .14 Underwriters' Laboratories of Canada (ULC):
  - .1 CAN/ULC-S102-2019, Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.

### **1.3 DEFINITIONS**

- .1 Concealed Surfaces: Surfaces not visible after installation.
- .2 Exposed Surfaces: Surfaces exposed to view. Surfaces visible when doors and drawers are closed, backs of hinged doors and edges of hinged doors exposed when opened.
- .3 Semi-Exposed Surfaces: Surfaces that become visible when drawers and doors are opened.

### **1.4 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00- Submittal Procedures.
- .2 Product Data:
  - .1 Prepare and submit material list in accordance with NAAWS, cross-referenced to specifications.
  - .2 Include manufacturer's instructions, printed product literature, data sheets and catalogue pages for all materials and products to be incorporated into architectural wood casework and include product characteristics, performance criteria, dimensions and profiles, finish and limitations on use.
  - .3 Submit two copies of WHMIS SDS in accordance with Section 01 35 29.06 - Health and Safety Requirements.
- .3 Hardware List:
  - .1 Submit hardware list.
  - .2 Include manufacturer's specification sheets indicating name, model, material, function, finish, BHMA designations and other pertinent information.
- .4 Shop Drawings:
  - .1 Prepare and submit shop drawings in accordance with NAAWS and as follows.

- .2 Submit shop drawings for initial review. Revise as directed, submit shop drawings for final acceptance and distribution.
  - .3 Indicate details of construction, profiles, jointing, fastening and other related details.
    - .1 Scales: profiles full size, details half full size.
  - .4 Indicate materials, thicknesses, finishes and hardware.
  - .5 Indicate locations of service outlets in casework, typical and special installation conditions, and connections, attachments, anchorage and location of exposed fastenings.
  - .6 Show location on casework elevations of backing required in supporting structure for attachment of casework.
  - .7 Show locations and details of framing, blocking and furring and co-ordination for interface work at substrates: details and layout of cutouts for finish hardware, cabinet hardware, audio/visual, security, mechanical and electrical services and fixtures;
  - .8 On casework and countertop elevations show location of backing required for attachment within walls; or provide blocking schedule;
  - .9 For panelling produced from pre-manufactured sets, show finished panel sizes, set numbers, sequence numbers within sets, and method of cutting panels to produce indicated sizes;
  - .10 For panelling veneered in fabrication shop, show veneer with dimensions, grain direction, and exposed face.
  - .11 Indicate NAAWS quality grade where different from predominant grade specified.
  - .12 Include colour schedule of all casework items, including all countertop, exposed, and semi-exposed cabinet finishes, finish material manufacturer, pattern, and color.
- .5 Samples: Prepare and submit samples as follows.
- .1 Apply sample finishes to specified substrate or core material minimum 300 x 300 mm to match designer sample. For veneers with transparent finish submit three samples to illustrate range and colour of grain expected.
  - .2 Submit duplicate samples of laminated plastic for each specified colour selection.
  - .3 Submit duplicate samples of laminated plastic joints, edging, cutouts and post-formed profiles.
  - .4 Certifications: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
  - .5 Submit statement of experience and qualifications of architectural wood casework fabricator.
- .6 Test reports: Duplicate copies of flame spread classification test reports by independent testing agency to requirements of CAN/ULC-S102.
- .7 Maintenance Data and Operating Instructions: Supply 3 copies of detailed instructions for maintaining, preserving and keeping work of this Section clean, including adequate warning of maintenance practices or materials detrimental to the finished work.

**1.5 SUSTAINABLE DESIGN SUBMITTALS**

- .1 Provide sustainable design submittals in accordance with Section 01 47 15 Sustainable Requirements: Construction.
- .2 Certified Wood:
  - .1 Submit listing of wood products and materials used, produced from wood obtained from forests certified by FSC Accredited Certification Body in accordance with FSC-STD-01-001.
  - .2 Submit vendor's FSC Chain-of-Custody Certificate number.
- .3 Submit in accordance with Section 01 33 00 - Submittal Procedures and Section 01 47 15 Sustainable Requirements: Construction, to confirm that products and procedures conform to specified sustainability requirements.
- .4 Submit evidence that work of this Section incorporates required percentage of regional materials and products, showing their cost, distance from project to furthest site of extraction or manufacture, and total cost of materials for project.
- .5 All wood products are to be certified under CAN/CSA-Z809 or FSC or SFI certified wood.
  - .1 Submit manufacturer's Chain-of-Custody Certificate number.
- .6 Provide the following documentation in accordance with Section 01 47 15 Sustainable Requirements: Construction:
  - .1 Environmental Product Declarations (EPDs): where available for products in this section provide compliant EPDs as per Section 01 47 15 Sustainable Requirements: Construction.
    - .1 Provide cost of materials excluding on-site labour and equipment.
- .7 Low-Emitting Materials: Interior site -applied Adhesives and Sealants
  - .1 Submit product data/SDS sheets for VOC emitting materials that clearly identifies the VOC content for compliance with Green Globes.
  - .2 Submit listing of adhesives and sealants used in building, showing compliance with VOC and chemical component limits or restrictions requirements.
  - .3 Submit listing of composite wood products used in building, stating that they contain no added urea-formaldehyde resins, and laminate adhesives used in building, stating that they contain no urea-formaldehyde.
- .8 Low-emitting materials: Interior site-applied Paints and Coatings
  - .1 Submit product data/SDS sheets for VOC emitting materials that clearly identifies the VOC content for compliance with Green Globes.
- .9 Construction Waste Management:
  - .1 Submit project Waste Management Plan highlighting recycling and salvage requirements.

**1.6 PRE-INSTALLATION MEETING**

- .1 Prior to enclosing framing, convene a meeting of contractor, casework fabricator, casework installer, framing subcontractor and Departmental Representative.

- .1 Review locations of backing required for casework installation as shown on shop drawings and as necessary for installation.
- .2 Review method of attachment for backing to wall system.
- .3 Review coordination with other affected sections.

## **1.7 QUALITY ASSURANCE**

- .1 Work of this Section shall be done by manufacturer and tradesmen with experience in successful manufacture and installation of this type of work and of quality as indicated on Drawings and as specified.
- .2 Single Source Manufacturing and Installation responsibility: Engage a qualified manufacturer to assume undivided responsibility for architectural woodwork items specified in this Section, including fabrication, finishing, and installation. The manufacturer shall maintain an organized quality control program and retain facilities with sufficient capacity and quality to produce the required architectural woodwork without causing delay to the project.
- .3 Quality of work and materials:
  - .1 Comply with the requirements for Premium Grade in accordance with the NAAWS standards for all materials and fabrication.
  - .2 In case of conflict between Contract Documents and NAAWS grade requirements, Contract Documents govern.
- .4 Site Quality Control: Provide full-time, fully qualified architectural woodwork supervisor to be present at Site at all times during execution of work specified in this Section.
- .5 Mock-ups:
  - .1 Construct mock-ups in accordance with Section 01 45 00- Quality Control.
  - .2 Erect mock-up to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution, as well as details, jointing, assembly, colour, finishes, alignment, and relationship to other materials, components and equipment placed by other Sections.
  - .3 Shop prepare one base cabinet unit, complete with counter top and hardware, and install where directed by Departmental Representative.
  - .4 Allow 48 hours for inspection of mock-up Departmental Representative before proceeding with Work.
  - .5 Adjust mock-up at no extra cost to Owner as required to obtain approval.
  - .6 When accepted, mock-up will demonstrate minimum standard for Work.
  - .7 Do not proceed with work prior to receipt of written acceptance of mock-up by Departmental Representative.
  - .8 Accepted mock-up may remain as part of finished work.
  - .9 Make sure the mock-up production, review and approval is accommodated in the construction schedule.
- .6 Lumber by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.

- .7 Plywood, particleboard, OSB and wood based composite panels to CSA and ANSI standards.
- .8 Regulatory requirements: Provide finished wall assemblies flame spread rating of not more than 150 and finished ceiling assemblies flame spread of not more than 25, listed and labelled by an organization accredited by Standards Council of Canada in conformance with CAN/ULC-S102, Surface Burning Characteristics of Building Materials and Assemblies.
- .9 Factory Finish: Apply finish in accordance with the NAAWS standards and to match Standard of Acceptance samples.

## **1.8 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Deliver wood casework only when area of work is enclosed, plaster and concrete work is dry, and area is broom clean and site environmental conditions are acceptable for installation.
- .3 Protect millwork against dampness and damage during and after delivery.
- .4 Store millwork in ventilated areas, protected from extreme changes of temperature and humidity, and within range recommended by NAAWS for location of project.
- .5 Store materials indoors, in dry location, in clean, dry, well-ventilated area.
- .6 Protect architectural woodwork and hardware from nicks, scratches, and blemishes.
- .7 Replace defective or damaged materials with new.
- .8 Packaging Waste Management: remove for reuse and return by manufacturer of pallets, crates, padding, and packaging materials as specified in Construction Waste Management Plan in accordance with Section 01 74 19 - Waste Management and Disposal.

## **1.9 FIELD CONDITIONS**

- .1 Environmental Limitations: Do not deliver or install millwork items until building is enclosed, wet work is complete, and HVAC system is operating and maintaining temperature between 16 and 32 deg. C and relative humidity between 25 and 55 percent during the remainder of the construction period.
- .2 Field Measurements: Where items are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication, and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
  - .1 Locate concealed framing, blocking, and reinforcements that support items by field measurements before being enclosed, and indicate measurements on Shop Drawings.
- .3 Established Dimensions: Where items are indicated to fit to other construction, establish dimensions for areas where items are to fit. Provide allowance for trimming at site, and coordinate construction to ensure that actual dimensions correspond to established dimensions.

**1.10 CO-ORDINATION**

- .1 Verify all dimensions on job site prior to shop fabrication and work on site. Alert Departmental Representative immediately where discrepancies occur.
- .2 Co-ordinate fabrication, delivery, and installation with other Sections whose work affect work of this Section, including finish hardware, audio/visual, security, mechanical and electrical services and fixtures.
- .3 It shall be the responsibility of this Section to verify the dimensions and installation details for Departmental Representative's supplied equipment and furnishings requiring cut-outs, adaptations and interfacing with woodwork items.

**Part 2 Products****2.1 SUSTAINABILITY CHARACTERISTICS**

- .1 Provide wood products, adhesives, and related materials as specified and in accordance with Section 01 47 15 Sustainable Requirements: Construction.
- .2 Lumber: to be CAN/CSA-Z809 or FSC or SFI certified.
- .3 Plywood, Particleboard, OSB: urea-formaldehyde free and certified to, CAN/CSA-Z809 or FSC or SFI.
- .4 Adhesives used to fabricate laminated assemblies used in the building that contain composite wood and agrifibre products shall not contain added formaldehyde.
- .5 Adhesives used must meet VOC requirements.

**2.2 MATERIALS**

- .1 Softwood lumber: S4S, moisture content 6 – 8% or less in accordance with following standards:
  - .1 CSA O141.
  - .2 NLGA Standard Grading Rules for Canadian Lumber.
  - .3 AWMAC premium grade, kiln-dried to moisture content as specified.
  - .4 Machine stress-rated lumber is acceptable.
- .2 Hardwood lumber: moisture content 6 – 8% or less in accordance:
  - .1 National Hardwood Lumber Association (NHLA).
  - .2 AWMAC premium grade, kiln-dried to moisture content as specified.
- .3 Medium Density Fibreboard Core (MDF): to ANSI A208.2, Grade 155, manufactured from 100% recycled materials, without the use of added formaldehyde resins, minimum density of 760 kg/m<sup>3</sup>.
  - .1 Where indicated on drawings or required by authorities having jurisdiction, provide industrial grade MDF certified to meet Class A surface burning characteristics of CAN/ULC S102 and UL 723 (maximum flame spread  $\leq 25$ , maximum smoke development  $\leq 200$ ).
  - .2 Use moisture resistant MR grade for countertops and splash-backs to receive plumbing fixtures.

- .4 Veneer Core (Plywood): Provide exterior grade, veneer core (plywood) conforming to NAAWS.
  - .1 Softwood plywood (concealed locations): Canadian Softwood Plywood (CSP) to CSA O151, standard construction, grade as required, of thickness as indicated, as recommended by NAAWS.
  - .2 Hardwood plywood: In accordance with ANSI/HPVA HP-1, with a non telegraphing grain manufactured with exterior glue meeting requirements of NAAWS. Exposed faces of ~~Good Sequence~~ **Slip** Matched, selected veneers, and unexposed faces of Sound Grade, So, veneers.
  - .3 Douglas Fir plywood (DFP): CSA O121; Western Softwood Plywood: CSA O151. Exposed two sides shall be Grade S2S, and exposed one side shall be Grade S1S. Consider fitment doors exposed on both sides.
  - .4 Birch-faced hardwood plywood: CSA O115, ~~Good Sequence~~ **Slip** Matched, Select White or Select Red.
  - .5 Where indicated on drawings, provide fire-retardant treated plywood.
- .5 Particleboard Core: 100% pre-consumer recycled wood fiber particleboard, no added formaldehyde, to ANSI/NPA A208.1, Grade R, minimum density of 720 kg/m<sup>3</sup>, sanded both sides with thickness as recommended by NAAWS for specified applications.
- .6 Solid wood, exposed and semi-exposed: refer to Section 06 20 00, Finish Carpentry.
- ~~.7 Stainless steel base: 1.6 mm thick, Type 304, polished finish.~~

### 2.3 LAMINATED PLASTIC MATERIALS

- .1 Laminated plastic for flatwork: to NEMA LD3, Grade VGL, Type HD, 1.2 mm thick.
- .2 Laminated plastic for postforming work: to NEMA LD3, Grade VGP, Type HD 1.2 mm thick.
- .3 Laminated plastic backing sheet: Grade BKL, Type HD minimum of 0.5 mm thick, colour as face laminate.
- .4 Laminated plastic liner sheet: Grade CLS, Type HD, 0.5 mm thick, colour white
- .5 Thermofused Melamine: to NEMA LD3 Grade LPDL.
  - .1 High wear resistant thermofused melamine: equal or exceed 400 cycles (Minimum standard for HPL abrasion test).
- .6 Plastic laminate colours, patterns, and finish: as specified in Section 01 61 10 – List of Materials.
- .7 Edgeband
  - .1 For Plastic Laminate Casework: High Pressure Decorative Laminate (HPDL).
- .8 Laminated plastic adhesive: contact adhesive to CAN/CGSB-71.20, resorcinol resin adhesive to CSA O112.7, polyvinyl adhesive to CSA O112.4, or two component epoxy thermosetting adhesive.



~~27 May~~ **18 Jul** 2022**2.4 HARDWARE**

- .1 Meeting requirements of AWS for grade specified, unless otherwise specified.
- .2 Finish for Semi exposed hardware: Manufacturer's standard finish.
- .3 Hardware Pulls: as indicated in 01 61 10, List of Materials.
- .4 Drawer Guides: full extension meeting requirements of AWS for type and size of drawer.
- .5 Hinges: 170°, concealed European style, self-closing.
- .6 Flip-up Hinges: 90°, flip-up hinge, nickel plated steel, self-closing.**
- ~~.6.7~~ Shelf Supports: recessed metal shelf standard and compatible supports.

**2.5 MANUFACTURED UNITS**

- .1 General: Materials and methods of construction to meet requirements of AWS for Premium grade.
- .2 Plastic Laminate Casework:
  - .1 Grade: AWS Premium Grade.
  - .2 Construction Type: AWS construction type, Frameless.
  - .3 Cabinet and door interface: flush overlay.
  - .4 Exposed Exterior Surfaces High Pressure Decorative Laminate (HPDL).
  - .5 Exposed interior surfaces: LPDL (melamine), white.
  - .6 Semi-exposed surfaces: vertical grade laminate matching exposed surfaces.
  - .7 Edgeband: HPDL
    - .1 Edgeband at doors, drawer fronts, and false fronts: 6 mm thick minimum.
- .3 Drawers:
  - .1 Sides: Particle board with melamine surfaces.
  - .2 Bottoms: MDF with melamine surfaces.
  - .3 Joinery: Meeting requirements of AWS for Premium Grade.
    - .1 Sides, front and back: Miter fold and glued
    - .2 Drawer bottoms grooved into front and sides and glued.

**2.6 CUSTOM MILLWORK**

- .1 Fabricate to sizes and profiles shown, and as detailed on drawings.

**2.7 CASEWORK FABRICATION - GENERAL**

- .1 Set nails and countersink screws apply plain wood filler to indentations, sand smooth and leave ready to receive finish.
- .2 Shop install cabinet hardware for doors, shelves and drawers. Recess shelf standards unless noted otherwise.
- .3 Shelving to cabinetwork to be adjustable unless otherwise noted.
- .4 Provide cutouts for plumbing fixtures, inserts, appliances, outlet boxes and other fixtures.



- .5 Shop assemble work for delivery to site in size easily handled and to ensure passage through building openings.
- .6 Obtain governing dimensions before fabricating items which are to accommodate or abut appliances, equipment and other materials.

## **2.8 LAMINATED PLASTIC CASEWORK FABRICATION - - GENERAL**

- .1 Perform laminated plastic fabrication in compliance with NEMA LD3, Annex A and specified NAAWS quality grade.
- .2 Ensure adjacent parts of continuous laminate work match in colour and pattern.
- .3 Veneer laminated plastic to core material in accordance with adhesive manufacturer's instructions. Ensure core and laminate profiles coincide to provide continuous support and bond over entire surface. Use continuous lengths up to 2400 mm. Keep joints 600 mm from sink cutouts.
- .4 Form shaped profiles and bends as indicated, using post-forming grade laminate to laminate manufacturer's instructions.
- .5 Use straight self-edging laminate strip for flatwork to cover exposed edge of core material. Chamfer exposed edges uniformly at approximately 20 degrees. Do not mitre laminate edges.
- .6 Apply laminate backing sheet to reverse side of core of plastic laminate work.
- .7 Apply laminated plastic liner sheet to interior of cabinetry.

## **2.9 CABINET LOCKS**

- .1 Cabinet locks: to ANSI/BHMA A156.11. Provide locks at cabinet doors and drawers.
- .2 Keying: Keyed as scheduled. Stamp keying code numbers on keys and cylinders.

## **2.10 ACCESSORIES**

- .1 Provide screws, bolts, expansion shields and other fastening devices required for satisfactory installation.
- .2 Wood screws: stainless steel, type and size to suit application.
- .3 Nails and staples: to CSA B111 and ASTM F1667.
- .4 Splines: metal.
- .5 Sealant: in accordance with Section 07 92 00- Joint Sealants.

## **2.11 SOLID SURFACING**

- .1 Refer to Section 06 61 16 – Solid Surfacing Fabrications.

**Part 3 Execution****3.1 EXAMINATION**

- .1 Verification of Conditions: verify conditions of substrates previously installed under other Sections or Contracts are acceptable for architectural woodwork installation in accordance with manufacturer's instructions.
  - .1 Visually inspect substrate in presence of Departmental Representative.
  - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
  - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

**3.2 INSTALLATION**

- .1 Install architectural wood casework in accordance with NAAWS grade for respective items.
- .2 In case of conflict between Contract Documents and NAAWS grade requirements, Contract Documents govern.
- .3 Install prefinished millwork at locations shown on drawings.
  - .1 Position accurately, level, plumb straight.
- .4 Fasten and anchor millwork securely.
  - .1 Supply and install heavy duty fixture attachments for wall mounted cabinets.
- .5 Countersink mechanical fasteners at exposed and semi-exposed surfaces, excluding installation attachment screws and screws securing cabinets end to end.
- .6 Use draw bolts in countertop joints.
- .7 Scribe and cut as required to fit abutting walls and to fit properly into recesses and to accommodate piping, columns, fixtures, outlets or other projecting, intersecting or penetrating objects.
- .8 At junction of plastic laminate counter back splash and adjacent wall finish, apply small bead of sealant in accordance with Section 07 92 00- Joint Sealants.
- .9 Apply moisture barrier between wood framing members and masonry or cementitious construction.
- .10 Fit hardware accurately and securely in accordance with manufacturer's written instructions.
- .11 Make cutouts for inset equipment and fixtures using templates provided.
- ~~.12 Install stainless steel base where indicated.~~
- ~~13.12~~ **12** Install accessories where indicated on drawings, in accordance with manufacturer's written instructions.

**3.3 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 00- Cleaning.
  - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 00 - Cleaning.
  - .1 Clean outside surfaces, cabinet work, inside cupboards and drawers.
  - .2 Remove excess glue, pencil and ink marks from surfaces.

**3.4 PROTECTION**

- .1 Protect millwork items from damage until final inspection.
- .2 Protect installed products and components from damage during construction.
- .3 Repair damage to adjacent materials caused by architectural woodwork installation.

**END OF SECTION**

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**Part 1 General**

**1.1 RELATED SECTIONS**

- .1 Section 05 50 00 - Metal Fabrications.
- .2 Section 06 61 16 - Solid Surfacing Fabrications.

**1.2 REFERENCE STANDARDS**

- .1 ASTM International
  - .1 ASTM A53-20, Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless
  - .2 ASTM A307-21, Standard Specifications for Carbon Steel Bolts and Studs, 60,000 psi Tensile Strength
  - .3 ASTM B209-21a, Standard Specification for Aluminum and Aluminum Alloy Sheet and Plate
  - .4 ASTM C1349-17, Standard Specification for Architectural Flat Glass Clad Polycarbonate
  - .5 ASTM D7803-19, Standard Practice for Preparation of Zinc (Hot-Dip Galvanized) Coated Iron and Steel Product and Hardware Surfaces for Powder Coating
- .2 Underwriters' Laboratories (UL):
  - .1 ANSI / UL 752-2005, (ANSI approved 2015), Standard for Bullet Resisting Equipment.

**1.3 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
  - .1 Submit manufacturer's instructions, printed product literature and data sheets and include product characteristics, performance criteria, physical size, finish and limitations.
- .3 Installation Drawings:
  - .1 Submit installation drawings.
  - .2 Indicate location, type, size, panel arrangement, backing, hardware, anchor or mounting details, frame or trim and accessories.

**1.4 QUALITY ASSURANCE**

- .1 Manufacturer Qualifications: Provide security Products from a single manufacturer with a minimum of ten (10) years experience.
- .2 Installer Qualifications: Security Products specified in this Section are to be installed by a installer with minimum five (5) years demonstrated experience in installing Products of similar type and complexity.

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- .3 Test Reports: submit certified test reports showing compliance with specified performance characteristics and physical properties.
- .4 Certificates: submit product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

## **1.5 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Storage and Handling Requirements:
  - .1 Store materials off ground, and in accordance with manufacturer's recommendations in clean, dry, area.
  - .2 Store and protect Products from nicks, scratches, and blemishes.
  - .3 Replace defective or damaged materials with new.

## **1.6 SUSTAINABLE REQUIREMENTS**

- .1 Provide the following documentation in accordance with Section 01 47 15 Sustainable Requirements: Construction:
  - .1 Environmental Product Declarations (EPDs): where available for products in this section provide compliant EPDs as per Section 01 47 15 Sustainable Requirements: Construction.
    - .1 Provide cost of materials excluding on-site labour and equipment.

## **1.7 WASTE MANAGEMENT AND DISPOSAL**

- .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 19 - Construction/Demolition Waste Management.

## **Part 2 Products**

### **2.1 BULLET RESISTANT GLAZED WINDOWS AND FRAMES**

- .1 Fixed and sliding transparent bullet resistant panels constructed from extruded 6063-T5 aluminum alloy in accordance with ASTM B209, including concealed hardware and fasteners needed for installation.
  - .1 Performance Requirements: Ballistic resistant aluminum framing, glazing, and accessories: rated and tested to ANSI / UL 752, Level 3.
    - .1 Unlisted bullet resistant products are not acceptable.

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- .2 Glazing (GL-BL): laminated, mar-resistant, polycarbonate and acrylic sheets to ASTM C1349 and ANSI /UL 752, Level 3.
  - .1 Interlayer for Laminated Ballistic Units: Clear urethane interlayer with a proven record of no tendency to bubble, discolour, or lose physical and mechanical properties after laminating polycarbonate sheets and installation.
  - .2 Fabrication: Laminate sheets to interlayers to produce laminated ballistic units free of foreign substances, air, and glass pockets.
- .3 Glazing Channel: U-Channel specifically designed for securing ballistic glazing tightly in place. Angles and stops are only acceptable for top attachment.
- .4 Voice Transmission: Hole and Backer Voice Port, bulletproof, round, 150 mm diameter hole with 250 mm oversized backer.
- .2 Deal Tray (DT-1): 16-gauge stainless steel, recessed security deal tray with sliding ball bearing assembly and spring-loaded plunger lock. System shall be designed to not allow viewing panel to be lifted while in the extended position.
- .3 Refer to Section 01 61 10, List of Materials for additional information and requirements on Product types, thicknesses, sizes, composition and finishes.

## **2.2 BIKE RACKS**

- .1 Bike Racks: U-Shaped Loop, 50 mm O.D. steel pipe conforming to ASTM A53, Schedule 40, Grade A, surface mounted, bolted, suitable for commercial application.
  - .1 Steel Surface Preparation: to ASTM D7803.
  - .2 Finish: powder coating to AAMA2604, pigmented, polyester based, thermosetting, powder coating. Provide coating system that complies with coating manufacturer's written instructions for pre-treatment, application, baking, and minimum dry film thickness.
    - .1 Colour: Blue.
  - .3 Quantities: as indicated on the drawings.
  - .4 Fasteners: bolts to ASTM A307, Grade A, hot galvanized steel, sized as required, corrosion resistant non staining type with hexagon heads and nuts where exposed in the finish work.

## **2.3 BOLLARDS**

- .1 Control Zone Bollard: free-standing, low density polyethylene (LDPE) plastic delineator bollard complete with weighted base, prismatic reflective collar and 6 mm dia. polypropylene rope.
  - .1 Height: 1000 mm, minimum.
  - .2 Quantities: as indicated on the drawings.
  - .3 Colour: Orange

~~27 May~~ **18 Jul** 2022**2.4 ADULT CHANGE TABLE**

- .1 Adult Special Needs Changing Table:
  - .1 Adjustable height, folding, wall-mounted changing table complete with mounting hardware, and including PVC (phthalate-free) coated soft mesh mattress.
  - .2 Technical Data:
    - .1 Static load (weight capacity): 150 kg.
    - .2 Product weight: based on the manufacturer's specific model, selected for the project.
    - .3 Material: Powder lacquered stainless steel.
    - .4 Minimum Size: 600 mm wide and 1800 mm long.
    - .5 Safety Rails: integrated, foldable up and down.
    - .6 Electric powered height adjustment from 520 mm to 920 mm.
  - .3 Electrical requirements:
    - .1 Operate at 24v / 1 amp via 120v wall outlet.
    - .2 Maximum consumption 70 W, current 0.3 Amp.
    - .3 Wired remote hand control for height adjustment.
    - .4 Integrated transformer and US 8' power cord included.
    - .5 Linak liquid tight actuator and control system.
    - .6 Noise level during operation: 48 decibels.
    - .7 All components, including hand control, are sealed, waterproof, and UL/ULC listed.
  - .4 Manufacturer's Standard warranty: 5 years.
- .2 Concealed support steel framing: as per Section 05 50 00 - Metal Fabrications.

**2.5 LECTERN**

- .1 **Lectern (LECT-1):** Height adjustable lectern/ podium, full metal front panels, with lift mechanism to raise work surface from 860 mm to 1280 mm high.
- .2 Angled working surface size 530 mm W x 530 mm D, with 60mm round grommet in black, 17 degree angle with pencil stop lip in anodized aluminum.
- .3 Push button activated lift with display for height read-out.
- .4 Accessible base shape with cable pass through, 2 wheels to roll lectern when tilted.
- .5 Finish: thermowrap, colour Ebony Black.
- .6 Lectern is to be outfitted with adjustable gooseneck light and microphone.
- .7 Cable umbilical will be integrated to provide for AV and power connections to the floor boxes.
- .8 Provide power panel and 6-outlet 110V power bar with 3 m cord.

**2.6 CONCRETE PARKING STOPS**

- .1 **Precast concrete, chamfered bumper curbs, low profile, 35 MPa compressive strength at 28 Days, air entrained, 2.15 m long, 190 mm wide, and 100 mm high.**

~~27 May~~ **18 Jul** 2022**.2 Anchorage pins: 15M diameter steel rebar, 600 mm long****Part 3 Execution****3.1 EXAMINATION**

- .1 Verification of Conditions: verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for chalkboard installation in accordance with manufacturer's written instructions.
  - .1 Visually inspect substrate in presence of Departmental Representative.
  - .2 Inform Departmental Representative of unacceptable conditions immediately upon discovery.
  - .3 Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Departmental Representative.

**3.2 MANUFACTURER'S INSTRUCTIONS**

- .1 Compliance: comply with manufacturer's written data, including product technical bulletins, product installation instructions, and data sheets.

**3.3 INSTALLATION**

- .1 Install Products in accordance with manufacturer's instructions, plumb and level, to details indicated on the drawings.
- .2 Installation of recessed Deal Trays: under Section 06 61 16, Solid Surfacing Fabrications.
- .3 Coordinate installation of adult change table with Section 05 50 00 - Metal Fabrications.
- .4 Lectern Installation: as specified in Section 11 52 01 - Audio Visual Systems
- .5 Concrete Parking Stops: Install precast bumper curbs at locations indicated on the Contract Drawings. Secure precast bumper curbs in place with anchorage pins, driven down into anchor holes to slightly below top of precast bumper curb.**

**3.4 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 00 - Cleaning.
  - .1 Leave Work area clean at end of each day.
- .2 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 00 - Cleaning.
- .3 Waste Management: separate waste materials for reuse and recycling in accordance with Section 01 74 19 - Waste Management and Disposal.
  - .1 Remove recycling containers and bins from site and dispose of materials at appropriate facility.

**3.5 PROTECTION**

- .1 Protect installed products and components from damage during construction.



.2 Repair damage to adjacent materials caused by Work of this Section.

**END OF SECTION**

**Part 1 General****1.1 RELATED REQUIREMENTS**

- .1 Section 08 14 16 - Flush Wood Doors
- .2 Section 08 34 73 - Sound Control Door Assemblies**
- ~~.3~~ Section 08 80 00 - Glazing

**1.2 REFERENCES**

- .1 American Architectural Manufacturers Association (AAMA)
  - .1 AAMA 2604-05, Voluntary Specifications, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels.
- .2 American Society of Testing and Materials International (ASTM)
  - .1 ASTM B221M-21: Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profile and Tubes (Metric).
- .3 GB Initiative Canada
  - .1 GREEN GLOBES Canada Design for New Construction and Major Retrofits v.2, <http://www.greenglobes.com>
- .4 Health Canada / Workplace Hazardous Materials Information System 2015 (WHMIS)
  - .1 Safety Data Sheets (SDS).
- .5 National Research Council Canada (NRC)
  - .1 National Building Code of Canada 2015, with Revisions and Errata 2018 (NBC).

**1.3 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
  - .1 Product Data: Manufacturer's data sheets on each type of product to be used, including:
    - .1 Construction details, material descriptions, glass type, dimensions of individual components and profiles, finishes, and hardware.
    - .2 Preparation instructions and recommendations.
    - .3 Storage and handling requirements and recommendations.
    - .4 Installation methods
  - .2 Delegated Design Submittals - Shop Drawings: Plans, sections, elevations, details and attachments to other work.
    - .1 Submit Engineered Shop Drawings prepared and sealed by Professional Engineer, registered or licensed to practice in the Province of PEI.
    - .2 Indicate materials, methods of construction, attachment or anchorage details, glazing, erection diagrams of pre-assembled components, connections, explanatory notes and other information necessary for completion of work.

- .3 Indicate partition layout, including doors and hardware, elevations, opening locations, special panels and conditions at adjacent construction.
- .4 Do not commence manufacture or order materials before shop drawings are reviewed by Departmental Representative.
- .3 Finish Samples:
  - .1 For initial Selection: For units with factory-applied color finishes.
  - .2 For verification: for each type of exposed finish and trim required.
- .4 Closeout Submittals:
  - .1 Maintenance Data and Operating Instructions: Three (3) copies of instructions covering re-glazing, adjustments and other relevant maintenance data for glass partition system.
- .5 Product test reports from approved independent testing laboratory, certifying compliance with STC Rating, Surface Burning Rating, and Structural Performance requirements.

#### **1.4 SUSTAINABLE DESIGN SUBMITTALS**

- .1 Adhere to the requirements of the Construction Waste Management plan as per Section 01 74 19 Construction Waste Management and Disposal.
- .2 Provide the following documentation in accordance with Section 01 47 15 Sustainable Requirements: Construction:
  - .1 Environmental Product Declarations (EPDs): where available for products in this section provide compliant EPDs as per Section 01 47 15 Sustainable Requirements: Construction.
    - .1 Provide cost of materials excluding on-site labour and equipment.
  - .2 Low-emitting materials: Interior site -applied Adhesives and Sealants
    - .1 Submit product data/MSDS sheets for VOC emitting materials that clearly identifies the VOC content for compliance with Green Globes.

#### **1.5 QUALITY ASSURANCE**

- .1 Manufacturer Qualifications: Provide primary products specified in this section supplied by a single manufacturer with a minimum of ten (10) years experience.
- .2 Installer Qualifications: Minimum of two years documented experience in the installation of products in this section and must be approved by the manufacturer.
- .3 Source Limitations: Obtain Partition System with glass doors from single source from single manufacturer.
- .4 Pre-Installation Meetings: Convene minimum two weeks prior to starting work of this section.
- .5 Shop Assembly: Preassemble items in shop to greatest extent possible. Disassemble units only to extent necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.
- .6 Installed partitions shall have a deflection limit of L/240 when subject to a 5 psf uniform lateral load and a concentrated load of 200 lbs.

**1.6 DELIVERY, STORAGE, AND HANDLING**

- .1 Deliver and store products in manufacturer's unopened packaging bearing the brand name and manufacturer's identification until ready for installation.
- .2 Handle materials to avoid damage.

**1.7 PROJECT CONDITIONS**

- .1 Environmental Limitations: Do not deliver or install partition system components until finishing operations, including ceiling and floor covering installation and painting, are completed.
- .2 Field measurements: Indicate all site dimensions including ceiling heights and "hold-to" dimensions on shop drawings.
- .3 Coordination of work: Coordinate layout and installation of partition components with other units of work, including ceilings, floor coverings, lighting fixtures, HVAC, fire suppression systems and other equipment.

**1.8 WARRANTY**

- .1 Submit, for Departmental Representative's acceptance, manufacturer's warranty document executed by authorized company official.
  - .1 Warranty period: Five (5) years from date of Substantial Performance.

**Part 2 Products****2.1 SYSTEM DESCRIPTION**

- .1 Interior floor to ceiling custom modular aluminium and glass partition system rectilinear in design and expression with crisp corners and well defined horizontal and vertical elements to harmonize and integrate with base building architectural detailing. System to be engineered, fabricated and supplied by single manufacturer, and installed as complete and functioning assembly.
  - .1 Refer to Section 01 61 10, List of Materials for additional information and requirements.
  - .2 Unitized panels are to be fabricated off-site in a controlled factory environment and delivered fully finished to site for installation with no additional assembly, construction or finishing required.
  - .3 System shall include doors complete with hardware. All door panels to utilize standard panel connection methods and be reversible in field without additional modifications or materials, **except doors with high Sound Transmission Classification (STC) ratings. High STC doors do not require to be reversible.**
  - .4 Components to be distortion free, uniform in dimension, construction and appearance, panel construction with faces smooth and free of buckles, oil-canning, and seams.

## 2.2 PERFORMANCE REQUIREMENTS

- .1 Acoustic Performance:
  - .1 Glazed partitions minimum STC ratings are indicated on the Wall Assemblies drawing and Door / Frame Schedule.
- .2 Structural Performance:
  - .1 Design and size the Partition System and components to withstand dead and live loads as calculated in accordance with the National Building Code, and project requirements.
- .3 Combustibility Performance:
  - .1 Product shall be available with finishes and construction acceptable for use in Non-Combustible buildings, in accordance with the National Building Code.
- .4 Completed installation shall be of adequate strength to support operating doors and normal loading without glass shaking or vibrating when doors are in use.

## 2.3 MATERIALS

- .1 Aluminum extrusions: to ASTM B221, minimum 1.3mm thick, with strength and durability characteristics of not less than Alloy 6063-T5.
- .2 Glass and glazing materials:
  - .1 Glass and glazing: Single and double glazed units, Laminated Safety glass, as indicated in Section 01 61 10, List of Materials.
  - .2 Thickness of glass: Glass thicknesses indicated or scheduled in the Contract Documents are minimums required. Exact thickness of glass to be engineered to account for size of glass and application, to satisfy building code requirements and requirements of authorities having jurisdiction.
  - .3 Glazing sections: resilient ABS, extruded glazing section to suit glazing channel retaining slot, to Partition System manufacturer's standard, gaskets for setting glass.
  - .4 Refer to Section 08 80 00 Glazing for additional information
- .3 Types of Doors: Hinged and sliding as indicated, full height, complete with required hardware, and sound gasketing to achieve required STC ratings indicated on the drawings.
- .4 Door panels:
  - .1 Glazed in a slim profile, hardware, and sound gasketing to achieve required STC rating.
  - .2 Flush Wood Doors: as per Section 08 14 16.
- .5 Door frames: extruded aluminium, with self-closing mechanism on the door interior.
- .6 Hardware: supply and install as required for complete system, and to ensure alignment of glass between fixed units and door modules.
- .7 Tested (listed) acoustical door and frame assemblies: certified to have STC rating of STC 51. Refer to Section 08 34 73, Sound Control Door Assemblies, for additional requirements.**

**2.4 FABRICATION**

- .1 General: Take field measurements from actual structure and verify prior to commencement of fabrication.
- .2 Fabricate Partition System for installation with concealed fastening devices and pressure-fit members that will not damage ceiling or floor finishes.
- .3 Fabricate components that, when assembled, have the following characteristics:
  - .1 Profiles that are sharp, straight, and free of defects or deformations.
  - .2 Accurately fitted joints with ends coped or mitered.
- .4 Fabricate system for installation with continuous seals at floor, ceiling, and other locations where partitions abut fixed construction.

**2.5 FINISHES**

- .1 Powder-Coat Finish: to AAMA 2604, with a minimum dry film thickness of 1.2 mils (30 microns).
  - .1 Colours: as selected by Departmental Representative from manufacturer's full range.
- .2 ABS extrusions: colour as selected by Departmental Representative.

**Part 3 Execution****3.1 EXAMINATION**

- .1 Examine the areas and conditions where glazed partitions are to be installed and correct any conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected by the Contractor in a manner acceptable to Departmental Representative.

**3.2 PREPARATION**

- .1 Concealed surfaces of aluminum which would otherwise come in direct contact with structural steel, concrete, masonry or plaster shall be given a heavy protective coating of bituminous paint or zinc chromate primer prior to installation.

**3.3 ERECTION**

- .1 Comply with frame manufacturer's printed installation instructions and reviewed engineered shop drawings under manufacturer's approved, direct supervision to insure wall performance and compatibility with design and specification intent. Strictly adhere to maintaining required wall thickness.
- .2 Erect partitions rigid, level, plumb and aligned, with components secured together, securely anchored to substrates with fasteners recommended by partition system manufacturer.
- .3 Install partitions before floor coverings and after suspended ceilings have been installed. Coordinate partition work with work of other trades which are affected by partition installation. Avoid damage to installed work.

- .4 Provide through posts to ceiling, or other concealed supports as required to assure lateral stability of partition runs.
- .5 Install continuous seal to prevent light and sound transmission at partition contacts with floor, ceiling, wall and other abutting surfaces.
- .6 Repair damaged or defaced work or replace with new work, as acceptable to Departmental Representative. Completely refinish defaced partition components with factory finished materials, or replace defaced components.

### **3.4 ADJUSTING**

- .1 Adjust Partition System for correct function and operation in accordance with manufacturer's written instructions.

### **3.5 CLEANING**

- .1 Progress Cleaning: clean in accordance with Section 01 74 11 - Cleaning.
  - .1 Leave Work area clean at end of each day.
  - .2 Clean exposed frames promptly after installation, using a damp cloth. If other marks or damage has occurred, contact the manufacturer for recommended methods. Do not use abrasives.
- .2 Final Cleaning: upon completion remove protective coatings, labels, stains and foreign matter from exposed surfaces of aluminum work and glass.
- .3 Remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 11 - Cleaning.

**END OF SECTION**

**Part 1 General****1.1 RELATED REQUIREMENTS:**

- .1 Section 01 33 00 - Submittal Procedures.
- .2 Section 25 05 01 – General Requirements

**1.2 DEFINITIONS**

- .1 Acronyms and definitions: refer to Section 25 05 01 - EMCS: General Requirements.

**1.3 DESIGN REQUIREMENTS**

- .1 Preliminary Design Review: to contain following contractor and systems information.
  - .1 Location of local office.
  - .2 Description and location of installing and servicing technical staff.
  - .3 Location and qualifications of programming design and programming support staff.
  - .4 List of spare parts.
  - .5 Location of spare parts stock.
  - .6 Names of sub-contractors and site-specific key personnel.
  - .7 Sketch of site-specific system architecture.
  - .8 Specification sheets for each item including memory provided, programming language, speed, type of data transmission.
  - .9 Descriptive brochures.
  - .10 Sample CDL and graphics (systems schematics).
  - .11 Response time for each type of command and report.
  - .12 Item-by-item statement of compliance.
  - .13 Proof of demonstrated ability of system to communicate utilizing BACnet

**1.4 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submittals in accordance with Section 01 33 00 - Submittal Procedures and coordinate with requirements in this Section.
- .2 Submit preliminary design document within 5 working days after tender closing and before contract award, for review by Departmental Representative.
- .3 Shop Drawings to consist of 3 hard copies and 1 soft copy of design documents, shop drawings, product data and software.
- .4 Hard copy to be completely indexed and coordinated package to assure compliance with contract requirements and arranged in same sequence as specification and cross-referenced to specification section and paragraph number.
- .5 Soft copy to be in Autocad - latest version and Microsoft Word latest version format, structured using menu format for easy loading and retrieval on OWS.



## 1.5 PRELIMINARY SHOP DRAWING REVIEW

- .1 Submit preliminary shop drawings within 30 working days of award of contract and include following:
  - .1 Specification sheets for each item. To include manufacturer's descriptive literature, manufacturer's installation recommendations, specifications, drawings, diagrams, performance and characteristic curves, catalogue cuts, manufacturer's name, trade name, catalogue or model number, nameplate data, size, layout, dimensions, capacity, other data to establish compliance.
  - .2 Detailed system architecture showing all points associated with each controller including commentaries, signal levels, pressures where new EMCS ~~ties into~~ **installed. There is no existing control equipment in place. No part of the existing control system will remain.**
  - .3 Spare point capacity of each controller by number and type.
  - .4 Controller locations.
  - .5 Auxiliary control cabinet locations.
  - .6 Single line diagrams showing cable routings, conduit sizes, spare conduit capacity between control centre, field controllers and systems being controlled.
  - .7 Valves: complete schedule listing including following information: designation, service, manufacturer, model, point ID, design flow rate, design pressure drop, required Cv, Valve size, actual Cv, spring range, pilot range, required torque, actual torque and close off pressure (required and actual).
  - .8 Dampers: sketches showing module assembly, interconnecting hardware, operator locations, operator spring range, pilot range, required torque, actual torque.
  - .9 Flow measuring stations: complete schedule listing designation, service, point ID, manufacturer, model, size, velocity at design flow rate, manufacturer, model and range of velocity transmitter.
  - .10 Compressor schematic and sizing data.

## 1.6 DETAILED SHOP DRAWING REVIEW

- .1 Submit detailed shop drawings within 60 working days after award of contract and before start of installation and include following:
  - .1 Corrected and updated versions (hard copy only) of submissions made during preliminary review.
  - .2 Wiring diagrams.
  - .3 Piping diagrams and hook-ups.
  - .4 Interface wiring diagrams showing termination connections and signal levels for equipment to be supplied by others.
  - .5 Shop drawings for each input/output point, sensors, transmitters, showing information associated with each particular point including:
    - .1 Sensing element type and location.
    - .2 Transmitter type and range.
    - .3 Associated field wiring schematics, schedules and terminations.
    - .4 Pneumatic schematics and schedules.

- .5 Complete Point Name Lists.
- .6 Setpoints, curves or graphs and alarm limits (high and low, 3 types critical, cautionary and maintenance), signal range.
- .7 Software and programming details associated with each point.
- .8 Manufacturer's recommended installation instructions and procedures.
- .9 Input and output signal levels or pressures where new system ties into existing control equipment.
- .6 Control schematics, narrative description, CDL's fully showing and describing automatic and manual procedure required to achieve proper operation of project, including under complete failure of EMCS.
- .7 Graphic system schematic displays of air and water systems with point identifiers and textual description of system, and typical floor plans as specified.
- .8 Complete system CDL's including companion English language explanations on same sheet but with different font and italics. CDL's to contain specified energy optimization programs.
- .9 Listing and example of specified reports.
- .10 Listing of time of day schedules.
- .11 Mark up to-scale construction drawing to detail control room showing location of equipment and operator work space.
- .12 Type and size of memory with statement of spare memory capacity.
- .13 Full description of software programs provided.
- .14 Sample of "Operating Instructions Manual" to be used for training purposes.
- .15 Outline of proposed start-up and verification procedures. Refer to Section 25 01 11 - EMCS: Start-up, Verification and Commissioning.

## **1.7 QUALITY ASSURANCE**

- .1 Preliminary Design Review Meeting: Convene meeting within 45 working days of award of contract to:
  - .1 Undertake functional review of preliminary design documents, resolve inconsistencies.
  - .2 Resolve conflicts between Contract Document requirements and actual items (e.g.: points list inconsistencies).
  - .3 Review interface requirements of materials supplied by others.
  - .4 Review "Sequence of Operations".
- .2 Contractor's programmer to attend meeting.
- .3 Departmental Representative retains right to revise sequence or subsequent CDL prior to software finalization without cost to Departmental Representative.

## **Part 2 Products**

### **2.1 NOT USED**

- .1 Not Used.

**Part 3 Execution**

**3.1 NOT USED**

.1 Not Used.

**END OF SECTION**

**Part 1        General****1.1            SUMMARY**

- .1        This Section includes requirements for selective demolition and removal of electrical, communications, safety and security components including removal of conduit, junction boxes, and panels to source (home run removal) and incidentals required to complete work described in this Section ready for new construction.

**1.2            RELATED REQUIREMENTS**

- .1        Section 02 41 19.13 – Selective Building Demolition
- .2        Section 02 41 19.16 – Selective Interior Demolition
- .3        Section 01 74 19 – Construction Waste Management and Disposal

**1.3            REFERENCE STANDARDS**

- .1        CSA Group
  - .1        CSA S350 M1980 (R2003), Code of Practice for Safety in Demolition of Structures

**1.4            DEFINITIONS**

- .1        Demolish: Detach items from existing construction and legally dispose of items off site, unless indicated as removed and salvaged, or removed and reinstalled.
- .2        Remove: Planned deconstruction and disassembly of electrical items from existing construction including removal of conduit, junction boxes, cabling and wiring from electrical component to panel taking care not to damage adjacent assemblies designated to remain; legally dispose of items off site, unless indicated as removed and salvaged, or removed and reinstalled.
- .3        Remove and Salvage: Detach items from existing construction and deliver them to Departmental Representative ready for reuse.
- .4        Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.
- .5        Existing to Remain: Existing items of construction that are not removed and that are not otherwise indicated as being removed and salvaged, or removed and reinstalled.
- .6        Hazardous Substances: Dangerous substances, dangerous goods, hazardous commodities and hazardous products may include asbestos, mercury and lead, PCB's, poisons, corrosive agents, flammable substances, radioactive substances, or other material that can endanger human health or wellbeing or environment if handled improperly as defined by Federal Hazardous Products Act (RSC 1985) including latest amendments.

**1.5 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Action Submittals: Provide in accordance with Section 26 05 00 Common Work Results for Electrical before starting work of this Section:
  - .1 Construction Waste Management Plan (CWM Plan): Submit plan addressing opportunities for reduction, reuse, or recycling of materials prepared in accordance with Section 260500 Common Work Results for Electrical.

**1.6 ADMINISTRATIVE REQUIREMENTS**

- .1 Coordination: Coordinate work of this Section to avoid interference with work by other Sections.
- .2 Scheduling: Account for Departmental Representative continued occupancy requirements during selective demolition with Section 02 41 19.13 – Selective Building Demolition, Section 02 41 19.16 – Selective Interior Demolition and schedule staged occupancy and worksite activities as a defined Critical Path in Section 01 32 16.16 – Construction Progress Schedule – Critical Path Method (CPM).

**1.7 QUALITY ASSURANCE**

- .1 Regulatory Requirements: Perform work of this Section in accordance with:
  - .1 Federal and Provincial Workers' Compensation Boards/Commissions
  - .2 Occupational Health and Safety Act and Regulations.
  - .3 Conform to local municipal bylaws and regulations governing this type of work.

**1.8 SITE CONDITIONS**

- .1 Existing Conditions: Condition of materials identified as being salvaged or demolished are based on their observed condition at time of site examination before tendering.
- .2 Existing Hazardous Substances: Departmental Representative performed a hazardous substances assessment and it is not expected that hazardous substances will be encountered in Work.
  - .1 Hazardous substances will be removed by a hazardous abatement specialist engaged by Departmental Representative before start of Work.
- .3 Existing Hazardous Substances: Departmental Representative has performed a hazardous substances assessment and identified materials requiring abatement as follows:
  - .1 Hazardous substances are as defined in Hazardous Products Act.
  - .2 Hazardous substances will be removed by Department Representative as a part of Contract before starting Work.
- .4 Discovery of Hazardous Substances: It is not expected that Hazardous Substances will be encountered in Work; immediately notify Departmental Representative if materials suspected of containing hazardous substances are encountered and perform following activities:
  - .1 Refer to Section 01 41 00 – Regulatory Requirements for directives associated with specific material types.
  - .2 Hazardous substances will be as defined in Hazardous Products Act.

- .3 Stop work in area of suspected hazardous substances.
- .4 Take preventative measures to limit users' and workers' exposure, provide barriers and other safety devices and do not disturb.
- .5 Hazardous substances will be removed by Departmental Representative under a separate contract or as a change to Work.
- .6 Proceed only after written instructions have been received from Departmental Representative.

## **1.9 SALVAGE AND DEBRIS MATERIALS**

- .1 Demolished items will be removed from Project site; except for items indicated as being reused, salvaged, or otherwise indicated to remain Departmental Representative property.
- .2 Carefully remove materials and items designated for salvage and store in a manner to prevent damage or devaluation of materials in place designated by Departmental Representative.

## **Part 2 Products**

### **2.1 MATERIALS**

- .1 General Patching and Repair Materials: Refer to Section 02 41 19.13 – Selective Building Demolition, Section 02 41 19.16 – Selective Interior Demolition for listing of patching and repair materials incidental to removal or demolition of components associated with work of this Section.
- .2 Electrical Repair Materials: Use only new materials, CSA or ULC labelled as appropriate and matching components remaining after work associated with components identified for removal or demolition are completed.
- .3 Fire stopping Repair Materials: Use fire stopping materials compatible with existing fire stopping systems where removal or demolition work affects rated assemblies, restore to match existing fire rated performance.

## **Part 3 Execution**

### **3.1 EXAMINATION**

- .1 Verification of Existing Conditions: Visit site, thoroughly examine and become familiar with conditions that may affect the work of this Section before tendering the Bid; Departmental Representative will not consider claims for extras for work or materials necessary for proper execution and completion of the contract that could have been determined by a site visit.

### **3.2 PREPARATION**

- .1 Protection of Existing Systems to Remain: Protect systems and components indicated to remain in place during selective demolition operations and as follows:
  - .1 Prevent movement and install bracing to prevent settlement or damage of adjacent services and parts of existing buildings scheduled to remain.

- .2 Notify Departmental Representative and cease operations where safety of buildings being demolished, adjacent structures or services appears to be endangered and await additional instructions before resuming demolition work specified in this Section.
- .3 Prevent debris from blocking drainage inlets.
- .4 Protect mechanical systems that will remain in operation.
- .2 Protection of Building Occupants: Sequence demolition work so that interference with the use of the building by the Departmental Representative and users is minimized and as follows:
  - .1 Prevent debris from endangering safe access to and egress from occupied buildings.
  - .2 Notify Departmental Representative and cease operations where safety of occupants appears to be endangered and await additional instructions before resuming demolition work specified in this Section.

### 3.3 EXECUTION

- .1 Demolition and Removal: Coordinate requirements of this Section with information contained in Section 02 41 19.13 – Selective Building Demolition and Section 02 41 19.16 – Selective Interior Demolition and as follows:
  - .1 Disconnect electrical circuits, panel feeders, electrical service and panels as shown on the drawings.
  - .2 Remove existing luminaires, electrical devices and equipment including associated conduits, boxes, wiring, and similar items unless specifically noted otherwise.
  - .3 Disconnect and remove existing fire alarm system including associated conduits, boxes, wiring, and similar items unless specifically noted otherwise.
  - .4 Disconnect and remove communication systems including associated conduits, boxes, cabling, and similar items unless specifically noted otherwise.
  - .5 Disconnect and remove telephone outlets, associated conduit, cabling and sub terminal backboards and related accessories; maintain telephone service and main terminal backboard as is.
  - .6 Disconnect and remove existing security system devices including but not limited to card readers, pushbuttons, door operators, cameras, etc, complete with back boxes, conduits, wires and cables, junction and pull boxes, and similar items unless specifically noted otherwise.**
  - ~~.6.7~~ Disconnect mechanical equipment to be removed or relocated, disconnect all associated equipment, conduits and wiring.
  - ~~.7.8~~ Perform demolition work in a neat and workmanlike manner:
    - .1 Remove tools or equipment after completion of work, and leave site clean and ready for subsequent renovation work.
    - .2 Repair and restore damages caused as a result of work of this Section to match existing materials and finishes.
  - ~~.8.9~~ Place weatherproof blank cover plates on exterior outlet boxes remaining after demolition and removal activities.

- ~~9.10~~ Remove existing conduits, boxes, cabling and wiring associated with removed luminaires, electrical devices and equipment.
- ~~10.11~~ Grind off conduits and make flush with surface of concrete where conduits are cast into concrete; seal open ends of conduit with silicone sealant and leave in place.
- ~~11.12~~ Seal open ends of conduit with silicone sealant and leave in place where they are inaccessible or cannot be removed without damaging adjacent construction.

### **3.4 CLOSEOUT ACTIVITIES**

- .1 Demolition Waste Disposal: Arrange for legal disposal and remove demolished materials to accredited provincial landfill site or alternative disposal site (recycle centre) except where explicitly noted otherwise for materials being salvaged for re use in new construction in accordance with Section 01 74 19 – Construction Waste Management and Disposal.
- .2 Hazardous Substances Disposal: Arrange for disposal of hazardous substances in accordance with requirements of Section 01 41 00 – Regulatory Requirements for directives associated with specific material types

**END OF SECTION**



**Part 1 General**

**1.1 RELATED REQUIREMENTS**

- .1 Section 26 05 00 - Common Work Results for Electrical.
- .2 Section 26 08 02 – Field Testing and Commissioning – Low Voltage Installations.

**1.2 REFERENCE STANDARDS**

- .1 American Petroleum Institute (API)
  - .1 API Std. 650 13<sup>th</sup> Edition, Welded Steel Tanks for Oil Storage 11th Edition.
- .2 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB-3.6-2010, Regular Sulphur Diesel Fuel.
- .3 Canadian Environmental Protection Act (CEPA)
  - .1 CCME PN 1326-2008, Environmental Code of Practice for Aboveground and Underground Storage Tank Systems for Petroleum Products and Allied Petroleum Products.
- .4 CSA Group (CSA)
  - .1 CSA C22.1-21, Canadian Electrical Code, Part 1 (25th Edition), Safety Standard for Electrical Installation.
  - .2 CSA C282:19, Emergency Power Supply for Buildings
  - .3 CSA C22.2 No. 5-16, Moulded Case Circuit Breakers
  - .4 CSA-B139 Series:19, Installation Code for Oil Burning Equipment.
- .5 International Organization for Standardization (ISO)
  - .1 ISO 3046-1-2002, Reciprocating Internal Combustion Engines - Performance - Part 1: Declarations of Power, Fuel and Lubricating Oil Consumptions, and Test Methods - Additional requirements for engines for general use.
- .6 National Electrical Manufacturers Association (NEMA)
  - .1 NEMA MG 1-2016, Motors and Generators.
- .7 Underwriters' Laboratories of Canada (ULC)
  - .1 CAN/ULC-S601-14, Standard for Shop Fabricated Steel Aboveground Horizontal Tanks for Flammable and Combustible Liquids.
- .8 The generator set must conform to applicable NFPA requirements.
- .9 The generator set must meet federal emission guidelines for stationary emergency power generation.

**1.3 ACTION AND INFORMATIONAL SUBMITTALS**

- .1 Submit submittals in accordance with Section 26 05 00 Common Work Results for Electrical.

- .2 Product Data:
  - .1 Provide manufacturer's printed product literature, specifications and data sheets for power generators and include product characteristics, performance criteria, physical size, finish and limitations, warranty statement.
- .3 Shop Drawings:
  - .1 Submit drawings include:
    - .1 Engine: make and model, with performance curves.
    - .2 Alternator: make and model.
    - .3 Voltage regulator: make, model and type.
    - .4 Battery: make, type and capacity.
    - .5 Battery charger: make, type and model.
    - .6 Alternator control panel: make and type of meters and controls.
    - .7 Governor type and model.
    - .8 Control specification sheets.
    - .9 Wiring schematic.
    - .10 Sound data.
    - .11 Emission certification.
    - .12 British standard or DIN rating of engine.
    - .13 Dimensioned drawing showing complete generating set mounted on steel base, including vibration isolators, exhaust system, drip trays, and total weight.
    - .14 Continuous full load output of set at 0.8 PF lagging.
    - .15 Description of set operation.

#### **1.4 CLOSEOUT SUBMITTALS**

- .1 Provide operation and maintenance data for diesel generator for incorporation into manual specified in Section 26 05 00 Common Work Results for Electrical.
- .2 Include in Operation and Maintenance Manual instructions for particular unit supplied and not general description of units manufactured by supplier and:
  - .1 Operation and maintenance instructions for engine, alternator, control panel, battery charger, battery, fuel system, engine room ventilation system, exhaust system and accessories, to permit effective operation, maintenance and repair.
  - .2 Technical data:
    - .1 Illustrated parts lists with parts catalogue numbers.
    - .2 Schematic diagram of electrical controls.
    - .3 Certified copy of factory test results.
    - .4 Maintenance and overhaul instructions and schedules.
    - .5 Precise details for adjustment and setting of time delay relays or sensing controls which require on site adjustment.

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## **1.5 DELIVERY, STORAGE AND HANDLING**

- .1 Deliver, store and handle materials in accordance with Section 26 05 00 Common Work Results for Electrical and with manufacturer's written instructions.
- .2 Delivery and Acceptance Requirements: deliver materials to site in original factory packaging, labelled with manufacturer's name and address.
- .3 Packaging Waste Management: remove in accordance with Section 26 05 00 Common Work Results for Electrical.

## **1.6 MAINTENANCE MATERIAL SUBMITTALS**

- .1 Provide maintenance materials in accordance with Section 26 05 00 Common Work Results for Electrical.
- .2 Include:
  - .1 2 fuel filter replacement elements.
  - .2 2 lube oil filter replacement elements.
  - .3 2 air cleaner filter elements.
  - .4 2 sets of fuses for control panel.
  - .5 Special tools for unit servicing.

## **Part 2 Products**

### **2.1 SYSTEM DESCRIPTION**

- .1 Provide a 500 kW integrated, standby power system to supply electrical power at 600 Volts, 60 Hertz, 3 Phase.
- .2 Generating system consists of:
  - .1 Liquid cooled diesel engine.
  - .2 Synchronous AC alternator.
  - .3 System controls with all necessary accessories for a complete operating system.
  - .4 Battery charger and battery.
  - .5 Fuel supply system.
  - .6 Exhaust system.
  - .7 Steel mounting base.
  - .8 Sub-base fuel tank.
- .3 System designed to operate as emergency standby in remote location.
- .4 Environment requirements:
  - .1 Altitude above sea level: 49 m
  - .2 Ambient temperature: -30 degree C to +40 degree C
  - .3 Humidity: 15 % to 100 %
- .5 The genset is to meet site noise requirements of 75 dBa, at 7 meters.

**2.2 DIESEL ENGINE**

- .1 Diesel engine: to ISO 3046-1.
- .2 Liquid cooled, diesel fueled, turbo charged and after cooled engine of 4-cycle design, with adequate horsepower to achieve output with at a synchronous speed 1800 rpm.
- .3 The generator system to support generator start-up and load transfer within 10 seconds.
- .4 The engine to support a 100% load step.
- .5 Cooling System:
  - .1 Liquid cooled: heavy duty industrial radiator mounted on generating set base with engine driven pusher type fan to direct air through radiator from engine side, with ethylene glycol anti-freeze non-sludging above -46 degrees C.
  - .2 To maintain manufacturer's recommended engine temperature range at no load to 100% continuous load in ambient temperature of 40 degrees C.
  - .3 Engine coolant heater: thermostatically controlled coolant heater connected to maintain engine at a suitable temperature for reliable starting at the site conditions.
  - .4 Engine coolant and oil drain extensions, equipped with pipe plugs and shut-off valves to the outside of the mounting base for cleaner and engine servicing.
- .6 Fuel System:
  - .1 Fuel: to CAN/CGSB-3.6, Type A, Arctic Grade 2.
  - .2 Factory installed primary fuel filter, water separator, manual fuel priming pump, and engine flexible fuel lines.
  - .3 The engines suction line fitted with a check valve to secure prime for the engine injection pump.
- .7 Governor:
  - .1 Electronic load sharing type, electric actuator, temperature compensated with steady state speed maintenance capability of plus or minus 0.25%.
- .8 Lubrication system:
  - .1 Mineral based oil.
  - .2 Pressure lubricated by engine driven pump.
  - .3 Lube oil filter: replaceable, full flow type, removable without disconnecting piping.
  - .4 Lube oil cooler.
  - .5 Engine sump drain valve.
  - .6 Oil level dip-stick.
- .9 Starting system:
  - .1 Positive shift, gear engaging starter 24 Vdc.
  - .2 Cranking limiter to provide trois (3) cranking periods of 10s duration, each separated by 5 s rest.

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- .3 Industrial type lead acid, 24V storage battery with sufficient capacity to crank engine for 1 min at 0 degrees C without using more than 25% of ampere hour capacity.
- .4 Battery charger: constant voltage, solid state, two stage from trickle charge at standby to boost charge after use.
  - .1 Regulation: plus or minus 1% output for plus or minus 10% input variation.
  - .2 Automatic boost for 6 hours every 30 days.
  - .3 Equipped with dc voltmeter, dc ammeter and on-off switch, and power failure alarm.
  - .4 Minimum charger capacity: 10 A.
- .10 Exhaust system:
  - .1 Heavy duty horizontally mounted exhaust silencer with condensate drain, plug and flanged couplings.
  - .2 Heavy duty flexible exhaust pipe with flanged couplings to connect the exhaust manifold of the engine to the muffler.
  - .3 Thermally wrapped exhaust piping from the turbo-charger discharge to the silencer.
  - .4 Fittings and accessories as required.
  - .5 Expansion joints: stainless steel, corrugated, of suitable length, to absorb both vertical and horizontal expansion.
  - .6 Engine mounted, replaceable, dry element filters on engine intake air.
- .11 Vibration isolated engine instrument panel with:
  - .1 Lube oil pressure gauge.
  - .2 Lube oil temperature gauge.
  - .3 Lube oil level gauge.
  - .4 Coolant temperature gauge.
  - .5 Coolant level gauge.
  - .6 Running time meter: non-tamper type.
- .12 Guards to protect personnel from hot and moving parts.
  - .1 Locate guards so that normal daily maintenance inspections can be undertaken without their removal.
- .13 Drip tray.

## **2.3 ALTERNATOR**

- .1 Alternator: to NEMA MG1
- .2 Rating: 3 phase, 347/600 V, 4 wire, 500 kW, 60 Hz, at 0.8 PF.
- .3 Output at 40 degrees C ambient:
  - .1 100% full load continuously.
- .4 Revolving field, brushless, single bearing.

- .5 Drip proof.
- .6 Amortisseur windings.
- .7 Synchronous type.
- .8 Dynamically balanced rotor permanently aligned to engine by flexible disc coupling.
- .9 Exciter: permanent magnet.
- .10 NEMA class H insulation on windings capable of withstanding 150 degrees C temperature rise.
- .11 Voltage regulator: thyristor controlled rectifiers with phase controlled sensing circuit:
  - .1 Stability: plus or minus 0.25%; % maximum voltage variation at any constant load from no load to full load.
  - .2 Regulation: 1.5 % maximum voltage deviation between no-load steady state and full-load steady state.
- .12 Alternator: capable of sustaining 300% rated current for period not less than 10 s permitting selective tripping of down line protective devices when short circuit occurs.
- .13 The alternator protection against overloads and short circuit conditions: by advanced control panel of a time current algorithm protective functions.

## **2.4 CONTROL PANEL**

- .1 Totally enclosed, environmentally sealed, microprocessor-based module for engine control, monitoring, protection, metering, enabling remote diagnostics and easy building management integration of all generator functions, including fuel control, engine protection, alternator protection, speed governing, voltage regulation and all related generator operations.
- .2 Controls to include predictive maintenance algorithm that alarms when maintenance is required. The controller shall have the capability to call out to the local servicing dealer when maintenance is required.
- .3 Diagnostic capabilities:
  - .1 Time-stamped event and alarm logs.
  - .2 Ability to capture operational parameters during events.
  - .3 Simultaneous monitoring of all input or output parameters.
  - .4 Callout capabilities.
  - .5 Support for multi-channel digital strip chart functionality and .2 msec data logging capabilities.
- .4 Communication:
  - .1 Pre-wired I/O: 4 relay outputs, communications support via RS232 and RS485 with optional additional I/O.
  - .2 Software configurable I/O providing full access to all alarm, event, data logging, and shutdown functionality.
  - .3 Custom ladder logic functionality in controller to provide application support flexibility with access to all the controller inputs and customer assignable outputs.

- .5 Alternator protection: electronically implemented in the generator control panel a time current algorithm that protects the alternator against all overloads and short circuits.
- .6 The control panel to include the following:
  - .1 Engine start button.
  - .2 Selector switch: Off-Auto-Manual.
  - .3 Engine emergency stop button and provision for remote emergency stop button.
  - .4 Automatic shutdown and lockout for following:
    - .1 Engine overcrank
    - .2 Engine overspeed
    - .3 Engine high coolant temperature
    - .4 Engine low lubricating oil pressure
    - .5 Short circuit
    - .6 AC overvoltage
  - .5 Alarm annunciation with lamp indication, local horn, silence pushbutton, acknowledge and reset pushbuttons, lamp test function and common alarm contacts for remote annunciation for the following:
    - .1 Engine overcrank shutdown
    - .2 Engine overspeed shutdown
    - .3 Engine high coolant temperature shutdown
    - .4 Engine low lubricating oil pressure shutdown
    - .5 Low or no battery voltage, continuously monitored even when engine not running
  - .6 Engine Gauges:
    - .1 Lube oil pressure
    - .2 Lube oil temperature
    - .3 Tachometer, scale in r/min
    - .4 Coolant temperature
    - .5 Coolant level
    - .6 Elapsed time meter
  - .7 Digital metering unit, controlled by a microprocessor, with digital readout for generator voltages, amps, frequency, kilowatts, and power factor.
  - .8 Remote annunciator.

## **2.5 ENGINE ALTERNATOR PACKAGING**

- .1 The engine/alternator to be isolated from the generator frame with rubber isolators.
- .2 A mainline, factory installed electronic LSI circuit breaker, 100% carrying of the rated ampacity of the genset. The line side connections are to be made at the factory. Output lugs to be provided for load side connections.
- .3 Factory installed electronic LSI load bank circuit breaker, 100% carrying of the rated ampacity of the genset. The line side connections are to be made at the factory. Output lugs to be provided for load side connections. The breaker is to include auxiliary contacts and shunt trip functionality.

- .4 Factory mounted auxiliary power load center to serve the generator set and enclosure with factory wired equipment including but not limited GFCI receptacles, emergency lighting battery unit with lighting heads, AC lamps, lighting switches, heaters, battery charger. All devices provided with dedicated breaker withing the load center.

## **2.6 STEEL MOUNTING BASE**

- .1 Complete generating set mounted on structural steel base of sufficient strength and rigidity to protect assembly from stress or strain during transportation, installation and under operating conditions on suitable level surface.
- .2 The base to be complete with steel flooring under generator to avoid sound dissipation and debris collection.
- .3 Assembly fitted with vibration isolators and control console resiliently mounted.
  - .1 Spring type isolators with adjustable side snubbers and adjustable for levelling.
- .4 Sound insulation pads for installation between isolators and concrete base.

## **2.7 SUB-BASE FUEL TANK**

- .1 Fuel storage tanks: to API Standard 650, ULC labelled, to ULC-S601.
- .2 Integral sub-base double wall, pressure tested fuel tank system of 24 hours capacity at 100 % load to be supplied by the diesel generator set supplier and complete with following:
  - .1 Rupture basin alarm contact and high fuel level alarm contact
  - .2 Low level alarm contact
  - .3 Float switch
  - .4 Fuel gauge, dial type
  - .5 Connections for engine supply, engine return, vent with vent whistle, bottom drain, fuel gauge, lockable fill cap.
  - .6 Normally closed 1" fuel solenoid shut off valve for positive control of fuel supply.
- .3 Fuel storage tank installation and associated equipment and devices to comply with the requirements of CSA B139.1.0-15 and CSA B139.1.1-15, NFCC, NBC and the authorities having jurisdiction.
- .4 For tanks specified for a design static pressure exceeding 35 kPa at the bottom of the tank, submit a copy of the shop drawings and a copy a report of the factory pressure test at the specified design pressure.

## **2.8 ENCLOSURE**

- .1 Complete generator set packaged with a sound attenuating weather protective enclosure.
- .2 The enclosure completely lined with sound deadening self extinguishing design material with a reflective surface for enhanced serviceability.
- .3 Enclosure material: steel with a minimum thickness of 16 gauge.



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- .4 The enclosure equipped with:
  - .1 Hinged, removable doors to allow access to the engine, alternator and control panel. The hinges shall allow for door fit adjustment.
  - .2 Stainless steel hinges and all exposed fasteners stainless steel or Sermagard coated.
  - .3 Door equipped with lockable hardware with identical keys.
  - .4 Upward discharging radiator hood.
  - .5 Silencer mounted on the discharge hood of the enclosure.
  - .6 Silencers mounted inside the main generator compartment are acceptable only if the silencer is thermally wrapped to minimize heat stress on the surrounding components.
  - .7 Weather hood, exhaust cap, motorized damper.
  - .8 Thermostatically controlled space heater designed to maintain the enclosure at 40 degrees F.
- .5 The enclosure finish:
  - .1 Electrostatic applied powder paint, baked and finished to manufacturer's specifications.
  - .2 Colour: manufacturer's standard.

## **2.9 EQUIPMENT IDENTIFICATION**

- .1 Provide equipment identification in accordance with Section 26 05 00 - Common Work Results for Electrical.
- .2 Control panel:
  - .1 Size 5 nameplates for controls including alternator breakers and program selector switch.
  - .2 Size 3 nameplates for meters, alarms, indicating lights and minor controls.

## **2.10 FABRICATION**

- .1 Shop assemble generating unit including:
  - .1 Base.
  - .2 Engine and radiator.
  - .3 Alternator.
  - .4 Alternator output circuit breaker.
  - .5 Control panel.
  - .6 Remote annunciator.
  - .7 Battery and charger.
  - .8 Auxiliary power load center
  - .9 Sub-base fuel tank.
  - .10 Enclosure.

~~27 May~~ **18 Jul** 2022**2.11 PERMANENT LOAD BANK**

- .1 Provide a fan cooled resistive load bank for permanent, outdoor installation for routing load testing of standby diesel generating system. The load bank designed to operate from a remote control panel.
- .2 The load bank to be completely self contained, free standing unit, incorporated all resistive elements, load contactors for each load group, individual load group circuit breakers, load bank protective devices, main load busbar, auxiliary terminals, fan cooling systems, malfunction detection system, unit controller, remote control facility and IP55 type control enclosure.
- .3 Load Bank rating – 500 kW, 600 Volt, 3 phase, Delta, 60 Hz, 1.0 power factor, 50 kW load as a minimum, 15° to 120° F ambient temperature, continuous duty cycle, 120 Volt control.
- .4 The load enclosure to be constructed of heavy gauge aluminized steel with stainless steel exterior fasteners. Permanent base to be equipped with built-in forklift channels.
- .5 The resistive elements manufactured from corrosion resistant chromium alloy wire. Resistor design and rating shall ensure a life span of ten years under normal operating conditions.
- .6 The resistive elements to be air cooled by integrally mounted blower motor.
- .7 Cooling airflow through the resistor chamber to be vertical discharge, with cold air intake at the bottom and hot air exhaust at the top.
- .8 Resistor groups to have branch circuit fusing on all steps and over temperature protection. Differential pressure air switches on blowers to be electrically interlocked to remove load if the airflow is not sufficient to provide proper cooling.
- .9 The load bank controls to be incorporated into the generator control switchboard and include:
  - .1 Power ON-OFF switch,
  - .2 Power ON light,
  - .3 Blower ON-OFF pushbuttons with a Blower Failure light,
  - .4 Over temperature light,
  - .5 Master Load ON-OFF switch,
  - .6 Six (6) load step toggle switches.
- .10 The control panel to be the means to control the load bank in the generator test and exercise mode. Manual operation only be possible when the automatic transfer switch is in the normal position. When the manual operation is in progress and emergency standby is called for, the control panel automatically disable the manual mode operation, dump loads and initiate a fan run-on for a period of five minutes.

**2.12 FINISHES**

- .1 Apply finishes in accordance with Section 26 05 00 Common Work Results for Electrical.
- .2 Alternator control cubicle: to manufacturer's standards.
- .3 Exhaust and inlet air hoods: to manufacturer's standards.

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- .4 Other ducts and racks grey.
- .5 Supply 0.25 L of grey touch-up enamel.

### **2.13 SOURCE QUALITY CONTROL**

- .1 Factory test generator set for 4 hours under rated load for performance and proper functioning of engine, alternator, control panels, control and interfacing circuits, and accessories. Tests to include:
  - .1 Verification of voltage and frequency stability.
  - .2 Verification of the transient voltage and frequency dip response.
  - .3 Load test the generator for 4 hours at rated power factor.
- .2 Provide factory test reports for Department Representative review and acceptance.
- .3 Test procedure:
  - .1 Prepare blank forms and check sheet with spaces to record data and at top of first sheet record:
    - .1 Date.
    - .2 Generator set serial no.
    - .3 Engine, make, model, serial no.
    - .4 Alternator, make, model, serial no.
    - .5 Voltage regulator, make and model.
    - .6 Rating of generator set, kW, kVA, V, A, r/min, Hz.
  - .2 Mark check sheet and record data on forms in duplicate as test proceeds.
  - .3 Tests:
  - .4 With 100% rated load, operate set for 4 hours, and record following:
    - .1 Time of reading.
    - .2 Running time.
    - .3 Ambient temp in degrees C.
    - .4 Lube oil pressure in kPa.
    - .5 Lube oil temp in degrees C.
    - .6 Engine coolant temp in degrees C.
    - .7 Exhaust stack temp in degrees C.
    - .8 Alternator voltage: phase 1, 2, 3.
    - .9 Alternator current: phase 1, 2, 3.
    - .10 Power in kW.
    - .11 Frequency in Hz.
    - .12 Power Factor.
    - .13 Battery charger current in A.
    - .14 Battery voltage.
    - .15 Alternator cooling air outlet temp.

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- .5 Next install continuous strip chart recorders to record frequency and voltage variations during load switching procedures. Each load change delayed until steady state conditions exist. Switching increments to include:
  - .1 No load to full load to no load.
  - .2 No load to 70% load to no load.
  - .3 No load to 20% load to no load.
  - .4 20% load to 40% load to no load.
  - .5 40% load to 60% load to no load.
  - .6 60% load to 80% load to no load.
- .4 Record:
  - .1 Automatic starting of set and automatic transfer of load on failure of normal power time.
  - .2 Automatic shut down of engine on resumption of normal power.
  - .3 That battery charger reverts to high rate charge after cranking.
  - .4 Low oil pressure and high engine temperature shutdown devices operation without subjecting engine to these excesses.

### **Part 3 Execution**

#### **3.1 INSTALLATION**

- .1 Install the complete electrical generating system including all external fuel connections in accordance with requirements of all applicable codes, standards, and the manufacturer's recommendations.
- .2 Complete wiring and interconnections as indicated.
- .3 Start generating set and test to ensure correct performance of components.

#### **3.2 FIELD QUALITY CONTROL AND STARTUP**

- .1 Perform tests in accordance with Section 26 05 00 - Common Work Results for Electrical.
- .2 Notify Departmental Representative 10 working days in advance of test date.
- .3 Provide fuel for testing and leave full tanks on acceptance.
- .4 The supplier of the generator set and associated items is to provide factory trained personnel to validate the completed installation and to perform an initial Life Safety start-up inspection in compliance with CSA C282, and to include:
  - .1 Ensuring the engine starts (both hot and cold) within the specified time.
  - .2 Verification of engine parameters within specification.
  - .3 Verify no load frequency and voltage, adjusting if required.
  - .4 Test all automatic shutdowns of the engine-generator.
  - .5 Ensuring full load frequency and voltage are within specification by using building load.

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- .6 Perform operational test for 1 hour using building load, after which normal power to be restored to the building and satisfactory transfer of the load and shutdown of the generator to be demonstrated. All required by CSA C282 data to be observed and recorded.
- .7 Following the operational test, generator set to be tested for a 4-hour full load test based on the maximum site design load specified by the engine generator set label.
- .5 Demonstrate:
  - .1 Unit start, transfer to load, retransfer to normal power, unit shut down, on "Automatic" control.
  - .2 Unit start and shut down on "Manual" control
  - .3 Unit start and transfer on "Test" control.
  - .4 Unit start on "Engine start" control.
  - .5 Operation of manual bypass switch.
  - .6 Operation of automatic alarms and shut down devices.
- .6 At end of test run, check battery voltage to demonstrate battery charger has returned battery to fully charged state.

### 3.3 TRAINING

- .1 Training is to be supplied by the start-up technician for the end-user during commissioning. The training should cover basic generator operation and common generator issues that can be managed by the end-user.
- .2 Training is to include manual operation of system.

### 3.4 SERVICE

- .1 Permanent service facilities to be available in this trade area.
- .2 The facilities to comprise a permanent force of factory trained service personnel on 24 hour call, experienced in servicing this type of equipment, providing warranty and routine maintenance service to afford the owner maximum protection.
- .3 Service and maintenance contracts to be available.

### 3.5 WARRANTY

- .1 A ~~ten (10)~~ **five (5)** years manufacturer's warranty against defective materials and factory workmanship for all standby electric generating system components.
- .2 The defective parts replacement or repair to be free of charge for parts, labor and travel.
- .3 The warranty period is to commence when the standby power system is first placed into service.

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**3.6 CLEANING**

- .1 Progress Cleaning, Final Cleaning and Waste Management as per Section 26 05 00 Common Work Results for Electrical.

**3.7 MAINTENANCE - CLEARANCES**

- .1 Provide clearance around systems, equipment and components for observation of operation, inspection, servicing, maintenance and as recommended by manufacturer and accordance with NBC and CSA-B139.

**END OF SECTION**

| EXISTING EXT. WALL TYPES     |            |             |                                                                                          |
|------------------------------|------------|-------------|------------------------------------------------------------------------------------------|
| EIA                          | STC RATING | FIRE RATING |                                                                                          |
| E1A                          |            |             | 90 CIP CONCRETE                                                                          |
| E1B                          |            |             | 200 CIP CONCRETE                                                                         |
| E1C                          |            |             | 250 CIP CONCRETE                                                                         |
| E1D                          |            |             | 300 CIP CONCRETE                                                                         |
| E1E                          |            |             | 350 CIP CONCRETE                                                                         |
| E2A                          |            |             | 90 BRICK<br>AIRSPACE<br>76 INSULATION<br>AVB<br>90 CONC. BLOCK                           |
| E2B                          |            |             | 90 BRICK<br>AIRSPACE<br>76 INSULATION<br>AVB<br>140 CONC. BLOCK                          |
| E3C                          |            |             | 90 BRICK<br>AIRSPACE<br>76 INSULATION<br>AVB<br>190 CONC. BLOCK                          |
| E3                           |            |             | 90 BRICK<br>AIRSPACE<br>76 INSULATION<br>AVB<br>92 STUD C/W BATT INSULATION              |
| E4                           |            |             | 90 BRICK<br>AIRSPACE<br>AVB                                                              |
| E4a                          |            |             | 90 BRICK<br>20 MORTAR<br>90 BRICK<br>AT MAIN ENTRY<br>CANOPY                             |
| EW-21   ON   E5   SUBSTRATE  |            |             | METAL CLADDING<br>(EW-2.1)<br>AIRSPACE<br>76 INSULATION<br>AVB<br>190 CONC. BLOCK        |
| EW-21   ON   E5A   SUBSTRATE |            |             | METAL CLADDING<br>(EW-2.1)<br>NARROW AIRSPACE<br>76 INSULATION<br>AVB<br>190 CONC. BLOCK |
| EW-21   ON   E5B   SUBSTRATE |            |             | METAL CLADDING<br>(EW-2.1)<br>NARROW AIRSPACE<br>76 INSULATION<br>AVB<br>90 CONC. BLOCK  |
| EW-21   ON   E5C   SUBSTRATE |            |             | METAL CLADDING<br>(EW-2.1)<br>NARROW AIRSPACE<br>76 INSULATION<br>AVB<br>140 CONC. BLOCK |

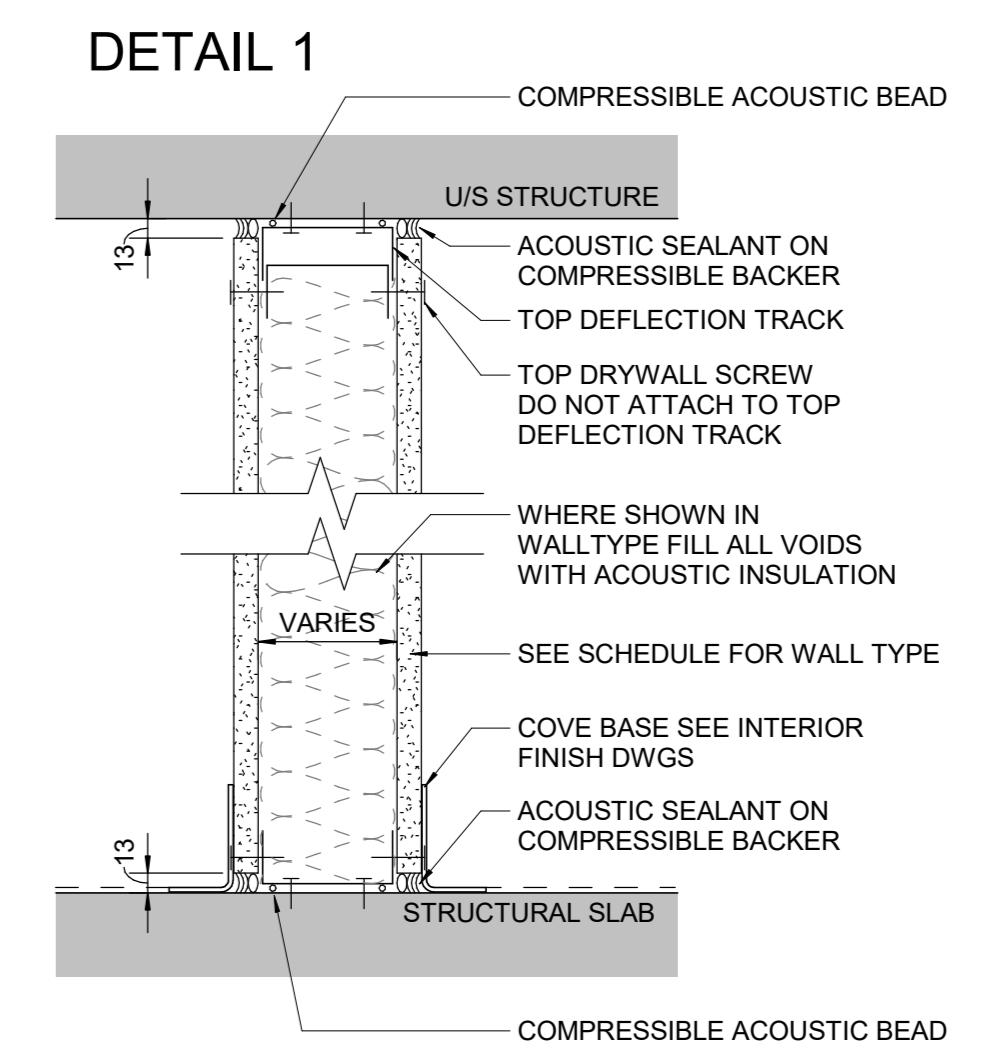
| EXISTING EXT. WALL TYPES (CONT) |            |             |                                                                                                                                                  |
|---------------------------------|------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| E7                              | STC RATING | FIRE RATING |                                                                                                                                                  |
| E7                              |            |             | AIRSPACE<br>76 INSULATION<br>AVB<br>16 EXT. SHEATHING<br>92 STUD<br>16 GWB<br>IN VOID ABOVE KENT ST. FACE                                        |
| E8                              |            |             | METAL PANEL SYSTEM<br>AIRSPACE<br>16 EXT. SHEATHING<br>76 INSULATION + AVB ON<br>METAL BACKPAN<br>METAL FINISH PANEL<br>IN BASE AT KENT ST. FACE |
| E9                              |            |             | 90 BRICK<br>AIRSPACE<br>90 CIP CONC.<br>AT STAIR D                                                                                               |
| E10                             |            |             | 20 ALUM SIDING<br>AIRSPACE<br>100 RIGID INSUL.<br>AT PENTHOUSE                                                                                   |
| E11                             |            |             | 20 ALUM SIDING<br>AIRSPACE<br>76 RIGID INSUL.<br>AVB<br>AT STAIR TOWERS                                                                          |
| EXISTING CURTAIN WALL TYPES     |            |             |                                                                                                                                                  |
| CW-E1                           |            |             |                                                                                                                                                  |
| CW-E1                           |            |             | EXISTING CURTAIN WALL<br>SKYLIGHT                                                                                                                |
| CW-E1.2                         |            |             | EXISTING CURTAIN WALL<br>KENT ST STOREFRONT                                                                                                      |
| CW-E1.3                         |            |             | EXISTING CURTAIN WALL<br>MECH LOUVRES                                                                                                            |
| CW-E1.4                         |            |             | EXISTING CURTAIN WALL<br>GRAFTON ST<br>STOREFRONT                                                                                                |
| EW-21                           |            |             | EXISTING CURTAIN WALL<br>METAL SIDING @ STRIP WINDOWS                                                                                            |
| EW-22                           |            |             | EXISTING CURTAIN WALL<br>STRIP WINDOWS                                                                                                           |

| PARTITION WALL TYPES |                                    |                                            |                                                                                                                                                                                                                               |
|----------------------|------------------------------------|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| P1.1                 | STC RATING                         | FIRE RATING                                |                                                                                                                                                                                                                               |
| P1.1                 |                                    |                                            | 16 GWB TYPE "X"<br>64 ST. STUD @ 400 O.C.<br>16 GWB TYPE "X"<br>TO U/S CEILING<br>SEE DETAIL 2                                                                                                                                |
| P1.2                 | STC 37                             | 1 HR FRR<br>SIM TO<br>ULC 407              | 16 GWB TYPE "X"<br>92 ST. STUD @ 400 O.C.<br>16 GWB TYPE "X"<br>TO U/S STRUCTURE<br>SEE DETAIL 1                                                                                                                              |
| P1.2A                | SEE A02-10<br>SERIES FOR<br>EXTENT | SEE A02-00<br>SERIES FOR<br>EXTENT         | 16 GWB TYPE "X"<br>92 ST. STUD @ 400 O.C.<br>16 GWB TYPE "X"<br>TO U/S CEILING<br>SEE DETAIL 2                                                                                                                                |
| P1.2C                | STC 47                             | 1 HR FRR<br>SIM TO<br>ULC 407              | 16 GWB TYPE "X"<br>92 ST. STUD @ 400 O.C.<br>C/W 89 ACOUSTIC INSULATION<br>16 GWB TYPE "X"<br>TO U/S STRUCTURE<br>SEE DETAIL 1                                                                                                |
| P1.3                 | STC 55                             | 2 HR FRR<br>PER<br>ULC 404                 | 2x16 GWB TYPE "X"<br>92 ST. STUD @ 400 O.C.<br>C/W 89 ACOUSTIC INSULATION<br>2x16 GWB TYPE "X"<br>TO U/S STRUCTURE<br>SEE DETAIL 1                                                                                            |
| P1.3S                | STC 55                             |                                            | 2x16 CEMENT BOARD LAMINATED<br>19 PLYWOOD<br>101x101 HSS @ 600 O.C. C/W<br>BASEPLATE / TOP PLATE<br>4 METAL MESH<br>12 BALLISTIC PANEL BP-1<br>16 CEMENT BOARD<br>TO U/S STRUCTURE<br>SEE DETAIL ON SHEET A-51-14             |
| P1.3R                | STC 55                             | 2 HR FRR<br>PER<br>ULC 404                 | 2x16 GWB TYPE "X" (OUTSIDE)<br>92 ST. STUD @ 400 O.C.<br>C/W 89 ACOUSTIC INSULATION<br>1x16 GWB TYPE "X"<br>1X16 RF BOARD (ROOM SIDE)<br>2 COATS RF PAINT (INCLUDING<br>FLOOR & U/S SLAB)<br>TO U/S STRUCTURE<br>SEE DETAIL 1 |
| BLOCK WALL TYPES     |                                    |                                            |                                                                                                                                                                                                                               |
| P2.1                 |                                    |                                            |                                                                                                                                                                                                                               |
| P2.1                 |                                    |                                            | 90 CONC. BLOCK<br>TO U/S STRUCTURE<br>SEE DETAIL 4<br>AND STRUCTURAL DETAILS<br>FOR SUPPORT                                                                                                                                   |
| P2.2                 | STC 47                             | 1.1 HR FRR<br>NBC<br>APPENDIX D<br>D-2.2.1 | 140 CONC. BLOCK<br>SEAL ONE FACE AIRTIGHT<br>TO U/S STRUCTURE<br>SEE DETAIL 4<br>AND STRUCTURAL DETAILS<br>FOR SUPPORT                                                                                                        |
| P2.3                 | STC 50                             | 1.8 HR FRR<br>NBC<br>APPENDIX D<br>D-2.2.1 | 190 CONC. BLOCK<br>SEAL ONE FACE AIRTIGHT<br>TO U/S STRUCTURE<br>SEE DETAIL 4<br>AND STRUCTURAL DETAILS<br>FOR SUPPORT                                                                                                        |
| P2.3A                | STC 52                             | 2 HR FRR<br>NBC<br>APPENDIX D<br>D-2.2.1   | 190 CONC. BLOCK 75% FILLED<br>SEAL ONE FACE AIRTIGHT<br>TO U/S STRUCTURE<br>SEE DETAIL 2<br>AND STRUCTURAL DETAILS<br>FOR SUPPORT                                                                                             |
| P2.4                 | STC >55                            | 2 HR FRR<br>NBC<br>APPENDIX D<br>D-2.2.1   | 240 CONC. BLOCK<br>SEAL ONE FACE AIRTIGHT<br>TO U/S STRUCTURE<br>SEE DETAIL 2<br>AND STRUCTURAL DETAILS<br>FOR SUPPORT                                                                                                        |
| P2.5                 | STC >55                            | 3 HR FRR<br>NBC<br>APPENDIX D<br>D-2.2.1   | 290 CONC. BLOCK<br>SEAL ONE FACE AIRTIGHT<br>TO U/S STRUCTURE<br>SEE DETAIL 2<br>AND STRUCTURAL DETAILS<br>FOR SUPPORT                                                                                                        |

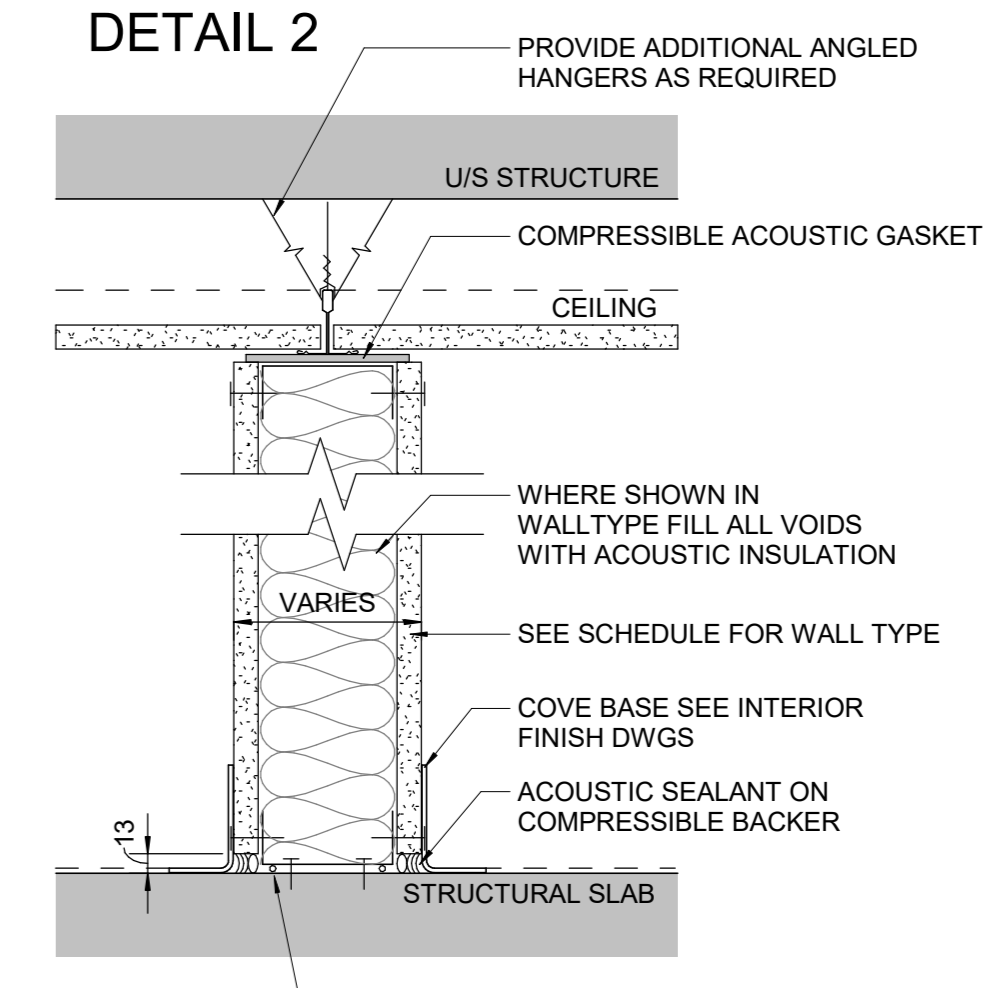
| FURRING WALL TYPES         |                                    |                                    |                                                                                                                                                                                                  |
|----------------------------|------------------------------------|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| F3.1                       | STC RATING                         | FIRE RATING                        |                                                                                                                                                                                                  |
| F3.1                       |                                    |                                    | 16 GWB TYPE "X"<br>22 ST. FURRING CHANNELS<br>@ 600 O.C.<br>TO U/S CEILING<br>SEE DETAIL 3                                                                                                       |
| F3.1                       |                                    |                                    | 16 GWB TYPE "X"<br>41 ST. STUD @ 400 O.C.<br>TO U/S CEILING<br>SEE DETAIL 3                                                                                                                      |
| F3.1                       |                                    |                                    | 16 GWB TYPE "X"<br>64 ST. STUD @ 400 O.C.<br>TO U/S CEILING<br>SEE DETAIL 3                                                                                                                      |
| F4.1                       |                                    |                                    | 16 GWB TYPE "X"<br>92 ST. STUD @ 400 O.C.<br>TO U/S CEILING<br>SEE DETAIL 3                                                                                                                      |
| F4.1A                      |                                    |                                    | 16 GWB TYPE "X"<br>92 ST. STUD @ 400 O.C.<br>TO U/S SLAB ABOVE                                                                                                                                   |
| F4.2                       |                                    |                                    | 2x16 GWB TYPE "X"<br>92 ST. STUD @ 400 O.C.<br>AVB (@ FACE INSUL)<br>TO U/S SLAB ABOVE                                                                                                           |
| F5.1                       |                                    |                                    | 16 GWB TYPE "X"<br>64 ST. STUD @ 400 O.C.<br>AIRSPACE<br>AVB (@ FACE INSUL)<br>100 INS-1<br>AT EXTERIOR MASONRY WALLS<br>SEE WALL SECTIONS                                                       |
| GLAZED / SCREEN WALL TYPES |                                    |                                    |                                                                                                                                                                                                  |
| P3.1                       |                                    |                                    |                                                                                                                                                                                                  |
| P3.1                       |                                    |                                    | OFFICE PARTITION<br>95x45 ALUM FRAME<br>LAMINATED GLASS FRONT - GS-1<br>TO U/S CEILING                                                                                                           |
| P3.1A                      | STC 36                             |                                    | OFFICE PARTITION<br>95x45 ALUM FRAME<br>LAMINATED GLASS FRONT - GS-1<br>TO U/S CEILING                                                                                                           |
| P3.1B                      | SEE A02-10<br>SERIES FOR<br>EXTENT | SEE A02-00<br>SERIES FOR<br>EXTENT | WALLTYPE P1.2. ABOVE TO U/S<br>SLAB - PROVIDE KICKERS AT 300<br>O.C. IF WALL RUN BETWEEN<br>PERP. WALLS EXCEEDS 2450                                                                             |
| P3.1C                      | STC 46                             |                                    | OFFICE PARTITION<br>95x45 ALUM FRAME<br>LAMINATED GLASS FRONT - GS-2<br>TO U/S CEILING                                                                                                           |
| P3.1D                      | SEE A02-10<br>SERIES FOR<br>EXTENT | SEE A02-00<br>SERIES FOR<br>EXTENT | WALLTYPE P1.2C. ABOVE TO U/S<br>SLAB - PROVIDE KICKERS AT 300<br>O.C. IF WALL RUN BETWEEN<br>PERP. WALLS EXCEEDS 2450                                                                            |
| P3.1E                      | STC 45                             |                                    | GLAZING AT TRAINING ROOM<br>150x45 ALUM FRAME<br>LAMINATED GLASS FRONT - GS-2<br>TO U/S CEILING                                                                                                  |
| P3.1F                      | SEE A02-10<br>SERIES FOR<br>EXTENT | SEE A02-00<br>SERIES FOR<br>EXTENT | WALLTYPE P1.2C<br>ABOVE AND BELOW WINDOW<br>TO U/S SLAB                                                                                                                                          |
| P3.1G                      | STC 50                             |                                    | GLAZING AT VIDEO BOOTH<br>165x45 ALUM FRAME<br>LAMINATED GLASS FRONT - GS-3<br>TO U/S CEILING                                                                                                    |
| P3.1H                      | SEE A02-10<br>SERIES FOR<br>EXTENT | SEE A02-00<br>SERIES FOR<br>EXTENT | WALLTYPE P1.3. ABOVE AND BELOW<br>WINDOW TO U/S SLAB - PROVIDE<br>KICKERS AT 900 O.C. IF WALL RUN<br>@ PERP. WALLS EXCEEDS 2450                                                                  |
| P3.1I                      | STC 45                             |                                    | GLAZING AT SECURITY OFFICE<br>100x45 BALLISTIC ALUM FRAME<br>GL-5<br>WALLTYPE P1.3S<br>ABOVE AND BELOW WINDOW<br>TO U/S SLAB                                                                     |
| NEW MASONRY WALL TYPES     |                                    |                                    |                                                                                                                                                                                                  |
| BRK1                       |                                    |                                    |                                                                                                                                                                                                  |
| BRK1                       |                                    |                                    | 90 BRICK "BRK-1" FROM REUSED<br>EXISTING SALVAGED BRICK<br>BACKING TO MATCH EXISTING<br>WALL ASSEMBLY AROUND<br>ADJ. TO NEW SOUTH BLOCK<br>WINDOWS AND/OR EXISTING<br>SOUTH BLOCK WINDOWS INFILL |
| SPECIALITY WALL TYPES      |                                    |                                    |                                                                                                                                                                                                  |
| P4                         |                                    |                                    |                                                                                                                                                                                                  |
| P4                         |                                    |                                    | NEW SLIDING METAL MESH PART.<br>45 METAL MESH IN HM FRAME<br>TO 2450<br>WALLTYPE P1.2C TO U/S SLAB -<br>PROVIDE KICKERS @900 OC<br>INSIDE CAGE<br>AT CAGED SECURE PALLET AREA                    |
| P5                         |                                    |                                    | NEW INSULATED METAL WALL<br>PANEL<br>GALV. METAL<br>INSUL.<br>GALV. METAL<br>100 OVERALL THICKNESS<br>AT MECH LOUVRES                                                                            |

| CW & WW WALL TYPES     |            |             |                                                                                                                                                                                                  |
|------------------------|------------|-------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CW1                    | STC RATING | FIRE RATING |                                                                                                                                                                                                  |
| CW1                    |            |             | NEW CURTAIN WALL<br>KENT ST STOREFRONT                                                                                                                                                           |
| CW2                    |            |             | NEW CURTAIN WALL<br>STRIP WINDOWS                                                                                                                                                                |
| CW3                    |            |             | NEW CURTAIN WALL<br>ATRIUM CLERESTORY                                                                                                                                                            |
| CW3                    |            |             | NEW CURTAIN WALL<br>GRAFTON ST STOREFRONT                                                                                                                                                        |
| CW4                    |            |             | NEW CURTAIN WALL<br>SOUTH BUILDING GLAZING                                                                                                                                                       |
| MTL-PNL2               |            |             | ALUM PANELS AT NEW<br>ENTRY PORTALS                                                                                                                                                              |
| MTL-PNL3               |            |             | ALUM PANELS AT NEW STRIP<br>WINDOWS - NORTH BLOCK                                                                                                                                                |
| MTL-PNL4               |            |             | ALUM SIDING AT NEW STRIP<br>WINDOWS - SOUTH BLOCK                                                                                                                                                |
| NEW MASONRY WALL TYPES |            |             |                                                                                                                                                                                                  |
| BRK1                   |            |             |                                                                                                                                                                                                  |
| BRK1                   |            |             | 90 BRICK "BRK-1" FROM REUSED<br>EXISTING SALVAGED BRICK<br>BACKING TO MATCH EXISTING<br>WALL ASSEMBLY AROUND<br>ADJ. TO NEW SOUTH BLOCK<br>WINDOWS AND/OR EXISTING<br>SOUTH BLOCK WINDOWS INFILL |
| SPECIALITY WALL TYPES  |            |             |                                                                                                                                                                                                  |
| P4                     |            |             |                                                                                                                                                                                                  |
| P4                     |            |             | NEW SLIDING METAL MESH PART.<br>45 METAL MESH IN HM FRAME<br>TO 2450<br>WALLTYPE P1.2C TO U/S SLAB -<br>PROVIDE KICKERS @900 OC<br>INSIDE CAGE<br>AT CAGED SECURE PALLET AREA                    |
| P5                     |            |             | NEW INSULATED METAL WALL<br>PANEL<br>GALV. METAL<br>INSUL.<br>GALV. METAL<br>100 OVERALL THICKNESS<br>AT MECH LOUVRES                                                                            |

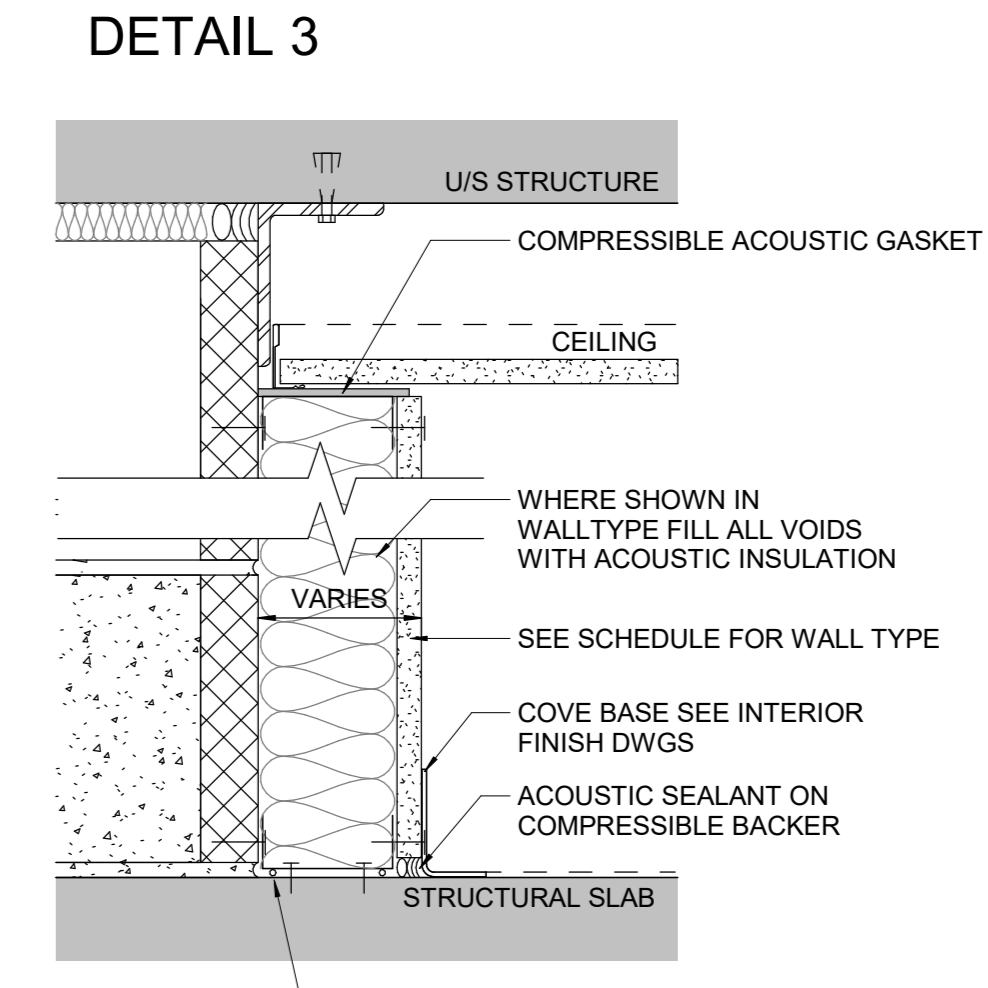
**GENERAL NOTES**  
1. FIRE RATING SHOWN ON THIS PAGE IS THE POTENTIAL FIRE RATING OF THE ASSEMBLY. PLEASE REFER TO DRAWINGS A02-01 AND A02-02 FOR THE SPECIFIC WALLS WHICH MUST ACHIEVE THIS RATING.  
2. STC RATING SHOWN ON THIS PAGE IS THE POTENTIAL STC RATING OF THE ASSEMBLY. PLEASE REFER TO DRAWINGS A02-11 AND A02-12 FOR THE SPECIFIC WALLS WHICH MUST ACHIEVE THIS RATING.  
3. SEE 9A53-02 FOR PENETRATION DETAILS



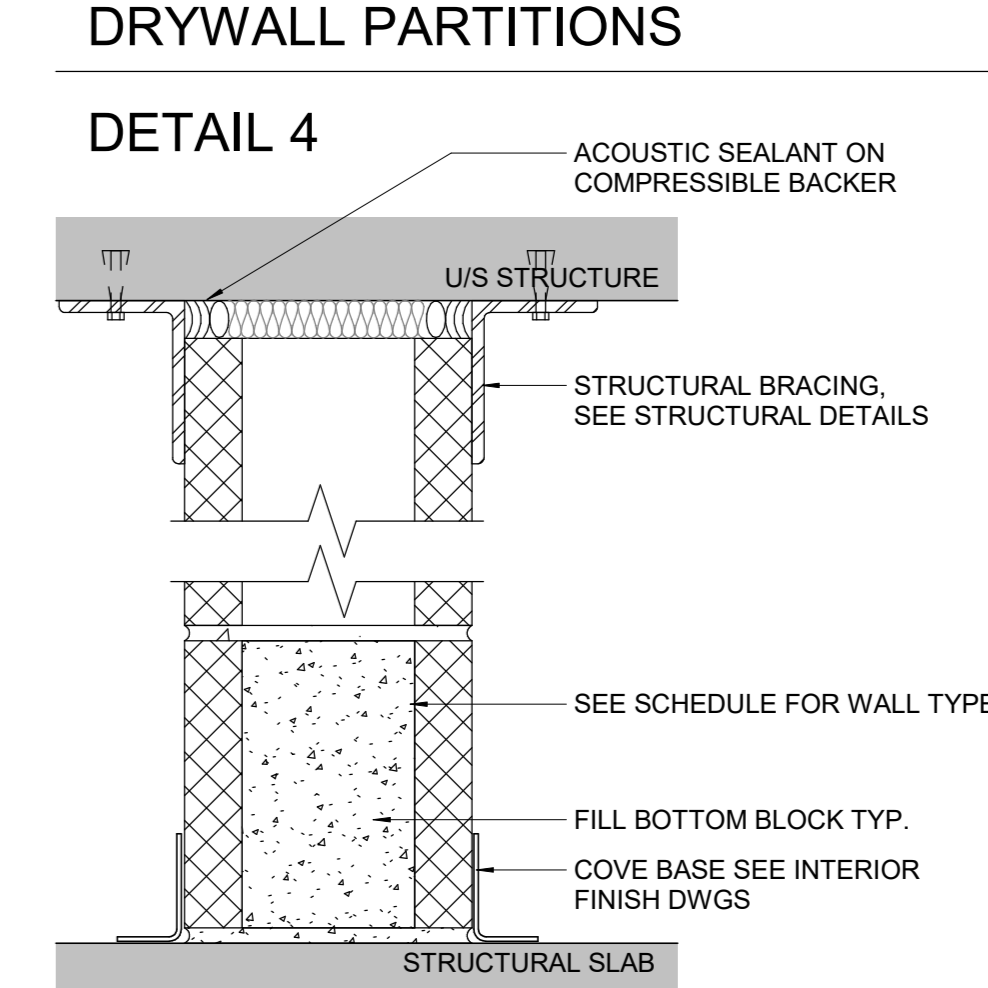
**DETAIL 1**  
1) REPLACE ACOUSTIC SEAL WITH SMOKE SEAL AND FIRE STOP IN RATED ASSEMBLIES  
2) REPLACE GWB WITH TILE BACKER BOARD IN ALL AREAS WHERE TILE FINISH IS INDICATED  
3) REPLACE GWB WITH MOISTURE RESISTANT GWB IN ALL WASHROOMS, SHOWER ROOMS, KITCHEN MILLWORK AND JANITOR ROOMS WHERE TILE FINISH IS NOT INDICATED



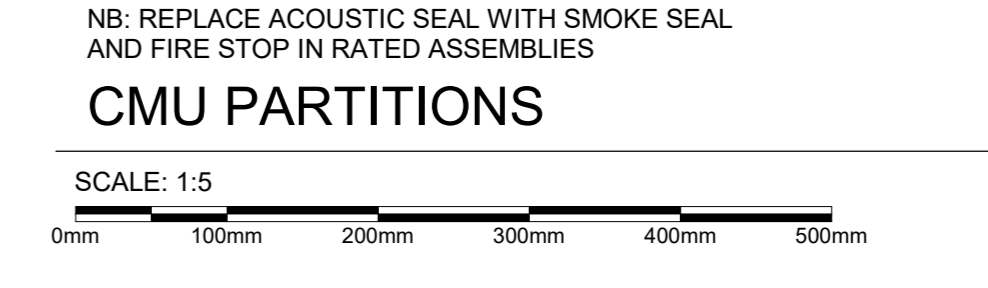
**DETAIL 2**  
PROVIDE ADDITIONAL ANGLED HANGERS AS REQUIRED



**DETAIL 3**  
NB: SEE NOTES AT DETAIL 1 ABOVE



**DETAIL 4**  
NB: REPLACE ACOUSTIC SEAL WITH SMOKE SEAL AND FIRE STOP IN RATED ASSEMBLIES



**CMU PARTITIONS**  
SCALE: 1:5  
0mm 100mm 200mm 300mm 400mm 500mm

**NORR**  
NORR Architects & Engineers Limited  
An Ingenium Group Company  
175 Bloor St. East  
North Tower, 15th Floor  
Toronto, ON Canada M4W 3R8  
nor.com

project and true North

project legend

revisions

|   |                   |            |
|---|-------------------|------------|
| 1 | ADDENDUM #1       | 2022-07-11 |
| 2 | ISSUED FOR TENDER | 2022-06-07 |

project

**DANIEL J MACDONALD  
MODERNIZATION**

161 GRAFTON STREET  
CHARLOTTETOWN, PEI C1A 1L1

drawing

**WALL ASSEMBLIES**

designed NORR

|             |            |          |
|-------------|------------|----------|
| date        | 2019-01-07 | conçu    |
| drawn       | NORR       | dessiné  |
| date        | 2019-01-07 |          |
| approved AS |            | approuvé |
| date        | 2022-07-11 |          |

Tender

Submission

PWGCSC Project Manager Administrateur de projets TPSCG

project number no. du projet

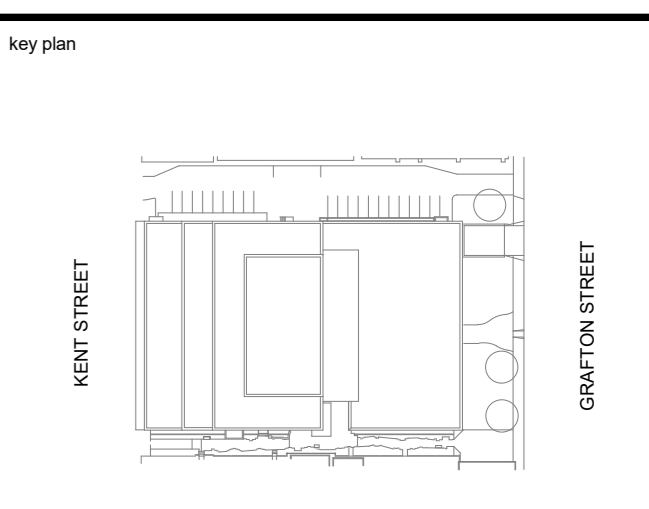
**R.056687.005**

drawing no. no. du dessin

**A01-07**

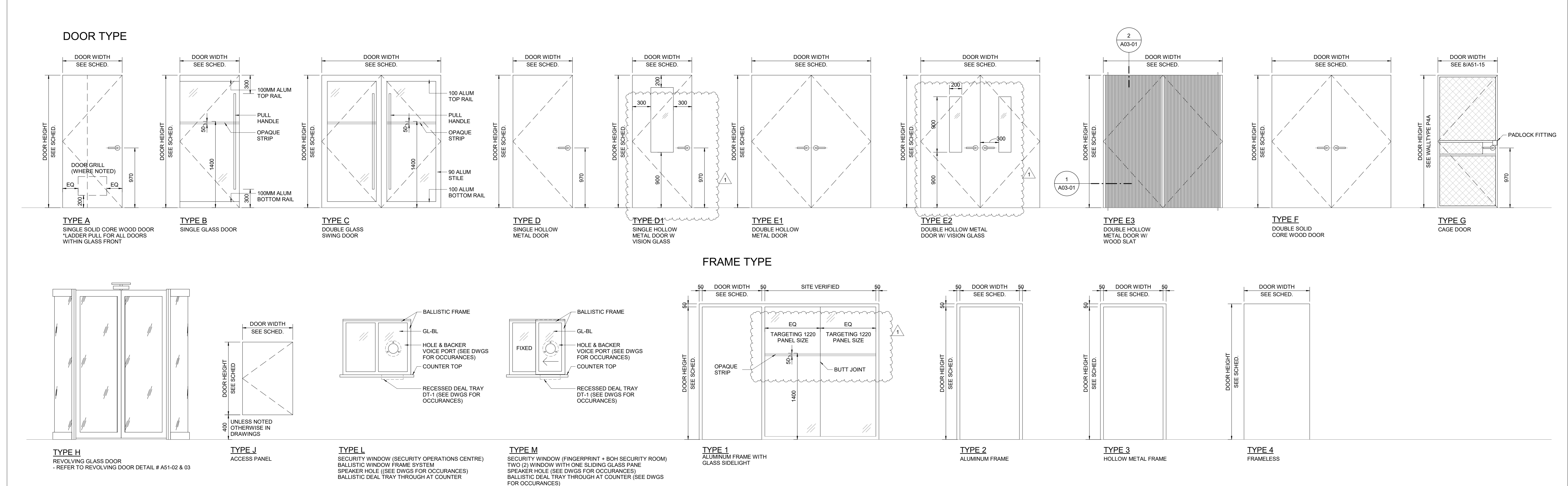
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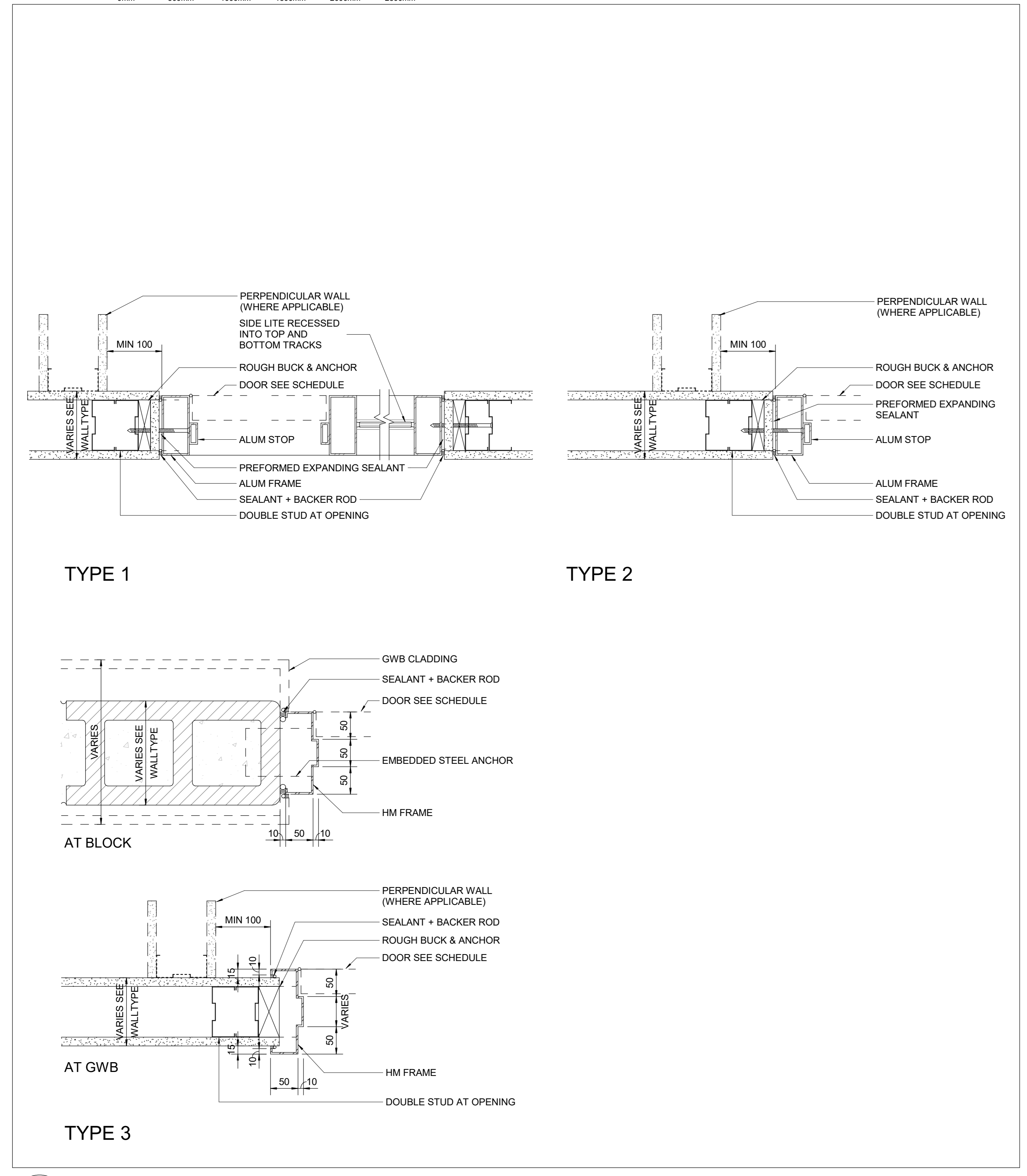


Project and true North

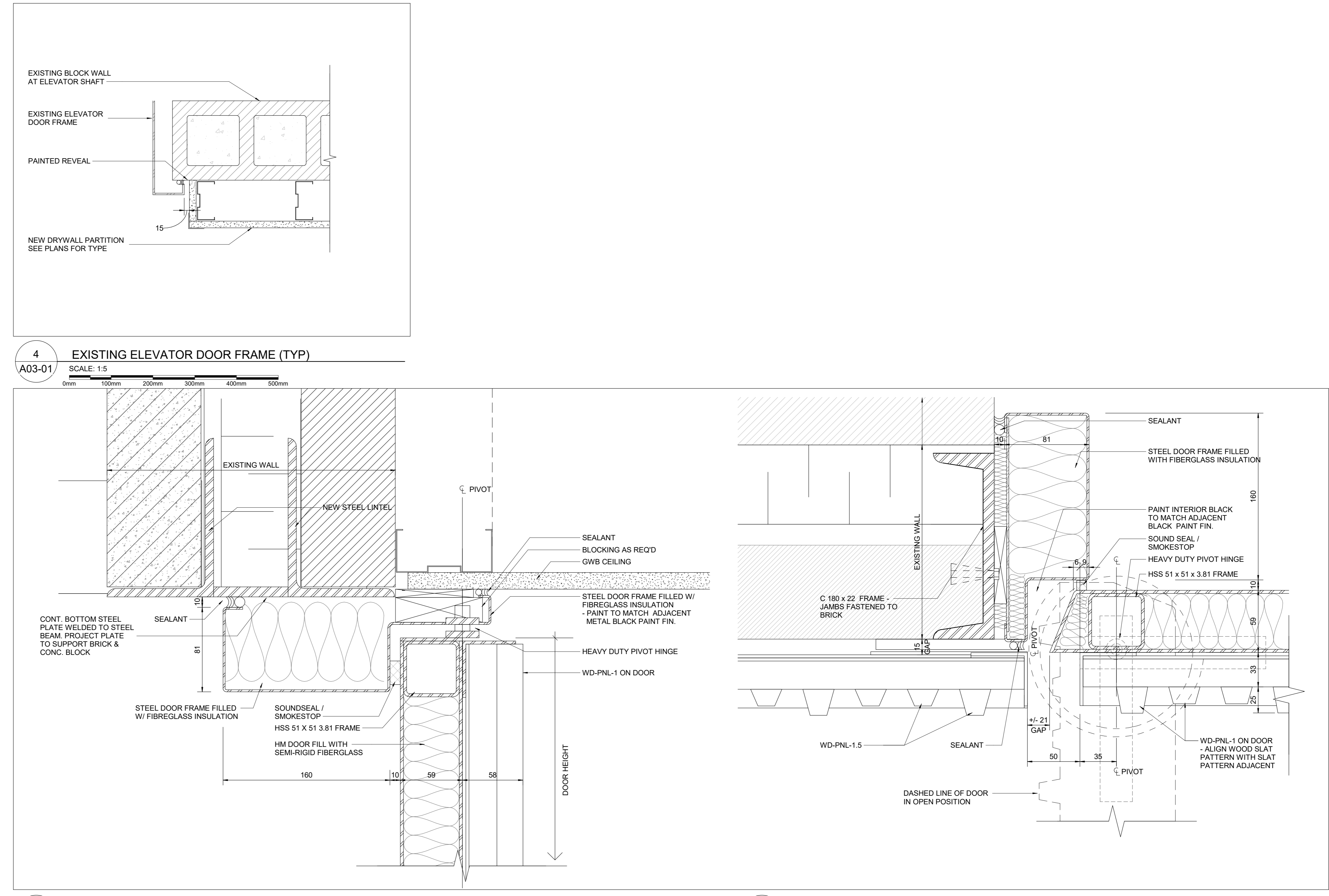
Project Legend



**5 DOOR & FRAME TYPE**  
SCALE: 1:25



**3 FRAME TYPES**  
SCALE: 1:5



**2 ATRIUM WOOD DOOR SECTION HEADER**  
SCALE: 1:2

**1 ATRIUM WOOD DOOR PLAN DETAIL**  
SCALE: 1:2

| NO. | DESCRIPTION                    | DATE       |
|-----|--------------------------------|------------|
| 1   | ADDENDUM # 1 ISSUED FOR TENDER | 2022-07-11 |
| 2   |                                | 2022-06-07 |

PROJECT: DANIEL J MACDONALD MODERNIZATION

161 GRAFTON STREET CHARLOTTETOWN, PEI C1A 1L1

**DOOR TYPES & DETAILS**

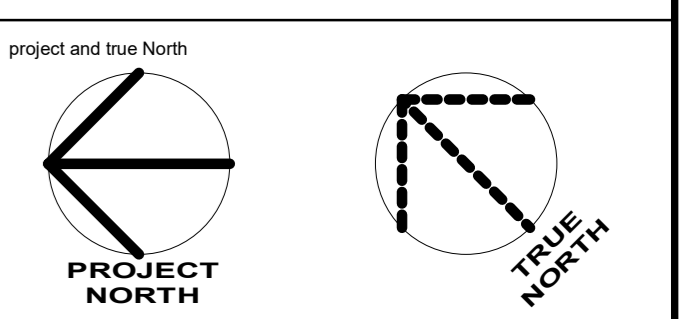
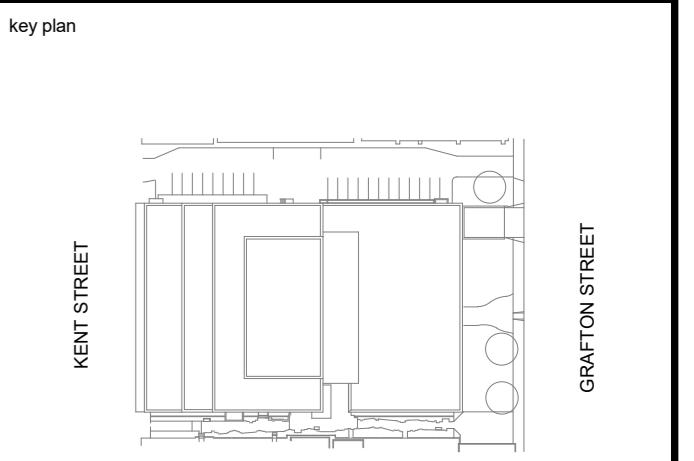
|                      |                                |
|----------------------|--------------------------------|
| designed NORR        | compu                          |
| date 2019-01-23      |                                |
| drawn NORR           | dessiné                        |
| date 2019-01-23      |                                |
| approved AS          | approuvé                       |
| date 2022-07-11      |                                |
| Tender               | Submission                     |
| PWGC Project Manager | Administrateur de projets TPSC |
| project number       | no. du projet                  |

R.056687.005  
drawing no. A03-01 no. du dessin



# NORR

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project legend

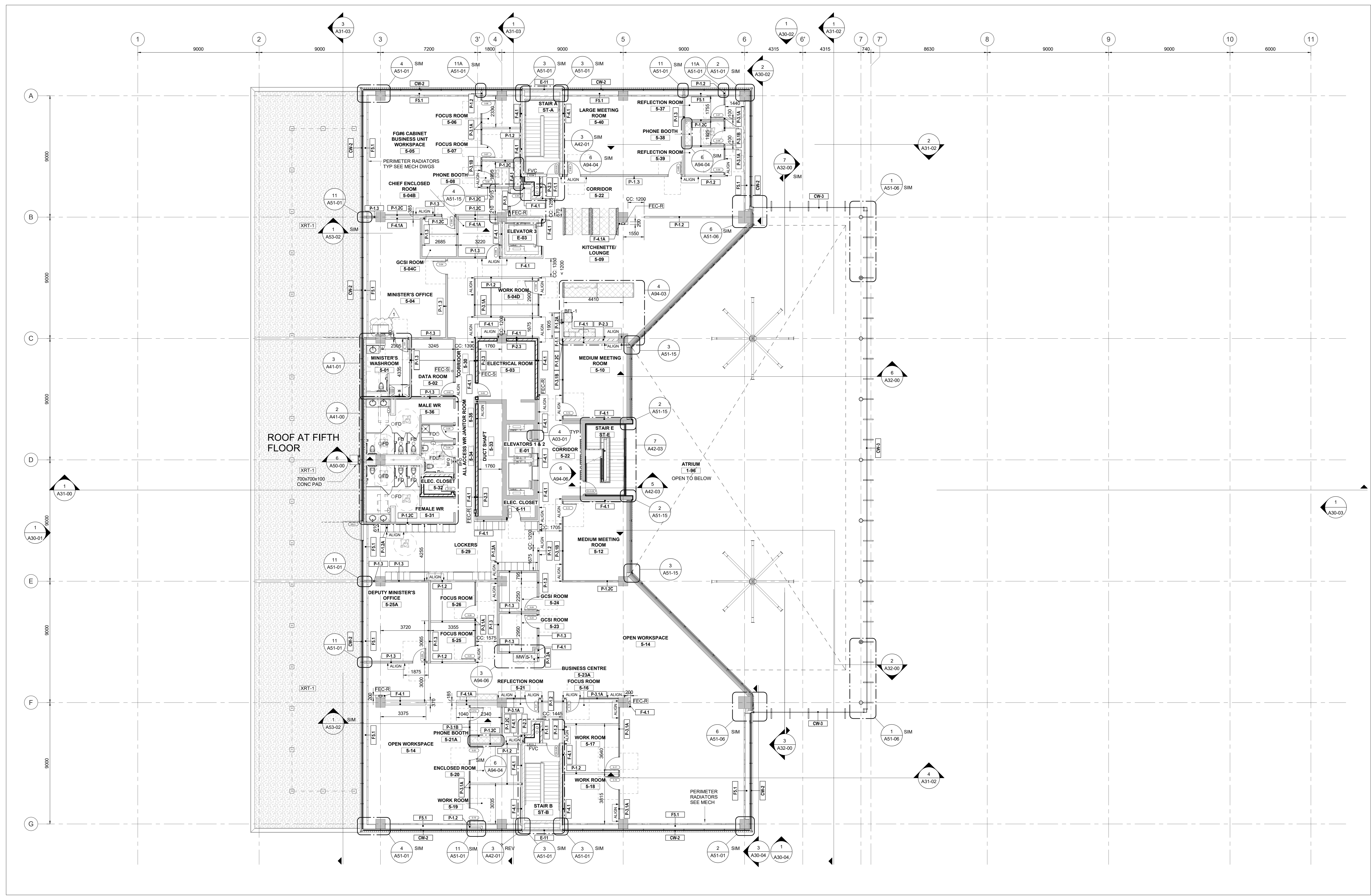
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|-----|-------------------|------------|
| 1   | ADDENDUM #1       | 2022-07-11 |
| 2   | ISSUED FOR TENDER | 2022-06-07 |

project  
**DANIEL J MACDONALD MODERNIZATION**

161 GRAFTON STREET  
 CHARLOTTETOWN, PEI C1A 1L1

drawing  
**FIFTH FLOOR PARTITION PLAN**  
 1:100

| designed            | conpu                          |
|---------------------|--------------------------------|
| NORR                |                                |
| date                | 2020-08-31                     |
| drawn               | NORR                           |
| date                | 2020-08-31                     |
| approved            | AS                             |
| date                | 2022-07-11                     |
| Tender              | Submission                     |
| Project Manager     | Administrateur de projets TPSC |
| project number      | no. du projet                  |
| <b>R.056687.005</b> |                                |
| drawing no.         | no. du dessin                  |
| <b>A21-05</b>       |                                |



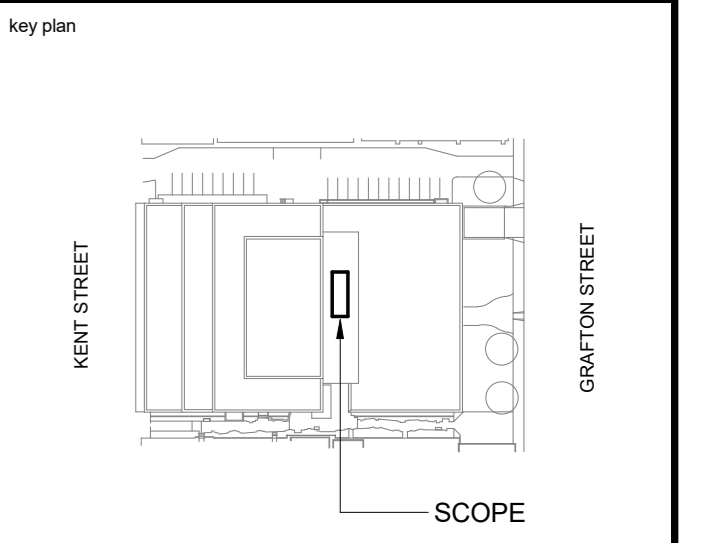
SCALE: 1:100  
 0m 1m 2m 3m 4m 5m 6m 7m 8m 9m 10m

### GENERAL PARTITION PLAN NOTES

- REFER TO GENERAL NOTES SHEET A01-02 FOR FURTHER INFORMATION.
- TO BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS.
- REFER TO THE LIST OF MATERIALS AS PROVIDED IN THE PROJECT SPECIFICATIONS FOR MORE INFORMATION.
- REFER TO SHEET A01-07 FOR WALL ASSEMBLIES AND GENERAL CONSTRUCTION DETAIL.
- REFER TO DRAWING SERIES A22 AND A33 FOR WALL MOUNTED DEVICES INCLUDING TV MONITORS AND WHITEBOARDS. PROVIDE PLYWOOD BACKING AT EACH LOCATION PER DETAIL 10/A53-02.
- PROVIDE ADEQUATE BLOCKING IN WALLS FOR ALL MILLWORK ITEMS INCLUDING BUT NOT LIMITED TO SHELVING UNITS AND WALL HUNG MILLWORK.
- REFER TO A01 SERIES FOR FIRE RATED WALLS.
- REFER TO A02 SERIES FOR STC RATED WALLS.

### PARTITION PLAN LEGEND

- EXISTING WALL TO REMAIN
- EXISTING COLUMN TO REMAIN
- NEW PARTITION
- NEW PARTITION C/W INSULATION
- NEW CMU PARTITION
- MILLWORK
- ALIGN PARTITIONS AS SHOWN



project and true North

project legend

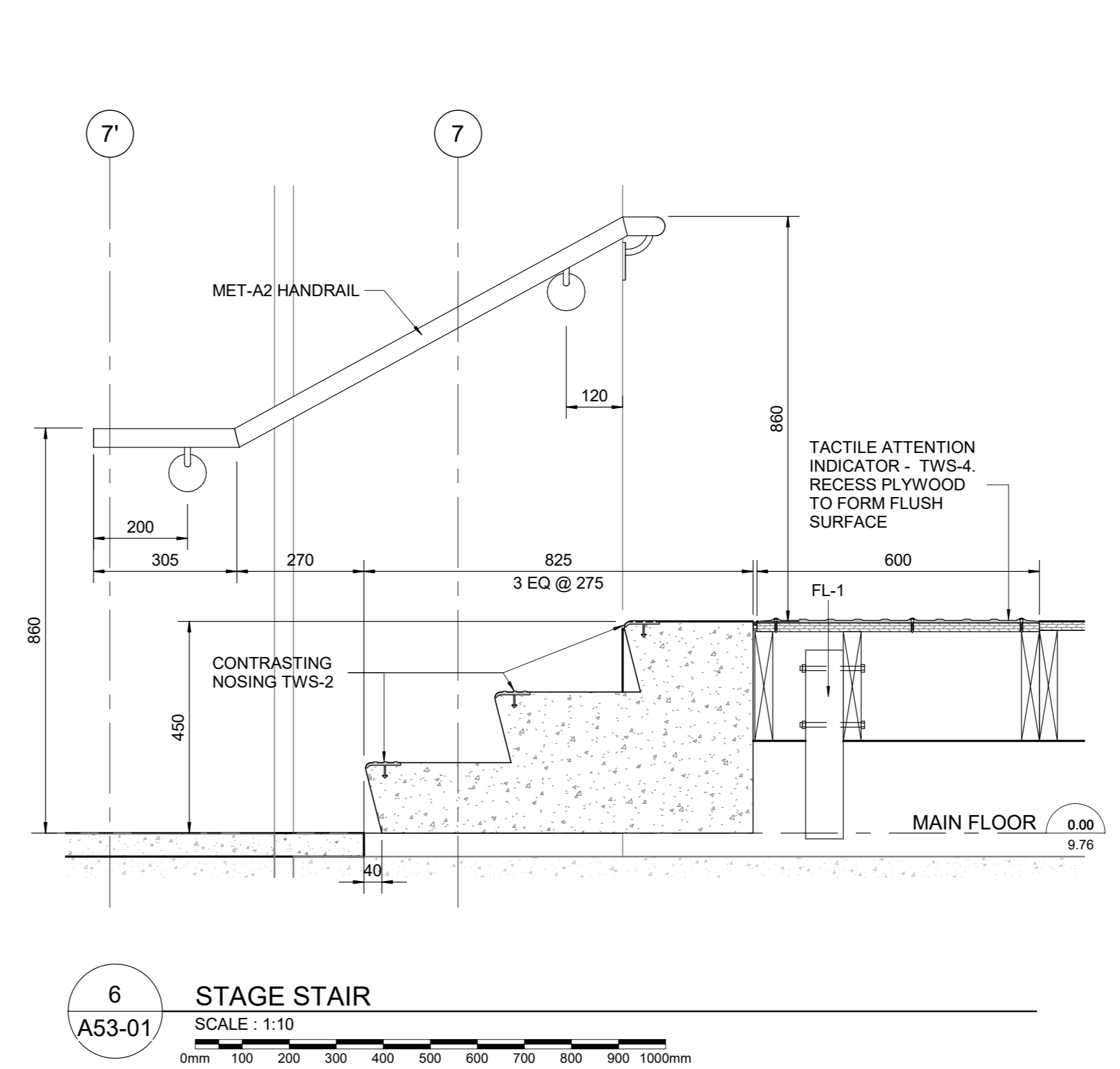
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| 1   | ISSUED FOR TENDER | 2022-05-27 |

project  
**DANIEL J MACDONALD MODERNIZATION**

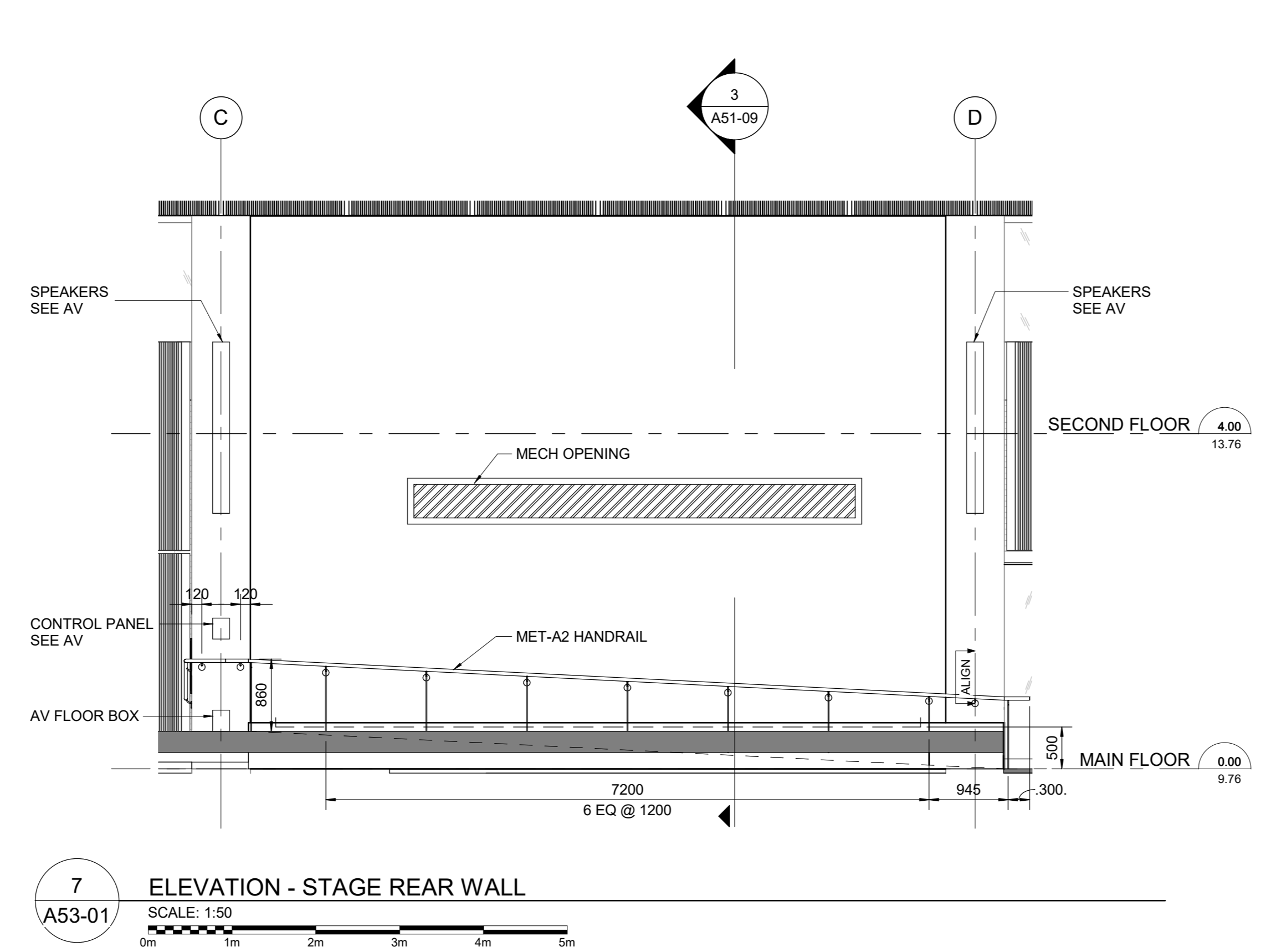
161 GRAFTON STREET  
CHARLOTTETOWN, PEI C1A 1L1

design  
**STAGE DETAILS**

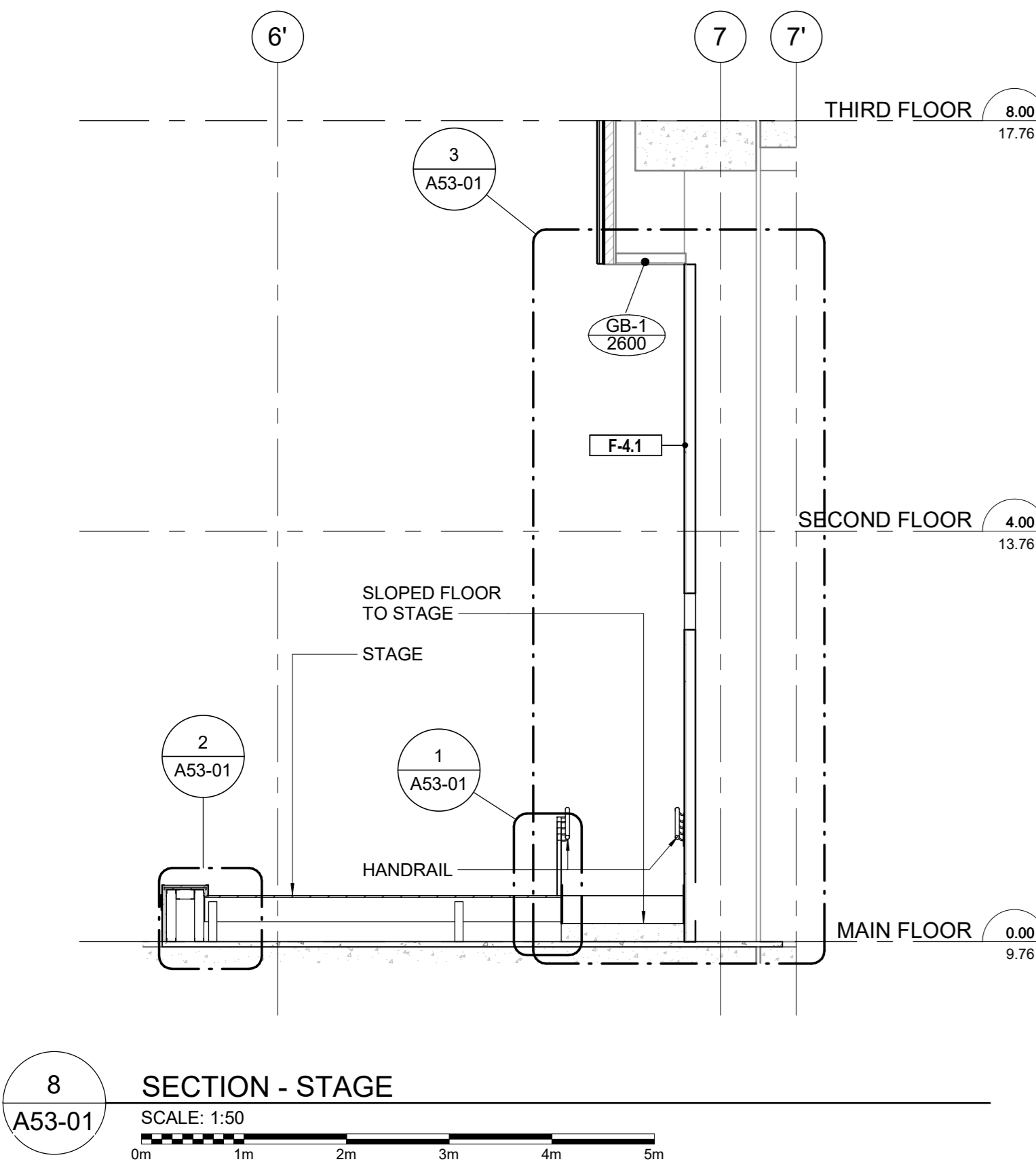
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| designed             | NORR                            | conçu         |  |
| date                 | 2019-01-07                      |               |  |
| drawn                | NORR                            | dessiné       |  |
| date                 | 2019-01-07                      |               |  |
| approved             | AS                              | approuvé      |  |
| date                 | 2022-05-27                      |               |  |
| Tender               |                                 | Submission    |  |
| PWGC Project Manager | Administrateur de projets TPSCG |               |  |
| project number       |                                 | no. du projet |  |
|                      | <b>R.056687.005</b>             |               |  |
| drawing no.          |                                 | no. du dessin |  |
|                      | <b>A53-01</b>                   |               |  |



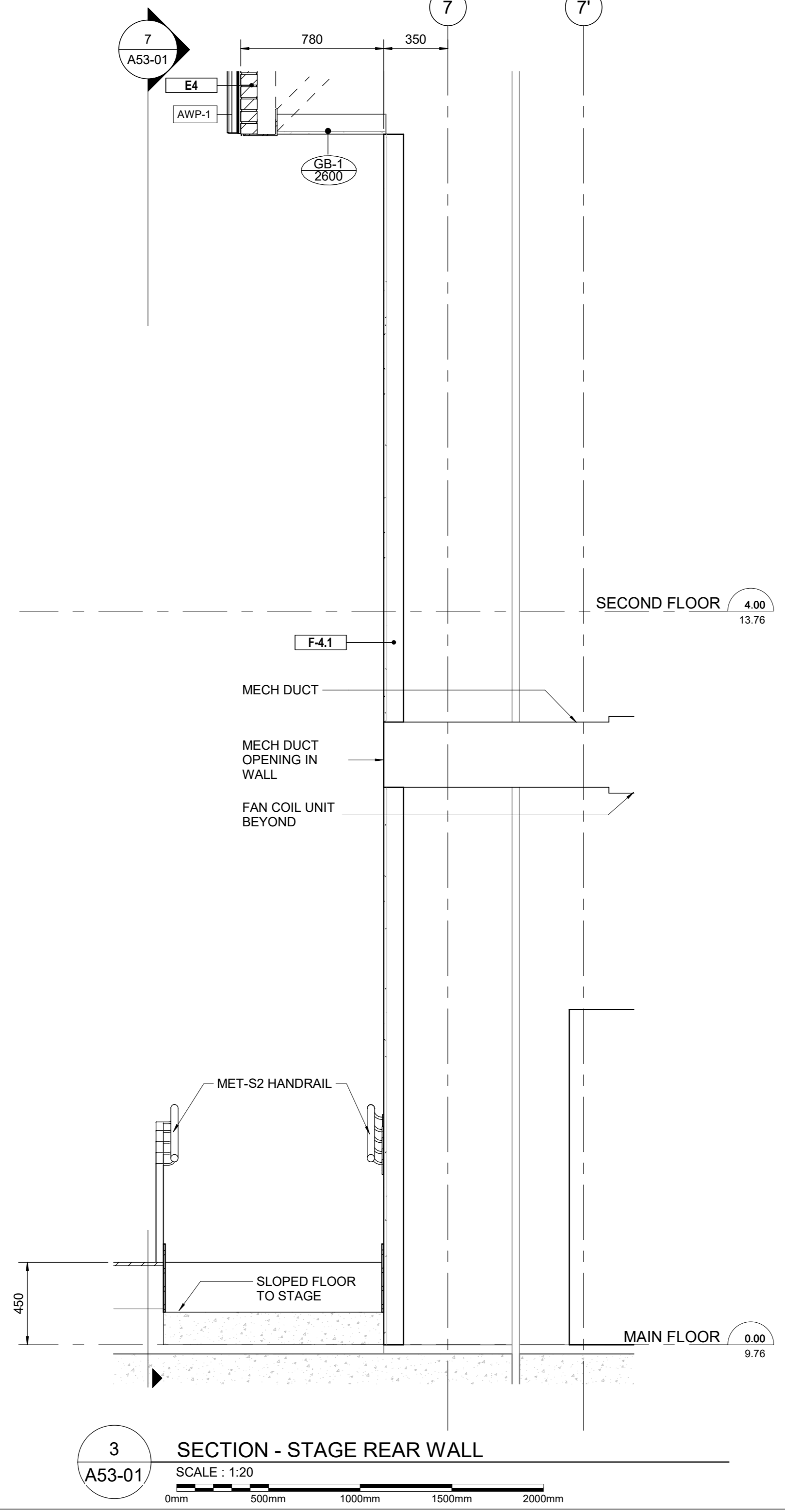
6 STAGE STAIR  
SCALE: 1:10  
0mm 100 200 300 400 500 600 700 800 900 1000mm



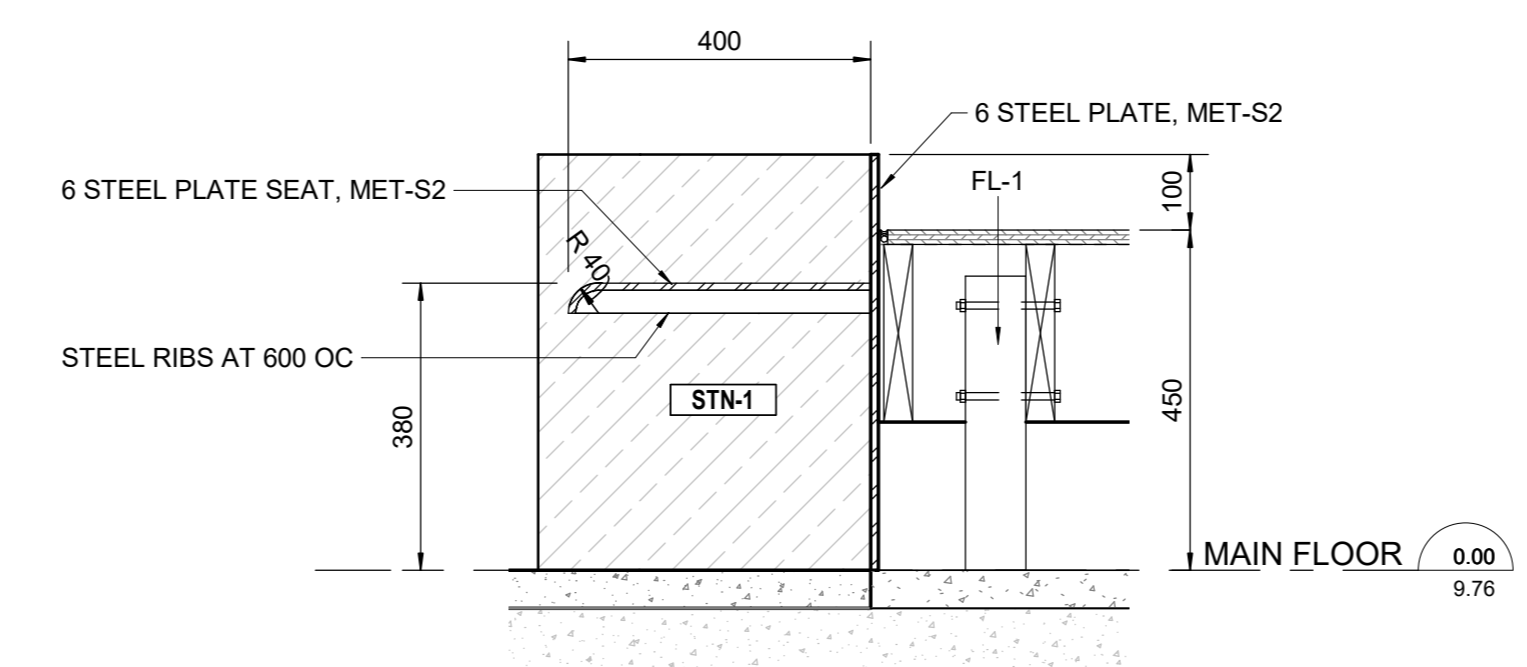
7 ELEVATION - STAGE REAR WALL  
SCALE: 1:50  
0m 1m 2m 3m 4m 5m



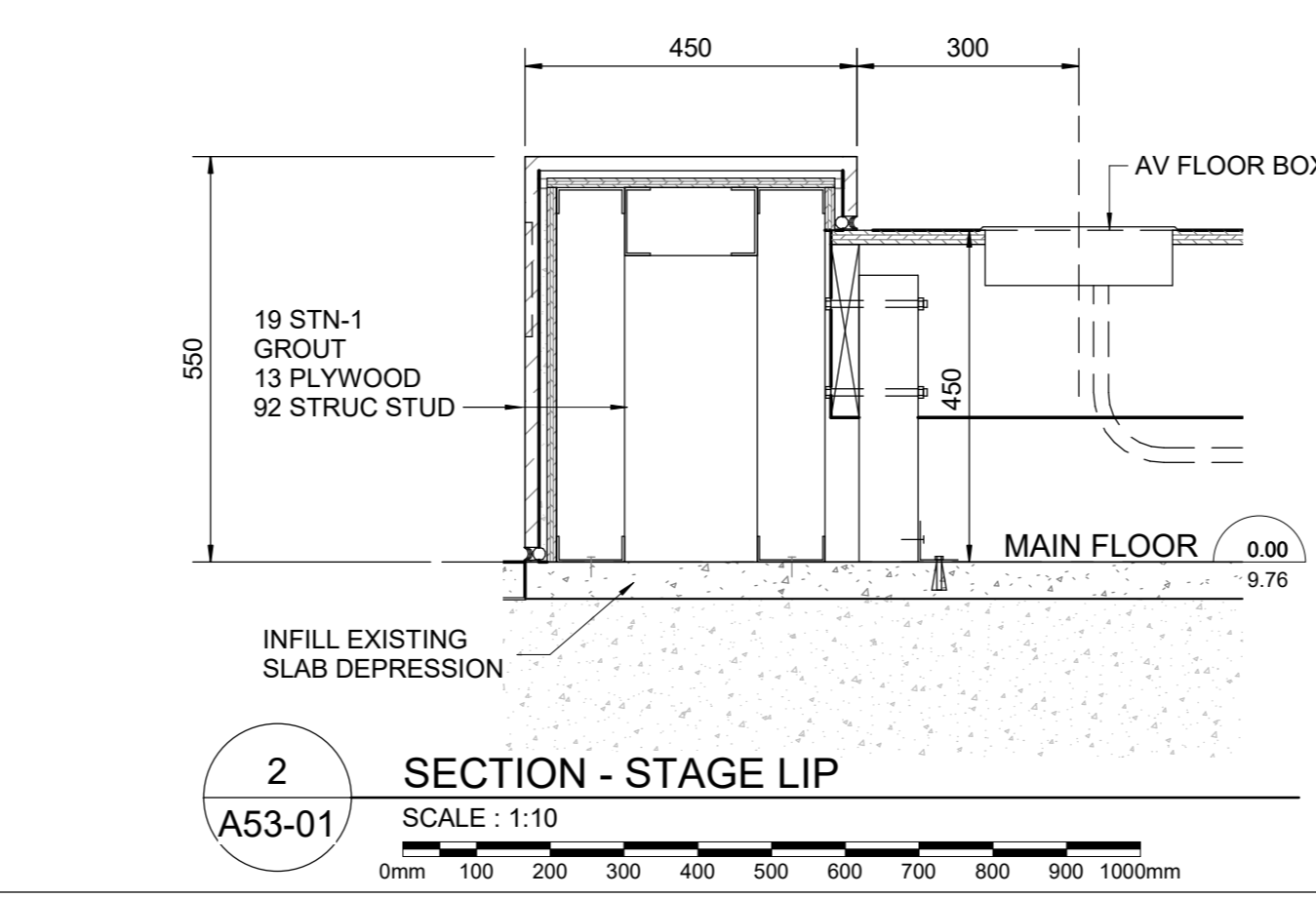
8 SECTION - STAGE  
SCALE: 1:50  
0m 1m 2m 3m 4m 5m



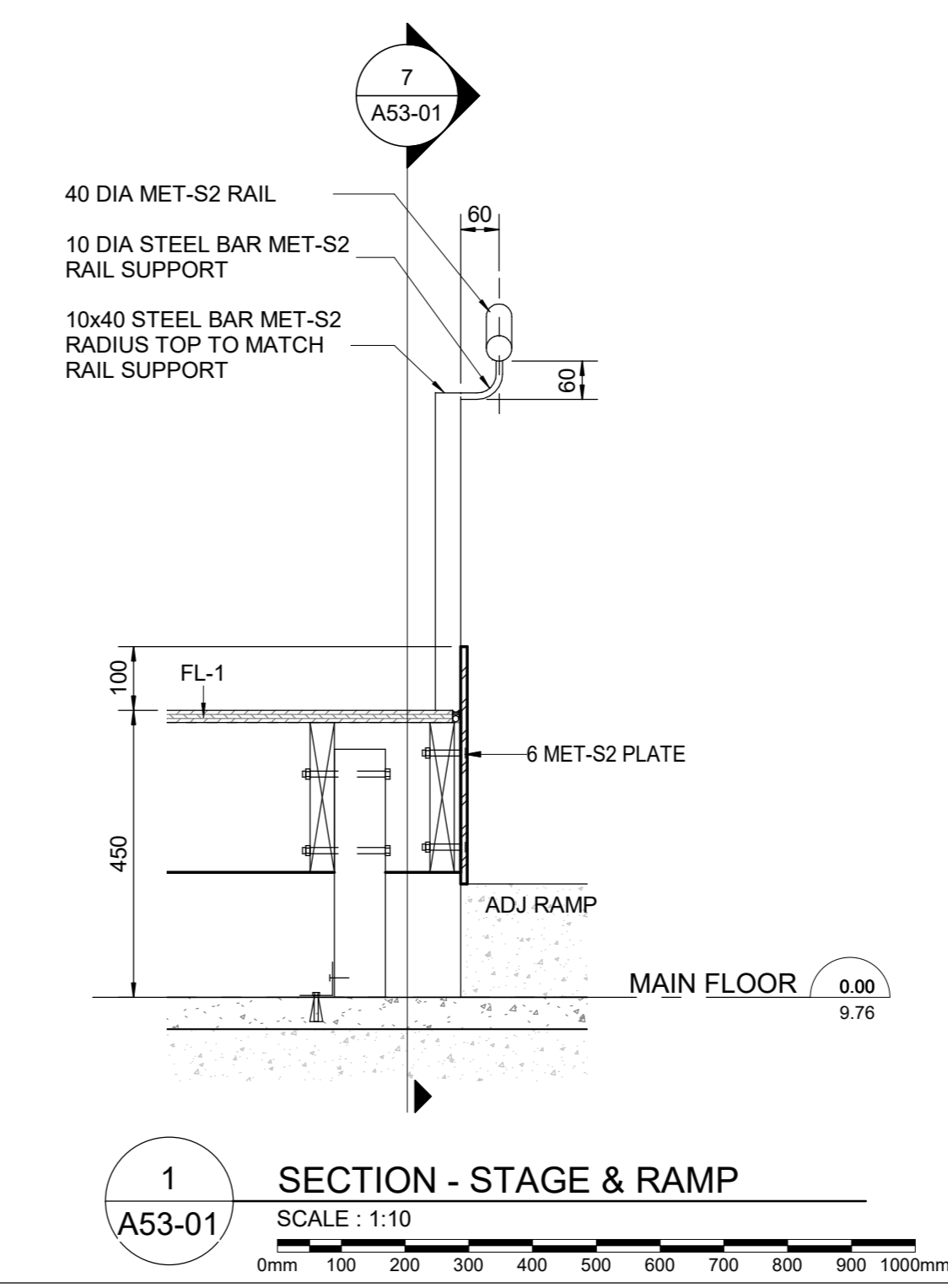
3 SECTION - STAGE REAR WALL  
SCALE: 1:20  
0mm 500mm 1000mm 1500mm 2000mm



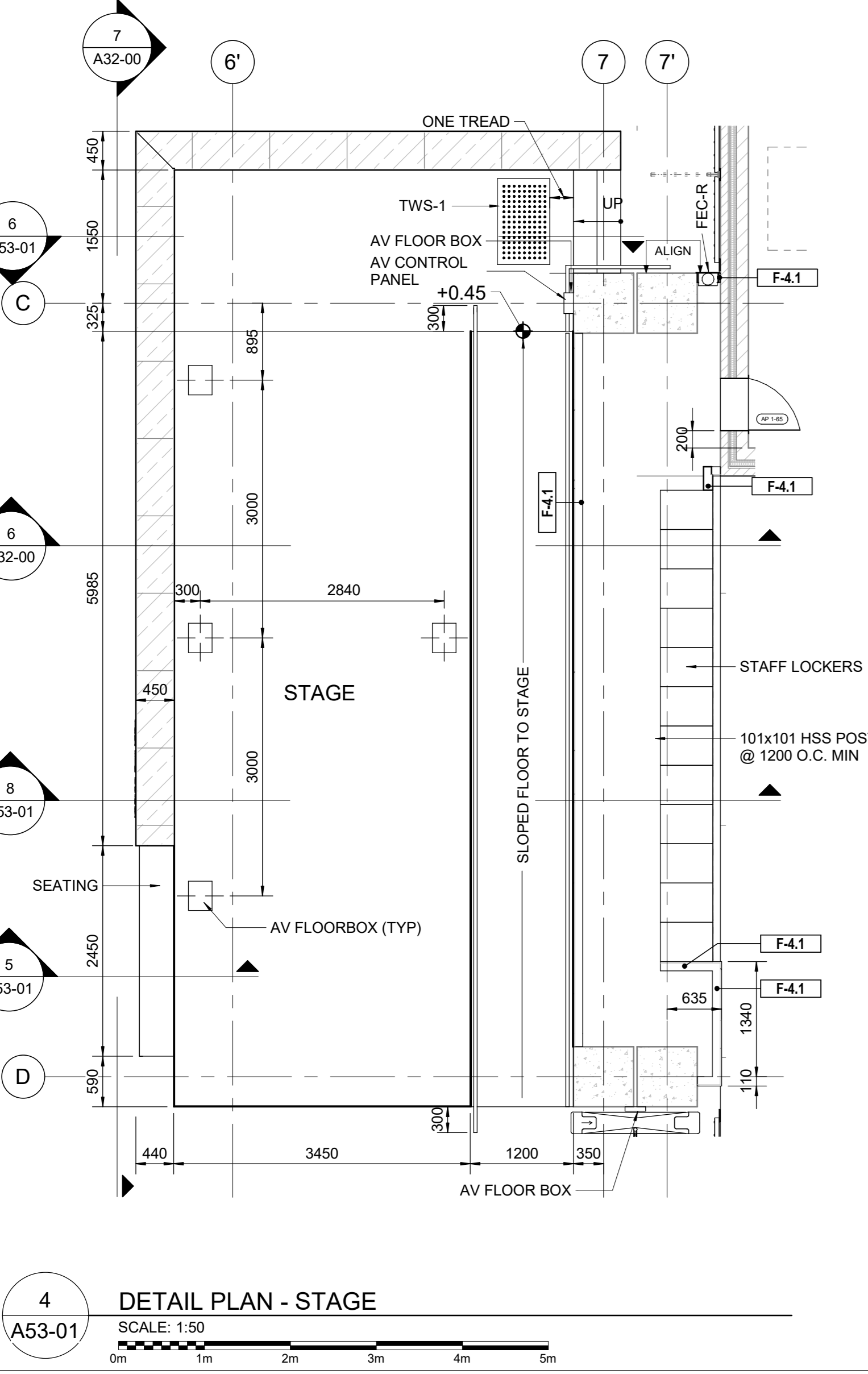
5 SECTION - STAGE LIP - SEAT  
SCALE: 1:10  
0mm 100 200 300 400 500 600 700 800 900 1000mm



2 SECTION - STAGE LIP  
SCALE: 1:10  
0mm 100 200 300 400 500 600 700 800 900 1000mm

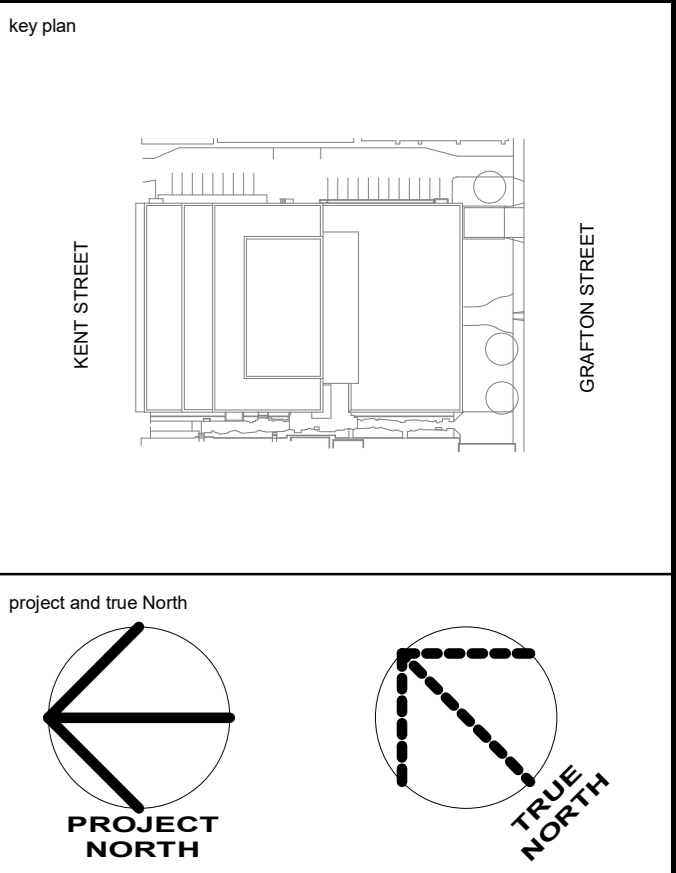


1 SECTION - STAGE & RAMP  
SCALE: 1:10  
0mm 100 200 300 400 500 600 700 800 900 1000mm



4 DETAIL PLAN - STAGE  
SCALE: 1:50  
0m 1m 2m 3m 4m 5m



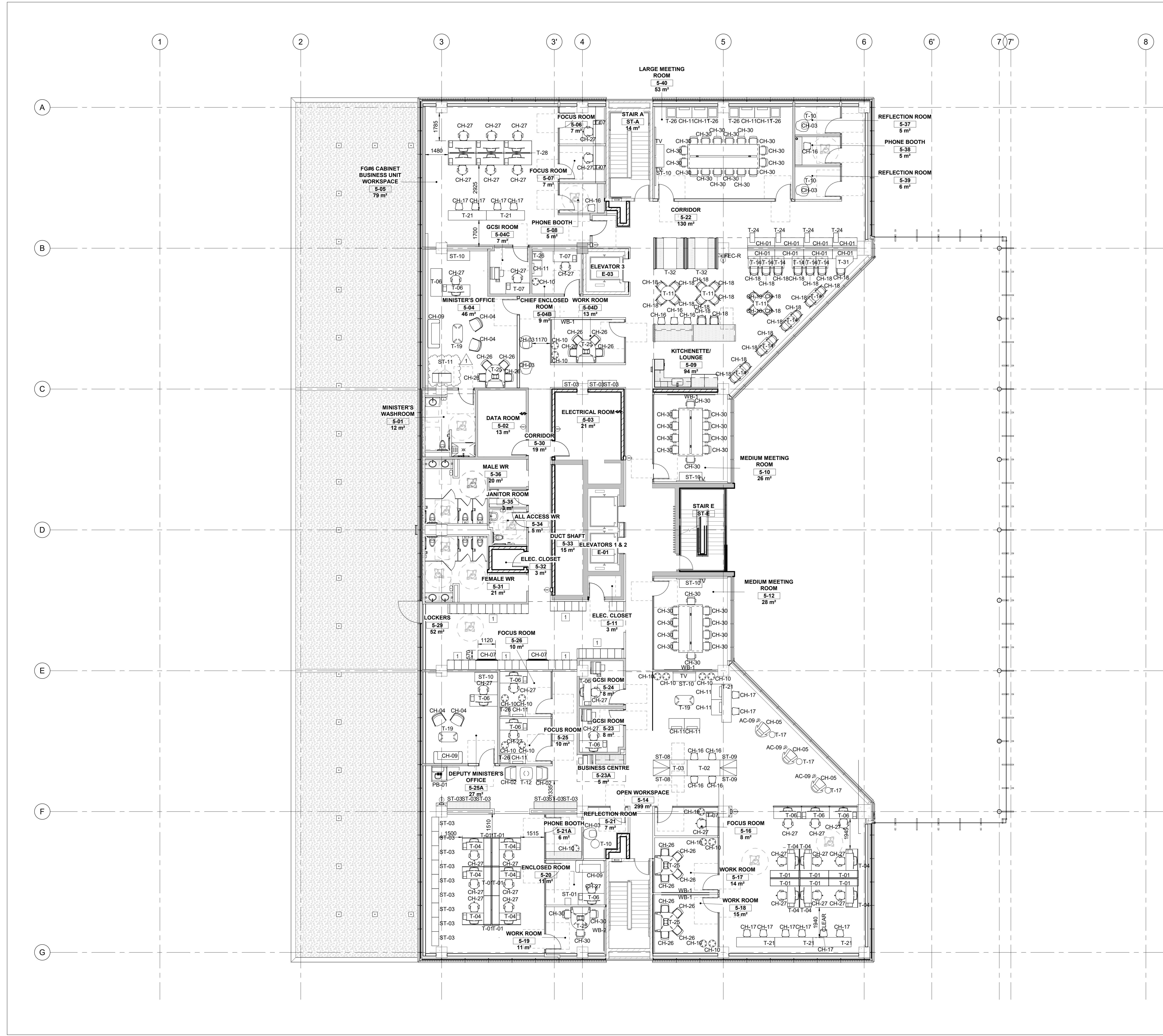


Project and True North



Project Legend

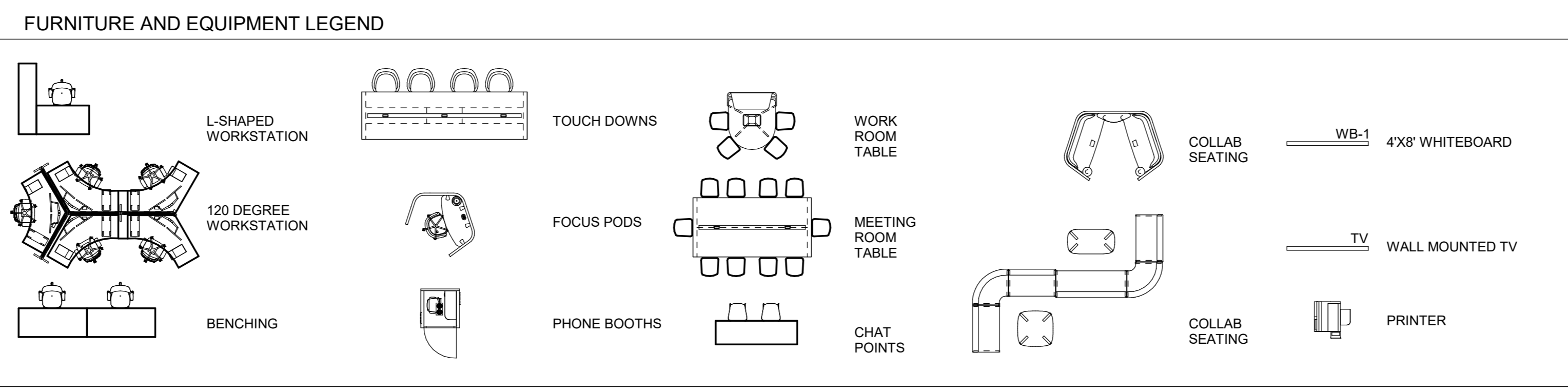
| EXISTING EQUIPMENT SCHEDULE |                            |                         |                                                                                                                           |               |             |                                     |       |
|-----------------------------|----------------------------|-------------------------|---------------------------------------------------------------------------------------------------------------------------|---------------|-------------|-------------------------------------|-------|
| EQUIPMENT CODE              | DESCRIPTION                | VAC GROUP               | PRODUCT DESCRIPTION                                                                                                       | LEVEL         | ROOM NUMBER | ROOM NAME                           | COUNT |
| EQ-01                       | Binding Machine            | Administration Services | Manufacturer: Gerard Ovalstrapping Model: Mini Max Serial # 10711344 Asset # E323775 Size: 35.5"L x 22.5"W x 30"H         | MAIN FLOOR    | 1-63        | STORE/SHIPPING & RECEIVING          | 1     |
| EQ-02                       | Printer/Copier/Fax         | Administration Services | Manufacturer: Lexmark Model: MX711fe Asset # E392461 Address: DM-81 LEX-MX711-PA Fax: 902-566-8243 fax line is hooked up. | MAIN FLOOR    | 1-63        | STORE/SHIPPING & RECEIVING          | 1     |
| EQ-03                       | Miscellaneous Carts        | Administration Services |                                                                                                                           | MAIN FLOOR    |             |                                     | 21    |
| EQ-04                       | Miscellaneous Pallet Jacks | Administration Services |                                                                                                                           | MAIN FLOOR    |             |                                     | 8     |
| EQ-05                       | Scanner                    | Administration Services | HP Scanjet Enterprise Flow 7500                                                                                           | MAIN FLOOR    | 1-63        | STORE/SHIPPING & RECEIVING          | 1     |
| EQ-06                       | Printer                    | Administration Services | Zebra ZP-505 label printer                                                                                                | MAIN FLOOR    | 1-63        | STORE/SHIPPING & RECEIVING          | 1     |
| EQ-07                       | Stationary Bikes           | Client Relations        |                                                                                                                           | PARKING LEVEL | B-02        | WELLNESS CENTRE                     | 2     |
| EQ-08                       | Treadmills                 | Client Relations        |                                                                                                                           | PARKING LEVEL | B-02        | WELLNESS CENTRE                     | 4     |
| EQ-09                       | Rowing Machines            | Client Relations        | Product: Concept 2                                                                                                        | PARKING LEVEL | B-02        | WELLNESS CENTRE                     | 2     |
| EQ-10                       | Stationary Walker          | Client Relations        | Product: Life Fitness 9100                                                                                                | PARKING LEVEL | B-02        | WELLNESS CENTRE                     | 1     |
| EQ-11                       | Stair Climber              | Client Relations        | Product: Life Fitness 9500                                                                                                | PARKING LEVEL | B-02        | WELLNESS CENTRE                     | 1     |
| EQ-12                       | Pull up Rack               | Client Relations        |                                                                                                                           | PARKING LEVEL | B-02        | WELLNESS CENTRE                     | 1     |
| EQ-13                       | Incline Bench              | Client Relations        |                                                                                                                           | PARKING LEVEL | B-02        | WELLNESS CENTRE                     | 3     |
| EQ-14                       | Squat Rack                 | Client Relations        |                                                                                                                           | PARKING LEVEL | B-02        | WELLNESS CENTRE                     | 1     |
| EQ-15                       | Ab Cruncher                | Client Relations        | Product: AB Supreme                                                                                                       | PARKING LEVEL | B-02        | WELLNESS CENTRE                     | 1     |
| EQ-16                       | Long Bar Rack              | Client Relations        | Product: Strength Armour                                                                                                  | PARKING LEVEL | B-02        | WELLNESS CENTRE                     | 1     |
| EQ-17                       | Dumbbell Rack              | Client Relations        |                                                                                                                           | PARKING LEVEL | B-02        | WELLNESS CENTRE                     | 1     |
| EQ-18                       | Dumbbell Rack              | Client Relations        |                                                                                                                           | PARKING LEVEL | B-02        | WELLNESS CENTRE                     | 1     |
| EQ-19                       | Dumbbell Rack              | Client Relations        |                                                                                                                           | PARKING LEVEL | B-02        | WELLNESS CENTRE                     | 1     |
| EQ-20                       | Ball Rack                  | Client Relations        |                                                                                                                           | PARKING LEVEL | B-02        | WELLNESS CENTRE                     | 1     |
| EQ-21                       | Weight Rack                | Client Relations        |                                                                                                                           | PARKING LEVEL | B-02        | WELLNESS CENTRE                     | 1     |
| EQ-22                       | Dubbing Station            | Communications          |                                                                                                                           | MAIN FLOOR    | 1-18        | VIDEO PRODUCTION                    | 1     |
| EQ-23                       | Taping Storage Unit        | Communications          |                                                                                                                           | MAIN FLOOR    | 1-18        | VIDEO PRODUCTION                    | 5     |
| EQ-24                       | Taping Storage Unit        | Communications          |                                                                                                                           | MAIN FLOOR    | 1-18        | VIDEO PRODUCTION                    | 3     |
| EQ-25                       | Material Cabinets          | Communications          |                                                                                                                           | MAIN FLOOR    | 1-18        | VIDEO PRODUCTION                    | 2     |
| EQ-26                       | Audio Mixer                | Communications          |                                                                                                                           | MAIN FLOOR    | 1-18        | VIDEO PRODUCTION                    | 1     |
| EQ-27                       | Portable Green Screen      | Communications          |                                                                                                                           | MAIN FLOOR    | 1-18A       | VIDEO STUDIO                        | 1     |
| EQ-28                       | ID Card Producer           | Security Services       | Model: DTC 4500e                                                                                                          | MAIN FLOOR    | 1-98        | FINGER PRINT PHOTO ID               | 1     |
| EQ-29                       | ID Office Storage          | Security Services       |                                                                                                                           | MAIN FLOOR    | 1-80        | SECURITY OPERATIONS CENTRE          | 1     |
| EQ-30                       | Safe                       | Security Services       |                                                                                                                           | MAIN FLOOR    | 1-80        | SECURITY OPERATIONS CENTRE          | 1     |
| EQ-31                       | Key Cabinet                | Security Services       |                                                                                                                           | MAIN FLOOR    | 1-80        | SECURITY OPERATIONS CENTRE          | 1     |
| EQ-32                       | Secure Storage Cabinet     | Security Services       |                                                                                                                           | MAIN FLOOR    | 1-80        | SECURITY OPERATIONS CENTRE          | 2     |
| EQ-33                       | Secure Storage Cabinet     | Security Services       |                                                                                                                           | MAIN FLOOR    | 1-86        | SECURITY OPERATIONS CENTRE SOC ROOM | 1     |
| EQ-34                       | BGIS Workbench             | BGIS                    |                                                                                                                           | PARKING LEVEL | B-21        | BGIS STORAGE                        | 1     |
| EQ-35                       | Pitney Bowes               | Administration Services |                                                                                                                           | MAIN FLOOR    | 1-103       | MAIL DIGITIZATION ROOM              | 1     |
| EQ-36                       | High Density Filing System | DOJ, BPA                |                                                                                                                           |               |             |                                     | 2     |



SCALE: 1:100  
 0m 1m 2m 3m 4m 5m 6m 7m 8m 9m 10m

**GENERAL FURNITURE AND EQUIPMENT PLAN NOTES**

- ALL FURNITURE AND EQUIPMENT TO BE SUPPLIED AND INSTALLED BY OTHERS UNLESS OTHERWISE NOTED. THIS DRAWING IS TO BE USED FOR FURNITURE AND EQUIPMENT COORDINATION ONLY.
- G.C. TO COORDINATE EQUIPMENT (EQ-XX) SUPPLIED BY OWNER. REFER TO EQUIPMENT SCHEDULE ON SHEET A93-05 FOR MORE INFORMATION.
- ALL T.V.'S & WHITEBOARDS ARE SUPPLIED AND INSTALLED BY OTHERS. G.C. TO PROVIDE BLOCKING IN WALL CAVITY IN LOCATION AS SHOWN ON PLAN.
- WHERE SHELVING (ST-X) IS SHOWN ON PLAN AGAINST A WALL, G.C. TO PROVIDE BLOCKING IN WALL CAVITY.
- G.C. TO REUSE EXISTING LEARNING CENTRE/MEETING ROOM FURNITURE FOR NEW 1-93 LEARNING CENTRE AND 1-94 TRAINING ROOM.



**FURNITURE AND EQUIPMENT KEYNOTES**

- LOCKERS TO BE SUPPLIED AND INSTALLED BY GC. GC TO COORDINATE POSITION OF LOCKERS WITH BULKHEAD ABOVE. 75% OF TOTAL LOCKERS TO BE FULL HEIGHT. AND 25% TO BE HALF HEIGHT. TO COORDINATE FINAL LOCATION OF LOCKERS WITH DESIGNER.

|                                                       |                                |            |
|-------------------------------------------------------|--------------------------------|------------|
| 1                                                     | ADDENDUM #1                    | 2022-07-11 |
| 0                                                     | ISSUED FOR TENDER              | 2022-06-27 |
| revisions                                             |                                | date       |
| project                                               |                                |            |
| DANIEL J MACDONALD<br>MODERNIZATION                   |                                |            |
| 161 GRAFTON STREET<br>CHARLOTTETOWN, PEI C1A 1L1      |                                |            |
| drawing                                               | design                         |            |
| FIFTH FLOOR<br>FURNITURE &<br>EQUIPMENT PLAN<br>1:100 |                                |            |
| designed NORR                                         | compu                          |            |
| date 2018-12-19                                       |                                |            |
| drawn NORR                                            | dessiné                        |            |
| date 2018-12-19                                       |                                |            |
| approved AS                                           | approuvé                       |            |
| date 2022-07-11                                       |                                |            |
| Tender                                                | Submission                     |            |
| FWGSC Project Manager                                 | Administrateur de projets TPSC |            |
| project number                                        | no. du projet                  |            |
| R.056687.005                                          |                                |            |
| drawing no.                                           | no. du dessin                  |            |
| A93-05                                                |                                |            |