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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\_R6, Table of Contents
  - .2 Section No. 01 61 10\_R3, List of Materials
  - .3 Section No. 03 01 37\_R1, Concrete Restoration

End of NORR Addendum No. 6

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<b>DIVISION</b>	<u>SECTION</u>	<u>DOCUMENT</u> <u>RESPONSIBILITY</u>	DATE	PAGES
	32 01 90.33 - Tree and Shrub Preservation	L	27 May 2022	4
	32 12 16 Asphalt Paving	С	27 May 2022	4
	VOLUME 3 OF 3			
APPENDIX 1	DESIGNATED SUBSTANCES AND HAZARDOUS BUILDING MATERIALS			
	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
APPENDIX 2	<b>BUILDING CONDITION REPORTS</b>			
	Building Condition Report 2017	Info	26 Apr 2017	103
APPENDIX 3	GEOTECHNICAL INVESTIGATION			
	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**

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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	<b>APPLICATION /</b>
			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.

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

#### **DIVISION 03 - CONCRETE**

#### **DIVISION 04 - MASONRY**

BRK-1	Brick Cladding	Salvaged brick from onsite exterior wall demolition.	Exterior; Interior (lobby)
		Or	
		New Brick to Match Existing as required. Provide samples to Departmental	The second state
		Representative for Approval. New brick to be mixed with salvaged brick	THE REAL PROPERTY.
		proportionally	

#### **DIVISION 05 – METALS**

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

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

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

CODE	ITEM	DESCRIPTION A	PPLICATION / OCATION
MET-S4	Prefinished Steel	Bluing of Acoustic Panel's Steel Frame	Custom Atrium Acoustic Panel:
		Shop Applied Transparent Black Acrylic Lacquer Coating	
		Dry Film Thickness .35 mils	
		Color: Black Matte RGB Colour Code: 39 39 45	
MET-Z1	Flat Lock Zinc Panels	Pre-patinated Titanium Zinc Panel	Interior Atrium Stair E, guard post roof
		FlatLock Panels Thickness - 0.65mm on 16mm plywood substrate	
		Note: All corners to be continuous, no exterior corner flashing to be used	
		Width: 230mm with ~280mm elongation on sloped stair ceiling surfaces (to match 230mm width on vertical faces)	
		Height: Typically 575mm, as needed around edges and corners	
		Pigmented brown-grey to complement natural limestone STN-1.	
		Provide samples to consultant	
CRBT-1	Carborundum Tape	Self Adhered Anti-Slip Tape	Atrium Stair E nosing
		Peel Adhesion: MIL-D-17951E(SH): Adhesive strength 0.75 lbs. (minimum)	
		Width: 51mm	

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CODE	ITEM	DESCRIPTION	APPLICATION / LOCATION
TS-1	Transition Strip - Carpet, LVT to Tile	SS Transition Strip Material: Stainless steel Type 304 Height: Match tile thickness	
TS-2	Transition Strip - Carpet, LVT, Tile to SDT	Sloped SS Transition Strip Material: Stainless Steel Type 304 Height: To Match both adjacent floor thickness	
TS-3	Transition Strip - Carpet, LVT, SDT to Painted Epoxy/ Concrete	Product: Rubber Transition Strips Colour: Charcoal Grey Material: Rubber Gauge to be coordinated with flooring material thickness	
TS-4	Transition Strip - Tile to Painted Epoxy/ Concrete	Sloped SS Transition Strip Material: Stainless Steel Type 304 Height: Tile thickness to Painted epoxy concrete flooring	Р-Мен-107 — — — — — — — — — — — — — — — — — — —

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

FAB-1	Fabric	Face: 100% Polyurethane Back: 100% Polyester Knit Weight: 18 oz Per Linear Yard Stain Repellent Fire Rating: NFPA 260, Class 1	Bench seating
			本語に語るなどの語言である

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

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

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CODE	ITEM	DESCRIPTION AI	PPLICATION / OCATION
		Design Repeat: 1092mm L x 774mm W Material: Scratch Resistant High Pressure Laminate Finish: Soft Grain	
SSF-1	Solid Surfacing	Product: Quartz Countertop Material: Quartz Colour: White ground with touches of gray and pale beige, feather look Finish: Polished Thickness:30 mm Edge Profile: Mitered Edge	Security Desk/ Refer to millwork details for location
SSF-2	Solid Surfacing	Product: Quartz Countertop Material: Quartz Colour: Snow White with icy look Finish: Polished Thickness: 30 mm Edge Profile: Mitered Edge	Countertop/ Washroom
SSF-3	Solid Surfacing	<ul><li>Product: Solid Surface Countertop</li><li>Colour: White with veining</li><li>Material: 1/3 acrylic resin and 2.3 natural materials</li><li>Finish: Polished</li><li>Thickness: 12mm</li></ul>	Countertop/ Business Center

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		L	OCATION /
		Edge Profile: Mitered Edge	
SSF-4	Solid Surface	Product: Quartz Countertop Colour: Organic Speckled White Finish: Polished Material: Quartz Thickness: <del>13mm20 mm</del> Edge Profile: Mitered Edge	Countertop/ Kitchenette
WD-PNL- 1	Solid Wood Grille Panel	Linear Wood Blade Panel Panel Size 460mm x 1220mm Blade Size 50 x 19 mm Number of Blades: 6 Blade Material: Solid Wood White Oak Finish: Clear Stain – Matte Finish Backer: Cross Wood Backer, fire-rated, painted Black @ 305 O.C. Acoustic Backer: Black Acoustic Woverr Material, Exterior Rated Fire Rating: Class A	Grafton Street Entrance - Exterior Canopy Soffit

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

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

#### **DIVISION 07 – THERMAL AND MOISTURE PROTECTION**

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

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

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

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

#### **DIVISION 08 – OPENINGS**

Colour: white

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

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CODE	ITEM	DESCRIPTION	APPLICATION / LOCATION
		profile 63.5mm x 101.6mm profile at existing columns	
		25mm cap at end of field locations. Structural Silicone Glazing (SSG) at all vertical joints.	
		Finish: MET-A3	
CW-2	Window System	Flush Front Glazed Fixed Window System	Ground, 2 <sup>nd</sup> , 3 <sup>rd</sup> , 4 <sup>th</sup> and 5 <sup>th</sup> floors.
		Material: Aluminum Alloy - 6003	
		Mullion Size: 19mm x 127mm + 19mm setting block	
		Finish: MET-A3	
CW-3	Curtain Wall System – High Span	Thermal Broken Curtain Wall System Material: Aluminum Alloy – 6603	Atrium/ Grafton St Entrance
		Final dimensions of system per CW engineering requirements	
		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	
		25mm cap at end of field locations. 4-sided Structural Silicone Glazing (SSG).	20 20 (55.3 mm)
		Finish: MET-A1 Provide exterior knife blades as required to support CW-VS1 vertical sunshade at Atrium clerestory.	
CW-4	Curtain Wall System South Block 3rd floor	Thermal Broken Curtain Wall System Material: Aluminum Alloy – 6603	South Block 3rd Floor Special Surround Mullion Cap 25254
		Mullion Size: 63.5mm x 254mm tapered profile at end of field locations , 63.5mm	1

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CODE	ITEM	<b>DESCRIPTION</b>	APPLICATION / LOCATION
		x 168.3mm rect. profile at middle vertica mullions. Structural Silicone Glazing (SSG) at all vertical joints Colour: MET-A1	Al 25254
CW-VS1	Curtain Wall System Vertical Sunshade	Vertical Sunshade – Material: Aluminum Alloy – 6603 Sunshade size: 63mm x 305mm Fastened to the CW-3 curtain wall framing. Colour: MET-A2 (light bronze)	
FLM-1	Glazing Film	Standard of Acceptance: 3M Product: Dusted Crystal Code: 7725SE-314	Glass Fronts *Refer to Signage Package
FLM-2	Glazing Film	Standard of Acceptance: 3M Product: Dusted Crystal Code: 7725SE-314	Bike Storage Glass Front *Refer to Signage Package
GL-BL	Ballistic Glass	Type: Laminated Ballistic Thickness: 32mm = 3mm + 0.6 urethane interlayer +25mm + 0.6 urethane interlayer +3mm Glass 1 (3mm): Mar-Resistant Polycarbonate Interlayer: .0.60 Urethane Glass 2 (25mm): Acrylic Interlayer: 0.60Urethane Glass 1 (3mm): Mar-Resistant Polycarbonate	At Security Desks

	LC	DCATION
	Mullion Size: 45mmx100mm Ballistic Aluminum Frame Assembly Rated: ULC-752-3	
Fire Rated Glass	Clear laminated ceramic glazing material Thickness: 8mm	
Laminated Tempered Glass	Type: Laminated Float Glass Thickness: 13mm Glass 1 (6mm): Clear Float Glass Interlayer: 0.60 PVB interlayer Glass 2 (6mm): Clear Float Glass	Building Entrances
Laminated Tempered Glass	Type: Laminated Safety Thickness: 21 mm Glass 1 (10mm): Clear Tempered Glass Interlayer: 0.80 PVB interlayer Glass 2 (10mm): Clear Tempered Glass 2mm chamfer on all glass edges	Bridge and Stair Guards
Tempered Safety Glass	Type: Tempered Glass, impact resistant Thickness: 6 mm	Doors, as per Door/Hardware Schedule indicated on drawings
Glass Partition System Single Glazed	Aluminum Framed Full Height Glazed Partition System Glass: Glass 1 (4mm): Tempered Glass Laminate 1: 0.8 PVB laminate Glass 2 (4mm) Tempered Glass Mullion Size: 45mmx95mm - Horizontal Mullions End	All interior Single Glazed Glass Fronts
	Fire Rated Glass Laminated Tempered Glass Laminated Tempered Glass Glass Partition System Single Glazed	LCMullion Size: 45mmx100mm Ballistic Aluminum Frame Assembly Rated: ULC-752-3Fire Rated GlassClear laminated ceramic glazing material Thickness: 8mmLaminated Tempered GlassType: Laminated Float Glass Thickness: 13mm Glass 1 (6mm): Clear Float Glass Interlayer: 0.60 PVB interlayer Glass 2 (6mm): Clear Float GlassLaminated Tempered GlassType: Laminated Safety Thickness: 21 mm Glass 1 (10mm): Clear Tempered Glass Interlayer: 0.80 PVB interlayer Glass 2 (10mm): Clear Tempered Glass 2 mm chamfer on all glass edgesTempered Safety GlassType: Tempered Glass, impact resistant Thickness: 6 mmGlass Partition SystemAluminum Framed Full Height Glazed Partition SystemSingle GlazedGlass 1 (4mm): Tempered Glass Laminate 1: 0.8 PVB laminate Glass 2 (4mm) Tempered Glass Laminate 1: 0.8 PVB laminate Glass 2 (4mm) Tempered Glass

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

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CODE	ITEM	DESCRIPTION A	PPLICATION / OCATION
GS-3	Glass Partition System	Aluminum Framed Full Height Glazed Partition System	All interior Glass Fronts (STC 52)
	Double Glazed	Glass: 12.5mm + Airspace + 12.5mm Glass 1 (5mm): Tempered Glass Laminate 1: 2.3 PVB laminate Glass 2 (5mm): Float Glass Gap 1: Glass 3 (5mm): Float Glass Laminate 2: 2.3 PVB laminate Glass 4 (5mm): Tempered Glass Mullion Size: 45mmx165mm - Horizontal Mullions, End of Range Terminations and Door	
		<ul> <li>Frames</li> <li>90mmx165mm - Perpendicular Butt Joint Walls,</li> <li>Extra Clear Silicone butt joints all remaining vertical locations</li> <li>Colour: Dark Grey / Graphite</li> <li>DCD G L = G L (0.616)</li> </ul>	
		Doors: Wood doors by Division 8	
IGU-1V1	Insulated Glass Vision Glazing	VISIBLE LIGHT Transmittance - 68 % Reflectance outside - 11 %	On CW-2 at Floors 3-5
	Double Glazed Bird Friendly to meet (CSA) A460:19	Reflectance inside - 12 % General Color Rendering Index (CRI) - 95.4 ULTRAVIOLET Transmittance UV - 30 % SOLAR ENERGY Solar transmittance - 33 % Reflectance outside - 33 % Reflectance inside - 36 % Solar absorptance - 34 %	
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	IIEM	DESCRIPTION A	PPLICATION / OCATION
IGU-1V2	IIEM Insulated Glass	DESCRIPTIONALineShading Coefficient - 0.43THERMAL PROPERTIESWinter night U-Value - 0.245Summer day U-value - 0.220Light to Solar Gain - 1.8225mm IGU = 6 mm + 13mm air space +6 mm.Glass 1 (6mm): Clear Float Glass w/ #1Bird Friendly Acid Etch Pattern No. 17Gap 1 (13mm): Required min 0.25UArgon filled, Warm Edge spacer, blackGlass 2 (6mm): Clear Float Glass w/ #2Low-e CoatingVISIBLE LIGHTTo black	PPLICATION / OCATION On CW-3 & CW-4 at
IGU-1V2	Insulated Glass Vision Glazing Double Glazed Bird Friendly to meet (CSA) A460:19	Transmittance - 68 % Reflectance outside - 11 % Reflectance inside - 12 % General Color Rendering Index (CRI) - 95.4 ULTRAVIOLET Transmittance UV - 30 % SOLAR ENERGY Solar transmittance - 33 % Reflectance outside - 33 % Reflectance inside - 36 % Solar absorptance - 34 % SHGC - 0.37 Shading Coefficient - 0.43 THERMAL PROPERTIES Winter night U-Value - 0.245 Summer day U-value - 0.220 Light to Solar Gain - 1.82 25mm IGU = 6 mm + 9mm air space + 10 mm.	On CW-3 & CW-4 at Floors 3-5

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

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

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

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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

MIR-1	Fixed Position Mirror	Product: Fixed-Position Mirror 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. All mirror edges should be polished and protected by plastic filler strips.	
MIR-2	Mirror - Washrooms	Refer to Washroom Elevations for more information Frame Finish: Satin Stainless Steel	NO IMAGE
MIR-3	Mirror – Fitness Center	Refer to Fitness Center for more information Frame Finish: Satin Stainless Steel	NO IMAGE

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

ACT-1Acoustic Ceiling TileProduct: Acoustic Ceiling Tile Edge: Tegular Colour: WhiteSize: 500x1500mmNRC Rating: 0.75 CAC rating: 35 Fire Class: Class A (UL) Grid: 9/16" Suprafine White	General
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CODE	ITEM	DESCRIPTION AF	PPLICATION / OCATION
AWP-2	Acoustical Wall Panel - Suspended	Product: Acoustical Wall Panel Material: 100% polyester, approximately 50% should be recycled water/soda bottles Colour: TBD Pattern: Custom Cut to Match Selected Film Pattern Size: Review floor plan locations for sizes Thickness: 1/2" (12mm) Hardware: Cable suspension at floor (carpet tile on slab) and ceiling (T-bar). No top and bottom rails. *Refer to Signage Package for more information	Various – Refer to Furniture and Equipment Plans for Locations
AWP-3	Acoustic Board	Semi-rigid glass fibre sound attenuation board insulation with a black glass fibre mat surface. Thickness 25mm NRC = 0.70 Compliance: Type I ASTM C553 Type I ASTM C612 Fire Flame Spread <25; Smoke Developed <50 CAN/ULC-S102	Custom Atrium Acoustic Panel: Superior Acoustical Performance

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

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

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

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

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

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

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

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

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

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

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

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			LOCATION
RB-1	Rubber Wall Base	Product: Rubber Wall Base Colour: White Style: Millworkbase with eased edge Size: 100mm high Material: Rubber	Varies, refer to floor finish plan for location
RB-2	Rubber Wall Base	Product: Rubber Wall Base Colour: Silver Grey Style: Millworkbase with eased edge Size: 100mm high Material: Rubber	Varies, refer to floor finish plan for location

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CODE	ITEM	DESCRIPTION	APPLICATION / LOCATION
RB-3	Rubber Wall Base	Product: Rubber Wall Base Colour: Grey Style: Millworkbase with eased edge Size: 100mm high Material: Rubber	Varies, refer to floor finish plan for location
RST-1	Rubber stair tread	Product: Rubber Stair Tread with integr 50mm colour contrast strip at the nosing to conform to CSA B651-18 Article 5.4 Material: Rubber Colour: TBD	ral Stairs A, BC & D Rober Stair Tread Company of the Stair Tread Filter Stair Stair Tread Filter Stair S
RSF-1	Rubber Sheet Flooring	Product : Roll good Rubber Flooring Colour : Dark grey with light grey spec Thickness : 4mm Material : Rubber	ks Floor Tile/ Wellness Center

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

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

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** /

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

# **DIVISION 10 – SPECIALTIES**

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

ITEM

**APPLICATION /** 

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

DESCRIPTION

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

			LOCATION
BCT-1	Baby Changing Table	Product: Horizontal Stainless Steel Wall Mounted Baby Changing Table	
		Size: Unit Dimensions: 892 mm x 508 mm Depth (closed): 102 mm Extension (open): 483 mm	0
		Material: 18 gauge, Type-304 satin stainless steel exterior finish with blow molded high-density grey polyethylene	
		Finish: Stainless Steel	
		Minimum holding capacity: 22.68 kg	
		Supplier/Installer: Contractor supplied/ Contractor Installed	
DT-1	Deal Tray	Product: Recessed Flip Lid Currency Tray	
		Material: 18 ga Stainless Steel with welded connections	
		Should be bullet-proof.	
		Dimensions: 368mm x 419mm x 70mm	
		Standard of Acceptance: Total Security Solutions	
		Product: Recessed Flip Lid Deal Tray 368mm x 419mm x 70mm	
		Rated ULC-752-3	
GRB-1	Grab Bar	Product: 32mm Diameter Stainless Steel Grab Bars with Snap Flange	Barrier Free WR/Stalls & Universal Washrooms
		Clearance from wall : 38mm	
		Length : 610mm	
		Material : 18-1, Type-304, 18-Gauge (1.2mm) Stainless steel tubing with a	

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

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

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

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

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

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			LOCATION
		Contractor Installed	
SND-2	Sanitary Napkin Dispenser	Semi Recessed - Mounted Sanitary Napkin Dispenser Flat door design with 90° return.	e
		Size: 330mm W x 711mm H.	
		Material: 18-8, Type-304, 18-gauge (1.2mm) stainless steel. All-welded construction	c c
		Finish: Satin Stainless steel	
		Projection: 100mm	
		Operation:	
		Push-Button Operation and two tumbler door locks keyed	
		Capacity: Holds 30 tampons, 20 napkins	
		Supplier/ Installer: Contractor supplied/ Contractor installed	
TBR-1	Toilet Backrests	Refer to Mechanical Schedules for Specification	
		Supplier/Installer: Contractor supplied/ Contractor Installed	
TPH-1	Toilet Paper Holder	Surface-Mounted Multi-Roll Toilet Tissue Dispenser	
		Supplier/Installer: Owner supplied/ Contractor Installed	NU INIAGE

			LOCATION
TWS-1	Tactile Attention Indicator	610mm x 610mm Tile 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	Stair Nosing	75 Deep x 12mm H Colour Contrast Carborundum Strips with integral mounting hooks	
TWS-3	Tactile Direction Indicator	305x305 Tile 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	Tactile Attention Indicator	Surface Applied 610mm Deep x Stair Width 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	

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	IIEM	DESCRIPTION	APPLICATION / LOCATION
LECT-1	Lectern	Metal, height adjustable, accessible base with cable pass through Finish: Ebony Black	

# **DIVISION 12 – FURNISHINGS**

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

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

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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.

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

END OF SECTION

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#### Part 1 General

### 1.1 **REFERENCE STANDARDS**

- .1 ASTM International (ASTM)
  - .1 ASTM C109/C109M-21, Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. (50-mm) Cube Specimens)
  - .2 ASTM C348- 21, Standard Test Method for Flexural Strength of Hydraulic-Cement Mortars
  - .3 ASTM C469/C469M-14e1, Standard Test Method for Static Modulus of Elasticity and Poisson's Ratio of Concrete in Compression.
  - .4 ASTM C496/C496M-17 Standard Test Method for Splitting Tensile Strength of Cylindrical Concrete Specimens
  - .5 ASTM C596-18, Standard Test Method for Drying Shrinkage of Mortar Containing Hydraulic Cement
  - .6 ASTM C666/C666M-15, Standard Test Method for Resistance of Concrete to Rapid Freezing and Thawing
  - .7 ASTM C779/C779M-19, Standard Test Method for Abrasion Resistance of Horizontal Concrete Surfaces
  - .8 ASTM C1059/C1059M-21, Standard Specification for Latex Agents for Bonding Fresh to Hardened Concrete
  - .9 ASTM C1202-19, Standard Test Method for Electrical Indication of Concrete's Ability to Resist Chloride Ion Penetration
  - .2 Canadian Environmental Protection Act (CEPA), 2012
  - .3 Green Building Initiative (GBI) Canada
    - .1 Green Globes Canada Design for New Construction and Major Retrofits v.2, http://www.greenglobes.com
  - .4 International Concrete Repair Institute (ICRI)
    - .1 ICRI Concrete Repair Terminology 2010.
  - .5 Transport Canada (TC)
    - .1 Transportation of Dangerous Goods Act (TDGA), 1992, c. 34, with Memorandum D19-13-5.

# 1.2 **DEFINITIONS**

- .1 Application Specialist: An individual who performs surface preparation and application of protective coatings and linings to steel and concrete surfaces of complex industrial structures.
- .2 Additional definitions: as per ICRI Concrete Repair Terminology.

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### **1.3 SECTION INCLUDES**

- .1 Labour, Products, equipment and services necessary to complete the work of this Section for concrete restoration including the following:
  - .1 Sump pit repair including: surface preparation, chipping and breaking out all deteriorated, spalled and delaminated concrete, defective cold joints, sandblasting, repair of exterior surfaces of interior sump pit walls, and the surface repair by filling of voids, cracks and rebuilding of surface profiles. Include in the Contract Price the entire repair of the sump pit walls as a lump sum item.
  - .2 Include in the Contract Price <del>1,500750</del> square meters of Surface Repair Type A as defined in Surface Repair Types below.
  - .3 Include in the Contract Price 500-250 square meters of Surface Repair Type B as defined in Surface Repair Types below.
  - .4 Include in the Contract Price 1,000 linear meters of Surface Repair Type C as defined in Surface Repair Types below.
  - .5 Include in the Contract Price 500 square meters of Surface Repair Type D as defined in Surface Repair Types below.
  - .6 Include in the Contract Price 750 square meters of Shallow Repair Type E as defined in Surface Repair Types below.
  - .7 Include in the Contract Price 250 square meters of Full Depth Repair Type F as defined in Surface Repair Types below.

### 1.4 UNIT PRICES AND PAYMENT PROCEDURES

- .1 The quantities shown above for Surface Repair Type A, B, C, and D, E and F are estimated. The work will be measured on site and will be paid based on the actual quantities and the unit prices stated in the Bid and Acceptance Form.
- .2 The Contract Price will be adjusted according to the actual final quantities.

# 1.5 ADMINISTRATIVE REQUIREMENTS

.1 Site Visit: Schedule a site visit with Departmental Representative to examine existing site conditions

#### 1.6 ACTION AND INFORMATIONAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 Submittal Procedures.
- .2 Product Data:
  - .1 Submit manufacturer's instructions, printed product literature and data sheets for compounds and include product characteristics, performance criteria, physical properties, finish and limitations.
- .3 Submit WHMIS Safety Data Sheet (SDS) in accordance with Section 01 47 15 -Sustainable Requirements: Construction.
  - .1 Submit 2 copies of SDS.
- .4 Submit a proposed work plan for approval by Departmental Representative. Work plan to include a list of products and materials and proposed plan to be implemented to perform the work, including methodology and sequence of construction.
- .5 Provide Shop Drawings showing area, extent and type of repairs.
- .6 Sustainable Design Submittals:
  - .1 Submittals: In accordance with Section 01 47 15 Sustainable Requirements: Construction.
  - .2 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.

# 1.7 CLOSEOUT SUBMITTALS

.1 Submit in accordance with Section 01 78 00 – Closeout Submittals.

## 1.8 QUALITY ASSURANCE

.1 Manufacturer's Instructions: submit manufacturer's application instructions and special handling criteria, cleaning procedures.

# 1.9 EXISTING CONDITIONS

- .1 Examine Site conditions and existing surfaces to be restored.
- .2 Apply exterior base and finish coatings during dry weather and when imminent weather forecast is favorable for proper application and curing in accordance with manufacturer's recommendations.

# Part 2 Products

# 2.1 MATERIALS

- .1 Patching compound (for 6-50 mm horizontal and 6-25 mm for vertical applications): fast setting, non-shrink, premixed, requiring addition of water only, free of wax, metal, tar, emulsion and calcium chloride.
  - .1 Compressive strength: to ASTM C109/C109M, 24 MPa at 24 h and 44 MPa at 28 days.
  - .2 Flexural strength: to ASTM C348, 6.8 MPa at 7 days, 8.5 MPa at 28 days.
  - .3 Modulus of elasticity: to ASTM C469/C469M, 1.5 x 10 MPa at 28 days.
- .2 Patching compound (for 6-25 mm horizontal applications): fast setting, non-shrink, one component, polymer modified cementitious based, repair mortar.
  - .1 Compressive strength: to ASTM C109/C109M, 17.4 MPa at 1 day; 38.2 MPa at 7 days; 52.1 MPa at 28 days.
  - .2 Flexural strength: to ASTM C348, 5.6 MPa at 1 day; 6.9 MPa at 7 days; 10.4 MPa at 28 days.
  - .3 Splitting tensile strength: to ASTM C496/C496M, 2.6 MPa at 1 day; 3.1 MPa at 7 days; 4.2 MPa at 28 days.
  - .4 Bond strength: to ASTM C1059/C1059M, 6.8 MPa at 1 day; 12.1 MPa at 7 days; 17.7 MPa at 28 days.
  - .5 Drying shrinkage: to ASTM C596, 28 day -0.093%.

- .6 Rapid chloride permeability: to ASTM C1202, 28 day 365/very low.
- .7 Abrasion Resistance: to ASTM C779/C779M, (Procedure A), depth of wear 0.419 mm/hour.
- .3 Bonding agent: acrylic polymer emulsion formulated for bonding new concrete to cured concrete, non-yellowing, water based, compatible with or recommended by patching compound manufacturer.
  - .1 Compressive strength: to ASTM C109/C109M, 31 MPa at 28 days.
  - .2 Flexural strength: to ASTM C348, 12.4 MPa at 28 days.
- .4 Corrosion Inhibitor: to ASTM C1582
- .5 Non-shrink flowable self-consolidating concrete: to ASTM C138, ASTM C1437, 1 Day 50 MPa, 7 days 55 MPa, 28 days 70 MPa.

## 2.2 EQUIPMENT

- .1 Pneumatically operated scabbler with high-speed tungsten carbide tipped pistons to pulverize protective coatings, laitance, and concrete substrate in a single process, leaving surface clean with uniformly keyed texture, ready to receive new toppings and overlays and the following:
  - .1 Production rate:  $1.9-2.8 \text{ m}^2$  /hour at 1.6 mm surface removal.
  - .2 Size: 305 mm long x 150 mm wide x 305 mm high.
  - .3 Air consumption:  $1.7 \text{ m}^3$ /min.
  - .4 Vacuum flow:
    - .1 Interfaceable with self-cleaning, high efficiency HEPA filtered vacuum.
- .2 Mobile, high performance HEPA Vacuum/Drumming System as follows:
  - .1 Two-stage positive filtration of hazardous particles.
    - .1 First stage: Automatic self-cleaning by reverse-flow pulses of high pressure air. Efficiency of 95% at 1 micron.
    - .2 Second stage: HEPA efficiency of 99.7% at 0.3 microns.
  - .2 Controlled-seal drum fill system to allow filling, sealing, removal and waste drum replacement under controlled vacuum system.
  - .3 Automatic, full-drum level alarm.

#### Part 3 Execution

#### 3.1 SURFACE PREPARATION

- .1 Remove protective coatings using pneumatically operated scabbler and HEPA vacuum / drumming system.
  - .1 Handle and dispose of hazardous materials in accordance with CEPA, TDGA, Regional and Municipal regulations.
  - .2 Remove drums from site and dispose of in accordance with the Federal, Provincial, and municipal regulations.

- .2 Remove loose, spalled, cracked, eroded and disintegrated concrete to solid surface, 9 mm minimum depth.
- .3 Chisel under perimeter of areas to be patched.
- .4 Sandblast loose rust and scale from exposed steel surfaces.
- .5 Utilize dustless decontamination and surface preparation system for scabbling concrete floors and slabs.
- .6 Clean area of loose material, dirt, oil and scale.
- .7 Clean cracks 6 mm thick or wider with pressurized water jet or sandblasting.
- .8 Chip and break out all deteriorated concrete, previous repairs that are delaminated, existing delamination and defective cold joints to sound concrete.
- .9 Chip concrete away from exposed rusted surfaces of reinforcing bars, chipping to extend for a distance of about 150 mm along the bars beyond evident rusting.
- .10 Rout out wall cracks wider than 1 mm to a minimum width and depth of 6 mm and clean free of dust and debris, for subsequent filling (after sandblasting).

## 3.2 SANDBLASTING

- .1 Provide temporary enclosure as required to limit contamination to within the boundaries of the work site. Do not pollute water with overspray.
- .2 Exterior surfaces of sump-pit walls including cracks and joints shall be "Brush-off-blast cleaned" to remove visible oil, grease, dirt, dust, loose concrete, loose rust, and paint by compressed air nozzle sandblasting. Tightly adherent mill scale and rust may remain on the surface.
- .3 Use suitable sandblasting equipment for heavy duty type with proper nozzles to provide adequate air pressure and volume to efficiently and effectively prepare the surface.
- .4 Protect doors, and other areas and appurtenances either inserted in or adjoining the concrete being sandblasted all times. Contractor is responsible for making good any damage at their own expense.
- .5 Remove all contaminated sand from the site and dispose of to an appropriate off-site facility identified by Contractor and approved by Departmental Representative.

## 3.3 MIXING

- .1 Patching Compound:
  - .1 Mix components in accordance with manufacturer's written instructions.
  - .2 Use drill mixer to mechanically mix components. Ensure components are thoroughly mixed.
    - .1 Add up to 6.8 kg of aggregate to 25 kg bag of patching compound for large cavities and patches in excess of 25 mm thick.
  - .3 Apply mix immediately.
  - .4 Dispose of unused mix immediately, do not retemper.
- .2 Base Coating:
  - .1 Perform coating in accordance with manufacturer's written instructions.

- .2 Mix 1 part bonding agent to 3 parts water.
- .3 Add bonding mixture to base coating and mix to cement mortar consistency with 50 to 76 mm slump.

## 3.4 SURFACE REPAIRS – GENERAL

- .1 Rebuild surface profile following surface preparation, previously described, and fill with patching compound and bonding agent.
- .2 Install repair material in accordance with manufacturer's written instructions.
- .3 Mix patching compound to batter consistency and apply by brush over dampened concrete within patching area.
- .4 Slush mix over old concrete within patching area with brush coat before filling patch with heavier, trowel coat of patching compound.
- .5 Place and level patching compound within five to ten minutes after mixing water is added.
- .6 Apply mix in successive 12 mm to 25 mm layers.
  - .1 Scratch first layer, cool with water and apply second layer within 15 to 20 minutes.
- .7 Sponge float surface. If patch gets hot and turns light grey, cool by wetting. Keep patch damp 30 to 45 minutes after filling.
- .8 Repair scaled or spalled concrete and missing corners deeper or greater than 6 mm with patching compound and bonding agent to render a regular flush surface.
  - .1 When rebuilding projecting concrete, such as cracked caps, key into existing concrete by means of edge cutting at a minimum depth of 20 mm.
- .9 Protect other trades work and/or other prepared surfaces from patching material spills.
- .10 Execution steps defined in this section are applicable to all surface repair types described below.

## **3.5 SURFACE REPAIR TYPES**

- .1 Surface Repair Type A shallow repair
  - .1 Remove all unsound concrete to a depth not greater than top of the existing reinforcing steel until sound concrete substrate is exposed.
    - .1 Saw-cut surface perimeter to remove all deteriorated and loose concrete from slab surface.
    - .2 Extend chipping along member to remove until sound concrete is encountered.
    - .3 Clean and repair concrete surface in spalled area after removal of loose concrete. Apply bonding agent following manufacturer's instructions.
    - .4 Fill cavity with patching compound.
    - .5 Trowel finish and wet cure patching compound.

- .2 Surface Repair Type B horizontal repair
  - .1 Remove all unsound concrete to a depth of 25 mm beyond existing rebars. For slab repair maximum depth shall be mid depth of the slab.
    - .1 Saw-cut surface perimeter to remove all deteriorated and loose concrete from slab surface.
    - .2 Chip and remove concrete to the extents where the reinforcement is exposed and no longer corroded. Extend chipping concrete minimum 25mm beyond rebars.
    - .3 Clean exposed corroded reinforcing steel bars by method of sandblasting.
    - .4 Clean and prepare concrete surface in spalled area. Apply bonding agent following manufacturer's instructions.
    - .5 Have rebars inspected by Departmental Representative before proceeding with further repairs.
    - .6 Add reinforcement bars where excessive loss of section is determined by the Department Representative
    - .7 Restore with non-shrink flowable self-consolidating concrete with corrosion inhibitor. Minimum concrete thickness to comply with manufacturer's specifications.
- .3 Surface Repair Type C crack repair
  - .1 Do work in accordance with drawings and Manufacturer instructions.
  - .2 Repair cracks and joints whether or not they are leaking or are dry, full length.
  - .3 Remove concrete from cracks and joints. Saw cut edges. Make concrete removals minimum 38 mm deep. Make concrete removals deeper as necessary to reach sound concrete and to repair and clean reinforcing steel. Width of concrete removal shall be sufficient for concealment of injection ports and for permanent bonding of repair mortar.
  - .4 Cut out existing visible injection ports to minimum 38 mm deep and deeper where necessary to affect water-tight seal.
  - .5 Prepare and protect reinforcing steel from corrosion.
  - .6 Install by injection, waterproofing crack/joint filler into cracks, joints and injection ports. Use sufficient material to ensure cracks, joints and injection ports are completely filled and sufficient material flowout occurs on other side in case of through cracks. Make injection ports concealed in the finished work.
  - .7 When waterproofing crack/joint filler has set and the crack/joint assessed as being dry, install structural resin continuous to crack/joint and to injection ports.
  - .8 Fill cut out areas full with repair concrete system. Ensure no air pockets. Make face of repair flush and in plane with concrete surface.
  - .9 Remove all stains, leakage residue, previously installed injection residue from floors.
- .4 Surface Repair Type D vertical repair
  - .1 Saw-cut surface perimeter to remove all deteriorated/loose concrete from wall surface.

- .2 Chip and remove unsound concrete from surface until sound concrete substrate is exposed.
- .3 If reinforcing bars are exposed, clean exposed corroded reinforcing steel bars by method of sandblasting.
- .4 Provide 25 mm clearance around all exposed reinforcing bars.
- .5 Clean and prepare concrete surface in spalled area. Apply bonding agent per manufacturer's instruction.
- .6 Have rebars inspected by departmental representative before concrete placement.
- .7 Add reinforcement bars where excessive loss of section is determined by the Department Representative
- .8 All vertical repair requires shoring, maintain shoring until repair material has attained 75% of specified concrete strength.
- .9 Restore with patching compound . Minimum concrete thickness to comply with manufacturer's specifications.

.5 Shallow Depth Repair Type E at Bottom of Slab

- .1 Provide temporary support for any existing services, pipes, ducts, etc where necessary.
- .2 Provide temporary shoring to slab and barricade around effected area.
- .3 Remove all unsound concrete to a depth of 25 mm beyond existing rebars. For slab repair maximum depth shall be mid depth of the slab.
- .4 Saw-cut surface perimeter to remove all deteriorated and loose concrete from slab surface.
- .5 Chip and remove concrete to the extents where the reinforcement is exposed and no longer corroded. Extend chipping concrete minimum 25mm beyond rebars.
- .6 Clean exposed corroded reinforcing steel bars by method of sandblasting.
- .7 Clean and prepare concrete surface in spalled area. Apply bonding agent following manufacturer's instructions.
- .8 Have rebars inspected by Departmental Representative before proceeding with further repairs.
- .9 Provide formwork to safely support concrete repair.
- .10 Add reinforcement bars where excessive loss of section is determined by the Department Representative
- .11 Restore with non-shrink flowable self-consolidating concrete with corrosion inhibitor. Minimum concrete thickness to comply with manufacturer's specifications.
- .6 Full Depth Repair Type F
  - .1 Provide temporary support for any existing services, pipes, ducts, etc where necessary.
  - .2 Provide temporary shoring to slab and barricade around effected area.
  - .3 Sawcut perimeter of repair area, chip remove spalled concrete to full depth to expose slab reinforcing bars that is not corroded. Cut corroded slab rebars exposing unaffected rebar length to facilitate splicing new rebars.

- .4 Clean exposed corroded rebars by method of sand blasting.
- .5 Clean and repair concrete surface in spalled area. Apply bonding agent following manufacturer's instructions.
- .6 Have rebars inspected by Departmental Representative before proceeding with further repair.
- .7 Add reinforcement bars where excessive loss of section is determined by departmental representative.
- .8 Provide formwork to safely support concrete repair.
- .9 Restore with non-shrink flowable self-consolidating concrete with corrosion inhibitor.
- .10 Areas where concrete surface repair is required at both top and bottom shall be considered as full depth repair.

#### **3.6 FINISH COATING INTERIOR APPLICATION**

- .1 Prepare interior surface by sanding to remove loose paint, efflorescence and heavy rust to staining adequate substrate.
- .2 Patch holes and spalls with patching compound.
- .3 Rout out and fill prepared cracks with patching compound.
- .4 Protect equipment with drop sheets.
- .5 Brush or roll on two coats, total coverage 4.0 m<sup>2</sup>/l in accordance with manufacturer's written instructions. Coat interior wall and ceiling surfaces with white finish coating. Allow minimum 3 to 4 hours wait between coats.
- .6 Coat interior wall and ceiling surfaces with white finish coating.
- .7 Allow minimum 3 to 4 hours wait between coats.

## 3.7 SEALANT INSTALLATION

- .1 Clean and dry joints before work starts.
- .2 Insert joint filler where applicable to a depth of 1/2 joint width, minimum of 6 mm.
- .3 Prime joints when recommended by sealant manufacturer.
- .4 Apply sealant in accordance with manufacturer's instructions.
- .5 Make surfaces smooth and concave.

## 3.8 INSPECTION

- .1 Departmental Representative will inspect work for:
  - .1 Adherence to specific procedures and materials
  - .2 Final cleanliness and completion.
- .2 No additional costs will be allowed by Contractor for additional labour or materials required to provide specified performance level.

## 3.9 CLEANING

.1 Progress cleaning in accordance with Section 01 74 00 - Cleaning.

- .2 Leave work area clean at end of each working day.
- .3 Dispose of waste in accordance with applicable Federal, Provincial, and municipal regulations.
- .4 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment in accordance with Section 01 74 00 Cleaning.
- .5 Waste Management: Adhere to the requirements of the Construction Waste Management plan as per Section 01 74 19 Construction Waste Management and Disposal.

## **3.10 PROTECTION OF COMPLETED WORK**

.1 Protect adjacent finished work against damage which may be caused by on-going work.

## **END OF SECTION**