

*The following changes in the Tender Documents are effective IMMEDIATELY.  
This addendum will form part of the Contract Documents*

**Amend / revise Standard Contract Documents as follows:**

**1.0 Architectural Drawings**

- 1.1 Architectural Sketches AD01 to AD14, all revisions are included.
- 1.2 Add 55 x 55 x 6 thick inverted angle around and welded to minimum two flutes each side of new exhaust opening at roof deck in detail 6/A73.
- 1.3 Delete note on floor plan in drawing A08  
"Make good existing concrete floor slab and terrazzo flooring to receive new flooring"

And replace with

Make good existing floor slab to receive new floor finishes including but not limited to hacking out existing uneven concrete patch, filling floor recesses and prepare existing terrazzo flooring suitable to receive new floor finish, all to provide a level and acceptable substrate for installation of the specified flooring. Finished floor level to meet existing at all door access locations. There is no need to repair existing terrazzo floor for visual appearance.

**2.0 Specifications**

The following revised specification pages are enclosed with changes in **bold type**:

- 2.1 Section 01 11 00 General Instructions pg.1 and pg. 7
- 2.2 Section 04 05 00 Common Work Results for Masonry pg.1
- 2.3 Section 04 05 12 Masonry Mortar and Grout pg. 1
- 2.4 Section 04 05 19 Masonry Anchorage and Reinforcing pg.1
- 2.5 Section 04 23 16 Glass Unit Masonry pg.1
- 2.6 Section 05 50 00 Metal Fabrications pg.1
- 2.7 Section 07 13 52 Modified Bituminous Sheet Waterproofing pg.2
- 2.8 Section 07 21 16 Blanket Insulation pg.2
- 2.9 Section 07 21 29.03 Sprayed Polyurethane Foam pg.1
- 2.10 Section 07 81 00 Applied Fireproofing pg.1
- 2.11 Section 07 84 00 Fire Stopping pg.1
- 2.12 Section 08 11 00 Metal Doors and Frames pg.2
- 2.13 Section 08 11 16 Aluminum Doors and Frames pg.2
- 2.14 Section 08 71 00 Door Hardware pg.11 and pg.12
- 2.15 Section 09 21 16 Gypsum Board Assemblies pg.3

- 2.16 Section 09 30 13 Ceramic Tiling pg.2
- 2.17 Section 09 51 99 Acoustical Ceiling for Minor Works pg.1
- 2.18 Section 09 65 99 Resilient Flooring for Minor Works pg.1
- 2.19 Section 09 66 13 Portland Cement Terrazzo Flooring pg.1
- 2.20 Section 09 66 16 Terrazzo Floor Tile pg.1
- 2.21 Appendix C Site Photos added
- 2.22 Appendix F pg.3

### **3.0     Structural**

- 3.1     Drawing S313, SECTIONS & DETAILS SHEET – 3 (GALLERIA & ATRIUM):
  - .1       **Revise** Section 10/S303 and Section X-X as per attached addendum sketch AD-S01.
- 3.2     Drawing S315, SECTIONS & DETAILS SHEET – 5 (GALLERIA & ATRIUM):
  - .1       **Clarify** 12 curved plate width to be 250mm, not 50mm in Section 2/S305.
- 3.3     Drawing S316, SECTIONS & DETAILS SHEET – 6 (GALLERIA & ATRIUM):
  - .1       **Revise** Detail E/S315 as per attached addendum sketch AD-S02.
- 3.4     Drawing S402, LEVEL B1 (LOWER MALL) FLOOR PLAN (WINCH – POST OFFICE):
  - .1       **Clarify** fibrewrap extended 500mm, not 600mm above granite foundation wall for existing granite foundation wall. This information is shown on drawing S416.
- 3.5     Drawing S403, LEVEL 1 (UPPER MALL) FLOOR PLAN (WINCH – POST OFFICE):
  - .1       **Add** note 3, contractor to patch one existing slab opening adjacent to wall along gridline 15 between gridline T and U & to patch seven 75Ø cored holes between gridline 15 and 19.
- 3.6     Drawing S411, SECTIONS & DETAILS SHEET – 1 (WINCH – POST OFFICE):
  - .1       **Clarify** gridline U should be gridline O in Detail C/S401.
- 3.7     Drawing S412, SECTIONS & DETAILS SHEET – 2 (WINCH – POST OFFICE):
  - Clarify** that in Section 1, contractor shall consider the existing soil condition :  
  
**IF** existing material in the shown excavation extent is backfill, contractor shall excavate as shown for new wall construction and micro-pile installation and provide well compacted backfill after that.  
**IF** existing material beyond the extent of existing strip footing, i.e., 1.8 meter beyond existing concrete wall, is in fact sandstone and/or shale, contractor shall remove existing backfill and keep existing sandstone and/or shale profile and provide trench shoring as required. Contractor shall also provide required temporary falsework as required for micro-pile installation and construct new concrete wall within this 1.8m wide strip working space. Contractor shall provide well compacted backfill after that. Contractor shall include

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in his price submission to work with the potential existing site conditions as described above as well as any site conditions in between.

- .1 **Clarify** that in Section 3/S403, contractor shall provide approved couplers as required for weldable dywidag bars in new concrete wall.
- .2 **Revise** Section A – A as per attached addendum sketch AD-S03.
- .3 **Clarify** that in Detail Y/-, contractor shall provide rebar caps at top for wall vertical bars above level 1 floor.

3.8 Drawing S415, SECTIONS & DETAILS SHEET – 5 (WINCH – POST OFFICE):

- .1 **Clarify** dowel connections to level 1 lobby slab to be 2 rows of 10M600 dowels @200 on center, staggered in Section 1/S413, Section 6/S413, Section 7/S413 and Section 8/S413.

3.9 Drawing S416, SECTIONS & DETAILS SHEET – 6 (WINCH – POST OFFICE):

- .1 **Add** the section mark of Section E-E on South Wall Elevation – Grid Line 15-23 as per attached addendum sketch AD-S03.
- .2 **Clarify** that the 100 thick concrete wall to be connected to the granite wall foundation with 10M dowels as per attached addendum sketch AD-S05.
- .3 **Clarify** that the 150 ceiling slab to be connected to the existing concrete wall at alcoves with 10M dowels as per attached addendum sketch AD-S06.
- .4 **Add** Section E-E as per attached addendum sketch AD-S07.

3.10 Drawing S417, SECTIONS & DETAILS SHEET – 7 (WINCH – POST OFFICE):

- .1 **Revise** Section Z – Z as per attached addendum sketch AD-S08

3.11 Drawing S102, GENERAL NOTES SHEET 2 AND TYPICAL DETAILS

- .1 Add notes for Steel Deck and Wood Products as per addendum Sketch AD-S09 and AD-S10

3.12 Drawings S101, S304, S311, S312, S313, S314, S315, S316, S317 which were missed from addendum 2 are enclosed with this addendum.

**4.0 Mechanical**

4.1 DRAWING NO. M0.02, M0.03 – Phase 2: Mechanical Schedules and DDC Points List

REVISE: Motorlist and Exhaust Fan Schedule as indicated on MADD.2.1.

4.2 DRAWING NO. M1.01 – Phase 2: Plumbing Demolition Post Office Level B1

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- REVISE: Plumbing demolition plan as indicated on MADD2.2 and MADD2.3.
- 4.3 DRAWING NO. M1.02 – Phase 2: Plumbing Renovation Post Office Level B1
- REVISE: Plumbing renovation plan as indicated on MADD2.4.
- 4.4 DRAWING NO. M1.03 – Phase 2: FP Renovation Post Office Level B1
- REVISE: Demolition of existing and provide all new sprinkler protection grid for level B1, as indicated on the re-issued M1.03. See note 1.
- 4.5 DRAWING NO. M1.04 – Phase 2: Hydronic Renovation Post Office Level B1
- REVISE: Diversion and re-location of existing hydronic piping, and deletion of lines serving the space above, as indicated on the re-issued M1.04.
- 4.6 DRAWING NO. M1.05 – Phase 2: HVAC Demolition & Kitchen Exhaust Post Office Level B1
- REVISE: Kitchen exhaust duct routing and associated notes, as indicated on MADD2.5.
- 4.7 DRAWING NO. M1.06 – Phase 2: HVAC Renovation Post Office Level B1
- REVISE: HVAC renovation plan, including flattening of large supply air ducts, as indicated on MADD2.6 and MADD2.7.

## **5.0 Electrical**

- 5.1 E0 - Cover Sheet, Legend & Drawing List
- 1.1 Revise & Addition of Security Symbols
- .1 Revise "motion detector" to "wall mounted dual technology motion detector". Refer to sketch EAD03-E0-1
- .2 Add "ceiling mounted dual technology motion detector". Refer to sketch EAD03-E0-1.
- 5.2 E10 - Atrium New Power & Communication - Level B1 Lower Mall Floor Plan (NE)
- 2.1 Drawing Key Note
- .1 Add a drawing key note 11 for the receptacle near grid lines K/20.
- .2 Add drawing key note 11 to read:  
"Provide and install a 60-inch LED monitor with a wall mounted TV bracket. The LED monitor shall be connected to the Q-matic System for signage display. Coordinate with Q-matic contractor regarding connection requirements and testing commissioning of the monitor. LED monitor to have the following specifications:  
Size: 60-inch wide screen"

Maximum Resolution: 1920x1080  
Brightness: 700cd/m2 or better  
Contrast Ratio: 4000:1  
Backlight: LED edge lit  
Mounting: VESA 6-points  
Inputs: DisplayPort, DVI-I, Mini D-sub, 2xHDMI, LAN, Audio  
Speakers: 2x10watt  
Power Supply: 100V-240VAC"

5.3 E12 - Passport and Federal Building New Power - Level B3 and Penthouse Plans

3.1 Detail 2 - Power Plan - Post Office - Penthouse

- .1 Revise equipment tag near grid lines R/17-19 from "EF-11" to "EF-11L".

5.4 E13 - Elevator Lobby New Power & Communication - Level B1 Lower Mall & Level L1 Upper Mall Floor Plans (SW)

4.1 Detail 1 - Level B1 Elevator Lobby New Power & Communications Plan

- .1 Add an existing wall mounted speaker near grid lines N/13 on the west wall by the entrance of the washroom with reference key note 8.

4.2 Additional Drawing Key Note

- .1 Add key note 8 to read: "Existing wall mounted speaker to remain. Temporarily support during construction and re -install to the new re-built wall."

5.5 E15 - New Passport Office Power & Communication - Level B1 Lower Mall (SE)

5.1 General Note

- .1 Add to general note D to read:  
"All existing temporary smoke detectors to be removed and turned over to owner's representative during structural upgrade."

5.2 Drawing Key Note

- .1 Add drawing key note 12 to the south side of the wall and the east side of the wall.
- .2 Add drawing key note 12 to read:  
"All existing conduits and junction boxes located within 12-inches from the south and east walls to be rerouted and relocated to clear from new structural work."

5.6 E16 - New Passport Office Security Level B1 - Lower Mall (SE)

6.1 Revise Security Device

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- .1 Revise all ceiling mounted infrared motion detectors (PIR) to a ceiling mounted dual technology motion detectors (MD). Refer to sketch EAD03-E0-1 for symbol.
- .2 Revise all wall mounted infrared motion detectors (PIR) to a wall mounted dual technology motion detectors. Refer to sketch EAD03-E0-1 for symbol.

6.2 Detail 2 - Passport Canada Security Systems Wiring Layout

- .1 Revise all infrared motion detectors (PIR) to dual technology motion detectors (MD). Refer to sketch EAD03-E0-1 for symbol.
- .2 Add an additional Lenel NGP-1100-U input control module connected to other modules. Add a dual technology motion detector (MD) to the additional module with the following label: "Lan Room 1012".

5.7 E18 - Mechanical Schedule & Panel Schedule

7.3 Mechanical Schedule

- .1 Revised mechanical schedule. Refer to attached partial mechanical schedule.

5.8 Specification

8.1 Section 27 05 14 - Communication Cables Inside Buildings

- .1 Add section 27 05 14. See attached.

5.9 E29- Power Details 1

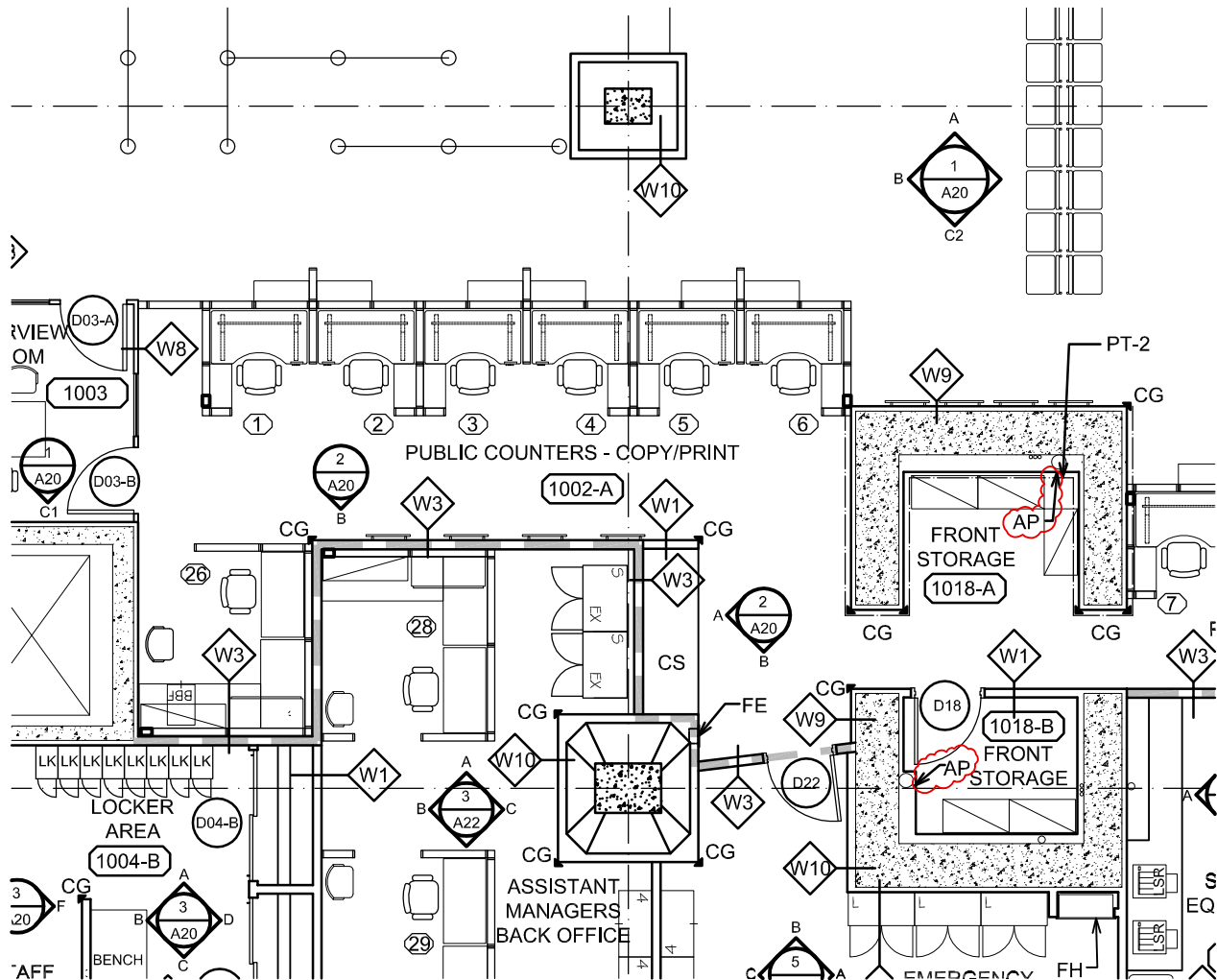
- 9.1 This is to clarify that this drawing that was issued in the electrical drawing package under Addendum #2 will form part of the addendum, though it is not mentioned in the Addendum #2.

End of Addendum #3

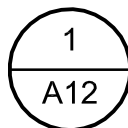


## KEY ABBREVIATIONS

AB	- ALARM BELL
AP	- WALL ACCESS PANEL (PAINTED TO MATCH WALL PAINT)
BH	- BASEBOARD HEATER
CG	- STAINLESS STEEL CORNER GUARD, 50X50X1120
CS	- MILLWORK COUNTER SHELF



## LEVEL B1 (LOWER MALL) FLOOR PLAN NEW PASSPORT OFFICE



1 : 100

REFER DWG A02

Project title/Titre du projet

**SINCLAIR CENTRE  
REVITALIZATION PROJECT**  
757 W HASTINGS ST, VANCOUVER

Drawing title/Titre du dessin

Consultant Signature Only

PWGC Project Manager/Administrateur  
de Projets TPSGC Tom Dunphy

Scale/Echelle

Designed by/Concept par

TY

PWGC, Regional Manager, Architectural and Engineering Services/  
Gestionnaire régionale, Services d'architectural et de génie, TPSGC  
Preetipal Paul

Date/Date

2013-06-11

Drawn by/Dessiné par

KTH

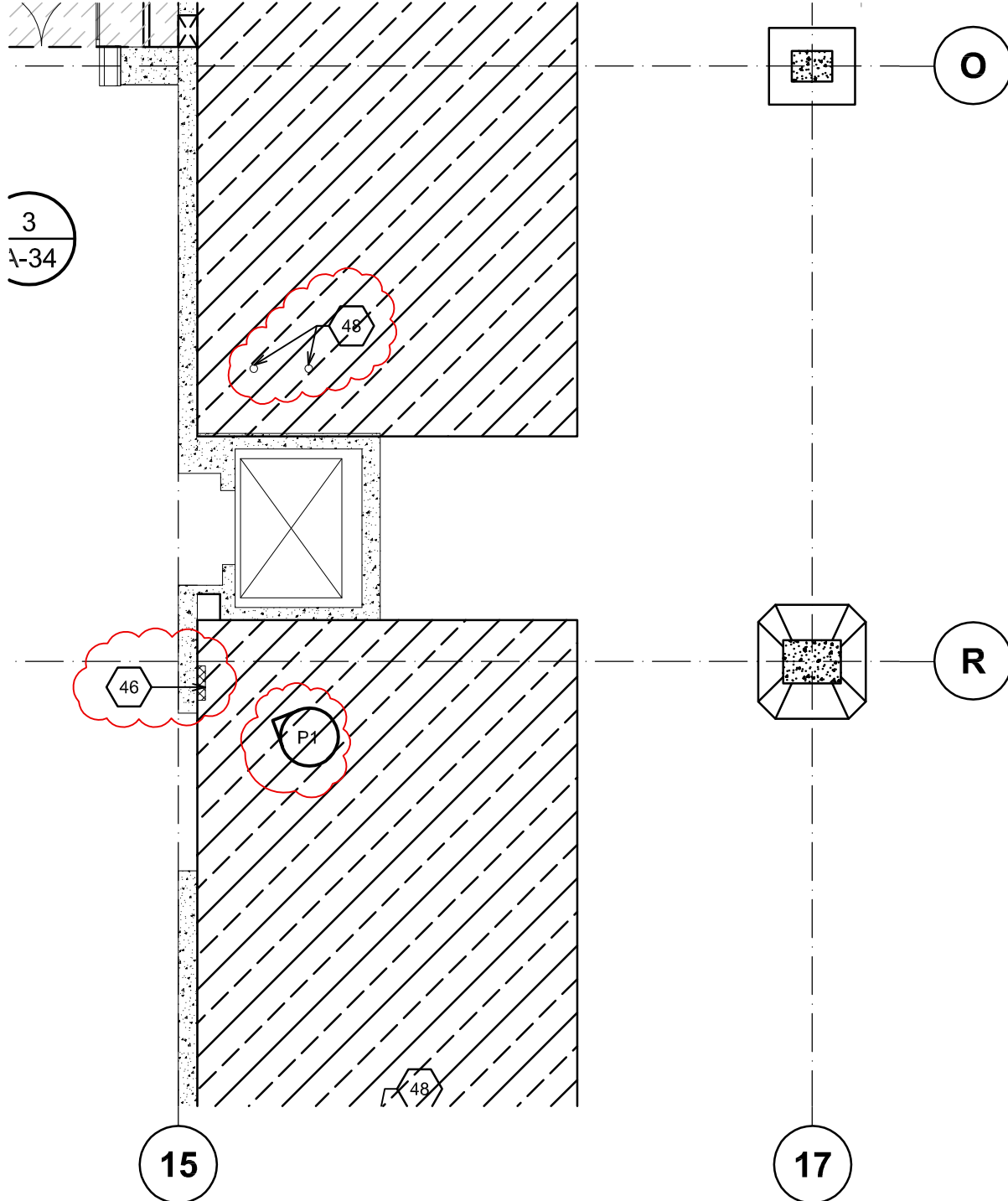
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**AD-01**

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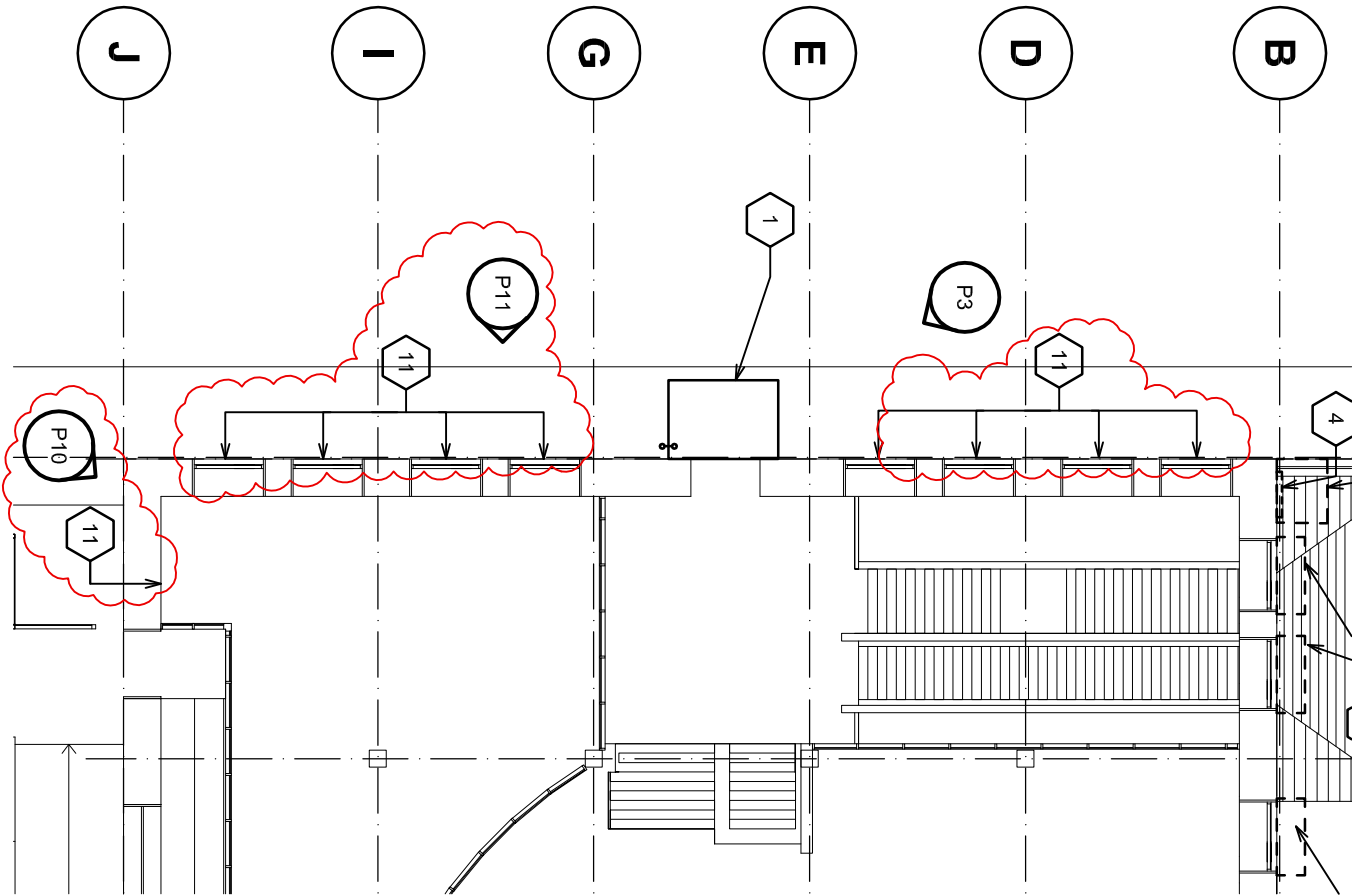
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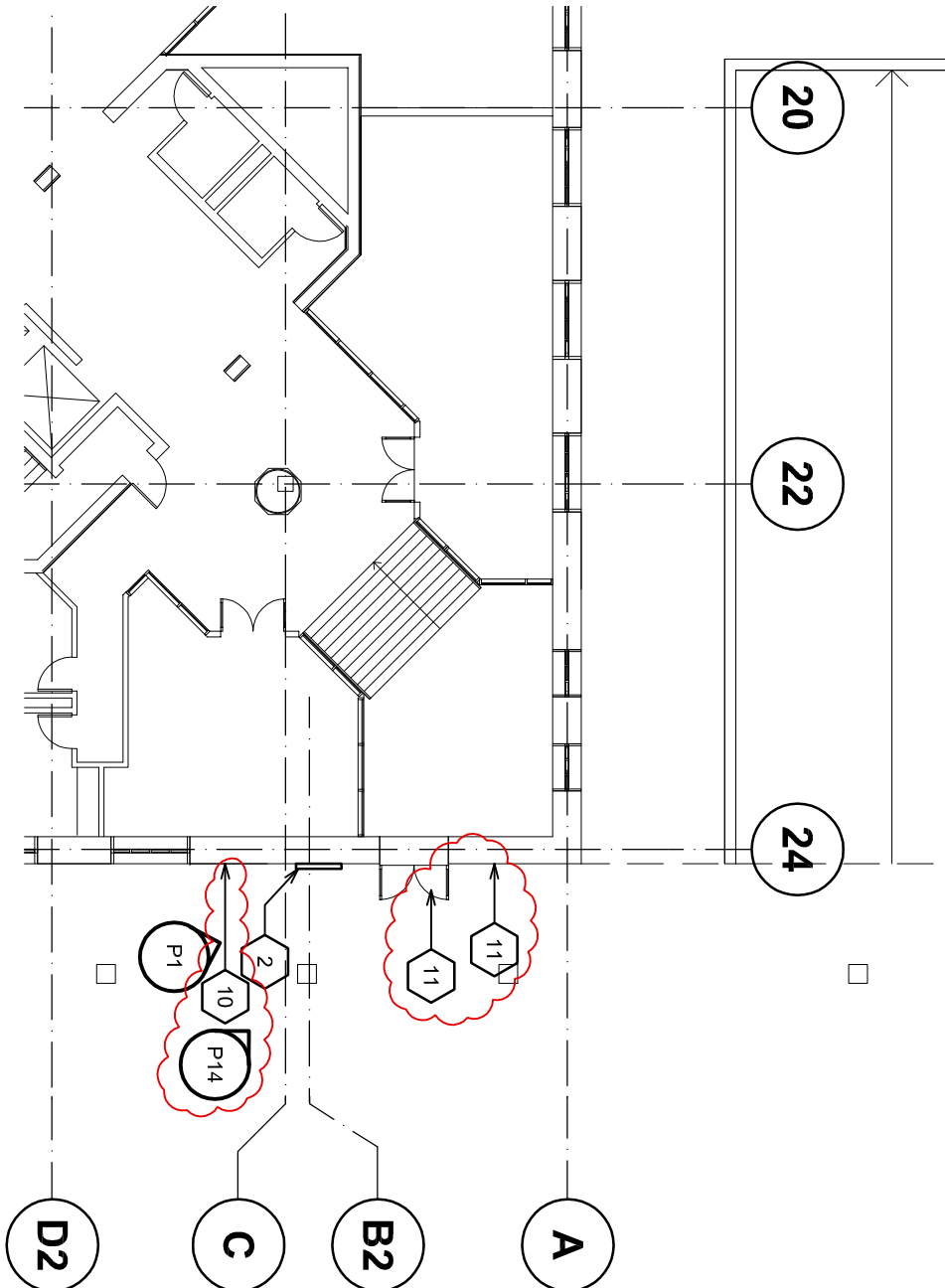




UPPER MALL LEVEL  
EXTERIOIR DEMOLITION PLAN

1  
DA200 1:200

REFER DWG A02



2  
LOWER MALL LEVEL  
EXTERIOR DEMOLITION PLAN

2  
DA200

1:200

REFER DWG A02

**DEMOLITION LEGEND**

10 = PATCH EXISTING SCREW HOLES  
WITH EPOXY GROUT TO MATCH  
EXISTING WALL

11 = CUT OFF EXISTING THREADED RODS  
AND CLEAN UP EXISTING GLUE MARK  
ON THE WALL FROM PREVIOUS  
AWNING / SIGN BOARD

Client/client

Project title/Titre du projet

Consultant Signature & Date Only

PWSSC Project Manager/Administrateur  
de Projets TPSCOTOM DUNPHY

Project No./No. du projet

Revision/

VANCOUVER, B.C.  
757 W HASTINGS ST

SINCLAIR CENTRE  
REVITALIZATION PROJECT

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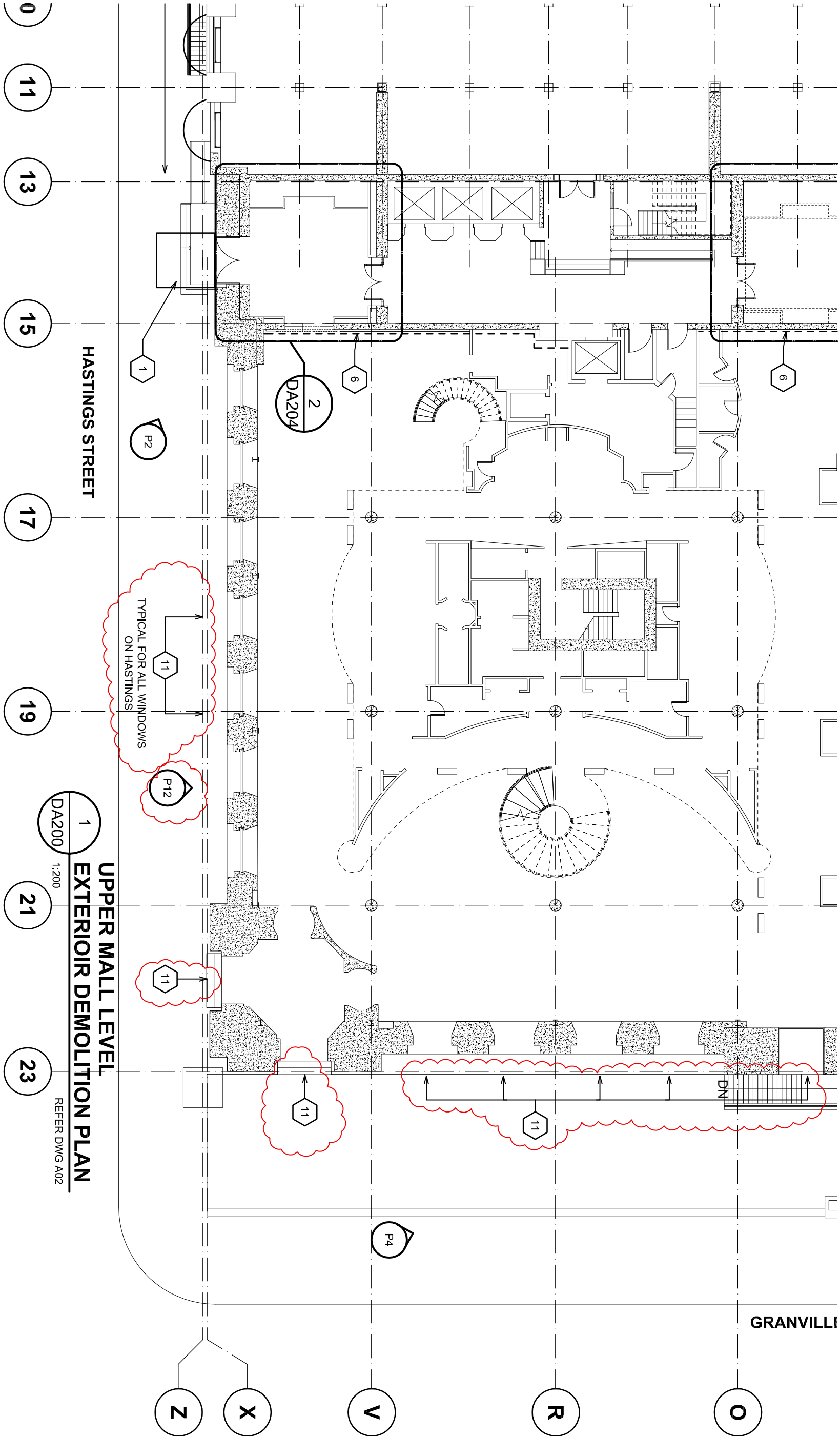
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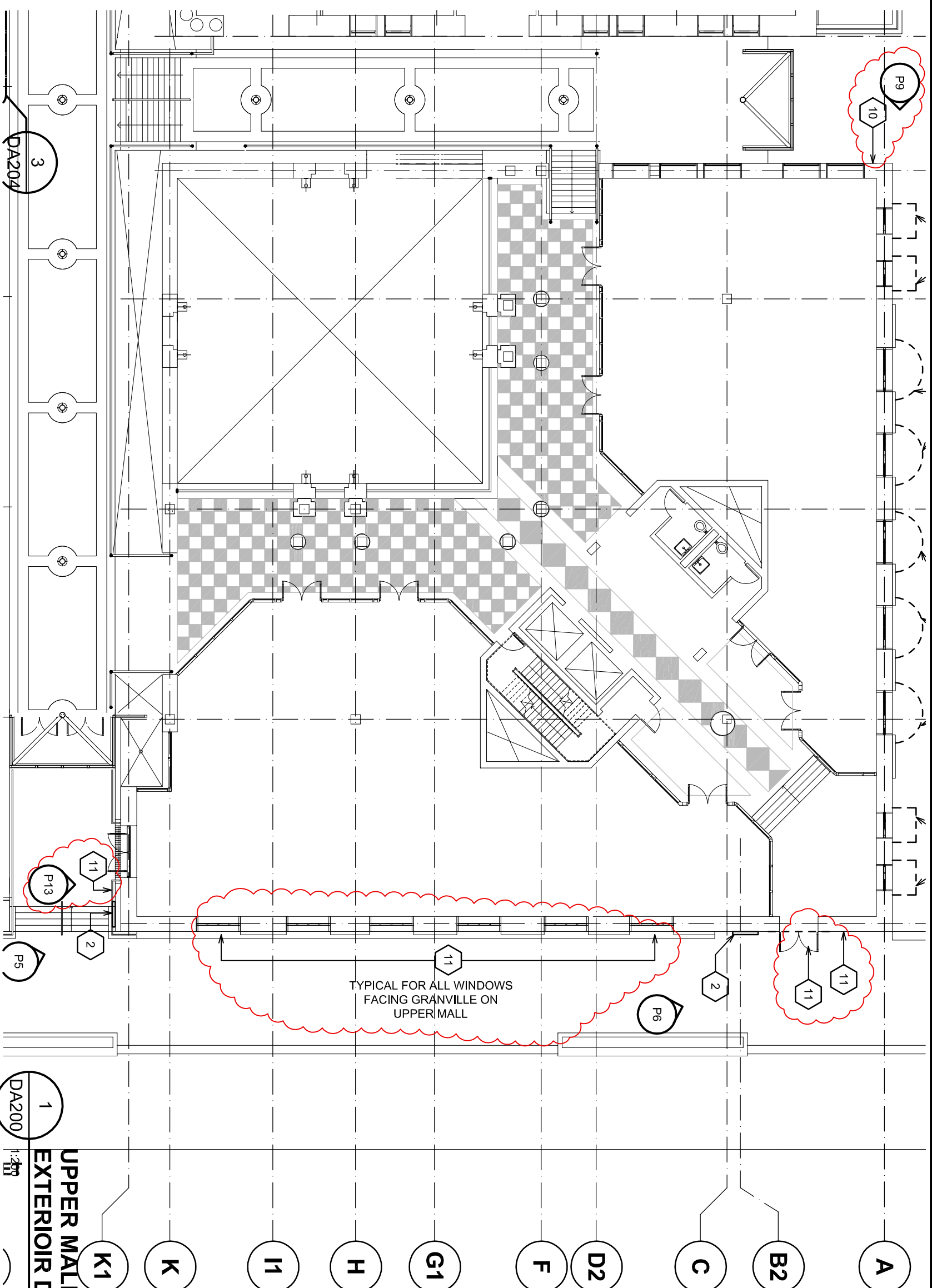
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				Revision/ Révision 0	
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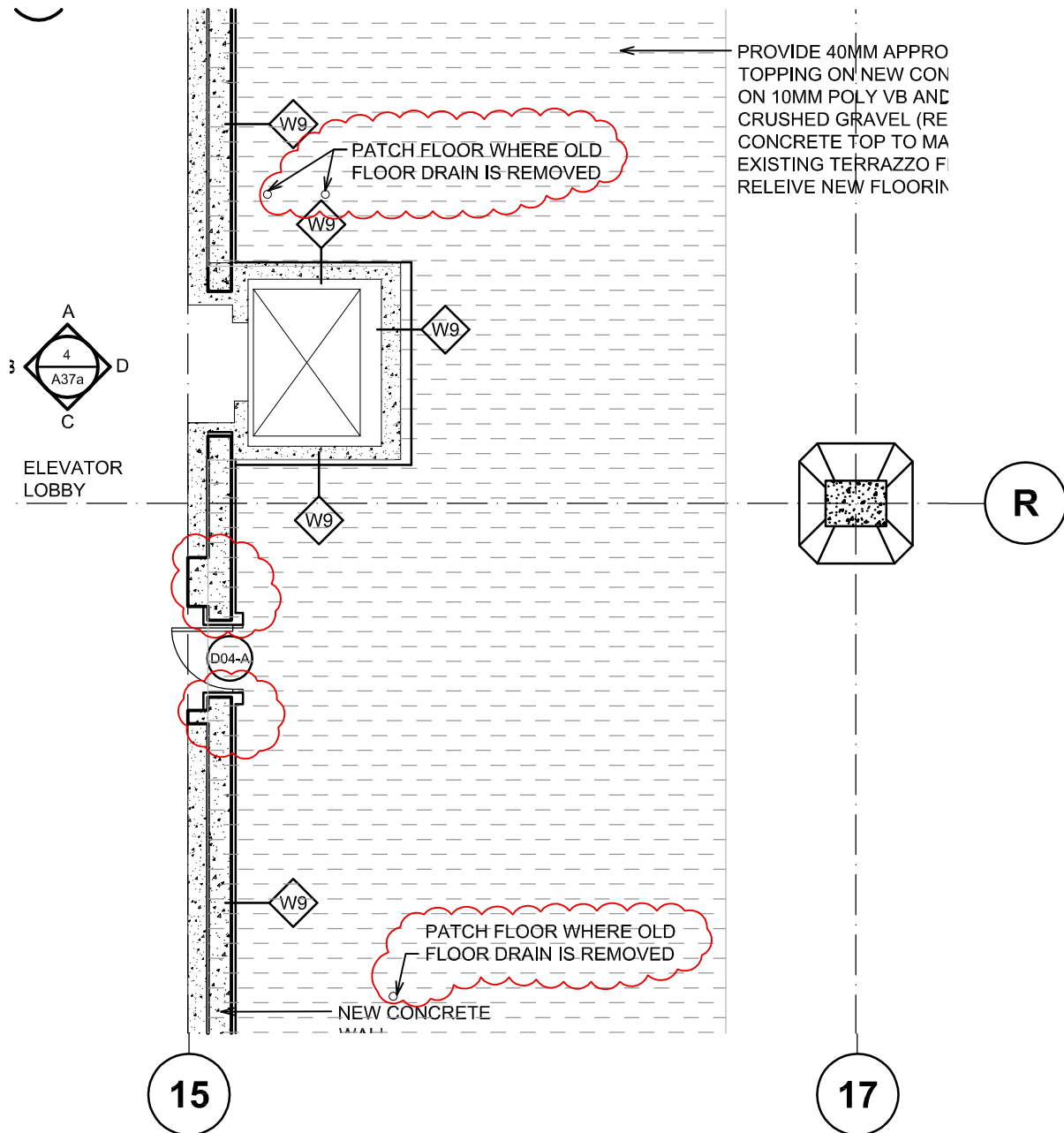
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## LEVEL B1 (LOWER MALL) FLOOR PLAN NEW PASSPORT OFFICE

1  
A-08

1: 100

REFER DWG A02

Project title/Titre du projet

**SINCLAIR CENTRE  
REVITALIZATION PROJECT**  
757 W HASTINGS ST, VANCOUVER

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PWGC Project Manager/Administrateur  
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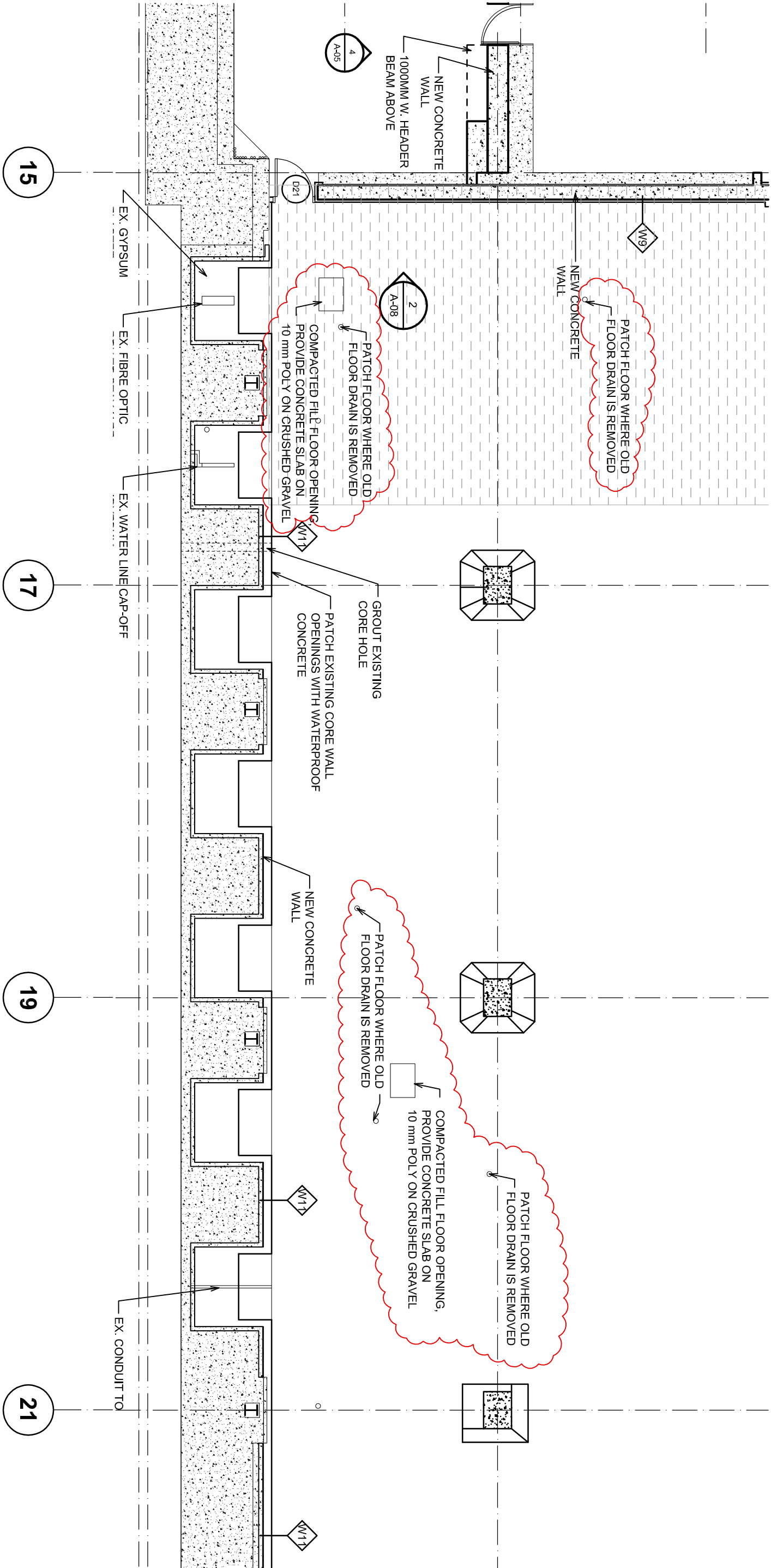
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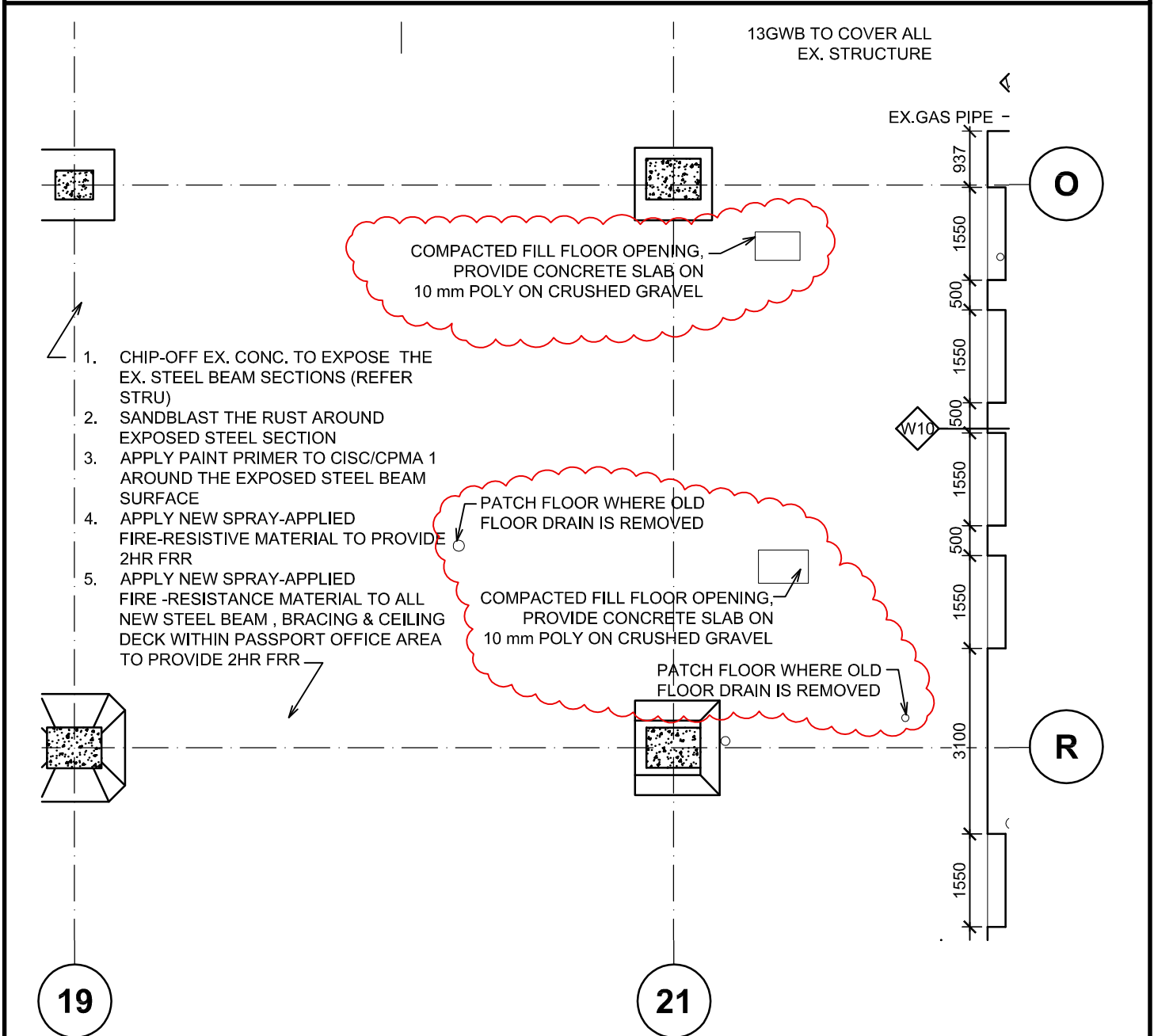


LEVEL B1 (LOWER MALL) FLOOR PLAN  
NEW PASSPORT OFFICE

1  
A-08  
1 : 100

REFER DWG A02

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	VANCOUVER, B.C. 757 W HASTINGS ST SINCLAIR CENTRE REVITALIZATION PROJECT	
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## LEVEL B1 (LOWER MALL) FLOOR PLAN NEW PASSPORT OFFICE

1

A-08

1 : 100

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757 W HASTINGS ST, VANCOUVER

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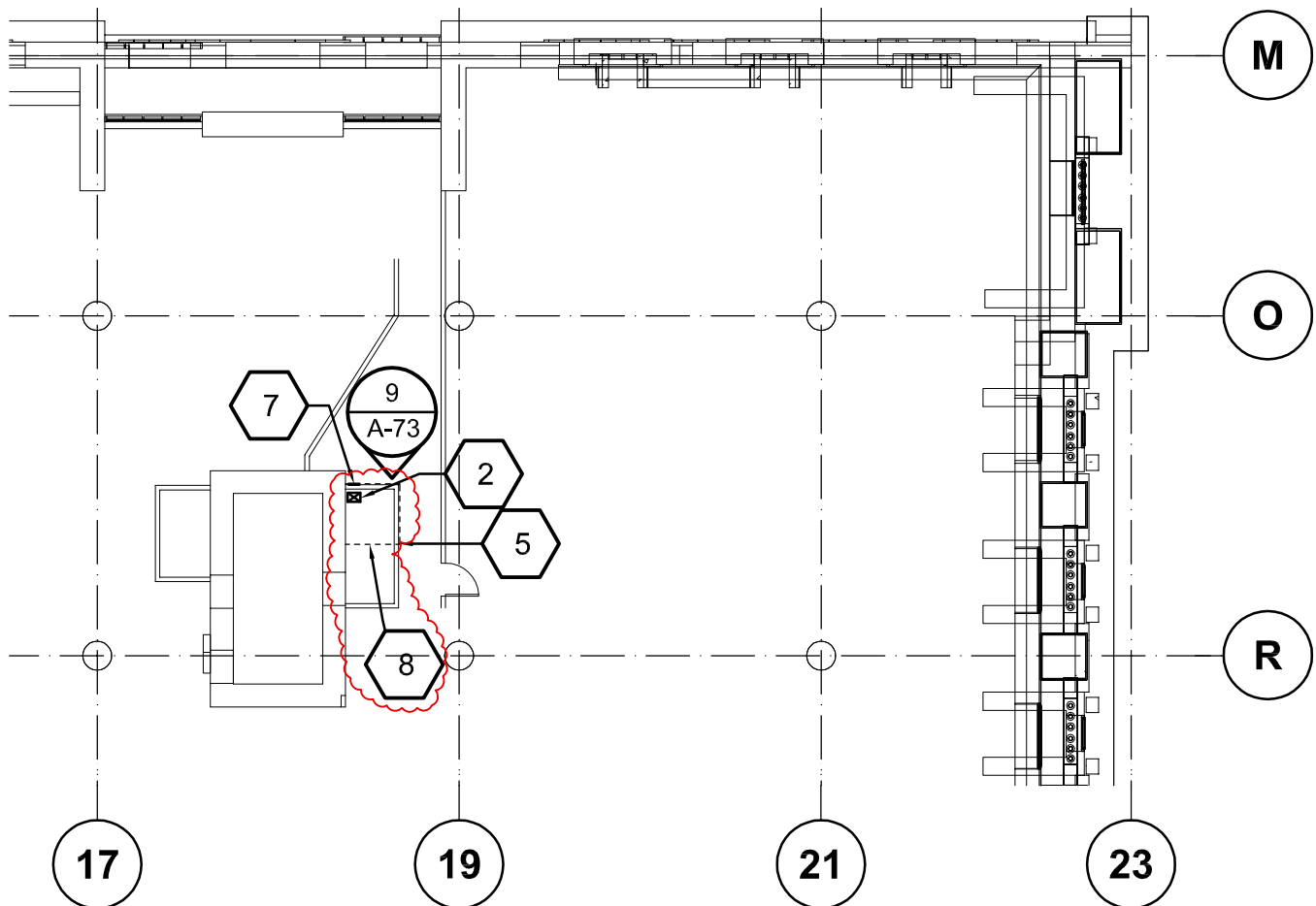




## DRAWING NOTES

8

----- PROVIDE NEW 2HR FRR SHAFT WALL ABOVE  
EX. SUSPENDED CEILING TO CONTINUE FROM  
EXISTING SHAFT UP TO U/S OF EX. CEILING DECK  
TO PROVIDE A COMPLETE AIR TIGHT FIRE RATED  
SHAFT THROUGHOUT FROM UPPER MALL LEVEL  
TO U/S OF 5/F.



4  
A-73

## FIFTH FLOOR PLAN

1 : 200

REF. DWG. A-60

Project title/Titre du projet

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757 W HASTINGS ST, VANCOUVER

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**PWSC Project Manager/Administrateur  
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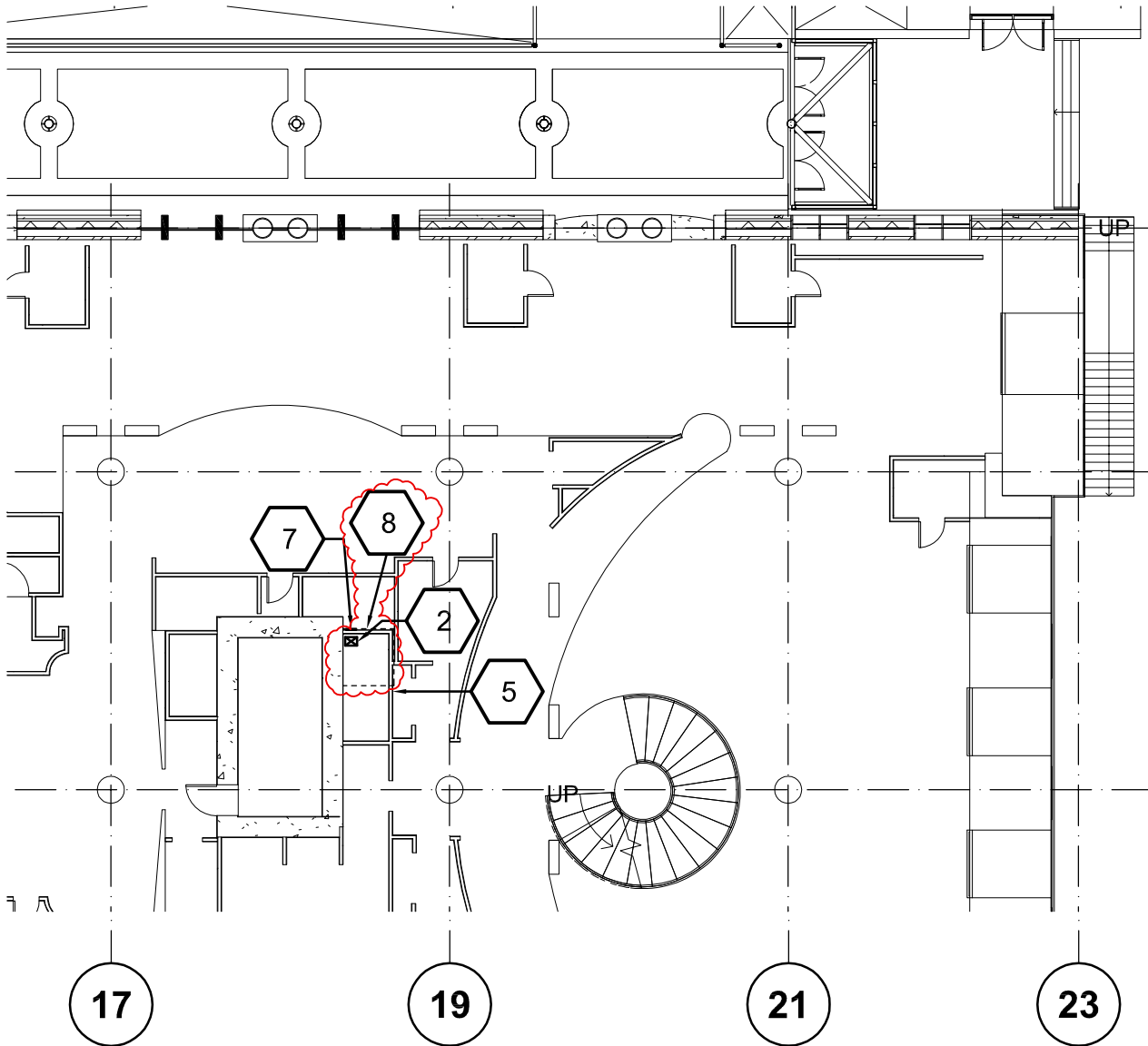
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1 **FIRST FLOOR PLAN**  
A-73 1 : 200 (UPPER MALL) REF. DWG. A-60

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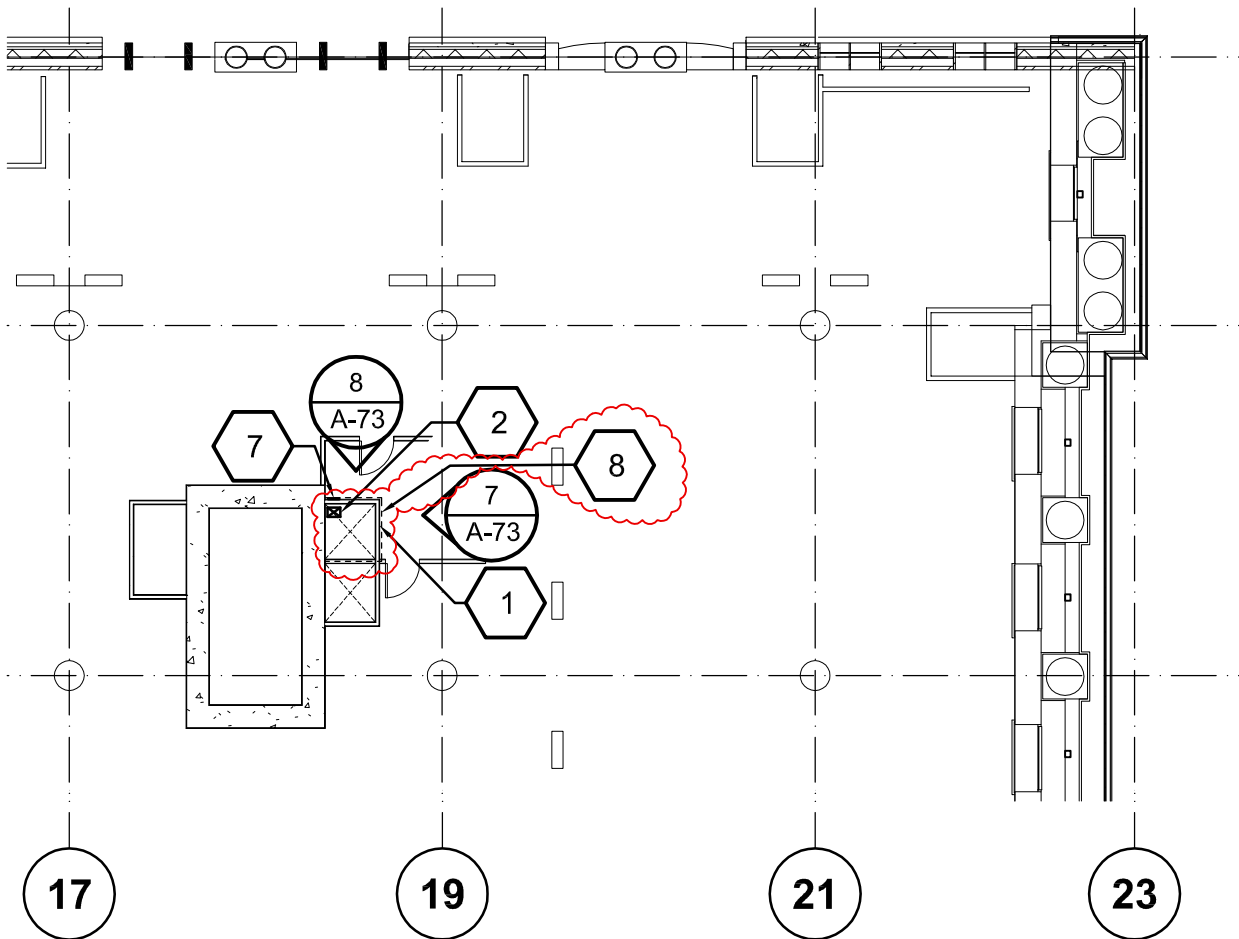
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A-73

## SECOND FLOOR PLAN

1 : 200

REF. DWG. A-60

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REVITALIZATION PROJECT**  
757 W HASTINGS ST, VANCOUVER

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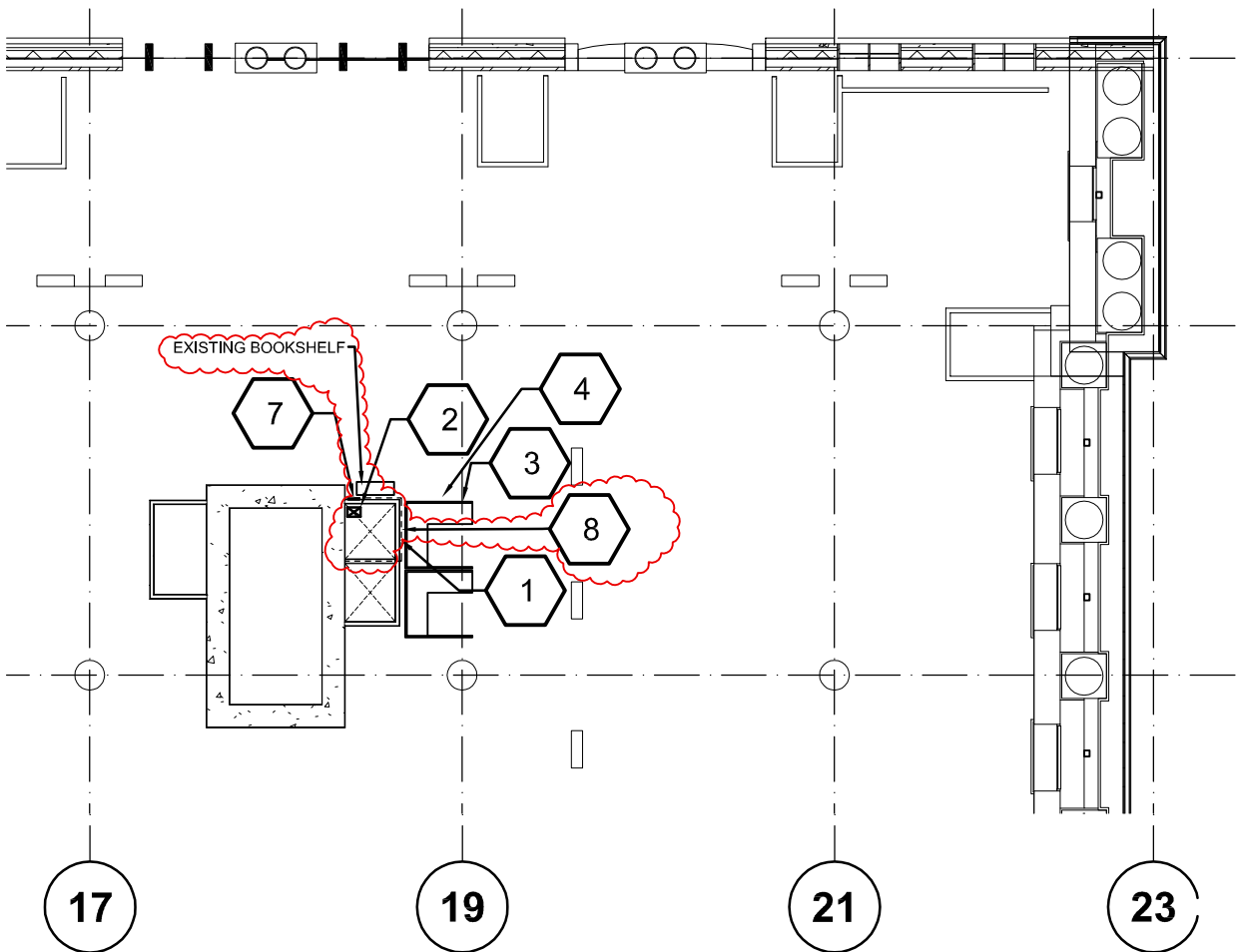
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Revision/  
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3  
A-73

### THIRD FLOOR PLAN

1 : 200

REF. DWG. A-60

Project title/Titre du projet

**SINCLAIR CENTRE  
REVITALIZATION PROJECT**  
757 W HASTINGS ST, VANCOUVER

Drawing title/Titre du dessin

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Scale/Echelle

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Preetipal Paul

Date/Date

2013-06-11

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projet** R.058952.001

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**AD-14**

Revision/  
Révision

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1.0 GENERAL

1.1 CODES

- .1 Perform work in accordance with National Building Code for Canada 2010, Workers' Compensation Board of BC, Vancouver Building By-law 2007 and any other code of provincial or local application provided that in any case of conflict or discrepancy, the more stringent requirements shall apply.
- .2 Meet or exceed requirements of specified standards, codes and referenced documents.

1.2 DESCRIPTION OF WORK

- .1 Work under this Contract comprises, but is not limited to, the provision of all labour, materials, services and equipment necessary for the Renovation, Seismic Upgrade and Passport Office Fit-Out at Sinclair Centre, Vancouver, BC, including demolition and construction work at level B2, Lower Mall and Upper Mall, and associated mechanical work at level B3 and mechanical penthouse of Post-Office Building as fully described in the Tender Documents.

1.3 CONTRACT DOCUMENTS

- .1 The Contract documents, drawings and specifications are intended to complement each other.
- .2 Drawings are, in general, diagrammatic and are intended to indicate the scope and general arrangement of the work.
- .3 Cooperate with pre-purchased equipment suppliers in carrying out their respective works and carry out instructions from Departmental Representative.
- .4 Coordinate work with that of pre-purchased equipment suppliers. If any part of work under this Contract depends on its proper execution or result upon work of said suppliers, report promptly to Departmental Representative, in writing, any defects which may interfere with proper execution of this Work.

1.4 TIME OF COMPLETION

- .1 Commence work immediately upon official notification of acceptance of offer and complete Passport Office Fit-out, including testing, adjusting and commissioning within thirty-two (32) weeks after contract award. Remainder of the work must be completed within fifty-nine (59) weeks after award of contract.
- .2 **Work for kitchen exhaust for Leone must be carried out and completed within the period of July 27, 2013 to August 19, 2013 inclusive during which the Leone Kitchen Restaurant will be shut down for the these three weeks. The kitchen exhaust system must be commissioned and operational by August 19, 2013.**

1.5 HOURS OF WORK

- .1 All work which generates excessive noise, including cutting and coring, hammer drills and power activated fastening shall be executed outside of the normal operating hours, except Saturday, for Sinclair Centre.
- .2 All other work, except for that noted in Clause 1.5.1 shall be executed during the normal operating hours for Sinclair Centre:  
Monday through Friday – 07:00 to 17:00 hours.  
Saturday – 10:00 to 17:30 hours.  
Sunday – Closed.

the Contract requirements, Contractor shall pay costs for additional tests or inspections as the Departmental Representative may require to verify acceptability of corrected work.

- .6 Contractor shall furnish labour and facilities to:
  - .1 Notify Departmental Representative in advance of planned testing.
- .7 Where materials are specified to be tested, deliver representative samples in required quantity to testing laboratory.
- .8 Pay costs for uncovering and making good work that is covered before required inspection or testing is completed and approved by Departmental Representative.
- .9 Provide Departmental Representative with 2 copies of testing laboratory reports as soon as they are available.
- .10 Contractor is required to perform on-site testing of the existing concrete slab for 3 floors at Post Office building and 2 floors at Winch building with investigation areas confirmed on site by Departmental Representative **work to be completed within 8 weeks after award of contract**. The scope of work includes:
  - .1 Site visit for planning the field works and marking locations for the removal of concrete cores.
  - .2 Provide ground radar penetration to identify the existing floor slab reinforcement and in-floor ducts where existed prior to coring the slab.
  - .3 Locally removal of existing floor finishing as required.
  - .4 Removal of core samples for compressive strength tests for concrete floor slab and topping in accordance with CSA A23.2 -9C. The total numbers of core samples per floor slab shall be determined in accordance with CSA A23.2. Each core would include both the topping and the concrete base floor slab and would be cut at the topping-slab interface for compressive strength tests to be performed on the slab portion.
  - .5 Removal of one additional core sample for petrographic examination of aggregates in the concrete.
  - .6 Conduct tensile bond strength tests in accordance with CSA 23.2-6B to determine the bond stress between the topping and base floor slab.
  - .7 Chipping the concrete to remove rebar and/or wire mesh samples in the floor slab and topping to determine the yield strength of the rebar and/or wire mesh. The total numbers of rebar/wire mesh samples shall be determined in accordance with the Code.
  - .8 Extract powder samples at top and bottom of the floor base slab core samples (minimum two core samples) and perform a chemical analysis to determine the existence of volatiles, i.e., Semi Volatile Organic Compounds (SVOS) testing and provide comments on the potential environmental issues if existed.
  - .9 Provide tests on concrete carbonation of the floor base slab. Minimum two core samples per floor slab.
  - .10 Extract concrete powder samples from two depths (one at the reinforcement depth and one from a depth away from reinforcement) of core sample on floor base slab for laboratory analysis of water soluble chloride ion content (CSA A23.2-4B) and pH of concrete. Minimum two concrete powder samples per floor slab.

## 1.0 GENERAL

### 1.1 RELATED REQUIREMENTS

- .1 Section 04 05 12 Masonry Mortar Grout.
- .2 Section 04 22 00 Concrete Unit Masonry.

### 1.2 REFERENCES

- .1 Canada Green Building Council (CaGBC)
  - .1 LEED Canada-CI Version 1.0-2007, LEED (Leadership in Energy and Environmental Design): Green Building Rating System Reference Guide For Commercial Interiors.
- .2 Canadian Standards Association (CSA International)
  - .1 CSA-A165 Series-04, Standards on Concrete Masonry Units.
  - .2 CSA A179-04, Mortar and Grout for Unit Masonry.
  - .3 CSA-A371-04, Masonry Construction for Buildings.
- .3 International Masonry Industry All-Weather Council (IMIAC)
  - .1 Recommended Practices and Guide Specification for Hot and Cold Weather Masonry Construction.

### 1.3 ADMINISTRATIVE REQUIREMENTS

- .1 Pre-installation meetings: comply with Section 01 31 19 - Project Meetings. Conduct pre-installation meeting one week prior to commencing work of this Section and on-site installations to:
  - .1 Verify project requirements, including mock-up requirements.
  - .2 Verify substrate conditions.
  - .3 Co-ordinate products, installation methods and techniques.
  - .4 Sequence work of related sections.
  - .5 Co-ordinate with other building subtrades.
  - .6 Review manufacturer's installation instructions.
  - .7 Review masonry cutting operations, methods and tools and determine worker safety and protection from dust during cutting operations.
  - .8 Review warranty requirements.
- .2 Sequencing: sequence with other work in accordance with 01 32 16.07 - Construction Progress Schedules - Bar (GANTT) Chart. Comply with manufacturer's written recommendations for sequencing construction operations.
- .3 Scheduling: schedule with other work in accordance with Section 01 32 16.07 - Construction Progress Schedules - Bar (GANTT) Chart.

### 1.4 ACTION & SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
  - .1 Provide manufacturer's printed product literature, specifications and datasheet and include product characteristics, performance criteria, limitations and colours.
  - .2 **Provide two copies of Workplace Hazardous Materials Information System (WHMIS) – Material Safety Data Sheets (MSDS) in accordance with Section 01 35 33 -Health and Safety Requirements**

## 1.0 GENERAL

### 1.1 RELATED REQUIREMENTS

- |    |                                 |                  |
|----|---------------------------------|------------------|
| .1 | Common Work Results for Masonry | Section 04 05 00 |
| .2 | Masonry Accessories             | Section 04 05 23 |
| .3 | Concrete Unit Masonry           | Section 04 22 00 |

### 1.2 REFERENCES

- .1 Canada Green Building Council (CaGBC)
  - .1 LEED Canada-CI Version 1.0-2007, LEED Green Building Rating System Reference Guide For Commercial Interiors.
- .2 Canadian Standards Association (CSA International)
  - .1 CAN/CSA-A23.1/A23.2-04, Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete.
  - .2 CAN/CSA A179-04, Mortar and Grout for Unit Masonry.
  - .3 CAN/CSA A371-04, Masonry Construction for Buildings.
  - .4 CAN/CSA-A3000-03, Cementitious Materials Compendium; CAN/CSA-A3002-03, Masonry and Mortar Cement.
- .3 South Coast Air Quality Management District (SCAQMD), California State (SCAQMD)
  - .1 SCAQMD Rule 1168-05, Adhesives and Sealants Applications.

### 1.3 ACTION AND INFORMAL SUBMITTALS

- .1 Product Data:
  - .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
  - .2 Provide manufacturer's printed product literature, specifications and datasheets. Include product characteristics, performance criteria, and limitations.
  - .3 **Provide two copies of Workplace Hazardous Materials Information System (WHMIS) - Material Safety Data Sheets (MSDS) in accordance with Section 01 35 33 - Health and Safety Requirements. Indicate VOC's mortar, grout, parging, colour additives and admixtures. Expressed as grams per litre (g/L).**
- .2 Samples:
  - .1 Samples: provide unit samples in accordance with Section 04 05 00 - Common Work Results for Masonry, supplemented as follows:
    - .1 Provide two size samples of mortar coloured mortar.
    - .2 Provide samples and confirmation of source or product data sheet, prior to mixing or preparation of mortars, to Departmental Representative.
      - .1 Aggregate: course aggregate and sand.
      - .2 Cement.
      - .3 Lime.
      - .4 Colour pigment samples.
- .3 Manufacturer's Instructions:
  - .1 Provide manufacturer's installation instructions.
- .4 Sustainable Design Submittals:
  - .1 LEED Submittals: in accordance with Section 01 35 21 - LEED Requirements.



1.0 GENERAL

1.1 RELATED REQUIREMENTS

- .1 Common Work Results for Masonry Section 04 05 00
- .2 Masonry Accessories Section 04 05 23
- .3 Concrete Unit Masonry Section 04 22 00

1.2 REFERENCES

- .1 ASTM International Inc.
  - .1 ASTM A 36/A 36M- 05, Standard Specification for Carbon Structural Steel.
  - .2 ASTM A 82/A 82M- 05a, Standard Specification for Steel Wire, Plain, for Concrete Reinforcement.
  - .3 ASTM A 167- 99 (R2004), Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.
  - .4 ASTM A 307- 04, Standard Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength.
  - .5 ASTM A 580/A 580M- 06, Standard Specification for Stainless Steel Wire.
  - .6 ASTM A 641/A 641M- 03, Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire.
  - .7 ASTM-A666- 03, Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.
- .2 Canada Green Building Council (CaGBC)
  - .1 LEED Canada-CI Version 1.0-2007, LEED: Green Building Rating System Reference Guide For Commercial Interiors.
- .3 Canadian Standards Association (CSA International)
  - .1 CAN/CSA-A23.1/A23.2- 04, Concrete Materials and Methods of Concrete Construction/Methods of Test and Standard Practices for Concrete.
  - .2 CAN/CSA A179- 04, Mortar and Grout for Unit Masonry.
  - .3 CAN/CSA A370- 04, Connectors for Masonry.
  - .4 CAN/CSA A371- 04, Masonry Construction for Buildings.
  - .5 CAN/CSA G30.18- M92 (R2007), Billet-Steel Bars for Concrete Reinforcement.
  - .6 CSA-S304.1- 04, Design of Masonry Structures.
  - .7 CSA W186- M1990 (R2007), Welding of Reinforcing Bars in Reinforced Concrete Construction.

1.3 ACTION AND INFORMAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
  - .1 Provide manufacturer's printed product literature, specifications and datasheets illustrating products to be incorporated into project for specified products.
  - .2 Provide two copies of Workplace Hazardous Materials Information System (WHMIS) - Material Safety Data Sheets (MSDS) in accordance with **Section 01 35 33** - Health and Safety Requirements.
- .3 Manufacturer's Instructions:
  - .1 Provide manufacturer's installation instructions.

1.0 GENERAL

1.1 RELATED REQUIREMENTS

- .1 Section 04 05 00 Common Work Result Masonry
- .2 Section 05 50 00 Metal Fabrications
- .3 Section 07 92 00 Joint Sealants

1.2 REFERENCES

- .1 Canada Green Building Council (CaGBC)
  - .1 LEED Canada-CI Version 1.0- 2007, LEED (Leadership in Energy and Environmental Design): Green Building Rating System Reference Guide For Commercial Interiors.
- .2 Canadian Standards Association (CSA International)
  - .1 CAN/CSA A179- 04, Mortar and Grout for Unit Masonry.
  - .2 CAN/CSA A371- 04, Masonry Construction for Buildings.
  - .3 CAN/CSA-A3000- 03, Consolidation - Cementitious Materials Compendium.
  - .4 CAN/CSA-G164- M92 (R2003) , Hot Dip Galvanizing of Irregularly Shaped Articles.
- .3 National Fire Protection Association (NFPA)
  - .1 NFPA 80- 2007, Standard for Fire Doors and Other Opening Protectives.
- .4 South Coast Air Quality Management District (SCAQMD), California State (SCAQMD)
  - .1 SCAQMD Rule 1168- 05, Adhesives and Sealants Applications.
- .5 Underwriter's Laboratories of Canada (ULC)
  - .1 CAN4-S106- M80EN, Standard Method For Fire Test of Window and Glass Block Assemblies.

1.3 SYSTEM DESCRIPTION

- .1 Furnish all floor system perimeter pieces, spanning members, spacer members, paver boots, paver units, sealant, all other materials and labor necessary for complete floor system installation as indicated on the Drawings and specified herein.
- .2 Glass block paver floor is to be designed to support structural live loads of 100 PSF.
- .3 Provide for expansion and movement joint along the edge of the building as required.
- .4 Design and install glass block paver floor by whole units. Cutting glass block paver is not acceptable.

1.4 ACTION AND INFORMAL SUBMITTALS

- .1 Product Data:
  - .1 Provide manufacturer's printed product literature, specifications and data sheet in accordance with Section 01 33 00 - Submittal Procedures. Indicate VOC's for joint fillers and sealants.
    - .1 **Provide two copies of Workplace Hazardous Materials Information System (WHMIS) - Material Safety Data Sheets (MSDS) in accordance with Section 01 35 33 - Health and Safety Requirements**

## 1.0 GENERAL

### 1.1 RELATED REQUIREMENTS

- .1 Rough Carpentry Section 06 08 99
- .2 Exterior Painting Section 09 91 13
- .3 Interior Painting Section 09 91 23

### 1.2 REFERENCES

- 1 ASTM International
  - .1 ASTM A 53/A 53M-07, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.
  - .2 ASTM A 269 08, Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless.
  - .3 ASTM A 307-07v, Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.
- .2 Canada Green Building Council (CaGBC) C.1 Version 1.0 (2007)
  - .1 LEED Canada-LEED (Leadership in Energy and Environmental Design): Green Building Rating System and Reference Package For Commercial Interiors.
- .3 CSA International
  - .1 CSA G40.20/G40.21-04 (R2009), General Requirements for Rolled or Welded Structural Quality Steel/Structural Quality Steel.
  - .2 CAN/CSA G164-M92 (R2003), Hot Dip Galvanizing of Irregularly Shaped Articles.
  - .3 CSA S16-09, Design of Steel Structures.
  - .4 CSA W48-06, Filler Metals and Allied Materials for Metal Arc Welding (Developed in co-operation with the Canadian Welding Bureau).
  - .5 CSA W59-M03 (R2008), Welded Steel Construction (Metal Arc Welding) [Metric].
    - .1 GS-11-2008, 2nd Edition], Paints and Coatings.
- .4 Health Canada / Workplace Hazardous Materials Information System (WHMIS)
  - .1 Material Safety Data Sheets (MSDS).
- .5 The Master Painters Institute (MPI)
  - .1 Architectural Painting Specification Manual - current edition.
- .6 Cereen Seal Environmental Standard (GS)

### 1.3 SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 – Submittals.
- .2 Product Data:
  - .1 Submit manufacturer's instructions, printed product literature and data sheets for sections, plates, pipe, tubing, bolts and include product characteristics, performance criteria, physical size, finish and limitations.
  - .2 **Submit two copies of WHMIS MSDS in accordance with Section 01 35 33 - Health and Safety Requirements**
    - .1 For finishes, coatings, primers, and paints applied on site: indicate VOC concentration in g/L.
- .3 Shop Drawings:

- .4 CAN/ULC-S706- 02, Standard for Wood Fibre Thermal Insulation for Buildings.

### 1.3 ADMINISTRATIVE REQUIREMENTS

- .1 Convene pre-installation meeting one week prior to beginning waterproofing Work, with waterproofing contractor's representative and Departmental Representative in accordance with Section 01 32 16.07 - Construction Progress Schedules - Bar (GANTT) Chart to:
  - .1 Verify project requirements.
  - .2 Review installation and substrate conditions.
  - .3 Co-ordination with other building subtrades.
  - .4 Review manufacturer's installation instructions and warranty requirements.

### 1.4 SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
  - .1 Provide for review by Departmental Representative prior to commencing work, two copies of most recent technical waterproofing components data sheets describing materials' physical properties and include product characteristics, performance criteria, physical size, finish and limitations.
  - .2 Provide two copies of WHMIS MSDS in accordance with **Section 01 35 33** - Health and Safety Requirements 01 35 21 - LEED Requirements, and indicate VOC content for:
    - .1 Primers.
    - .2 Asphalt.
    - .3 Sealers.
    - .4 Filter fabric.
- .3 Provide shop drawings and indicate:
  - .1 Flashing, control joints, insulation details.
- .4 Samples: submit two (2) samples of granular cap sheet and cap flashing.
- .5 Manufacturer's Certificate: certify that products meet or exceed specified requirements.
- .6 Test and Evaluation Reports: submit laboratory test reports certifying compliance of bitumens and roofing felts and membrane with specification requirements.
- .7 Manufacturer's Installation Instructions: indicate special precautions required for seaming the membrane.
- .8 Manufacturer's field report: in accordance with Section 01 45 00 - Quality Control.
- .9 Reports: indicate procedures followed ambient temperatures and wind velocity during application.
- .10 Sustainable Design Submittals:
  - .1 LEED Submittals: in accordance with Section 01 35 21 - LEED Requirements.

### 1.5 QUALITY ASSURANCE

- .1 For each type of work, obtain primary materials from single manufacturer, which has produced that type of product successfully for not less than 10-Years. Provide ancillary materials only as recommended by manufacturer of membrane materials for use with roofing system specified.
- .2 Roofing installer shall be approved by the manufacturer of the materials prior to tender; shall be

GANTT Chart.

- .1 Verify project requirements.
- .2 Review installation and substrate conditions.
- .3 Co-ordinate with other building sub-trades.
- .4 Review manufacturer's installation instructions and warranty requirements.

- .4 Health and Safety Requirements: do construction occupational health and safety in accordance with **Section 01 35 33** - Health and Safety Requirements.

1.5 WASTE MANAGEMENT & DISPOSAL

- .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management And Disposal.
- .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
- .3 Collect and separate for disposal packaging material for recycling in accordance with Waste Management Plan.

2.0 PRODUCTS

2.1 SUSTAINABLE REQUIREMENTS

- .1 Materials and products in accordance with Section 01 35 21 - LEED Requirements: Construction.
- .2 Verification requirements in accordance with Section 01 35 21 - LEED Requirements: Contractor's Verification, include:
  - .1 Materials and resources.
  - .2 Storage and collection of recyclables.
  - .3 Construction waste management.
  - .4 Resource reuse.
  - .5 Recycled content.
  - .6 Local/regional materials.
  - .7 Low-emitting materials.

2.2 INSULATION

- .1 Thermal Batt and blanket mineral wool: non-combustible to ULC CAN 4-S114, zero flame spread and smoke development to ULC S102, comply CAN/ULC-S702-97 Type 1.
  - .1 Thickness: as indicated.
  - .2 Density: more than 32 kg/m<sup>3</sup>, 184 mm thk = 5.9 kg/m<sup>3</sup>, 150 mm thk = 4.8 kg/m<sup>3</sup>, 89 mm thk = 2.8 kg/m<sup>3</sup>
  - .3 Minimum Insulation Value:
    - R10 (RSI 1.76) = 64 mm thk
    - R14 (RSI 2.47) = 89 mm thk
    - R22.5 (RSI 3.96) = 152 mm thk
- .2 Acoustic Batt & blanket mineral wool: Comply Type 1 CAN/ULC-5702-09, Type 1 for ASTM C665, Comply ASTM C553.
  - .1 Fire Performance:

CAN4 S114	Test for Non-Combustibility	Non-Combustible
ASTM E 136	Behavior of Materials at 750°C (1382°F)	Non-Combustible
CAN/ULC S102	Surface Burning Characteristics	Flame Spread = 0
		Smoke Developed = 0

## 1.0 GENERAL

### 1.1 RELATED REQUIREMENTS

- .1 Steel Decking Section 05 31 00

### 1.2 REFERENCES

- .1 Canada Green Building Council (CaGBC)
  - .1 LEED Canada-CI Version 1.0- 2007, LEED (Leadership in Energy and Environmental Design): Green Building Rating System Reference Guide For Commercial Interiors.
- .2 Canadian Urethane Foam Contractors' Association Inc. (CUFCA)
- .3 Green Seal Environmental Standards
  - .1 Standard GC-03- 93, Anti-Corrosive Paints.
  - .2 Standard GS-11- 97, Architectural Paints.
- .4 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1 Material Safety Data Sheets (MSDS).
- .5 South Coast Air Quality Management District (SCAQMD), California State
  - .1 SCAQMD Rule 1113- 06, Architectural Coatings.
- .6 Underwriters' Laboratories of Canada (ULC)
  - .1 CAN/ULC-S101-04, Fire Endurance Tests of Building Construction and Materials.
  - .2 CAN/ULC-S102-03, Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.
  - .3 CAN/ULC-S705.1-01, Standard for Thermal Insulation - Spray Applied Rigid Polyurethane Foam, Medium Density, Material Specification.
  - .4 CAN/ULC-S705.2-05, Standard for Thermal Insulation - Spray Applied Rigid Polyurethane Foam, Medium Density, Application.

### 1.3 SUBMITTALS

- .1 Submit product data in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
  - .1 Submit manufacturer's printed product literature, specifications and datasheet and include product characteristics, performance criteria, physical size, finish and limitations.
  - .2 Submit two copies WHMIS MSDS - Material Safety Data Sheets in accordance with **Section 01 35 33 Health and Safety Requirements.**
- .3 Sustainable Design Submittals:
  - .1 LEED Canada- CI Version 1.0-2007. Submittals: in accordance with Section 01 35 21 - LEED Requirements.
- .4 Provide LEED submittals indicating how following requirements will be met.
  - .1 Materials and Resources Credit MRc2.1 Construction Waste Management
  - .2 Materials and Resources Credit MRc5.1 Regionally Materials: 20% Extracted and Manufactured Regionally
  - .3 Indoor Environmental Quality Credit EQc4.2 Low-Emitting Materials: Paints and Coatings :
- .5 Quality assurance submittals: submit following in accordance with Section 01 45 00 - Quality Control.

1.0 GENERAL

1.1 RELATED REQUIREMENTS

- .1 Structural Steel for Building Section 05 12 33
- .2 Steel Decking Section 05 31 00

1.2 REFERENCES

- .1 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1 Material Safety Data Sheets (MSDS).
- .2 Underwriter's Laboratories of Canada (ULC)
  - .1 CAN-ULC-S101- 04, Standard Methods of fire Endurance Tests of Building Construction and Materials.
  - .2 CAN-ULC-S102- 03, Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.

1.3 ACTION AND INFORMAL SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
  - .1 Submit manufacturer's printed product literature, specifications and datasheet and include product characteristics, performance criteria, physical size, finish and limitations.
  - .2 Submit two copies of WHMIS MSDS - Material Safety Data Sheets in accordance with **Section 01 35 33 Health and Safety Requirements**.
- .3 Samples: submit duplicate 300 x 300 mm size sample of exposed fireproofing for approval of texture and colour.
- .4 Quality assurance submittals: submit following in accordance with Section 01 45 00 - Quality Control.
  - .1 Test Reports:
    - .1 Submit product data including certified copies of test reports verifying fireproofing applied to substrate as constructed on project will meet or exceed requirements of Specification.
    - .2 Submit test results in accordance with CAN- ULC-S101 for fire endurance and CAN-ULC-S102 for surface burning characteristics.
    - .3 For assemblies not tested and rated, submit proposals based on related designs using accepted fireproofing design criteria.
  - .2 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.
  - .3 Manufacturer's Instructions: submit manufacturer's installation instructions and special handling criteria, installation sequence, cleaning procedures.
  - .4 Manufacturer's Field Reports: submit to manufacturer's written reports within 3 days of review, verifying compliance of Work, as described in PART 3 - FIELD QUALITY CONTROL.
- .5 Sustainable Design Submittals:
  - .1 LEED Canada CI 1.0 2007

## 1.0 GENERAL

### 1.1 RELATED REQUIREMENTS

- .1 Mechanical Divisions 20-25
- .2 Electrical Communications/Electronics/Security Divisions 26-28

### 1.2 REFERENCES

- .1 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1 Material Safety Data Sheets (MSDS).
- .2 Underwriter's Laboratories of Canada (ULC)
  - .1 ULC-S115-1995, Fire Tests of Fire stop Systems.

### 1.3 DEFINITIONS

- .1 Fire Stop Material: device intended to close off opening or penetration during fire or materials that fill openings in wall or floor assembly where penetration is by cables, cable trays, conduits, ducts and pipes and poke-through termination devices, including electrical outlet boxes along with their means of support through wall or floor openings.
- .2 Single Component Fire Stop System: fire stop material that has Listed Systems Design and is used individually without use of high temperature insulation or other materials to create fire stop system.
- .3 Multiple Component Fire Stop System: exact group of fire stop materials that are identified within Listed Systems Design to create on site fire stop system.
- .4 Tightly Fitted; (ref: NBC Part 3.1.9.1.1): penetrating items that are cast in place in buildings of noncombustible construction or have "0" annular space in buildings of combustible construction.
  - .1 Words "tightly fitted" should ensure that integrity of fire separation is such that it prevents passage of smoke and hot gases to unexposed side of fire separation.

### 1.4 SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data:
  - .1 Submit manufacturer's printed product literature, specifications and datasheet and include product characteristics, performance criteria, physical size, finish and limitations.
  - .2 Submit two copies of WHMIS MSDS - Material Safety Data Sheets in accordance with **Section 01 35 33 Health and Safety Requirements.**
- .3 Shop Drawings:
  - .1 Submit shop drawings to show location, proposed material, reinforcement, anchorage, fastenings and method of installation.
  - .2 Construction details should accurately reflect actual job conditions.
- .4 Quality assurance submittals: submit following in accordance with Section 01 45 00 - Quality Control.
  - .1 Test reports: in accordance with CAN-ULC-S101 for fire endurance and CAN-ULC-S102 for surface burning characteristics.
    - .1 Submit certified test reports from approved independent testing laboratories, indicating compliance of applied fire stopping with specifications for specified performance characteristics and physical properties.



### 1.3 SYSTEM DESCRIPTION

- .1 Design Requirements:
  - .1 Provide fire labeled frames for openings requiring fire protection ratings. Test products in conformance with CAN4-S104, and listed by nationally recognized agency having factory inspection services and to ULC fire protection rating.

### 1.4 SUBMITTALS

- .1 Provide shop drawings: in accordance with Section 01 33 00 - Submittal Procedures.
  - .1 Indicate each type of door, material, steel core thicknesses, mortises, reinforcements, location of exposed fasteners, openings, glazed, arrangement of hardware and fire rating and finishes.
  - .2 Indicate each type frame material, core thickness, reinforcements, glazing stops, location of anchors and exposed fastenings and finishes.
  - .3 Include schedule identifying each unit, with door marks and numbers relating to numbering on drawings and door schedule.
- .2 Provide submittals in accordance with Section 01 35 21-LEED Requirements.

### 1.5 SUSTAINABLE REQUIREMENTS

- .1 Materials and products in accordance with **Section 01 35 21 - LEED** Requirements: Contractor's Verification.

### 1.6 DELIVERY, STORAGE AND HANDLING

- .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Waste Management and Disposal:
  - .1 Separate waste materials for recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

## 2.0 PRODUCTS

### 2.1 MATERIALS

- .1 Hot dipped galvanized steel sheet: to ASTM A 653M, ZF75, minimum base steel thickness in accordance with CSDMA Table 1 - Thickness for Component Parts.
- .2 Reinforcement to CSA G40.20/G40.21, Type 44W, coating designation to ASTM A 653M, ZF75.
- .3 Interior Door Frames: 16ga

### 2.2 DOOR CORE MATERIALS

- .1 Honeycomb construction:
  - .1 Structural small cell, 24.5 mm maximum kraft paper 'honeycomb', weight: 36.3 kg per ream minimum, density: 16.5 kg/m<sup>3</sup> minimum sanded to required thickness.
- .2 Stiffened: face sheets honeycomb core.
- .3 Temperature rise rated (TRR): Only if indicated in door schedule, core composition to limit temperature rise on unexposed side of door to 250 degrees C at 60 minutes. Core to be tested as part of a complete door assembly, in accordance with CAN4-S104, covering Standard Method of Tests of Door Assemblies and listed by nationally recognized testing agency having factory inspection service.

Province of British Columbia, Canada. Submit VBBL 2007 Schedule B and C-B and **NBC Schedule B1, B2 and C-B as per Appendix P of this specification.**

- .2 Indicate materials and profiles and provide full-size, scaled details of components for each type of door and frame. Indicate:
  - .1 Interior trim and exterior junctions with adjacent construction.
  - .2 Junctions between combination units.
  - .3 Elevations of units.
  - .4 Core thicknesses of components.
  - .5 Type and location of exposed finishes, method of anchorage, number of anchors, supports, reinforcement, and accessories.
  - .6 Location of caulking.
  - .7 Each type of door system including location.
  - .8 Arrangement of reinforcing for hardware and joints.
  - .9 Arrangement of hardware and required clearances.
  
- .4 Samples:
  - .1 Submit for review and acceptance of each unit.
  - .2 Submit one 300 x 300 mm corner sample of each type door and frame.
  - .3 Submit sample showing glazing detail, reinforcement, finish and location of manufacturer's nameplates.
  - .4 Frame sample to show glazing stop, door stop, jointing detail, finish.
  
- .5 Sustainable Design Submittals:
  - .1 Construction Waste Management:
    - .1 Submit project Waste Management Plan highlighting recycling and salvage requirements.
    - .2 Submit calculations on end-of-project recycling rates, salvage rates, and landfill rates demonstrating that 50% of construction wastes were recycled or salvaged.
  - .2 Recycled Content:
    - .1 Submit listing of recycled content products used, including details of required percentages or recycled content materials and products, showing their costs and percentages of post-consumer and post-industrial content, and total cost of materials for project.
  - .3 Low-Emitting Materials:
    - .1 Submit listing of adhesives and sealants paints and coatings used in building, showing compliance with VOC and chemical component limits or restriction requirements.

#### 1.4 CLOSEOUT SUBMITTALS

- .1 Submit in accordance with Section 01 78 00 - Closeout Submittals.
  
- .2 Operation and Maintenance Data: submit operation and maintenance data for cleaning and maintenance of aluminum finishes for incorporation into manual.

#### 1.5 QUALITY ASSURANCE

- .1 Certifications: product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.

- .3 2 Ea. Cylinders B1 (group A)
- .4 1 Ea. Cylinder pull J2
- .5 1 Ea. Closer C3
- .6 1 Ea. Kick plate J3
- .7 1 Ea. Astragal M2
- .8 1 Ea. Viewer F2
- .9 1 Ea. Door contact
  
- .17 Doors D03-A:
  - .1 1 Ea. Lock set B3 Key Group B
  - .2 1 Ea. Wall stop F3
  - .3 1 Ea. Viewer F2
  
- .18 Doors D03-B:
  - .1 1 Ea. Lock set B3 Key Group B
  - .2 1 Ea. Electric strike F4
  - Card reader, power supply, junction box
  - Wiring, conduits and all hookups by electrical
  - .3 1 Ea. Closer C4
  - .4 1 Ea. Wall stop F3
  - .5 1 Ea. Door contact F5
  - .6 1 Ea. Astragal M4

Note: Door to be secured on the pull side and readily operable on the push side.
  
- .19 Single Door D61 & D62
  - .1 3 Ea. Hinges A1
  - .2 1 Ea. Pull J4
  - .3 1 Ea. Push plate J5
  - .4 1 Ea. Closer C8
  - .5 1 Ea. Wall stop F3
  - .6 1 Ea. Kick plate J3
  
- .20 Single Door D70 & D71
  - .1 3 Ea. Hinges A1
  - .2 1 Ea. Dead Lock B6
  - .3 1 Ea. Pull J1a
  - .4 1 Ea. Operator C8
  - .5 1 Ea. Wall stop F3
  
- .21 Single Door D72 & D73
  - .1 3 Ea. Hinges A2
  - .2 1 Ea. Dead Lock B6
  - .3 1 Ea. Pull J2
  - .4 1 Ea. Wall stop F3
  
- .22 **Single Door D74**
  - .1 **3 Ea. Hinges A2**
  - .2 **1 Ea. Exit device D7**
  - .3 **1 Ea. Closer C3**

3.7 DOOR HARDWARE TYPE

- .1 HINGES:  
A1 – Hinge 5 Knuckle-.180 gauge-114mm x 101mm x Non Removable Pin x 652  
A2 – Hinge 5 Knuckle-.134 gauge- 114mm x 101mm x Non Removable Pin x 652  
A3 –Concealed Circuit Electric 12 wire Hinge 5 Knuckle-.180 gauge-114mm x 101mm x 652
- .2 LOCKS, DEADBOLTS AND PRIVACYS:  
B1 - Cylinder Type x length x cam to suit 626  
B2 - Latch set ANSI F01 626  
B3 - Lock set ANSI F07 626  
B4 - Lock set ANSI F13 626  
B5 - Lock set ANSI F05 626  
B6 – Dead Lock ANSI E06081 626
- .3 CLOSERS:  
Note: Include thru-bolts and grommet nuts fasteners.  
C1 – Closer Institutional, non sized, rigid parallel arm x delayed action x 689  
C2 - Closer non sized, Jamb mount compression spring buffer arm x delayed action x 689  
C3 - Closer Institutional, non sized, compression spring buffer arm x delayed action x 689  
C4 - Closer Institutional, non sized, regular arm x delayed action x 689  
C6 - Mag Holder Floor mounted, concealed wiring, 120VAC 689  
Note: -Wiring/conduits/rectifyers/transformers/power to holder  
and all hookups to holder and fire alarm by electrical.
- .4 OPERATORS:  
C8– Operator see 2.2.13
- .5 EXIT DEVICES:  
D1 - Exit Device Narrow Stile concealed vertical rod for narrow stile  
aluminum doors night latch function less pull x cylinder  
dogging x 626 (ANSI A156.3 – 2008-Grade 1)  
  
D2 - Exit Device Narrow Stile concealed vertical rod for narrow stile  
aluminum doors exit only x cylinder dogging x 626(ANSI A156.3 – 2008-Grade 1)  
  
D3 - Exit Device Narrow Stile concealed vertical rod for narrow stile  
aluminum doors night latch function less pull x battery  
alarm kit with key override x 626 (ANSI A156.3 – 2008-Grade 1)  
  
D4 - Exit Device Mortise lock night latch function less pull x momentary electric latch  
retraction x 626 (ANSI A156.3 – 2008-Grade 1)  
  
D5 - Exit Device Mortise lock night latch function less pull x battery  
alarm kit with key override x 626 (ANSI A156.3 – 2008-Grade 1)  
  
D6 - Exit Device Mortise lock night latch function less pull x with key override x 626 (ANSI  
A156.3 – 2008-Grade 1)  
  
**D7 - Exit Device Mortise lock exit only function x 626 (ANSI  
A156.3 – 2008-Grade 1)**
- .6 AUXILIARY HARDWARE:  
F1 - Floor stop Low dome 28.57mm high x 50mm Dia solid cast x 626

- .4 Develop Construction Waste Management Plan related to Work of this Section.
- .5 Packaging Waste Management: remove for reuse of pallets, crates, padding, and packaging materials as specified in Construction Waste Management Plan in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

## 1.5 AMBIENT CONDITIONS

- .1 Maintain temperature 10 degrees C minimum (21 degrees C maximum) for 48 hours prior to and during application of gypsum boards and joint treatment, and for 48 hours minimum after completion of joint treatment.
- .2 Apply board and joint treatment to dry, frost free surfaces.
- .3 Ventilation: ventilate building spaces as required to remove excess moisture that would prevent drying of joint treatment material immediately after its application.

## 2.0 PRODUCTS

### 2.1 MATERIALS

- .1 Standard board: to ASTM C 1396/C 1396M regular, **12.7mm** and **15.9 mm** thick and Type X, **12.7 mm** and **15.9 mm** thick, 1200 mm wide x maximum practical length, ends square cut, edges tapered.
- .2 Gypsum sheathing board: to ASTM C 1396/C 1396M, regular, 12.7mm and 18 mm thick and Type X, 12.7mm and **15.9 mm** thick, 1200 mm wide x maximum practical length.
- .3 Backing board and coreboard: to ASTM C 1396/C 1396M regular, 127mm **15.9 mm** thick and Type X, **12.7mm** and **15.9 mm** thick, bevelled edges.
- .4 Water-resistant board: to ASTM C 1396/C 1396M regular, 12.7mm and **15.9 mm** thick and Type X, 12.7mm and **15.9mm** thick, 1220 mm wide x maximum practical length.
- .5 Glass mat water-resistant gypsum backing board: to ASTM C 1178/C 1178M, 12.7 and **15.9 mm** thick, 1200 mm wide x maximum practical length.
- .6 Resilient clips and drywall furring: 0.5 mm base steel thickness galvanized steel for resilient attachment of gypsum board.
- .7 Nails: to ASTM C 514.
- .8 Steel drill screws: to ASTM C 1002.
- .9 Stud adhesive: to CAN/CGSB-71.25.
- .10 Laminating compound: as recommended by manufacturer, asbestos-free.
- .11 Casing beads, corner beads, control joints and edge trim: to ASTM C 1047, metal, zinc-coated by hot-dip process, 0.5 mm base thickness, perforated flanges, one piece length per location.
- .12 Sealants: in accordance with Section 07 92 00 - Joint Sealants.
  - .1 VOC limit 250 g/L maximum to SCAQMD Rule 1168.
  - .2 Acoustic sealant: in accordance with Section 07 92 00 - Joint Sealants.

### 1.3 SUBMITTALS

- .1 Provide product data in accordance with Section 01 33 00 - Submittal Procedures.
  - .1 Include manufacturer's information on:
    - .1 Ceramic tile, marked to show each type, size, and shape required.
    - .2 Chemical resistant mortar and grout (Epoxy and Furan).
    - .3 Cementitious backer unit.
    - .4 Dry-set cement mortar and grout.
    - .5 Divider strip.
    - .6 Elastomeric membrane and bond coat.
    - .7 Reinforcing tape.
    - .8 Levelling compound.
    - .9 Latex cement mortar and grout.
    - .10 Commercial cement grout.
    - .11 Organic adhesive.
    - .12 Slip resistant tile.
    - .13 Waterproofing isolation membrane.
    - .14 Fasteners.
- .2 Provide samples in accordance with Section 01 33 00 - Submittal Procedures.
  - .1 Base tile: submit duplicate, full size sample of each colour, texture, size, and pattern of tile.
  - .2 Floor tile: submit duplicate, full size sample of each colour, texture, size, and pattern of tile.
  - .3 Granite tile: duplicate, full size sample of each colour, texture, size, and pattern of tile.
  - .4 Trim shapes, bullnose cap and cove including bullnose cap and base pieces at internal and external corners of vertical surfaces, each type, colour, and size.
  - .5 Adhere tile samples to 11 mm thick plywood and grout joints to represent project installation.
- .3 Sustainable Design Submittals:
  - .1 LEED Canada-Commercial Interiors Version 1.0-2007

### 1.4 QUALITY ASSURANCE

- .1 Quality Assurance Submittals:
  - .1 Manufacturer's Instructions: manufacturer's installation instructions.

### 1.5 SUSTAINABLE REQUIREMENTS

- .1 Materials and products in accordance with **Section 01 35 21 - LEED** Requirements: Contractor's Verification.

### 1.6 DELIVERY, STORAGE AND HANDLING

- .1 Packing, shipping, handling and unloading:
  - .1 Deliver, store and handle materials in accordance with Section 01 61 00 - Common Product Requirements.
- .2 Waste Management and Disposal:
  - .1 Separate waste materials for recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

### 1.7 AMBIENT CONDITIONS

- .1 Maintain air temperature and structural base temperature at ceramic tile installation area above 12 degrees C for 48 hours before, during, and 48 hours after, installation.

## 1.0 GENERAL

### 1.1 RELATED REQUIREMENTS

- .1 Gypsum Board Assemblies Section 09 21 16.

### 1.2 REFERENCES

- .1 ASTM International
  - .1 ASTM C 635/C 635M- 07, Standard Specifications for the Manufacture, Performance and Testing of Metal Suspension Systems for Acoustical Tile and Lay-In Panel Ceilings.
  - .2 ASTM C 636/C 636M- 08, Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels.
  - .3 ASTM E 1477- 98a (2008), Standard Test Method for Luminous Reflectance Factor of Acoustical Materials by Use of Integrating-Sphere Reflectometers.
- .2 Canada Green Building Council (CaGBC)
  - .1 LEED Canada-CI 1.0 -2007, LEED (Leadership in Energy and Environmental Design): Green Building Rating System and Reference Package For Commercial Interiors.
- .3 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB-92.1- M89, Sound Absorptive Prefabricated Acoustical Units.
- .4 Green Seal Environmental Standards (GS)
  - .1 GS-11- 2008, 2nd Edition, Paints and Coatings.
- .5 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1 Material Safety Data Sheets (MSDS).
- .6 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI. Source Specific Standards
  - .1 SCAQMD Rule 1113- A2007, Architectural Coatings.
- .7 Underwriter's Laboratories of Canada (ULC)
  - .1 CAN/ULC-S102- 2007, Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies.

### 1.3 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 for ceiling panels and ceiling suspension system and include product characteristics, performance criteria, physical size, finish and limitations.
  - .2 **Submit 2 copies of WHMIS MSDS in accordance with Section 01 35 33 - Health and Safety Requirements**
- 3 Shop Drawings:
  - .1 Submit drawings stamped and signed by professional engineer registered or licensed in Province of British Columbia, Canada. The Engineer shall submit Letters of Assurance of VBBL 2007 and NBC Schedule B1, B2 and C-B as per attached Appendix P in this specification along with sealed shop drawings and Schedule B and C-B and NBC Schedule B1, B2 and C-B as per attached Appendix P in this specification on completion of the work.

## 1.0 GENERAL

### 1.1 RELATED REQUIREMENTS

- .1 Gypsum Board Assemblies Section 09 21 16
- .2 Tile Carpeting Section 09 68 13

### 1.2 REFERENCES

- .1 ASTM International
  - .1 ASTM C 501-84 (2009), Standard Test Method for Relative Resistance to Wear of Unglazed Ceramic Tile by Taber Abraser.
  - .2 ASTM D 2047-04, Standard Test Method for Static Coefficient of Friction of Polish-Coated Flooring Surfaces as Measured by the James Machine.
  - .3 ASTM F 1066-04, Standard Specification for Vinyl Composition Floor Tile.
  - .4 ASTM F 1303-04 (2009), Standard Specification for Sheet Vinyl Floor Covering with Backing.
  - .5 ASTM F 1344-10, Standard Specification for Rubber Floor Tile.
  - .6 ASTM F 1861, Standard Specification for Resilient Wall Base.
- .2 Canada Green Building Council (CaGBC)
  - .1 LEED Canada-CI 1.0 -2007, LEED (Leadership in Energy and Environmental Design): Green Building Rating System and Reference Package For Commercial Interiors.
- .3 South Coast Air Quality Management District (SCAQMD), California State, Regulation XI. Source Specific Standards
  - .1 SCAQMD Rule 1113-A2007, Architectural Coatings.
  - .2 SCAQMD Rule 1168-A2005, Adhesives and Sealants Applications.
- .4 National Floor Covering Association (NFCA) Specification Manual.

### 1.3 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 for flooring, adhesive, primer, sealer, and include product characteristics, performance criteria, physical size, finish and limitations.
  - .2 **Submit 2 copies of WHMIS MSDS in accordance with Section 01 35 33- Health and Safety Requirements**
- .3 Samples:
  - .1 Submit for review and acceptance of each unit.
  - .2 Samples will be returned for inclusion into work.
  - .3 Submit duplicate 300 x 300 mm sample pieces of sheet material.
  - .4 Submit duplicate full size samples of each type of tile.
  - .5 Submit 300 mm long base and edge strips.
- .4 Sustainable Design Submittals:
  - .1 Construction Waste Management:
    - .1 Submit project Waste Management Plan highlighting recycling and salvage requirements.
    - .2 Submit calculations on end-of-project recycling rates salvage rates, and landfill



## 1.0 GENERAL

### 1.1 RELATED REQUIREMENTS

- |    |                                    |                  |
|----|------------------------------------|------------------|
| .1 | Cast-In-Place-Concrete             | Section 03 30 00 |
| .2 | Ceramic Tiling                     | Section 09 30 13 |
| .3 | Resilient Flooring for Minor Works | Section 09 65 99 |
| .4 | Tile Carpeting                     | Section 09 68 13 |

### 1.2 REFERENCES

- .1 ASTM International
  - .1 ASTM C 241- 90 (R2005), Standard Method for Abrasion Resistance of Stone Subject to Foot Traffic.
  - .2 ASTM D 2370- 98 (R2002), Standard Test Method for Tensile Properties of Organic Coatings.
- .2 Canada Green Building Council (CaGBC)
  - .1 LEED Canada-CI 1.0 -2007, LEED (Leadership in Energy and Environmental Design): Green Building Rating System and Reference Package For Commercial Interiors.
- .3 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB-51.34- M86 (R1988), Vapour Barrier, Polyethylene Sheet for Use in Building Construction.
  - .2 CAN/CGSB-25.20- 95, Surface Sealer for Floors.
- .4 Canadian Standards Association (CSA International)
  - .1 CSA-A23.1/A23.2- 04, Concrete Materials and Methods of Concrete Construction/ Methods of Test for Concrete.
  - .2 CAN/CSA-A3000- 03 (R2006), Cementitious Materials Compendium (Consists of A3001, A3002, A3003, A3004 and A3005).
  - .3 CSA G30.5- M1983 (R1998), Welded Steel Wire Fabric for Concrete Reinforcement.
- .5 Health Canada/Workplace Hazardous Materials Information System (WHMIS)
  - .1 Material Safety Data Sheets (MSDS).
- .6 South Coast Air Quality Management District (SCAQMD), California State
  - .1 SCAQMD Rule 1168- 05, Adhesives and Sealants Applications.
- .7 Terrazzo, Tile and Marble Association of Canada (TTMAC)
  - .1 Maintenance Guide.
  - .2 TTMAC/CSCTEK-AID 09 40 00, Portland Cement Terrazzo Digest.
  - .3 TTMAC standard 3001.
  - .4 TTMAC/CSC Architectural Specification Study on Terrazzo (Portland Cement).

### 1.3 SUBMITTALS

- .1 Submit in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Provide Sustainable Submittals:
  - .1 Co-ordinate submittal requirements and provide submittals required by **Section 01 35 21 - LEED Requirements**.

1.0 GENERAL

1.1 RELATED WORK

- |    |                        |                  |
|----|------------------------|------------------|
| .1 | Cast-in-Place Concrete | Section 03 30 00 |
| .2 | Ceramic Tiling         | Section 09 30 13 |

1.2 REFERENCE

- |    |               |  |
|----|---------------|--|
| .1 | ASTM C109-08  | Compressive Strength of Hydraulic Cement Mortars.  |
| .2 | ASTM D2047-04 | Static Coefficient of Friction of Polish Coated Floor Surfaces as Measured by the James Machine. |
| .3 | ASTM E648-10  | Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source.              |
| .4 | MIL D 3134J   | Deck Covering Materials.   |

1.3 SUBMITTALS

- |    |   |   |
|----|---|---|
| .1 | In accordance with Section 01 33 00, Submittal Procedures.  |   |
| .2 | Sustainable Design Submittals:  |   |
|    | .1  | LEED Canada CI Version 1.0 Submittals: in accordance with Section 01 35 21 - LEED Requirements. |
| .3 | Flooring Manufacturer's Literature and Data: Printed installation instructions for conditions indicated.  |   |
| .4 | Certificates: Indicating materials conform to specified requirements. Indicating flooring manufacturer's approval of underlayment, adhesive and cleaners. |   |
| .5 | Samples: Terrazzo Tile, 150mm square (each color and pattern to be used).   |   |

1.4 QUALITY ASSURANCE

- |    |  |
|----|--|
| .1 | Installer has technical qualifications, experience, trained personnel and facilities to install specified items. Approval will not be given, however, where experience record is one of unsatisfactory performance.  |
| .2 | Manufacturer's product submitted has been in satisfactory and efficient operation on three installations similar or equivalent to this project for three years. Submit list of installations. List shall include name of project, and owner and location of project. |

1.5 DELIVERY

- |    |   |
|----|---|
| .1 | Deliver materials to job in manufacturer's original unopened containers, free of damage, with manufacturer's brand name marked thereon. |
|----|---|