

The following changes to the tender documents are effective immediately and will form part of the contract documents:

This addendum consists of one (1) page plus the following list of attached drawings:

No.	Drawing Title	Issue Date
RA2.1	Typical Roof Pipe Penetration Detail	17 July 2018
RA2.2	Typical Duct Penetration Detail	17 July 2018
RA2.3	Penetration Thru Foundation Wall	17 July 2018
RA2.4	Dispatch Console	18 July 2018
RA2.5	Partial Plan – New Generators	18 July 2018

1.1 CHANGES TO THE PROJECT MANUAL

- .1 SECTION 32 12 16 Asphalt Paving
 - .1 **Add** specification section.

1.2 CHANGES TO THE DRAWINGS

- .1 DRAWING RA2.1 Typical Roof Pipe Penetration Details
 - .1 **Add** detail 1/RA2.1 to clarify pipe penetrations.
- .2 DRAWING RA2.2 Typical Duct Penetration Detail
 - .1 **Add** detail 1/RA2.2 to clarify duct penetrations.
- .3 DRAWING RA2.3 Penetration Thru Foundation Wall
 - .1 **Add** detail 1/RA2.3 illustrating typical penetration thru foundation wall. Scan concrete wall to locate all existing reinforcing steel for all openings.
- .4 DRAWING RA2.4 Dispatch Console
 - .1 **Replace** detail 5/A4 with 1/RA2.4.
 - .2 **Replace** detail 6/A4 with 2/RA2.4.
- .5 DRAWING RA2.5 Partial Plan – New Generators
 - .1 **Add** detail 1/RA2.5 to clarify extent of asphalt repair due to demolition and installation of new generators.

END OF ADDENDUM

Part 1 General

1.1 REFERENCES

- .1 Canadian General Standards Board (CGSB)
 - .1 CAN/CGSB-8.1, Sieves Testing, Woven Wire, Inch Series.
 - .2 CAN/CGSB-8.2, Sieves Testing, Woven Wire, Metric.
- .2 American Association of State Highway and Transportation Officials (AASHTO)
 - .1 AASHTO M320-2017, Standard Specification for Performance Grade Asphalt Binder.
- .3 ASTM International
 - .1 ASTM C88-13, Standard Test Method for Soundness of Aggregates by Use of Sodium Sulphate or Magnesium Sulphate.
 - .2 ASTM C117-13, Standard Test Method for Material Finer Than 0.075 mm (No. 200) Sieve in Mineral Aggregates by Washing.
 - .3 ASTM C123/C123-14, Standard Test Method for Lightweight Particles in Aggregate.
 - .4 ASTM C127-12, Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption of Coarse Aggregate.
 - .5 ASTM C128-12, Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption of Fine Aggregate.
 - .6 ASTM C131/C131M-14, Standard Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.
 - .7 ASTM C136/C136M-14, Standard Method for Sieve Analysis of Fine and Coarse Aggregates.
 - .8 ASTM D698-12e2, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³) (600 kN-m/m³).
 - .9 ASTM D977-13e1, Standard Specification for Emulsified Asphalt.
 - .10 ASTM D995-95b (2002), Standard Specification for Requirements Mixing Plants for Hot-Mixed, Hot-Laid Bituminous Paving Mixtures.
 - .11 ASTM D997-80 (1986), Method for Drop Test for Loaded Cylindrical Containers.
 - .12 ASTM D1559-89, Test Method for Resistance of Plastic Flow of Bituminous Mixtures Using Marshall Apparatus.
 - .13 ASTM D2419-14, Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate.
 - .14 ASTM D3203/D3203M-11, Standard Test Method for Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures.

- .15 ASTM D4791-10, Standard Test Method for Flat Particles or Elongated Particles in Coarse Aggregate.
- .4 Asphalt Institute (AI)
 - .1 Asphalt Institute MS-2-1993 Sixth Edition, Mix Design Methods for Asphalt Concrete.
- .5 City of Winnipeg
 - .1 City of Winnipeg Specification CW 3410 – Asphaltic Concrete Pavement Works.

1.2 SUBMITTALS

- .1 Submit asphalt concrete mix design to Departmental Representative for review.
- .2 Materials to be tested by testing laboratory acceptable to Departmental Representative.
- .3 Submit test certificates showing suitability of materials at least 4 weeks prior to commencing work.
- .4 Inform Departmental Representative of proposed source of aggregates and provide access for sampling at least 4 weeks prior to commencing work.

Part 2 Products

2.1 MATERIALS

- .1 Granular base and sub-base material: to City of Winnipeg CW 3410, and following requirements:
 - .1 Crushed or screened stone, gravel or sand.
 - .2 Gradations: within limits specified when tested to ASTM C136 and ASTM C117. Sieve sizes to CAN/CGSB-8.1.
 - .3 Table:

Sieve Designation	Granular Base	Granular Sub-Base
200 mm	-	-
75 mm	-	-
50 mm	-	75-100
38.1 m	-	-
25 mm	-	-
19 mm	100	-
15.9 mm	-	45-80
12.5 mm	-	-
9.5 mm	55-80	-
4.75 mm	35-60	25-55
2.00 mm	-	-
1.20 mm	17-35	12-35
0.425 mm	-	-
0.180 mm	-	-

	Sieve Designation	Granular Base	Granular Sub-Base
	0.075 mm	3-6	3-6
.4	Granular base aggregates:		
.1	Crushed particles: at least 50 % of particles by mass retained on 4.75 mm sieve to have at least 1 freshly fractured face.		
.2	Asphalt concrete aggregates:		
.1	Coarse aggregate is aggregate retained on 4.75 mm sieve and fine aggregate is aggregate passing 4.75 mm sieve when tested to ASTM C117.		
.2	When dryer drum plant or plant without hot screening is used, process fine aggregate through 4.75 mm sieve and stockpile separately from coarse aggregate.		
.3	Separate stock piles for coarse and fine aggregate are not required for sheet asphalt.		
.4	Do not use aggregates having known polishing characteristics in mixes for surface courses.		
.5	Aggregate: material to City of Winnipeg CW 3410, and following requirements:		
.1	Crushed stone or gravel.		
.2	Gradations to be within limits specified when tested to ASTM C136 and ASTM C117, Latest Edition. Sieve sizes to CAN/CGSB-8.1, Latest Edition.		
	Sieve Designation	% Passing	
	(Type 1) Base	(Base Type 2)	
	19.0 mm	100	
	9.5 mm	60-80	
	4.75 mm	40-65	
	2.00 mm	30-50	
	0.180 mm	5-20	
	0.075 mm	3-8	
.3	Sand equivalent: to ASTM D2419, Minimum 50.		
.4	Magnesium Sulphate soundness: to ASTM C88. Max % loss by weight: coarse aggregate 12, fine aggregate 16.		
.5	Los Angeles Degradation: to ASTM C131, Max % loss by weight: coarse aggregate, 35.		
.6	Absorption: to ASTM C127, Max % by weight: coarse aggregate, 1.75.		
.7	Lightweight particles: to ASTM C123, Max % by mass, with less than 1.95. Relative density (formally Specific Gravity): 1.5.		

- .8 Flat and elongated particles: to ASTM D4791, (with length to thickness ratio greater than 5): Max % by weight: coarse aggregate, 15.
 - .9 Crushed particles: at least 60 % of particles by mass within each of following sieve designation ranges to have at least 1 freshly fractured face. Material to be divided into ranges using methods of ASTM C136.

Passing		Retained on
19 mm	to	9.5 mm
9.5 mm	to	4.75 mm
 - .10 Regardless of compliance with specified physical requirements, fine aggregates may be accepted or rejected on basis of past field performance.
- .3 Mineral filler for asphalt concrete:
- .1 Finely ground particles of limestone, hydrated lime, Portland cement or other acceptable non-plastic mineral matter, thoroughly dry and free from lumps.
 - .2 Add mineral filler when necessary to meet job mix aggregate gradation or as directed by Departmental Representative to improve mix properties.
- .4 Asphalt cement: to AASHTO M320.
- .5 Asphalt Prime: to ASTM D997.
- .6 Sand blotter: clean granular material passing 4.75 mm sieve and free from organic matter or other deleterious materials.
- .7 Asphalt tack coat: to ASTM D977.

2.2 MIX DESIGN

- .1 Job mix formula to be reviewed by Departmental Representative.
- .2 Design of mix: by Marshall method to requirements below:
 - .1 Compaction blows on each face of test specimens: 50.
 - .2 Mix physical requirements:

Property	Asphalt / Concrete
Marshall Stability at 60°kN minimum	5.5
Flow Value, mm.	2 - 4
Air Voids in Mixture, %	3 - 5
Voids in Mineral Aggregate, %	15
minimum	
Index of Retained Stability, %	75
minimum	
 - .3 Measure physical requirements as follows:
 - .1 Marshall load and flow value.

- .2 Compute void properties on basis of bulk specific gravity of aggregate to ASTM C127, and ASTM C128. Make allowance for volume of asphalt absorbed into pores of aggregate.
- .3 Air voids: to ASTM D3203.
- .4 Voids in mineral aggregate: to Asphalt Institute, MS-2 chapter 4.
- .5 Index of Retained Stability.
- .4 Do not change job-mix without prior acceptance of Departmental Representative. When change in material source proposed, new job-mix formula to be reviewed by Departmental Representative.
- .5 Return plant dust collected during processing to mix in quantities acceptable to Departmental Representative.

2.3 EQUIPMENT

- .1 Pavers: mechanical grade controlled self-powered pavers capable of spreading mix within specified tolerances, true to line, grade and crown indicated.
- .2 Rollers: sufficient number of rollers of type and weight to obtain specified density of compacted mix.
- .3 Vibratory rollers for parking lots and driveway:
 - .1 Minimum drum diameter: 750mm.
 - .2 Maximum amplitude of vibration (machine setting): 0.5mm for lifts less than 40mm thick.
- .4 Haul trucks: of sufficient number and of adequate size, speed and condition to ensure orderly and continuous operation and as follows:
 - .1 Boxes with tight metal bottoms.
 - .2 Covers of sufficient size and weight to completely cover and protect asphalt mix when truck fully loaded.
 - .3 In cool weather or for long hauls, insulate entire contact area of each truck box.
- .5 Suitable hand tools.

Part 3 EXECUTION

3.1 SUBGRADE SURFACE PREPARATION AND INSPECTION

- .1 Verify grades of subgrade drains and other items set in paving area for conformity with elevations and sections before placing granular base material.
- .2 Obtain acceptance of subgrade by Departmental Representative before placing granular base.

3.2 GRANULAR BASE AND GRANULAR SUBBASE

- .1 Place granular base and sub-base material on clean unfrozen surface, free from snow and ice.

- .2 Place granular base and sub-base to compacted thicknesses as indicated. Do not place frozen material.
- .3 Place in layers not exceeding 150 mm compacted thickness. Compact to density not less than 98 % maximum dry density in accordance with ASTM D698.
- .4 Finished base surface to be within 10 mm of specified grade, but not uniformly high or low.

3.3 ASPHALT PRIME

- .1 Emulsified asphalt:
 - .1 Dilute asphalt emulsion with clean water at 1:1 ratio for application. Mix thoroughly by pumping or other method acceptable to Departmental Representative.
 - .2 Apply diluted asphalt emulsion at rate directed by Departmental Representative but do not exceed 5 L/m².
 - .3 Apply on damp surface unless otherwise directed by Departmental Representative.
- .2 Do not apply prime when air temperature is less than 5°C or when rain is forecast within 2 hours.
- .3 If asphalt prime fails to set within 24 hours, spread sand blotter material in amounts required to absorb excess material. Sweep and remove excess blotter material.

3.4 PLANT AND MIXING REQUIREMENTS

- .1 To ASTM D995.

3.5 ASPHALT CONCRETE PAVING

- .1 Obtain acceptance of primer from Departmental Representative before placing asphalt mix.
- .2 Place asphalt mix only when base or previous course is dry and air temperature is above 5°C.
- .3 Place asphalt concrete in compacted layers not exceeding 50 mm.
- .4 Minimum 135°C mix temperature required when spreading.
- .5 Maximum 160°C mix temperature permitted at any time.
- .6 Compact each course with roller as soon as it can support roller weight without undue cracking or displacement.
- .7 Compact parking lot and driveway asphalt concrete to density not less than 95 % of density obtained with Marshall specimens prepared in accordance with ASTM D1559, from samples of mix being used. Roll until roller marks are eliminated.
- .8 Keep roller speed slow enough to avoid mix displacement and do not stop roller on fresh pavement.
- .9 Moisten roller wheels with water to prevent pick up of material.

- .10 Compact mix with hot tampers or other equipment acceptable to Departmental Representative in areas inaccessible to roller.
- .11 Finish surface to be within 10 mm of design elevation and with no irregularities greater than 10 mm in 4.5 m.
- .12 Repair areas showing checking, rippling or segregation as directed by Departmental Representative.

3.6 JOINTS

- .1 Remove surplus material from surface of previously laid strip. Do not deposit on surface of freshly laid strip.
- .2 Paint contact surfaces of existing structures such as manholes, curbs or gutters with bituminous material prior to placing adjacent pavement.
- .3 For cold joints, cut back to full depth vertical face and tack face with hot asphalt.
- .4 For longitudinal joints, overlap previously laid strip with spreader by 25 to 50 mm.

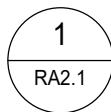
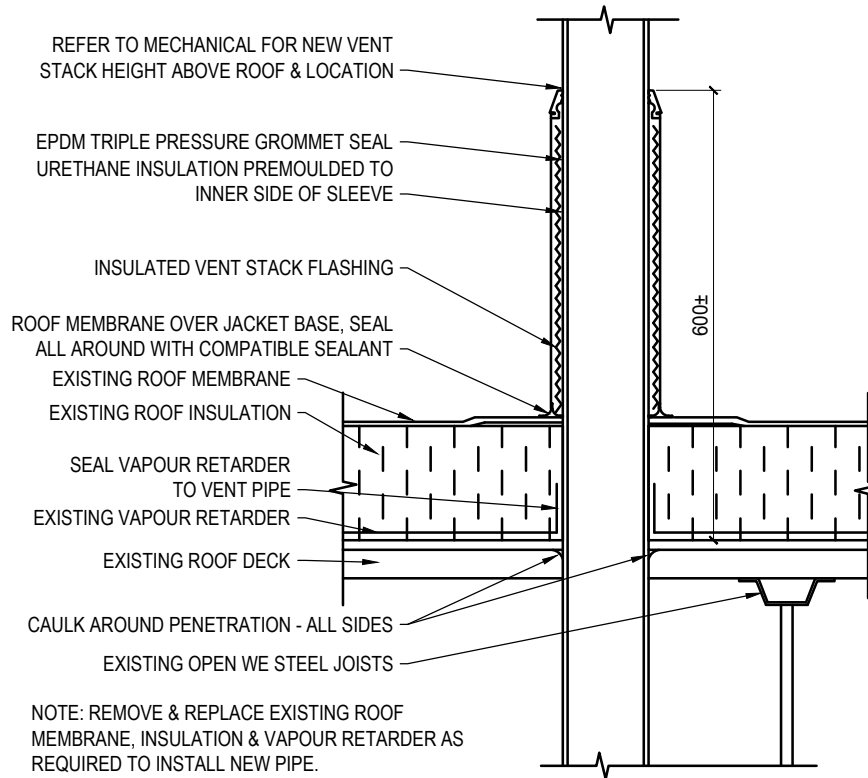
3.7 TESTING

- .1 Inspection and testing of asphalt pavement will be carried out by designated testing laboratory. Refer to Section 01 45 00 - Quality Control.
- .2 Include costs of tests in this section of work.

3.8 PROTECTION

- .1 Keep vehicular traffic off newly paved areas until paving surface temperature has cooled below 38°C. Do not permit stationary loads on pavement until 24 hours after placement.
- .2 Provide access to buildings as required. Arrange paving schedule so as not to interfere with normal use of premises.

END OF SECTION



TYPICAL ROOF PIPE PENETRATION DETAIL

SCALE: 1:10

DO NOT SCALE DRAWINGS

Project title/Titre du projet

Interior Alterations - Suite 483 Renovation & Fit Up
1091 Portage Avenue
Winnipeg, Manitoba

Drawing title/Titre du dessin

TYPICAL ROOF PIPE PENETRATION DETAIL
ADDENDUM 2

Approved by/Approuvé par

N/A

PWGSC Project Manager/Administrateur
de Projets TPSGC **Mark Arrojado**

Scale/Echelle

As Noted

Designed by/Concept par

TS

PWGSC, Architectural and Engineering Resources Manager/
Ressources Architectural et de Directeur d'Ingénierie,
TPSGC

Date/Date

2018-07-17

Drawn by/Dessiné par

JL

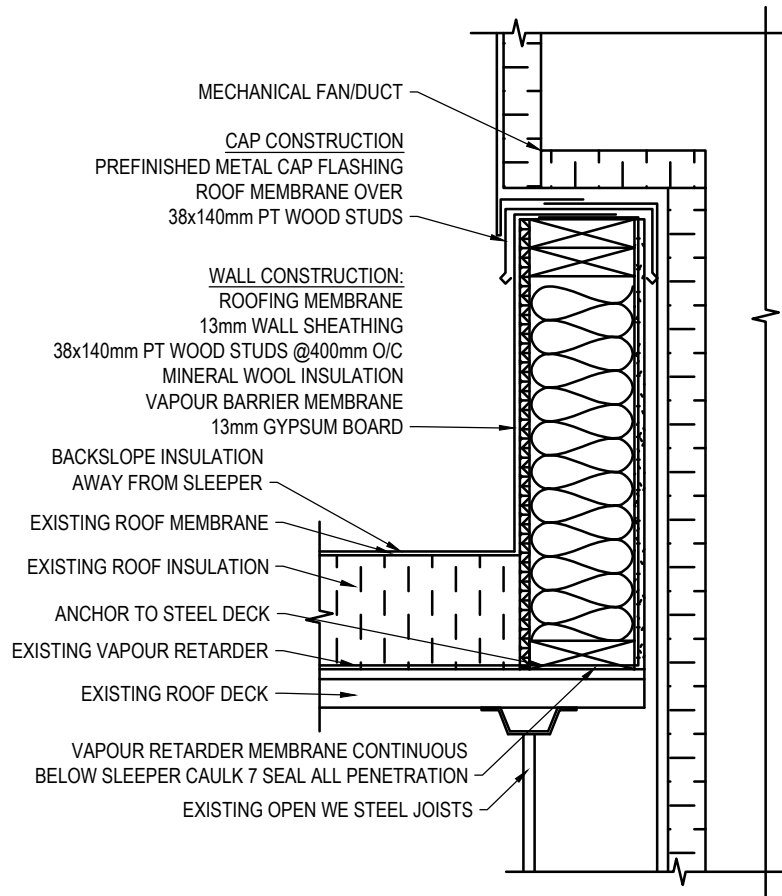
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1 of 5

Revision/Revision

RA2.1



NOTE: REMOVE & REPLACE EXISTING ROOF
MEMBRANE, INSULATION & VAPOUR RETARDER AS
REQUIRED TO INSTALL NEW VENT.



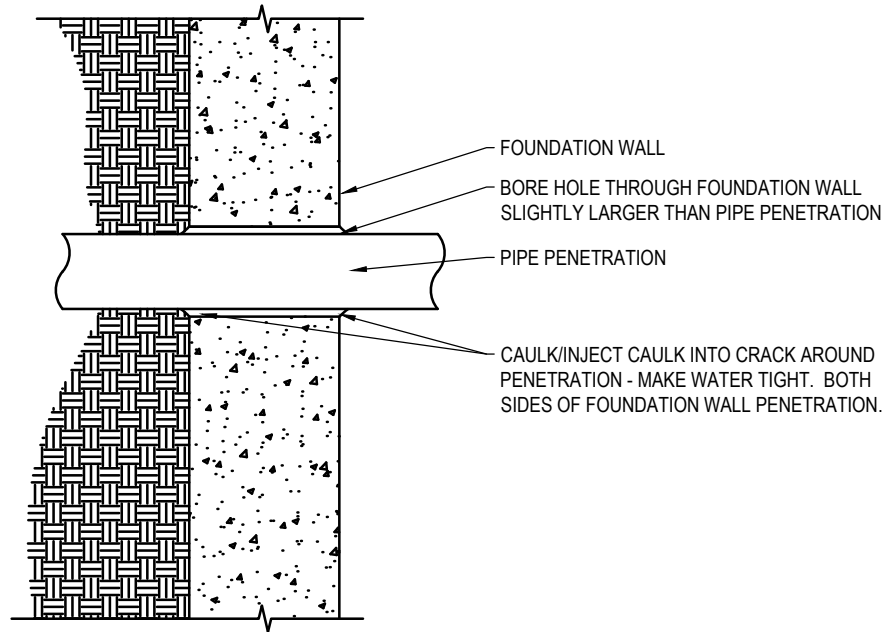
1 ROOF DUCT PENETRATION DETAIL

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REFER TO MECHANICAL DETAIL 6/M10 FOR MORE INFORMATION

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Approved by/Approuvé par N/A	PWGSC Project Manager/Administrateur de Projets TPSGC Mark Arrojado	Scale/Echelle As Noted	
Designed by/Concept par TS	PWGSC, Architectural and Engineering Resources Manager/ Ressources Architectural et de Directeur d'Ingénierie, TPSGC	Date/Date 2018-07-17	
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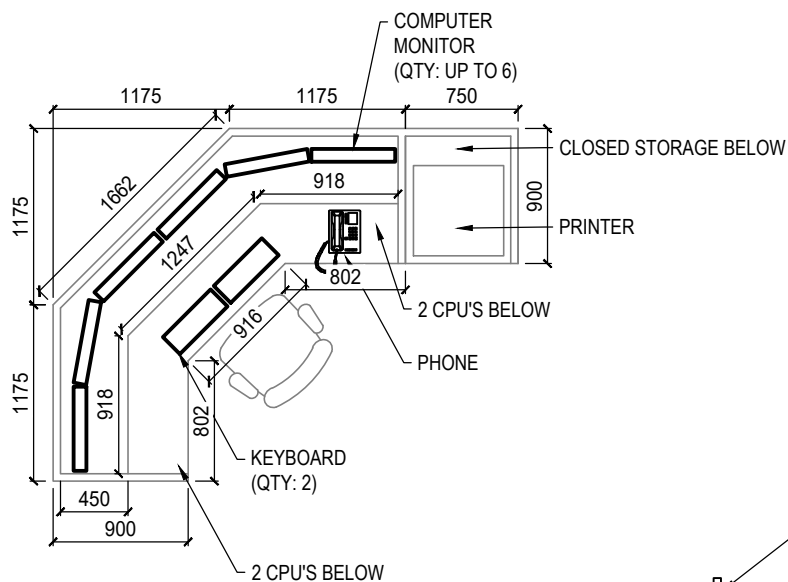


PENETRATION THRU FOUNDATION WALL

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Approved by/Approuvé par N/A	PWGSC Project Manager/Administrateur de Projets TPSGC Mark Arrojado	Scale/Echelle As Noted	
Designed by/Concept par TS	PWGSC, Architectural and Engineering Resources Manager/ Ressources Architectural et de Directeur d'Ingénierie, TPSGC	Date/Date 2018-07-17	
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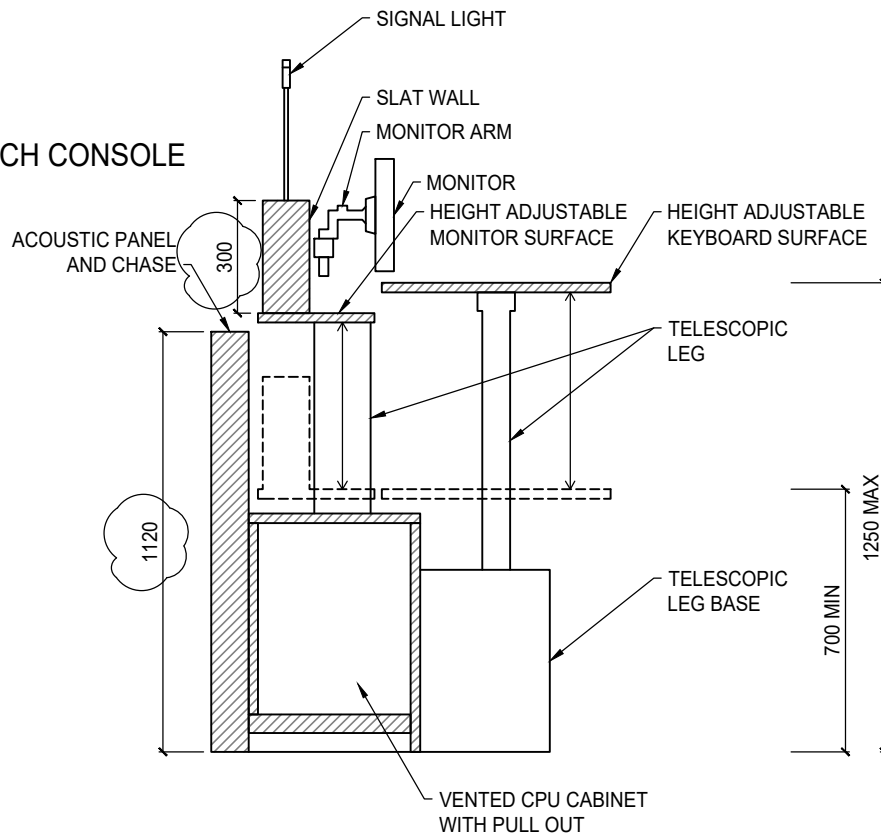


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LARGE SCALE DISPATCH CONSOLE

RA2.4

SCALE: 1:50



2

DISPATCH CONSOLE SECTION

RA2.4

SCALE: 1:20

Project title/Titre du projet

Interior Alterations - Suite 483 Renovation & Fit Up
1091 Portage Avenue
Winnipeg, Manitoba

Drawing title/Titre du dessin

DISPATCH CONSOLE
ADDENDUM 2

Approved by/Approuvé par

N/A

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Scale/Echelle

As Noted

Designed by/Concept par

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PWGSC, Architectural and Engineering Resources Manager/
Ressources Architectural et de Directeur d'Ingénierie,
TPSGC

Date/Date

2018-07-18

Drawn by/Dessiné par

JL

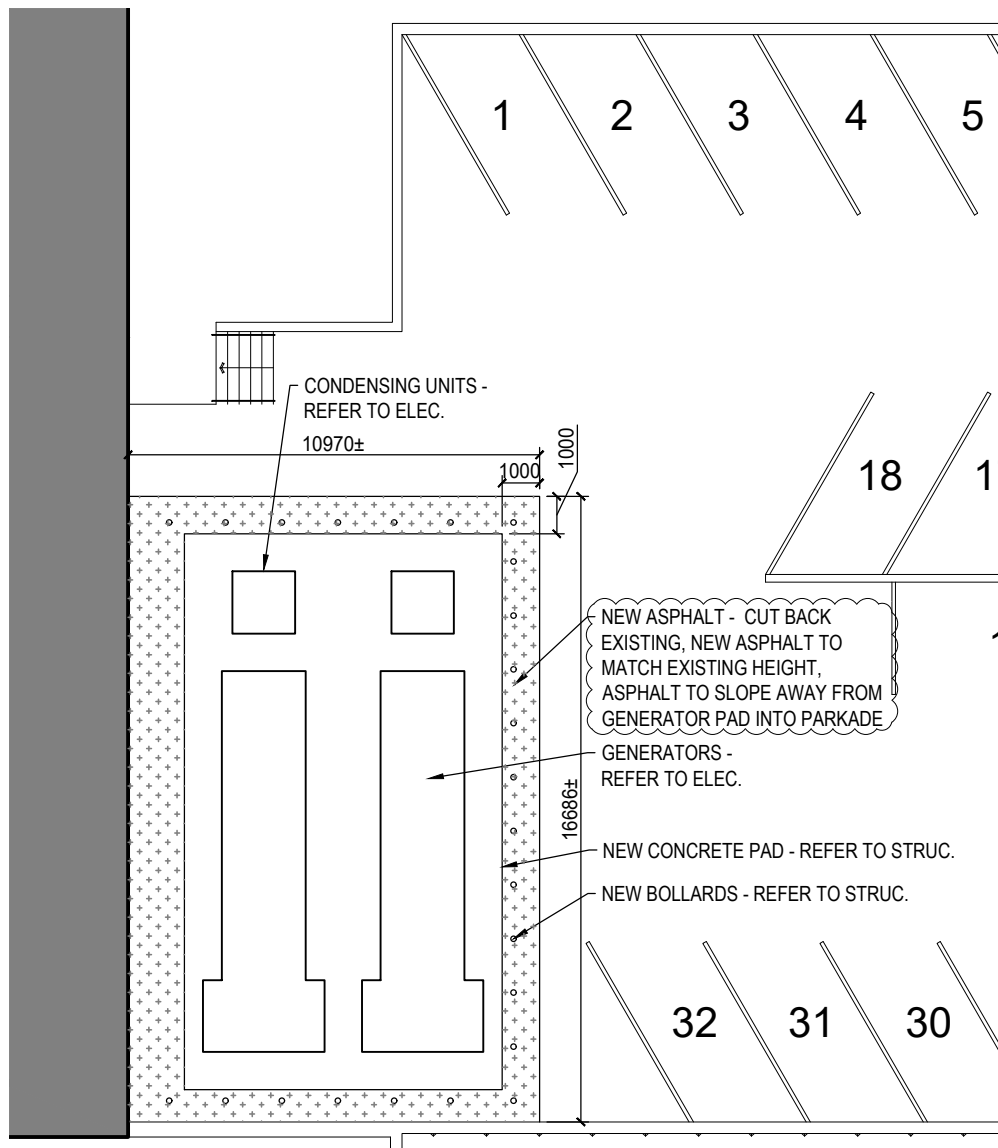
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Revision/Revision

RA2.4



1 PARTIAL PLAN - NEW GENERATORS

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Project title/Titre du projet

**Interior Alterations - Suite 483 Renovation & Fit Up
1091 Portage Avenue
Winnipeg, Manitoba**

Drawing title/Titre du dessin

**GENERATORS/ASPHALT REPAIR
ADDENDUM 2**

Approved by/Approuvé par

N/A

PWGSC Project Manager/Administrateur
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Scale/Echelle

As Noted

Designed by/Concept par

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PWGSC, Architectural and Engineering Resources Manager/
Ressources Architectural et de Directeur d'Ingénierie,
TPSGC

Date/Date

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RA2.5