

Portage and Main Underground Concourse

Decommissioning Study Report

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Structural Engineering & Building Performance
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Executive Summary

At the request of the City of Winnipeg, a feasibility study was conducted to evaluate the decommissioning options for the Portage and Main Underground Concourse (PMUC) located at the intersection of Portage Avenue and Main Street in Winnipeg, Manitoba. The primary goal of the study is to assess the advantages and risks associated with various decommissioning options and provide a Class 4 cost estimate for budgeting and planning purposes.

The study is limited to a technical exercise to determine the feasibility of decommissioning the concourse, either completely or partially. The information presented within this report including observations, findings, and recommendations are based on engineering and architectural perspectives only. Interviews with stakeholders and considerations involving adjacent property owners have not been considered, beyond the scope of this study. Impacts on stakeholders will be identified but not quantified as part of this study.

The decommissioning methodology was chosen to minimize or eliminate maintenance and prevent deterioration of the structure that could in a risk to public safety in the short term and over the long term. A significant consequence of the methodology is that recommissioning the space at some future date would either be impractical, not cost-effective, or not be feasible. The decommissioning methodology chosen is therefore considered permanent.

The partial decommissioning options for the Concourse have been evaluated through a comparative fire protection engineering analysis, which involved the use of egress simulation software and related technical calculations. The results of this analysis serve as a foundation for this review and allow for the formulation of opinions. It has been established that both of the partial options can yield an acceptable level of fire safety as benchmarked by comparable MBC acceptable solution arrangements, notwithstanding any extended travel distance discrepancies.

The full decommissioning option completely closes the underground interconnected concourse to pedestrians as indicated in Figure 7. The underground connections between the 4 buildings (200 Portage, 201 Portage, 1 Lombard, and 335 Main Street) will no longer exist. Required exiting from the lower level of each of the 4 buildings is achievable without reliance on the underground concourse, providing safe exiting for all patrons. During construction, some crosswalks will be closed temporarily while work is being completed.

Three decommissioning options were identified:

.1 **Full Closure Option**: This involves completely decommissioning the concourse with no access from any corner of the intersection.

.2 **Partial Closure Option - South Loop**: This option eliminates access from the south side, specifically from 333 and 335 Main Street.

.3 **Partial Closure Option - North Loop**: This option eliminates access from the north side, specifically from 201 Portage Avenue.

The Class 4 cost estimates for each option were $7.9 Million for the full decommissioning; $6.5 Million for the partial decommissioning – south loop closure. The cost estimate for the partial decommissioning – north loop closure was beyond the scope of this study; however, based on the scope of work is estimated to be the same or lower than the south loop closure.

It was determined that all three options are feasible, all having advantages and disadvantages. In order to determine which option is best suited for the City, careful consideration of the impacts on stakeholders, costs, and the long-term usability of the PMUC space must be made.

1. Introduction

At the request of the City of Winnipeg (City), a feasibility study was completed for the proposed decommissioning options for the Portage and Main Underground Concourse (PMUC) in Winnipeg, Manitoba. The purpose of the study is to assess the advantages and risks of decommissioning options being considered and provide a Class 4 cost estimate for the purposes of budgeting and planning.

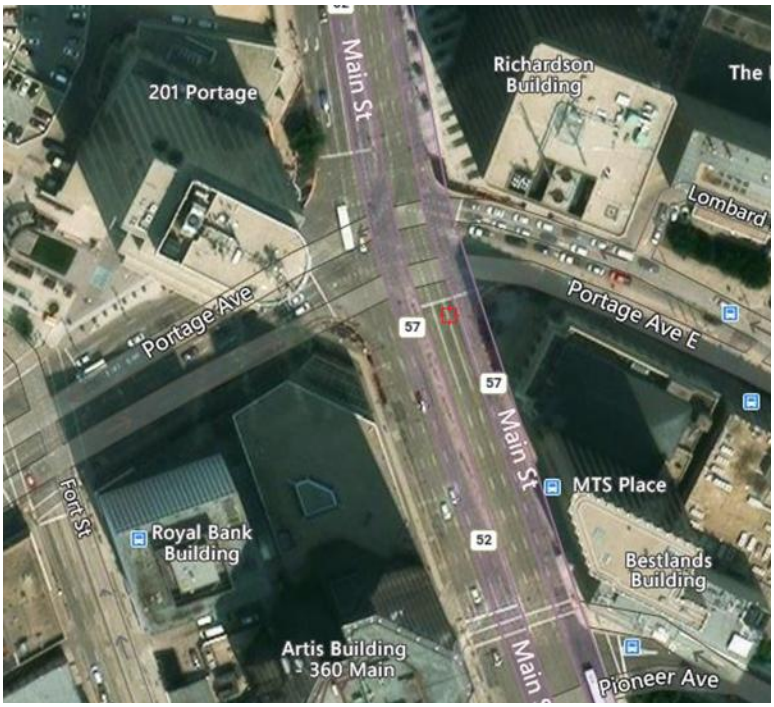


Figure 1: Site Plan of Street Level at Portage and Main

1.1 Background Information

The following description is based on a review of the existing architectural and engineering drawings. The following drawings were available for review:

- Architectural drawings A-1 through A-14 by Smith Carter Partners and dated April 21, 1976.
- Structural drawings S-1 through S-17 by Templeton Engineering Company and dated April 21, 1976.
- Mechanical drawings M1 through M9 by WL Wardrop & Associates and dated April 21, 1976.
- Electrical drawings E-1 through E-4 by Smith Carter Partners and dated April 21, 1976.
- Fire Safety Plans 1 through 5 by the City of Winnipeg dated October 2004.

- Portage + Main – Concourse Membrane Renewal by Stantec Consulting dated September 11, 2023.
- Portage and Main Pedestrian Opening – Tender #675-2024 Issued for Construction Drawings (and associated tender package)
- Architectural drawings A-1 through A-45 200 Portage Avenue by Smith Carter Partners dated 1978
- Structural drawings S-1 through S-24 200 Portage Avenue by Smith Carter Partners dated 1978
- Architectural drawings A-1 through A-80 Toronto Dominion Centre by Domco Engineering dated 1988
- Structural drawings S-1 through S-50 Toronto Dominion Centre by Domco Engineering dated 1988
- Mechanical drawings P-1 through P-21 Toronto Dominion Centre by Domco Engineering dated 1988
- Architectural drawings A-1 through A-39 Lombard Place by Associated Architects, Smith Carter Searle, Skidmore Owings & Merril dated 1967
- Mechanical drawings M-1 through M-7 Lombard Place by G.Granek & Associates dated 1967
- Structural drawings S-1 through S-38 Lombard Place by W.Milley dated 1967
- Drawings 1 through 12 Bank of Montreal by McKim Mead and White dated 1909
- Portage and Main Topographic Survey Drawings for City of Winnipeg dated 2014

1.2 Property Description

Constructed in the late 1960s and early 1970s, the Portage and Main Underground Concourse (PMUC) is located at the intersection of Portage Avenue and Main Street in Winnipeg, Manitoba (Figure 1) and serves as a pedestrian link connecting the basement levels of the four major commercial towers situated at each corner of the intersection: 1 Lombard Avenue, 201 Portage Avenue, 200 Portage Avenue; and 335 Main Street. Figure 2 shows a site plan of the intersection. The circular corridor has been known as the “donut” where the middle portion is not occupied and contains fill.

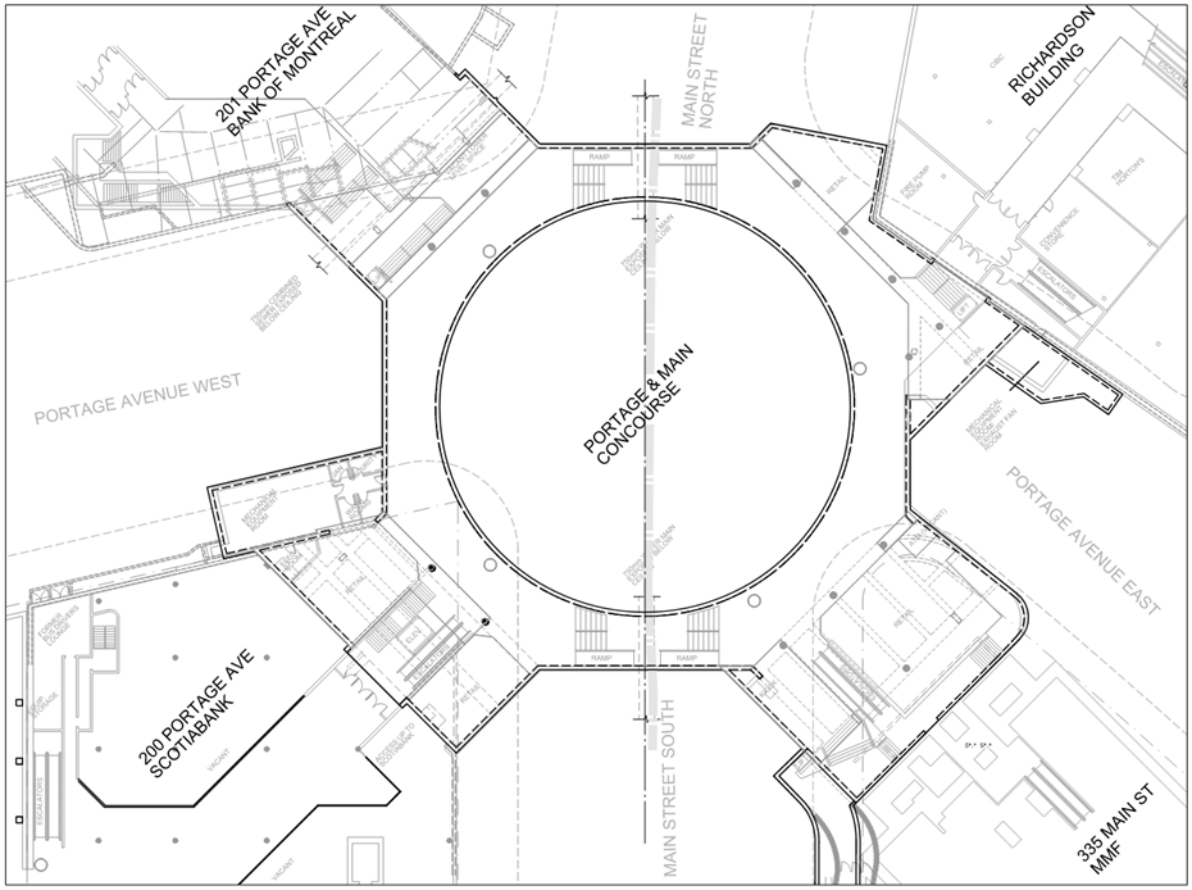


Figure 2: PMUC Site Plan

1.2.1 Structural Desciption

The PMUC is constructed of conventionally reinforced cast-in-place concrete construction. Figure 3 below shows the typical tunnel cross-section.

The tunnel roof slab consists of a 457 mm (18 inch) thick one-way spanning slab supported on the tunnel walls. The top of the roof slab (elevation 92'-0") is approximately 2.44 metres (8 feet) below finished grade, which is the roadway surface (approximately elevation 100'-0"). Reinforcement for the roof varies with location but typically includes two layers of reinforcement. The concourse roof has a total design load (live load (LL) + dead load (DL)) of 30.1 kPa (1,440 psf).

The main tunnel walls are 406 mm thick conventionally reinforced cast-in-place concrete. The walls are typically covered with architectural finishes and not visible except in non-public areas such as utility rooms, storage rooms, and within ceiling spaces. The walls are supported on a deep foundation consisting of cast-in-place belled caissons on hardpan. The typical caisson supporting the tunnel walls is 762 mm diameter with a 1778 mm bell.

The concourse floor slab is approximately 6.4 metres (21 feet) below finished grade (elevation 79'-0") with localized 762 mm depressions in the slab at the top (north) and bottom (south) of the concourse to accommodate the existing sewer line runs north-south along Main Street and through the concourse. The floor slab consists of a 125 mm thick concrete slab supported on either 38 mm or 76 mm metal deck which was used as a stay in place form. The slabs typically span between the exterior foundation walls and 457 mm x 457 mm concrete beam that runs along the centreline of the tunnel and is supported by 457 mm straight-shaft end bearing piles to hardpan. Reinforcing for the slab consists of #5 bars at 406 mm on-centre bottom and #5 bars at 305 mm on-centre top over supports.

A crawlspace is provided throughout the concourse area. A crawlspace is located below the concourse floor slab. Access to the crawlspace is provided by way of four access hatches within the floor slab.

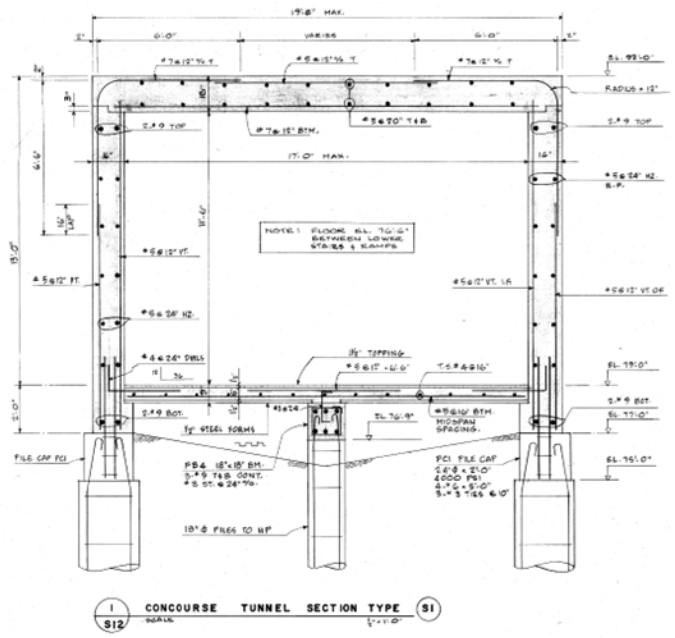


Figure 3: Tunnel Cross-Section

1.2.2 Architectural Description

The interior of the underground concourse incorporates various changes in level which require a combination of stairs, ramps, lifts, and escalators to accommodate pedestrians entering from the four connected properties.

The inner wall of the circular walkway incorporates a massive concrete artwork covering, created by the late Winnipeg artist, Bruce Head.

1.2.3 Mechanical Description

The existing concourse is fit with two main mechanical rooms that have direct access to grade through shafts or service-ways. The Southwest mechanical houses the 100% outdoor air handler as well as the main water service entrance, chiller and fire protections services. The Northeast mechanical rooms houses the main exhaust system and ancillary sump pump

and pits. The main concourse mechanical services enter the building off Portage Avenue, directly into the Southwest mechanical room.

Ventilation air is brought into the concourse near the 220 Portage Building and circulated through a pressurized plenum for the circular part of the concourse. Separate branch ducting serves the retail units and separated spaces. An exhaust fan is also attached to the plenum and has ducted sections to separated spaces causing directional airflow through the concourse.

The water service enters the facility and is distributed to retail and washroom spaces. Sanitary services are run in the crawlspace back to a sewage pit which is pumped out to the sanitary main in both mechanical rooms.

The facility is sprinklered throughout on a single sprinkler zone.

1.2.4 Electrical Description

The main electrical distribution in concourse is located on the west mechanical room which feeds sub-distribution panels in the adjacent electrical room and in the east mechanical room. In addition to lighting and receptacles, the main electrical loads in the concourse are heating and ventilation equipment, escalators, elevator and lifts.

Lighting fixtures within concourse incorporates a mix of fluorescent and LED sources with battery banks and remote heads for backup emergency egress lighting.

The concourse is equipped with a single-stage fire alarm system which was recently upgraded as part of an above-grade renovation project and a CCTV system. Main incoming telecom demarcation are located in security room near the west mechanical room and a closet near the east mechanical room. Wireless access points and booster antennas were observed within the main concourse area.

Emergency panel E-100 located in the electrical room provides power to lighting fixtures, CCTV system, sewage pumps and exit signs in the concourse. Emergency backup is from a diesel generator no longer owned by the City of Winnipeg. The generator is located in 360 Main St. parkade. An agreement between current owner of generator and City of Winnipeg is in place to maintain service to the emergency panel.

1.2.5 Civil Description

There are multiple existing utilities that go through the Portage and Main intersection. Shallow utilities located above the concourse roof include traffic signals, streetlights, power and communications. A 1950mm wastewater sewer main, runs north-south along the northbound lanes of Main Street beneath the concourse. A 750mm diameter wastewater sewer line passes through the concourse parallel to main street and a second is located underneath the concourse roof at 201 Portage Avenue.

Several watermains are located directly above the concourse roof and are anchored to the concrete.

1.2.6 Significant Renovations

After the construction of the concourse, the TD Canada trust building was built in 1988. Part of the work included renovations to the northwest corner of the concourse including relocation of a stairwell and modification to the concourse framing. This information was obtained from drawings from Domco Engineering Drawings dated March 1988.

For the civil components, information gathered was based heavily on the Pedestrian Opening project (City Tender No. 675-2024) which was under design in 2024 with construction ongoing through June 2025. Base plan information was generated from these project drawings, and knowledge of site conditions and underground utility information obtained during design and observed during construction was instrumental in scoping the abandonment process. City-supplied Land-Based Information System (LBIS) and record drawings, as well as GIS information obtained from the MyUtilityInfo website was used to evaluate sewer and water lines that may conflict with abandonment processes.

2. Scope of Study

The purpose of this study is to evaluate decommissioning options under consideration for the PMUC. The study included the development of preliminary drawings and outline scope of work for architectural, structural, mechanical, electrical and civil disciplines to obtain a Class 4 estimate and preliminary construction schedule for each option. The study included discussions with City personnel and considers operational and logistical constraints, durability, constructability, phasing and future maintenance.

The study is limited to a technical exercise to determine the feasibility of decommissioning the concourse, either completely or partially. The information presented within this report including observations, findings, and recommendations are based on engineering and architectural perspectives only. Interviews with stakeholders and considerations involving adjacent property owners have not been considered and are beyond the scope of this study. Impacts on stakeholders will be identified but not quantified as part of this study.

2.1 Decommissioning Options

Three decommissioning options are being considered as follows:

- Option 1 - Full Closure Option – no access to the concourse from all corners of the intersection
- Option 2 – Partial Closure Option, South Loop – no access to concourse from 333 / 335 Main Street
- Option 3 – Partial Closure Option, North Loop - no access to concourse from 201 Portage Avenue

Several options were reviewed for the extent of the partial decommissioned areas; however based on the considerations noted in Section 3.0, only two partial options were deemed to be technically feasible.

2.2 Cost Estimates

The cost estimates presented in this report have been prepared in accordance with the City of Winnipeg Cost Estimate Classification System for a Class 4 feasibility study with an accuracy of -30% to +60%. The budget estimates are prepared based on limited information with some engineering work completed and preliminary scope determination (approximately 10% design completion).

Please note that the costs presented are for construction only, and excludes taxes, contingencies, and professional fees for design and specification preparation, tendering, field reviews, and contract administration services. In addition, the estimates provided do not include soft costs related site-specific requirements such as security, protection, phasing, etc. which can affect total construction costs. For this reason, further investigation and updating of budget construction costs should be completed prior to proceeding to final design and construction. All costs are presented in 2025 dollars.

2.2.1 Assumptions

The following assumptions have been made in developing the preliminary scope of work and opinions of probable construction costs:

- The PMUC will be vacated prior to mobilization. The City will be responsible for relocations of all retailers, personnel, furniture and equipment (not part of base building) etc. including any associated costs.
- Any costs associated with arranging agreements with adjacent property owners due to overlaps in property lines are not included in this report.
- The Work will be completed under a single contract in a phased manner and proceed continuously from mobilization to total performance.
- Construction processes will be completed during normal working hours. No allowance has been included for work to be completed during evenings or weekends.
- Traffic modeling of the lane closures proposed was not undertaken. In general, lane closures are less impactful than those undertaken for the 2025 Portage and Main Pedestrian Opening project and thus have been "tested" in both summer and winter conditions. It is therefore reasonable that traffic impacts would be acceptable to the Public Works Department and public at large.
- Rehabilitation of underground infrastructure that passes above, below, and through the concourse, but is not impacted by the abandonment procedure, is not considered under the scope of this study. Due to the space-efficient abandonment method with cellular concrete, significant excavation areas are not required, thus exposure of utilities is minimized. Repairing/replacing underground infrastructure at the same time is thus not part of the cost estimates.
- The report does not include costs associated with replacing the existing waterproofing membranes to remain.
- The report does not include reviews of replacement options for the waterproofing membranes.
- Costs related to re-inspection of the decommissioned zones after construction is completed, has not been included.
- All costs are presented in 2025 dollars.
- The schedule and costs assumes a start date in 2026.
- Contingencies are not included.
- Consulting fees are not included in the cost estimates.
- The cost estimates do not include soft costs related site-specific requirements such as security, protection, phasing, etc. which can affect total construction costs.
- Only permanent disruptions to the public or the facilities were considered. Temporary interruptions to pedestrian or vehicle routes, transit routes, city service(s), etc. during construction were not reviewed.

2.3 Limitations

Our assessment is based on available project records and a limited examination of representative portions of the building under review which were easily visible, exposed and could be examined. We cannot warrant any different conditions that may exist, but which are covered by finishes, or other materials, or not accessible at the time of site visits.

The location of underground infrastructure was determined using the best available information. Pipes not visible from the concourse were not exposed to confirm their location

3. Decommissioning Considerations and Limitations

In addition to the parameters set forth in the RFP, the extents of the decommissioning were determined by several drivers which were identified and prioritized as follows:

.1 Decommissioning methodology so the structure could be permanently closed in a manner to eliminate future maintenance including replacement of the waterproofing membrane, as well as any structural or safety concerns related to an abandoned underground structure.

.2 Structural limitations and specifically the locations where new foundation walls could be constructed and how they relate to the existing buildings, sidewalks, and roads. Locations were chosen to minimize the extents of the concourse which will remain below exterior space after decommissioning and to avoid decommissioning spaces of occupied spaces, either privately or City owned.

.3 Mechanical and electrical services and impacts related to overlapping building systems with connected properties for full or partial decommissioning, and impacts on the remaining areas of the PMUC for the partial decommissioning option.

.4 Building code requirements including exiting and accessibility limitations affecting connected properties for full or partial decommissioning, and impacts on the remaining areas of the PMUC for the partial decommissioning option.

The following sections summarize the general requirements and other issues common to all decommissioning options which assisted in determining the extent of the decommissioned areas.

3.1 PMUC Decommissioning Methodology

Two options were identified for decommissioning and abandoning the PMUC, either completely or partially:

.1 Demolition of the PMUC.

.2 Retaining the structure and infilling the abandoned areas in-place with stabilized fill.

3.1.1 Option 1 – Demolition of the PMUC

Demolition of the structure would be the most invasive of the two options and is also projected to have the highest capital cost and longest construction duration. Demolition would include excavation of the road surfaces above the PMUC to expose the structure, demolition of the tunnel roof, walls (where required), and tunnel floor structure. The option would likely include retaining portions of the existing foundation walls to minimize excavation depths and abandoning the foundations in place. The existing mechanical and electrical systems, and architectural finishes would also be demolished as part of the option.

New foundation walls would be installed at connections to the existing buildings. The foundation walls would be waterproofed from the exterior prior to the excavation being backfilled with a stabilized fill. Although the excavation would be backfilled with stabilized fill there would be a potential for settlement resulting from the weight of the backfill. A geotechnical investigation would be required to determine the risks which were beyond the scope of this assessment.

Table 1: Demolition Options

Advantages	Disadvantages
Permanent solution. No maintenance, monitoring, or repairs required, once confirmation of infilling and settlement is complete. Replacement of existing waterproof membranes not required. Repair and maintenance of decommissioned structures not required.	Very disruptive. Large excavations would require substantial road closures. Longer construction duration. Higher capital cost. No access to existing connected properties. Potential for settlement of the road surface. Recommissioning is not practical.

3.1.2 Option 2 – Infilling of the PMUC

Infilling of the structure would be the least invasive of the two options and is also projected to have a lower capital cost and shorter construction duration. In this option, the structure would be decommissioned by infilling the tunnel and below-grade portions of the concourse with a stabilized fill. Unlike the demolition option, infilling could be completed within only minor surface works within the intersection. This would be completed by installing strategically placed openings through the roof structure and infilling the concourse with a stabilized fill. Like the demolition option, foundation walls would be installed at the connections to the existing buildings, and the tunnel floor structure, mechanical and electrical systems, and architectural finishes demolished. Note that his methodology has been utilized at other locations within the City.

Since the roof structure and overburden would remain, the potential for settlement of the road surface would be eliminated. Note however that settlement of the backfill within the tunnels may still occur, creating voids within the tunnel. To ensure the tunnel roof remains supported and in contact with the backfill, monitoring and periodic void filling may be required. A geotechnical investigation would be required to determine the risks which were beyond the scope of this assessment.

Table 2: Infilling Options

Advantages	Disadvantages
Permanent solution.	Some maintenance, monitoring, or repairs may be required.
Less disruptive than demolition. Excavations would be limited to strategic areas to minimize road closures and traffic disruptions.	Potential interference with future sub-surface works.
Lower capital cost.	No access to existing connected properties.
Shorter construction duration.	Recommissioning not practical.
Proven methodology. Has been used elsewhere.	Bruce Head sculpture inaccessible.

3.1.3 Summary

Of the two options, infilling was deemed to be a more advantageous solution since it minimizes disruptions to the intersection, has a lower projected capital cost, and short construction duration. And since the remaining roof structure will be supported by the underlying fill, replacement of the waterproofing membrane is not required, as well as any structural or safety concerns related to deterioration of the structure is eliminated. The infilling option was used to develop a scope of work and assess the implication of a full and partial decommissioning of the PMUC.

The waterproofing is presumably original to construction and over 40 years old. This system of waterproofing is well beyond its theoretical service-life, which is typically about 25 years. In the short term, we expect that the existing waterproofing will continue to provide adequate service for some period of time, however its performance will continue to deteriorate, and greater instances of leakage will occur over the short term and accelerate over the long term. Although localized areas of leakage will initially be a nuisance, leakage will increase over time and eventually cause deterioration of the concrete structure.

The decommissioning methodology and structural work to facilitate was chosen to minimize or eliminate maintenance and prevent deterioration of the structure that could in a risk to public safety in the short term and over the long term. A significant consequence of the methodology is that recommissioning the space would either be impractical, not cost-effective, or not be feasible. The decommissioning methodology chosen is therefore considered permanent.

3.2 Structural Considerations

The structural implications of either the full or partial decommissioning of the PMUC is limited demolition of existing structural components including the concourse floor structure, installation of new foundation walls to isolate the abandoned sections of the concourse from the connected buildings, and installation of openings through the roof structure to facilitate construction activities and infilling of the concourse.

The concourse floor is constructed of 125 mm (5 inch) thick conventionally reinforced concrete slab over a crawlspace. Records indicate that the crawlspace floor is unfinished. The slab is supported on

the perimeter tunnel walls and concrete beam running down the centre of the concourse (see Figure 3).

The floor structure and beam must be demolished to enable complete filling of the tunnel. The floor slab serves as a horizontal strut, offering lateral support for the tunnel walls and preventing inward movement due to soil pressures. Temporary shoring or sequential filling of the concourse will be necessary to maintain wall support during demolition and infilling.

The location of the foundation walls was a primary driver in establishing the extents of the decommissioned area. While the property lines were considered when choosing the location of the walls, it was only considered where installation was practical with respect to the existing structure. Wherever possible, the location of new foundation walls was chosen to coincide with foundation walls of the connected buildings, and minimize structural modifications, including the installation of new piles within an interior space which can be costly and challenging. Limiting the areas of occupied space remaining beyond the footprint of the connected buildings and below sidewalks and roadways was also a priority to minimize future maintenance costs including replacement of the waterproofing membrane. It is important to note that there may be additional costs, mainly non-construction related, that result due to the location of the walls. These costs are not quantified and beyond the scope of this report but may be reduced if alternate locations are considered.

Although it is our understanding that the City of Winnipeg does not have a formal policy as it relates to abandoned underground structures, in discussions with the City of Winnipeg Public Works Department, it is recommended that structures be demolished to a minimum of 1.2 metres below road surface. Any structures below public rights of way within this depth that are scheduled to be decommissioned will be demolished and not reinstated. The concourse roof is approximately 2.44 metres (8 feet) below the road surface and will remain apart from areas required for infilling and access during construction. Any perimeter walls surrounding the concourse will also remain. This includes the interior circular wall with art sculpted by Bruce Head.

Infilling of the concourse will be completed using a stabilized fill, such as cellular concrete. According to the American Concrete Institute (ACI), cellular concrete is a mixture of cement, water, and preformed foam that provides high proportion of stable air voids can be induced into the mixture and produce a cellular or porous solid upon curing. Cellular concrete has a density of about 1/3 that of conventional concrete which will ease placement and filling of the concourse.

The relative light weight of cellular concrete, which has a density less than water, will also reduce the load on the sub-grade, thereby reducing the magnitude of settlement expected from loading the sub-grade. Notwithstanding, some settlement is expected, and it is anticipated that infilling would be completed in stages, possibly over multiple years, to allow settlement to occur and prevent voids forming below the roof slab. The openings created through the roof for infilling would therefore be retained for future monitoring and additional infilling if required. Although an excessive amount of settlement is not anticipated, a geotechnical engineer was not retained for this study to confirm.

By infilling the concourse and eliminating any voids, loads from overburden, vehicles, and pedestrians will be transferred through the existing roof structure, fill, and into the sub-grade; eliminating any risk associated with deterioration of the structure. As a result, decommissioned areas will not require monitoring or maintenance.

As part of the Portage and Main Pedestrian Opening Project, some areas over the concourse roof footprint and generally within the required demolition depth recommended by City of Winnipeg Public

Works were exposed. These locations are generally between the road and building face within the plazas of each property. The scope of work included removal of the existing membrane, completing concrete required concrete repairs and installation of a new hot applied waterproofing system, insulation and drainage board. The new waterproofing was tied into the existing wherever possible. This work was considered in determining the extent of decommissioning considering that maintenance could be prolonged.

For areas designated to remain as part of a partial decommissioning option, monitoring of the structure will be required and replacement of the membrane will eventually be required. Monitoring would include regular visual inspections of exposed areas of the structure for evidence of cracking, leakage, and/or delamination due to corrosion of the embedded reinforcing steel. Physical testing, such as hammer soundings, of the exposed areas of the structure would also be completed at regular intervals. Core sampling and testing, such as chloride value and carbonation, could also be incorporated into the monitoring program to establish future potential for deterioration. To establish the condition of the existing membrane and provide an estimate of remaining service-life, the existing waterproofing should be reviewed at access locations.

3.2.1 Waterproofing

In either a full, or partial decommissioning, there will be areas of the concourse that remain below. Areas beneath sidewalks and roadways that will remain in service after decommissioning need regular monitoring and eventually, the waterproofing membranes will need to be replaced. The 2023 Stantec report on the membrane renewal presented two options for replacing the existing membrane; (1) a fully adhered membrane applied to the exterior surfaces of the concourse roof and walls; and (2) a fully adhered membrane applied to the exterior surface of the concourse roof and a crystalline waterproofing applied to the interior surfaces of the concourse walls. While Option 2 had the advantage of not requiring excavation of the foundation walls, it was not recommended, with Stantec citing concerns of water migrating through discontinuities between the exterior membrane and interior coating, and damage to the Bruce Head artwork.

Since the membrane is currently functioning and will continue to function for some period of time, it would be possible to deal with nuisance leakage using crack injection techniques to seal the cracks from the interior as part of an ongoing maintenance program. This involves injecting a urethane resin into the cracks which reacts with water and forms an impermeable barrier. While cost effective, this method is not 100% reliable and is not considered an alternate permanent solution compared to an adhered membrane option.

Blind-side curtain grouting may also be a viable way of delaying replacement of the membrane in aeras designated to remain. In blind-side curtain grouting applications, proprietary resin injection is used to create an impermeable barrier between the soil and the foundation wall. Although the selection of the resinous material will depend on the soil type, common materials including polyurethane and acrylic grouts. The process involves drilling injection ports through the foundation wall at regular intervals and injecting the resin into the surrounding soil to form a continuous water-resistant curtain. While limited empirical data is available regarding the long-term performance of this system, some manufacturers indicate an expected service life in the range of 10 to 20 years, subject to site-specific conditions and installation quality, which is well below that of a conventional membrane system.

While crack injection and/or blind-side curtain grouting could be used to address leakage and extend the service-life of the membrane, we do not consider it an equivalent alternate solution to a conventional membrane system or permanent repair. Notwithstanding, these options could be use as part of a maintenance program to delay replacement of the membranes until a more opportune time such as when major surface repairs are scheduled for the intersection.

3.3 Architectural Code Considerations

The following information is a summary of pertinent acceptable solution building code requirements that apply to the underground concourse and is provided to illustrate the issues that must be considered if a portion of the concourse is to be retained and would need to be considered to the extent applicable for the adjacent buildings under the full decommissioning option (e.g. dead end conditions).

For each of the options presented it is the opinion of RJ Barlett Engineering, A Division of CBCL Limited (RJBE) that code compliant paths are attainable and would involve a combination of both acceptable (prescriptive) and alternative (performance-based) solutions and/or engineering judgments. Of note, there would be the need to address any resulting dead end conditions that arise due to the elimination of existing means of egress and also the need to leverage a performance-based alternative approach specific to travel distance discrepancies for the partial closure scenarios; the presented options do not rely on the introduction of new bunkers/access to grade exits. Through an iterative series of egress modelling scenarios completed by RJBE, it has been established that the conditions presented under the partial closures can be rationalized and would achieve an acceptable level of fire safety. The approaches presented herein represent a more comprehensive review of fire and life safety conditions than what has been captured in our prior letter dated January 11, 2018. That letter was specific to the Richardson building/bunker and only considered a limited set of options in the context of MBC acceptable solutions.

At the discretion of the Authority Having Jurisdiction (AHJ), it may be necessary to rationalize the continued presence of existing nonconforming building elements that are not being materially altered by the project scope; e.g. existing rise/run, handrails, etc. and do not comply with the contemporary Manitoba Building Code (MBC) requirements. Should this arise, it has been our experience that documented engineering judgements can be developed to address such discrepancies and would build on allowances specific to alterations in existing buildings that have been established in other Canadian jurisdictions and are anticipated to be incorporated into upcoming editions of the Canadian Model Code/MBC.

3.3.1 Construction

It was confirmed in 1975 by the Winnipeg Building Commission that the underground concourse, which included retail tenancies and the presence of sprinklers, was acceptable in the context of MBC Article 3.2.3.20. but conditioned on the installation of a noncombustible separation between the tenancies and the walkway.

Any existing discrepancy related to these noncombustible concourse tenant separations are subject to the Manitoba Fire Code (MFC) and it is our understanding that no outstanding orders to comply exist.

Except for paint, the interior wall and ceiling finishes of an underground walkway are to be of noncombustible construction (MBC Article 3.1.13.9.).

Buildings connected by an underground walkway are to be separated from the walkway by a fire separation with a fire-resistance rating not less than 1 h (MBC Sentence 3.2.3.20.(2)).

An underground walkway is to be of noncombustible construction suitable for an underground location (MBC Sentence 3.2.3.20.(3)).

3.3.2 Exiting

The escalators serving 1 Lombard Bunker, the 335 Main Street Bunker and 200 Portage Ave appear to function as means of egress. It is noted that the 1965 National Building Code of Canada (1965 NBC) permitted escalators to function as exits.

Every door in a fire separation, other than doors to freight elevators, is to be equipped with a self-closing device designed to return the door to the closed position after each use (MBC Sentence 3.1.8.13.(1)).

A hold-open device is permitted to be used on a closure in a required fire separation, other than on exit stair doors and on doors for vestibules as required by MBC Article 3.3.5.7., provided the device is designed to release the closure in conformance with MBC Article 3.1.8.14. (MBC Sentence 3.1.8.14.(1)).

Hold-open devices are permitted to release upon a signal from a smoke detector connected to the fire alarm system and located as described in CAN/ULC-S524, where the device is used on (MBC Sentence 3.1.8.14.(3)):

- An exit door,
- A door in opening into a public corridor, or
- A door required to function as part of a smoke control system.

A swing-type doors in a fire separation is to be equipped with a positive latching mechanism designed to hold the door in the closed position after each use (MBC Article 3.1.8.15.).

A single means of egress is permitted for rooms and suites that are sprinklered provided the travel distance to an egress doorway is not more than 25 m, or the area of the room or suite is not more than (MBC Sentence 3.3.1.5.(1)):

- 200 m² for a Group E occupancy, and
- 300 m² for a Group D occupancy.

A dead-end corridor is permitted provided it is not more than 6 m long (MBC Sentence 3.3.1.9.(5)).

A door that opens into a corridor or other facility providing access to exit from a room or suite that is used or intended for an occupant load more than 60 is to swing in the direction of travel to the exit (MBC Sentence 3.3.1.11.(2)).

If a pair of doors is installed in a corridor that provides access to exit in both directions, the doors are to swing in opposite directions, with the door on the right hand side swinging in the direction of travel to the exit (MBC Sentence 3.3.1.11.(4)).

A door in an access to exit is to be readily openable in travelling to an exit without requiring keys, special devices or specialized knowledge of the door-opening mechanism (MBC Sentence 3.3.1.13.(2)).

Door release hardware is to comply with MBC Clause 3.8.3.8.(1)(b) and the door is to be openable with not more than one releasing operation (MBC Sentence 3.3.1.13.(3)).

Every floor area intended for occupancy is to be served by at least two exits (MBC Sentence 3.4.2.1.(1)).

If more than one exit is required from a floor area, the exits are to be located so that the travel distance to at least one exit is not more than 45 m (MBC Sentence 3.4.2.5.(1)).

The minimum aggregate required width of exits serving floor areas intended for assembly, business and personal services, and mercantile occupancies are to be determined by multiplying the occupant load of the area served by 6.1 mm per person for doorways, corridors and passageways, or 8 mm per person for a stair consisting of steps whose rise is not more than 180 mm and whose run is not less than 280 mm (MBC Sentence 3.4.3.2.(1)).

In an underground walkway the travel distance from the door of an adjacent room or space to the nearest exit is not to be more than one and a half times the least allowable travel distance to an exit for any of the adjacent occupancies (67.5 m) (MBC Sentence 3.2.3.20.(4)).

Illuminated exit signs are to be installed above or adjacent to every exit door and are to be located throughout floor areas to indicate direction of travel to exits (MBC Article 3.4.5.1.).

Each exit sign is to consist of a green pictogram and a white or lightly tinted graphical symbol meeting the colour specification referred to in ISO 3864-1 and conform to ISO 7010 for emergency exits and directional arrows (MBC Sentence 3.4.5.1.(2)).

Exit signs are required to be either internally illuminated powered by an emergency electrical power circuit, or externally illuminated by lighting powered by an emergency power circuit and be in conformance with CAN/ULC-S572 (MBC Article 3.4.5.1.).

Electromagnetic locks that do not incorporate latches, pins or other similar devices to keep the door in the closed position are permitted to be installed on exit doors provided the following are met (MBC Sentence 3.4.6.16.(5)):

- The locking device releases upon actuation of the fire alarm signal,
- The locking devices releases upon actuation of the alarm signal from the building's fire alarm system,
- The locking device releases immediately upon loss of power controlling the electromagnetic locking mechanism and its associated auxiliary controls,
- The locking device releases immediately upon actuation of a manually operated switch readily accessible only to authorized personnel,

- A force of not more than 90 N applied to the door opening hardware initiates an irreversible process that will release the locking device within 15 s and not relock until the door has been opened,
- Upon release, the locking device must be reset manually by the actuation of the switch referred to above,
- A legible sign is permanently mounted on the exit door to indicate that the locking device will release within 15 s of applying pressure to the door-opening hardware,
- A tactile information sign complying with MBC Subsection 3.8.3. is permanently mounted near the door to indicate that the locking device will release within 15 s of applying pressure to the door-opening hardware,
- The total time delay for all electromagnetic locks in any path of egress to release is not more than 15 s,
- Where a bypass switch is installed to allow testing of the fire alarm system, actuation of the switch:
    - Can prevent the release of the locking device by the fire alarm system during the test, and
    - Causes an audible and visual signal to be indicated at the fire alarm annunciator panel(s) and at the monitoring station for notification of the fire department,
- Emergency lighting is provided at each door, and
- Where installed on doors providing emergency crossover access to floor areas from exit stairs in accordance with MBC Article 3.4.6.18.,
    - The locking device is also to release immediately upon the operation of a fire alarm manual pull station located on the wall on the exit stair side not more than 600 mm from the door, and
    - A legible sign with the words “re-entry door unlocked by fire alarm” in letters at least 25 mm high with a stroke of at least 5 mm is permanently mounted on the door on the exit stair side.

Fire department access to structures, including such underground concourses, is significantly reduced with the presence of sprinkler protection. The potential elimination of access points from grade would not represent a deficiency in terms of the MBC requirements and in all instances contemplated access to any remaining concourse areas is provided by multiple pathways. This was affirmed recently with the WFPS during the Portage and Main Pedestrian project. It is acknowledged that consultation with emergency responders would be necessary to coordinate and update their response plans accordingly to reflect any alterations.

3.3.3 Fire Stopping

The continuity of a fire separation having a fire-resistance rating that abuts another fire separation, a floor, a ceiling, or a roof is to be maintained by a fire stop that conforms with the below requirement (MBC Sentence 3.1.8.3.(2)).

The fire stop required above is to have an FT rating not less than the fire-resistance rating of the abutting fire separation when subjected to the fire test method in CAN/ULC-S115 (MBC Sentence 3.1.8.3.(3)).

Except as noted in the requirement below, joints located in a horizontal plane between a floor and an exterior wall are to be sealed by a fire stop that, when subjected to the fire test method in ASTM E2307, has an F rating not less than the fire-resistance rating of the horizontal fire separation (MBC Sentence 3.1.8.3.(4)).

Joints between ceilings and walls, between floors and walls, and between walls at corners need not comply with MBC Sentences 3.1.8.3.(2) and (4) where such joints consist of gypsum board that is attached to framing members and arranged so as to restrict the passage of flame and smoke through the joints (MBC Sentence 3.1.8.3.(5)).

Penetrations through fire separations or a membrane forming part of an assembly required to have a fire-resistance rating are to be sealed with listed fire stop systems in conformance with MBC Subsection 3.1.9.

Concealed spaces are to be protected by fire blocks in conformance with MBC Subsection 3.1.11. Unless specifically designed with a fire stop, fire dampers are permitted to penetrate a fire separation or a membrane forming part of an assembly required to have a fire-resistance rating without having to meet the fire stop requirements of MBC Sentence 3.1.9.1.(1) provided the fire damper is installed in conformance with NFPA 80 (MBC Sentence 3.1.9.1.(5)).

Except as provided in MBC Sentence 3.1.9.3.(3) noted below, outlet boxes are permitted to penetrate the membrane of an assembly required to have a fire-resistance rating, provided they are sealed at the penetration by a fire stop that has an FT rating not less than the fire-resistance rating of the fire separation when subjected to the fire test method in CAN/ULC-S115 (MBC Sentence 3.1.9.3.(1)).

Combustible outlet boxes are permitted to penetrate the membrane of an assembly required to have a fire-resistance rating, provided they are sealed at the penetration by a fire stop that, when subjected to the fire test method in CAN/ULC-S115, has an FT rating not less than the fire-resistance rating for the fire separation (MBC Sentence 3.1.9.3.(2)).

Noncombustible outlet boxes that penetrate a vertical fire separation or a membrane forming part of an assembly required to have a fire-resistance rating need not conform to MBC Sentence 3.1.9.3.(1) above, provided (MBC Sentence 3.1.9.3.(3):

- They do not exceed:
    - 0.016 m2 in area, and
    - An aggregate area of 0.065 m2 in any 9.3 m2 of surface area, and
    - The annular space between the membrane and the noncombustible electrical outlet boxes does not exceed 3 mm.

Outlet boxes on opposite sides of a vertical fire separation having a fire-resistance rating are to be separated by (MBC Sentence 3.1.9.3.(4)):

- A horizontal distance of not less than 600 mm,

- A fire block conforming to MBC Article 3.1.11.7., or
- A fire stop installed on each outlet box that has an FT rating not less than the fire-resistance rating of the fire separation when subjected to the fire test method in CAN/ULC-S115.

Combustible drain, waste and vent piping is permitted to penetrate a fire separation required to have a fire-resistance rating or a membrane that forms part of an assembly required to have a fire-resistance rating, provided (MBC Sentence 3.1.9.4.(4)):

- The piping is sealed at the penetration by a fire stop that has an F rating not less than the fire-resistance rating required for the fire separation when subjected to the fire test method in CAN/ULC-S115,
- In buildings more than three storeys in building height, the piping is sealed at the penetration by a fire stop that has an F rating not less than the fire-resistance rating required for the fire separation when subjected to the fire test method in CAN/ULC-S115 with a pressure differential of 50 Pa between the exposed and unexposed sides, with the higher pressure on the exposed side, and
- The piping is not located in a vertical service space.

3.3.4 Active Fire Protection Systems

The automatic sprinkler system is to be designed, constructed, installed, and tested in accordance with NFPA 13 (MBC Article 3.2.5.12.).

The fire alarm system is to be designed and installed in accordance with CAN/ULC-S524 and verified in conformance with CAN/ULC-S537 (MBC Article 3.2.4.5.).

Fire detection is required to be provided as follows:

- Sprinkler system water flow detection devices per MBC Article 3.2.4.15.,
- Smoke detectors located in each public corridor, each exit stair, elevator machine rooms, at smoke/fire dampers and duct-type smoke detectors are to be located in air-handling systems serving more than one storey or more than one suite per MBC Articles 3.2.4.11. and 3.2.4.12., and
- Manual pull stations located adjacent to each exit, as well as the principal entrance to the building per MBC Article 3.2.4.16.

Signalling is to be provided by the following:

- Audible signal devices installed throughout (MBC Article 3.2.4.19.), and
- Visual signal devices installed throughout in addition to audible signal devices (MBC Article 3.2.4.20.).

3.3.5 Emergency Lighting

Emergency lighting with an average level of illumination of 10 lx and a minimum value not less than 1 lx is required to be provided in (MBC Article 3.2.7.3.):

- Exits,
- Principal routes providing access to exits in open floor areas,
- Service rooms,
- Public corridors,
- Corridors used by the public, and
- Assembly spaces having an occupant load of more than 60 persons.

An emergency power supply to maintain emergency lighting is to be provided from a power source such as batteries or generators that will continue to supply power in the event that the regular power supply to the building is interrupted. The emergency power supply is to be capable of maintaining the minimum illumination levels for a period of not less than 30 min (MBC Sentence 3.2.7.4.(1)).

Fire alarm systems are to be provided with an emergency power supply from a generator, batteries, or a combination thereof (MBC Sentences 3.2.7.8.(1) and (2)). Emergency power for the building's fire alarm system is to be capable of providing supervisory power for a period of not less than 24 h immediately followed by 30 min under full load operation (MBC Sentence 3.2.7.8.(3)).

3.4 Mechanical Considerations

The concourse is serviced mechanically in the southwest corner and the northeast corner through pathways to grade. These two points form the key elements in the decommissioning of the concourse. Under a partial decommissioning scope these points need to remain in service while under a full decommissioning they can be removed. The amount of ventilation and air required within the concourse would be reduced under a partial decommissioning option, while none is required in a full decomissioning option. The mechanical rooms need to have the water, sanitary and air handling systems maintained to support the partial decommissioning. Given the age of the equipment, replacement to new systems is proposed as part of the partial decommissioning scope. The corresponding crawlspace will have to remain operational with all the piping and sump pits.

The full decommissioning has no requirements for the concourse mechanical systems to remain and therefore they would be removed in their entirety. The intention of the structural decommissioning is to remove the entire floor for the concourse to allow a full height infill from upper structure to lower. As a result, any sump pumps within the decommissioning area will need to be removed along with all controls and piping.

Decommissioning of any equipment, piping and systems need to include removal from the concourse . It is proposed to use a surface access point to facilitate removal from the facility.

3.5 Electrical Considerations

Major electrical equipment that serves the concourse are located in service spaces west of concourse loop and in the mechanical room east of concourse loop. All electrical systems and equipment can be removed under full decommisioning. Lighting, emergency lighting, exit signage, fire alarm system and heating equipment are to be maintained in the remaining accessible areas around the at-grade entrances at 201 Portage and 1 Lombard. These devices will have to be reconnected to electrical systems at 201 Portage and 1 Lombard.

Existing electrical systems at concourse are to remain in both partial decommisioning options.

To support decommissioning scope and infilling, temporary power and lighting will be required.

3.6 Civil Considerations

The mandate to minimize cost and disruption to the public was paramount in developing the methodology for the civil works. In general, civil works refers to:

- Sewer, water, and land drainage pipe alterations
- Shallow utility alterations, including traffic signals, streetlights, and power and communication ducts
- Excavation to concourse roof and installation of manhole risers for access holes. Restoration of roadway/sidewalk.
- Excavation/shoring to concourse roof for service hole. Backfill to grade and restoration of roadway/sidewalk.
- Traffic staging

The proposed abandonment methodology is generally very space efficient. It avoids the need for vehicular access ramps, which would impact multiple utilities, require lanes to be closed, and generally affect traffic more significantly.

Impact to sewer and water lines is limited using this method. No realignments or renewals are required with the abandonment method and strategic location selection for the access holes and service hole location. It was not that the City's Water and Waste Department (WWD) may opt to complete some preventative maintenance in advance of any decommissioning activities. This work would be at the discretion of the WWD and would occur independent of the decommissioning works.

A 1950mm diameter wastewater sewer main, which runs north-south along the northbound lanes of Main Street, was flagged for review as it passes beneath the concourse. Based on review of record drawings, elevations, and visual inspection within the crawl space, the 1950mm diameter sewer should be able to remain in its current position immediately below the crawlspace without disruption.

Special precautions should be taken to prevent any damage to this sewer during floor demolition activities.

There is a 750 mm diameter wastewater sewer line that passes through the concourse airspace. It is parallel with Main Street, and roughly down the centreline of the road. It is visible to the public in the concourse and there are stairs to allow people to clear under the pipe at both the north and south sides.

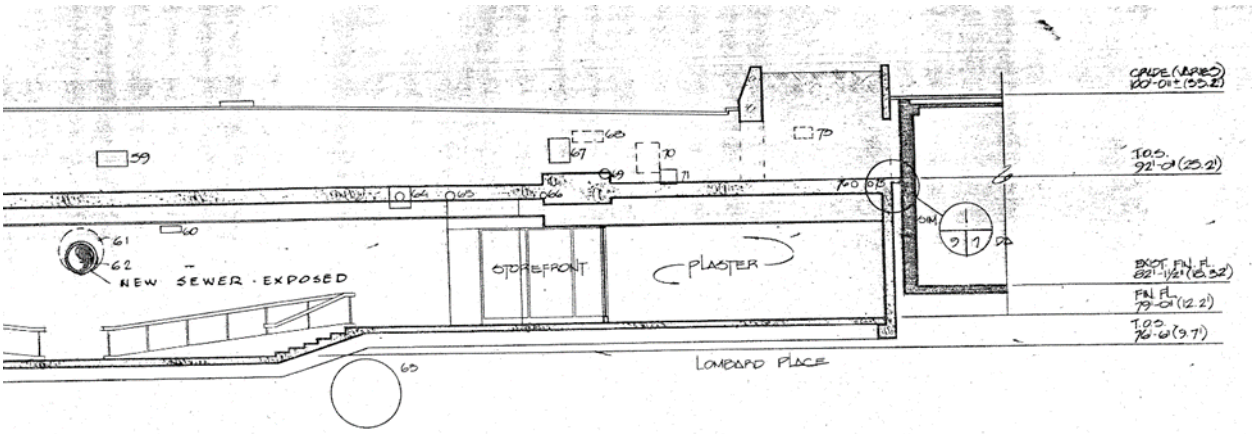


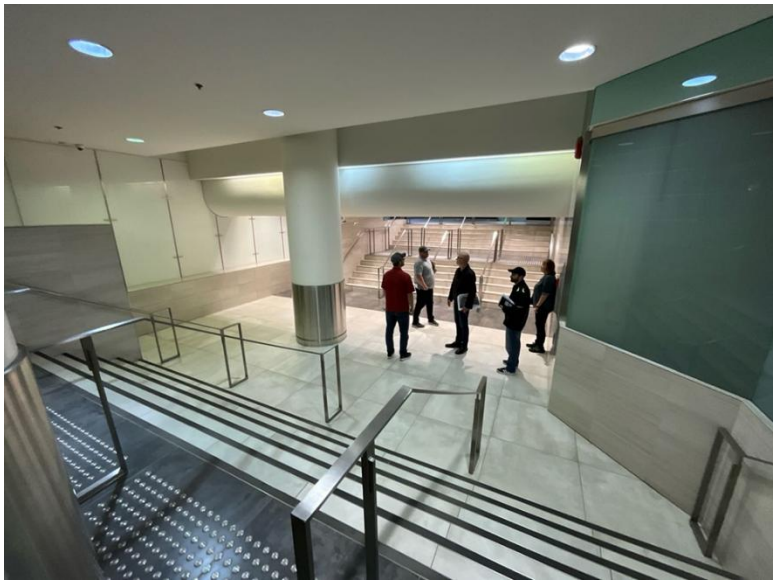
Figure 4: Section Through the North Side of the concourse from 1976 Construction Drawings. 750 mm WWS indicated as #62 with encasement #61. 1950 WWS indicated as #65 slightly below crawlspace (Courtesy: City of Winnipeg)

The 750mm sewer line should be preserved in its casement throughout the abandonment process and no further permanent actions should be required. The encasement pipe will continue to provide structural support to the sewer pipe as the cellular concrete proposed for infilling used to fill the concourse space is not expected to provide support required for a standard concrete gravity sewer pipe. Precautions should be taken to prevent any damage to this sewer during concourse demolition activities.



Photograph 1: 750 mm wastewater sewer through concourse during original construction in 1977 (Courtesy: City of Winnipeg)

Another 750 mm diameter wastewater sewer line traverses the concourse airspace in the northwest corner of the intersection. It runs through the concourse connection to 201 Portage Avenue, positioned at an angle from southwest to northeast, perpendicular to the hallway. To accommodate this, there are 12 stairs allowing people to pass beneath the pipe as seen in Photograph 2.



Photograph 2: 750 combined sewer pipe traversing through the concourse airspace

Under both the full closure and north loop partial closure options, the pipe will pass through the proposed wall which is to be built to isolate the abandoned areas of the concourse. In any case, the

wastewater sewer pipe shall remain in place and within the casement pipe for support and protection. Necessary precautions shall be taken in order to prevent any damage to the pipe during construction activities.

Several watermains cross over the concourse footprint, however all of them run above the concourse roof and therefore are not in conflict with any abandonment works inside the concourse cavity. The elevations of the watermain pipes were adjusted to sit atop the concourse roof slab and the pipes were anchored into the concrete, as illustrated in Photograph 3. Precautions will have to be taken to protect the watermains if the roof slab to be demolished.

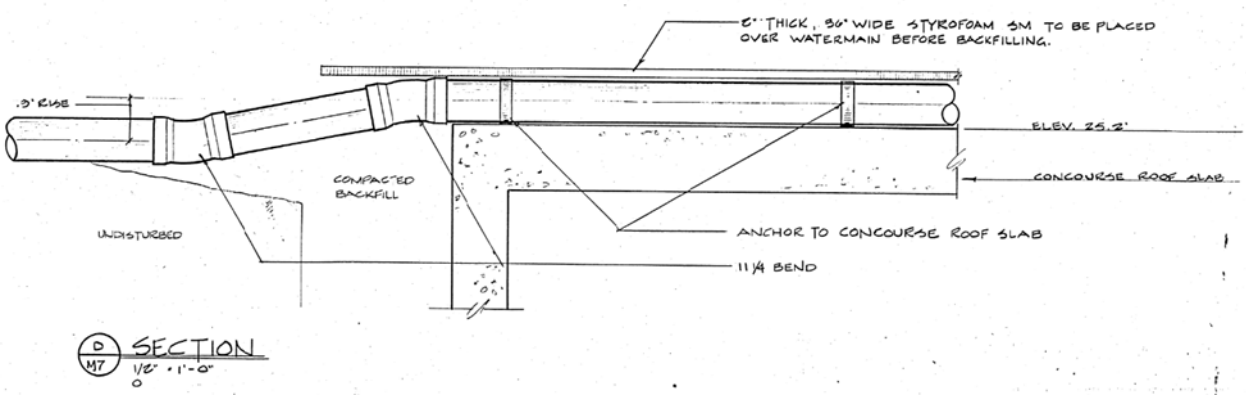
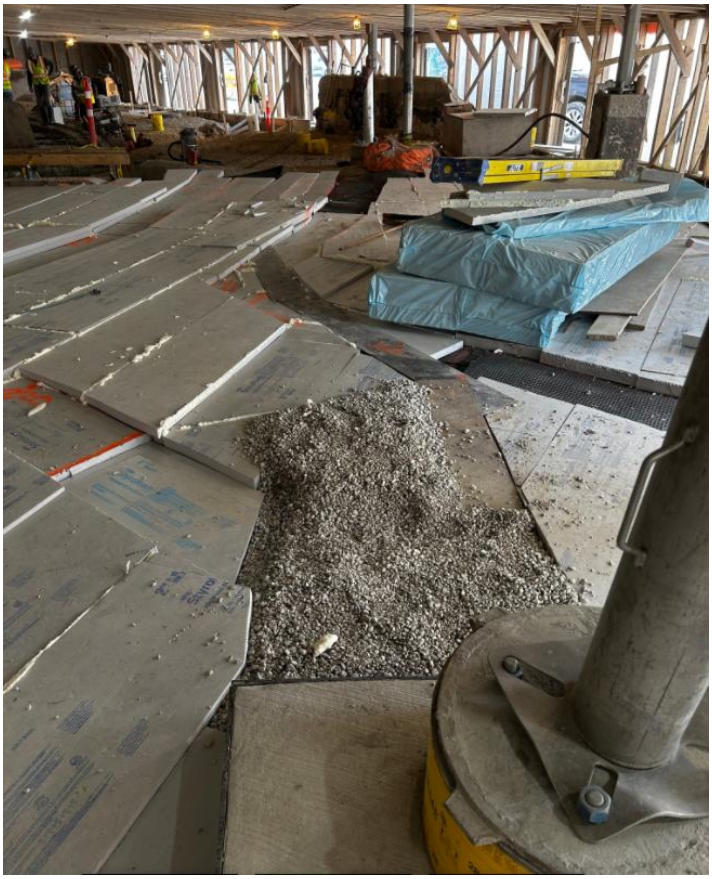


Figure 5: Watermain installation detail showing the pipe anchors into the concourse roof slab.

Similar to sewer and water infrastructure, the proposed abandonment methodology has limited impact on shallow utilities such as communication lines, traffic signal and street light power cables, and natural gas lines. Localized relocations are required to accommodate some access hole and lift locations, and this has been accounted for in the cost estimate. In general, shallow utilities are located a few feet above the roof of the central circular concourse, but are sometimes sitting directly on the roof in shallower locations. These shallower locations tend to occur in the sidewalk and private plaza areas adjacent to the public right-of-way. Regardless, they are generally not impacted by the abandonment methodology.



Photograph 3: Typical shallow utility protection with steel plate leading from traffic signal pole in foreground. This was installed at 201 Portage (NW corner) sidewalk as part of the 2025 Portage & Main Pedestrian Opening project. Concrete sidewalk was placed immediately overtop of the steel protection plate and adjacent roof insulation.

Access holes and the lift locations were strategically located to avoid impact to both shallow and deep utilities. Structural Drawings and Civil Drawings C-01 and C-02 illustrate the locations for each option in reference to all known underground infrastructure. Soft-digging and careful excavation will be required to install the round manhole trench shields to facilitate the construction of the access holes.

The scope of work included for the installation of the access holes are as follows:

- Removal of existing pavement,
- Excavation of sub-grade from the road/ sidewalk surface to the concourse roof
- Saw-cutting and partial demolition of the concourse structural roof create a minimum 1200mm diameter opening for the access holes,
- Installation of pre-cast standard 1200mm diameter concrete risers from the roof opening to the surface, and
- Installation of a standard 790mm diameter manhole frame and cover

Shallow utilities will be exposed in these limited excavation areas and can be supported and/or protected using typical construction practices. Some temporary or permanent relocations are required and are described in the options below.

Access holes will be constructed by installing round manhole trench shields to the concourse roof as seen in Photograph 3. The roof will be cut open to the inside diameter of a typical manhole riser. Risers (without a manhole base) will be placed on the roof and constructed to the road/sidewalk surface. Stabilized fill would be placed around the risers upon removal of the trench shields. During cellular concrete installation, the risers could remain uncovered for easier access, ventilation, and observation. Their purpose is to ensure the cellular concrete has been able to flow to the extremities of the concourse and is topped to the underside of the concourse ceiling.



Photograph 3: Sample round manhole trench shield typically used during manhole installations (Courtesy: National Trench Safety website)

An example of a manhole type structure that was supported by the concourse roof since the original construction in 1977 is shown in Photograph 4. This was actually a catchbasin in the southeast corner of the intersection that was abandoned during the 2025 Pedestrian Opening project.



Photograph 4: Former catchbasin/manhole supported by concourse roof.

After the concourse is filled with cellular concrete, the risers would be topped with a reducer, manhole frame and cover, and the localized area restored with cement-stabilized backfill material, pavement and/or sidewalk. They can then be opened and the height of the cellular concrete monitored in the future.

Following the completion of all work related to the installation of access holes and the use of service holes, the affected areas shall be restored in accordance with the following scope of work:

- Excavations associated with access holes shall be backfilled using cement-stabilized backfill material,
- Full-depth repairs of plain-dowelled concrete (230 mm thickness) shall be carried out, followed by the application of an asphalt overlay with an average thickness of 75 mm.
- Sidewalks shall be reconstructed as required, including standard sidewalk sections (100 mm thickness) and reinforced sidewalk sections (125 and 150 mm thickness).
- Curbs, curb ramps, bullnoses, and other miscellaneous concrete elements shall be installed as necessary.
- Existing interlocking paving stones shall be regraded and reinstalled where applicable.

All throughout construction, there will be impacts to pedestrians on the sidewalks, as well as vehicle movements in the road lanes. New for 2025 above ground crossings of the intersection will become the only way to cross the street in the full closure option, and in some respects with the partial closure options as well. Regarding pedestrian movements, the study team is aware that there is a planned

wheelchair ramp to be constructed in 2026 at 335 Main Street (MMF Heritage Centre). As this ramp impacts the plaza area, it is considered in the study.

Staging drawings shown in Drawings – C-03 to C-06 indicate which above ground crossings can remain open, considering safety setbacks from open excavations, laydown areas, and construction staging spaces.

During the decommissioning process, a mobile crane will be utilized to remove stripped materials from inside the underground concourse. This requires two lanes to be closed adjacent to the service hole. This is to accommodate the mobile crane's outriggers, truck staging, and to provide a laydown area for the stripped materials.

In addition to this, Cematrix, the cellular concrete producer, were contacted to determine a typical dry mix portable batch plant footprint. This is 50m long by 7m wide and thus two lanes are also required, adjacent to the service hole. Water would be supplied to the plant via the nearest fire hydrant.

In summary, two lanes adjacent to the service hole will be closed for the duration of the decommissioning process; this is to accommodate the mobile crane used during the concourse stripping stage, and to accommodate the dry mix portable batch plant to produce cellular concrete during the abandonment stage. The location of these two lanes will vary per closure type and can be found in Drawings C-03 to C-06.

Service holes were located on sidewalks where possible due to their larger footprint and need to facilitate equipment, personnel, and materials going in and out on a regular basis. In addition to the batch plant lane closures, additional lanes on the cross street would need to be closed to stage material drop-offs and provide worksite locations that do not block sidewalks.

Access holes were strategically sized and located to fit within one traffic lane where possible. These can usually be constructed in one lane if it is adjacent to a sidewalk, or in two lanes if it is in the middle of the road. Future monitoring inspections can generally be done by closing only one lane.

Lane closures and pedestrian accessibility would be managed in compliance with the Manual of Temporary Traffic Control on City Streets, as outlined by the City of Winnipeg's Public Works Department.

Note that computer simulations of the traffic/pedestrian lane closures were not undertaken as part of this study. However, lane closures are generally less extensive than those that were implemented during the 2025 Pedestrian Opening project, thus they are likely to be acceptable to the Public Works Department and the public at large, as long as nearby lane and street closures are coordinated as per typical practice.

3.7 Other Considerations

3.7.1 Transit

At the time of the compilation of this report, Winnipeg Transit was about to undertake a major change with the rollout of their Primary Transit Network. This will increase the amount of service directly on both Portage Avenue and Main Street. As noted in 2.2.1, traffic (including Transit) modelling was not within the project scope. Review of transit routes were beyond the

scope of this report. However, no long term changes to transit routes or stops will be required to facilitate the decommissioning of the PMUC. Short term delays, in parallel with general traffic delays, will be experienced due to the decommissioning construction.

3.7.2 Bruce Head Artwork

The interior wall of the circular corridor is constructed of 400mm thick concrete. The interior face was formed with built up plywood to produce artistic panels completed by Bruce Head. Preserving the art was considered in the decommissioning options. It was determined that the interior walls cannot be removed and relocated from a structural perspective or would require substantial excavation of the intersection as well as partial demolition of the concourse to access the walls, cut, and remove in sections, which was deemed impractical or not consistent with the intent of the project mandate.

As an alternative to salvaging the existing artwork, scanning the artwork using a high-resolution 3D laser scanning technology would is feasible to record existing conditions. Information obtained from Trimble, a manufacturer of 3D laser scanning equipment, publishes an accuracy of 0.3 mm at 20 metres, which should be sufficient to accurately record the artwork. Once recorded, the artwork could be replicated either virtually, or physically. The former, could be used to create a virtual walk-through that could be displayed online, or within a gallery setting. The data could also be used to create scale replicas of the artwork using 3D printing technology.

Producing full size molds of the artwork prior to decommissioning would also be possible. The molds could then be used to create full-size replicas of the wall.

With partial decommissioning of the concourse, a portion of the artwork will remain visible for the areas still operational.

3.8 Summary

Below is a summary of considerations to arrive at the scope of decommissioning options:

- Installation of new piles within an interior space can be costly and challenging. The location of the concrete boundary walls was deemed a primary driver in establishing the extents of the decommissioning areas and determined with consideration of using existing piles and beams to support them; thus, the installation of new piles will not be required.
- Limiting the areas of waterproofing the concourse roof beyond the decommissioning zones were also considered as this would result in additional maintenance costs.
- The concourse is served by a 100% outdoor air unit. The unit is installed in the mechanical room in the southwest corner of the concourse. This unit supplies air to the entire concourse and all the tenant spaces. In the opposite corner (northeast) there is an exhaust fan that draws 100% of the air and exhausts it through the bunker at grade on 1 Lombard Plaza. These access points need to remain operational if the concourse is partially closed as well as a continuous path from one mechanical room to the other seeing as the concourse ceiling operates as the supply air duct. The equipment size would change with the reduced area of the concourse and age of the existing equipment.

- Through an iterative series of egress models that would serve to technically substantiate a performance- based alternative solution approach for travel distance discrepancies, it was determined that, from a life safety perspective, there is a degree of flexibility around the extents of potential partial closures and generally would dictate that at least two adjacent bunkers/buildings would need to remain accessible.
- As has been noted, the extent of partial closures will need to respect the MBC requirements around dead end corridor conditions, means of egress from any remaining tenancies and their location of egress doors/common path of travel from suites.

4. Decommissioning Options

The following sections describe three feasible options of Decommissioning all of part of the underground concourse at Portage Avenue and Main Street.

4.1 Option 1 – Full Decommissioning

This option is based on completely decommissioning the concourse at Portage and Main. No access will be permitted to the underground area beyond the buildings footprint unless otherwise indicated in the Drawings. These areas include 201 Portage near the stairwell and 200 Portage adjacent to the existing escalators. Concrete walls will serve as boundaries of the decommissioned area. The concourse will be filled using lightweight cellular concrete. Certain areas within the concourse would remain accessible from the private buildings at some corners where infrastructure was shared. This option considers the closure of the corridor at 333 Main Street which may not be property owned by City of Winnipeg but cannot stay unoccupied for life safety concerns. Arrangements with the property owner will be required by the City and is beyond the scope of this study.

To facilitate the infilling process, three (3) access holes and one (1) service hole will be constructed. The access holes will allow for inspection during the cellular concrete pumping process from the surface and will also be utilized post-construction to determine voids occurred from settlement between the underside of the concourse roof and the cellular concrete.

The following sections describe the scope of work for each discipline. Drawings showing the preliminary scope of work are provided in Appendix A.

4.1.1 Structural Scope of Work

- Demolish existing 125mm slab on metal deck throughout concourse level floor as shown on Drawings (Refer to Figure 6).
- Demolish concrete stairs and ramps within the concourse. Demolish stairs at 201 Portage as required to install new perimeter wall.
- Demolish existing concrete beams supporting slab. Any existing rubble to be remain inside decommissioned areas. Any reinforcing to be hauled off site.
- Install granular fill at perimeter beams enclosing the decommissioned zones
- Excavate existing sidewalk and roadway as required to cut opening in concourse roof. Shore excavation as required.
- Cut new openings in concourse roof for lift access and manhole access. Supply and install 400mm cast in place concrete walls at perimeter of decommissioned areas. Temporarily brace walls during infilling.
- Infill decommissioned area with cellular concrete to the underside of concourse roof. Installation of several 75mm diameter PVC slicklines for pumping material to be completed as per suppliers written specifications.
- Install new 450mm slab at access openings. Manhole openings to remain, cellular concrete to be filled to top of concourse roof.

- Demolish existing 250mm structural slab and supporting walls at 335 Main Street. It should be noted that the original structural roof and walls (1975) were demolished, replaced and waterproofed as part of the pedestrian opening project (2025).
- Install high build waterproofing membrane system, insulation and drainage tile where roof was accessed or cut. Install new waterproofing membrane system at bottom of manhole locations.
- Replace fill and sidewalk where excavations were made.

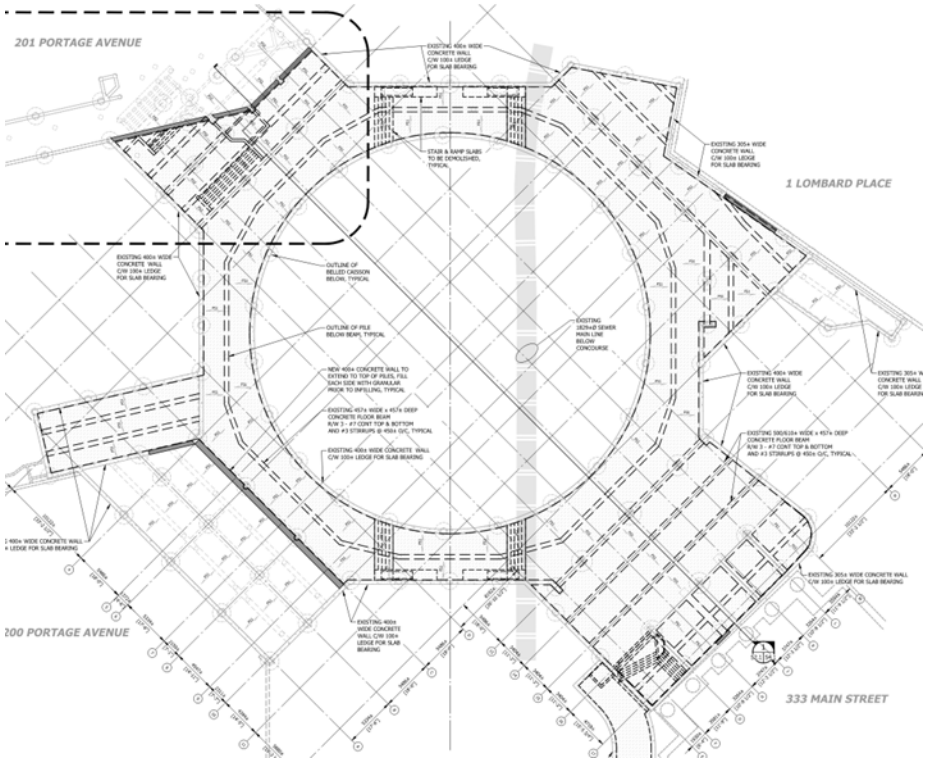


Figure 6: Extent of Demolition at Concourse Floor – Drawing S2.1

4.1.2 Architectural Scope of Work and Required Design Improvement

The full closure of the underground concourse requires the following scope of work and design considerations at each of the 4 building interfaces, i.e. at the existing access points from 200 Portage, 201 Portage, 1 Lombard Place, and 335 Main Street.

Demolition and removal of existing materials, including components from tenant spaces within the concourse, and existing lifts and escalators. Consideration should be given to recycling materials and reduction of waste.

Outside of the new concrete walls which will enclose the concourse, modifications to portions of the existing spaces will be required. The intent of these modifications is to ensure when a pedestrian is walking in the lower concourse level of one of the four buildings, that a “dead-end” situation is not created, and that safe / code-abiding exiting is still maintained and/or

improved. The amount of work varies at each of the 4 existing access locations and includes: new walls/partitions, new doors, paint and/or wall finishes, modifications to lighting, HVAC, and sprinklers. Refer to the Drawings for specific notes.

Safety and Convenience for Pedestrians

Safety: This option fully closes the underground interconnected concourse to pedestrians as indicated in Figure 7. The underground connections between the 4 buildings (200 Portage, 201 Portage, 1 Lombard, and 335 Main Street) will no longer exist. Required exiting from the lower level of each of the 4 buildings is achievable without reliance on the underground concourse, providing safe exiting for all patrons.

Posted evacuation signage and tenant/building fire safety plans are to be updated and the new evacuation drawings will be posted in strategic locations throughout the respective buildings.

Any remaining shelled spaces within the Concourse are to still be provided with fire and life safety devices, as well as automatic sprinkler protection.

Door hardware is to be installed in compliance with MBC Articles 3.1.8.13., 3.1.8.14., 3.1.8.15., and 3.4.6.16.

Convenience: This option does not provide the convenience to pedestrians of staying inside during inclement weather to access the existing concourse amenities or to walk indoors from one building to the other. Indoor access to the City's downtown overhead Skywalk System is only maintained through 200 Portage.

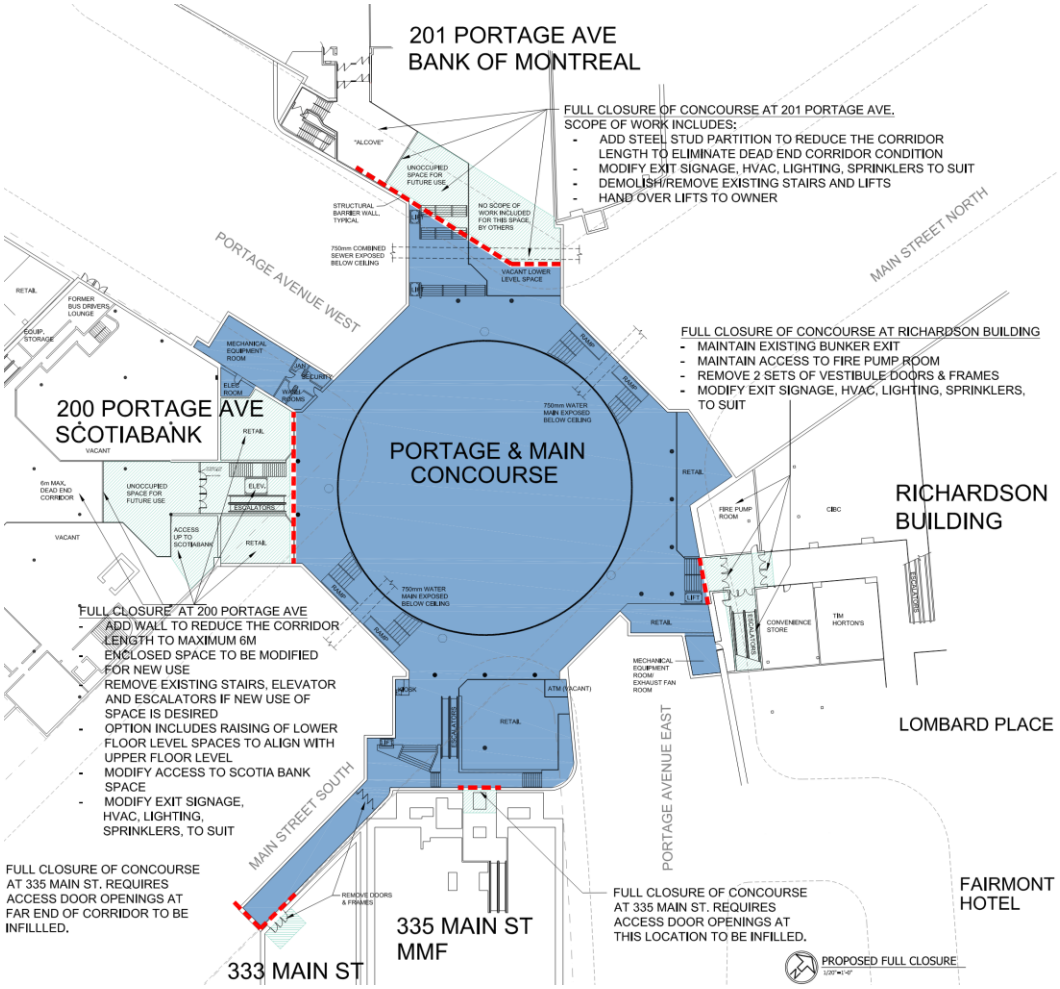


Figure 7: Full Decommissioning Extent Drawing A1.2.

Accessibility

There are several challenges in the existing underground concourse due to changes in floor levels, which require the use of ramps and vertical lifts. There have been times when the lifts have been under repair and not operational, further hindering accessibility. The full closure of the underground concourse eliminates these issues within the boundaries indicated on the drawings. There are pros and cons to this situation. While this may be seen as a positive to some, others may deem the current connectivity, even with its challenges, more accommodating. It should be noted that with the current changes underway at the grade level of Portage and Main, including the proposed pedestrian street crossings, improved street-level accessibility will be realized.

Dead-end Corridors

When a pedestrian is walking in the underground concourse level of one of the four buildings, it is imperative that a “dead-end” situation is not created, and that safe / code-abiding exits

are still maintained and/or improved. The drawing above indicates where these situations exist and the proposed exiting solution.

Where exits into the Concourse have been removed, tenant spaces are to be reconstructed such that no dead-end conditions that exceed 6 m in length are present as outlined in MBC Sentence 3.3.1.9.(5).

New Exit Signage

New directional exit signage is required in the four locations noted above to ensure that circulation to exits are clear and easy to follow.

Exit signage is to be updated to reflect the modified floor areas in accordance with MBC Article 3.4.5.1.

Interior Finishes

At the four locations noted above, new walls, flooring, and ceiling materials, as well as lighting and HVAC modifications are required to suit the affected areas.

4.1.3 Mechanical Scope of Work

The full decommissioning scope will largely remove the existing systems within the facility to allow for the entire concourse to be filled with cellular concrete fill.

- City Concourse Area
    - Remove all sump pumps and piping from the crawlspace.
    - Remove the plumbing fixtures and piping accessible within non-structural walls.
    - Remove the ductwork and air handlers within the concourse level in their entirety.
    - Remove glycol reclaim lines from exhaust fan to supply fan air handler
    - Remove intake ductwork to exterior near entrance to 220 Portage.

The four corners will have various modifications required largely related to the dead-end corridor condition presented by architectural section. As a result, the modifications for the corners are to re-establish or reimagine the current condition.

- 201 Portage Avenue
    - No specific plumbing demolition required. Should the area separated by the new architectural wall related to the dead-end corridor and infilled fully, remove the drains from the planters above.
    - Remove portion of ductwork that is within the area of decommissioning from the last fancoil.
        - Itemized Price: Should the area noted to be closed due to the dead-end corridor be infilled, remove the ductwork and fancoil noted for this are as well as close off the return ductwork.

- The tenant space that opens into the dead-end corridor area will need to remain accessible and re-configured so the space is accessible from within 201 Portage. This will include modification of the Tenant Improvement ductwork and plumbing.

- 1 Lombard Place
  - The bunker is planned to be maintained and therefore there is no work required for plumbing or ventilation modifications.
  - Remove the ductwork through the bunker shaft and remove all of the sump pumps within the City of Winnipeg mechanical room accessible from 1 Lombard.
- 333 and 335 Main Street
  - There is no impact to the 333 or 335 Main plumbing or HVAC based on the decommissioning line.
- 200 Portage Avenue
  - The portion under the 200 Portage building will need to be decommissioned. Removed the sump pump and pits for the elevator and escalator to allow removal of these.
  - The tenant spaces directly along the corridor which is now a dead-end corridor do not have to be modified.
  - Ventilation for the dead-end corridor area will have to be removed. As this area is below the building it will not be in-filled.
  - Plumbing within the dead-end corridor area will remain.

4.1.4 Electrical Scope of Work

The electrical scope of work for full decommissioning involves removing majority of existing electrical and communication devices and equipment including associated wiring, cabling and conduit to allow for the entire concourse to be infilled. Electrical system devices around the north and east at-grade entrances, which are to remain, will have to be re-supplied from 201 Portage and 1 Lombard, respectively. Refer to electrical drawings for layout. Scope of work for full decommissioning option include:

- City Concourse Area
  - Removal of electrical power distribution equipment, feeders and receptacles.
  - Removal of fire alarm system equipment and devices.
  - Removal of communication devices and cabling.
  - Removal of lighting fixtures and control devices.
  - Removal of security devices.
  - Disconnection and removal of feeder for mechanical equipment, lifts, lighted signages and escalators.
- 201 Portage
  - Removal of electrical devices including lighting fixtures, power receptacles, security cameras and fire alarm devices in south portion to be infilled.

- Removal of security cameras in bunker.
- Disconnection and removal of existing feeder for lifts.
- Reconnection of existing lighting fixtures, power receptacles and heater in existing at-grade entrance and new alcove area to electrical power distribution equipment within 201 Portage.
- Replacement of fire alarm manual pull station and notification device in new alcove area and connection to fire alarm system within 201 Portage.
- Replacement of exit sign in new alcove area and connection to electrical power distribution equipment within 201 Portage.

- 1 Lombard
  - Removal of lighting fixtures and exit sign.
  - Reconnection of lighting fixtures, exit signs, power receptacles, escalators and heaters in and around the bunker to electrical power distribution equipment within 1 Lombard Place.
- 333 and 335 Main
  - Removal of lighting fixtures and control devices.
  - Removal of fire alarm devices.
  - Disconnection and removal of feeder for door operator.
  - Removal of card access, intercom and CCTV system devices.
- 200 Portage
  - Removal of existing electrical devices including lighting fixtures, power receptacles, security cameras and fire alarm devices.
  - Disconnection and removal of feeder for door operator, escalators and elevator.
  - Removal of lighting fixtures and control devices.
  - Provision of lighting and fire alarm devices for a ‘shell space’ connected to electrical power distribution equipment and fire alarm system within 200 Portage.

4.1.5 Civil Scope of Work

In addition to the access and service hole installation and road/ sidewalk restoration on the affected areas listed in Section 4.1.1, additional work specific to the full decommissioning option include:

- Demolition and sealing off of the south-east concourse stairway access point in front of 335 Main Street, and constructing new structural concrete sidewalk overtop of the abandoned stairway,
- Demolition of redundant structural roof and walls in south-east plaza, including under the roadway, and construction of new structural concrete sidewalk throughout 335 Main Street plaza area.
- Temporarily remove the traffic signal pole and base, and relocate the underground traffic signal conduits adjacent to the service hole opening at the corner of 200 Portage Avenue,

as well as the traffic signal conduits near the access hole at the corner of 1 Lombard Place,

- Relocate the Hydro Power conduits (12 ducts) at the corner of 200 Portage Avenue in conflict with the service hole location, and
- Reinstallation of the traffic signals pole and base at the corner of 200 Portage Avenue after underground concourse has been abandoned.

Construction of the access and service holes will occur in two phases to maintain as much pedestrian and vehicular access as possible through the project.

- Phase 1:
    - Demolition and sealing off the stairway access point and constructing new structural sidewalk overtop requires single lane closures in the SE quadrant.
    - Demolition of redundant structural roof and wall slabs in SE quadrant and reconstruction of structural sidewalk throughout 335 Main Street plaza area.
    - Pedestrians cannot use the public sidewalks or private plaza area in the SE quadrant.
    - The south and east crosswalks of the intersection must be closed due to their proximity to the staircase abandonment work zone.
- Phase 2:
    - Pavement removal and excavation of the access and service holes once lane closures have been set up as outlined in Drawing – C-04.
    - The access holes at the corners of 335 Main Street and 1 Lombard place are located within the sidewalk, however lane closures are still required to give room for heavy equipment and truck staging.
    - The south and west crosswalks of the intersection must be closed due to direct conflicts with the access holes and service hole.
    - Pedestrians cannot use the private plaza area in the SE quadrant, although the sidewalk along Portage Ave E is accessible.
    - If an agreement can be reached with the owners of 1 Lombard Place, pedestrians could use their plaza to travel between Portage Ave E and north Main Street.
    - The access hole located west of the concourse will require the left-turning lane towards Northbound Main Street and the westbound lane towards Portage Avenue West to be closed for heavy equipment and truck staging.
    - For the duration of this phase, two southbound traffic lanes downstream of Main Street will be closed to serve as the mobile crane and cellular concrete batching area.

4.1.6 Impacts on Stakeholders

Below is a summary of impacts identified on stakeholders on this option. Quantification of these items were not included in the cost estimates.

- Discussions and agreements to be made between owners and City of Winnipeg within private property lines
- Areas not being infilled but will be closed off to public will need to be repurposed by the Owners. This will include installation of alternate access points.
- Retail areas that are within decommissioned areas to be relocated before the start of demolition work.
- Refer to Figure 8 below and Drawing S1.2 showing areas being infilled and areas remaining vacant adjacent to property lines.

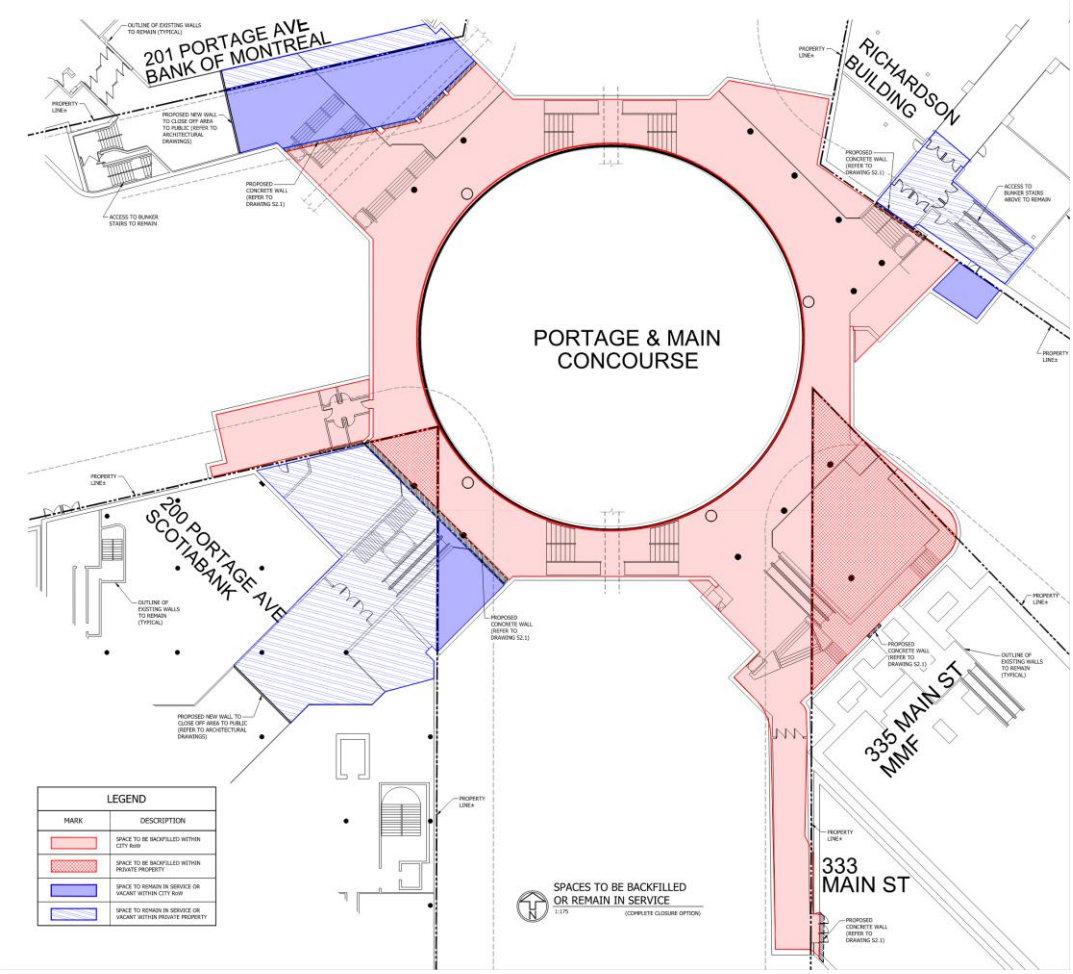


Figure 8: Scope of work adjacent to property lines (See drawing S1.2)

4.1.7 Cost Estimate

The following table provides a breakdown of the cost estimate a detailed breakdown is provided in Appendix B:

Table 3: Full Decommissioning Cost Estimate Summary

Item/Description	Estimated Cost
General Requirements	$1,127,500.00
Demolition & Civil Works	$1,961,500.00
Structural Works	$2,983,400.00
Architectural Works	$12,800.00
Mechanical Works	$20,000.00
Electrical Works	$73,800.00
Bonds and Insurance	$349,000.00
Fees	$1,354,500.00
Total	**$7,882,500.00**

Notes:

- Civil items costed are as described in Section 4.1.5,
- Civil cost estimates utilized a mix of average unit prices from the Public Works Department, augmented by unit prices from Tender No. 675-2024 that are specific to this site, such as the unique structural sidewalk recently installed over private basements/areaways and the concourse,
- Third party utility estimates made based on past project experience, and conversations with utility representatives where possible, and
- Set up of lane closures and temporary traffic control during construction detailed in Drawings C-03 and C-04.
- Cost estimate does not include relocation of tenants, agreements to be made for areas outside the property lines, fit up of space no longer accessible to public but is still at the concourse level, maintenance of the bunkers at 201 Portage and 1 Lombard.
- Cost estimate assumes a minimum five bidder tender format. If less than five bids are submitted, cost could increase.
- Items not included in estimate to be considered in the future:
    - Membrane repairs / replacement at locations remaining vacant
    - Localized structural maintenance repairs at areas remaining vacant and connection between in-service and decommissioned zones
    - Maintenance of stair bunkers at 201 Portage and 1 Lombard
    - Monitoring of decommissioned areas

4.1.8 Schedule

The following schedule is anticipated for Option 1 – Full Decommissioning:

Table 4: Full Decommissioning Schedule

Task	Estimated Schedule
Mobilization	12 weeks
Phase 1 of civil works	4 weeks
Demolition	28 weeks
Installation of walls	3 weeks
Infilling of cellular concrete	8 weeks
Architectural works	4 weeks
Mechanical / Electrical work	4 weeks
Phase 2 access hole construction	2 weeks
Total Duration	**65 weeks**

Total project duration is estimated to be 65 working weeks (approximately 17 months). Schedule assumes daytime working hours, no heating and hoarding.

4.1.9 Long Term Maintenance and Monitoring

With exception of the initial monitoring of the cellular concrete fill, no long-term or permanent maintenance would be required for any areas decommissioned. For areas designated to remain in service below sidewalks and roadways, monitoring of the structure will be required, and replacement of the membrane will eventually be required. Monitoring would include regular visual inspections of exposed areas of the structure for evidence of cracking, leakage, and/or delamination due to corrosion of the embedded reinforcing steel. Physical testing, such as hammer soundings, of the exposed areas of the structure would also be completed at regular intervals. Core sampling and testing, such as chloride value and carbonation, could also be incorporated into the monitoring program to establish future potential for deterioration.

Waterproofing repairs at areas under the sidewalk that were not decommissioned will need to be completed throughout the life of the structure. To establish the condition of the existing membrane and provide an estimate of remaining service-life, the existing waterproofing should be reviewed at access locations.

Eventually, replacement of the waterproofing membranes will be required. This would include demolition and removal of sidewalk and/or hard landscaping finishes, excavation to the level of the concourse roof, removal of the existing waterproofing, and installation of new waterproofing, insulation, backfill, and surface finishes. Note that this work is underway as part of the ongoing project to reopen the intersection to pedestrian traffic. Where waterproofing has been completed as part of this ongoing surface works, or subsequently as part of a decommissioning project, a 40+ year service-life should be expected for any new membranes.

Monitoring for settlement of the cellular concrete fill will be required to ensure the fill remains in contact with the concourse roof. Monitoring would be completed via the openings created through the roof for infilling. The same openings would also be utilized for additional infilling, if required. The timing of any monitoring of the backfill will be dependent on the geotechnical assessment which was beyond the scope of this study. Notwithstanding, it is assumed that monitoring will be completed at 2, 5 and 10-years.

The City will also need to maintain usage of bunkers at 201 Portage and 1 Lombard to meet exiting requirements for existing occupied space. This will include localized concrete repairs, waterproofing repairs and ongoing heating unit maintenance at a minimum. Similar to the concourse roof waterproofing, a 40+ year service-life should be expected for replacement waterproofing.

4.2 Option 2 – Partial Decommissioning – South Loop Closure

This option consists of decommissioning the Southeast portion of the underground concourse. This will close the connection below grade from 333 and 335 Main Street. The remaining unaffected sections of the concourse will remain open and accessible to the public. Concrete walls were located to maintain access to the mechanical and electrical rooms that service the concourse to remain occupied. Similar to the full decommissioning option, arrangements with the property owner at 333 Main Street will be required by the City and is beyond the scope of this study.

To facilitate the decommissioning process, two (2) access holes and one (1) service hole will be constructed. The access holes will enable proper inspection during the cellular concrete pumping process from the surface and will also be used post-construction to monitor any variations in the cellular concrete elevation.

The following sections describe the scope of work for each discipline. Drawings showing the preliminary scope of work are provided in Appendix A.

4.2.1 Structural Scope of Work

- Demolish existing 125mm slab on metal deck throughout level floor for north portion of concourse (Refer to Figure 8).
- Demolish concrete stairs and ramps within the concourse.
- Demolish existing concrete beams supporting slabs. Any existing rubble will remain inside decommissioned areas as backfill. Any reinforcing to be hauled off site.
- Demolish existing stair treads at 335 Main Street.
- Demolish existing 250mm structural slab and supporting walls at 335 Main Street. It should be noted that the original structural roof and walls (1975) were demolished, replaced and waterproofed as part of the pedestrian opening project (2025).
- Install granular fill at perimeter beams enclosing the decommissioned zones
- Excavate existing sidewalk and roadway as required to cut opening in concourse roof. Shore excavation as required.
- Cut new openings in concourse roof for lift access and manhole access. Supply and install 400mm cast in place concrete walls at perimeter of decommissioned areas. Temporarily

brace walls during infilling. Provide a temporary wall with door as an alternative exit during construction.

- Infill decommissioned area with cellular concrete to the underside of concourse roof
- Install new 450mm slab at access openings. Manhole openings to remain, cellular concrete to be filled to top of concourse roof.
- Install new 150mm slab at existing stair location at 335 Main Street
- Install high build waterproofing membrane system, insulation and drainage board where roof was accessed or cut. Install new waterproofing membrane system at concourse roof where manhole is installed.
- Replace fill and sidewalk where excavations were made.

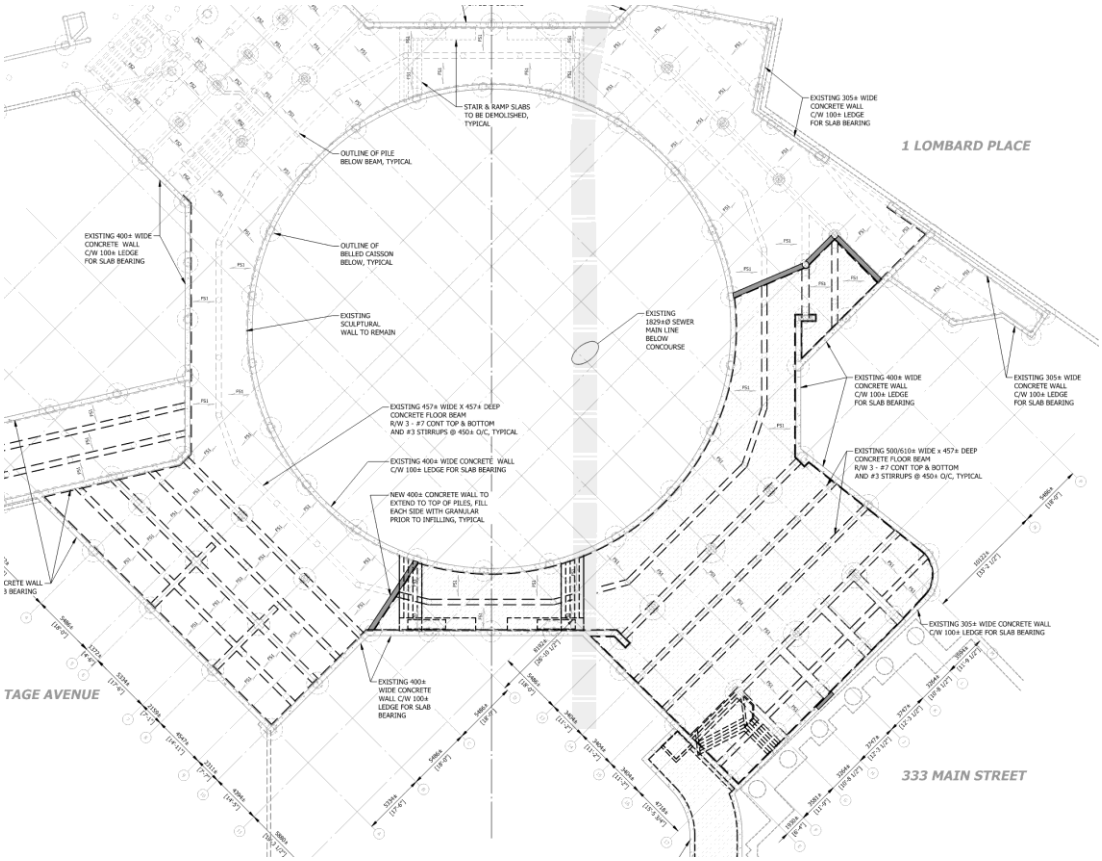


Figure 9: Extent of Demolition at Concourse Floor – Drawing S2.4

4.2.2 Architectural Scope of Work and Required Design Improvement

The partial closure of the underground concourse, at 335 Main Street, requires the following scope of work and design considerations. Boundaries are indicated in Drawings.

Demolition and removal of existing materials, including components from tenant spaces within the concourse, and existing lifts and escalators. Consideration should be given to recycling materials and reduction of waste.

Within the remaining concourse, modifications to portions of the existing spaces will be required. The intent of these modifications is to ensure that a “dead-end” situation is not created, and that paths of travel and exits are safe and code-abiding. The work includes: new walls/partitions, new doors, paint and/or wall finishes, modifications to lighting, door swings, HVAC, and sprinklers. Refer to the drawing above for specific notes.

Safety and Convenience for Pedestrians

Safety: This option closes the south-east portion of the underground concourse, which eliminates access to the concourse from 335 Main Street. This option maintains access to the underground concourse for 200 Portage, 201 Portage, and 1 Lombard. Required exiting from the lower level of 335 Main Street is achievable without reliance on the underground concourse, as indicated on Figure and Drawings.

Posted evacuation signage and tenant/building fire safety plans are to be updated and the new evacuation drawings will be posted in strategic locations throughout the Concourse.

Sprinkler heads are to be relocated to reflect the modified floor areas. Sprinkler head spacing is to be in compliance with NFPA 13 as outlined in MBC Article 3.2.5.12.(1).

Fire alarm notification and detection devices are to be relocated to serve the modified floor areas. Additional notification and detection devices may be required and are to be installed in accordance with MBC Subsection 3.2.4.

Emergency lighting units are to be relocated to reflect the modified floor areas. Additional emergency lighting units may be required and are to be installed in accordance with MBC Subsection 3.2.7.

Any remaining shelled spaces within the Concourse are to still be provided with fire and life safety devices, as well as automatic sprinkler protection.

As required by MBC Subsection 3.2.9., integrated testing of fire protection and life safety systems is to be conducted in conformance with CAN/ULC-S1001 to verify they have been properly integrated and are functioning according to the intent of their design and the MBC. Testing of fire protection and life safety systems may include fire alarm systems, sprinklers, ventilation, door hold-open devices, smoke and fire shutters and dampers, mechanical exhaust, emergency power, emergency lighting, emergency generator, etc. where applicable.

Exits are to be fire separated from the remainder of the building with a minimum fire-resistance rating in compliance with MBC Article 3.4.4.1.

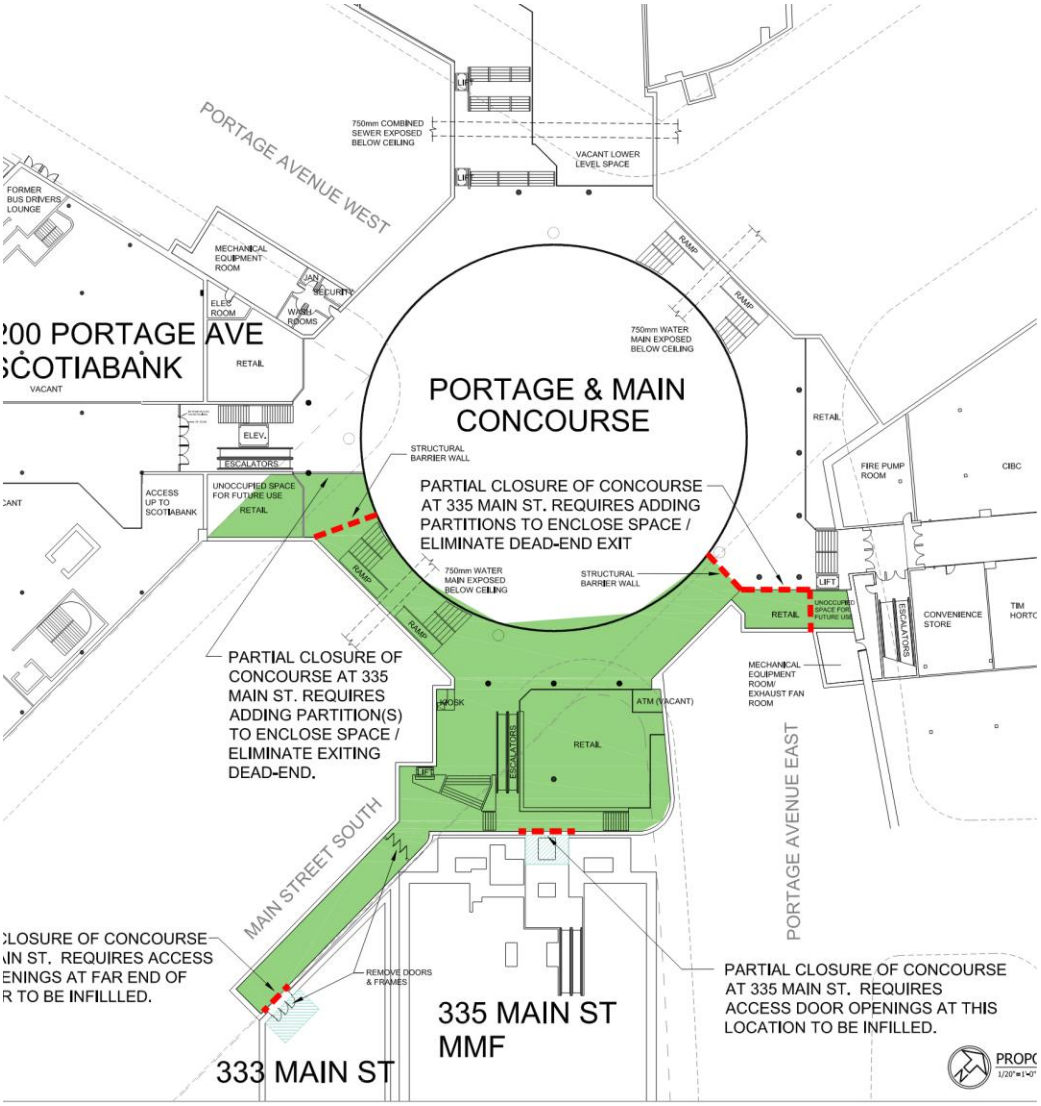


Figure 10: Partial Decommissioning Extent – Drawing A1.3

Door hardware is to be installed in compliance with MBC Articles 3.1.8.13., 3.1.8.14., 3.1.8.15., and 3.4.6.16.

The Concourse occupant load is not to exceed a maximum of 458 occupants.

Code compliant paths are attainable and would involve a combination of both acceptable (prescriptive) and alternative (performance-based) solutions and/or engineering judgments. Of note, would be the need to leverage a performance based alternative approach specific to travel distance discrepancies for this partial closure scenario. Through an iterative series of egress modelling scenarios completed by RJBE, it has been established that the conditions presented under the partial closures can be rationalized and would achieve an acceptable level of fire safety.

At the discretion of the AHJ, it may be necessary to rationalize the continued presence of existing nonconforming building elements that are not being materially altered by the project scope; e.g. existing rise/run, handrails, etc. and do not comply with the contemporary MBC requirements. Should this arise, it has been our experience that documented engineering judgements can be developed to address such discrepancies and would build on allowances specific to alterations in existing buildings that have been established in other Canadian jurisdictions and are anticipated to be incorporated into upcoming editions of the Canadian Model Code/MBC.

Convenience: With underground access maintained for 200 Portage, 201 Portage, and 1 Lombard, this option provides the convenience to pedestrians, via these 3 buildings, of staying inside during inclement weather to access the existing concourse amenities and to walk indoors from one building to the other. Indoor access to the City's downtown overhead Skywalk System is also maintained for 200 Portage, 201 Portage, and 1 Lombard.

Accessibility

There are several challenges in the existing underground concourse for persons with mobility issues due to changes in floor levels, which requires the use of ramps and vertical lifts. However, this option maintains indoor access for pedestrians accessing the concourse from 3 of the 4 buildings and has the potential for improved accessibility.

Dead-end Corridors

It is imperative that "dead-end" corridors are not created, and that safe / code-abiding exits are still maintained and/or improved. Hence, at the proposed concourse closure at the 335 Main St. location, interior improvements are required (as described on the drawings and notes above) to ensure that paths of travel and exits are safe and code-abiding. A partition is required to be installed so that a dead-end condition exceeding 6 m in length is not created.

New Exit Signage

New exit signage is required to inform pedestrians of the direction to exits.
Exit signage is to be updated to reflect the modified floor areas in accordance with MBC Article 3.4.5.1.

Interior Finishes

At the 335 Main Street location, new walls, flooring, and ceiling materials, as well as lighting and HVAC modifications are required to suit the affected areas.

4.2.3 Mechanical Scope of Work

The partial decommissioning option is the south portion closure which entails closing access to the 333 and 335 Main entrance to the concourse. Both Mechanical rooms would need to have access maintained so there is direct supply and exhaust from the concourse level as these are the only two existing access points.

Decommissioning Scope

- City Concourse
- Remove the one sump pit within the proposed decommissioning area in the crawlspace. No additional pumps are required to replace the removed pumps currently. With rising ground water levels additional capacity may be required but is not expected to be an immediate impact and is excluded for that reason.
    - Remove ductwork and seal the ceiling at both decommissioning boundaries to maintain the seal for the pressurization system
    - Remove plumbing associated with the tenant spaces that will be removed.
- 333 and 335 Main
    - No specific plumbing demolition required.
    - Remove portion of ductwork that is within the area of decommissioning.
    - Remove plumbing from the retail spaces.

Remaining Portion:

- The mechanical systems that serve the concourse are nearing the expected service-life. As a result, the reduced floor area served and the functional life, it is recommended to replace the units and systems. The list below provides a general overview of the system which should be replaced:
- Sump Pumps. Total of 6 pumps in three pits.
    - Sewage pits and pumps within the northeast mechanical room.
    - Air handler and exhaust fan.
        - The air handler is expected to be:
            - 4000cfm
            - 2”W.C.
            - Electric heating coil
            - Dx cooled with reject heat to the exhaust shaft in the bunker on 1 Lombard
            - No heat recovery.
        - Exhaust Fan:
            - 4000cfm
            - 2”W.C
    - Remove the glycol run-around loop.
    - Plumbing fixtures and piping for the two washroom groups.
- The air conditioning will be 13.5 tons and will be a small chiller with remote barrel.
    - The discharge section will be in the exhaust mechanical room and the chiller barrel in the supply mechanical room. Pipe refrigerant between both rooms.
- 200 Portage:
    - No work expected under this option.
- 1 Lombard Place:

- No work expected under this option.

- 201 Portage:
  - No work expected under this option.

4.2.4 Electrical Scope of Work

The electrical scope of work for partial decommissioning involves maintaining the majority of existing electrical and communication devices and equipment to support access to concourse level and mechanical equipment that serves the remaining space. Electrical system devices in the south half of the concourse to be infilled are to be removed. Select devices including emergency lighting and security camera are to be relocated to areas that will remain open. Refer to electrical drawings for layout. Scope of work for partial decommissioning – south loop closure include:

- City Concourse
  - Removal of electrical devices including lighting fixtures, power receptacles, emergency lighting, security cameras and fire alarm devices in portions to be infilled.
  - Disconnection and removal of feeder for lighted signages.
  - Removal of communication devices and cabling.
  - Disconnection and removal of feeder for two sump pumps.
  - Relocation of emergency lighting units to suit new concourse layout.
  - Relocation of one security camera.
  - Provision of new feeder from Main Distribution 1 to sub-distribution H-200 routed on the north side of concourse.
  - The electrical power distribution equipment that serves the concourse is obsolete. Replacement of equipment and feeders is recommended, or feeder breakers should be serviced and tested to ensure proper operation if partial access to concourse is to be maintained. Reduction of equipment may be possible due to reduced electrical load.
- 201 Portage
  - No work expected under this option.
- 1 Lombard
  - No work expected under this option.
- 333 and 335 Main
  - Removal of lighting fixtures and control devices.
  - Removal of electric heater.
  - Disconnection and removal of feeder for lighted signage.
  - Disconnection and removal of feeder for lift, escalators and door operator.

- Removal of card access, intercom, communication, CCTV and fire alarm system devices.

- 200 Portage
  - Removal of electrical system devices in south retail space.

4.2.5 Civil Scope of Work

In addition to the access and service hole installation and road/ sidewalk restoration on the affected areas listed in Section 4.2.1, additional work specific to the partial decommissioning—south loop closure option include:

- Demolition and sealing off of the south-east concourse stairway access point in front of 335 Main Street, and constructing new structural concrete sidewalk overtop of the abandoned stairway, and
- Demolition of redundant structural roof and wall slabs in south-east plaza within 1.2 metres of the roadway surface, and construction of new structural concrete sidewalk throughout the 335 Main Street plaza.
- Relocation of the Traffic Signal conduit in conflict with the access hole located in the northeast quadrant of the concourse.

Construction of the access and service holes will occur in two phases to maintain as much pedestrian and vehicular access as possible through the project.

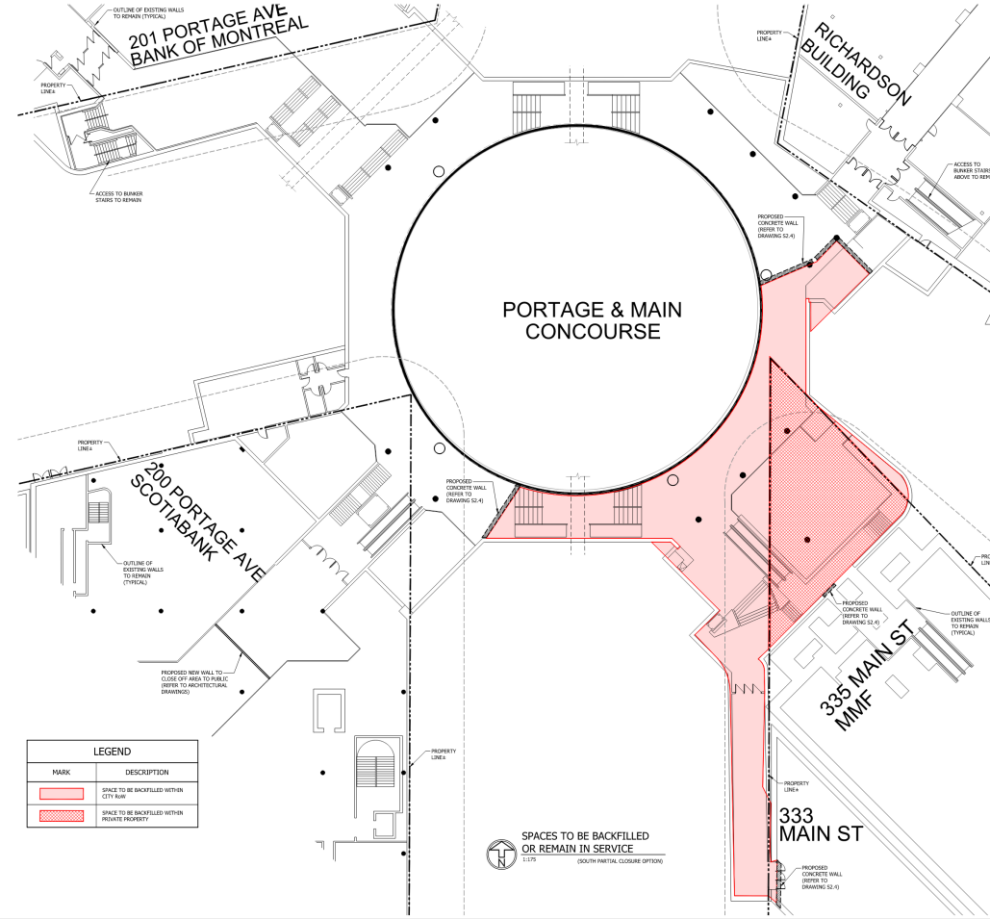
- Phase 1:
  - Demolition and sealing off the stairway access point and constructing new structural sidewalk overtop requires single lane closures in the SE quadrant,
  - Demolition of redundant structural roof and wall slabs in SE quadrant and reconstruction of structural sidewalk throughout 335 Main Street plaza area.
  - Pedestrians cannot use the public sidewalks or private plaza area in the SE quadrant.
  - The south and east crosswalks of the intersection must be closed due to their proximity to the staircase abandonment work zone.
- Phase 2:
  - Pavement removal and excavation of the access and service holes once lane closures have been set up as outlined in Drawing – C-06.
    - Due to the location of the access hole in the north east quadrant of the concourse being situated in the middle westbound lane, two lanes are required to be closed to give room for heavy equipment and truck staging. The remaining median lane will serve as a through lane and a right-turn lane for the duration of this phase.
    - The access hole located at the south end of the concourse will require the southbound median lane along downstream Main Street to be closed.

- Two northbound traffic lanes upstream of Main Street will be closed to serve as the mobile crane and cellular concrete batching area.
- The west, north, and east crosswalks can remain open.
- Pedestrians cannot use the private plaza area in the SE quadrant, although the sidewalk along Portage Ave E is accessible.

4.2.6 Impacts on Stakeholders

Below is a summary of impacts identified on stakeholders on this option. Quantification of these items were not included in the cost estimates.

- Discussions and agreements to be made between owners and City of Winnipeg within private property lines
- Areas not being infilled but will be closed off to public will need to be repurposed by the Owners. This will include installation of alternate access points.
- Retail areas that are within decommissioned areas to be relocated before the start of demolition work.
- Access to the remaining areas of the PMUC will be maintained along with access to the City's downtown overhead Skywalk System for 200 Portage, 201 Portage, and 1 Lombard.
- 333 and 335 Main Street will lose access to the PMUC and the City's downtown overhead Skywalk System.
- Refer to Figure 11 below and Drawing S1.3 showing areas being infilled and areas remaining vacant on either side of property lines.



4.2.7 Cost Estimate

The following table provides a breakdown of the cost estimate a detailed breakdown is provided in Appendix B:

Table 5: Full Decommissioning Cost Estimate Summary

Item/Description	Estimated Cost
General Requirements	$925,500.00
Demolition & Civil Works	$1,346,000.00
Structural Works	$1,545,000.00
Architectural Works	$7,000.00
Mechanical Works	$378,000.00
Electrical Works	$895,300.00
Bonds and Insurance	$287,400.00
Fees	$1,117,100.00
Total	**$6,501,300.00**

Notes:

- Civil items costed are as described in Section 4.2.5,
- Civil cost estimates utilized a mix of average unit prices from the Public Works Department, augmented by unit prices from Tender No. 675-2024 that are specific to this site, such as the unique structural sidewalk recently installed over private basements/areaways and the concourse,
- Third party utility estimates made based on past project experience, and conversations with utility representatives where possible, and
- Set up of lane closures and temporary traffic control during construction detailed in Drawings C-05 and C-06.
- Costs do not include consulting fees, taxes, permits
- Cost estimate assumes a minimum five bidder tender format. If less than five bids are submitted, cost could increase.
- Items not included in estimate to be considered in the future:
    - Membrane repairs / replacement at locations remaining vacant
    - Localized structural maintenance repairs at areas remaining vacant and connection between in-service and decommissioned zones
    - Maintenance of stair bunkers at 201 Portage and 1 Lombard
    - Monitoring of decommissioned areas
    - Maintenance of mechanical and electrical equipment servicing areas to remain operational

4.2.8 Schedule

The following schedule is anticipated for Option 1 – Full Decommissioning:

Table 6: Full Decommissioning Schedule

Task	Estimated Schedule
Mobilization	12 weeks
Phase 1 of civil works	3 weeks
Demolition	16 weeks
Phase 2 of Civil Works – access hole construction	4 weeks
Infilling with Cellular Concrete	4 weeks
Architectural Works	4 weeks
Mechanical / Electrical Works (in concurrence with other work)	20 weeks
Pavement / Sidewalk Restoration	2 weeks
Phase 2 of Civil Works – access hole construction	2 weeks
Total Duration	**56 weeks**

Total project duration is estimated to be 56 working weeks (approximately 14 months). Schedule assumes daytime working hours, no heating and hoarding.

4.2.9 Long Term Maintenance and Monitoring

No maintenance would be required for any areas decommissioned. For areas designated to remain below sidewalks and roadways, monitoring of the structure will be required and replacement of the membrane will eventually be required. Monitoring would include regular visual inspections of exposed areas of the structure for evidence of cracking, leakage, and/or delamination due to corrosion of the embedded reinforcing steel. Physical testing, such as hammer soundings, of the exposed areas of the structure would also be completed at regular intervals. Core sampling and testing, such as chloride value and carbonation, could also be incorporated into the monitoring program to establish future potential for deterioration.

Waterproofing repairs at areas under the sidewalk and intersection that were not decommissioned will need to be completed throughout the life of the structure. To establish the condition of the existing membrane and provide an estimate of remaining service-life, the existing waterproofing should be reviewed at access locations.

Eventually, replacement of the waterproofing membranes will be required. This would include demolition and removal of sidewalk and/or hard landscaping finishes, excavation to the level of the concourse roof, removal of the existing waterproofing, and installation of new waterproofing, insulation, backfill, and surface finishes. Note that this work is presently being completed as part of the ongoing project to reopen the intersection to pedestrian traffic. Where waterproofing has been completed as part of this ongoing surface works, or subsequently as part of a decommissioning project, a 40+ year service-life should be expected.

Monitoring of this option would involve localized inspection ports to determine any excessive settlement that may occur after the infilling is completed. This is recommended to be completed at 2, 5 and 10 year timeline. Annual inspections are recommended to review any exposed areas of the concourse that remain in use. This includes monitoring any areas of leaking or deterioration.

The City will need to maintain usage of bunkers at 201 Portage and 1 Lombard. This will include localized concrete repairs, waterproofing repairs and ongoing heating unit maintenance at the minimum. The City will also need to maintain the mechanical and electrical equipment that serve the concourse that remains operational.

On-going mechanical and electrical maintenace, similar to what is required currently, would continue in this partial decommissioning option.

4.3 Option 3 – Partial Decommissioning – North Loop Closure

This option consists of decommissioning the Northwest quadrant of the underground concourse. This will close the connection to the concourse at 201 Portage Avenue. Concrete boundary walls are located to maintain access to the mechanical and electrical rooms that service the concourse that is to remain occupied.

To facilitate the decommissioning process, two (2) access holes and one (1) service hole will be constructed. The access holes will enable proper inspection during the cellular concrete pumping

process from the surface and will also be used post-construction to monitor any variations in the cellular concrete elevation.

The following sections describe the scope of work for each discipline.

4.3.1 Structural Scope of Work

- Demolish existing 125mm slab on metal deck throughout level floor for north portion of concourse.
- Demolish concrete stairs and ramps within the concourse. Demolish stairs at 201 Portage as required to install new perimeter wall.
- Demolish existing concrete beams supporting slab. Any existing rubble to be remain inside decommissioned areas. Any reinforcing to be hauled off site.
- Install granular fill at perimeter beams enclosing the decommissioned zones
- Excavate existing sidewalk and roadway as required to cut opening in concourse roof. Shore excavation as required.
- Cut new openings in concourse roof for lift access and manhole access. Supply and install 400mm cast in place concrete walls at perimeter of decommissioned areas. Temporarily brace walls during infilling. Provide a temporary wall with door as an alternative exit during construction.
- Infill decommissioned area with cellular concrete to the underside of concourse roof
- Install new 450mm slab at access openings. Manhole openings to remain, cellular concrete to be filled to top of concourse roof.
- Install high build waterproofing membrane system, insulation and drainage tile where roof was accessed or cut. Install new waterproofing membrane system at bottom of manhole locations.
- Replace fill and sidewalk where excavations were made.

4.3.2 Architectural Scope of Work

The partial closure of the underground concourse, at 201 Portage Avenue, requires the following scope of work and design considerations.

Demolition and removal of existing materials, including components from tenant spaces within the concourse, and existing lifts and escalators. Consideration should be given to recycling of materials and reduction of waste.

Within the remaining concourse, modifications to portions of the existing spaces will be required. The intent of these modifications is to ensure that a “dead-end” situation is not created, and that paths of travel and exits are safe and code-abiding. The work includes: new walls/partitions, new doors, paint and/or wall finishes, modifications to lighting, door swing, HVAC, and sprinklers. Refer to the drawing above for specific notes.

Safety and Convenience for Pedestrians

Safety: This option closes the northwest portion of the underground concourse, which eliminates access to the concourse from 201 Main Street. This option maintains access to the underground concourse for 335 Main Street, 200 Portage, and 1 Lombard. Required exiting from the lower level of 201 Main Street is achievable without reliance on the underground concourse.

Refer to Section 4.2.2 for other safety requirements.

Code compliant paths are attainable and would involve a combination of both acceptable and alternative (performance based) solutions and/or engineering judgments. Of note, would be the need to leverage a performance based alternative approach specific to travel distance discrepancies for this partial closure scenario. Through an iterative series of egress modelling scenarios completed by RJB, it has been established that the conditions presented under the partial closures can be rationalized and would achieve an acceptable level of fire safety.

At the discretion of the AHJ, it may be necessary to rationalize the continued presence of existing nonconforming building elements that are not being materially altered by the project scope; e.g. existing rise/run, handrails, etc. and do not comply with the contemporary MBC requirements. Should this arise, it has been our experience that documented engineering judgements can be developed to address such discrepancies and would build on allowances specific to alterations in existing buildings that have been established in other Canadian jurisdictions and are anticipated to be incorporated into upcoming editions of the Canadian Model Code/MBC.

Convenience: With underground access maintained for 335 Main Street , 200 Portage, and 1 Lombard, this option provides the convenience to pedestrians, via these 3 buildings, of staying inside during inclement weather to access the existing concourse amenities and to walk indoors from one building to the other. Indoor access to the City's downtown overhead Skywalk System is also maintained for 335 Main Street, 200 Portage, and 1 Lombard.

Accessibility

There are several challenges in the existing underground concourse for persons with mobility issues due to changes in floor levels, which requires the use of ramps and vertical lifts. However, this option maintains indoor access for pedestrians accessing the concourse from 3 of the 4 buildings and has the potential for improved accessibility.

Dead-end Corridors

It is imperative that "dead-end" corridors are not created, and that safe / code-abiding exits are still maintained and/or improved. Hence, at the proposed concourse closure at the 201 Portage location, interior improvements are required.

.1 Where the 201 Portage Ave portion is decommissioned, a partition is required to be installed so that a dead-end corridor exceeding 6 m in length is not created.

.2 The resulting alcove condition may be rationalized with an engineering judgement which would review the depth/width ratio.

New Exit Signage

New exit signage is required to inform pedestrians of the direction to exits.

Exit signage is to be updated to reflect the modified floor areas in accordance with MBC Article 3.4.5.1.

Interior Finishes

At the 201 Portage Avenue location, new walls, flooring, and ceiling materials, as well as lighting and HVAC modifications are required to suit the affected areas.

4.3.3 Mechanical Scope of Work

The partial decommissioning option is the north portion closure which entails closing access to the 201 Portage entrance to the concourse. Both Mechanical rooms would need to have access maintained so there is direct supply and exhaust from the concourse level as these are the only two existing access points.

Decommissioning Scope

- City Concourse
- Remove the two sump pumps that sit within the proposed decommissioning area within the crawlspace. No additional pumps are required to replace the removed pumps currently. With rising ground water levels additional capacity may be required but is not expected to be an immediate impact and is excluded for that reason.
- Remove ductwork and seal the ceiling at both decommissioning boundaries.
- Remove plumbing associated with the tenant spaces that will be removed.
- 201 Portage
    - No specific plumbing demolition required. Should the area separated by the new architectural wall related to the dead-end corridor and infilled fully. Remove the drains from the planters above.
    - Remove portion of ductwork that is within the area of decommissioning from the last fancoil
    - Should the area noted to be closed due to the dead-end corridor be infilled, remove the ductwork and fancoil noted for this area as well as close off the return ductwork.
    - The tenant space that opens into the dead-end corridor area will need to be re-access and re-configured to access from within 201 Portage. This will include modification of the TI ductwork and plumbing.
- Remaining Portion:
    - The mechanical systems that serve the concourse are nearing the expected service-life. As a result of the reduced floor area served and the functional life, it is recommended to replace the units and systems. The list below provides a general overview of the system which should be replaced:
- Sump Pumps. Total of six pumps in three pits.

- Sewage pits and pumps within the northeast mechanical room.
- Air handler and exhaust fan.
  - The air handler is expected to be:
    - 4000cfm
    - 2"W.C.
    - Electric heating coil
    - Dx cooled with reject heat to the exhaust shaft in the bunker on 1 Lombard
    - No heat recovery.
  - Exhaust Fan:
    - 4000cfm
    - 2"W.C
- Remove the glycol run-around loop.
- Plumbing fixtures and piping for the two washroom groups.
- The air conditioning will be 13.5 tons and will be a small chiller with remote barrel.
- The discharge section will be in the exhaust mechanical room and the chiller barrel in the supply mechanical room. Pipe refrigerant between both rooms.

- 200 Portage:
- No work expected under this option.
  - 1 Lombard:
- No work expected under this option.
  - 333 and 335 Main:
- No work expected under this option.

4.3.4 Electrical Scope of Work

The electrical scope of work for partial decommissioning involves maintaining majority of existing electrical and communication devices and equipment to support access to concourse level and mechanical equipment that serves the remaining space. Electrical system devices in north half of the concourse to be infilled are to be removed. Select devices including emergency lighting and security camera are to be relocated to areas that will remain open. Refer to electrical drawings for layout. Scope of work for partial decommissioning – north loop closure include:

- City Concourse
  - Removal of electrical devices including lighting fixtures, power receptacles, emergency lighting, security cameras and fire alarm devices in portions to be infilled.
  - Disconnection and removal of feeder for lighted signages.
  - Removal of communication devices and cabling.
  - Disconnection and removal of feeder for two sump pumps.

- Relocation of emergency lighting units to suit new concourse layout.
- Relocation of one security camera.
- Provision of new feeder from Main Distribution 1 to sub-distribution H-200 routed on the south side of concourse.
- The electrical power distribution equipment that serves the concourse are obsolete. Replacement of equipment and feeders is recommended, or feeder breakers should be serviced and tested to ensure proper operation if partial access to concourse is to be maintained. Reduction of equipment may be possible due to reduced electrical load.

- 201 Portage
  - Removal of electrical devices including lighting fixtures, power receptacles, security cameras and fire alarm devices in portions to be infilled.
  - Disconnection and removal of existing feeder for lifts.
  - Reconnection of existing lighting fixtures, power receptacles and heater in existing north, at-grade entrance and new alcove area to electrical power distribution equipment within 201 Portage.
  - Replacement of manual pull station and notification device in new alcove area and connection to fire alarm system within 201 Portage.
  - Replacement of exit sign in new alcove area and connection to electrical power distribution equipment within 201 Portage.
  - Removal of security cameras in bunker.
- 1 Lombard
  - No work expected under this option.
- 333 and 335 Main
  - No work expected under this option.
- 200 Portage
  - No work expected under this option.

4.3.5 Civil Scope of Work

In addition to the access and service hole installation and road/ sidewalk restoration on the affected areas listed in Section 3.1.5, additional work specific to the partial decommissioning—North loop closure option include:

- Temporarily remove one and temporarily relocate a second Traffic Signal pole, base, and conduit, as well as Hydro streetlight conduit in conflict with the service hole located at the corner of 1 Lombard Place, and
- Relocate Traffic Signal conduit on the access hole on the west side of the concourse.

Unlike the other two options, only one phase of construction is required for this option. Construction of the access and service holes is defined to maintain as much pedestrian and vehicular access as possible through the project.

- The service hole located at the corner of 1 Lombard Place will require the closure of the westbound curb lane and middle lane along Portage Avenue East to serve as the mobile crane and cellular concrete batching area for the duration of construction.
- The access hole west of the concourse will require the median lane and middle lane to be closed to give room for heavy equipment and truck staging during construction. This creates an unconventional through movement for westbound traffic, but the intersection is large enough to accommodate this lane shift.
- The west crosswalk of the intersection must be closed due to direct conflicts with the service hole.
- If an agreement can be reached with the owners of 1 Lombard Place, pedestrians could use their private plaza in front of the building to travel between Portage Ave E and north Main Street as the public right-of-way will be blocked.

4.3.6 Impacts on Stakeholders

Below is a summary of impacts identified on stakeholders on this option. Quantification of these items were not included in the cost estimates.

- Discussions and agreements to be made between owners and City of Winnipeg within private property lines.
- Areas not being infilled but will be closed off to public will need to be repurposed by the Owners. This will include installation of alternate access points.
- Retail areas that are within decommissioned areas to be relocated before the start of demolition work.
- Access to the remaining areas of the PMUC will be maintained along with access to the City's downtown overhead Skywalk System for 200 Portage, 335 and 333 Main, and 1 Lombard.
- 201 Portage will lose access to the PMUC and the City's downtown overhead Skywalk System.

4.3.7 Cost Estimate

A cost estimate for multiple partial decommissioning was not provided for this option and beyond the scope of the study. However, based on the area to be decommissioned and scope of work above, this option will likely be the same or lower than the South Loop Closure partial decommissioning option.

4.3.8 Schedule

The anticipated schedule for this option will be similar to the South Loop Closure decommissioning option although it will require less demolition time above grade.

4.3.9 Long Term Maintenance and Monitoring

The long term maintenance and monitoring for this option will be similar to the South Loop Closure decommissioning option although more waterproofing will be retained, increasing future inspection and maintenance costs.

On-going mechanical and electrical maintenance, similar to what is required currently, would continue in this partial decommissioning option.

Analysis of Options

The following sections discuss the advantages and disadvantages of each option.

4.4 Structural

Full decommissioning will require the least amount of waterproofing repairs and least amount of maintenance and monitoring. Waterproofing maintenance would be required at any areas with occupied spaces above or at 201 Portage and Main between the private property line and concrete wall. This option will require the most structural demolition and construction of new walls.

The partial options will require more area of waterproofing maintenance with approximately half of the concourse to remain in use. As part of the pedestrian opening project, some of these areas have new waterproofing installed and therefore will have an extended life service. In the south closure option, significant structural work is required at 335 Main to demolish the existing stairs and plaza as part of the mandate of excavating within 4’-0” of finished grade elevation.

Advantages for partial decommissioning the south loop is lower capital cost, shorter schedule. Disadvantages would be no access to 335 and 333 Main Street. Agreements to be arranged with private owners.

4.5 Architectural

No material code advantages/disadvantages emerge from the options considered since compliance can be attained through acceptable/alternative compliance paths for all of the decommissioning options.

The partial decommissioning options for the Concourse have been evaluated through a comparative fire protection engineering analysis, which involved the use of egress simulation software and related technical calculations. The results of this analysis serve as a foundation for this review and allow for the formulation of opinions.

It has been established that both of the partial options can yield an acceptable level of fire safety as benchmarked by comparable MBC acceptable solution arrangements, notwithstanding any extended travel distance discrepancies.

Where applicable we have considered a series of assumptions around adjacent reliance on the Concourse for usage even if not a required exit as defined by the MBC; it appears that much of the

access from adjacent buildings to the Concourse is in place currently to ensure dead-end corridors are managed.

The technical portion of this fire protection engineering study is primarily dependent on:

- Site specific egress model scenarios, including location, number and size of egress features, and
- Estimated Required Safe Egress Time (RSET) which accounts for occupant loading and distribution within the building, travel, and queuing times.

The Pathfinder simulation software was used in this analysis to estimate occupant egress travel and queue times. The Pathfinder software is based on empirical calculations that have been developed through testing and observation as outlined in the Society of Fire Protection Engineers (SFPE) Handbook. These methods are used by fire protection engineers in estimating occupant movement in fire situations.

The RSET includes the total time required for building occupants to evacuate the building via the available exit facilities. This includes a cumulative time for the fire detection, occupant pre-movement, and occupant travel time from the most remote locations within the Concourse floor areas to the exits, and accounts for queuing at transition/merge points.

The detection, alarm time, and pre-movement times have been considered constant for all scenarios, and as such, have been excluded from the RSET as this is a comparative analysis.

Occupant egress times have been estimated by using the Pathfinder simulation software. This includes occupant travel time to exits, and accounts for queuing times at transition/merge points. The models account for a distribution of occupants with consideration for MBC Table 3.1.17.1., and the various floor uses.

The MBC prescriptive models have accounted for an occupant load of 683 occupants based on the existing exit capacity of the Concourse with 1 Lombard Place, 335 Main Street and 201 Portage Ave exit locations available. The proposed decommissioning option 1 and 2 models have accounted for an occupant load of 458 occupants based on the respective occupant load factors in MBC Table 3.1.17.1.

A summary of the evacuation simulation results is presented in Table 1 and reflect that both option 1 and 2 yield relatively lesser RSETs when compared to MBC acceptable solution benchmarks and support the opinion that both attain an acceptable level of fire safety as required by the Code.

Table 7: Summary of RSET Results

Model	Aggregate Occupant Load	Evacuation Time [a]	RSET (s)	
			0.595 m/s	1.19 m/s
Option 1 (335 Main Street Closed)	458[b]	314	193	193 – 314
Option 2 (201 Portage Ave Closed)		285	166	166 – 285
Prescriptive 45 m Layout[d]	683[c]	411	267	267 – 411
Prescriptive 67.5 m Layout[d]		471	290	290 – 471

(a) Travel and queue time to reach a protected exit.
(b) Maximum permitted occupant load based on respective occupant load factors in MBC Table 3.1.17.1.
(c) Maximum permitted occupant load based on available exit capacity.
(d) Maximum travel speed of 2.43 m/s for egress on escalators as permitted by NFPA 130.

4.6 Mechanical

The mechanical systems have some clear constraints under anything other than a full decommissioning scenario. From a mechanical perspective, full decommissioning would eliminate future maintenance and replacement of existing equipment which are at the end of their service-life and for that reason would be the most economical option in both the short term and long term timeframes. Of the two partial decommissioning options, closure of the south loop is the least costly and has the least impact on stakeholder facilities.

Under the partial decommissioning option, the scope for mechanical related work to the City of Winnipeg Concourse would increase substantially due to the age of equipment over the impacts of decommissioning. The aged equipment is beyond the expected service-life and was noted as such in the 2018 report with most of it remaining to date. The partial decommissioning option therefore has very little direct work due to the partial decommissioning except for the impact to 333 and 335 Main under the south loop closure or 201 Portage under the north loop closure. The balance of the corners can remain largely untouched.

4.7 Electrical

Similar to mechanical, full decommissioning is the easiest for the electrical systems as it relates to the City of Winnipeg Concourse. With this option, modifications will be required in and around the existing at-grade entrances at 201 Portage and 1 Lombard. Electrical services would need to come from the two private buildings.

Under the partial decommissioning options, the scope for electrical would increase substantially due to the age of equipment over the impacts of the decommissioning. The existing electrical distribution equipment is beyond the expected service-life. The partial decommissioning option has very little direct work due to the partial decommissioning except for the impact to 333 and 335 Main under the south loop closure or 201 Portage under the north loop closure. The other corners are untouched.

4.8 Civil

A significant advantage to the full decommissioning option is minimizing the amount of waterproofing repairs, and thus eliminating surface works reconstruction and major impacts to traffic. The disadvantages include that of the decommissioning options, this one has the biggest temporary impact to traffic and pedestrians, and it permanently is the most restrictive to underground pedestrian movements.

The partial decommissioning options will also reduce the amount of necessary waterproofing repairs based on the areas being decommissioned. The traffic and pedestrian impacts will not be as significant as the full closure option. Additional advantages for the South Loop Closure includes: demolishing the only exterior weather exposed staircase that appears to have the most severe deterioration compared to the other corners.

An advantage of the North Loop Closure is decommissioning the concourse under two of the three heavy traffic volume legs of the intersection, reducing the amount of waterproofing repairs that conflict with vehicles. It also has the most straightforward traffic staging of all three options.

5. Summary and Recommendations

Below is a summary of the advantages (A) and disadvantages (D) of each option in relation to each other.

Table 8: Decommissioning Summary

Items for Consideration	Full Decommissioning	Partial Decommissioning Option 1: South Loop Closures	Partial Decommissioning Option 2: North Loop Closures
Decommissioning	(D) Decommissioning is permanent	(A) Less area for decommissioning (D) Decommissioning is permanent	(A) Less area for decommissioning (D) Decommissioning is permanent
Cost	(D) Highest Capital Cost: $7.9M	$6.5M	Not provided and beyond the scope of the study; estimated to be the same or lower than the south loop closure.
Membrane Replacement Cost	(A) Least amount of membrane replacement areas, only areas beyond perimeter walls under exterior spaces	(D) Approximately half of membrane replacement cost with half of concourse still operational*	(D) Approximately half membrane replacement cost with half of concourse still operational*
Unknown Costs	(D) Highest relocation costs for current tenants during and after decommissioning. Higher amount real estate arrangements with property owners.	(A) Lower relocation costs for current tenants during and after decommissioning. Lower amount real estate arrangements with property owners.	(A) Lower relocation costs for current tenants during and after decommissioning. Lower amount real estate arrangements with property owners.
Schedule	(D) Longest schedule: Approximately 17 months	(A) Shorter schedule: Approximately 14 months	(A) Shorter schedule: Approximately 14 months
Structural	(A) Least waterproofing maintenance required (D) More structural walls to be installed	(D) Waterproofing replacement required over non decommissioned area; (A) Less structural walls than full decommissioning; (D) Requires more demolition at 335 Main	(D) Waterproofing replacement required over non decommissioned area; (A) Less structural walls than full decommissioning; (A) Least amount of demolition of above grade areas
Civil	(D) most impact on traffic during decommissioning	(A) less impact on traffic during decommissioning (D) more impact on traffic when replacing the membrane outside decommissioned areas	(A) less impact on traffic during decommissioning (D) more impact on traffic when replacing the membrane outside decommissioned areas
Mechanical	(A) No further upgrades required for the City of Winnipeg. (D) Modifications required by neighbouring stakeholders.	(D) Additional service to keep operational and recommended replacement of existing aged equipment	(D) Additional service to keep operational and recommended replacement of existing aged equipment. More complex than south loop closure for northwest corner.

Items for Consideration	Full Decommissioning	Partial Decommissioning Option 1: South Loop Closures	Partial Decommissioning Option 2: North Loop Closures
Electrical	(A) No further upgrades required for the City of Winnipeg. (D) Modifications required by neighbouring stakeholders. Arrangements with private building owners to maintain / refeed existing electrical systems around NW and SE at-grade entrances	(D) Additional service to keep operational and recommended replacement of existing aged equipment	(D) Additional service to keep operational and recommended replacement of existing aged electrical distribution equipment. Arrangements to be made with private building owners to maintain / refeed existing electrical systems around NW at-grade entrance. More complex compared to south loop closure option.
Safety / Accessiblity	(D) No access to underground crossing	(A) Partial access to underground crossing present; (D) No access from 335 and 333 Main Street; sprinkler systems need modification	(A) Partial access to underground crossing present; (D) No access from 201 Portage Avenue; sprinkler systems need modification
Dead End Corridors	(D) Most amount of dead end corridors created that are addressed in this option	(A) Least amount of dead ends or reconfiguration of private basements.	(A) Results in dead end corridor created at 201 Portage requiring basement reconfiguration
Convenience	(D) Disconnects all four corners from weather protected pedestrian corridors	(A) Pedestrians can still access concourse and skywalk system with 200 Portage still open.	(A) Pedestrians can still access concourse and skywalk system with 200 Portage still open.
Impact on Tenants	(D) No access to all tenants at four corners; no access to Bruce Head artwork	(D) No access from 335 main, 333 Main Street; retail within decommissioned zones to be relocated (A)Continued access to part of Bruce Head artwork.	(D) No access from 201 Portage; retail within decommissioned zones to be relocated (A) Continued access to part of Bruce Head Artwork
Maintenance	(A) Least amount of maintenance vs. partial decommissioning options (D) Maintain stair bunkers at 201 Portage and 1 Lombard	(D) Maintenance required at areas still operational D) Maintain stair bunkers at 201 Portage and 1 Lombard	(D) Maintenance required at areas still operational D) Maintain stair bunkers at 201 Portage and 1 Lombard
Monitoring	(D) Monitoring required at decommissioned areas for any settlement of cellular concrete	(A) Monitoring required at decommissioned areas for any settlement of cellular concrete but for smaller areas (D) Inspection ports required to review existing membrane, visual inspections for leaks at concourse	(A) Monitoring required at decommissioned areas for any settlement of cellular concrete but for smaller areas (D) Inspection ports required to review existing membrane, visual inspections for leaks at concourse

*cost of membrane replacement can be referred to in Stantec report dated 2023.

5.1 Recommendations

Based on the above information, all three options studied are feasible. All three have advantages and disadvantages. There are multiple unknown factors that were beyond the scope of this study. In order to make a more well-informed decision between all three options, we are recommending the City extend the study to include the following:

- Interviews with stakeholders to confirm any potential financial impacts on decommissioning the concourse.
- Performing a pedestrian traffic study to determine how many people access the concourse from each of the 4 buildings.
- Performing a vehicular traffic study to determine effects on motorist during decommissioning construction, including consultations with Winnipeg Transit.

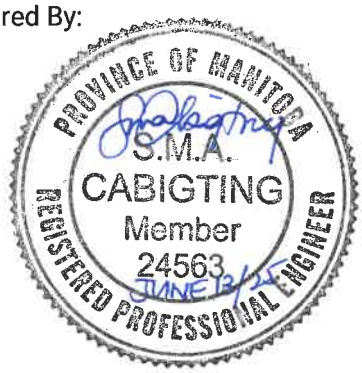
6. Closure

A feasibility study was completed for three options to decommission the Portage and Main Underground Concourse, Winnipeg, Manitoba. The purpose of this study is to assess each option, provide a Class 4 Cost estimate and preliminary schedule for the purposes of budgeting and planning.

The full and partial – south loop decommissioning options have a Class 4 Cost estimate of $7.9M and $6.5M respectively. A cost estimate for the partial – north loop decommissioning option was not provided; however, based on the scope of work would be similar or less than the south loop closure. It was determined that all three options are feasible; however further investigation is required to make a more informed decision. These include traffic studies and cost implications on stakeholders.

We trust this report provides the information you require. Upon your review, please contact our office to discuss the report in further detail.

Prepared By:



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Certificate of Authorization

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June 13, 2025



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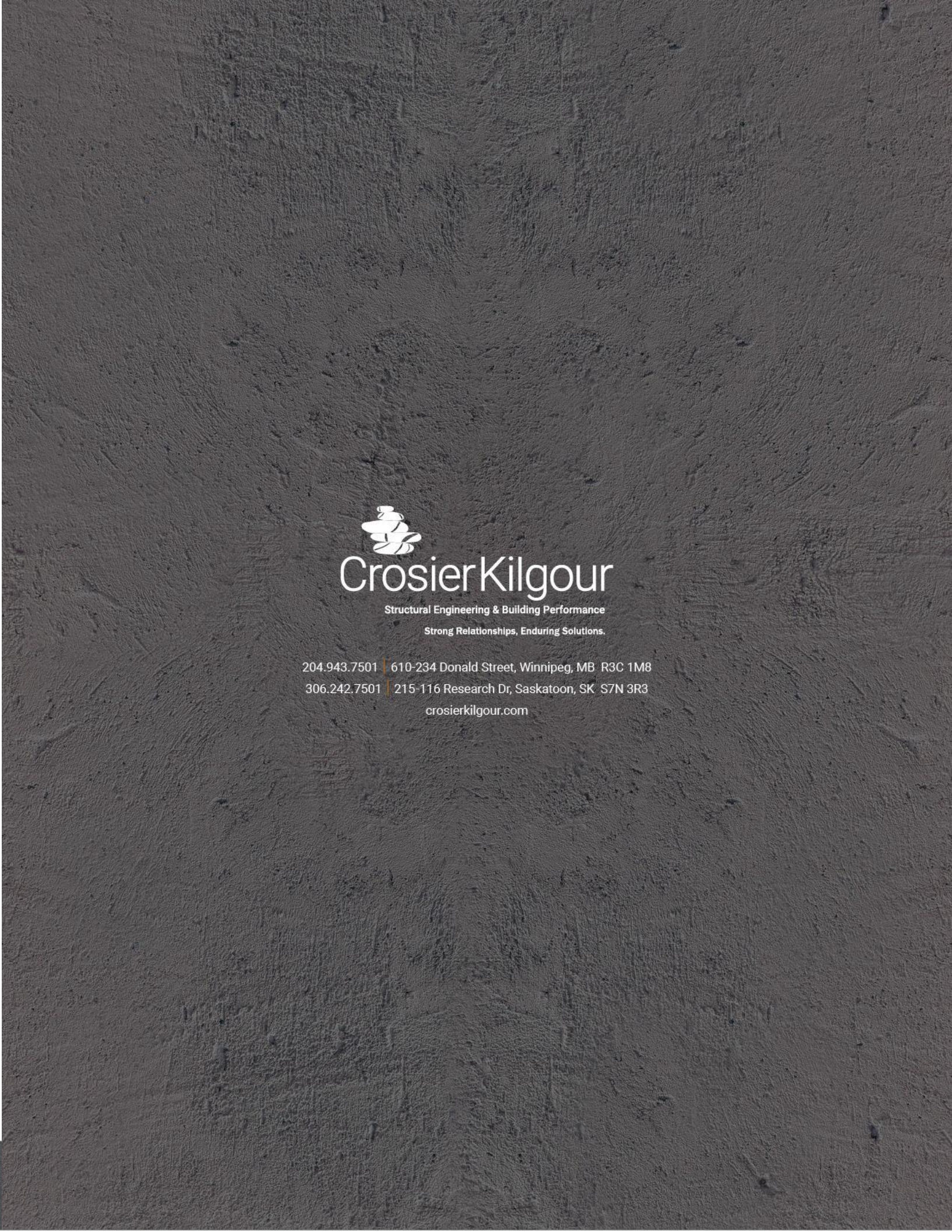
Appendix A - Drawings

Appendix B – Cost Estimate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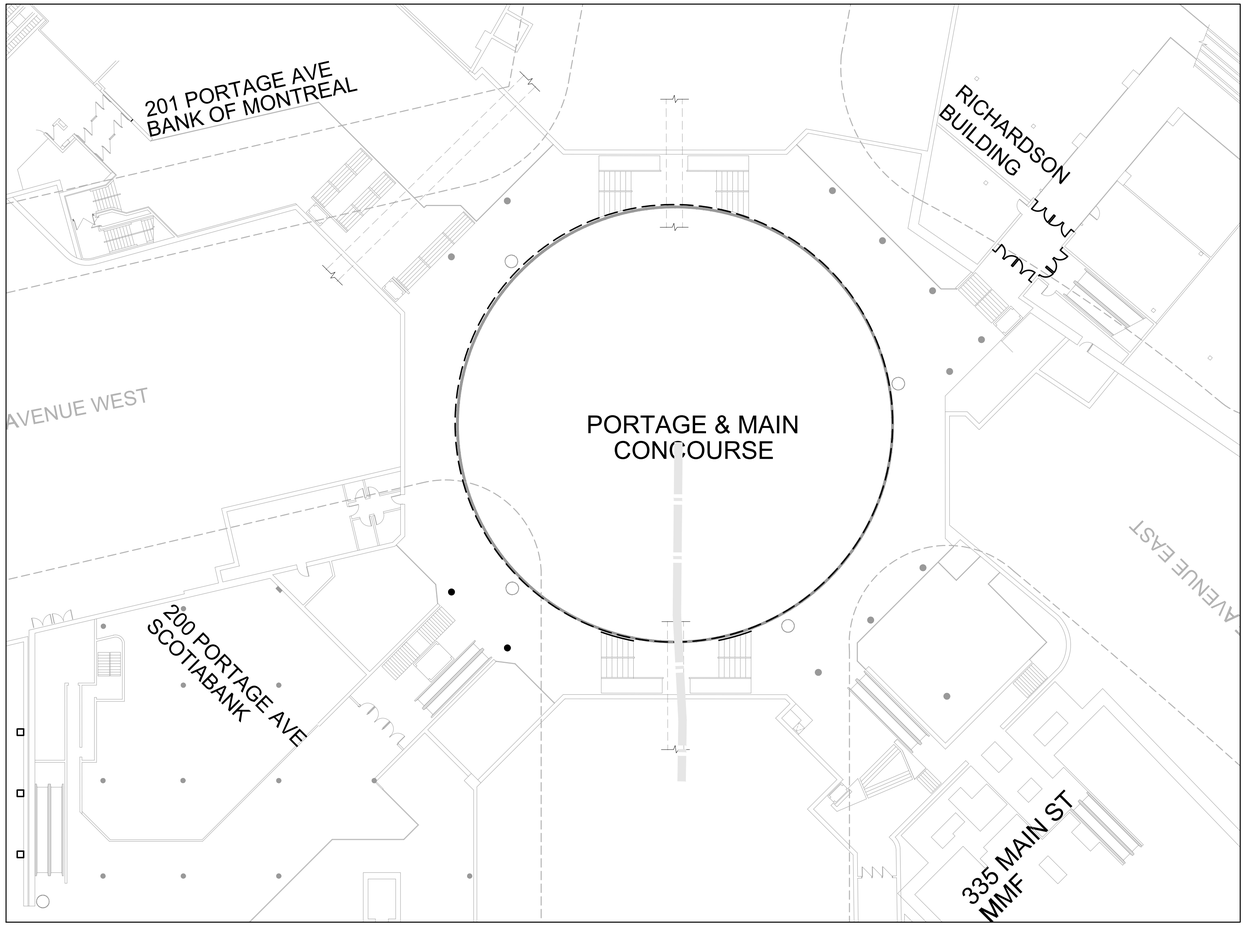
PORTAGE AND MAIN CONCOURSE DECOMMISSIONING

DECOMMISSIONING OPTIONS

PORTAGE AVENUE & MAIN STREET WINNIPEG, MANITOBA



SITE PLAN
NTS

CONSULTANTS

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PORTAGE & MAIN CONCOURSE DECOMMISSIONING
WINNIPEG, MANITOBA

Sheet Title
CONCOURSE FLOOR FRAMING PLAN - FULL DECOMMISSIONING

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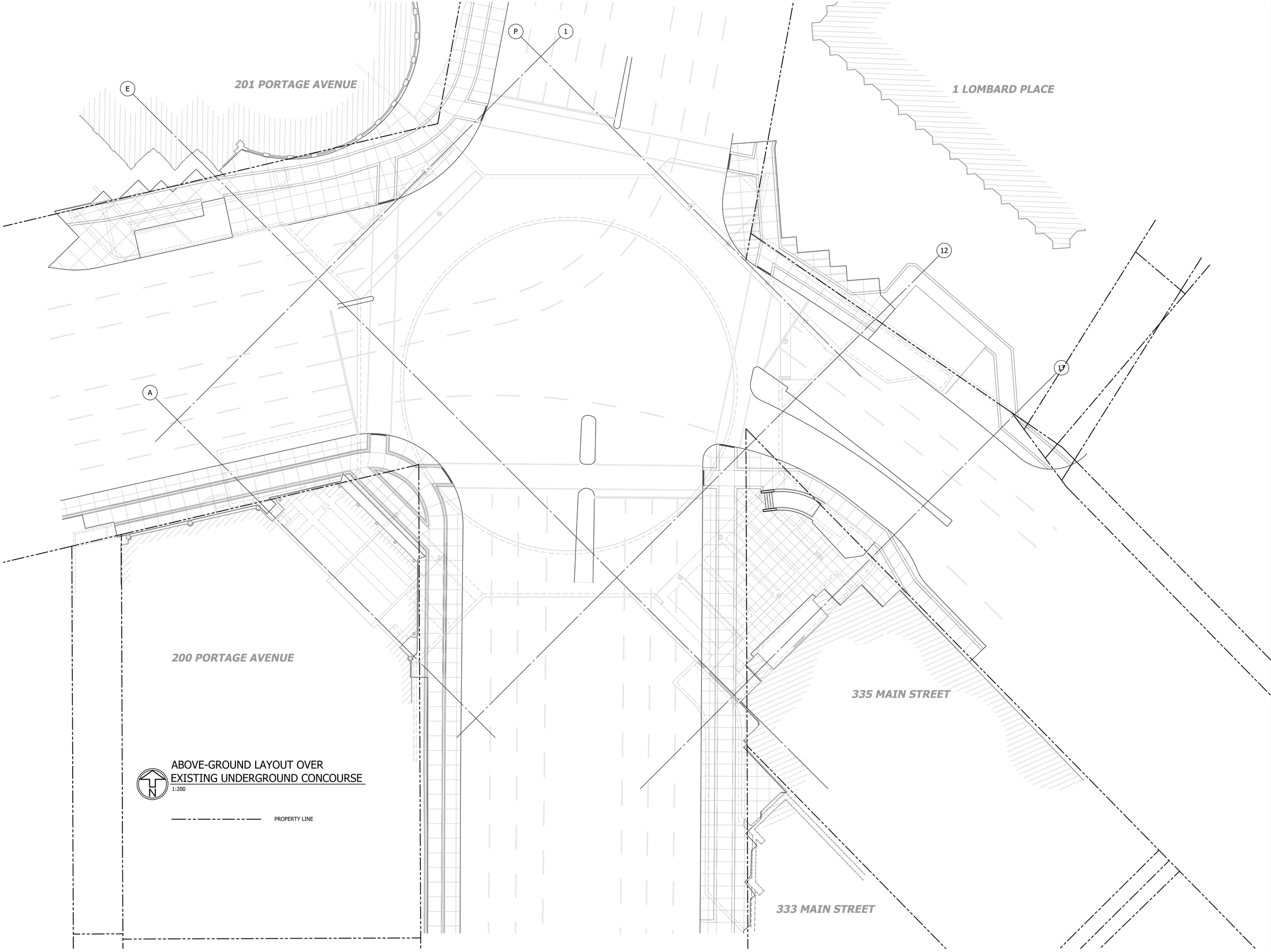

ABOVE-GROUND LAYOUT OVER
EXISTING UNDERGROUND CONCOURSE
1:200

PROPERTY LINE

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Sheet Title
ABOVE-GROUND LAYOUT OVER
EXISTING CONCOURSE

Design	SMC
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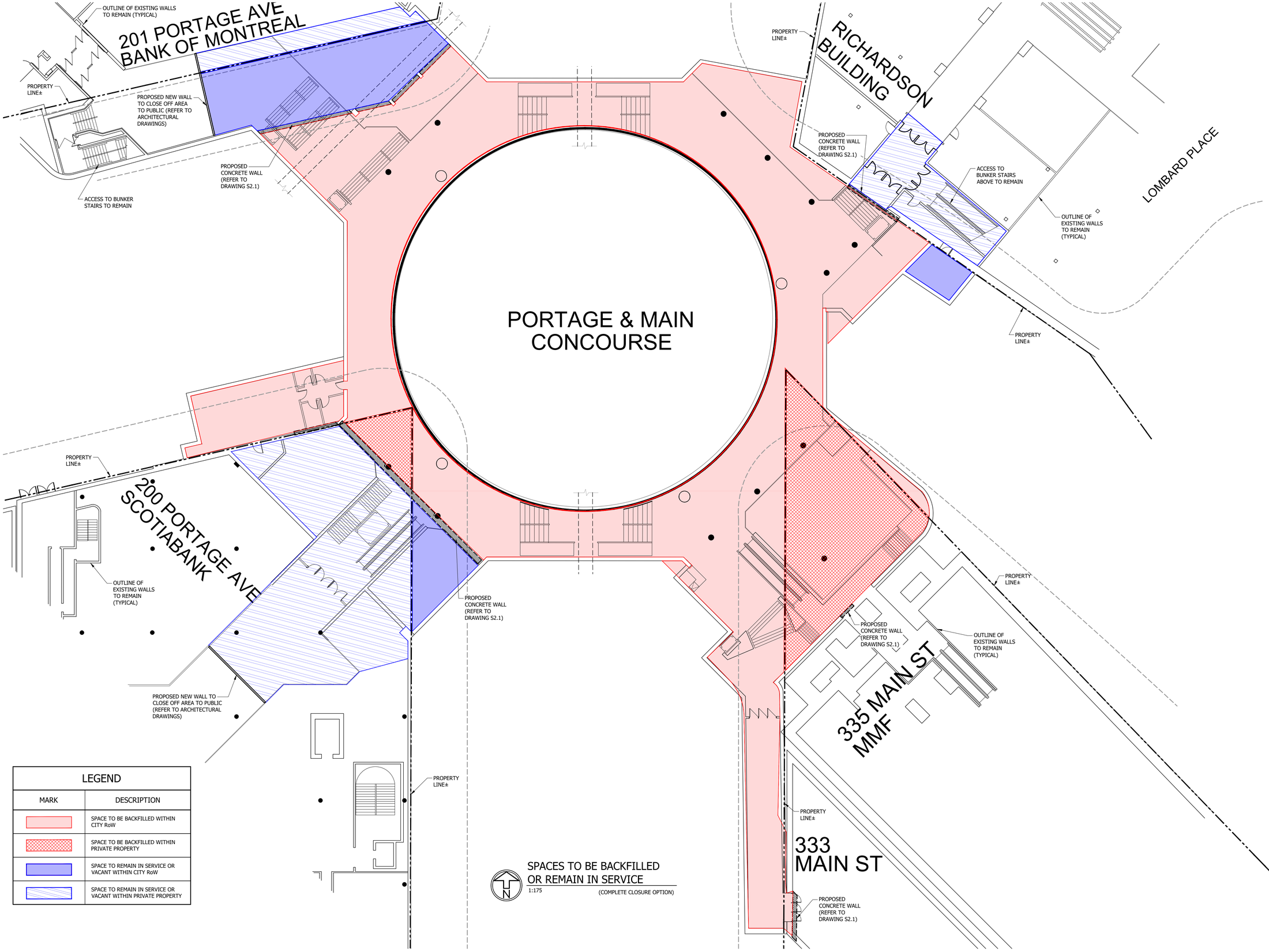

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	SPACE TO BE BACKFILLED WITHIN PRIVATE PROPERTY
	SPACE TO REMAIN IN SERVICE OR VACANT WITHIN CITY RoW
	SPACE TO REMAIN IN SERVICE OR VACANT WITHIN PRIVATE PROPERTY

SPACES TO BE BACKFILLED OR REMAIN IN SERVICE

1:175 (COMPLETE CLOSURE OPTION)

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Sheet Title
SPACES TO BE BACKFILLED OR REMAIN IN SERVICE/VACANT ON PRIVATE AND CITY OF WINNIPEG PROPERTIES

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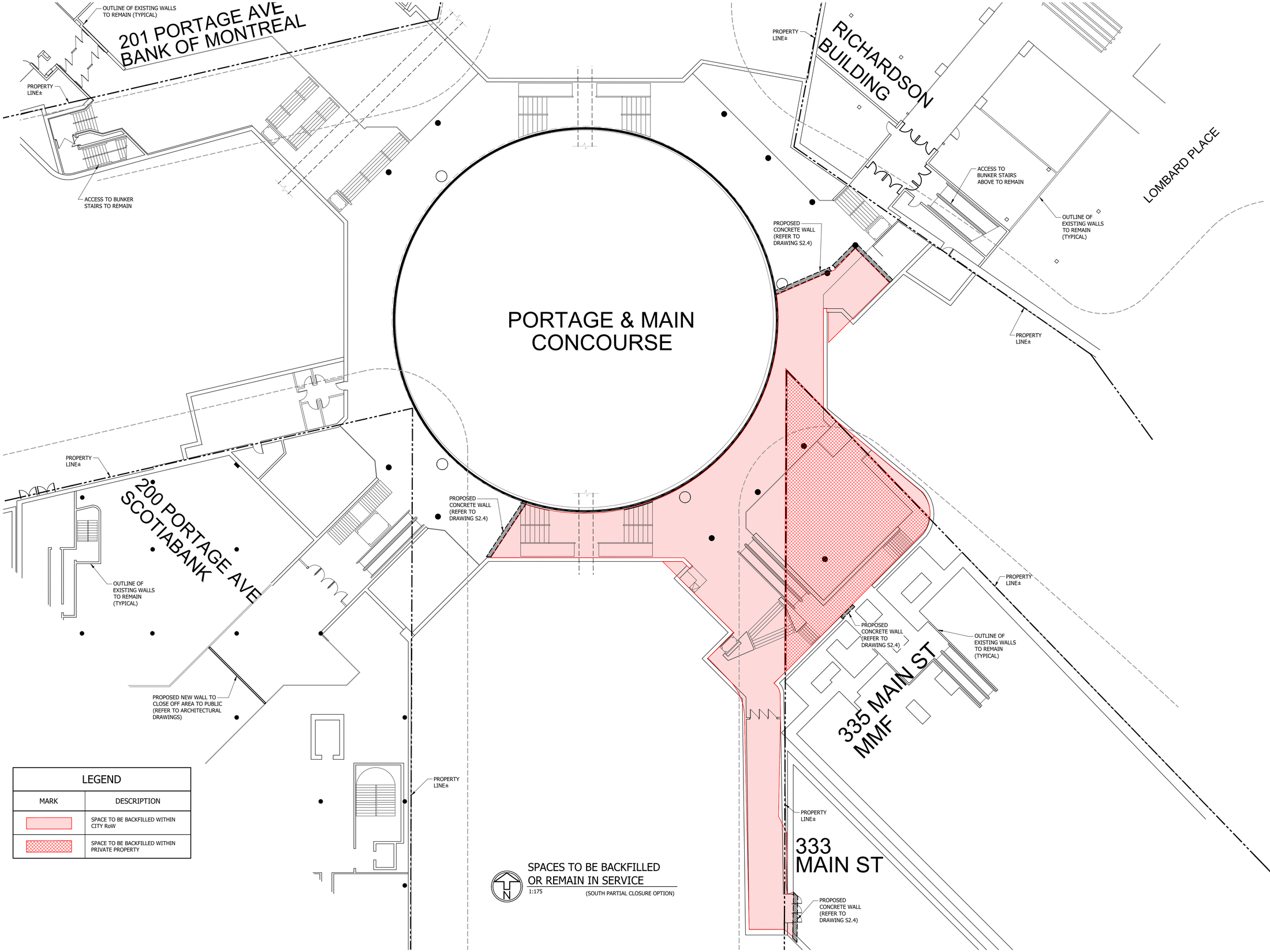

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	SPACE TO BE BACKFILLED WITHIN PRIVATE PROPERTY

SPACES TO BE BACKFILLED OR REMAIN IN SERVICE

1:175

(SOUTH PARTIAL CLOSURE OPTION)

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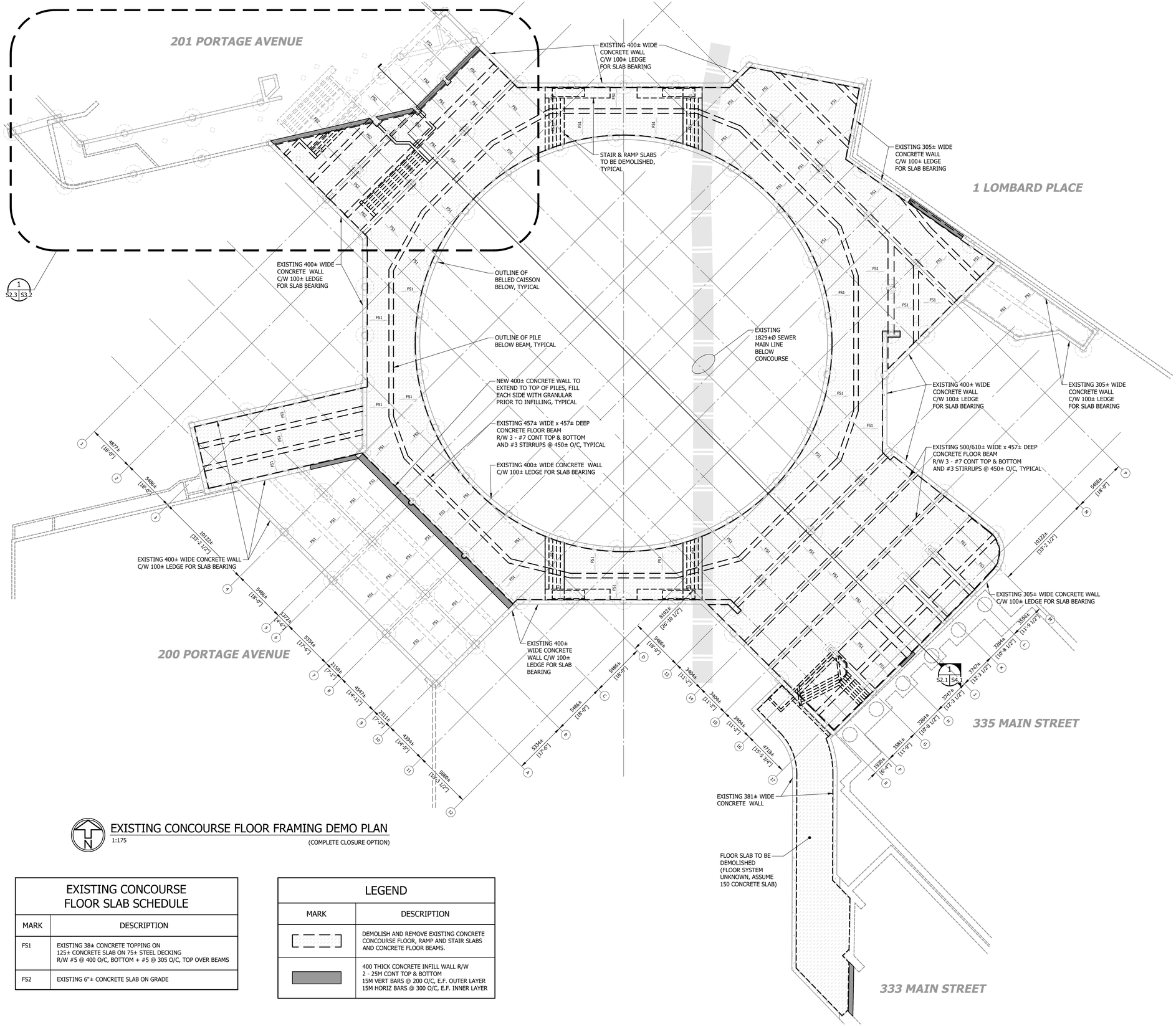

EXISTING CONCOURSE FLOOR FRAMING DEMO PLAN

1:175

(COMPLETE CLOSURE OPTION)

EXISTING CONCOURSE FLOOR SLAB SCHEDULE	
MARK	DESCRIPTION
FS1	EXISTING 38± CONCRETE TOPPING ON 125± CONCRETE SLAB ON 75± STEEL DECKING R/W #5 @ 400 O/C, BOTTOM + #5 @ 305 O/C, TOP OVER BEAMS
FS2	EXISTING 6"± CONCRETE SLAB ON GRADE

LEGEND	
MARK	DESCRIPTION
	DEMOLISH AND REMOVE EXISTING CONCRETE CONCOURSE FLOOR, RAMP AND STAIR SLABS AND CONCRETE FLOOR BEAMS.
	400 THICK CONCRETE INFILL WALL R/W 2 - 25M CONT TOP & BOTTOM 15M VERT BARS @ 200 O/C, E.F. OUTER LAYER 15M HORIZ BARS @ 300 O/C, E.F. INNER LAYER

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Sheet Title

CONCOURSE FLOOR FRAMING PLAN - FULL DECOMMISSIONING

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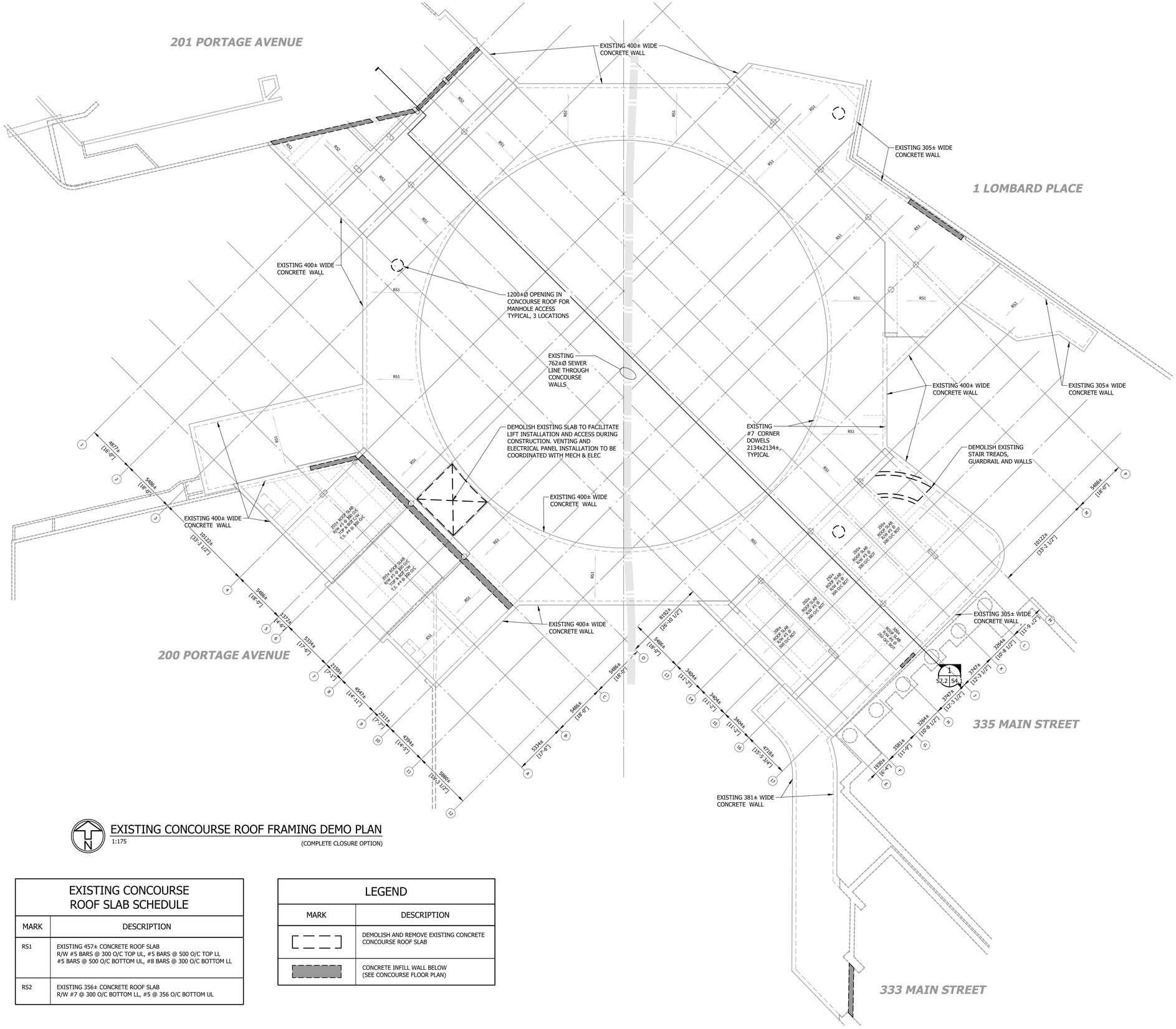

EXISTING CONCOURSE ROOF FRAMING DEMO PLAN

1:175

(COMPLETE CLOSURE OPTION)

EXISTING CONCOURSE ROOF SLAB SCHEDULE	
MARK	DESCRIPTION
RS1	EXISTING 457± CONCRETE ROOF SLAB R/W #5 BARS @ 300 O/C TOP LL, #5 BARS @ 500 O/C TOP LL #5 BARS @ 500 O/C BOTTOM UL, #8 BARS @ 300 O/C BOTTOM LL
RS2	EXISTING 356± CONCRETE ROOF SLAB R/W #7 @ 300 O/C BOTTOM LL, #5 @ 356 O/C BOTTOM UL

LEGEND	
MARK	DESCRIPTION
	DEMOLISH AND REMOVE EXISTING CONCRETE CONCOURSE ROOF SLAB
	CONCRETE INFILL WALL BELOW (SEE CONCOURSE FLOOR PLAN)

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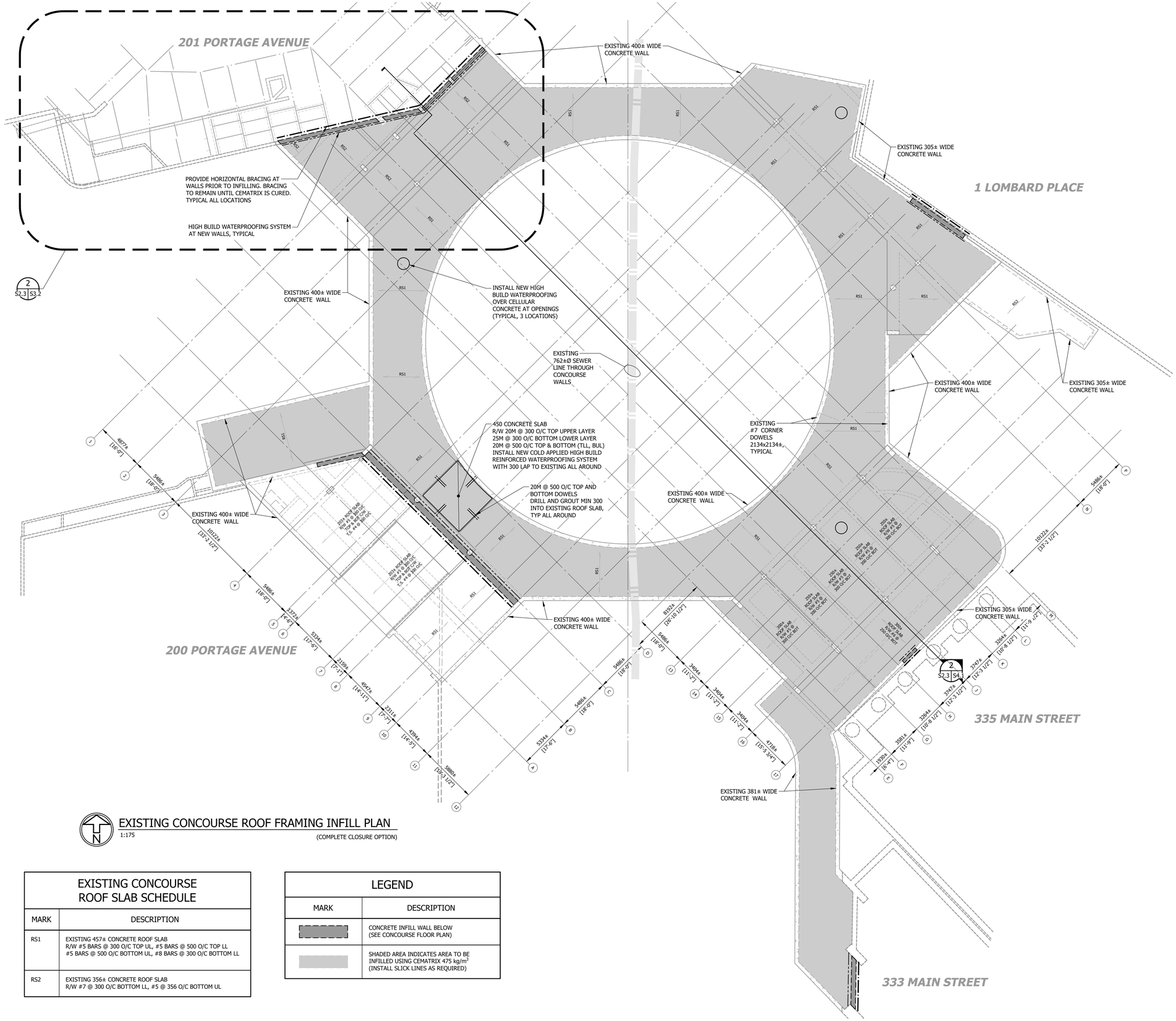

EXISTING CONCOURSE ROOF FRAMING INFILL PLAN

1:175

(COMPLETE CLOSURE OPTION)

EXISTING CONCOURSE ROOF SLAB SCHEDULE	
MARK	DESCRIPTION
RS1	EXISTING 457± CONCRETE ROOF SLAB R/W #5 BARS @ 300 O/C TOP UL, #5 BARS @ 500 O/C TOP LL #5 BARS @ 500 O/C BOTTOM UL, #8 BARS @ 300 O/C BOTTOM LL
RS2	EXISTING 356± CONCRETE ROOF SLAB R/W #7 @ 300 O/C BOTTOM LL, #5 @ 356 O/C BOTTOM UL

LEGEND	
MARK	DESCRIPTION
	CONCRETE INFILL WALL BELOW (SEE CONCOURSE FLOOR PLAN)
	SHADED AREA INDICATES AREA TO BE INFILLED USING CEMATRIX 475 kg/m³ (INSTALL SLICK LINES AS REQUIRED)

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CONCOURSE ROOF FRAMING INFILL PLAN - FULL DECOMMISSIONING

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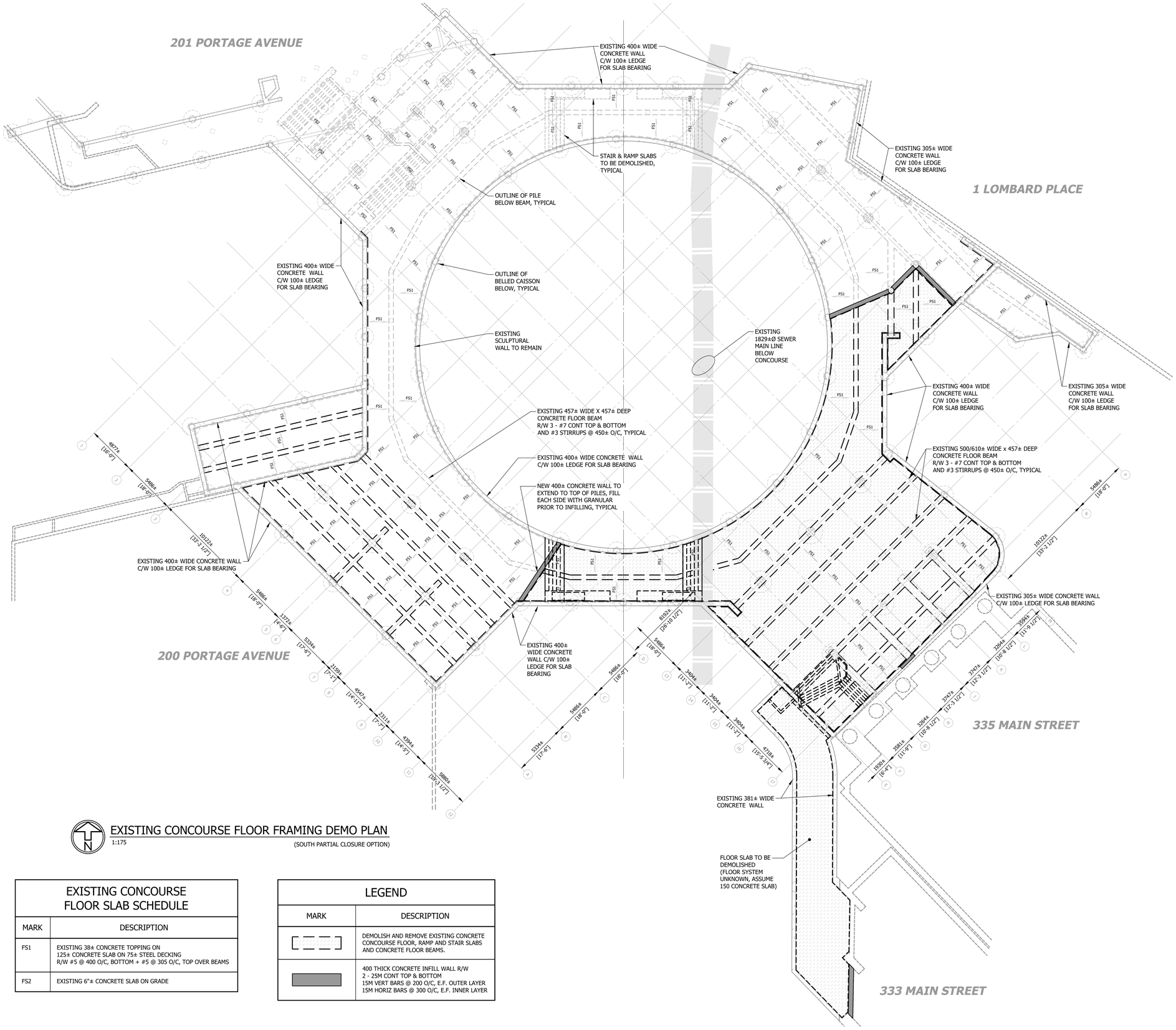

EXISTING CONCOURSE FLOOR FRAMING DEMO PLAN

1:175

(SOUTH PARTIAL CLOSURE OPTION)

EXISTING CONCOURSE FLOOR SLAB SCHEDULE	
MARK	DESCRIPTION
FS1	EXISTING 38± CONCRETE TOPPING ON 125± CONCRETE SLAB ON 75± STEEL DECKING R/W #5 @ 400 O/C, BOTTOM + #5 @ 305 O/C, TOP OVER BEAMS
FS2	EXISTING 6"± CONCRETE SLAB ON GRADE

LEGEND	
MARK	DESCRIPTION
	DEMOLISH AND REMOVE EXISTING CONCRETE CONCOURSE FLOOR, RAMP AND STAIR SLABS AND CONCRETE FLOOR BEAMS.
	400 THICK CONCRETE INFILL WALL R/W 2 - 25M CONT TOP & BOTTOM 15M VERT BARS @ 200 O/C, E.F. OUTER LAYER 15M HORIZ BARS @ 300 O/C, E.F. INNER LAYER

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Sheet Title

CONCOURSE FLOOR FRAMING PLAN - PARTIAL (SOUTH) DECOMMISSIONING

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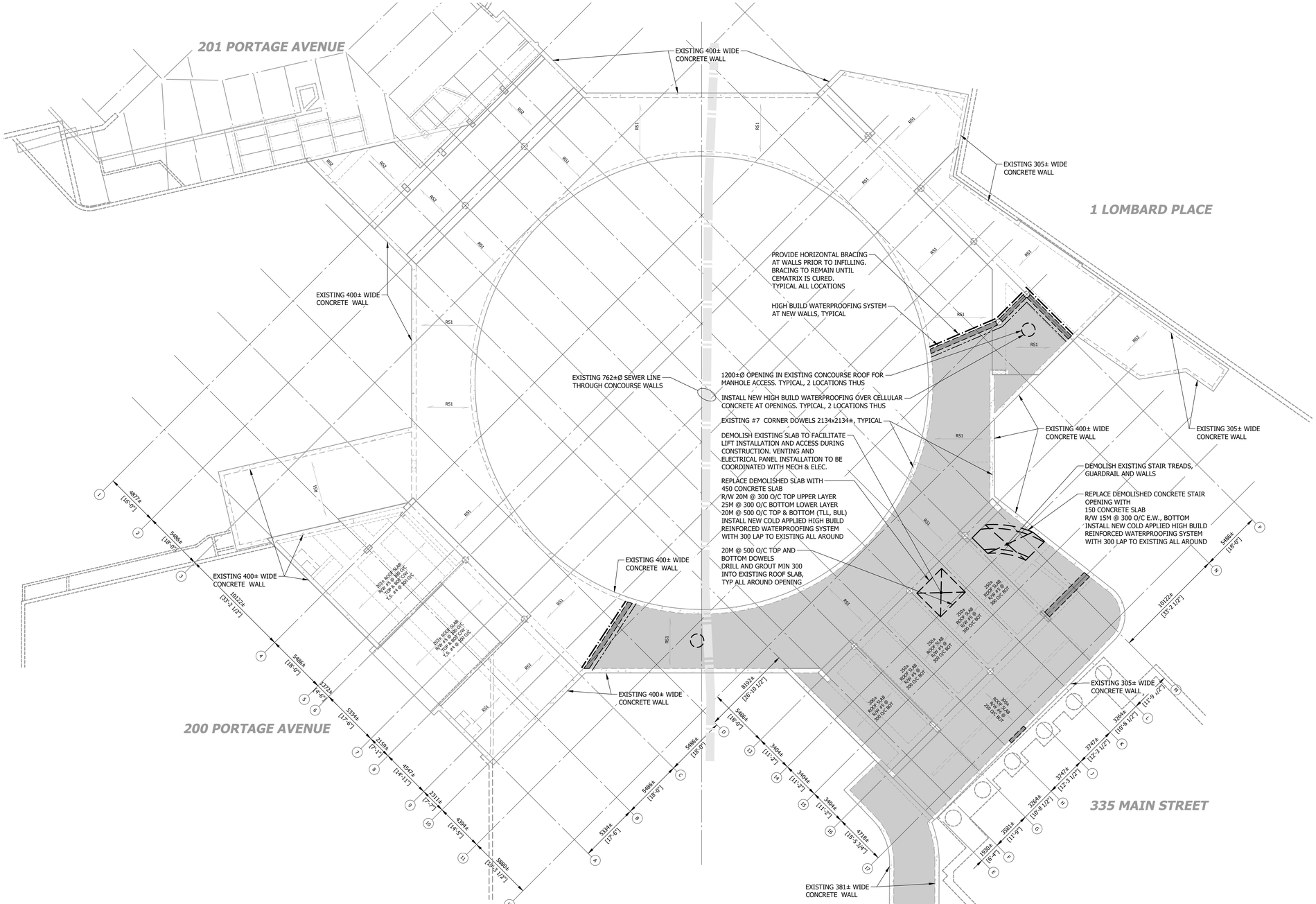

N

EXISTING CONCOURSE ROOF FRAMING DEMO & INFILL PLAN

1:175

(SOUTH PARTIAL CLOSURE OPTION)

EXISTING CONCOURSE ROOF SLAB SCHEDULE

MARK	DESCRIPTION
RS1	EXISTING 457± CONCRETE ROOF SLAB R/W #5 BARS @ 300 O/C TOP UL, #5 BARS @ 500 O/C TOP LL #5 BARS @ 500 O/C BOTTOM UL, #8 BARS @ 300 O/C BOTTOM LL
RS2	EXISTING 356± CONCRETE ROOF SLAB R/W #7 @ 300 O/C BOTTOM LL, #5 @ 356 O/C BOTTOM UL

LEGEND

MARK	DESCRIPTION
[- - -]	DEMOLISH AND REMOVE EXISTING CONCRETE CONCOURSE ROOF SLAB
	CONCRETE INFILL WALL BELOW (SEE CONCOURSE FLOOR PLAN)
	SHADED AREA INDICATES AREA TO BE INFILLED WITH STABILIZED FILL

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CONCOURSE ROOF FRAMING PLAN - PARTIAL (SOUTH) DECOMMISSIONING

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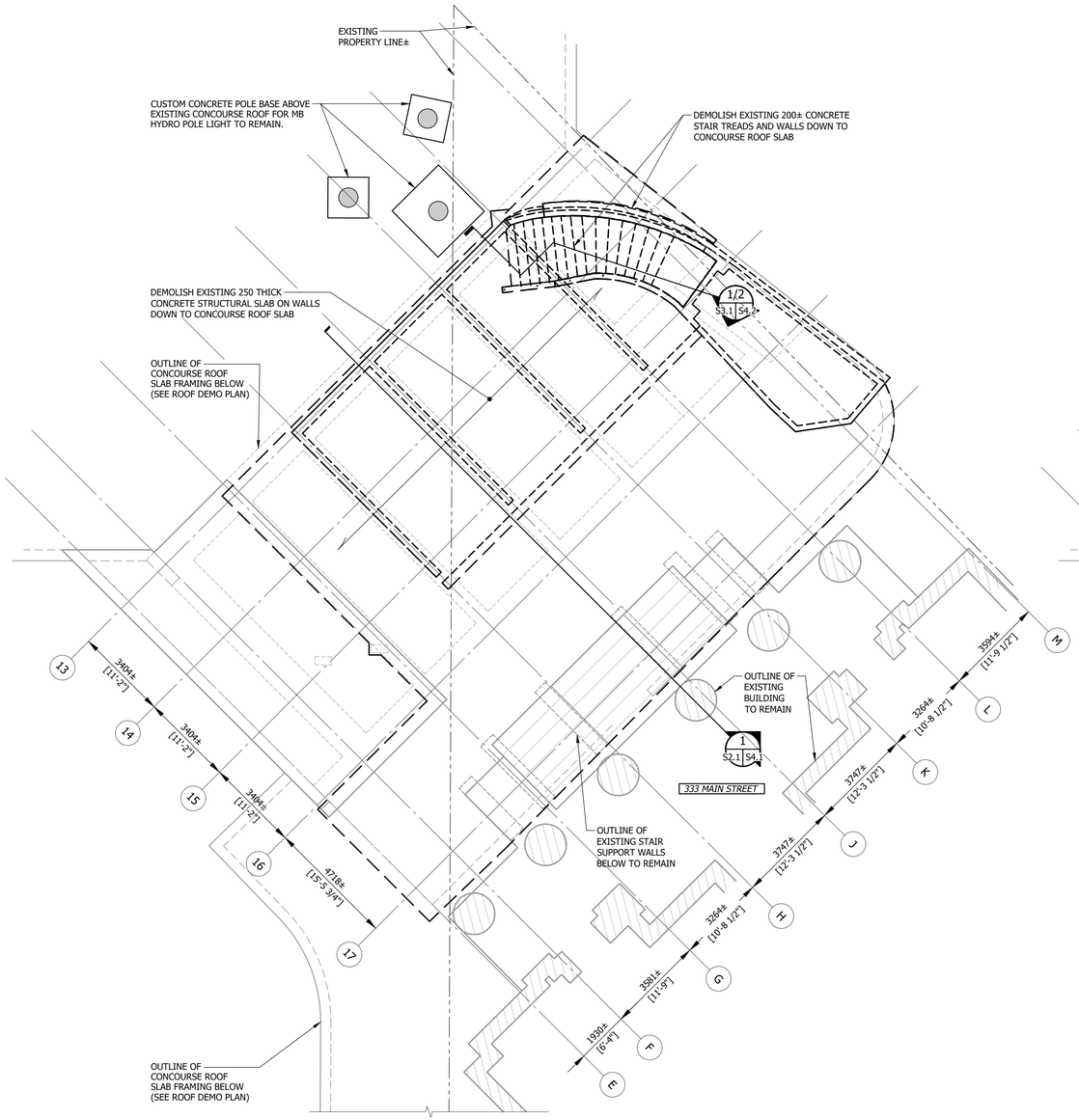
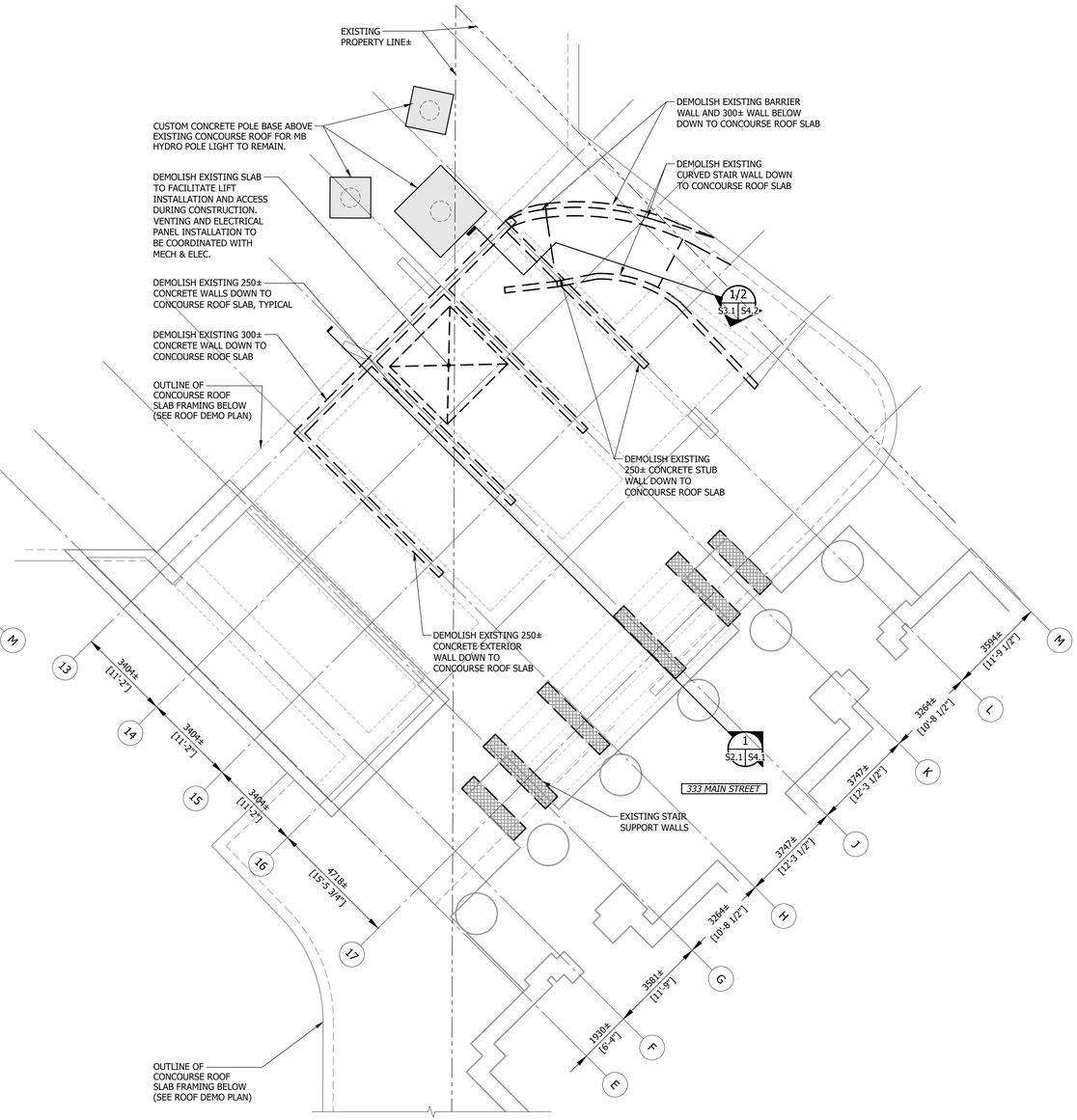


ENLARGED SOUTH-EAST CORNER FRAMING PLAN ABOVE CONCOURSE ROOF (UPPER LEVEL)

1:100



ENLARGED SOUTH-EAST CORNER FRAMING PLAN ABOVE CONCOURSE ROOF (LOWER LEVEL)

1:100

Consultant

CrosierKilgour

Structural Engineering & Building Performance

Rev	Date	Issuance
B	2025-05-29	ISSUED FOR REPORT
A	2025-04-21	ISSUED FOR REPORT - DRAFT

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Project

PORTAGE & MAIN CONCOURSE DECOMMISSIONING

WINNIPEG, MANITOBA

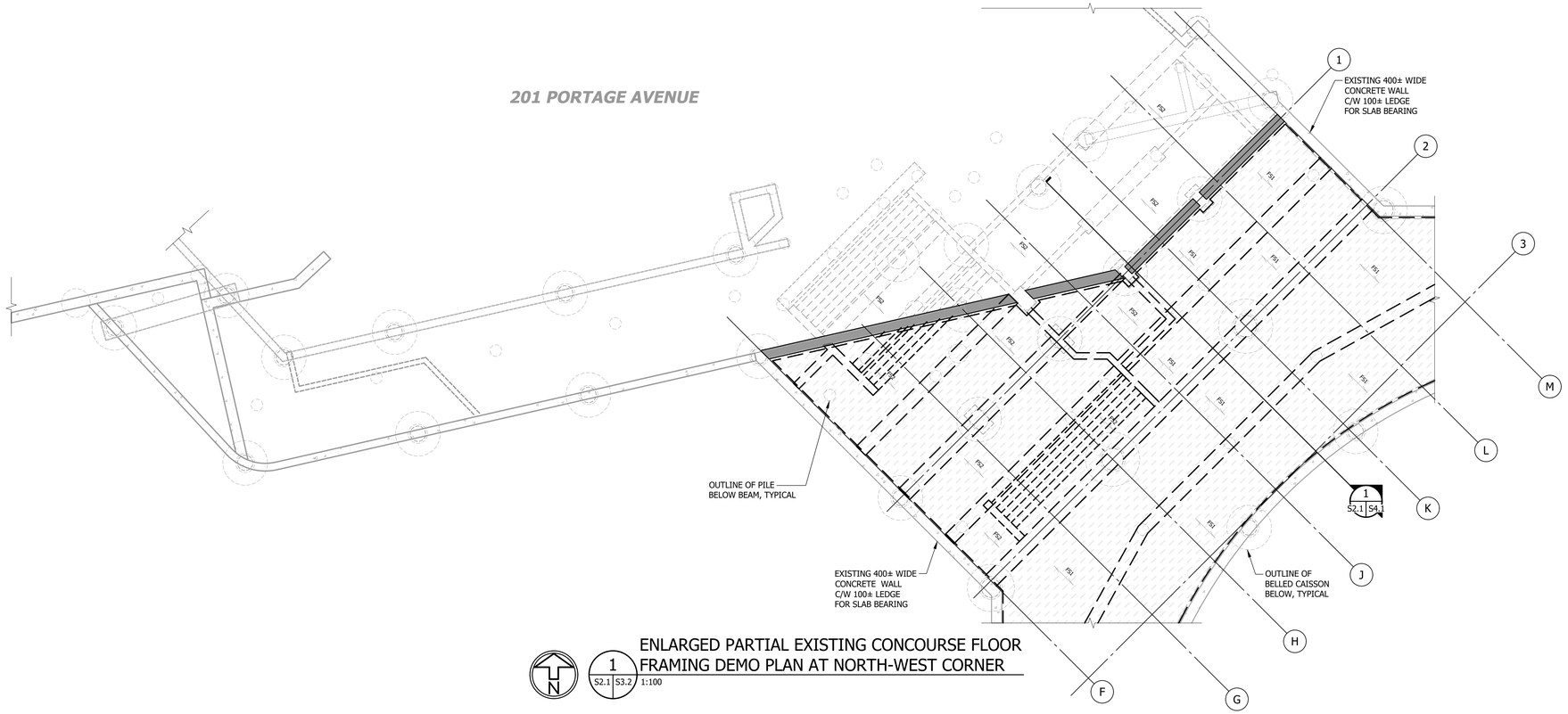
Sheet Title

ENLARGED SOUTH-EAST CORNER FRAMING PLANS ABOVE CONCOURSE ROOF

Design	SMC
Drawn	SAS
Project	2024-1243
Revision	B

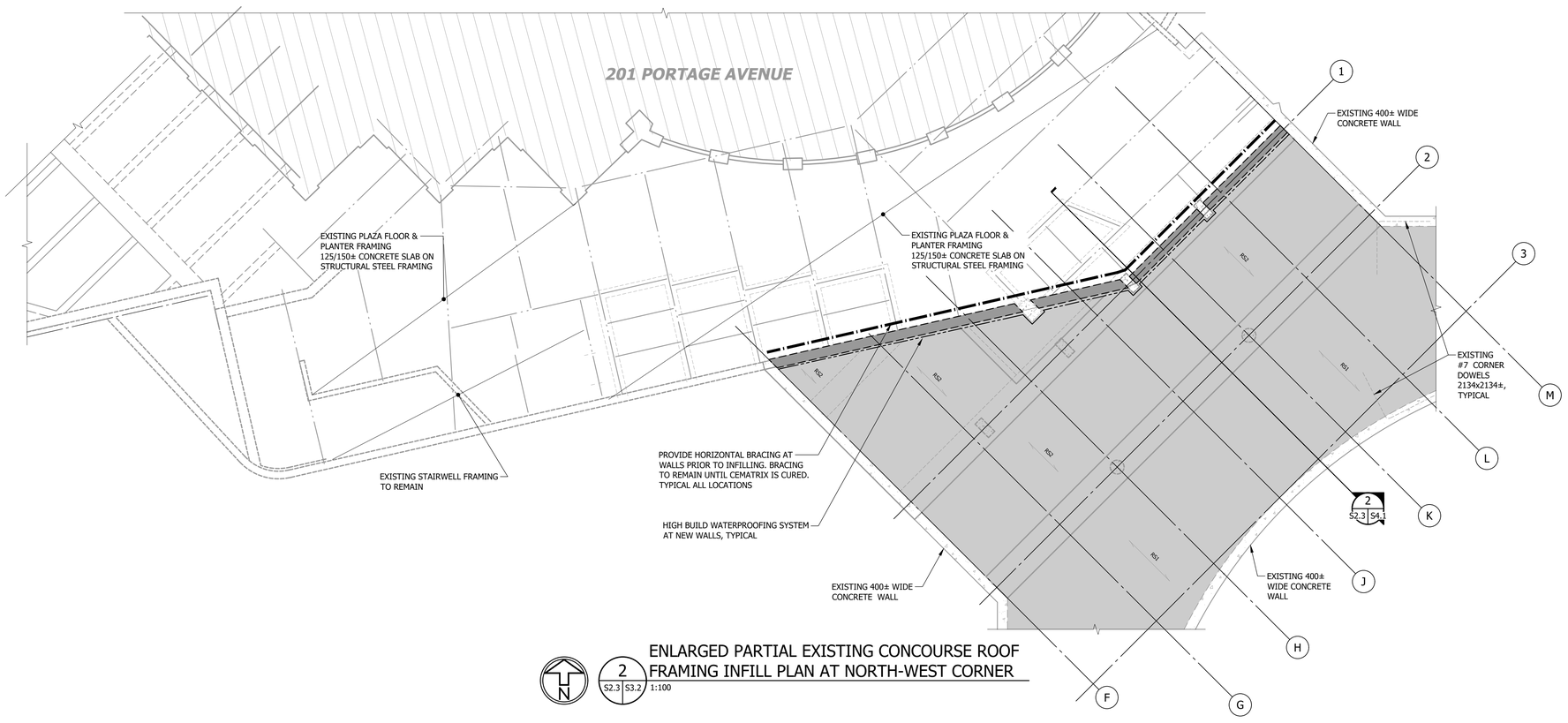
Sheet

S3.1



ENLARGED PARTIAL EXISTING CONCOURSE FLOOR FRAMING DEMO PLAN AT NORTH-WEST CORNER

1 S2.1 S3.2 1:100



ENLARGED PARTIAL EXISTING CONCOURSE ROOF FRAMING INFILL PLAN AT NORTH-WEST CORNER

2 S2.3 S3.2 1:100

Consultant

CrosierKilgour
Structural Engineering & Building Performance

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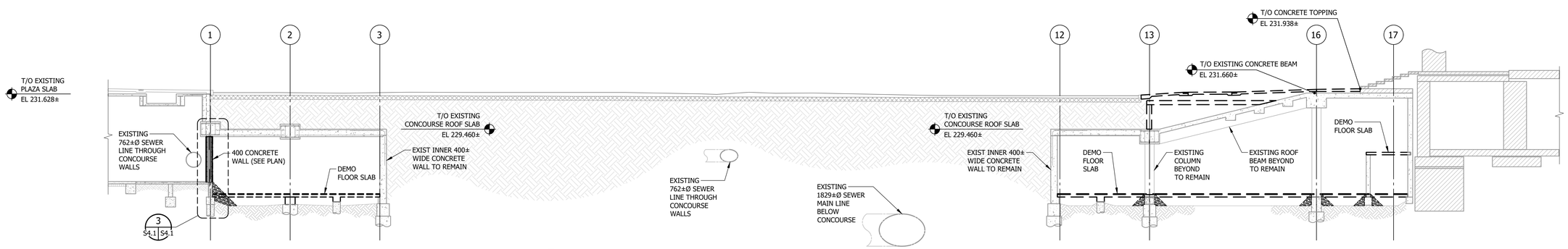
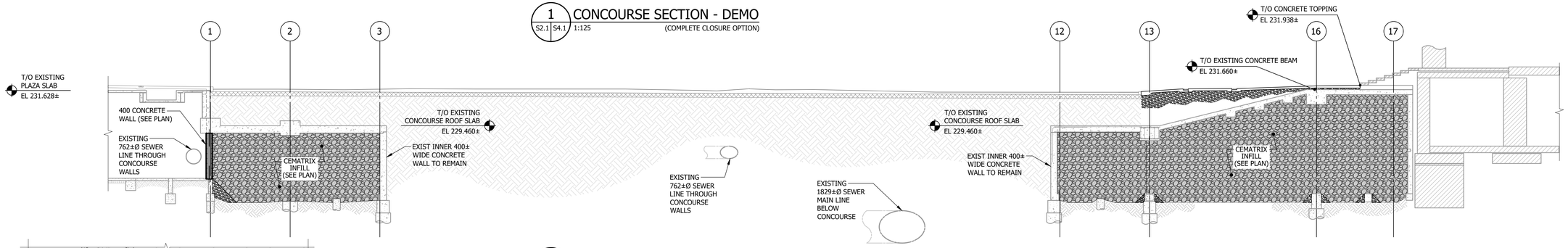
WINNIPEG, MANITOBA

Sheet Title
ENLARGED NORTH-WEST CORNER PARTIAL FRAMING PLANS

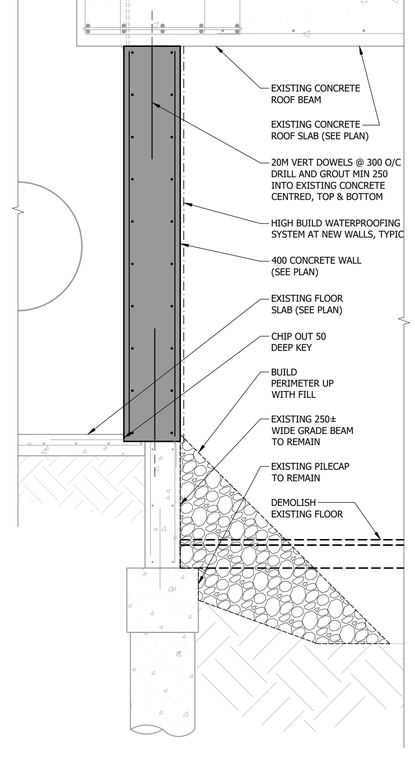
Design	SMC
Drawn	SAS
Project	2024-1243
Revision	B
Sheet	S3.2



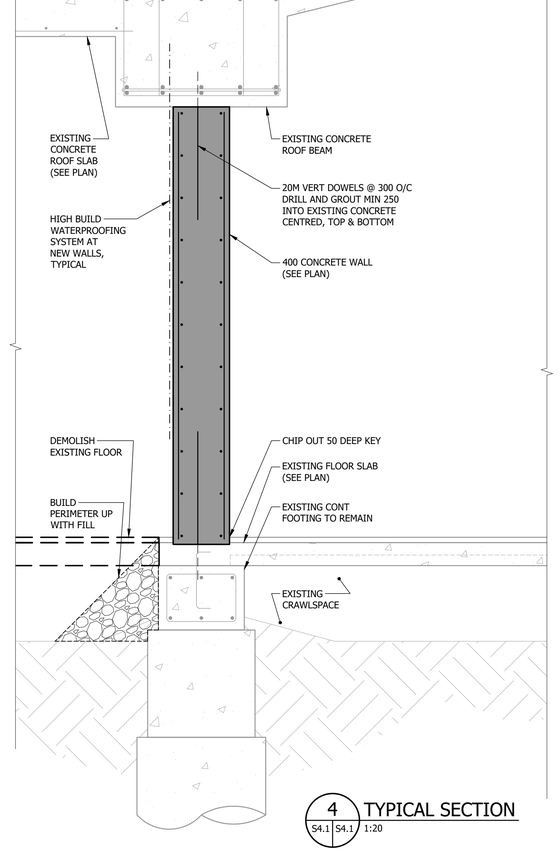
1 S2.1 S4.1 CONCOURSE SECTION - DEMO
1:125 (COMPLETE CLOSURE OPTION)



2 S2.1 S4.1 CONCOURSE SECTION - INFILL
1:125 (COMPLETE CLOSURE OPTION)



3 S4.1 S4.1 SECTION
1:20



4 S4.1 S4.1 TYPICAL SECTION
1:20

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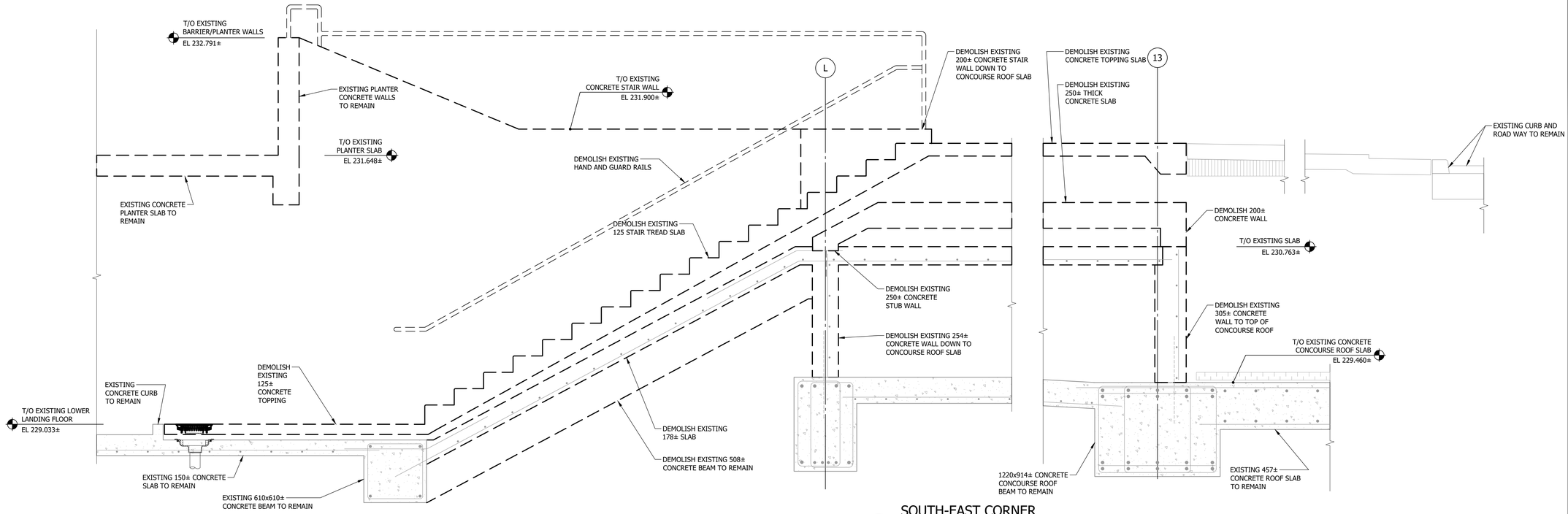
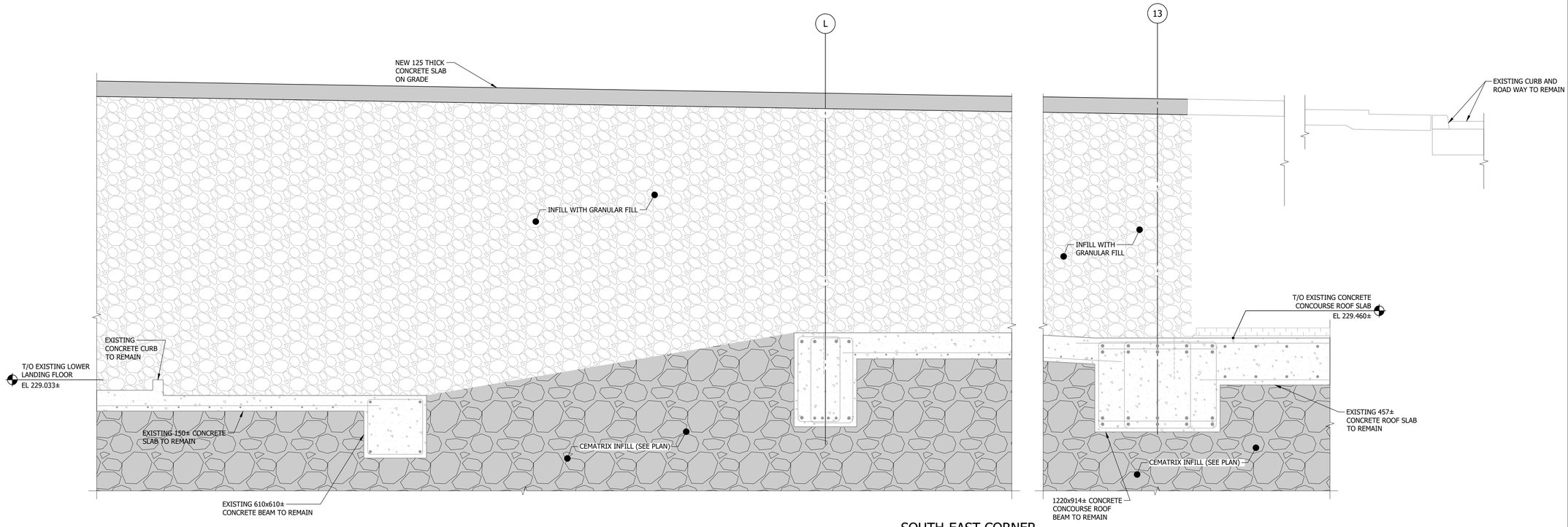
PORTAGE & MAIN CONCOURSE DECOMMISSIONING
WINNIPEG, MANITOBA

Sheet Title
CONCOURSE SECTIONS

Design	SMC
Drawn	SAS
Project	2024-1243
Revision	B
Sheet	S4.1



1 S3.1 | S4.2 SOUTH-EAST CORNER STAIR SECTION - DEMO 1:20



2 S3.1 | S4.2 SOUTH-EAST CORNER STAIR SECTION - INFILL 1:20

Consultant

CrosierKilgour
Structural Engineering & Building Performance

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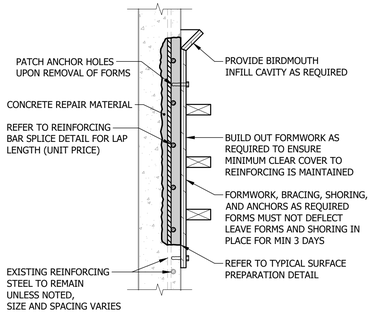
PORTAGE & MAIN CONCOURSE DECOMMISSIONING
WINNIPEG, MANITOBA

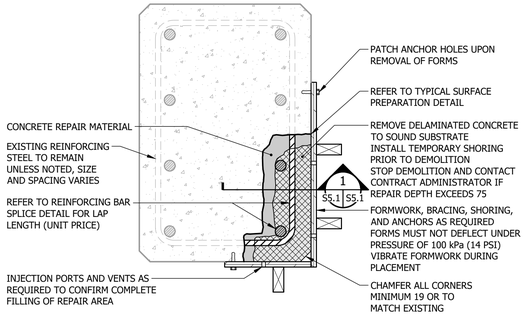
Sheet Title
SOUTH-EAST CORNER STAIR SECTIONS

Design	SMC
Drawn	SAS
Project	2024-1243
Revision	B

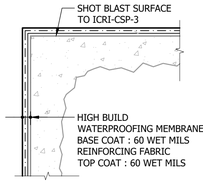
Sheet
S4.2



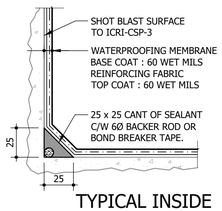
1 - S5.1 TYPICAL FORM AND POUR COLUMN/WALL REPAIR DETAIL
NTS (UNIT PRICE)



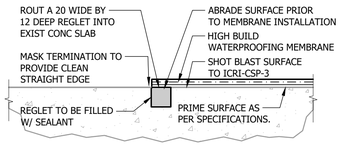
2 - S5.1 TYPICAL FORM AND POUR COLUMN REPAIR DETAIL
NTS (UNIT PRICE)



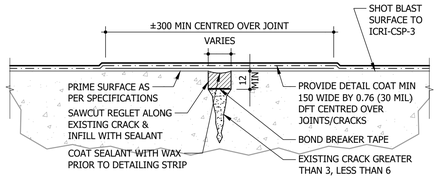
A - S5.1 TYPICAL OUTSIDE CORNER DETAIL
NTS



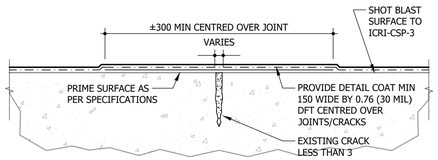
B - S5.1 TYPICAL INSIDE CORNER DETAIL
NTS



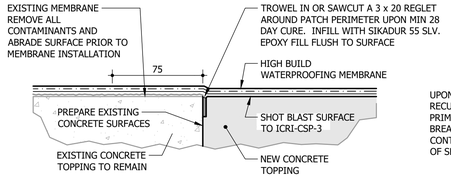
C - S5.1 TYPICAL HORIZ TERMINATION DETAIL
NTS



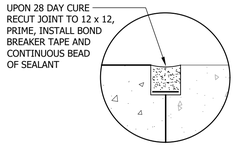
D - S5.1 TYPICAL DETAIL AT RANDOM CRACK/CONTROL JOINTS
NTS



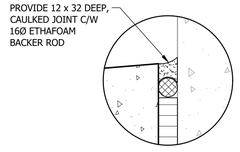
E - S5.1 TYPICAL DETAIL AT RANDOM CRACK/CONTROL JOINTS
NTS



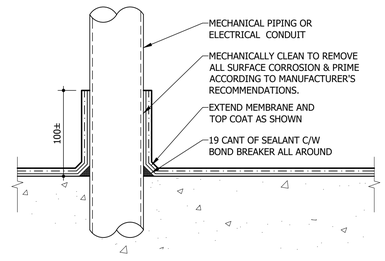
F - S5.1 TYPICAL OVERLAP DETAIL
NTS



G - S5.1 DETAIL
NTS



H - S5.1 DETAIL
NTS



J - S5.1 TYPICAL DETAIL AT PIPE PROJECTIONS
NTS

NOTE:
SEAL AROUND ALL PIPES AND ELECTRICAL CONDUITS THROUGH SLAB (TYPICAL)

Consultant

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Structural Engineering & Building Performance

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WINNIPEG, MANITOBA

Sheet Title
TYPICAL CONCRETE AND WATERPROOFING DETAILS

Design	SMC
Drawn	SAS
Project	2024-1243
Revision	B
Sheet	S5.1

201 PORTAGE AVE
BANK OF MONTREAL

220 PORTAGE AVE
(FORMER ROYAL
BANK BUILDING

200 PORTAGE AVE
SCOTIABANK

360 MAIN ST
TD BUILDING

333 MAIN ST

335 MAIN ST
MMF

PORTAGE & MAIN
CONCOURSE

RICHARDSON
BUILDING

LOMBARD PLACE

FAIRMONT
HOTEL

PORTAGE AVENUE WEST

MAIN STREET NORTH

MAIN STREET SOUTH

PORTAGE AVENUE EAST

RETAIL

FORMER
BUS DRIVERS
LOUNGE

EQUIP.
STORAGE

ESCALATORS

MECHANICAL
EQUIPMENT
ROOM

ELEC
ROOM

JAN

SECURITY

WASH
ROOMS

VACANT

ELEV.

ESCALATORS

TRANSIT
TICKET
OFFICE

RAMP

RAMP

ACCESS TO
CITY SQUARE

VACANT

ACCESS
UP TO
SCOTIABANK

RETAIL

750mm COMBINED
SEWER EXPOSED
BELOW CEILING

LIFT

LIFT

VACANT LOWER
LEVEL SPACE

RAMP

RAMP

750mm WATER
MAIN EXPOSED
BELOW CEILING

RAMP

RAMP

750mm WATER
MAIN EXPOSED
BELOW CEILING

RETAIL

FIRE PUMP
ROOM

CIBC

LIFT

ESCALATORS

CONVENIENCE
STORE

TIM
HORTON'S

ESCALATORS

RETAIL

MECHANICAL
EQUIPMENT
ROOM/
EXHAUST FAN
ROOM

KIOSK

ATM (VACANT)

RETAIL

ESCALATORS

LIFT

EXISTING CONCOURSE FLOOR PLAN
1/20"=1'-0"

Consultant

CrosierKilgour
Structural Engineering & Building Performance

number TEN architectural group
Winnipeg Office 204 942.0981
Victoria Office 250 360.2106
architecture ▪ interior design ▪ planning

LEGEND

- AREA OF UNDERGROUND CONCOURSE
- AREA OF PROPOSED FULL CLOSURE
- AREAS REQUIRING ADAPTATION DUE TO CONCOURSE CLOSURE
- AREA OF PARTIAL CLOSURE OPTION 1
- AREA OF PARTIAL CLOSURE OPTION 2
- STRUCTURAL BARRIER WALL

Rev	Date	Issuance
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Project
PORTAGE & MAIN
CONCOURSE
DECOMMISSIONING
WINNIPEG, MANITOBA

Sheet Title
ARCHITECTURAL -
EXISTING CONCOURSE FLOOR PLAN

Design	NTAG
Drawn	DS/DL
Project	2025004
Revision	A
Sheet	A1.1

201 PORTAGE AVE
BANK OF MONTREAL

220 PORTAGE AVE
(FORMER ROYAL
BANK BUILDING

200 PORTAGE AVE
SCOTIABANK

360 MAIN ST
TD BUILDING

PORTAGE & MAIN
CONCOURSE

RICHARDSON
BUILDING

LOMBARD PLACE

FAIRMONT
HOTEL

335 MAIN ST
MMF

333 MAIN ST

PORTAGE AVENUE WEST

MAIN STREET NORTH

MAIN STREET SOUTH

PORTAGE AVENUE EAST

"ALCOVE"

UNOCCUPIED
SPACE FOR
FUTURE USE

STRUCTURAL
BARRIER WALL,
TYPICAL

NO SCOPE OF
WORK INCLUDED
FOR THIS SPACE,
BY OTHERS

750mm COMBINED
SEWER EXPOSED
BELOW CEILING

VACANT LOWER
LEVEL SPACE

LIFT

RETAIL

FORMER
BUS DRIVERS
LOUNGE

EQUIP.
STORAGE

ESCALATORS

MECHANICAL
EQUIPMENT
ROOM

ELEC
ROOM

JAN
SECURITY

WASH
ROOMS

VACANT

RETAIL

6m MAX.
DEAD END
CORRIDOR

UNOCCUPIED
SPACE FOR
FUTURE USE

ELEV.

ESCALATORS

ACCESS
UP TO
SCOTIABANK

RETAIL

TRANSIT
TICKET
OFFICE

RAMP

VACANT

ACCESS TO
CITY SQUARE

RAMP

750mm WATER
MAIN EXPOSED
BELOW CEILING

RAMP

RAMP

RETAIL

FIRE PUMP
ROOM

CIBC

LIFT

RETAIL

CONVENIENCE
STORE

TIM
HORTON'S

ESCALATORS

ESCALATORS

MECHANICAL
EQUIPMENT
ROOM/
EXHAUST FAN
ROOM

KIOSK

ATM (VACANT)

RETAIL

LIFT

ESCALATORS

REMOVE DOORS
& FRAMES

FULL CLOSURE OF CONCOURSE AT 201 PORTAGE AVE.
SCOPE OF WORK INCLUDES:
- ADD STEEL STUD PARTITION TO REDUCE THE CORRIDOR LENGTH TO ELIMINATE DEAD END CORRIDOR CONDITION
- MODIFY EXIT SIGNAGE, HVAC, LIGHTING, SPRINKLERS TO SUIT
- DEMOLISH/REMOVE EXISTING STAIRS AND LIFTS
- HAND OVER LIFTS TO OWNER

FULL CLOSURE OF CONCOURSE AT RICHARDSON BUILDING
- MAINTAIN EXISTING BUNKER EXIT
- MAINTAIN ACCESS TO FIRE PUMP ROOM
- REMOVE 2 SETS OF VESTIBULE DOORS & FRAMES
- MODIFY EXIT SIGNAGE, HVAC, LIGHTING, SPRINKLERS, TO SUIT

FULL CLOSURE AT 200 PORTAGE AVE
- ADD WALL TO REDUCE THE CORRIDOR LENGTH TO MAXIMUM 6M
- ENCLOSED SPACE TO BE MODIFIED FOR NEW USE
- REMOVE EXISTING STAIRS, ELEVATOR AND ESCALATORS IF NEW USE OF SPACE IS DESIRED
- OPTION INCLUDES RAISING OF LOWER FLOOR LEVEL SPACES TO ALIGN WITH UPPER FLOOR LEVEL
- MODIFY ACCESS TO SCOTIA BANK SPACE
- MODIFY EXIT SIGNAGE, HVAC, LIGHTING, SPRINKLERS, TO SUIT

FULL CLOSURE OF CONCOURSE AT 335 MAIN ST. REQUIRES ACCESS DOOR OPENINGS AT FAR END OF CORRIDOR TO BE INFILLLED.

FULL CLOSURE OF CONCOURSE AT 335 MAIN ST. REQUIRES ACCESS DOOR OPENINGS AT THIS LOCATION TO BE INFILLED.

PROPOSED FULL CLOSURE
1/20"=1'-0"

Consultant

CrosierKilgour
Structural Engineering & Building Performance

number TEN architectural group
Winnipeg Office 204 942.0981
Victoria Office 250 360.2106
architecture ▪ interior design ▪ planning

LEGEND
- AREA OF UNDERGROUND CONCOURSE
- AREA OF PROPOSED FULL CLOSURE
- AREAS REQUIRING ADAPTATION DUE TO CONCOURSE CLOSURE
- AREA OF PARTIAL CLOSURE OPTION 1
- AREA OF PARTIAL CLOSURE OPTION 2
- STRUCTURAL BARRIER WALL

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CONCOURSE
DECOMMISSIONING
WINNIPEG, MANITOBA

Sheet Title
ARCHITECTURAL -
PROPOSED FULL CLOSURE

Design NTAG
Drawn DS/DL
Project 2025004
Revision A
Sheet A1.2

201 PORTAGE AVE
BANK OF MONTREAL

220 PORTAGE AVE
(FORMER ROYAL
BANK BUILDING

200 PORTAGE AVE
SCOTIABANK

360 MAIN ST
TD BUILDING

333 MAIN ST

335 MAIN ST
MMF

PORTAGE & MAIN
CONCOURSE

RICHARDSON
BUILDING

LOMBARD PLACE

FAIRMONT
HOTEL

PORTAGE AVENUE WEST

MAIN STREET NORTH

MAIN STREET SOUTH

PORTAGE AVENUE EAST

RETAIL

FORMER
BUS DRIVERS
LOUNGE

EQUIP.
STORAGE

ESCALATORS

MECHANICAL
EQUIPMENT
ROOM

JAN

SECURITY

ELEC
ROOM

WASH
ROOMS

RETAIL

VACANT

ELEV.

ESCALATORS

TRANSIT
TICKET
OFFICE

RAMP

RAMP

ACCESS TO
CITY SQUARE

VACANT

ACCESS
UP TO
SCOTIABANK

UNOCCUPIED SPACE
FOR FUTURE USE

RETAIL

LIFT

750mm COMBINED
SEWER EXPOSED
BELOW CEILING

LIFT

VACANT LOWER
LEVEL SPACE

RAMP

RAMP

750mm WATER
MAIN EXPOSED
BELOW CEILING

RETAIL

FIRE PUMP
ROOM

CIBC

STRUCTURAL
BARRIER WALL

PARTIAL CLOSURE OF CONCOURSE
AT 335 MAIN ST. REQUIRES ADDING
PARTITIONS TO ENCLOSE SPACE /
ELIMINATE DEAD-END EXIT

750mm WATER
MAIN EXPOSED
BELOW CEILING

RAMP

RAMP

STRUCTURAL
BARRIER WALL

LIFT

RETAIL

UNOCCUPIED
SPACE FOR
FUTURE USE

ESCALATORS

CONVENIENCE
STORE

TIM
HORTON'S

ESCALATORS

MECHANICAL
EQUIPMENT
ROOM/
EXHAUST FAN
ROOM

PARTIAL CLOSURE OF
CONCOURSE AT 335
MAIN ST. REQUIRES
ADDING PARTITION(S)
TO ENCLOSE SPACE /
ELIMINATE EXITING
DEAD-END.

KIOSK

ATM (VACANT)

RETAIL

ESCALATORS

LIFT

PARTIAL CLOSURE OF CONCOURSE
AT 335 MAIN ST. REQUIRES ACCESS
DOOR OPENINGS AT FAR END OF
CORRIDOR TO BE INFILLLED.

REMOVE DOORS
& FRAMES

PARTIAL CLOSURE OF CONCOURSE
AT 335 MAIN ST. REQUIRES
ACCESS DOOR OPENINGS AT THIS
LOCATION TO BE INFILLED.

PROPOSED PARTIAL CLOSURE OPTION 1
1/20"=1'-0"

Consultant

CrosierKilgour
Structural Engineering & Building Performance

number TEN architectural group
Winnipeg Office 204 942.0981
Victoria Office 250 360.2106
architecture ▪ interior design ▪ planning

LEGEND

- AREA OF UNDERGROUND CONCOURSE
- AREA OF PROPOSED FULL CLOSURE
- AREAS REQUIRING ADAPTATION DUE TO CONCOURSE CLOSURE
- AREA OF PARTIAL CLOSURE OPTION 1
- AREA OF PARTIAL CLOSURE OPTION 2
- STRUCTURAL BARRIER WALL

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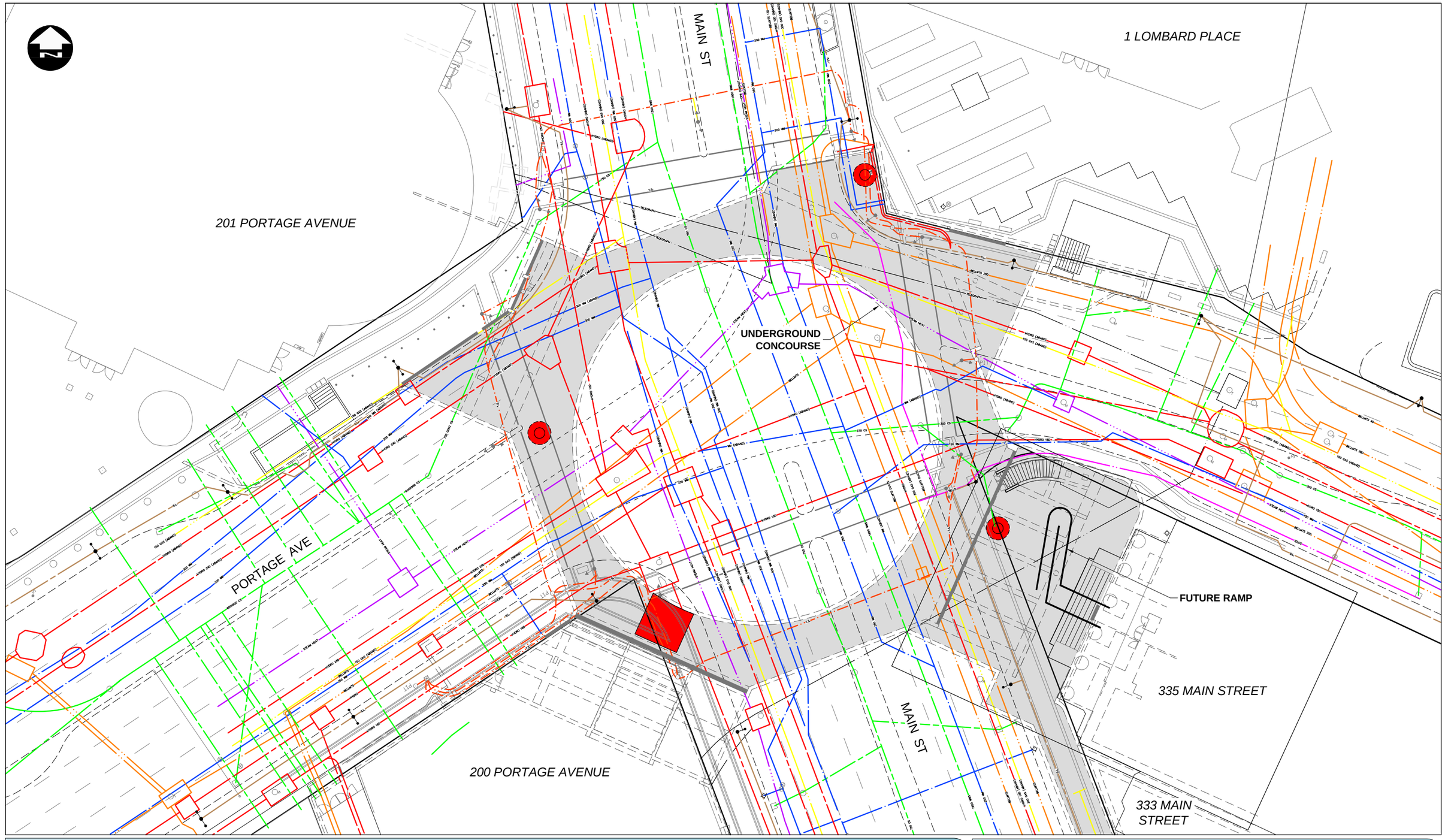
PORTAGE & MAIN
CONCOURSE
DECOMMISSIONING
WINNIPEG, MANITOBA

Sheet Title
ARCHITECTURAL -
PARTIAL CLOSURE OPTION 1

Design	NTAG
Drawn	DS/DL
Project	2025004
Revision	A
Sheet	A1.3



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DILLON CONSULTING

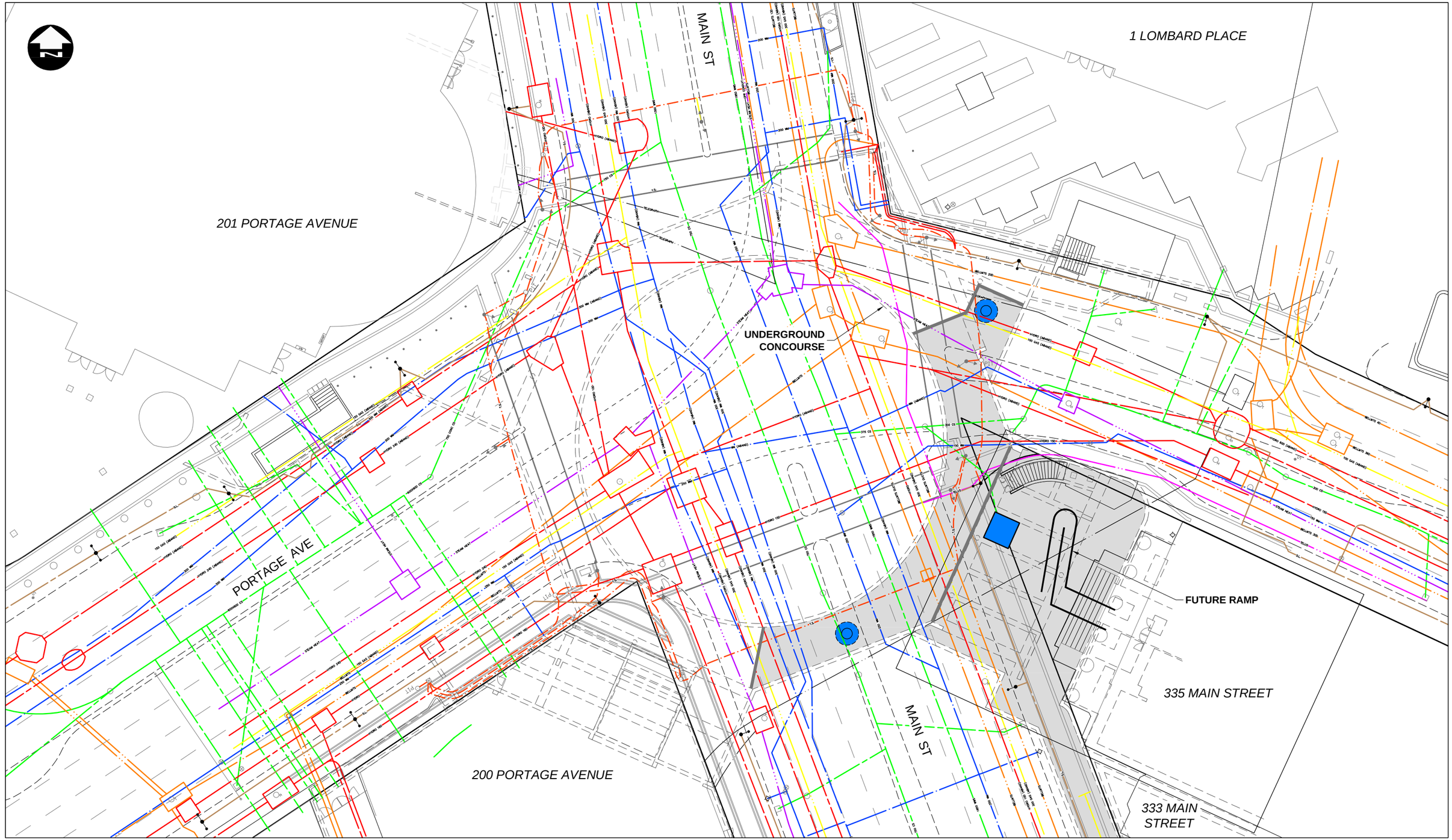
LEGEND

- FULL CLOSURE ACCESS HOLE/LIFT OPENING
- PARTIAL CLOSURE ACCESS HOLE/LIFT OPENING (SOUTH)

Winnipeg

CITY OF WINNIPEG - PMUC DECOMMISSIONING STUDY
FUNCTIONAL DESIGN

DWG C-01
FULL CLOSURE - OVERVIEW WITH UTILITIES
SCALE: 1:400



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DILLON CONSULTING

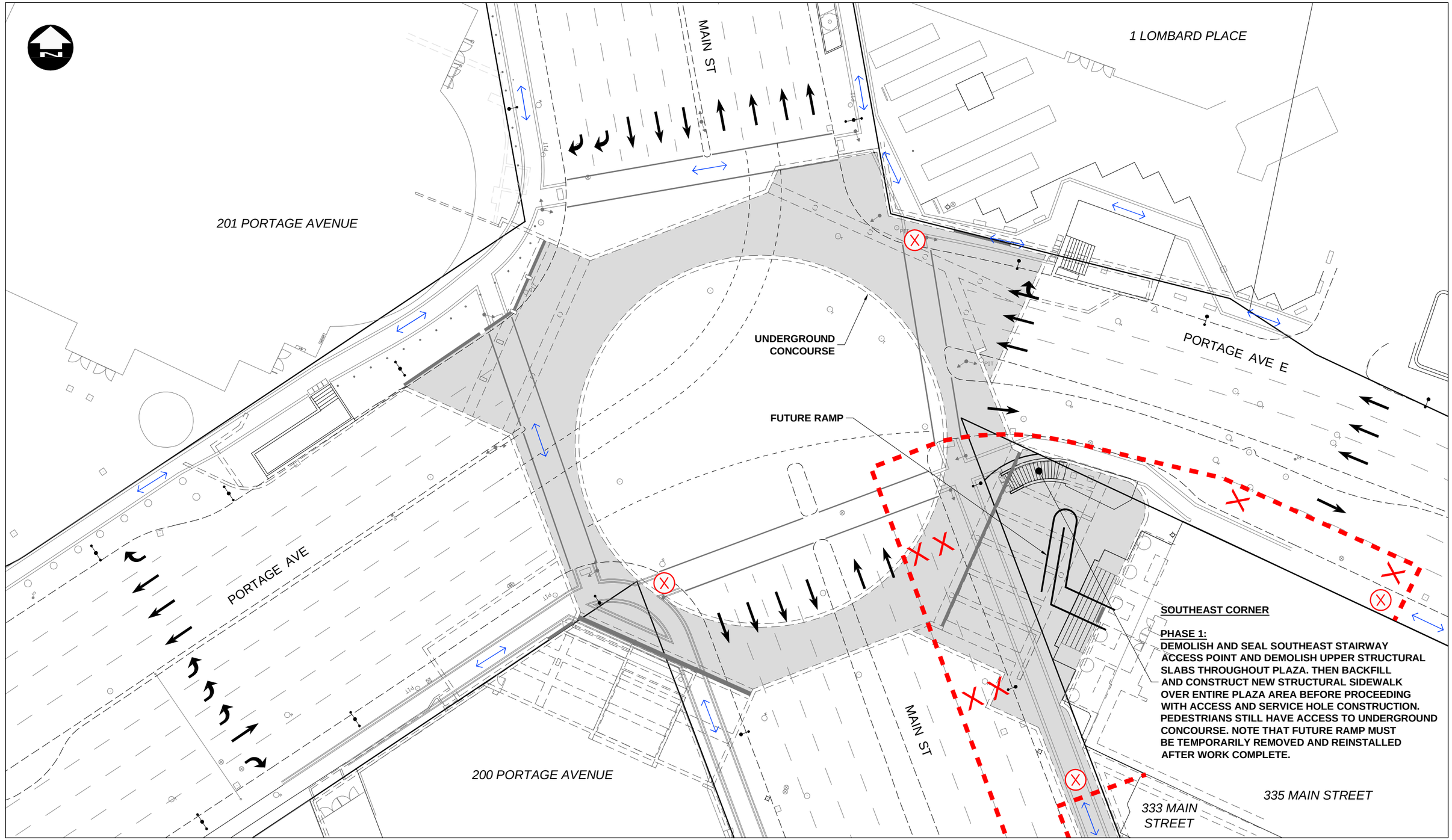
LEGEND

- FULL CLOSURE ACCESS HOLE/LIFT OPENING
- PARTIAL CLOSURE ACCESS HOLE/LIFT OPENING (SOUTH)

Winnipeg

CITY OF WINNIPEG - PMUC DECOMMISSIONING STUDY
FUNCTIONAL DESIGN

DWG C-02
PARTIAL CLOSURE (SOUTH) - OVERVIEW WITH UTILITIES
SCALE: 1:400



LEGEND

- CONTRACTOR BARRIERS
- EXISTING PROPERTY LINE
- VEHICULAR TRAFFIC
- PEDESTRIAN TRAFFIC
- LANE CLOSED
- SIDEWALK CLOSED
- FULL CLOSURE ACCESS HOLE/LIFT OPENING
- PARTIAL CLOSURE ACCESS HOLE/LIFT OPENING (SOUTH)
- CRANE AND CELLULAR CONCRETE BATCHING AREA

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CITY OF WINNIPEG - PMUC DECOMMISSIONING STUDY
FUNCTIONAL DESIGN

DWG C-03
FULL CLOSURE - STAGING - PHASE 1

SCALE: 1:400

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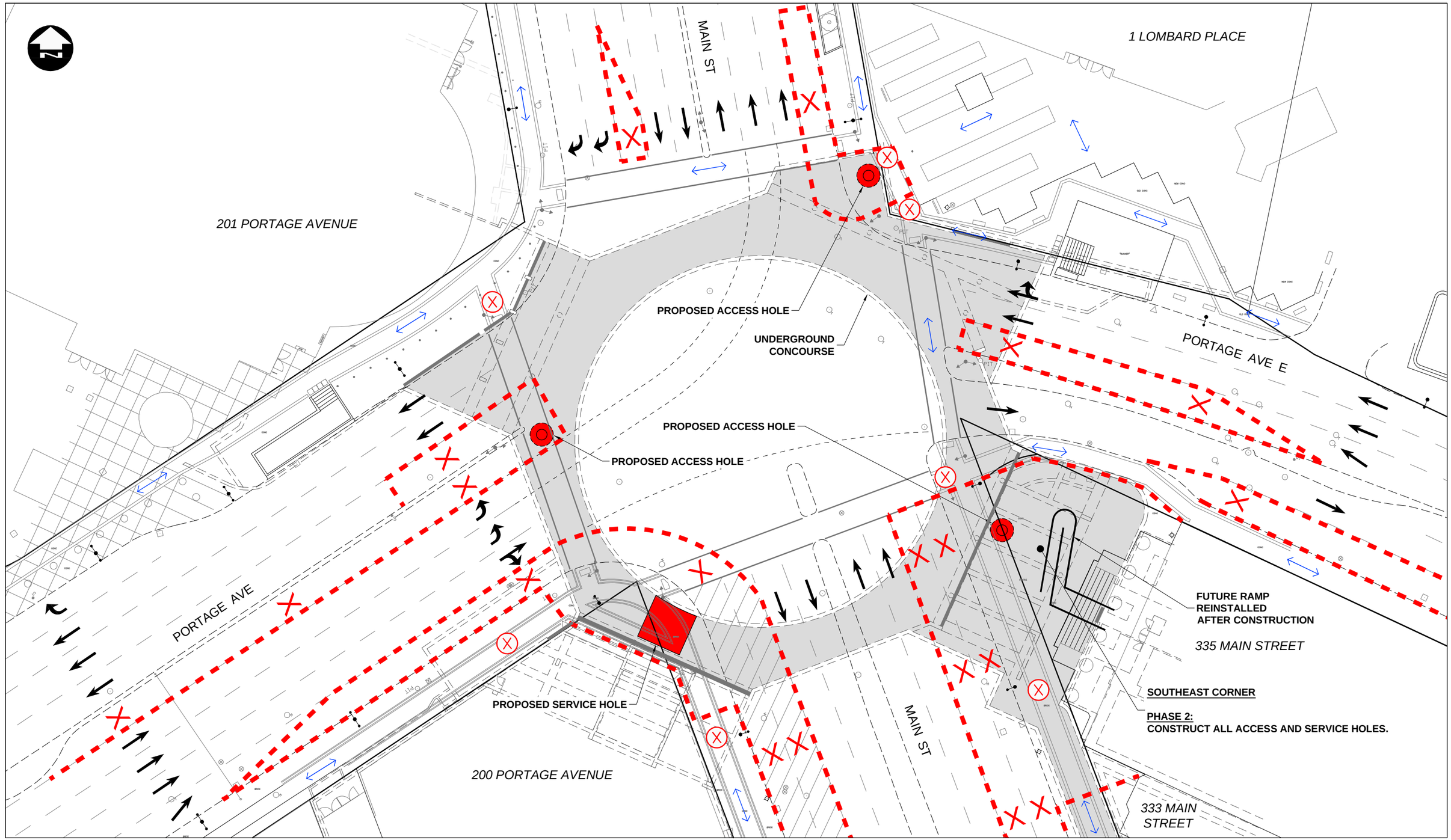

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LEGEND

- CONTRACTOR BARRIERS
- EXISTING PROPERTY LINE
- VEHICULAR TRAFFIC
- PEDESTRIAN TRAFFIC
- LANE CLOSED
- SIDEWALK CLOSED
- FULL CLOSURE ACCESS HOLE/LIFT OPENING
- PARTIAL CLOSURE ACCESS HOLE/LIFT OPENING (SOUTH)
- CRANE AND CELLULAR CONCRETE BATCHING AREA

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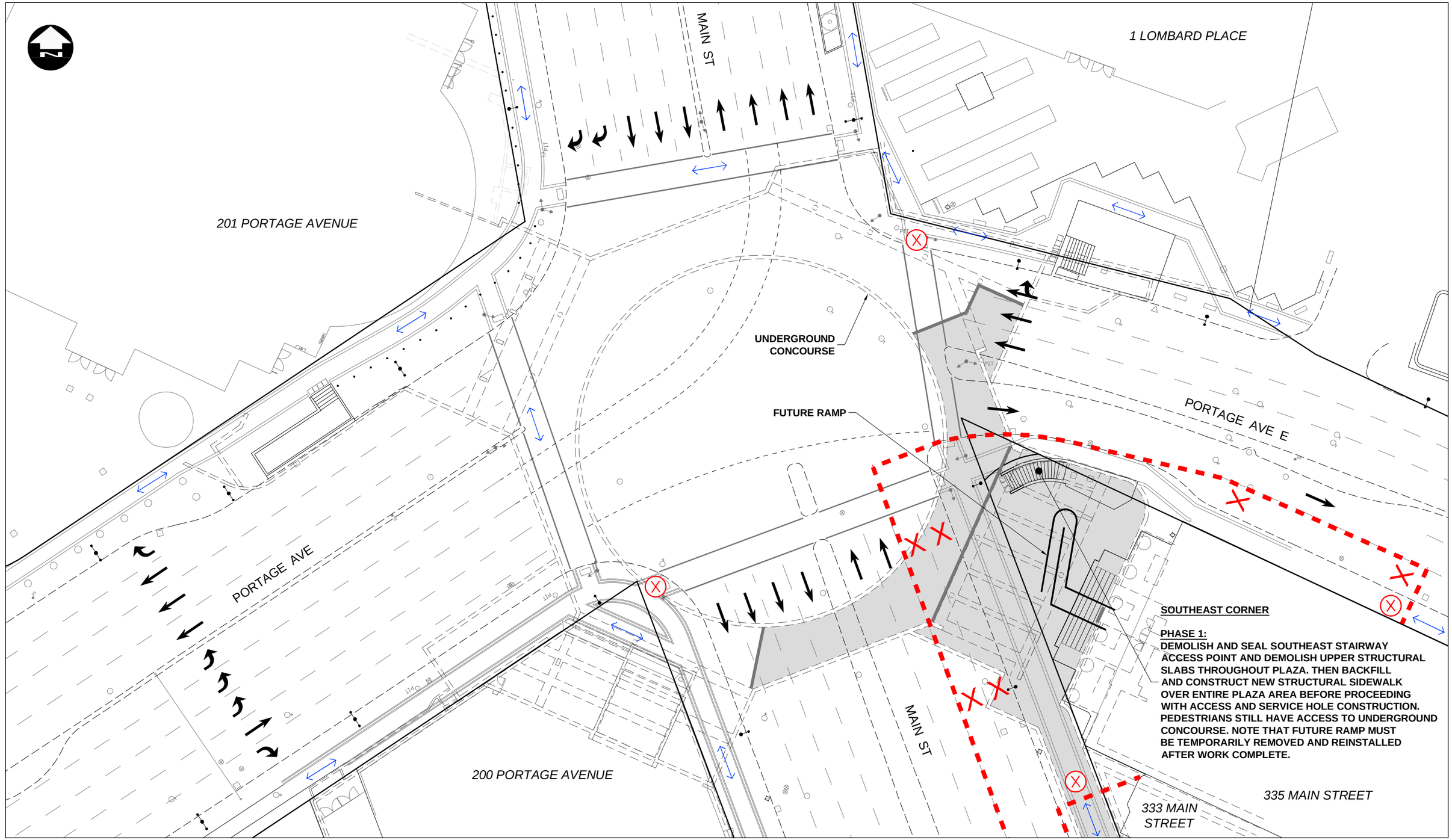
CITY OF WINNIPEG - PMUC DECOMMISSIONING STUDY FUNCTIONAL DESIGN

DWG C-04

FULL CLOSURE - STAGING - PHASE 2

SCALE: 1:400



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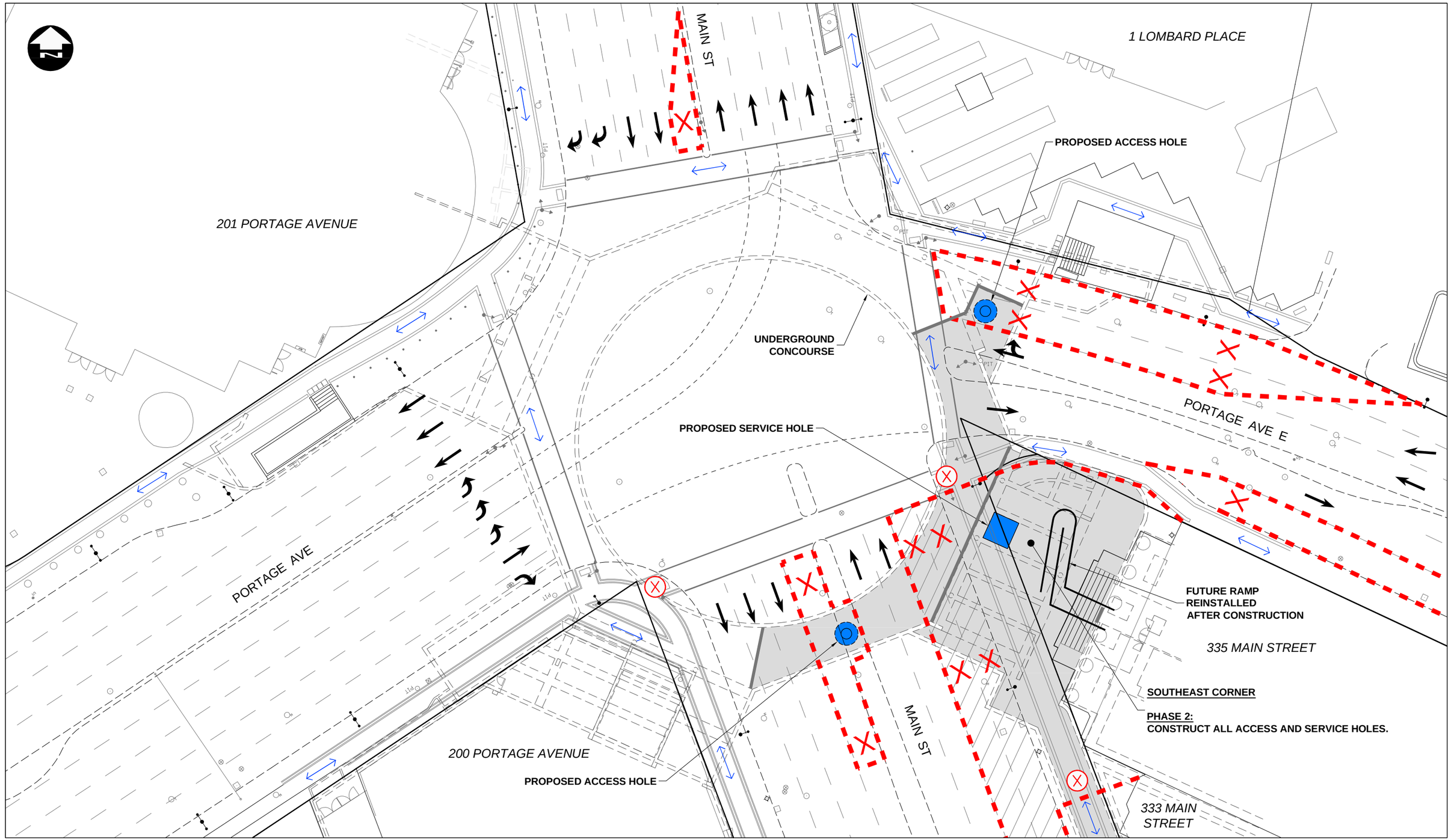
LEGEND

- CONTRACTOR BARRIERS
- EXISTING PROPERTY LINE
- VEHICULAR TRAFFIC
- PEDESTRIAN TRAFFIC
- LANE CLOSED
- SIDEWALK CLOSED
- FULL CLOSURE ACCESS HOLE/LIFT OPENING
- PARTIAL CLOSURE ACCESS HOLE/LIFT OPENING (SOUTH)
- CRANE AND CELLULAR CONCRETE BATCHING AREA

Winnipeg

CITY OF WINNIPEG - PMUC DECOMMISSIONING STUDY
FUNCTIONAL DESIGN

DWG C-05
PARTIAL CLOSURE (SOUTH) - STAGING - PHASE 1
SCALE: 1:400



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DILLON CONSULTING

LEGEND

- CONTRACTOR BARRIERS
- EXISTING PROPERTY LINE
- VEHICULAR TRAFFIC
- PEDESTRIAN TRAFFIC
- LANE CLOSED
- SIDEWALK CLOSED
- FULL CLOSURE ACCESS HOLE/LIFT OPENING
- PARTIAL CLOSURE ACCESS HOLE/LIFT OPENING (SOUTH)
- CRANE AND CELLULAR CONCRETE BATCHING AREA

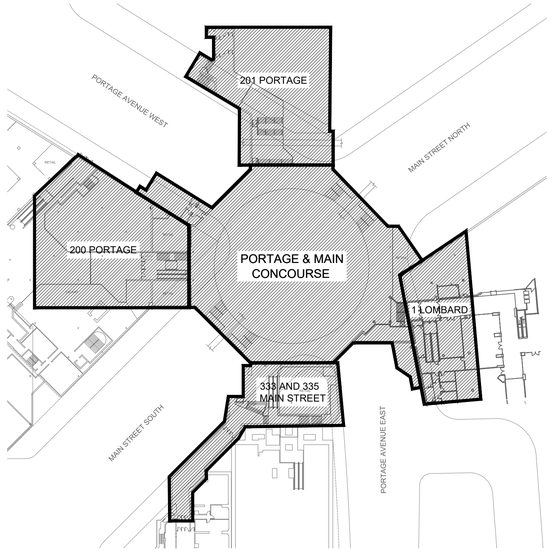
Winnipeg

CITY OF WINNIPEG - PMUC DECOMMISSIONING STUDY
FUNCTIONAL DESIGN

DWG C-06
PARTIAL CLOSURE (SOUTH) - STAGING - PHASE 2
SCALE: 1:400

DRAWING LIST

E0.1	DRAWING LIST, SYMBOL LEGEND AND GENERAL NOTES
E1.1	MAIN CONCOURSE AREA - FULL DECOMMISSIONING (OPTION 1) - LIGHTING
E1.2	PART PLANS - FULL DECOMMISSIONING (OPTION 1) - LIGHTING
E2.1	MAIN CONCOURSE AREA - FULL DECOMMISSIONING (OPTION 1) - POWER AND SYSTEMS
E2.2	PART PLANS - FULL DECOMMISSIONING (OPTION 1) - POWER AND SYSTEMS
E3.1	MAIN CONCOURSE AREA - PARTIAL DECOMMISSIONING - SOUTH LOOP CLOSURE (OPTION 2) - LIGHTING
E3.2	PART PLANS - PARTIAL DECOMMISSIONING - SOUTH LOOP CLOSURE (OPTION 2) - LIGHTING
E4.1	MAIN CONCOURSE AREA - PARTIAL DECOMM. - SOUTH LOOP CLOSURE (OPTION 2) - POWER AND SYSTEMS
E4.2	PART PLANS - PARTIAL DECOMM. - SOUTH LOOP CLOSURE (OPTION 2) - POWER AND SYSTEMS
E7.1	LARGE SCALE PLANS - ELECTRICAL - EXISTING
E8.1	SINGLE LINE DIAGRAM - EXISTING



KEY PLAN
SCALE: NTS

SYMBOL LEGEND

FACP	FIRE ALARM CONTROL PANEL
	PULL STATION
	BELL
	TELEPHONE OUTLET
WAP	WIRELESS ACCESS POINT
	CCTV CAMERA OUTLET
	PUSH BUTTON
	INTERCOM STATION
	CARD READER
	DUPLEX RECEPTACLE
	SPECIAL RECEPTACLE
	JUNCTION BOX
	DISCONNECT
	MOTOR
T	THERMOSTAT
	SURFACE MOUNTED PANEL
	BATTERY BANK COMPLETE WITH DOUBLE HEADS
E - *	EXIT LIGHT
E - *	EXIT LIGHT COMPLETE WITH DOUBLE HEADS
	EXIT LIGHT SINGLE ARROW
A1-a	LIGHT FIXTURE, A1-PANEL AND CIRCUIT, a-CONTROL
	LIGHT FIXTURE CONNECTED TO EMERGENCY POWER OR NIGHT LIGHT CIRCUIT (TYPICAL FOR ALL LIGHT FIXTURES)
	DOWN LIGHT
	WALL MOUNTED FIXTURE
$	SWITCH
c	CEILING MOUNTED

* PLEASE NOTE *

ALL EQUIPMENT SHOWN "FADED BACK" IS EXISTING TO REMAIN UNLESS OTHERWISE NOTED.

ALL EQUIPMENT SHOWN "DASHED" IS EXISTING TO BE DEMOLISHED.

ALL EQUIPMENT SHOWN "BOLDED" IS NEW TO BE PROVIDED UNLESS OTHERWISE NOTED.

GENERAL NOTES

A. VISIT SITE DURING BID AND VERIFY ALL EXISTING SERVICES ON SITE PRIOR TO SUBMITTING BID. REPORT ANY DISCREPANCIES TO CONSULTANT DURING BID PERIOD.

B. ALL EXISTING ELECTRICAL OUTLETS, CONDUITS, WIRING ETC., REQUIRED TO BE REMOVED ARE NOT NECESSARILY SHOWN ON DRAWINGS.

C. REMOVE ALL UNNECESSARY EXISTING ELECTRICAL EQUIPMENT, WIRING, DEVICES AND FIXTURES IN THOSE PORTIONS OF THE EXISTING BUILDING WHICH ARE BEING ALTERED, REMODELED OR DEMOLISHED. REMOVE RESPECTIVE CONDUIT, WIRING, ETC. BACK TO SOURCE.

D. ALL REMOVED ELECTRICAL EQUIPMENT, WIRING, DEVICES AND FIXTURES, UNDER DEMOLITION SCOPE, SHALL BE FIRST OFFERED TO OWNER FOR REFUSAL FOLLOWED BY CONTRACTOR AND FINALLY TO BE LEGALLY DISPOSED OF.

E. THE EQUIPMENT MAY BE REUSED IF, IN THE OPINION OF THE CONSULTANT, SUCH EQUIPMENT IS IN SATISFACTORY CONDITION AND MEETS THE STANDARDS ESTABLISHED.

F. VERIFY ALL EXISTING EQUIPMENT BEING RE-USED ARE WORKING PRIOR TO INSTALLATION. PROVIDE NEW EQUIPMENT IF NECESSARY.

G. ELECTRICAL EQUIPMENT IN REMODELED SECTIONS OR IN STRUCTURES REMOVED OR ALTERED, ADJACENT TO NEW WORK, NECESSARY FOR THE OPERATION OF THE EXISTING BUILDING, SHALL BE RELOCATED AS NECESSARY AND RE-CONNECTED.

H. WHERE RELOCATION OF EQUIPMENT OR WIRING IS REQUIRED, EXTEND WIRING AND CONDUIT AS NECESSARY.

I. PATCH, REPAIR AND PAINT EXISTING SURFACES WHERE EXISTING ELECTRICAL DEVICES HAVE BEEN REMOVED. INSTALLATION OF BLANK COVERPLATES OVER ABANDONED OUTLETS IS NOT ACCEPTABLE.

J. CO-ORDINATE WITH OWNER PRIOR TO SHUT-DOWN OF EQUIPMENT.

K. CONFIRM EXACT LOCATIONS OF EQUIPMENT AND WIRING PRIOR TO ROUGH-IN.

L. SITE SERVICES SHOWN ARE FOR INFORMATION PURPOSES ONLY. THE SERVICES SHOWN ARE APPROXIMATE AND MAY NOT BE ACCURATE. VERIFY ON SITE ALL LOCATIONS THAT MAY AFFECT SCOPE OF WORK.

M. UPDATE PANEL DIRECTORIES.

N. VERIFY FIRE ALARM SYSTEM AFTER COMPLETION OF INSTALLATION.

O. FIRE ALARM AUDIBLE LEVELS SHALL BE VERIFIED TO MEET REQUIREMENTS OF CAN/ULC S524 AFTER INSTALLATION.

P. DOWNTIME OF THE FIRE ALARM SYSTEM TO BE KEPT TO AN ABSOLUTE MINIMUM. FIRE WATCH SERVICE TO BE PROVIDED AND PAID FOR THE PERIOD DURING WHICH THE FIRE ALARM SYSTEM IS PARTIALLY OR FULLY DISABLED. EMPLOY FIRE WATCH SERVICE AND TO PAY ALL FIRE WATCH FEES. COORDINATE FIRE WATCH WITH THE FIRE DEPARTMENT AND THE BUILDING MANAGER. THE FIRE ALARM SYSTEM SHALL REMAIN FULLY OPERATIONAL AT THE END OF EACH WORKDAY.

Consultant

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25-014-01 smseng.com

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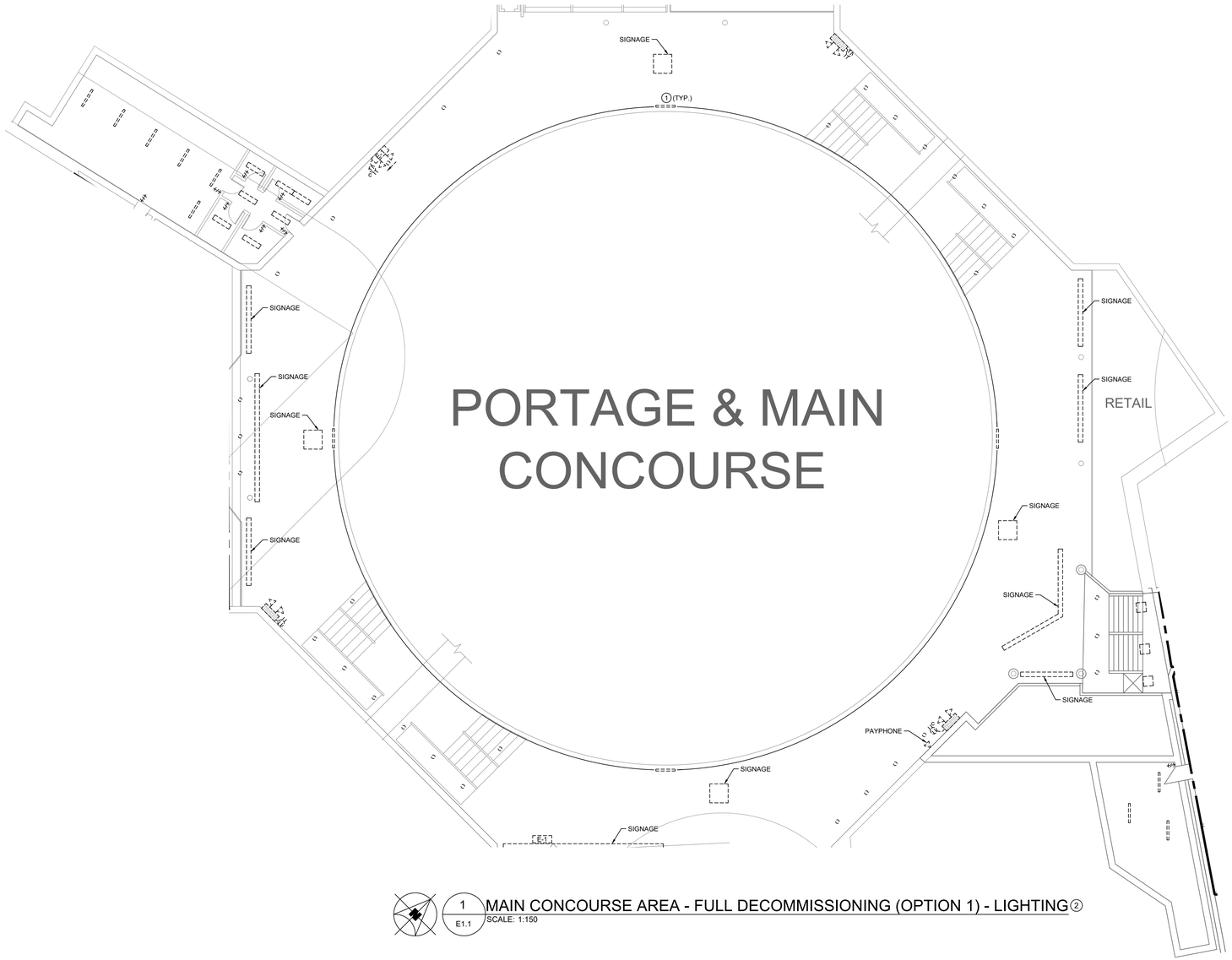
Project
PORTAGE & MAIN CONCOURSE DECOMMISSIONING
WINNIPEG, MANITOBA

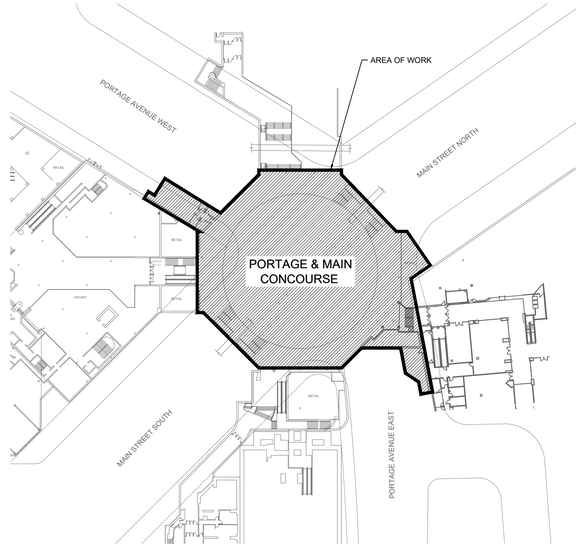
Sheet Title
DRAWING LIST, SYMBOL LEGEND AND GENERAL NOTES

Design	Sheet
IC	E0.1
Drawn	
JKC	
Project	
2025-0000	
Revision	
A	



1 E1.1 MAIN CONCOURSE AREA - FULL DECOMMISSIONING (OPTION 1) - LIGHTING ②

SCALE: 1:150



KEY PLAN

SCALE: NTS

KEY NOTES ⓘ

1. LIGHTING FIXTURES SURROUNDS CIRCULAR STRUCTURE.
2. REMOVE ALL DEVICES.

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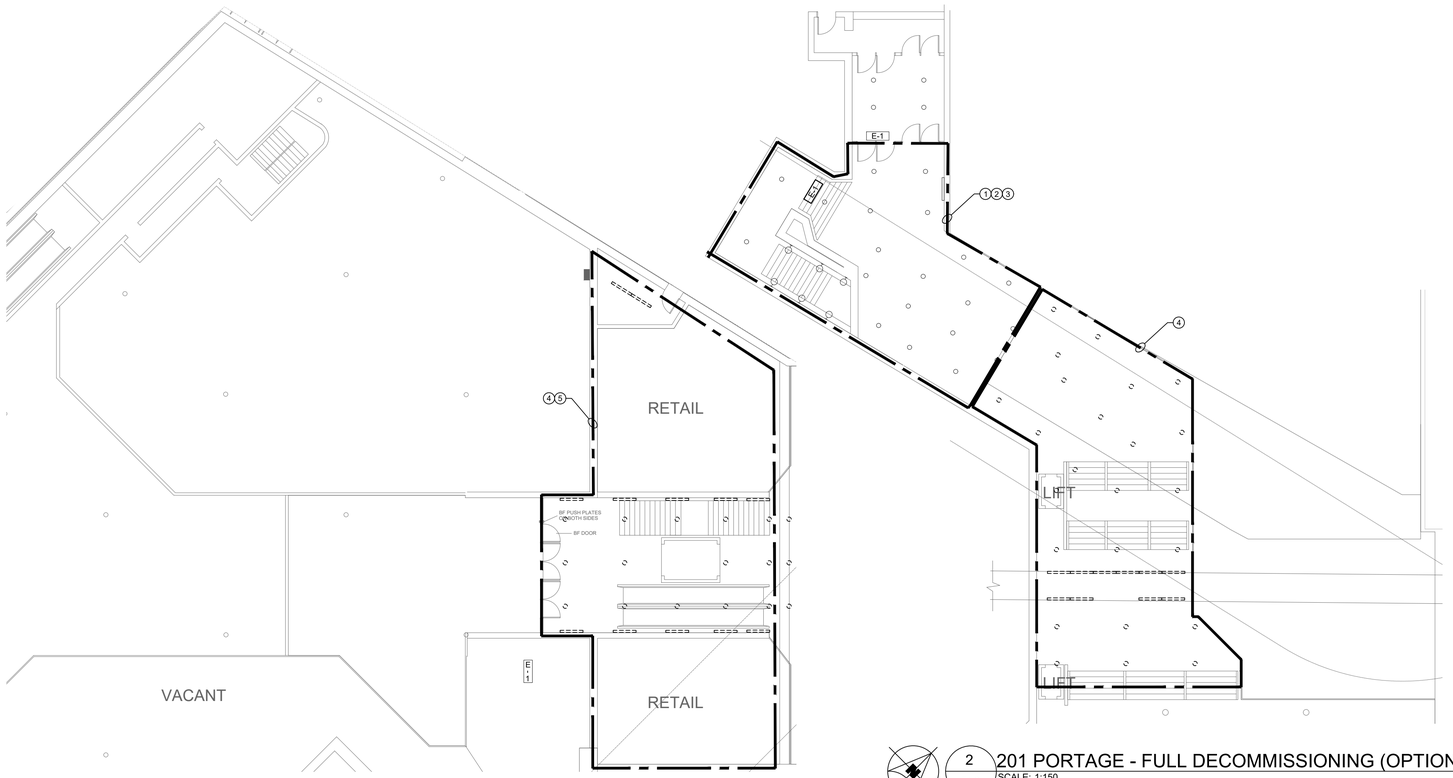
PORTAGE & MAIN CONCOURSE DECOMMISSIONING

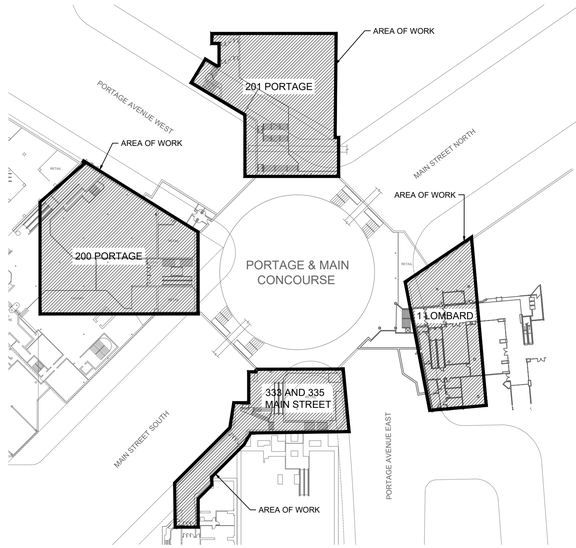
WINNIPEG, MANITOBA

Sheet Title MAIN CONCOURSE AREA - FULL DECOMMISSIONING (OPTION 1) - LIGHTING

Design	Sheet
IC	E1.1
Drawn	
JKC	
Project	
2025-0000	
Revision	
A	

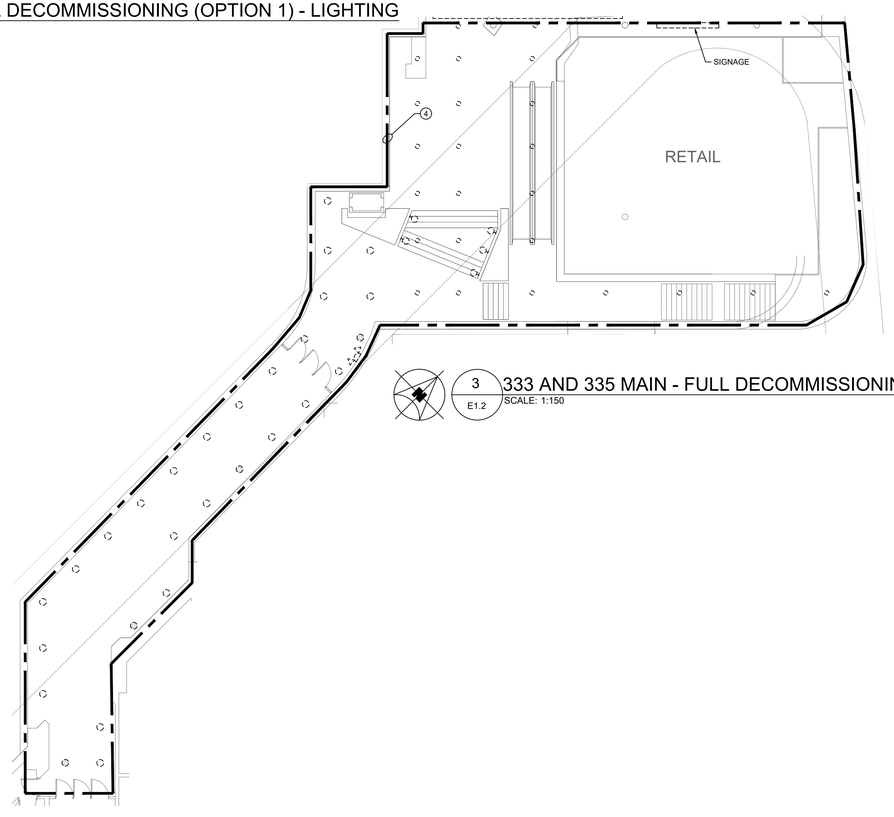


2 E1.2 201 PORTAGE - FULL DECOMMISSIONING (OPTION 1) - LIGHTING
SCALE: 1:150

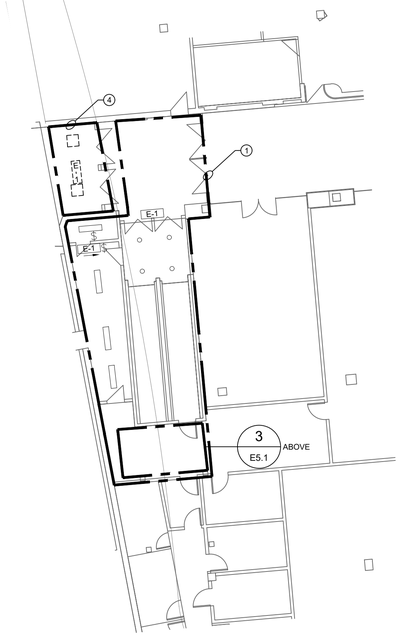


KEY PLAN
SCALE: NTS

1 E1.2 200 PORTAGE - FULL DECOMMISSIONING (OPTION 1) - LIGHTING
SCALE: 1:150



3 E1.2 333 AND 335 MAIN - FULL DECOMMISSIONING (OPTION 1) - LIGHTING
SCALE: 1:150



4 E1.2 1 LOMBARD - FULL DECOMMISSIONING (OPTION 1) - LIGHTING
SCALE: 1:150

KEY NOTES

1. REFEED LIGHTING FIXTURES FROM CORNER BUILDING.
2. REPLACE EXIT SIGN WITH GREEN RUNNING MAN TYPE AND REFEED FROM CORNER BUILDING.
3. PROVIDE NEW LIGHTING CONTROL DEVICE.
4. REMOVE LIGHTING FIXTURES.
5. PROVIDE LIGHTING FOR 'SHELL SPACE'.

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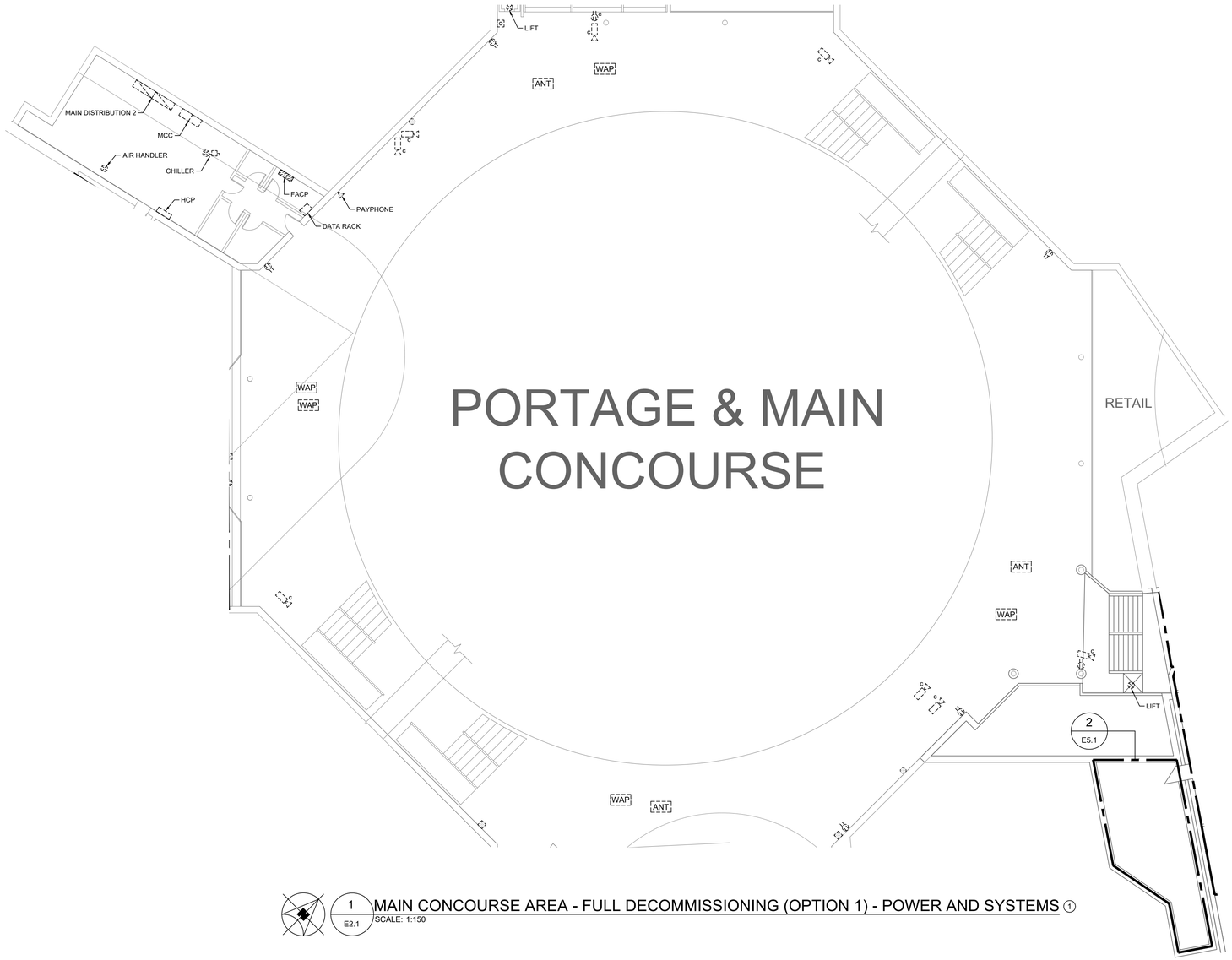
Project
PORTAGE & MAIN CONCOURSE DECOMMISSIONING
WINNIPEG, MANITOBA

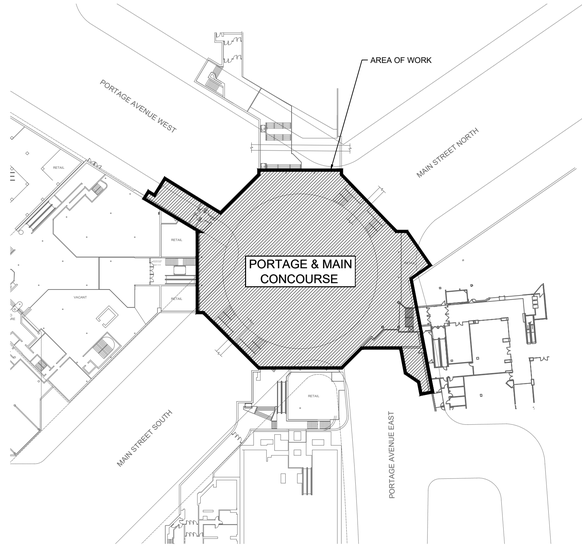
Sheet Title: PART PLANS - FULL DECOMMISSIONING (OPTION 1) - LIGHTING

Design: IC
Drawn: JKC
Project: 2025-0000
Revision: A
Sheet: E1.2



1 E2.1 MAIN CONCOURSE AREA - FULL DECOMMISSIONING (OPTION 1) - POWER AND SYSTEMS ①

SCALE: 1:150



KEY PLAN

SCALE: NTS

KEY NOTES ⓜ

1. REMOVE POWER AND SYSTEMS DEVICES.

Consultant

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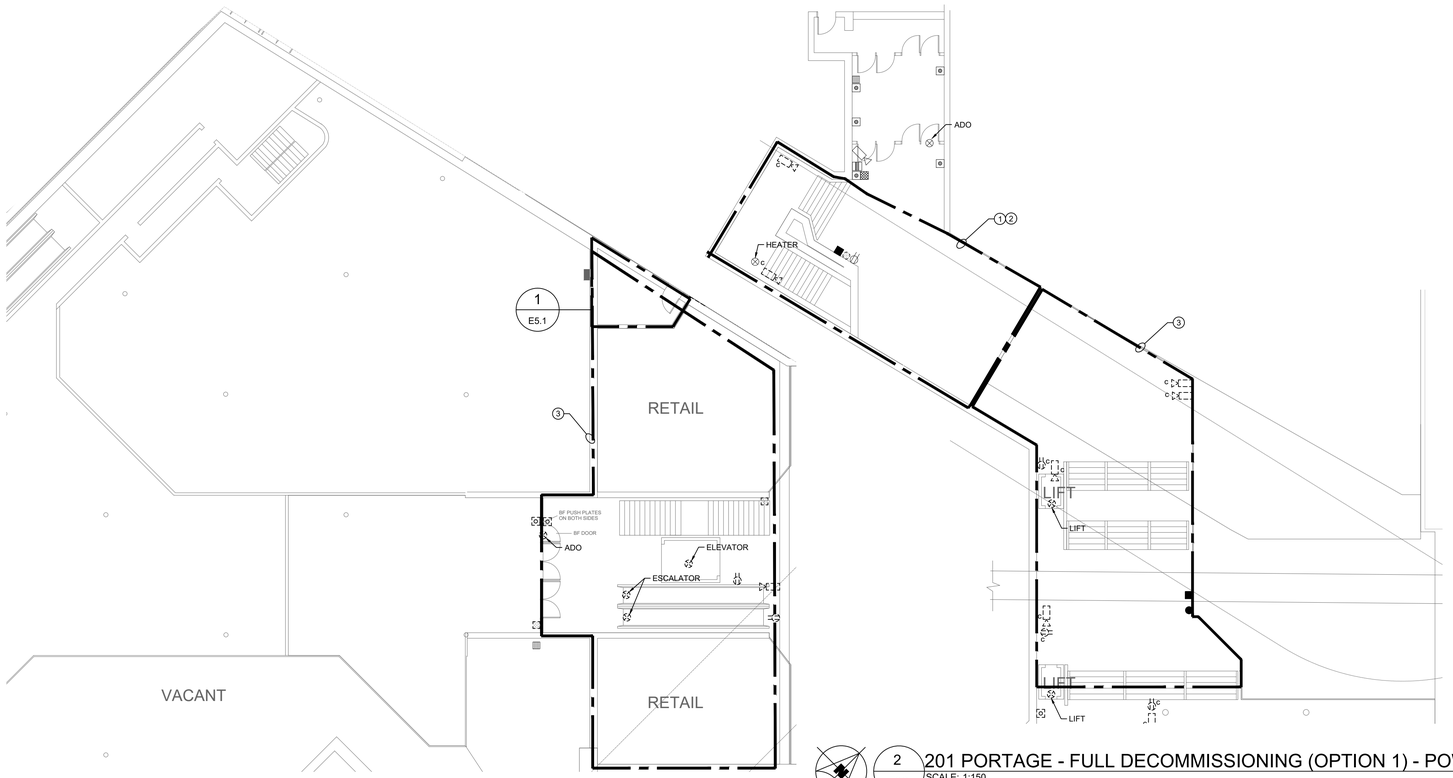
WINNIPEG, MANITOBA

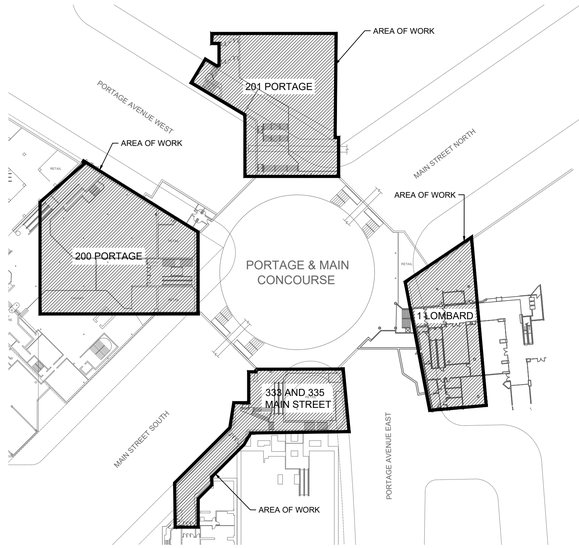
Sheet Title MAIN CONCOURSE AREA - FULL DECOMMISSIONING (OPTION 1) - POWER AND SYSTEMS

Design IC
Drawn JKC
Project 2025-0000
Revision A

Sheet E2.1

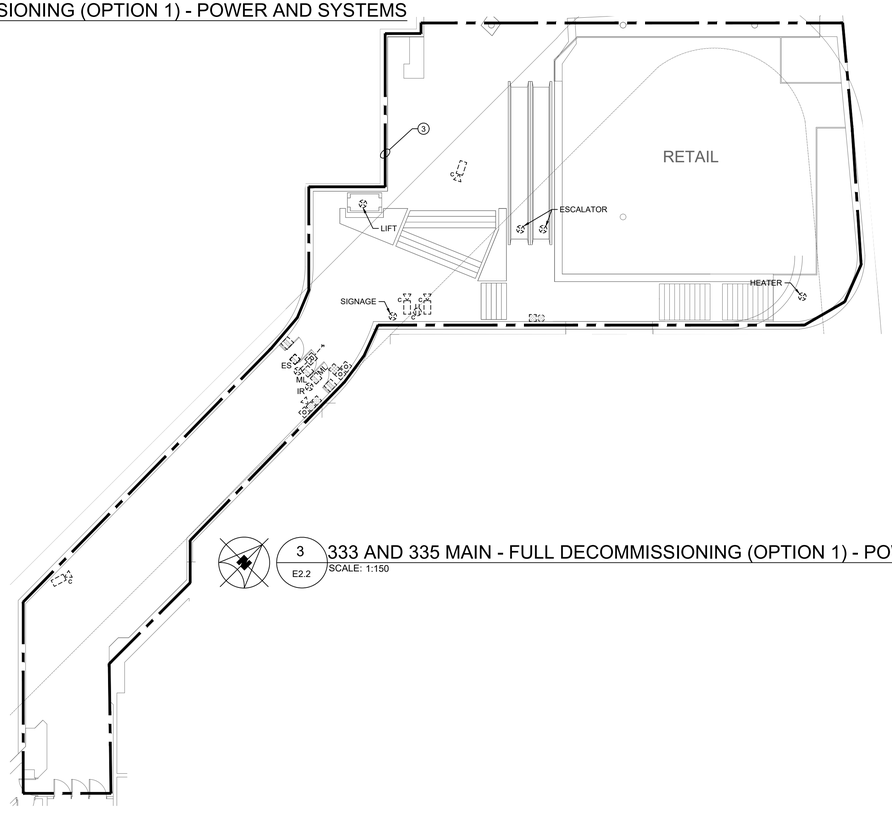


2 E2.2 201 PORTAGE - FULL DECOMMISSIONING (OPTION 1) - POWER AND SYSTEMS
SCALE: 1:150

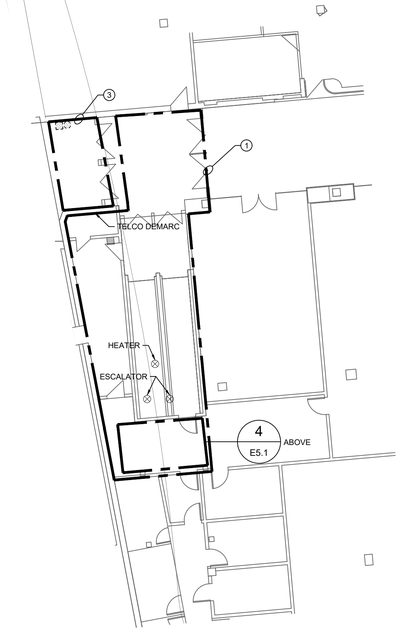


KEY PLAN
SCALE: NTS

1 E2.2 200 PORTAGE - FULL DECOMMISSIONING (OPTION 1) - POWER AND SYSTEMS
SCALE: 1:150



3 E2.2 333 AND 335 MAIN - FULL DECOMMISSIONING (OPTION 1) - POWER AND SYSTEMS
SCALE: 1:150



4 E2.2 1 LOMBARD - FULL DECOMMISSIONING (OPTION 1) - POWER AND SYSTEMS
SCALE: 1:150

KEY NOTES (01)

1. RECONNECT HEATER AND POWER RECEPTACLE TO CORNER BUILDING. REMOVE OTHER DEVICES.
2. PROVIDE FIRE ALARM DEVICES CONNECTED TO CORNER BUILDING'S SYSTEM.
3. REMOVE POWER AND SYSTEMS DEVICES.
4. RECONNECT HEATER, ESCALATOR AND POWER RECEPTACLE TO CORNER BUILDING.

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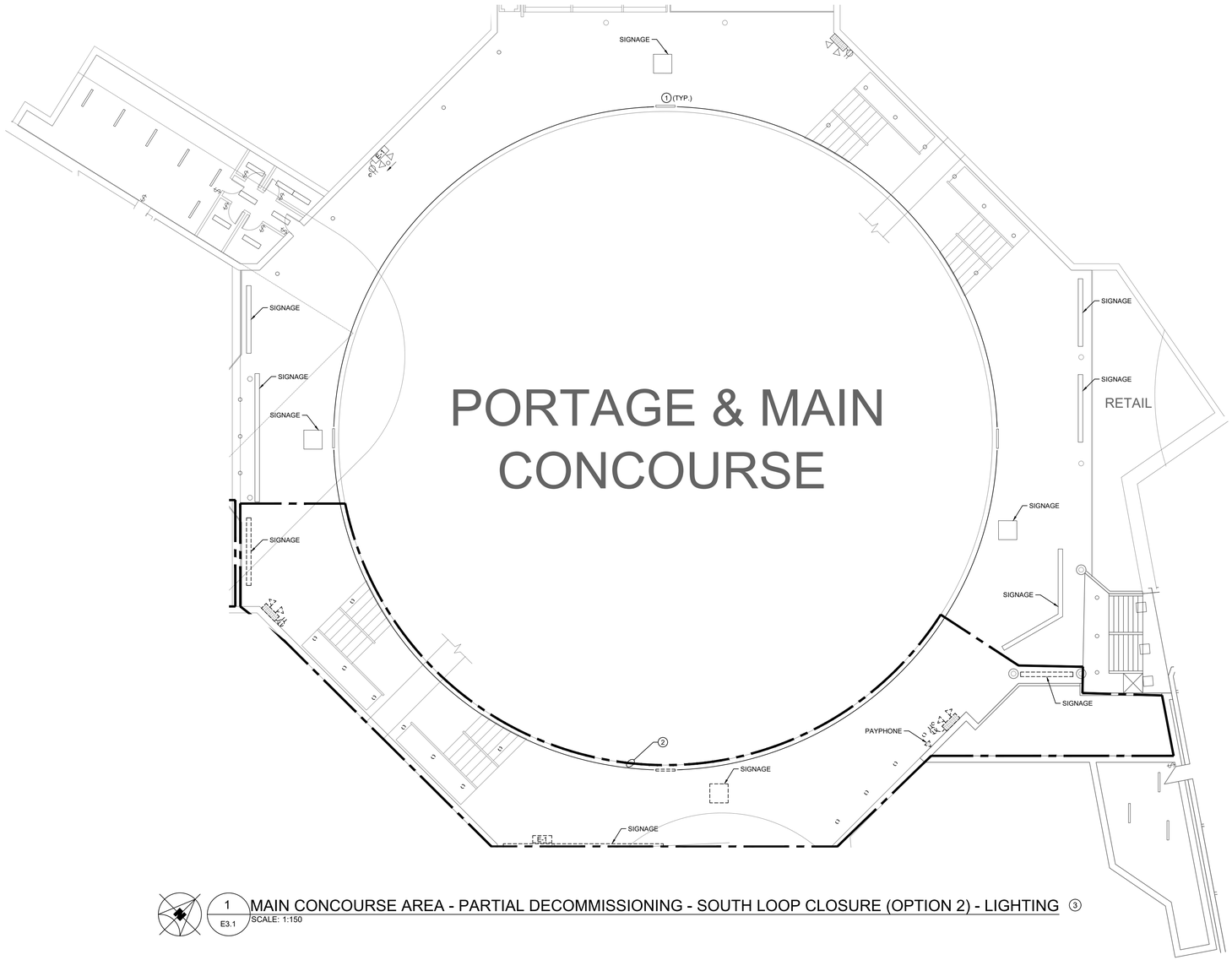
WINNIPEG, MANITOBA

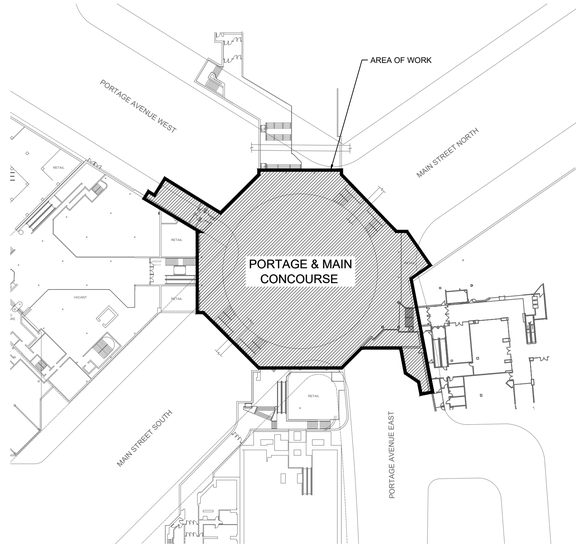
Sheet Title PART PLANS - FULL DECOMMISSIONING (OPTION 1) - POWER AND SYSTEMS

Design	Sheet
IC	E2.2
Drawn	
JKC	
Project	
2025-0000	
Revision	
A	



1 E3.1 MAIN CONCOURSE AREA - PARTIAL DECOMMISSIONING - SOUTH LOOP CLOSURE (OPTION 2) - LIGHTING ③

SCALE: 1:150



KEY PLAN

SCALE: NTS

KEY NOTES (##)

1. LIGHTING FIXTURES SURROUNDS CIRCULAR STRUCTURE.
2. REMOVE ALL DEVICES.
3. RELOCATE EMERGENCY LIGHTING UNITS TO SUIT NEW CONCOURSE LAYOUT.

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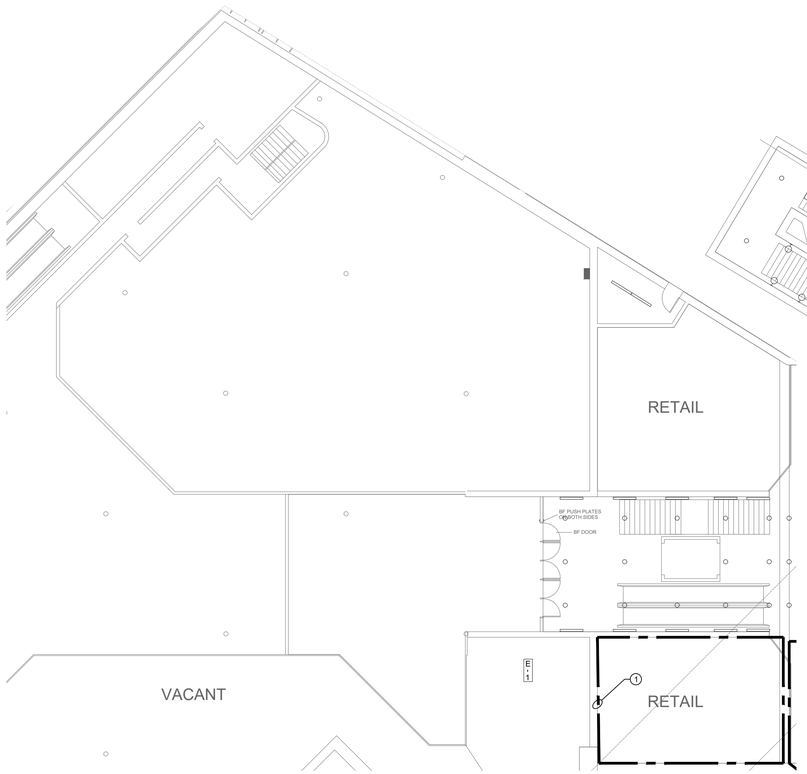
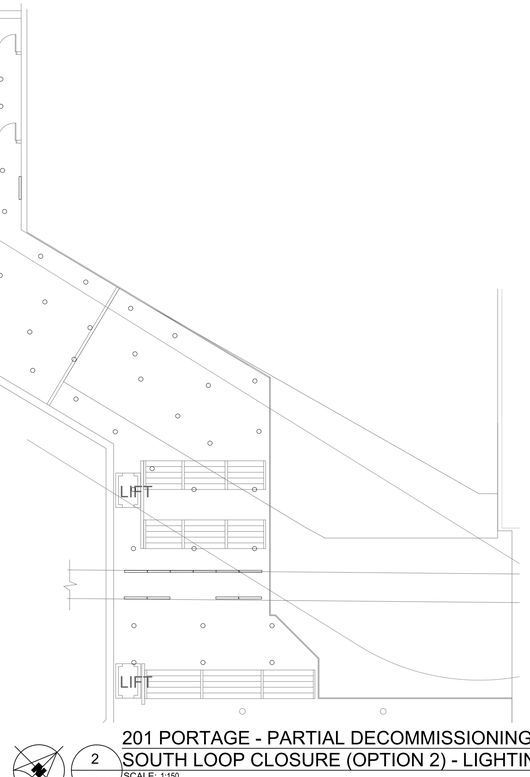
Sheet Title MAIN CONCOURSE AREA - PARTIAL DECOMMISSIONING - SOUTH LOOP CLOSURE (OPTION 2) - LIGHTING

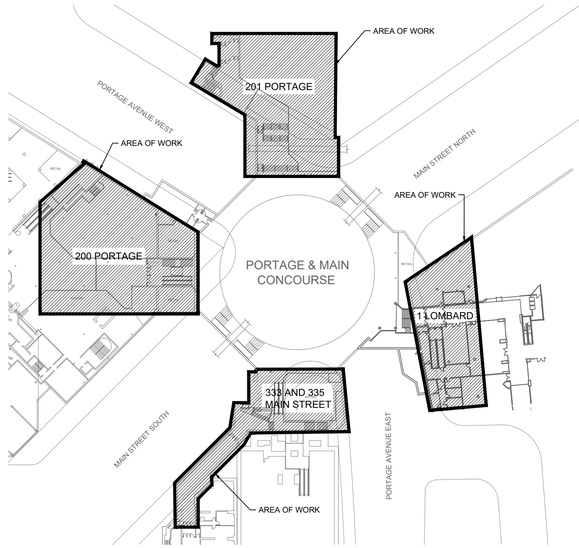
Design	IC
Drawn	JKC
Project	2025-0000
Revision	A
Sheet	E3.1



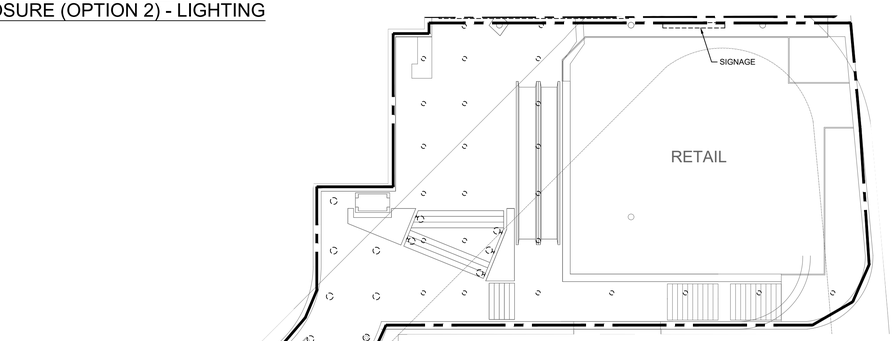
200 PORTAGE - PARTIAL DECOMMISSIONING
SOUTH LOOP CLOSURE (OPTION 2) - LIGHTING
1 / E3.2
SCALE: 1:150



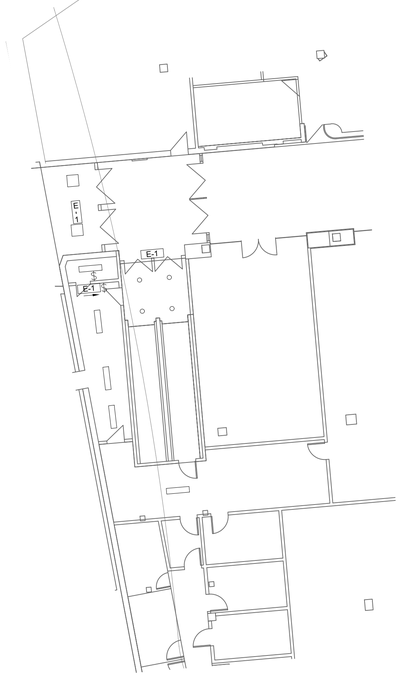
201 PORTAGE - PARTIAL DECOMMISSIONING ②
SOUTH LOOP CLOSURE (OPTION 2) - LIGHTING
2 / E3.2
SCALE: 1:150



KEY PLAN
SCALE: NTS



333 AND 335 MAIN - PARTIAL DECOMMISSIONING ①
SOUTH LOOP CLOSURE (OPTION 2) - LIGHTING
3 / E3.2
SCALE: 1:150



1 LOMBARD - PARTIAL DECOMMISSIONING ②
SOUTH LOOP CLOSURE (OPTION 2) - LIGHTING
4 / E3.2
SCALE: 1:150

KEY NOTES (##)

1. REMOVE ALL DEVICES.
2. DEVICES TO REMAIN.

Consultant

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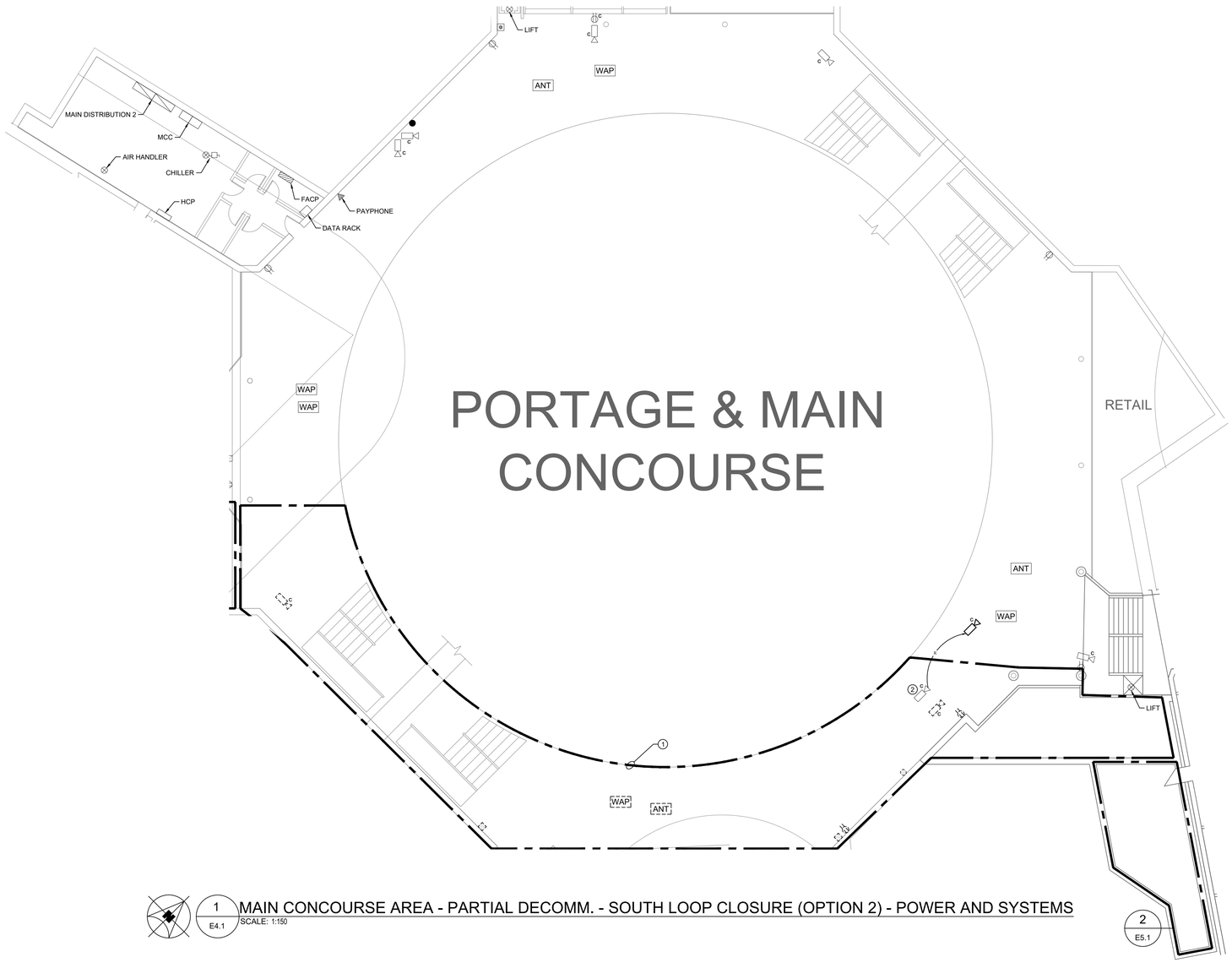
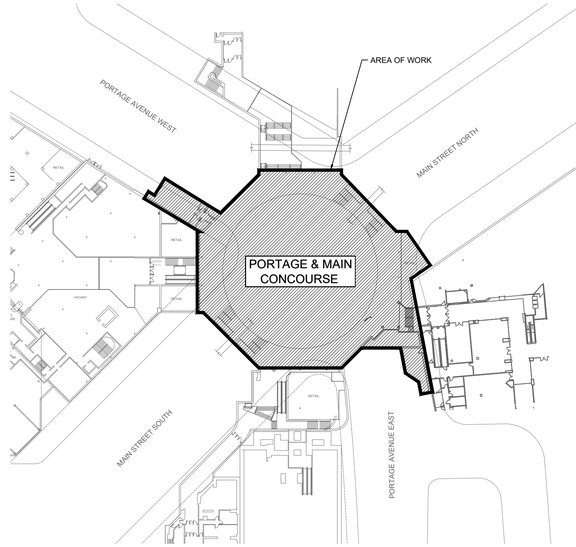
Sheet Title
PART PLANS - PARTIAL DECOMMISSIONING - SOUTH LOOP CLOSURE (OPTION 2) - LIGHTING

Design	Sheet
IC	E3.2
Drawn	
JKC	
Project	
2025-0000	
Revision	
A	



1 E4.1 MAIN CONCOURSE AREA - PARTIAL DECOMM. - SOUTH LOOP CLOSURE (OPTION 2) - POWER AND SYSTEMS
SCALE: 1:150

2 E5.1



KEY PLAN
SCALE: NTS

KEY NOTES (##)

1. REMOVE POWER AND SYSTEMS DEVICES.
2. RELOCATE DEVICE.

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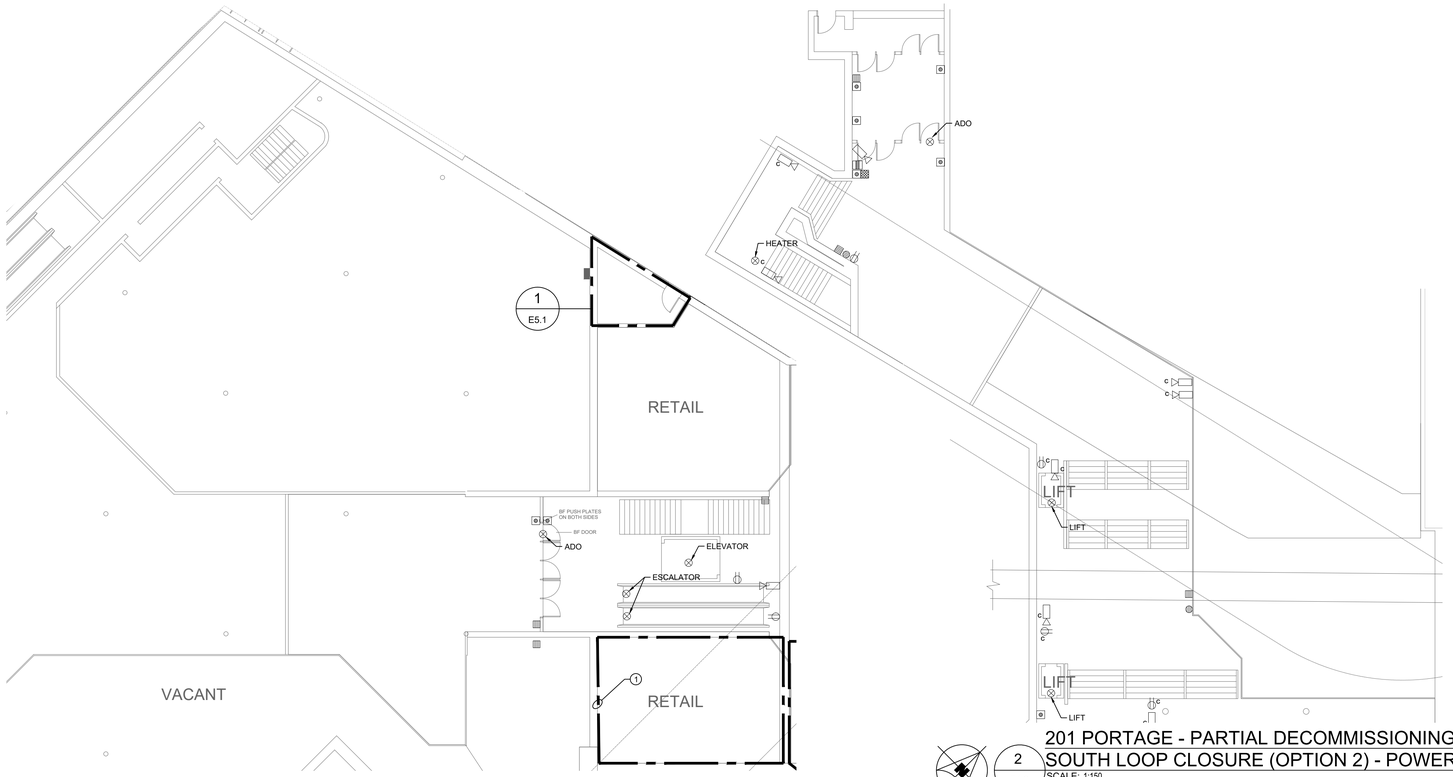
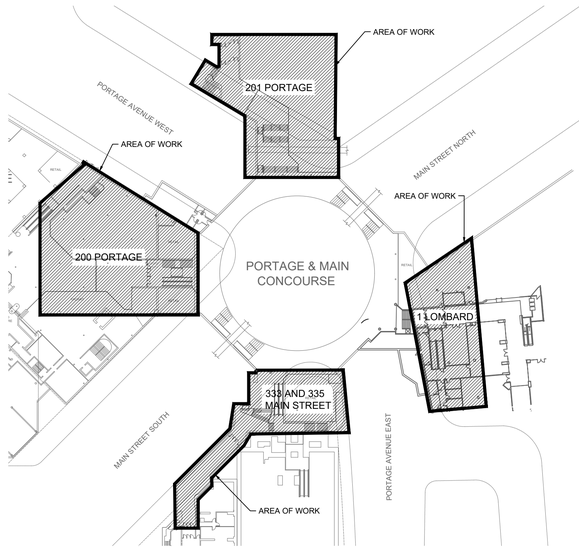
Sheet Title MAIN CONCOURSE AREA - PARTIAL DECOMM. - SOUTH LOOP CLOSURE (OPTION 2) - POWER AND SYSTEMS

Design	IC
Drawn	JKC
Project	2025-0000
Revision	A
Sheet	E4.1

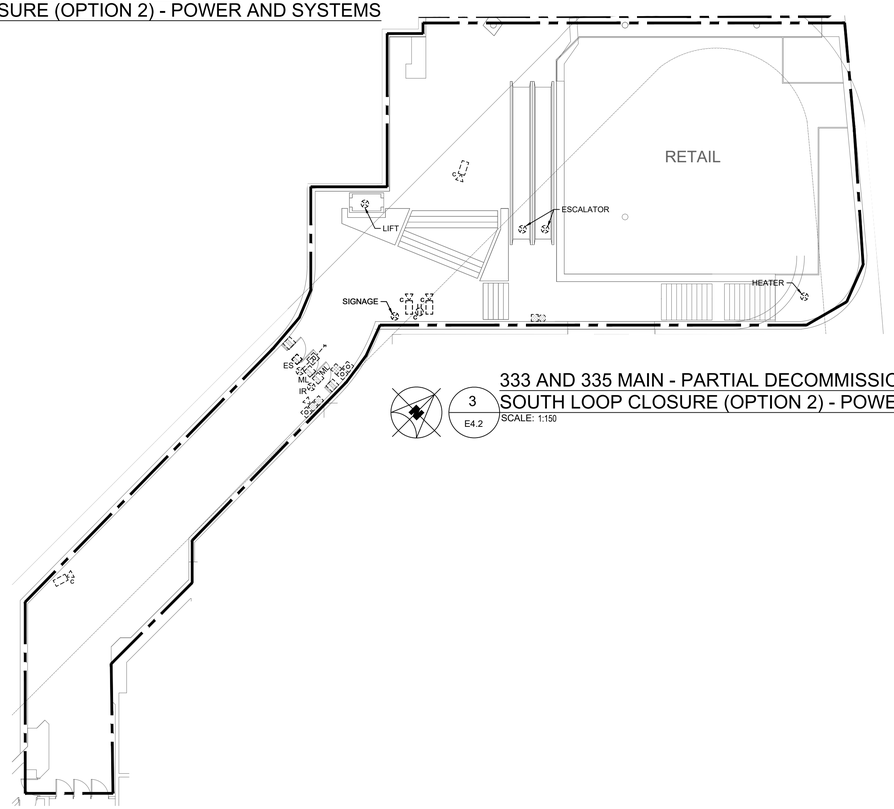


201 PORTAGE - PARTIAL DECOMMISSIONING ②
SOUTH LOOP CLOSURE (OPTION 2) - POWER AND SYSTEMS
2 E4.2
SCALE: 1:150

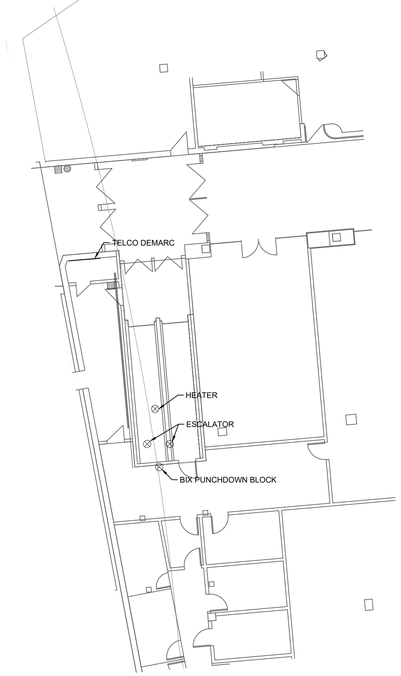


KEY PLAN
SCALE: NTS

200 PORTAGE - PARTIAL DECOMMISSIONING
SOUTH LOOP CLOSURE (OPTION 2) - POWER AND SYSTEMS
1 E4.2
SCALE: 1:150



333 AND 335 MAIN - PARTIAL DECOMMISSIONING ①
SOUTH LOOP CLOSURE (OPTION 2) - POWER AND SYSTEMS
3 E4.2
SCALE: 1:150



1 LOMBARD - PARTIAL DECOMMISSIONING ②
SOUTH LOOP CLOSURE (OPTION 2) - POWER AND SYSTEMS
4 E4.2
SCALE: 1:150

KEY NOTES (##)

1. REMOVE POWER AND SYSTEMS DEVICES.
2. DEVICES TO REMAIN.

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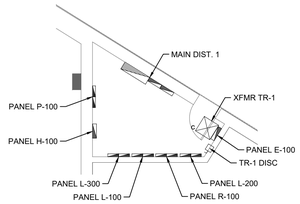
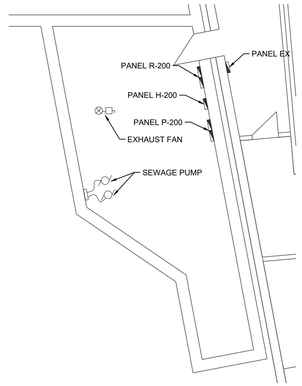
Sheet Title PART PLANS - PARTIAL DECOMM. - SOUTH LOOP CLOSURE (OPTION 2) POWER AND SYSTEMS

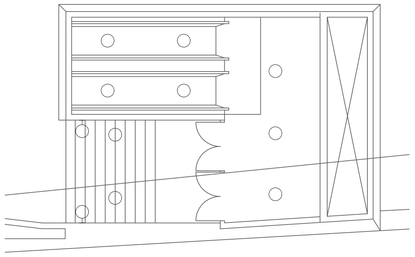
Design	Sheet
IC	E4.2
Drawn	
JKC	
Project	
2025-0000	
Revision	
A	



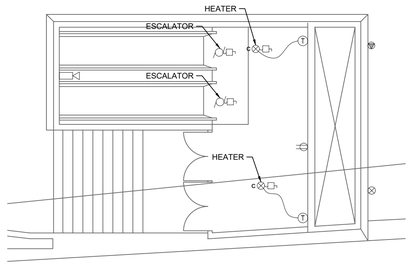
1 E7.1 MAIN ELECTRICAL ROOM (C-24) - POWER
SCALE: 1:100



2 E7.1 MECH / ELEC ROOM (C-14) - POWER
SCALE: 1:100



3 E7.1 BUNKER - STREET LEVEL - LIGHTING
SCALE: 1:100



4 E7.1 BUNKER - STREET LEVEL - POWER AND SYSTEMS
SCALE: 1:100

KEY NOTES

1. -

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Sheet Title
LARGE SCALE PLANS - ELECTRICAL - EXISTING

Design	Sheet
IC	E7.1
Drawn	
JKC	
Project	
2025-0000	
Revision	
A	

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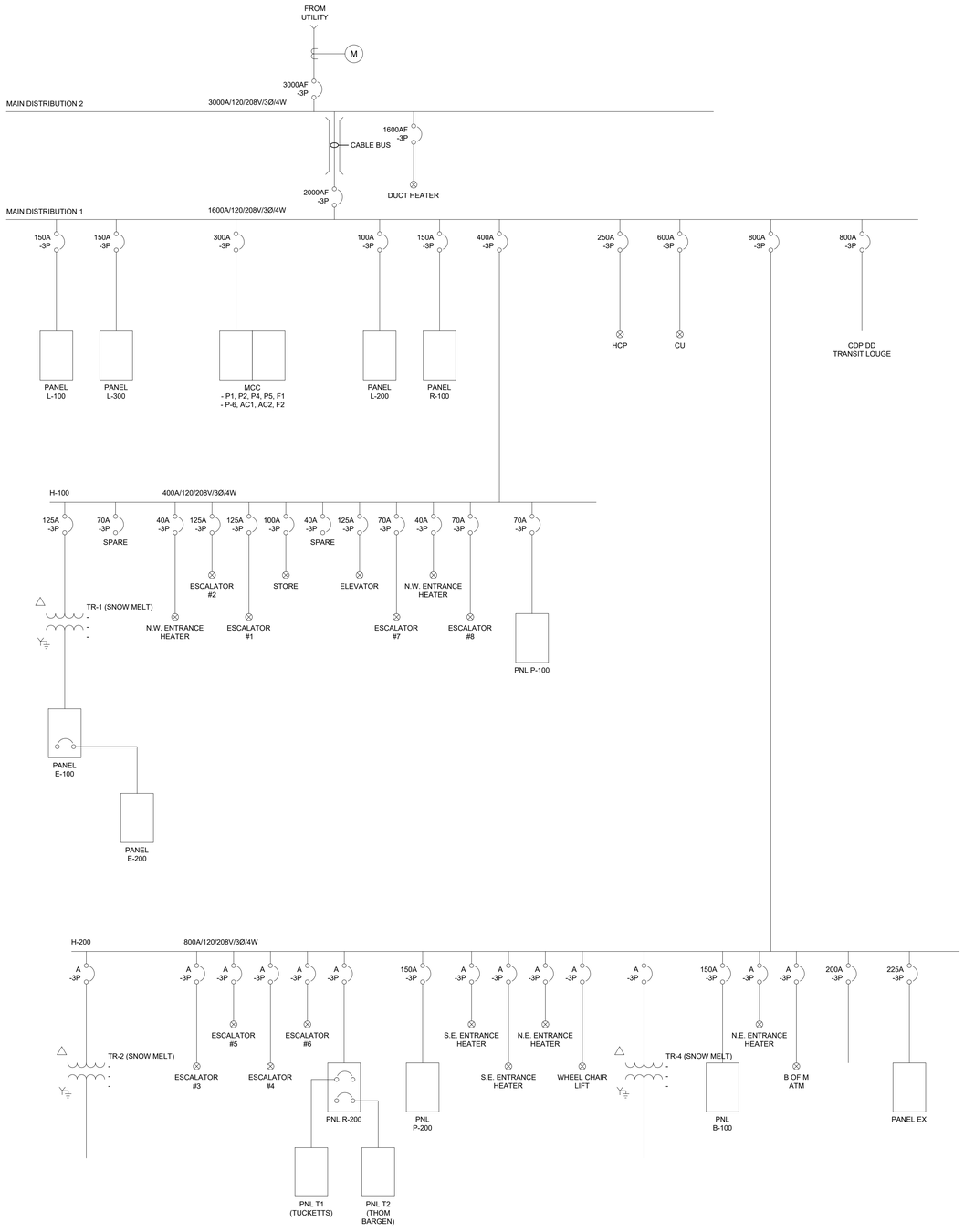

1 / E8.1 SINGLE LINE DIAGRAM ①

SCALE: NTS

KEY NOTES ⓦ

1. REPLACE DISTRIBUTION EQUIPMENT WITH NEW FOR PARTIAL DECOMMISSIONING OPTIONS.

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Sheet Title
SINGLE LINE DIAGRAM - EXISTING

Design	IC
Drawn	JKC
Project	2025-0000
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Sheet	E8.1

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