

October 17, 2016

*Via E-mail*

Mr. John Livey  
Deputy City Manager  
Toronto City Hall  
100 Queen Street West  
Toronto, Ontario M5H 2N2

Dear John,

As a follow-up to my letter dated September 2, 2016, I am sharing with you a detailed FAQ document that we have prepared in response to the various agency and stakeholder questions received by the City of Toronto during the review process of the planned Ground Run-Up Enclosure (GRE) at Billy Bishop Toronto City Airport.

I would like to once again take this opportunity to thank the City of Toronto for facilitating the constructive community consultation meeting on June 28, 2016 with regard to the planned GRE. As the owner and operator of an airport located near the city's thriving mixed-use waterfront, PortsToronto works very hard to be responsive to our neighbouring community. In addition to a number of noise mitigation measures already in effect at Billy Bishop Airport, the planned GRE will take our efforts one significant step further by dramatically dampening the acoustic impact from engine run-ups and I am very pleased to have the City's support on the project.

As we are committed to providing our neighbours with detailed and up-to-date information pertaining to the planned GRE, this document will be available online at [www.BillyBishopAirfieldProject.com](http://www.BillyBishopAirfieldProject.com) and [www.portstoronto.com](http://www.portstoronto.com). I will note that [www.BillyBishopAirfieldProject.com](http://www.BillyBishopAirfieldProject.com) is updated on a weekly-basis in the interest of keeping the community well-informed on this project.

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The wordmark for Canada, featuring the word "Canada" in a serif font with a small red maple leaf above the letter "a".

We look forward to City staff forwarding the Consent Agreement for execution and will continue to work towards the implementation and delivery of this important project to mitigate groundside noise conditions from the airport's operations on the community.

Sincerely,

A handwritten signature in black ink, appearing to read 'G. Wilson', with a stylized flourish at the end.

Geoffrey Wilson,  
Chief Executive Officer, PortsToronto

Cc: David Stonehouse, Director-Waterfront Secretariat, City of Toronto  
Bryan Bowen, Project Manager-Waterfront Secretariat, City of Toronto  
Gene Cabral, Executive Vice President, Billy Bishop Toronto City Airport  
Ken Lundy, Vice President, Infrastructure, Planning & Environment, PortsToronto  
Deborah Wilson, Vice President, Communications, PortsToronto

**Planned Ground Run-Up Enclosure (GRE) Follow-up Questions  
October 17, 2016**

**Q1. Why are engine run-ups done at Billy Bishop Airport? Does anything prevent PortsToronto from reducing the number, operating hours, and types of run-ups performed at Billy Bishop Airport?**

Engine run-ups are required for various reasons and a plane cannot go back into service or become airborne following maintenance or repair until a ground test is executed. Based on Transport Canada regulations, engine run-ups must occur where the maintenance work has been conducted.

Porter Airlines technicians and a maintenance support team based out of Billy Bishop Toronto City Airport (Billy Bishop Airport) in hangars owned by Porter Airlines carry out all of the planned maintenance tasks related to the Q400 with the exception of heavy checks, which are detailed inspections of multiple aircraft systems that take two to three weeks. Billy Bishop Toronto City Airport is the only main maintenance base for Porter airlines as per the approved Transport Canada Maintenance Policy Manual. Porter and Air Canada perform engine run-ups at other airports as well but when service/repair is conducted at Billy Bishop Airport the ground run-up is required at Billy Bishop Airport.

Ultimately the procedure of engine run-ups is about safety and is mandated by Transport Canada. The GRE will mitigate the noise associated with ground engine run-ups and enable operations to comply with safety regulations while reducing the noise experienced by those in the community. These procedures are consistent with the airport's operation and are restricted during the most sensitive hours.

**Q2. Could the GRE be designed and built with a roof enclosure?**

A Ground Run-up Enclosure (GRE) is a three-sided, open top facility, able to accommodate an aircraft while maintenance mechanics conduct high power engine run-up inspections. Acoustically and aerodynamically designed, a GRE can dramatically dampen the acoustic impact from engine run-ups. The facility is oriented and designed in such a way to maximize its usability taking into consideration predominant wind patterns. A GRE could be designed and built with a roof enclosure, but not at BBTCA. The GRE will not have a top because of aerodynamic considerations that require airflow through the facility.

PortsToronto has engaged the same GRE facility design-builder, Blast Deflectors Inc. (BDI), that constructed the Vancouver facility to construct the facility at Billy Bishop Airport. BDI has the specialized expertise of having built over 30 GRE facilities worldwide, none of which have tops.

**Q3. What is the cost to construct the GRE and how will it be funded?**

The GRE will cost approximately \$9 million to build which includes all site preparations, engineering and contract administration. The Billy Bishop Toronto City Airport Airfield Rehabilitation Program is part of capital improvements financed entirely by PortsToronto and

paid for through the AIF (Airport Improvement Fee) collected from passengers departing Billy Bishop Airport. No taxpayer dollars will be used to construct or maintain the GRE.

PortsToronto is a financially self-sufficient government business enterprise that receives no public funding from any level of government. This means that no taxpayer dollars are used to finance the organization's activities or operations. In fact, PortsToronto's mission is to effectively manage the Billy Bishop Airport, Marine Terminals 51 and 52 within the Port of Toronto and the Outer Harbour Marina on a self-sustaining basis, enabling the organization to reinvest funds into transportation infrastructure, marine safety, environmental protection and community programming.

Similar to the Province of Ontario and other government jurisdictions, the Government of Canada established a legislative framework that requires port authorities to be self-sufficient. There are approximately 50 Government Business Enterprises in Canada including the other 17 port authorities. The business structures of these organizations are similar to PortsToronto.

**Q4. Will the cost of the GRE be amortized beyond the June 30, 2033, expiration date of the Tripartite Agreement?**

PortsToronto has arranged a bank loan to pay for the Airfield Rehabilitation Program which is inclusive of the GRE which is amortized over 15 years.

**Q5. What feedback has Vancouver International Airport received following the construction of their GRE?**

The proposed GRE is only the second such facility to be constructed at a Canadian airport. The other facility is located at Vancouver International Airport and has received very positive feedback from the airport and local community.

The amount of noise complaints related to run-up noise from the south side of the Vancouver airport has decreased since the GRE was put into use. BDI has confirmed, as the design-builder of the Vancouver facility that the GRE met or exceeded the specified insertion loss (acoustic performance) which was demonstrated during the acceptance testing. The Vancouver Airport Authority has no reported issues related to technical difficulties with the GRE due to wind direction.

**Q6. What is the largest plane the GRE can accommodate?**

The GRE at Billy Bishop Airport is technically capable of accommodating other Code C aircraft. The GRE designed for Billy Bishop Airport is the optimal configuration for the Q400 (which is a Code C aircraft) and was chosen for its ability to have the aircraft powered in and out of the structure, as opposed to being manually towed which is costly and inefficient. The GRE designed for Billy Bishop Airport was in consideration of our current operations and reflects design choices specific to turboprop aircraft. For example, a 4-sided GRE would provide significant acoustic benefit to areas in front of the facility, however such a facility would only be aerodynamically suitable for jet aircraft. The Billy Bishop Airport project requires that the facility be designed only for turboprop aircraft, which have very unique design criteria.



**Q7. Elaborate on the relationship of elevation to GRE noise abatement. At what elevation does the noise abatement begin to diminish? At what elevation is the abatement no longer effective? Confirm there is no elevation or location at which the GRE creates a net increase in current noise impact from run-up procedures.**

The planned GRE would be located on the south-west end of the airport property (situated on City-owned lands leased to PortsToronto) as an optimal location identified in the Jacobs Study, as this area provides a safe distance from the active airfield and is where high power engine run-ups have been occurring historically as this is a farthest distance from the majority of the airport's neighbours.

The benefit of any GRE varies depending on one's elevation, with the optimal noise reduction at ground level. The only noise receivers to receive zero benefit from a GRE facility would be those with a direct line of sight into the facility. In this instance, noise receivers along the Toronto waterfront below an elevation of approximately 600m will benefit from the GRE due to a reduced, or eliminated, line of sight into the facility. Currently there are no buildings along the waterfront or downtown area that will not benefit from the noise abatement provided by the GRE facility. BDI has created cross-sections, which include land mark buildings on the waterfront to illustrate that there are no buildings which penetrate the line of sight (see attached Line-of-Sight Sketches).

BDI has confirmed with other airports that there is no elevation or location at which the GRE creates a net increase in current noise impact from run-up procedures. BDI is the industry leader in designing and building GRE's worldwide and there have been no facilities designed and built by BDI where a net increase in current noise impact from run-up procedures has occurred.

**Q8. Describe possible contaminants associated with run-up procedures. Are these affected by the construction of a GRE? How will they be managed?**

At PortsToronto, we are committed to sustainability and protecting the environment and Billy Bishop Airport carefully manages the use, collection, containment and disposal of snow from the airfield in accordance with safety and environmental protection requirements and as governed by a Sanitary Discharge Agreement with the City of Toronto. Collected snow is never discharged into the lake and any chemicals are contained in designated catch basins and underground sewers. The airport will continue to adhere to these important regulations in relation to snow removal from within the planned GRE, which would include residue or chemicals from aircraft exhaust emissions. Also of note, an aircraft using the facility will not have de-icing fluid on it since the aircraft is not preparing for take-off but is rather being tested. Should de-icing be necessary, the aircraft would be treated in the designated de-icing area after run-up testing has occurred.

**Q9. Describe the correlation between run-up procedures and number of aircraft movements at Billy Bishop Airport. Would the number of engine run-ups increase with an increase in aircraft movements? Will construction of the GRE support any increase in additional aircraft movements?**

At Billy Bishop Airport, the number of commercial carrier aircraft movements can reach 202 per day (PortsToronto's voluntary cap) which is not currently being fully utilized daily. As a reference

in the 12-month period July 2015 to June 2016, there were approximately 80% of the potential 73,730 annual commercial carrier movements utilized. As an increase in utilization of the current slots available occurs, there would be an increase in the total number of run ups. This is regardless of whether a GRE would be built at Billy Bishop Airport. The current number of aircraft movements under normal operations result in, on average, one run-up per day at the airport.

Although the proposed GRE has capacity, it does not facilitate additional run-ups beyond what is required for normal operations. Air carrier aircraft movements are dependent on a number of factors, including passenger demand and the air carrier's ability to provide the service. The facility would be used by carriers operating from Billy Bishop Airport and not used by external carriers.

**Q10. What impact will wind direction have on the effectiveness of the GRE? How often will run-up procedures be performed outside the GRE?**

The GRE's steel-framed structure is fully lined with acoustic panels designed specifically for the purpose of absorbing engine sound and reducing noise on the surrounding community. Through a design-build analysis it was determined that an optimized orientation for the open side of the facility would be at 250 degrees as this would maximize its usability while taking into consideration predominant wind patterns.

While the intent is to undertake all engine run-up tests inside the facility, certain wind conditions will not allow its use due to the possibility of engine damage. Based on BDI's data, GRE facilities built for turboprop aircrafts have a usability rate of 85 per cent. As such, it is anticipated that 15 per cent of the time the GRE cannot be used and the engine run-ups will occur outside the facility near the same location as they are performed today. As they are currently, wind direction and velocity will remain factors in the perceived noise impact of run-up procedures. However, the planned GRE will provide noise abatement which is not realized today.

**Q11. Will there be permanent noise monitoring at various points along the waterfront to monitor the effectiveness of the GRE?**

As part of PortsToronto's commitment to managing noise generated by operations related to the airport, the two Noise Monitoring Terminals (NMTs), located on the Toronto Police Marine Unit building and the airport's on-island Fire Hall, have been upgraded this year. The terminals are the foundation of the airport's noise monitoring system and provide ongoing noise-level data to the airport's Noise Management Office. This data is then used in long-term noise mitigation planning and in responding to noise complaints from the surrounding community. In addition to the upgrade of the two existing NMTs, a third NMT has been installed on the Mainland Passenger Transfer Facility building.

The noise data transmitted by the NMTs is also viewable through the airport's free, publically-accessible WebTrak website – an Internet-based software service that enables individuals to locate and track aircraft on their computer or tablet screen and research information on the aircraft, including the aircraft type, the destination and point of departure. The NMT's will in fact capture associated noise as one tool to monitor the source of noise.

**Q12. Elaborate on your construction management plan. How will traffic related to construction of the GRE affect the community?**

Since a portion of construction activities will have to take place during night-time hours when the airport is closed for aircraft traffic, PortsToronto has implemented a number of measures to minimize the impact of construction activities on local residents, including limitations on construction traffic access, construction noise and lighting.

In order to reduce related construction traffic through the Bathurst Quay Neighbourhood, this project has implemented an approach that will bring the majority of equipment and materials to the site by barging it from the Cruise Ship Terminal in the Port of Toronto to a temporary dock on the east side of the airport. This procedure will ensure minimal impacts on the local residents and airport travelers from construction traffic. Similarly, the contractor is implementing procedures that minimize the amount of backing-up by construction equipment and therefore noise from back-up alarms. Water trucks will ensure dust suppression during construction activities as well. Lighting for night time operations will be directed downwards and away from neighbourhoods.

PortsToronto will work diligently on minimizing the impacts on the surrounding neighbourhood from this project and appreciates everyone's patience as we deliver this significant and important project to enhance continued operations of the airport.

**Q13. Elaborate on the creation and confirmation of the pre and post-construction acoustic contours provided in Appendix D. Will Ports Toronto collect and make available noise data in both dBA and dBC?**

BDI has modelled the pre and post-construction acoustic contours as per the City's request and will be provided once finalized. The parameters were included in the contract between BDI and PortsToronto. Based on this, the actual acoustic contours will be provided to the City of Toronto.

We work diligently to mitigate and minimize the noise from our airport's operations on our neighbours in a number of important ways. PortsToronto is working with BDI to prepare noise level data in both A-weighting (dBA), which is based on the industry standard, as well as in a C-weighting (dBC) based on requests from members of the community. This will be made available at the time the GRE facility becomes operational.

**Q14. Please provide Ports Toronto's interpretation of Provincial noise guidelines as they relate to ground-based noise at Billy Bishop Airport.**

Under the Provincial Environmental Noise Guideline for Stationary and Transportation Sources (NPC-300), airport facilities are stationary sources that usually do not require an approval from the Provincial Ministry of the Environment and Climate Change, because most aspects of the facility are solely regulated by the federal government. Regardless of whether provincial approvals are required, airport facilities are subject to the sound level limits in Guideline NPC-300.

The guideline notes that certain airport facilities and activities such as mechanical systems serving terminals are considered as stationary sources of noise. PortsToronto contacted the

provincial Ministry of the Environment and Climate Change to confirm its understanding that the planned GRE facility is not a mechanical system serving the terminal and not an ancillary facility off-site of the airport property, and as such, this stationary facility does not require a MOECC approval.

As well the guideline states that outdoor and indoor noise impacts due to aircrafts should be established separately from the impact of road and/or rail traffic. If the outdoor NEF/NEP value is less than 25, further assessment is not required. Yearly compliance checks are requested by the City of Toronto and undertaken by Transport Canada, which confirms the outdoor NEF/NEP value is less than 25 at Billy Bishop Airport.

PortsToronto's interpretation of the Provincial noise guidelines is that the planned GRE facility does not require a MOECC approval.

**Q15. Elaborate on the performance parameters of the GRE as proposed. What options exist to refine the structure in order to expand the benefit further? In particular for waterfront destinations west of the GRE (i.e. Ontario Place), which receive only a modest noise reduction.**

The performance specifications for the proposed GRE require that the facility be aerodynamically available for engine run-ups a minimum of 85% of the time. In order to accomplish this, the proposed design includes features such as vented acoustic walls, sloped entry, rounded edges on the noise walls ahead of the engines and curved prop-wash deflector. The performance specifications also require that the proposed GRE demonstrate a 15dBA insertion loss measured per ANSI specifications, outside the GRE facility. This benefit will extend to neighbourhoods adjacent to the airport, as modeled in the contour drawings submitted to the City of Toronto (see attached Contour Drawings).

In order to provide a significant noise reduction to areas ahead of the open side of the GRE, (eg. such as areas adjacent to Ontario Place) the facility would need to have a noise attenuating wall on the fourth side, however due to the aerodynamic challenges of running turboprop aircraft, the front of the facility must be open. To date, no turboprop GRE facility has been built anywhere in the world with a front acoustic barrier (front doors) due to the much lower momentum of the turboprop exhaust which prevents efficiently drawing air through a front barrier.

A 4-sided GRE would provide significant acoustic benefit to areas in front of the facility, however such a facility would only be aerodynamically suitable for jet aircraft. The Billy Bishop Airport project requires that the facility be designed only for turboprop aircraft, which have very unique design criteria. The height of the west wall is being built to attain maximum benefit for noise reduction to the community, while ensuring the obstacle limitation surface is clear for aircraft take-offs and landings. The planned GRE facility for Billy Bishop Airport represents the best available technology for turboprop ground run-up noise attenuation.

**Q16. What landscaping options exist to reduce the visual profile of the GRE? Can features such as a berm, tree plantings and other landscape treatments be incorporated into the design?**

In terms of the GRE itself, the proposed facility includes aesthetic cladding that improves the visual profile by covering the structural framing (the skeleton) of the GRE. PortsToronto consulted with the City of Toronto on the colour of the GRE cladding and structural elements, including lighting, to ensure the visual profile of the facility blended into its surroundings. For aerodynamic reasons, the areas immediately adjacent to the side walls and rear wall must be clear of obstacles such as landscape features, berms, etc. In addition, the airport's Wildlife Management Plan requires that to minimize habitat feeding and nesting, landscape features including berms and plants should not be present.

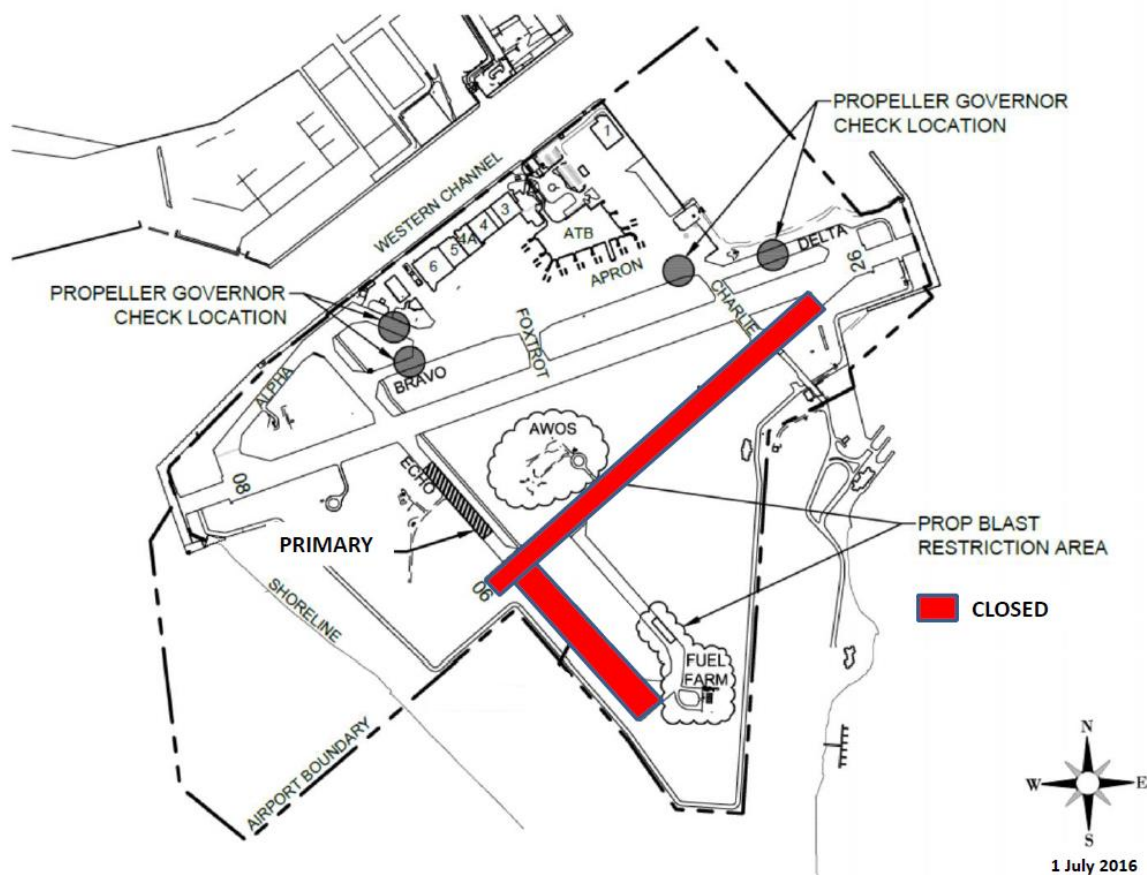
**Q17. Elaborate on the various types of run-up procedures performed at Billy Bishop Airport, including the average frequency of each procedure, and a map identifying the location of each. Please confirm which run-up procedures are technically capable/incapable of relocation to the GRE.**

At Billy Bishop Airport, there are five types of runs that an aircraft can perform: power run, low power engine idle run, propeller governor overspeed check, taxi test and compass swing. The propeller governor overspeed check, taxi test and compass swing runs are not considered an engine run but rather a check of the aircraft's system (see attached Aircraft Maintenance Run Procedures document for more details).

There are two types of engine runs or run-up procedures performed at Billy Bishop Airport:

- 1) Low power engine idle runs are completed at the gate and do not need to be performed at the GRE; and,
- 2) Power runs (high power) will all be conducted at the GRE when constructed.

All engine power runs (high power) are currently conducted during the airfield rehabilitation work at the "PRIMARY" location on the below map.



It is difficult to determine the exact frequency, as it depends on when and what type of maintenance procedure is done. In 2015, there were 358 engine runs which averages out to 1 engine run per day.

In terms of what procedures are possible in the GRE, aircraft engine run-ups/high power runs can be performed in the GRE based on suitable wind conditions.

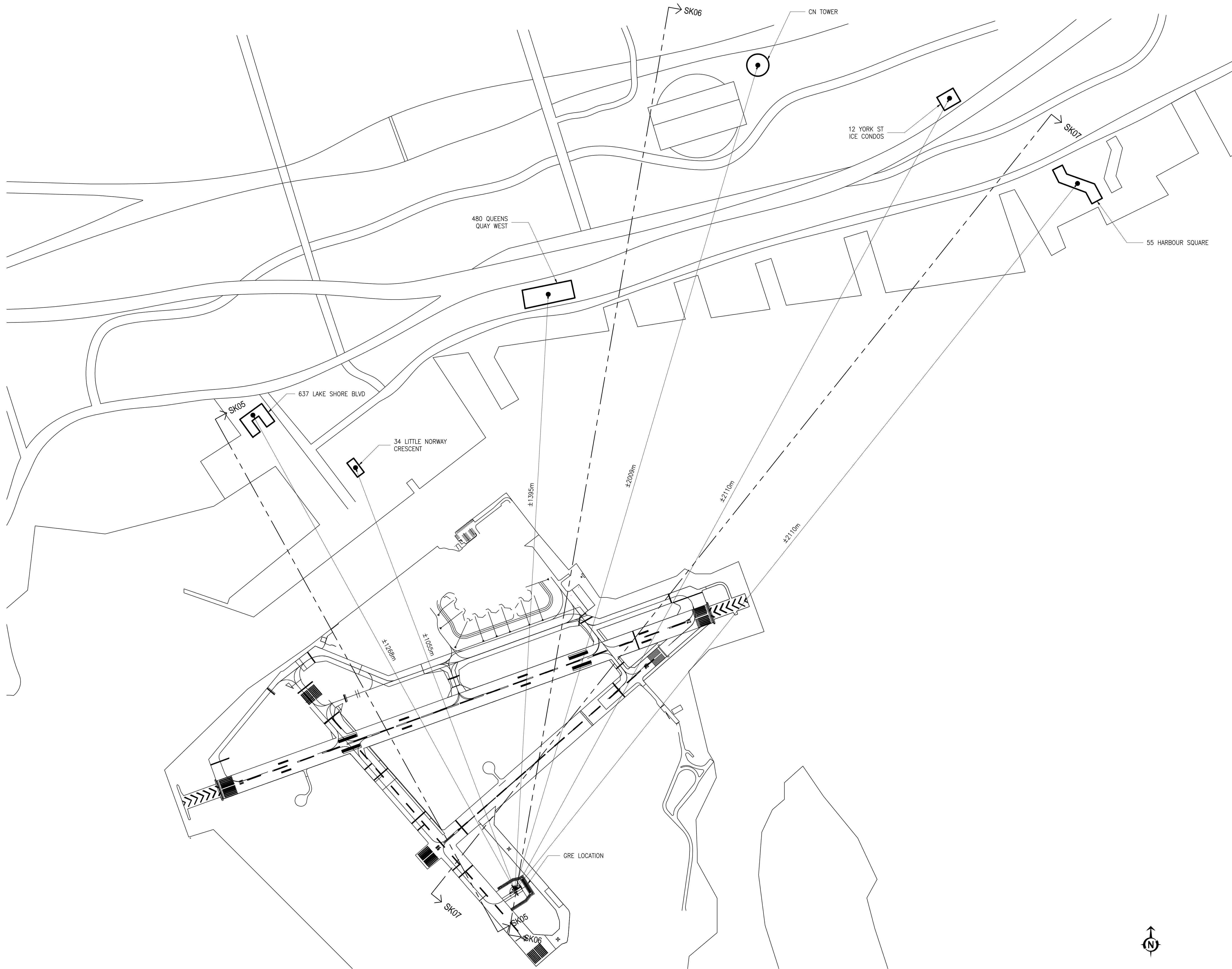
**Q18. Please revise and resubmit the acoustic plans provided in Appendix D to allow for reproduction in black and white.**

BDI has prepared the acoustic plans in Appendix D in a black and white version for reproduction and was submitted to the City of Toronto on September 13, 2016. (see attached acoustic plans)

#### Attachments

- Line-of-Sight Drawings
- Contour Drawings
- Aircraft Maintenance Run Procedures
- Acoustic Plans





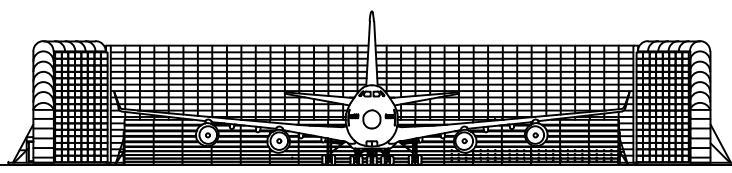
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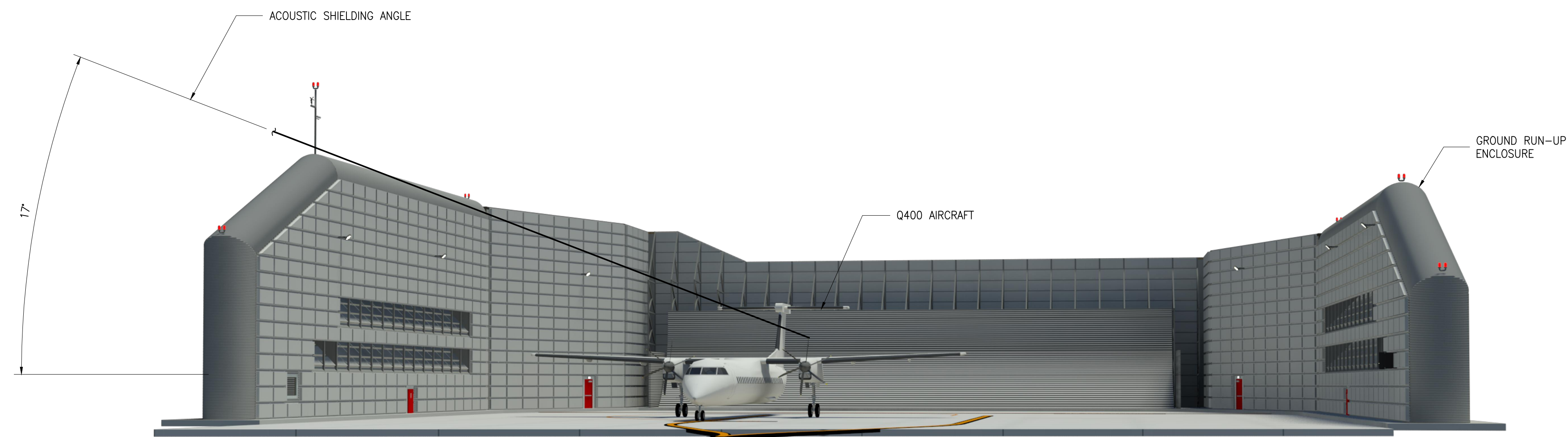
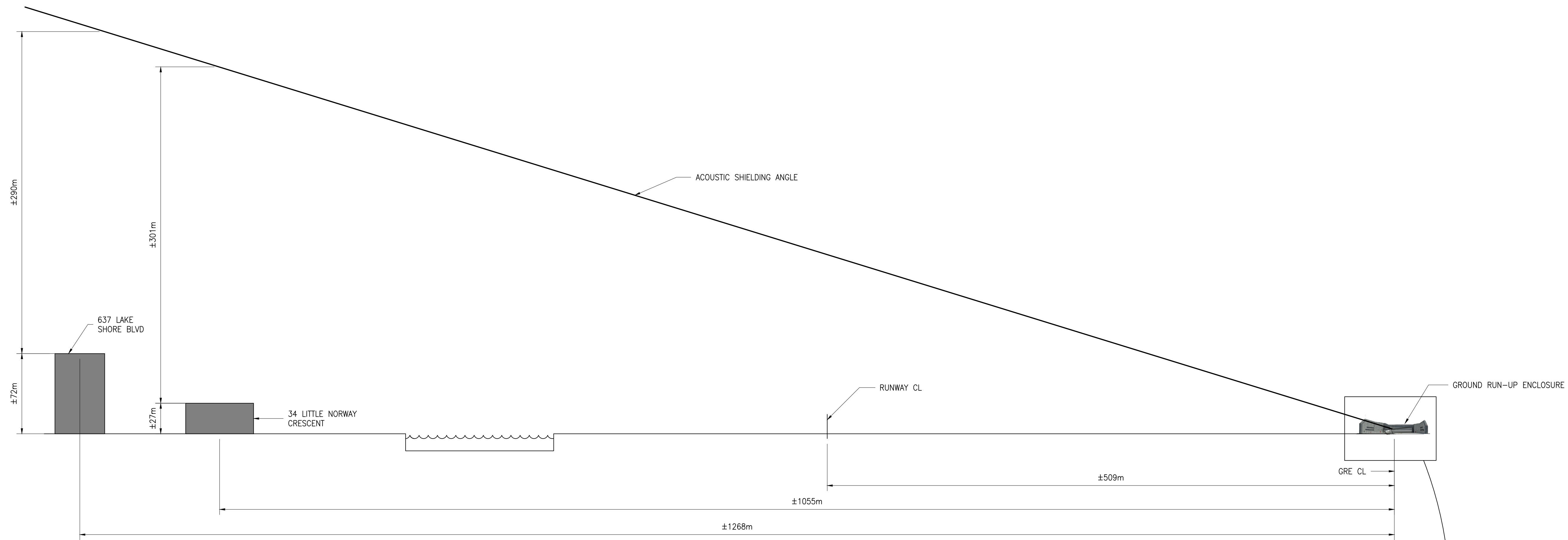
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AIRFIELD REHABILITATION PROGRAM  
CONTRACT NO. 2016-210-03

TORONTO, ONTARIO, CANADA

SHEET TITLE:  
AREA SITE PLAN  
WITH DISTANCES

DRAWN BY: LR	PROJECT No: 6YTZ20	SHEET No:
CHECKED BY: GR	DATE: 18 AUG 2016	SK04
REVIEWED BY: DB	SCALE: AS NOTED	
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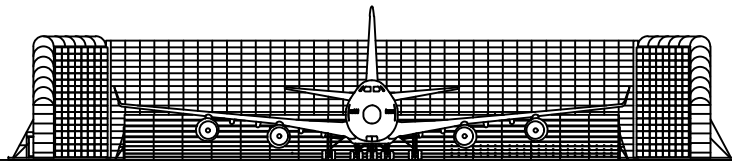
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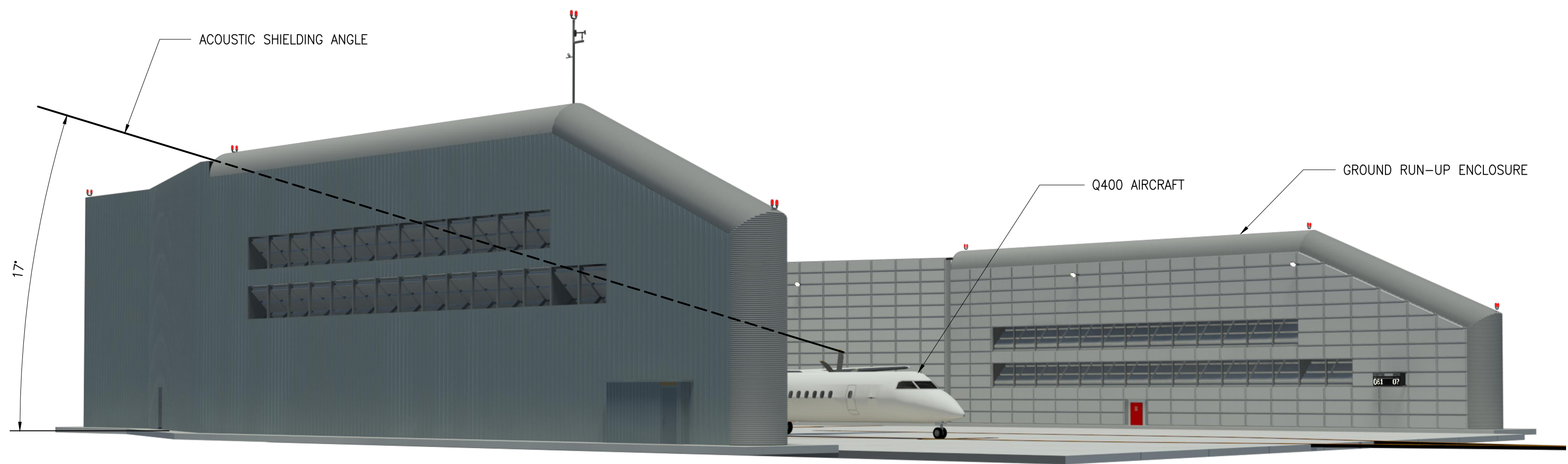
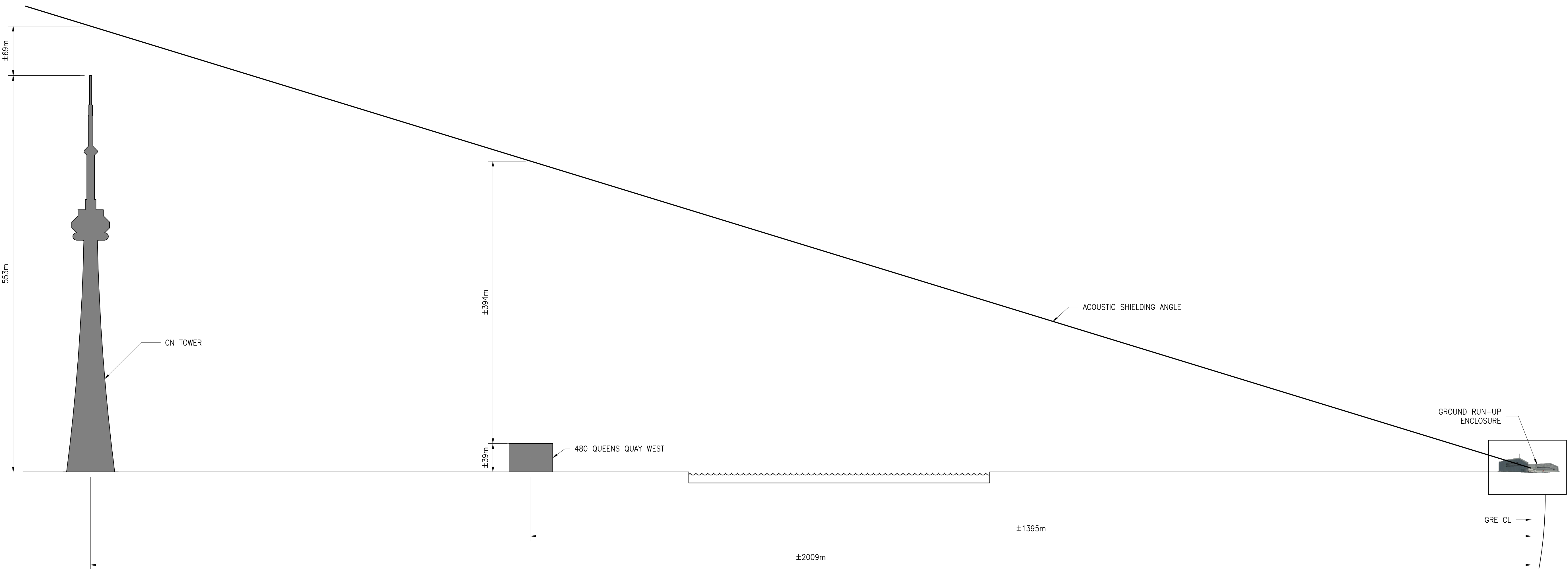
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SHEET TITLE:  
GROUND RUN-UP ENCLOSURE  
SECTION VIEWS

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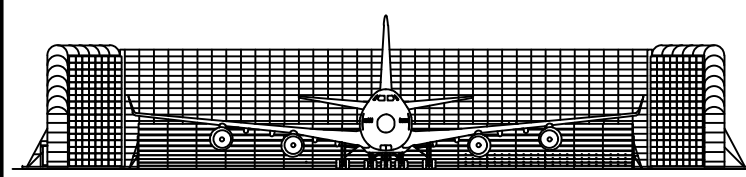
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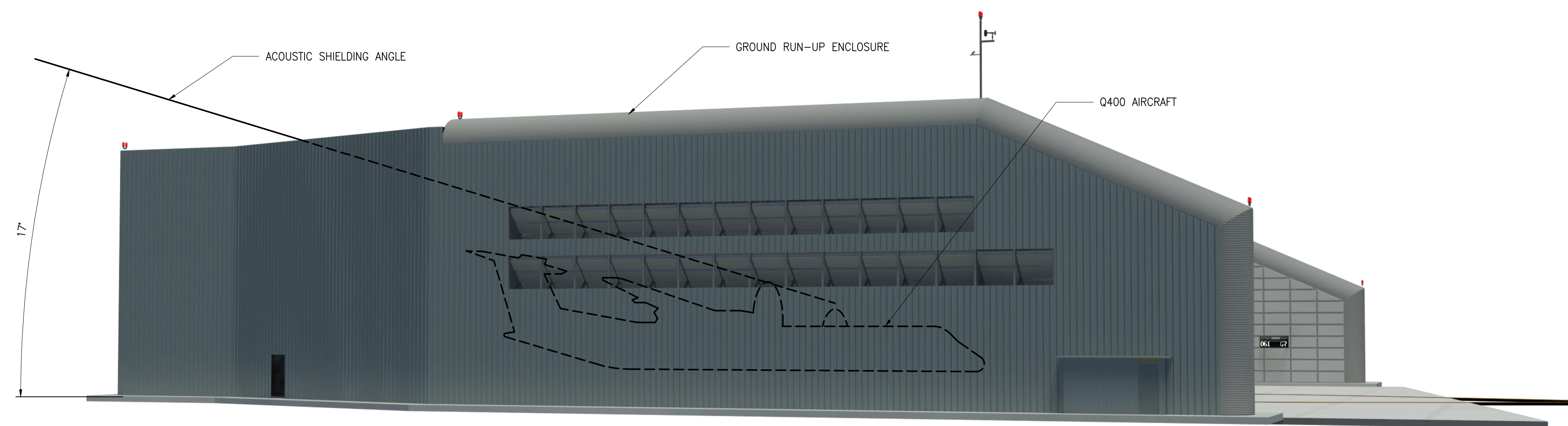
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TORONTO, ONTARIO, CANADA

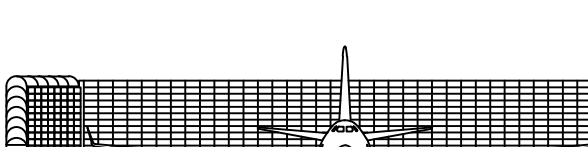
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GROUND RUN-UP ENCLOSURE  
SECTION VIEWS

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**Blast Deflectors, Inc.**  
**8620 Technology Way**  
**Reno NV 89509**  
**USA**

**Tel: (775) 856-1928**  
**www.bdi.aero**

Date:	August 23, 2016
Project Location:	Billy Bishop Toronto City Airport
Owner:	PortsToronto
Contour Type:	dBA L <sub>MAX</sub>
Aircraft:	Q400
Run Setup:	Engine #1 @ T/O, #2 Balancing
GRE Config:	Open field conditions (No GRE)
North Wall:	n/a
South Wall:	n/a
GRE Width:	n/a
Heading:	250°
Weather:	Clear
Temp. Inversion:	None
Wind Speed:	0 Kts (calm)
Receiver Height:	1.5m
Temperature:	20° C

- NOTES:**
- These contours do not take into account acoustic shielding provided by intermediate structures.





**Blast Deflectors, Inc.**  
**8620 Technology Way**  
**Reno NV 89509**  
**USA**

**Tel: (775) 856-1928**  
**www.bdi.aero**

Date:	August 23, 2016
Project Location:	Billy Bishop Toronto City Airport
Owner:	PortsToronto
Contour Type:	dBA L <sub>MAX</sub>
Aircraft:	Q400
Run Setup:	Engine #1 @ T/O, #2 Balancing
GRE Config:	BASELINE
North Wall:	14m
South Wall:	11m
GRE Width:	Power-in/Power-out
Heading:	250°
Weather:	Clear
Temp. Inversion:	None
Wind Speed:	0 Kts (calm)
Receiver Height:	1.5m
Temperature:	20° C

- NOTES:**
- These contours do not take into account acoustic shielding provided by intermediate structures.





PORTS  
TORONTO



Airfield Rehabilitation Program  
Ground Run-up Enclosure Facility

Supplemental Information  
Presented May 19, 2016

Contents:


- Acoustic Contours
- Photorealistic Renderings





Billy Bishop Toronto City Airport, Airfield Rehabilitation Program											
Ground Run-up Enclosure Details											
Date:	May 19, 2016										
Title:	Acoustic Contours Without GRE										
Contour Legend:	<table><tr><td>50dBA L<sub>MAX</sub></td><td></td></tr><tr><td>60dBA L<sub>MAX</sub></td><td></td></tr><tr><td>70dBA L<sub>MAX</sub></td><td></td></tr><tr><td>80dBA L<sub>MAX</sub></td><td></td></tr><tr><td>90dBA L<sub>MAX</sub></td><td></td></tr></table>	50dBA L <sub>MAX</sub>		60dBA L <sub>MAX</sub>		70dBA L <sub>MAX</sub>		80dBA L <sub>MAX</sub>		90dBA L <sub>MAX</sub>	
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60dBA L <sub>MAX</sub>											
70dBA L <sub>MAX</sub>											
80dBA L <sub>MAX</sub>											
90dBA L <sub>MAX</sub>											
Notes:	This contour shows the estimated sound levels of a Q400 running up at the designated location without a GRE.										




















GRE Concept

**Billy Bishop Toronto City Airport,  
Airfield Rehabilitation Program**

Ground Run-up Enclosure Details

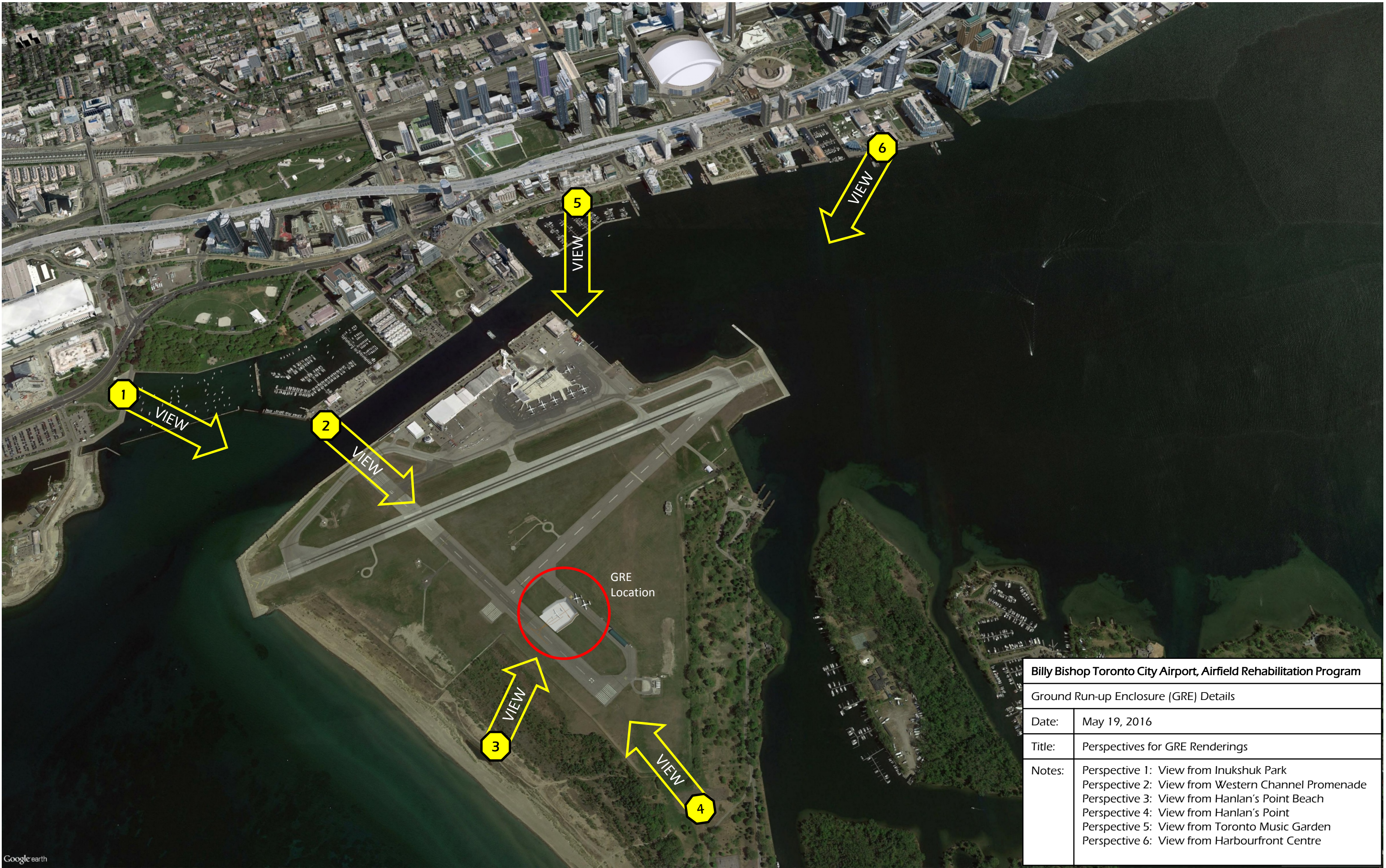
Date:	May 19, 2016										
Title:	Acoustic Contours With GRE										
Contour Legend:	<table><tr><td>50dBA L<sub>MAX</sub></td><td></td></tr><tr><td>60dBA L<sub>MAX</sub></td><td></td></tr><tr><td>70dBA L<sub>MAX</sub></td><td></td></tr><tr><td>80dBA L<sub>MAX</sub></td><td></td></tr><tr><td>90dBA L<sub>MAX</sub></td><td></td></tr></table>	50dBA L <sub>MAX</sub>		60dBA L <sub>MAX</sub>		70dBA L <sub>MAX</sub>		80dBA L <sub>MAX</sub>		90dBA L <sub>MAX</sub>	
50dBA L <sub>MAX</sub>											
60dBA L <sub>MAX</sub>											
70dBA L <sub>MAX</sub>											
80dBA L <sub>MAX</sub>											
90dBA L <sub>MAX</sub>											
Notes:	This contour shows the estimated sound levels of a Q400 running up at the designated location with the GRE.										





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Billy Bishop Toronto City Airport, Airfield Rehabilitation Program	
Ground Run-up Enclosure (GRE) Details	
Date:	May 19, 2016
Title:	Perspectives for GRE Renderings
Notes:	Perspective 1: View from Inukshuk Park Perspective 2: View from Western Channel Promenade Perspective 3: View from Hanlan's Point Beach Perspective 4: View from Hanlan's Point Perspective 5: View from Toronto Music Garden Perspective 6: View from Harbourfront Centre





Billy Bishop Toronto City Airport, Airfield Rehabilitation Program	Photo Taken:	May 13, 2016	NOTES 1. The “With GRE” image features a photorealistic rendering of the GRE facility that was created using 3D modeling software. 2. The GRE rendering was superimposed onto the “Without GRE Facility” photograph using photo editing software. 3. Great care was taken to present a realistic visualization of a potential future condition.
Ground Run-up Enclosure Details	Title:	Airport Photograph, Perspective 1 (Without GRE)	
Date: May 19, 2016	Perspective:	View from Inukshuk Park (43°37'55.99" N, 79°24'31.99" W)	





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Ground Run-up Enclosure Details	Title:	Airport Photograph, Perspective 2 (Without GRE)	
Date: May 19, 2016	Perspective:	View from Western Channel Promenade (43°37’51.00” N, 79°24’11.91” W)	





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Ground Run-up Enclosure Details	Title:	Airport Photograph, Perspective 3 (Without GRE)	
Date: May 19, 2016	Perspective:	View from Hanlan’s Point Beach (43°37’17.39” N, 79°23’44.52” W)	





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Date: May 19, 2016	Perspective:	View from Hanlan’s Point Beach (43°37’17.39” N, 79°23’44.52” W)	





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Ground Run-up Enclosure Details	Title:	Airport Photograph, Perspective 4 (Without GRE)	
Date: May 19, 2016	Perspective:	View from Hanlan’s Point (43°37’51.09” N, 79°23’32.09” W)	





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Ground Run-up Enclosure Details	Title:	Airport Photograph, Perspective 4 (With GRE)	
Date: May 19, 2016	Perspective:	View from Hanlan’s Point (43°37’51.09” N, 79°23’32.09” W)	





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Ground Run-up Enclosure Details	Title:	Airport Photograph, Perspective 5 (Without GRE)	
Date: May 18, 2016	Perspective:	View from Toronto Music Garden (43°38'13.00" N, 79°23'38.99" W)	





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Ground Run-up Enclosure Details	Title:	Airport Photograph, Perspective 6 (Without GRE)	
Date: May 19, 2016	Perspective:	View from Harborfront Centre (43°63’15.89” N, 79°22’59.89” W)	





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Date: May 19, 2016	Perspective:	View from Harborfront Centre (43°63’15.89” N, 79°22’59.89” W)	