



Land Use Compatibility Study

720 Granite Court

1334281 Ontario Limited

27 April 2023

→ **The Power of Commitment**



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Executive Summary

GHD Limited (GHD) was retained by 1334281 Ontario Limited (Applicant) to prepare a Land Use Compatibility Study for the proposed residential development (Development) located at 720 Granite Court, Pickering, Ontario (Site). This Study has been prepared in support of the planning approvals for the Development.

The proposed Development consists of a 12-storey-tall residential building with one outdoor amenity space located at grade.

The purpose of this Study is to assess the following:

1. Land use compatibility with nearby industrial uses
2. Noise impacts at the Development due to future road traffic
3. Stationary noise impacts from sources near the Development
4. Ground-borne vibration impacts at the Development due to rail traffic
5. Ground-borne vibration impacts at the Development due to industries

Based on the assessment summarized herein, ambient noise levels at the Development from road and rail traffic are high and require noise mitigation to achieve acceptable noise levels in accordance with NPC-300, which is common for residential developments near 400-series highways and rail corridors. Upgraded building envelope construction is required, and the Development will be served by central air conditioning systems such that windows can remain closed. A barrier wall is necessary to mitigate the noise experienced at the northern outdoor amenity space at grade and warning clauses are recommended to advise the occupants of the potential audibility of the nearby transportation noise sources.

Predicted stationary noise emissions from nearby commercial / industrial facilities are within the applicable sound level limits of NPC-300, and do not require mitigation.

There have been no air quality, odour, or dust complaints from existing residents nearby to the existing residential developments surrounding the Site; therefore, air quality issues are not expected at the new Site. The nearby Web Offset Publications facility has been identified as having minor potential for air quality impacts at the Development, as the Development is taller than the nearest existing sensitive uses. Further air quality assessment could be conducted to confirm.

Ground-borne vibration impacts from the GO Rail and VIA Rail were evaluated based on vibration measurements at the worst-case façade location of the Development, at grade. Based on these measurements, vibration levels are within the recommended vibration limit of 0.14 mm/s RMS and thus, vibration mitigation is not warranted for rail traffic.

Ground-borne vibration impacts from the existing industries surrounding the Site were evaluated based on vibration measurements at the worst-case façade location of the Development, at grade. Based on these measurements, vibration levels are within the recommended vibration limit of 0.3 mm/s PPV and thus, mitigation is not warranted for industry-generated vibration.

This report is subject to, and must be read in conjunction with, the limitations set out in section 1.2 and the assumptions and qualifications contained throughout the Report.

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1. Introduction

1.1 Purpose of this Report

GHD Limited (GHD) was retained by 1334281 Ontario Limited to prepare a Land Use Compatibility Study (Study) for the proposed Development of the proposed residential building located at 720 Granite Court, Pickering, Ontario (Site). This Study has been prepared in support of the planning applications for the Project.

1.2 Scope and Limitations

This report: has been prepared by GHD for 1334281 Ontario Limited and may only be used and relied on by 1334281 Ontario Limited, the City of Pickering, and the Region of Durham for the purpose agreed between GHD and 1334281 Ontario Limited as set out in section 1.1 of this report.

GHD otherwise disclaims responsibility to any person other than 1334281 Ontario Limited arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.

2. Site and Development Description

The Site is located on the west side of Whites Road and the north side of Granite Court, immediately east of the Metrolinx Kingston Subdivision rail line. A key plan is included as Figure 2.1, which identifies the location of the Site in relation to the nearby relevant points of interest to this Study.

The proposed Development consists of one 12-storey-tall residential building. The Development includes one outdoor amenity space located at grade.

The Site is currently zoned as Local Node (LN). The lands surrounding the Site include properties that are zoned as Commercial (C1), Residential (RS), Utility (UT, and Employment (E2). A zoning map is included in Figure A.1 of Appendix A.

The area surrounding the Site includes significant terrain changes. Notably, the Metrolinx Kingston Subdivision rail tracks are located in a valley, which obstructs line-of-sight between the lowest floors of the Development (including the outdoor amenity space) and the tracks. There are also existing buildings nearby that partially obstruct the line-of-sight to some significant roadways at lower floors of the Development.

3. Land Use Compatibility Assessment

Land use compatibility assessments in Ontario are typically performed in two stages. In the case of proposed industrial uses in proximity to sensitive uses, the first step is to determine if there are any potential adverse effects.

The Ministry of the Environment, Conservation and Parks (MECP) Guideline D-6 is meant to identify potential air and noise compatibility issues caused by industrial land uses on sensitive land uses. The guidelines have been considered in this assessment and is described further below. Where the potential for compatibility issues is identified a more detailed assessment may be performed.

3.1 Provincial Policy Statement

The Provincial Policy Statement ("PPS") is a consolidated statement of the government's policies on land use planning. It "provides policy direction on matters of provincial interest related to land use planning and Facility. As a key part of Ontario's policy-led planning system, the Provincial Policy Statement sets the policy foundation for regulating the Facility and use of land. It also supports the provincial goal to enhance the quality of life for all Ontarians."

The PPS, 2020 is an important part of More Homes, More Choice: Ontario's Housing Supply Action plan and became effective on May 1, 2020. Policy direction concerning land use compatibility is provided in Section 1.2.6 of the PPS, 2020:

1.2.6 Land Use Compatibility

1.2.6.1 Major facilities and sensitive land uses shall be planned and developed to avoid, or if avoidance is not possible, minimize and mitigate any potential adverse effects from odour, noise and other contaminants, minimize risk to public health and safety, and to ensure the long-term operational and economic viability of major facilities in accordance with provincial guidelines, standards and procedures.

1.2.6.2 Where avoidance is not possible in accordance with policy 1.2.6.1, planning authorities shall protect the long-term viability of existing or planned industrial, manufacturing, or other uses that are vulnerable to encroachment by ensuring that the planning and Facility of proposed adjacent sensitive land uses are only permitted if the following are demonstrated in accordance with provincial guidelines, standards and procedures:

- a) there is an identified need for the proposed use;
- b) alternative locations for the proposed use have been evaluated and there are no reasonable alternative locations;
- c) adverse effects to the proposed sensitive land use are minimized and mitigated; and
- d) potential impacts to industrial, manufacturing or other uses are minimized and mitigated."

The goals of the PPS are implemented through Municipal and Provincial policies, as discussed below. Provided the Municipal and Provincial policies, guidelines, standards and procedures are met, the requirements of the PPS will be met.

3.2 Guideline D-6

The MECP Guideline D-6 "Compatibility Between Industrial Facilities and Sensitive Land Uses" (Guideline D-6) provides recommended minimum separation distances (RMSD) and potential areas of influence (AOI) based on the class of an industrial facility. Industry classifications are determined based on the industry size and operation type. The guideline provides direction for land use planning to help ensure compatibility of industrial uses with adjacent land uses. The goal of Guideline D-6 is to minimize encroachment of sensitive land uses on industrial facilities and vice versa, in order to address potential incompatibility due to adverse effects such as noise, odour, and dust.

Guideline D-6 separates industry into three broad categories, depending on the nature of their operations and the types of potential impacts:

1. **Class I industries** are small-scale, self-contained plants or buildings, which produce and store products internally, and have low probability of fugitive emissions. They have daytime operations only, with infrequent movements of products and/or heavy trucks. Some examples include furniture repair and refinishing, electronics manufacturing, auto parts supply, distribution of dairy products, and beverages bottling.

2. **Class II industries** perform medium-scale processing, with occasional outputs of point source or fugitive emissions. Activities may include some outdoor storage of wastes and materials, frequent movement of products and/or heavy trucks during the daytime, and shift work. Some examples include paint spray booths, feed packing plant, dairy product manufacturing, and dry-cleaning services.
3. **Class III industries** conduct large-scale manufacturing and are characterized by persistent and/or intense dust and/or odour, frequent outputs of major annoyances, and have a high probability of fugitive emissions. Activities may include continuous operations and movements of products, outside storage of raw and finished goods, and high levels of production. Some examples include manufacturing of paint and varnish, manufacturing of resins and coatings, solvent recovery plants, organic chemicals manufacturing, breweries, and metal manufacturing.

The following table summarizes the recommended minimum setback distances and areas of potential influence which represents the distance within which adverse effects could potentially occur:

Table 3.1 Guideline D-6 Industry Separation Distances

Industry Classification	RMSD (metres)	AOI (metres)
– Class I	– 20	– 70
– Class II	– 70	– 300
– Class III	– 300	– 1,000

Guideline D-6 recommends that industrial or sensitive facilities should maintain the Recommended Minimum Separation Distances summarized above. However, section 4.10 of Guideline D-6 states that facilities within the separation distances can be considered in cases of re-zoning, infilling, and transitions to mixed use, provided that the appropriate studies are conducted and to ensure that the relevant air quality and noise guidelines are met.

3.3 Classification of Facilities

Analysis of nearby industries found that six had areas of influence that overlap the Development when using Guideline D-6. Classifications of the facilities per the D-series guidelines are summarized in Table 3.2:

Table 3.2 Summary of Key Industries nearby to the Development

Facility Name	Address	MECP Air Permit / Registration	Description of Operations	D 6 Class	RMSD (m)	AOI (m)	Distance from Site (m)	Further Assessments Warranted
Trim Stamping Inc.	1800 Ironstone Manor	None	Automotive metal parts stamping, tool and die: <ul style="list-style-type: none"> No outside storage Potential for frequent truck movements, primarily during the daytime hours 	II	70	300	130	Noise and vibration (discretionary)
Web Offset Publications Limited	1800 Ironstone Manor	9201-7L.TQN4 (ECA, 2009)	Commercial printing facility with sheet-fed printing presses and heat-set printing presses: <ul style="list-style-type: none"> No outside storage Low probability of fugitive emissions (required to comply with air standards at property line, and no large exhaust stacks) 	II	70	300	190	Air quality (discretionary)
Lenbrook Industries Ltd.	633 Granite Court	None	Wholesale distributor of commercial two-way communications devices, electronics manufacturing: <ul style="list-style-type: none"> No outside storage Potential for frequent truck movements, primarily during daytime hours Sound occasionally audible off-property 	II	70	300	100	Noise (discretionary)
Waterbridge	680 Granite Court	None	Chocolate confectionery product warehouse: <ul style="list-style-type: none"> Potential for frequent truck movements, primarily during daytime hours No outside storage Low probability of fugitive emissions Daytime operations only 	I	20	70	50	Noise (discretionary)
Commercial Plaza	1795 Ironstone Manor	None	Décor studio for residential real estate developer: <ul style="list-style-type: none"> No outside storage Low probability of fugitive emissions Daytime operations only 	I	20	70	210	--

Facility Name	Address	MECP Air Permit / Registration	Description of Operations	D 6 Class	RMSD (m)	AOI (m)	Distance from Site (m)	Further Assessments Warranted
Realty Space	1815 Ironstone Manor	None	Software company: – No outside storage – Daytime operations only	I	20	70	260	--
Swift Response First Aid	1815 Ironstone Manor	None	First aid and CPR training facility: – Not a significant source of emissions – Daytime operations only	I	20	70	260	--
Commercial Plaza	1845 Sandstone Manor	None	Multi-tenant commercial plaza including offices and some small manufacturing uses with no large outdoor equipment: – Self-contained – No outside storage – Low probability of fugitive emissions	I	20	70	165	--
Commercial Plaza	750 Oklahoma Drive	None	Multi-tenant commercial plaza including restaurants and retail stores with no large outdoor equipment: – No outside storage – Daytime operations only – Low probability of fugitive emissions	I	20	70	95	--
SmartStop Self Storage	600 Granite Court	None	Self storage facility: – No outside storage – Low probability of fugitive emissions – Daytime operations only	I	20	70	270	--
Peg Perego Canada	585 Granite Court	None	Warehouse distribution centre: – No outside storage – Potential for frequent truck movements, primarily during daytime hours – Daytime operations only	II	70	300	285	Noise (discretionary)
Rogers Communications Inc. Call Center	1851 Sandstone Manor	None	Office building with no major rooftop equipment: – No outside storage – Low probability of fugitive emissions – Daytime operations only	I	20	70	210	--

Facility Name	Address	MECP Air Permit / Registration	Description of Operations	D 6 Class	RMSD (m)	AOI (m)	Distance from Site (m)	Further Assessments Warranted
Ellis Packaging	1830 Sandstone Manor	6804-8A2QKT (ECA, 2012)	Printing and assembly of cardboard packaging: <ul style="list-style-type: none"> - No outside storage - Low probability of fugitive emissions 	II	70	300	295	Noise (discretionary)
Yorkville Sound	550 Granite Court	6155-5J5HUR (ECA, 2003)	Musical instruments manufacturer: <ul style="list-style-type: none"> - Low probability of odour impacts based on solvent usage rate (<10 L/h) - No outside storage - Low probability of fugitive emissions - Shift operation permitted - Frequent movement of products or heavy trucks, primarily during daytime hours 	II	70	300	510	--

Figure 3.1 attached shows the locations of the facilities listed above in relation to the Site. The Site is outside of the respective RMSDs of all of the facilities. The following facilities are located within the respective potential AOI per Guideline D-6, and therefore further evaluation or justification could be provided to determine if there are any potential compatibility concerns:

- Trim Stamping Inc.
- Web Offset Publications Limited
- Peg Perego Canada
- Lenbrook Industries Limited
- Ellis Packaging
- Waterbridge

3.4 Review of Complaints History

Based on GHD telephone communications with the Pickering MECP duty officer, GHD understands that there have been no complaints from existing residents due to emissions from any of the industries identified in Table 3.2 with exception of Ellis Packaging Limited, which has received noise complaints in the past.

However, during GHD's site visit on September 22, 2022 there was no audible noise from Ellis Packaging Limited at the Site or along Granite Court. The specific equipment/activity causing the previous complaints is not known; however, it is suspected to be related to either trucking activity at the docks on the west side of the building or dust collection systems at the south side of the building, as the rooftop mechanical units appear to be relatively minor.

3.5 Guideline D-6 Assessment Conclusions

Figure 3.1 shows the property lines of the Site and the associated setbacks per the D-series guidelines. As seen in the figure, the Development lies within the respective AOIs of some of the nearby facilities. As such, further assessments are included in the following sections to address any potential for impacts to the proposed Development.

It is expected that any potential future employment uses would be designed to be compatible with the sensitive uses existing at that time, including any required mitigation measures. Potential future uses at the employment lands are explored in the following section.

3.5.1 Potential Future Industrial Developments

The lands located directly adjacent on the west side of the Site are currently zoned as Employment Zones. The City of Pickering Zoning By-law Section 10 allows for the following potential future uses on these lands:

Table 3.3 E2 Employment - Permitted Uses (Amended by City of Pickering Zoning By-Law May 2022)

E2 Employment Uses (Prestige Employment)	Expected D 6 Classification
Commercial School	Class I
Financial Institution	Class I
Hotel	Class I
Office	Class I
Service and Repair Shop	Class II
Vehicle Body Repair Shop	Class II
Vehicle Repair Shop	Class II
Vehicle Sales and Rental Establishment	Class I
Dry-Cleaning Establishment	Class I
Film Studio	Class I
Food Preparation Plant	Class II
Light Manufacturing Facility	Class II
Research and Development Facility	Class II
Warehouse	Class II
Wholesaling Facility	Class II
Day Care Centre	Class I
Emergency Service Facility	Class I
Public Parking Lot	Class I

E2 Employment Uses (Prestige Employment)	Expected D 6 Classification
Accessory Office	Class I
Accessory Personal Service Establishment	Class I
Accessory Restaurant	Class I
Ancillary Retail	Class I
Outdoor Display Area	Class I

Although uses for many of these lands are already established, there is potential for new developments, such as on the vacant land located just south of the end of Sandstone Manor. Some of the uses permitted by the Employment Prestige zoning listed above would be best described as Class II industries. These uses generally have some or minimal outdoor storage of wastes or materials, with periodic outputs of minor annoyance, with possible shift operations and movement of products/heavy trucks during daytime hours.

Many uses are also best described as Class I industries per Guideline D-6, including commercial and vehicle rental establishments. These uses are relatively small in scale and self-contained. They generally operate during daytime hours only and have infrequent movement of products without outdoor storage.

This is not an exhaustive consideration of all possible industrial land uses that could impact the adjacent land uses but rather preliminary screening of probable uses in keeping with the current Industrial Development zoning designation. Any proposed industrial uses of these lands should be evaluated to ensure on-going land use compatibility. For example, depending on the site and the proposed activity, the minimum and recommended minimum setbacks will change. Therefore, each additional development phase shall be evaluated on an individual basis and designed with appropriate controls.

4. Air, Dust, and Odour Assessment

4.1 Industrial Impacts

Based on GHD's review of the existing employment uses nearby to the Development, the following table summarizes the potential sources of air, dust, and odour emissions:

Table 4.1 Summary of Potential Air, Dust, and Odour Emissions

Facility Name	Air Emissions	Dust	Odour
Web Offset Publications Limited	Facility required to comply at property line per their ECA. The facility's thermal oxidizers are fuelled by natural gas and have the potential to produce NOx emissions. The risk of air compliance issues is considered to be minor; however, further air quality assessment could be completed to confirm.	Insignificant based on operations and lack of complaints.	The facility is equipped with highly efficient thermal oxidizers, and there is no history of complaints; therefore, odour emissions are expected to be insignificant.
Trim Stamping Inc.	Metal stamping operations are not typically a significant source of air emissions. The risk of air compliance issues is considered to be minor.	Insignificant based on operations and lack of complaints.	Insignificant based on operations and lack of complaints.

As summarized above, dust and odour are not considered to be a concern, based on the operations of the facilities and lack of history of complaints. The risk of air quality issues is expected to be low; however, further air quality assessment could be completed to confirm.

4.2 Transportation Impacts

4.2.1 Transportation Related Air Pollution Overview

The City of Toronto published a report titled "Reducing Health Risks from Traffic Related Air Pollution (TRAP) in Toronto", dated October 16, 2017. The report describes potential air pollution issues which are relevant to developments nearby to highways and major roads as follows:

"Exposures to traffic-related air pollution (TRAP) are highest near highways and busy roads. The health literature indicates that health risk from TRAP is higher within 500 metres of highways with an average daily traffic volume of 100,000 vehicles or more, and within 100 metres of arterial roads with an average daily traffic volume of 15,000 vehicles or more." The report recommends that City Staff "develop guidance to assist appropriate City agencies, corporations, and divisions in establishing traffic-related air pollution mitigation measures at City owned sites located within 500 metres of roads with annual average traffic volumes of 100,000 vehicles or more per day, and within 100 metres of roads with annual average traffic volumes of 15,000 vehicles or more per day; and develop best practices guidelines for new and existing buildings, in consultation with industry professionals, and raise awareness of these practices among school board staff, childcare centre operators, long-term care facility operators, and residents, as well as builders, developers, designers, architects, engineers and other professionals."

TRAP policies are not in place at Pickering or Durham, however, GHD has included this analysis as a best practice for the Development. GHD recommends that the guidance be followed to help mitigate the potential health impacts associated with TRAP.

4.2.2 TRAP Screening Results

The Site is located inside the recommended TRAP zone of exposure of 500 m of Highway 401, and within the 100 m TRAP zone of exposure of Bayly Street and Whites Road, which have annual average daily traffic (AADT) exceeding 15,000 vehicles. Thus, potential exists for TRAP exposure from Highway 401 and the surrounding major arterial roadways.

In order to mitigate the potential for TRAP related issues at the development, GHD recommends the following mitigation measures:

- Add a Warning Clause related to TRAP for the Site.
- Face all air intakes away from Highway 401, which is the primary source of TRAP emissions.
- Install carbon and/or dust filters on all air intakes, HVAC units, make-up air units, and heat recovery units at the Site.
- Ensure that all HVAC units, heat/energy recovery units, and make-up air units are designed such that positive pressurization is maintained under typical weather conditions of all occupied areas following the current ASHRAE recommendations.

4.3 Summary of Air Quality, Odour, and Dust Conclusions

GHD concludes that the facilities surrounding the Site serve as insignificant sources of dust, and odour emissions and that the lack of complaints from existing residences supports this conclusion. The risk of air quality issues is expected to be low; however, further air quality assessment could be completed to confirm. Additionally, TRAP assessment identifies three significant roads of concern near the Site consisting of Highway 401, Bayly Street, and Whites Road. To reduce the risk of health impacts for residents, GHD recommends the mitigation detailed in section 4.2.

5. Noise and Vibration Assessment

5.1 Sound and Vibration Criteria

5.1.1 Noise By-Law

The City of Pickering By-Law No.6834/08 (Noise By-Law), dated February 27, 2008, has been reviewed in the context of this Study. The Noise By-Law includes specific requirements and prohibitions of noise emissions based on source type during certain time periods, including:

- Operation of solid waste bulk lift or refuse compacting equipment is prohibited from 10:00 pm to 6:00 am the next day (Noise By-Law Schedule 2)
- Operation of construction equipment is prohibited from 7:00 pm to 7:00 am, and all day on Sundays and statutory holidays (Noise By-Law Schedule 2)

The Noise By-Law does not include any objective sound level criteria for the assessment of noise emissions from commercial/industrial operations; therefore, sound level criteria contained in the Ontario Ministry of the Environment, Conservation and Parks (MECP) guideline NPC-300 "Environmental Noise Guideline, Stationary and Transportation Sources – Approval and Planning" (August 2013) are appropriate to be used as the basis for assessment of potential noise impacts.

5.1.2 Transportation Noise Criteria

Under NPC-300, road and rail traffic noise impacts are evaluated separately for exterior receptors and interior receptors based on the average day (07:00 to 23:00) and night (23:00 to 07:00) noise impacts. The sound levels are expressed in terms of A-weighted equivalent sound levels (Leq).

NPC-300 defines two categories of receivers for transportation noise:

- Plane of Window (POW): Point corresponding with the centre of a window of a sensitive space.
- Outdoor Living Area (OLA): Outdoor location intended and designed for quiet enjoyment of the outdoor environment that is readily accessible from the building (e.g., backyards, front yards, gardens, terraces, patios). Private balconies and terraces are only considered OLAs if they are greater than 4 metres in depth and if they are the only outdoor living area for the occupant(s).

NPC-300 specifies sound level limits for POW and OLA receivers as summarized in Table 5.1 below.

Table 5.1 Road and Rail Traffic – Outdoor Sound Level Limits

Receiver Category	Sound Level Limit (dBA)	
	Day (16 hour Leq)	Night (8 hour Leq)
Plane-of-Window (POW)	55	50
Outdoor Living Area (OLA)	55	N/A

For POWs, combined road and rail traffic sound levels exceeding the corresponding criteria above would require additional controls for MECP compliance. Depending on the magnitude of the exceedances, additional controls may include ventilation requirements, requirements for building envelope elements, and/or noise warning clauses.

For OLAs, road traffic sound levels exceeding the daytime limit indicated above would require design of noise barriers to achieve the target, and/or warning clauses. NPC-300 states that sound levels up to 5 dBA above the OLA sound level limit (i.e., up to 60 dBA) are acceptable with the use of an appropriate noise warning clause.

If POW sound levels from future road traffic exceed 65 dBA during the day or 60 dBA at night, or if sound levels from future rail traffic exceed 60 dBA during the day or 55 dBA at night, building envelope components must be designed to

achieve the indoor sound level limits of NPC-300. The indoor sound level limits for road and rail traffic are summarized in Table 5.2 below.

Table 5.2 Road and Rail Traffic – Indoor Sound Level Limits

Receiver Category	Road Sound Level Limits (dBA)		Rail Sound Level Limits (dBA)	
	Day (16 hour Leq)	Night (8 hour Leq)	Day (16 hour Leq)	Night (8 hour Leq)
Indoor living areas (excluding sleeping quarters)	45	45	40	40
Sleeping quarters	45	40	40	35

5.1.3 Stationary Noise Limits

5.1.3.1 MECP Standard Limits

NPC-300 defines stationary noise sources as sound from all sources that are normally operated within the property lines of a facility. The noise impact from stationary sources is evaluated based on operations during a predictable worst-case hour. Stationary noise assessment criteria are generally determined based on the MECP's minimum exclusionary sound level limits, as presented in NPC-300, in comparison to the background sound levels experienced in the area.

The Site is in what would generally be considered a Class 1 acoustic environment as defined by NPC-300, as the acoustic environment is dominated by human activities (i.e., road traffic).

Table 5.3 below summarizes the MECP's minimum exclusionary sound level limits for Class 1 areas, which are expressed in terms of 1-hour equivalent sound levels (1-hour Leq):

Table 5.3 MECP Minimum Exclusionary Sound Level Limits for Steady Sound – Class 1 Area

Point of Reception Type	Sound Level Limits (dBA)			
	Day (7am	11pm)	Night (11pm	7am)
Plane of window	50		45	
Outdoor space	50		--	

5.1.3.2 Background Sound Levels

GHD conducted a background sound level assessment to evaluate the existing background noise due to road traffic on Highway 401, Bayly Street, Whites Road, Granite Court, and Oklahoma Drive. Background noise was modelled in CadnaA, which was set to predict noise emission rates in accordance with the United States of America's (US) Department of Transportation's Traffic Noise Model (TNM). These noise emissions were validated with STAMSON, the MECP's computerized model of the Ontario Road Noise Analysis Method for Environment and Transportation (ORNAMENT). The applicable noise criteria at a point of reception are based on the higher of the background sound level and the MECP's minimum sound level limits, as noted in Section 5.1.3.1.

The computer model input parameters include, among other data, the number of road segments, number of house rows, the positional relationship of the receptor to a noise source or barrier in terms of distance, elevation and angle, the basic site topography, the ground surface type, traffic volumes, traffic composition, and speed limit.

Hourly traffic counts from 2019 for Highway 401 were obtained from the Ontario Ministry of Transportation and hourly traffic counts from 2017 for Granite Court and Oklahoma Drive were obtained from the City of Pickering. These counts were used to determine the minimum hourly count during the day, and nighttime periods. Additionally, the AADT

counts were used for Whites Road and Bayly Street which were adjusted to represent the minimum hour based on a published typical hourly traffic distribution for noise modelling (VanDelden et al, 2008).

Table 5.4 Background Road Traffic Parameters

Road Segment	Minimum Hourly Daytime Vehicles	Minimum Hourly Nighttime Vehicles	Commercial Vehicle Rates (medium trucks / heavy trucks)
Highway 401	3,780	2,062	5% / 8%
Whites Road	613	76	4% / 6%
Bayly Street	603	75	4% / 6%
Granite Court	43	3	1.5% / 8.8%
Oklahoma Drive	43	0	2.5% / 5.2%

The above road traffic data was used to calculate background sound levels at the façades and outdoor points of reception of the Development using the detailed model methodology described in Section 5.2.1 of this Study. Predicted noise levels exceed the minimum Class 1 exclusionary limits at the worst-case facades and outdoor points of reception of the development. Figure 5.1 shows the lowest predicted road traffic sound levels at each of the outer façades and outdoor points of reception of the Development based on the road traffic data summarized above. The lowest sound levels generally occur at the ground floor level (1.5 metres above grade) and increase with height due to increased line of sight exposure to the roadways.

Where the predicted background sound level due to road traffic exceeds the corresponding minimum exclusionary sound level limit of NPC-300 (see Table 5.3), the background sound level is instead used as the criteria for assessment of stationary noise impacts. The applicable site-specific sound level limits for the Development are summarized as follows:

Table 5.5 Applicable MECP Sound Level Limits for Steady Sound

POR ID	POR Description	Sound Level Limits (dBA)	
		Day (7am 7pm)	Night (11pm 7am)
POR-01	Edge of Outdoor Amenity Space (1.5 m Above Grade [A.G.])	57	--
--	Worst-case West Façade of Development (15 m A.G.)	64	61
--	Worst-case North Façade of Development (15 m A.G.)	64	59

5.1.4 Rail Vibration Criteria

5.1.4.1 Vibration Criteria for Nearby Rail Lines

The MECP does not stipulate criteria for ground-borne vibration produced by rail traffic. However, the Federation of Canadian Municipalities (FCM) & The Railway Association of Canada (RAC) document entitled "Guidelines for New Development in Proximity to Railway Operations, May 2013" (GNDPRO) is commonly used as a guideline for assessment of rail vibration.

According to the GNDPRO, any proposed development that is within 75 m of a railway right-of-way (ROW) must be assessed to evaluate the perceptibility of ground-borne vibration from the railway. GNDPRO specifies that ground-borne vibration measurements should be conducted using a measurement system capable of measuring frequencies between 4 Hz and 200 Hz (± 3 dB), with an averaging time constant of 1 second. The proposed development would be considered impacted by vibrations exceeding 0.14 mm/s (RMS). This recommended vibration limit applies directly to the measured outdoor ground borne vibration levels. If measured vibration levels exceed these limits, then vibration control measures must be investigated and considered to ensure that these vibration levels are not exceeded.

5.1.4.2 Vibration Criteria for Industrial Activities

MECP publication NPC-207 provides vibration limits applicable to industrial facilities which have the potential to produce significant ground-borne vibration (e.g., stamping presses, forging hammers, etc.). These limits are summarized in Table 5.6 below.

Table 5.6 MECP Vibration Limits for Frequent Impulses (20 or more impulses in observation period)

Observation Period	Day (7am - 11pm)	Night (11pm - 7am)
20 minutes or less	0.30 mm/s PPV	0.30 mm/s PPV
Less than or equal to 60 minutes but more than 20 minutes	0.60 mm/s PPV	0.30 mm/s PPV
Less than or equal to 120 minutes but more than 60 minutes	1.00 mm/s PPV	0.30 mm/s PPV
Less than 20 impulses reported in a 120-minute observation period	10.0 mm/s PPV	0.30 mm/s PPV

5.2 Transportation Noise Impact Assessment

5.2.1 Methodology

The roadways near the Site were modelled as sources of sound using the road element in CadnaA set to predict noise emission rates in accordance with the United States of America's (US) Department of Transportation's Traffic Noise Model (TNM).

Rail traffic noise levels are modelled as line sources of sound using the rail source element in CadnaA using the US Federal Transit Administration and Federal Railway Administration's prediction algorithm (FTA/FRA Model). The rail noise sources were set to use noise emission rates calculated using STAMSON.

The 3D CadnaA model accounts for the complex geometry at the Site and the surrounding area. The area surrounding the Site is essentially flat. Road traffic noise levels were predicted at all façades of the Project using the Building Noise Map feature of CadnaA.

To demonstrate that the model is generally consistent with the STAMSON model that is the standard in Ontario, a sample STAMSON calculation is included in Appendix B representing the east façade of the proposed Project. The prediction results are within ± 1 dBA of the CadnaA noise predictions, indicating that the CadnaA model is consistent with STAMSON.

5.2.2 Traffic Input Parameters

5.2.2.1 Road Traffic Data

Future road traffic model parameters used in this Study is summarized as follows:

Table 5.7 Future (2033) Road Traffic Input Parameters

Road Segment	Future AADT	Speed Limit (km/h)	Day / Night Split	Commercial Vehicle Rates (medium trucks / heavy trucks)
Highway 401	349,972	100	73% / 27%	5% / 8%
Whites Road	30,566	60	90% / 10%	4% / 6%
Bayly Street	25,000	60	90% / 10%	4% / 6%
Granite Court	12,305	40	92% / 8%	1.5% / 8.8%
Oklahoma Drive	8,162	40	92% / 8%	2.5% / 5.2%

Road traffic volumes for Highway 401 were obtained from data published by the Ontario Ministry of Transportation (MTO) in the form of Annual Average Daily Traffic (AADT) volumes for the year 2016. GHD applied an assumed

annual growth rate of 2.5% to the volumes to estimate the future 2033 AADT. The day / night split and commercial vehicle rates were calculated based on hourly counts received from the MTO.

Road traffic volumes for Granite Court and Oklahoma Drive were obtained from the City of Pickering in the form of hourly traffic counts for the year 2017. GHD averaged the data and applied an assumed growth rate of 2.5% to estimate the future 2033 AADT. A day / night split of 92% / 8% was calculated based on the hourly data. Commercial vehicle rates were determined based on the breakdown provided in the counts.

Road Traffic Volumes for Whites Road and Bayly Street were obtained from the Region of Durham. Whites Road was obtained from the Durham open data website in the form of 2017 AADT, which was then projected to the year 2033 using an assumed growth rate of 2.5%. Bayly Street data was obtained directly from the Region in the form of Ultimate AADT. A day / night split of 90% / 10% was assumed for both roadways. Commercial vehicle rates were determined based on the data provided by the Region for Bayly Street and assumed to be the same for Whites Road.

Figure 2.1 shows the location of the roadways noted above in relation to the Site. All road traffic data referenced in this Study is included in Appendix C.

5.2.2.2 Rail Traffic Data

Future rail traffic model parameters used in this Study is summarized as follows:

Table 5.8 Future (2033) Rail Traffic Input Parameters

Rail Source	Future Daytime Trains	Future Nighttime Trains	Locomotive Type	Max. Locomotives per Train	Max. Cars per Train	Max. Speed (km/h)
CN Rail - Kingston Subdivision Freight	16	5	Diesel	4	140	105
VIA Rail	10	0	Diesel	1	5	80
GO Rail – Kingston Subdivision	123	77	Diesel	1	12	150
GO Rail – Kingston Subdivision	26	10	Diesel	2	12	150

Rail traffic data for CN freight and VIA Rail passenger traffic operating on the Metrolinx – Kingston Subdivision was obtained from Canadian National (CN) railway and the VIA Rail train schedule. Future rail volumes for these rail traffic sources were estimated using an assumed annual growth rate of 2.5%.

Future 2033 forecast rail traffic data for GO Rail traffic operating on the Kingston Subdivision was obtained from Metrolinx. As per Metrolinx's recommendations, despite the future electrification of GO Rail trains, all locomotives were modelled as diesel locomotives.

Figure 2.1 shows the location of the rail line noted above in relation to the Site. All rail traffic data referenced in this Study is included in Appendix C.

5.2.3 Road and Rail Traffic Prediction Results

5.2.3.1 Plane of Window Receivers

Predicted future cumulative road and rail traffic noise impacts at the worst-case POW receivers of the Project are summarized as follows:

Table 5.9 Future Road and Rail Noise Levels – Plane of Window

Façade	Future Noise Levels (dBA)		Noise Level Limits (dBA)		Limit Exceeded?
	Day	Night	Day	Night	
North	75	72	55	50	Yes
East	71	67	55	50	Yes

Façade	Future Noise Levels (dBA)		Noise Level Limits (dBA)		Limit Exceeded?
	Day	Night	Day	Night	
South	70	65	55	50	Yes
West	75	72	55	50	Yes

As seen above, future road traffic noise levels at the façades generally range from 70 dBA to 75 dBA during the day and 65 dBA to 72 dBA at night. Based on these results, recommended window sound transmission class (STC) ratings are specified in Section 5.2.4.1 to achieve the indoor sound level criteria of NPC-300. Figure 5.2 shows the predicted road noise levels at the façades of the Project.

5.2.3.2 Outdoor Living Areas

Predicted future road and rail traffic noise impacts at the worst-case OLA receivers of the Development are summarized as follows:

Table 5.10 Future Road Noise Levels – Outdoor Living Area

Receiver ID	Receiver Description	Future Daytime Noise Level (dBA)	Daytime Noise Level Limit (dBA)	Limit Exceeded?
OLA-01	Shared green outdoor amenity space at grade (1.5 m AG)	65	55	Yes

As seen above, the noise levels experienced at the OLA receiver are above the MECP limits by 5 dBA. Therefore, noise barriers and warning clauses must be installed to mitigate the noise levels to be within compliance.

5.2.4 Transportation Noise Mitigation

5.2.4.1 Building Envelope Construction

Predicted future traffic noise levels are sufficiently high that the building envelope must be designed with sufficient sound insulation performance to achieve the sound level criteria of NPC-300 for indoor living spaces. Sound insulation performance for windows and walls are commonly specified in terms of Sound Transmission Class (STC) ratings. Higher STC ratings generally correspond to higher sound insulation performance.

STC rating requirements are dependent on the exterior noise levels, source type/spectrum, angles of incidence, sizes of façade components relative to the room size, and sound absorption characteristics of the subject indoor living space. Using these variables, STC rating requirements can be calculated using the method described in the National Research Council Canada's "Controlling Sound Transmission into Buildings" (BPN 56) publication.

Given the preliminary nature of the design of the Development, detailed floor plans and building elevations are not yet available. Therefore, minimum STC rating requirements have been calculated based on assumed window-to-floor area ratios (i.e., total window area for a room divided by its floor area) of up to **100%** for bedrooms and **80%** for other sensitive living areas (e.g., kitchens, living rooms). Bedrooms were assumed to have "intermediate" absorption characteristics, and other sensitive indoor living areas were assumed to have "hard" sound absorption characteristics. Note that if the actual window-to-floor area ratios are determined to exceed these values during detailed design, then window STC rating requirements would require an updated assessment to ensure acceptable indoor noise levels.

Based on the above assumptions, the minimum STC rating requirements at the worst-case façades are **STC-43** for windows and **STC-54** for exterior walls. Other façades that have less direct exposure to noise from Whites Road and the GO Rail Line have lower STC rating requirements, as shown in Figure E.1 of Appendix E. GHD notes that STC ratings for the worst-case walls are typical for developments located near arterial roads (Whites Road), Highway 401 and the Lakeshore East GO Rail Line.

Additionally, exterior wall assemblies must be **brick veneer or equivalent** high-mass construction (e.g., concrete) from the foundation to the rafters due to the Development's proximity to the GO Rail Line (Kingston Subdivision) and high associated noise levels.

Examples of window assemblies capable of achieving the necessary performance are included in Table 5.9 below:

Table 5.11 Example Window Assemblies and STC Ratings

STC Requirement	Window Assembly Short Form	Window Assembly Description
STC-37	8L-13AS-6	One 8 mm thick laminated glass pane and one 6 mm monolithic glass pane separated by an air gap of 13 mm
STC-43	10L-25AS-6	One 10 mm thick laminated glass pane and one 6 mm monolithic glass pane separated by an air gap of 25 mm

STC ratings for windows are dependent on a variety of factors (e.g., frame design, seals, etc.), and can vary significantly between manufacturers. Therefore, the final STC rating requirements for the windows should be included in the specifications, and window suppliers should be required to submit laboratory test data with their shop drawings to demonstrate that the STC requirements will be achieved.

STC rating requirements may be reduced if actual window-to-floor area ratios are lower than those assumed herein (see above). Conversely, if actual window-to-floor area ratios are higher than those assumed herein, the corresponding STC rating requirements would increase.

5.2.4.2 Ventilation

The indoor spaces of the Project must be served by central air conditioning systems. This will allow the windows and doors to remain closed during the hot summer months, such that the supplementary indoor sound level criteria of NPC-300 can be achieved. Warning clause Type D should also be used for all residential dwellings (wording included in Section 7.4). Both requirements are typical for buildings located near major transportation corridors.

5.2.4.3 Acoustic Barriers

Predicted future traffic noise levels at OLA-01 are sufficiently high that an acoustic barrier and warning clause must be used. The following is required to be implemented for this OLA:

- A 3 m high, 99 m long, acoustic barrier surrounding OLA-01

For greater clarity, the barrier location is shown in Figure 5.3. With the barrier recommended above, predicted noise levels in the OLAs are as follows:

Table 5.12 Future Mitigated Road Noise Levels – Outdoor Living Area

Receiver ID	Receiver Description	Future Daytime Noise Level (dBA)
OLA-01	Shared green outdoor amenity space at grade (1.5 m AG)	60

With the inclusion of the noise barrier the sound levels reach 60 dBA. NPC-300 states that sound levels up to 5 dBA above the OLA sound level limit (i.e., up to 60 dBA) are acceptable with the use of an appropriate noise warning clause (Warning Clause Type B). An acoustic barrier may vary in construction, provided it meets the following requirements:

- A minimum surface density of 20 kg/m² or meet compliance with requirement and certification CAN/CSA-Z107.9-00 (R2004) – Standard for Certification of Noise Barriers (Reaffirmed 2004).
- Be structurally sound and appropriately designed to withstand wind and snow loading as applicable.
- Constructed without any cracks or surface gaps at grade. If gaps are necessary for drainage purposes, they should be minimized to mitigate the impact on the acoustical performance of the barrier.

5.3 Stationary Noise Impact Assessment

The Project is considered a stationary noise source and has been evaluated as such to ensure noise emissions from the Project are acceptable at all nearby sensitive points of reception.

5.3.1 Methodology

Detailed assessment of stationary noise emissions from the Project has been carried out using CadnaA version 2023 (CadnaA). CadnaA is the industry standard for noise modelling of industrial and commercial facilities and is based on ISO standard 9613 2 "Acoustics – Attenuation of Sound during Propagation Outdoors". CadnaA modelling assumptions used in this Study include:

- Reflection Order: A maximum reflection order of 2 was used to evaluate indirect noise impact from reflecting surfaces.
- Ground Absorption: The model was set up with conservative ground absorption coefficients of 0.25 for asphalt surfaces, 0.5 for gravel, and 1.0 for absorptive areas of grass.
- Receptor Elevation: POR receptor heights were modelled appropriately based on an assumed storey height of 3 m.
- Tonality: A 5 dBA tonal penalty was applied to tonal sources, if applicable.
- Building Surfaces: The buildings are modelled as reflective surfaces.

The ground surface has distinct changes in elevation; therefore, topography data was used which was obtained from Ontario's Lake Erie Lidar Data.

5.3.2 Stationary Noise Sources

GHD evaluated noise emissions from these sources using sound level data for equipment that is comparable in size/capacity. Source locations are identified in Figure D.1, and source sound levels are summarized in Table D.1 found in Appendix D. Noise sources from the gas station and commercial plaza located across Whites Road were not included as they were deemed insignificant based on Guideline D-6 screening. This was further supported by observations on GHD's site visit conducted on September 22, 2022. A summary of the significant noise sources is included below:

5.3.2.1 Tractor Trailers

Trim Stamping Inc., Waterbridge, and Lenbrook Industries Ltd. appear to receive trucks frequently during the daytime. GHD assumed 2 trucks during the day and 1 truck at night entering and leaving the site during the worst-case hour for both facilities.

Additionally, a truck idling source has been included for each facility to help accurately model the operations that could occur. These sources are conservatively assumed to operate continuously.

5.3.2.2 HVAC Equipment

Most of the buildings surrounding the Site utilize roof-mounted heating, ventilation, and air conditioning (HVAC) equipment. GHD modelled these sources using representative sound data for similar HVAC units. These units are conservatively modelled to operate continuously during the day and evening, and on a 50% duty cycle at night (30 minutes per hour).

5.3.3 Results

Based on the stationary source information described in Section 5.3.2 of this Study, predicted noise levels at the nearby points of reception (PORs) are summarized as follows:

Table 5.13 Stationary Noise Prediction Results Summary

POR ID	POR Description	Predicted Noise Level (dBA)		Sound Level Limit (dBA)		Limits Met?
		Day	Night	Day	Night	
POR-01	Edge of Outdoor Amenity Space (1.5 m Above Grade [A.G.])	49	--	57	--	Yes
--	Worst-case West Façade of Development (15 m A.G.)	49	47	64	61	Yes
--	Worst-case North Façade of Development (15 m A.G.)	48	46	64	59	Yes

As seen above, predicted stationary noise emissions from the Project are within the Class 1 exclusionary sound level limits of NPC-300 at all nearby PORs. As such, stationary noise levels at the Development are considered acceptable, and do not require noise mitigation to achieve compliance with the Noise By-Law or NPC-300.

POR locations are identified in Figure 5.4, and a noise contour plot is included in Figure 5.5.

5.4 Noise Impacts from the Development

5.4.1 Outdoor Noise Impacts

Base building cooling and ventilation systems for the Development have the potential to result in noise impacts on noise sensitive spaces within the Development itself and at existing residential uses surrounding the Site. The specific equipment selections are not available at the time of writing; therefore, it is anticipated that noise emissions from rooftop equipment will be evaluated as part of the detailed design of the Development. GHD recommends that the Developer carry the necessary contingencies for the following noise controls, which may be necessary to achieve compliance with the sound level limits of NPC-300 and the City of Pickering Noise By-law at all worst-case points of reception both on-site and off-site:

- Acoustic louvers and/or barriers to surround large rooftop mechanical equipment (e.g., cooling towers, chillers, make up air units). Cost contingencies should account for structural requirements due to snow and wind loads associated with the barriers.
- Acoustic enclosures for any standby emergency generator sets (Level 2 minimum).
- Silencers for parking exhaust shafts.

Performance specifications of the above controls is dependent on equipment locations and sound power levels, which may vary. Therefore, the full scope and details of the required noise mitigation should be evaluated during detailed design.

5.4.2 Indoor Noise Impacts

Mechanical equipment and other building services also have the potential to cause annoyance due to noise and vibration transmission to residences. The American Society of Heating, Refrigerating, and Air conditioning Engineers (ASHRAE) guidelines specify acceptable noise levels from such equipment. Specification of noise controls (e.g., silencers, floating concrete slabs, acoustic ceilings, vibration isolators) to achieve these criteria is typically completed as part of the detailed building design, once equipment selections are made and floor layouts are more developed.

The Ontario Building Code stipulates minimum STC and apparent sound transmission class (ASTC) rating requirements for demising partitions separating residential suites from other spaces inside the building. For demising partitions separating suites from elevator shafts or garbage chutes, constructions meeting a minimum STC-55 rating must be used. For demising partitions separating suites from any other space in the building, constructions meeting a minimum STC-50 rating must be used. Suite demising partitions must also achieve a minimum rating of ASTC-47.

5.5 Rail Vibration Impact Assessment

5.5.1 Vibration Measurements

GHD conducted ground-borne vibration monitoring at the Site from September 22, 2022, to September 24, 2022 in order to quantify potential vibration impacts from the adjacent GO Rail Line. GHD monitored the on-site vibrations at the location where the northwest corner façade of the development is to be located on the existing soil surface (see Figure 5.6). This location was selected as it is the closest location to the rail line and thus represents the worst-case location for vibration impacts.

Vibration measurements were conducted at the site using a Syscom MR3003C vibration monitor. The device was calibrated in July 2022 and is compliant with DIN 45669-1. The device uses a geophone to measure velocity in cartesian coordinates (denoted as x, y, and z). The device was set to conform with the GNDPRO vibration measurement parameters.

5.5.2 Vibration Impact Results

In total, GHD conducted 20 railcar pass-by vibration measurements during the site visit on September 22, 2022. The Vibration Meter was set up for long-term monitoring and left at the site during the day. Table 5.12 below summarizes the results of the vibration measurements:

Table 5.14 Vibration Measurement Results

Source Description	Maximum Vibration Velocity of Pass-By (mm/s, RMS)	Vibration Limit (mm/s, RMS)	Limit Met?
GO Trains	0.004 to 0.021	0.14	Yes
VIA Rail Trains	0.02 to 0.09	0.14	Yes

These measurements were taken at grade at a conservative point closer to the rail tracks than the Development (see Figure 5.6). All the vibration measurements were within the GNDPRO vibration limit of 0.14 mm/s, with maximum pass-by values ranging from 0.01 mm/s to 0.09 mm/s. Therefore, building vibration mitigation is not required for the Development.

5.6 Industrial Vibration Impact Assessment

The Development is approximately 120 metres from Trim Stamping Inc. which is a potential source of ground-borne vibration due to metal stamping operations. As noted in section 5.5 of this Study, GHD conducted ground-borne vibration monitoring September 22, 2022 at the location shown in Figure 5.6. Between train pass-by events, there were no measured peaks in the vibration measurements that could be attributed to metal stamping operations, with ambient vibration levels remaining below the limit of 0.30 mm/s PPV throughout the entire monitoring period (maximum 0.25 mm/s PPV, measured during train pass-by). Therefore, there are no compatibility concerns with respect to ground-borne vibration from nearby industries.

6. Recommendations

6.1 Building Envelope Construction

For the worst-case façades of the Development with direct line-of-sight exposure to noise from the GO Rail line and Whites Road, windows must achieve ratings of at least **STC-43**, and exterior walls must be rated **STC-54** or higher (**brick or equivalent** density construction). STC rating requirements are shown graphically for each building façade on Figure E.1. STC ratings recommended in this Study are preliminary and subject to change depending on actual window-to-floor area ratios and should be updated at the detailed design stage.

6.2 Ventilation

Central air conditioning is required to be installed prior to occupancy for all residential dwellings. This will allow windows and doors to remain closed to help ensure that the indoor sound level limits of NPC-300 are met.

It is recommended that all air intakes face away from Highway 401, Whites Road, and Bayly Street whenever possible. Carbon and/or dust filters are required to be installed on all air intakes, HVAC units, make-up air units, and heat recovery units at the Site. Additionally, all HVAC units, heat recovery units, and make-up air units are to be designed such that positive pressurization is maintained under typical weather conditions of all occupied areas following the current ASHRAE recommendations. All these recommendations are to ensure adverse TRAP related affects are reduced at the Site.

6.3 Acoustic Barriers

An acoustic barrier is required to mitigate excessive noise at OLA-01 from future road and rail traffic as described in section 5.4.2 and shown in Figure 5.3.

6.4 Warning Clauses

The following warning clauses are recommended to be included in agreements of Offers of Purchase and Sale, lease/rental agreements, and condominium declarations for the residential units, for all residential dwellings of the Development:

Warning Clause Type B: "Purchasers/tenants are advised that despite the inclusion of noise control features in the development and within the building units, sound levels due to increasing road and rail traffic may on occasions interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the Municipality and the Ministry of the Environment."

Warning Clause Type D: "This dwelling unit has been supplied with a central air conditioning system which will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the Municipality and the Ministry of the Environment, Conservation and Parks."

Air Quality Warning Clause: "Purchasers/tenants are advised that due to the proximity of adjacent transportation corridors, dust and odours from may at times be perceptible."

7. Conclusions

It is in GHD's opinion that the Development adheres to the PPS and that all conclusions and recommendations presented in this report support proper land use planning procedure.

The Study concludes that the Development is feasible and will not be restricted by the surrounding noise and vibration impact exposures, provided that the Development adheres to the noise mitigation recommended in this Study. The

recommended mitigation at the Development consists of warning clauses, building envelope construction requirements, construction of an acoustic barrier, and installation of central air conditioning.

Additionally, no compliance issues are anticipated for air quality, dust, and odour provided the recommendations are followed. As identified in Section 4.1, there is one facility which has minor potential for air quality impacts at the Development. Further air quality assessment could be completed to confirm if any mitigation is required. Also, GHD recommends that the Development incorporates the TRAP related mitigation mentioned in this study. The recommended air mitigation at the development consists of orienting all air intakes to face the southwest direction, an air quality warning clause, and the installation of carbon/dust filters and positive pressurization maintained on all HVAC units, heat recovery units, and make-up air units.

8. References

City of Pickering, By-Law No.6834/08, Noise By-Law

Ontario Ministry of Environment, Conservation and Parks (MECP, 2013), Publication NPC-300: *Environmental Noise Guideline: Stationary and Transportation Sources – Approval and Planning*

National Research Council Canada (NRC, 1985), Building Practice Note 56: Controlling Sound Transmission Into Buildings

Railway Association of Canada/Federation of Canadian Municipalities (RAC/FCM), 2013, *Guidelines for New Development in Proximity to Railway Operations*



Source: Google Satellite



LAND USE COMPATIBILITY STUDY
 1334281 ONTARIO LTD.
 720 GRANITE COURT



KEY PLAN

12594433
 17.03.2023

FIGURE 2.1

CadnaA File: \\ghdnet\ghd\CAWaterloo\Projects\6621\2594433\Tech\Noise\04_Modelling\01_CadnaA\02_Noise_Models\12594433_720GraniteCourt_V2023.01.cna



Source: Google Satellite

Notes:
 RMSD = Recommended Minimum Separation Distance
 AOI = Potential Area of Influence



LAND USE COMPATIBILITY STUDY
 1334281 ONTARIO LTD.
 720 GRANITE COURT



GUIDELINE D-6 SETBACKS

12594433
 17.03.2023

FIGURE 3.1

CadnaA File: \\ghdnet\ghd\CAW\waterloo\Projects\6621\2594433\Tech\Noise\04_Modelling\01_CadnaA\02_Noise_Models\12594433_720GraniteCourt_V2023.01.cna



Source: Google Satellite



Legend
 > 45 dBA
 > 50 dBA

LAND USE COMPATIBILITY STUDY
 1334281 ONTARIO LTD.
 720 GRANITE COURT



MINIMUM ROAD TRAFFIC NOISE LEVELS - PLANE OF WINDOW

12594433
 17.03.2023

FIGURE 5.1

CadnaA File: \\ghdnet\ghd\CAWaterloo\Projects\662\12594433\Tech\Noise\04_Modelling\01_CadnaA\02_Noise_Models\12594433_720GraniteCourt_V2023.01.cna



Source: Google Satellite

Notes:
 Daytime sound level values in terms of 16-hour Leq (7:00 am to 11:00 pm)
 Nighttime sound level values in terms of 16-hour Leq (11:00 pm to 7:00 am)



LAND USE COMPATIBILITY STUDY
 1334281 ONTARIO LTD.
 720 GRANITE COURT

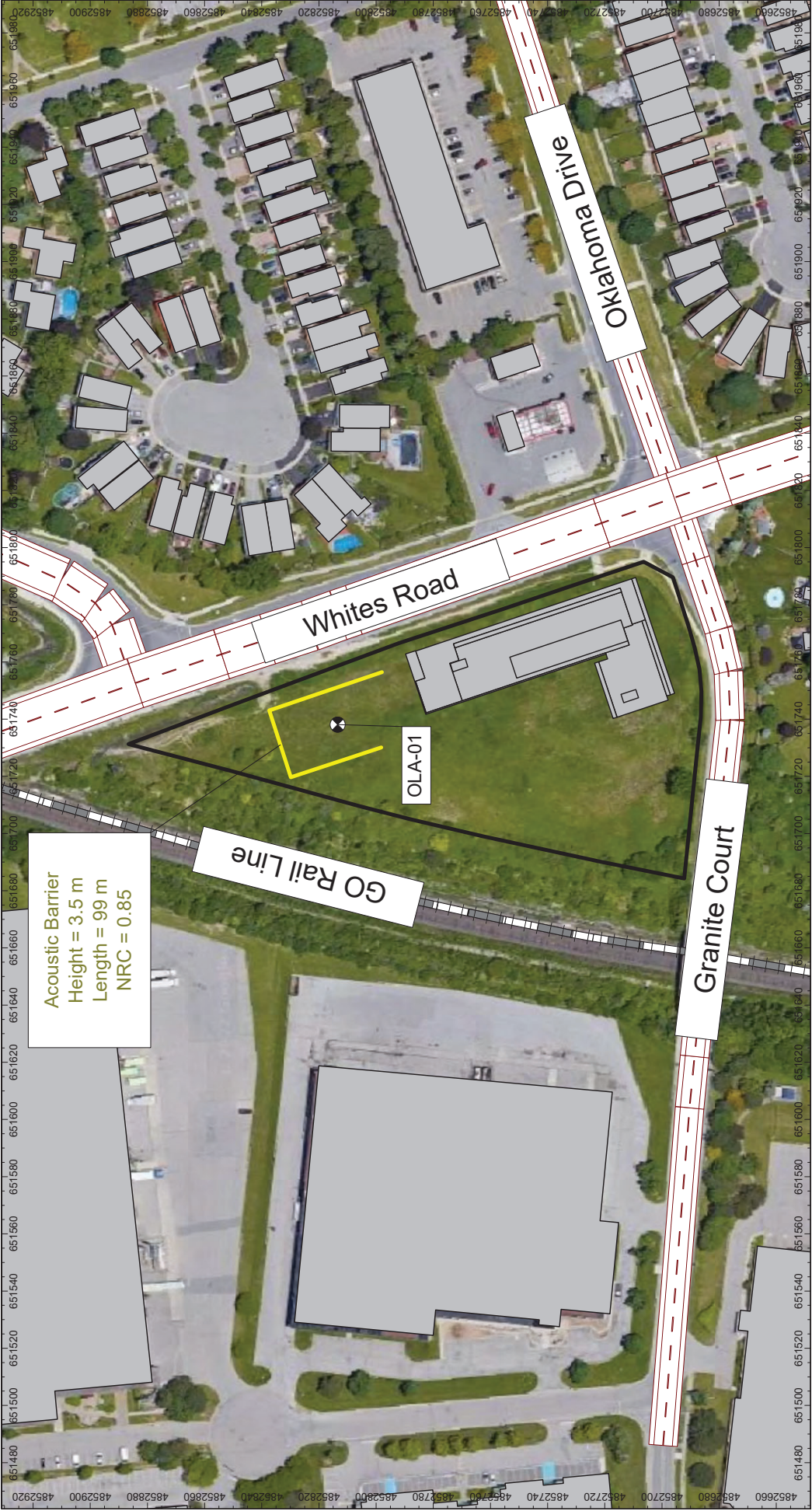


ROAD AND RAIL TRAFFIC NOISE LEVELS - PLANE OF WINDOW

12594433
 17.03.2023

FIGURE 5.2

CadnaA File: \\ghdnet\ghd\CAWaterloo\Projects\662\12594433\Tech\Noise\04_Modelling\01_CadnaA\02_Noise_Models\12594433_720GraniteCourt_V2023.01.cna



Acoustic Barrier
 Height = 3.5 m
 Length = 99 m
 NRC = 0.85

OLA-01



Source: Google Satellite



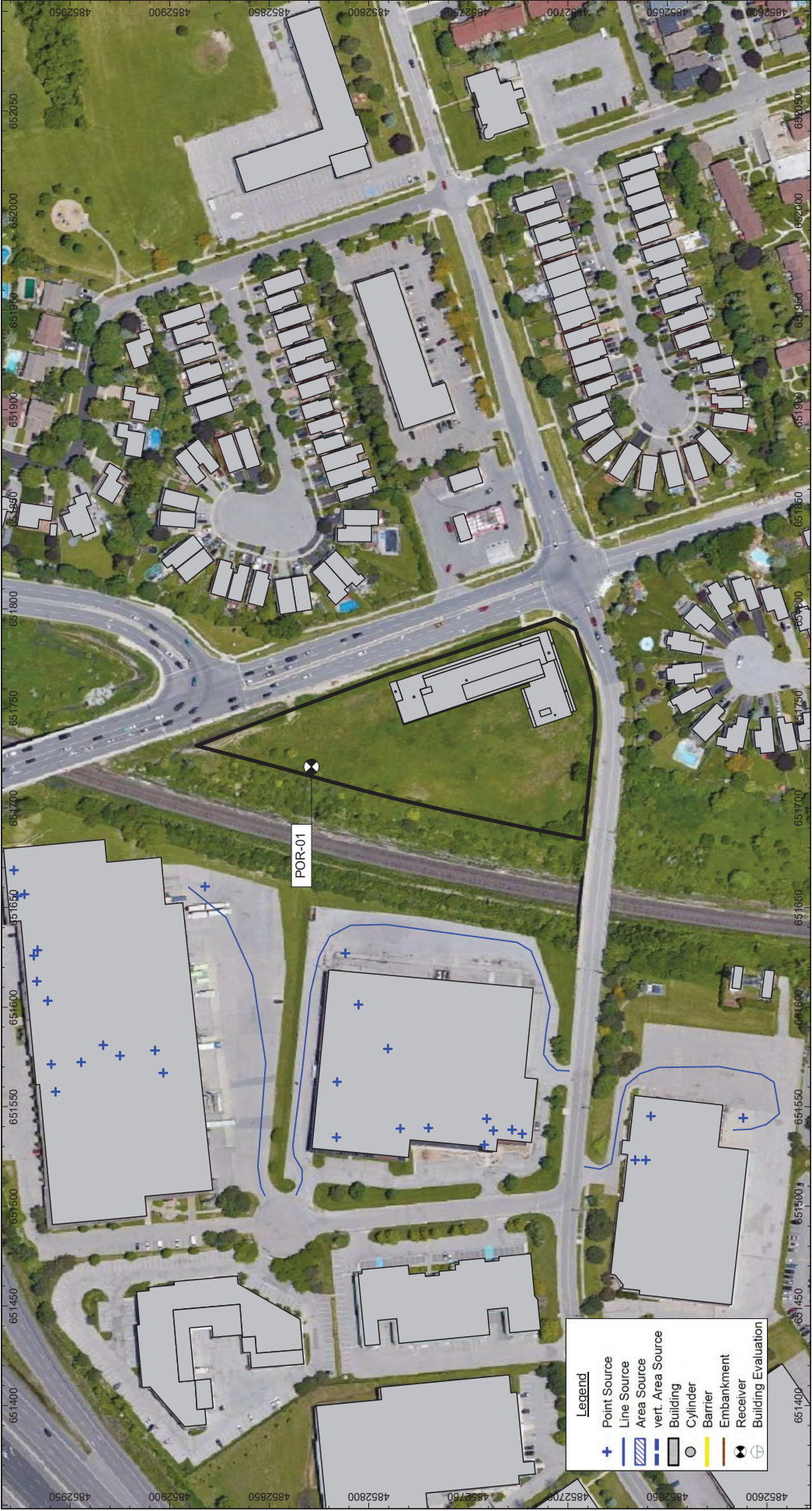
LAND USE COMPATIBILITY STUDY
 1334281 ONTARIO LTD.
 720 GRANITE COURT

12594433
 17.03.2023

ROAD AND RAIL TRAFFIC NOISE - OUTDOOR LIVING AREA RECEIVER LOCATIONS

FIGURE 5.3

CadnaA File: \\ghdnet\ghd\CAWaterloo\Projects\662\12594433\Tech\Noise\04_Modelling\01_CadnaA\02_Noise_Models\12594433_720GraniteCourt_V2023.01.cna



Source: Google Satellite



LAND USE COMPATIBILITY STUDY
 1334281 ONTARIO LTD.
 720 GRANITE COURT

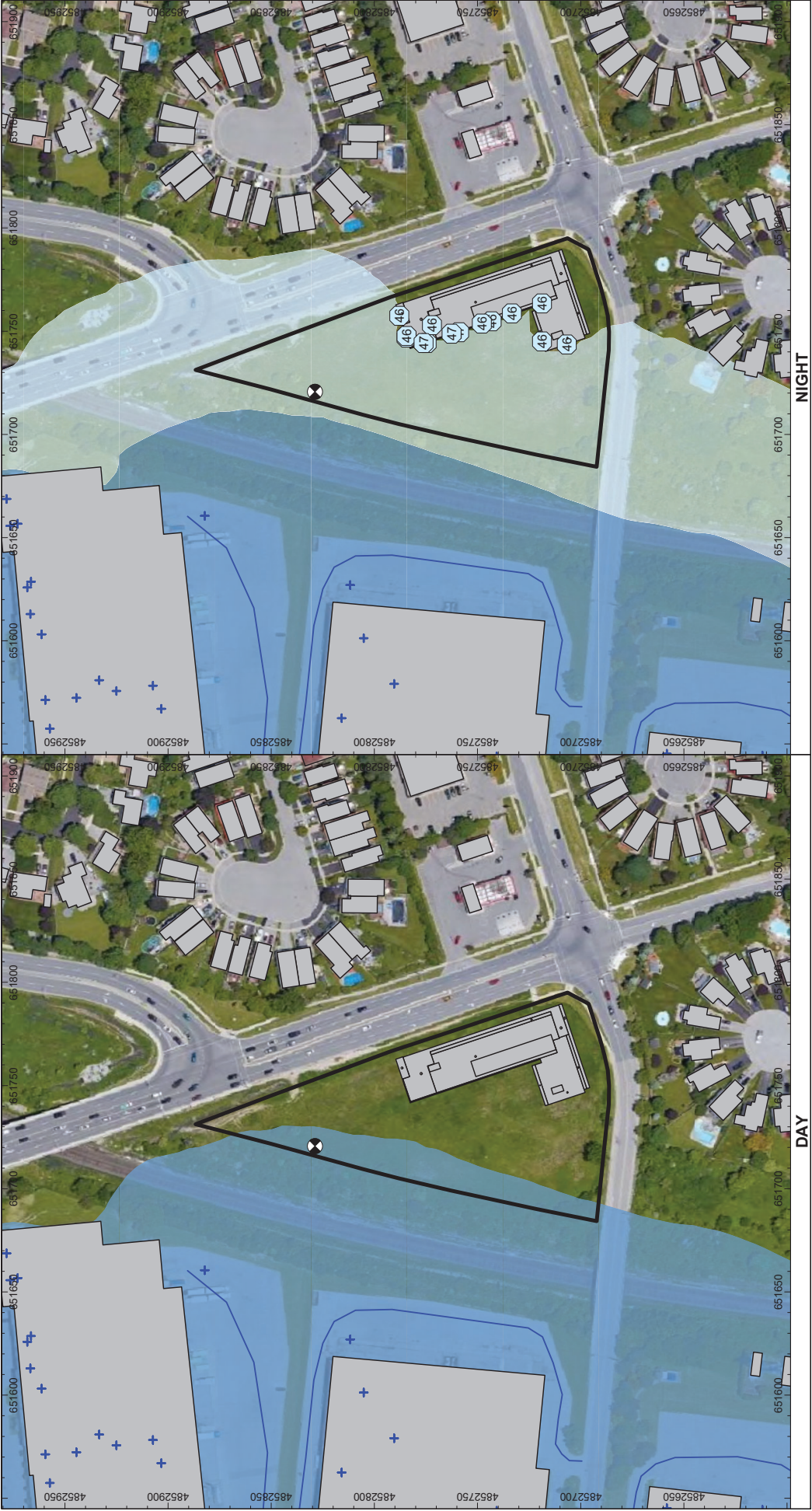


POINT OF RECEPTION LOCATION PLAN

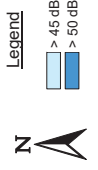
12594433
 17.03.2023

FIGURE 5.4

CadnaA File: \\ghdnet\ghd\CAWater\proj\6621\2594433\Tech\Noise\04_Modelling\01_CadnaA\02_Noise_Models\12594433_720GraniteCourt_V2023.01.cna



Source: Google Satellite



LAND USE COMPATIBILITY STUDY
 1334281 ONTARIO LTD.
 720 GRANITE COURT



UNMITIGATED STATIONARY NOISE LEVELS FROM NEARBY INDUSTRIES (15 m A.G.)

12594433
 17.03.2023

FIGURE 5.5

CadnaA File: \\ghdnet\ghd\CAWaterloo\Projects\662\12594433\Tech\Noise\04_Modelling\01_CadnaA\02_Noise_Models\12594433_720GraniteCourt_V2023.01.cna



Source: Google Satellite



LAND USE COMPATIBILITY STUDY
 1334281 ONTARIO LTD.
 720 GRANITE COURT



VIBRATION MONITOR LOCATION PLAN

12594433
 17.03.2023

FIGURE 5.6

CadnaA File: \\ghdnet\ghd\CAWater\proj\6621\2594433\Tech\Noise\04_Modelling\01_CadnaA\02_Noise_Models\12594433_720GraniteCourt_V2023.01.cna

Appendices

Appendix A

Zoning Map and Site Plan

O.B.C. MATRIX

CHANGING BUILDING CODE DATA MATRIX - PART 3 - Section 9

1700 Richardson Ave., Suite 205
 Dallas, TX 75207
 Phone: 972.414.4444
 Fax: 972.414.4444
 Email: info@onespacebuilding.com

NAME OF PROJECT: _____
 LOCATION: _____

OWNER: _____
 PROJECT NO.: _____
 SHEET NO.: _____

DATE: _____

REVISIONS:

NO.	DESCRIPTION	DATE
1	Project Description	11/18/14
2	Final Construction	11/18/14
3	Final Construction	11/18/14
4	Final Construction	11/18/14
5	Final Construction	11/18/14
6	Final Construction	11/18/14
7	Final Construction	11/18/14
8	Final Construction	11/18/14
9	Final Construction	11/18/14
10	Final Construction	11/18/14
11	Final Construction	11/18/14
12	Final Construction	11/18/14
13	Final Construction	11/18/14
14	Final Construction	11/18/14
15	Final Construction	11/18/14
16	Final Construction	11/18/14
17	Final Construction	11/18/14
18	Final Construction	11/18/14
19	Final Construction	11/18/14
20	Final Construction	11/18/14

Architectural Drawing Sheet List

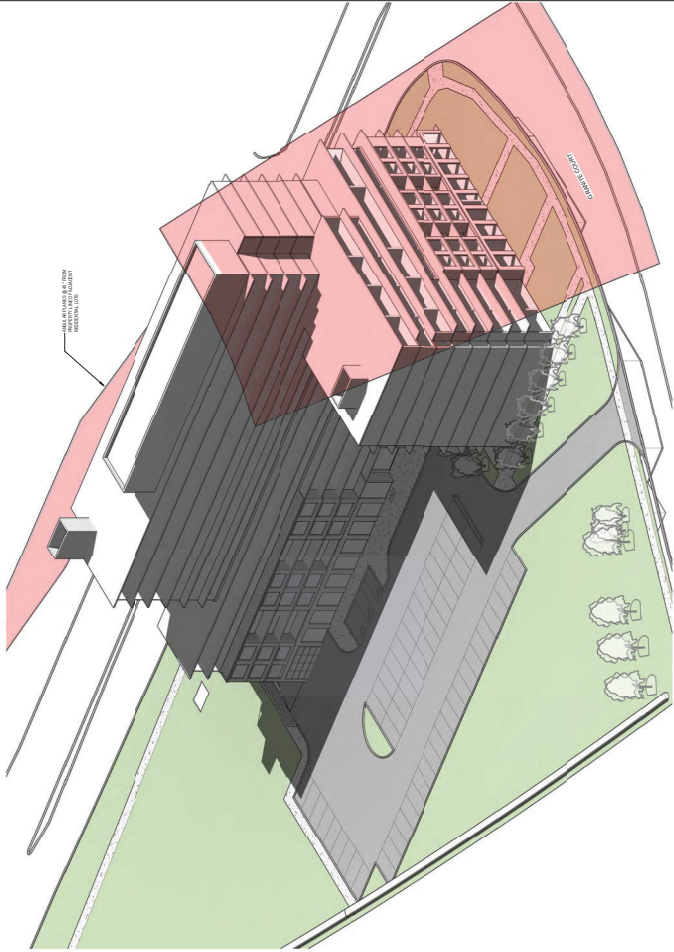
NO.	DESCRIPTION
1	Site Plan
2	Foundation Plan
3	First Floor Plan
4	Second Floor Plan
5	Third Floor Plan
6	Fourth Floor Plan
7	Fifth Floor Plan
8	Sixth Floor Plan
9	Seventh Floor Plan
10	Eighth Floor Plan
11	Ninth Floor Plan
12	Tenth Floor Plan
13	Eleventh Floor Plan
14	Twelfth Floor Plan
15	Thirteenth Floor Plan
16	Fourteenth Floor Plan
17	Fifteenth Floor Plan
18	Sixteenth Floor Plan
19	Seventeenth Floor Plan
20	Eighteenth Floor Plan

SITE STATISTICS (UPDATED)

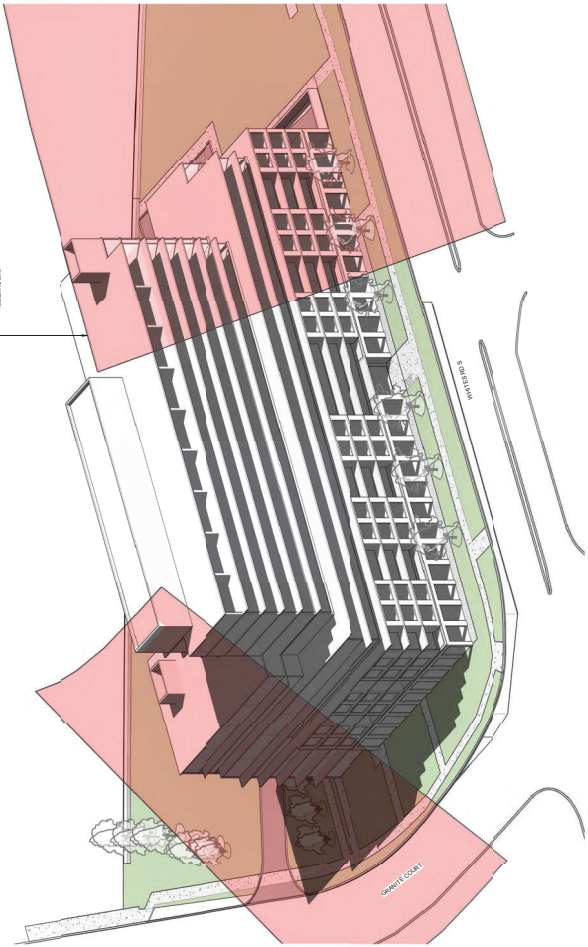
ITEM	DESCRIPTION	AMOUNT
1	Site Area	100,000
2	Building Footprint	50,000
3	Roof Area	20,000
4	Open Space	30,000
5	Water Features	5,000
6	Other Amenities	10,000
7	Site Improvements	15,000
8	Landscaping	10,000
9	Other Site Features	5,000
10	Total Site Area	100,000

REVISIONS:

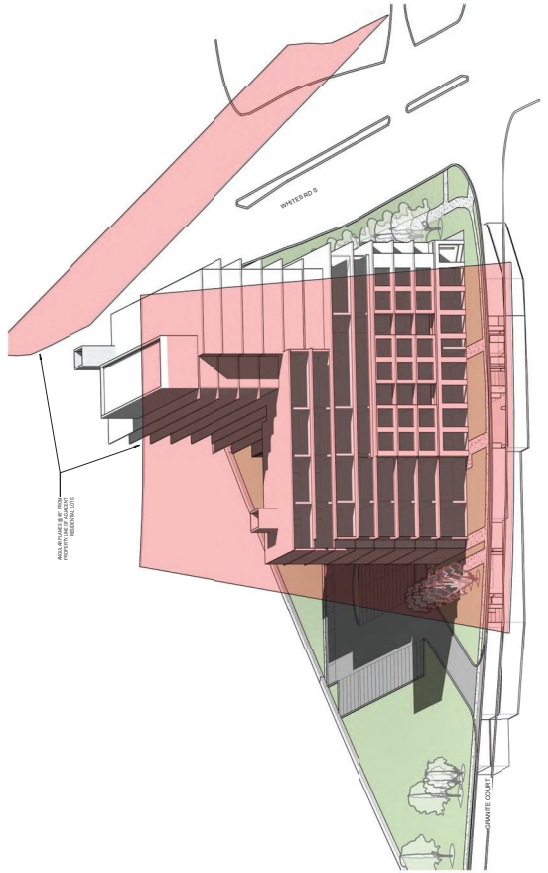
NO.	DESCRIPTION	DATE
1	Project Description	11/18/14
2	Final Construction	11/18/14
3	Final Construction	11/18/14
4	Final Construction	11/18/14
5	Final Construction	11/18/14
6	Final Construction	11/18/14
7	Final Construction	11/18/14
8	Final Construction	11/18/14
9	Final Construction	11/18/14
10	Final Construction	11/18/14
11	Final Construction	11/18/14
12	Final Construction	11/18/14
13	Final Construction	11/18/14
14	Final Construction	11/18/14
15	Final Construction	11/18/14
16	Final Construction	11/18/14
17	Final Construction	11/18/14
18	Final Construction	11/18/14
19	Final Construction	11/18/14
20	Final Construction	11/18/14



2 PERSPECTIVE B



1 PERSPECTIVE A



3 PERSPECTIVE C

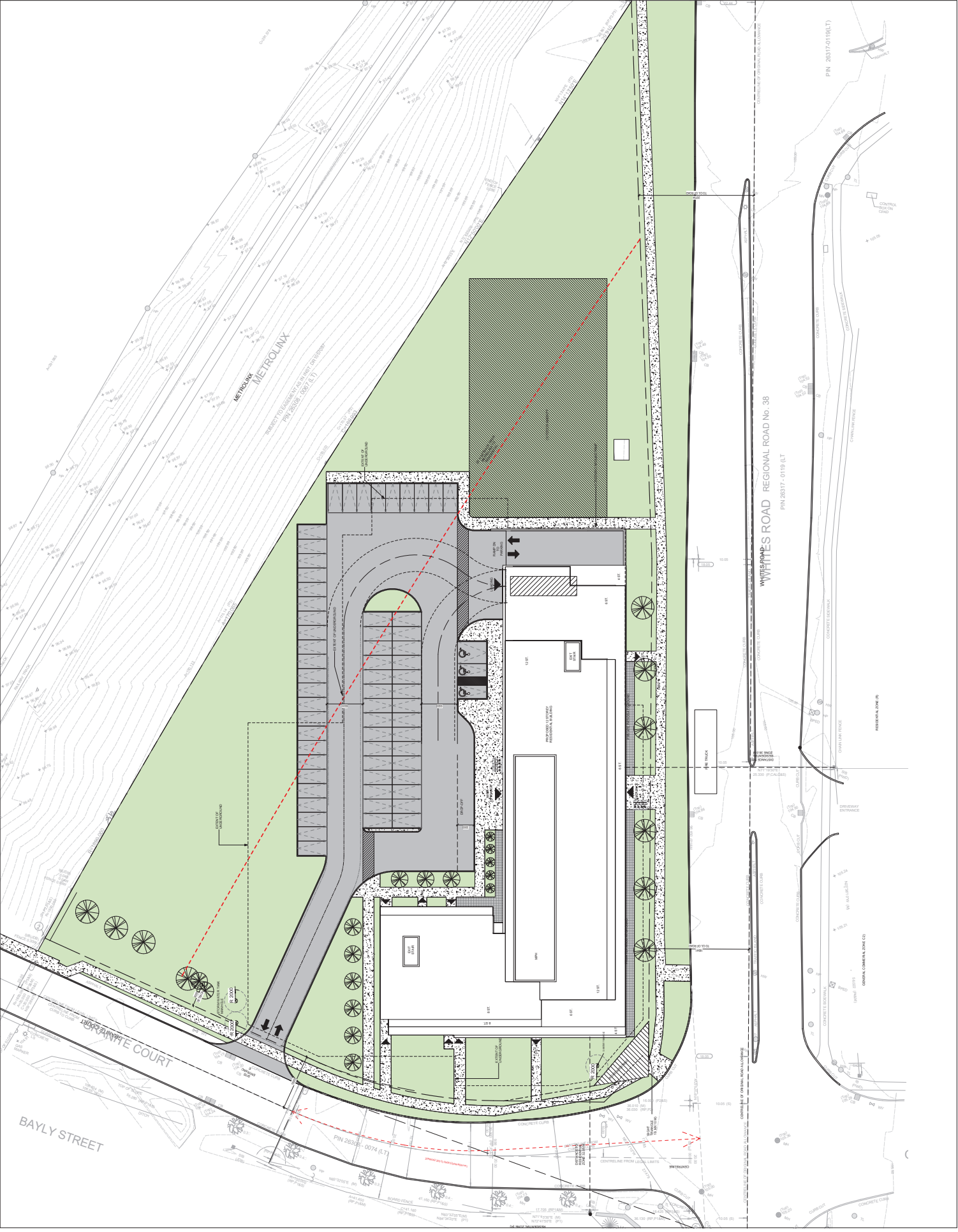


NO DATE ISSUED

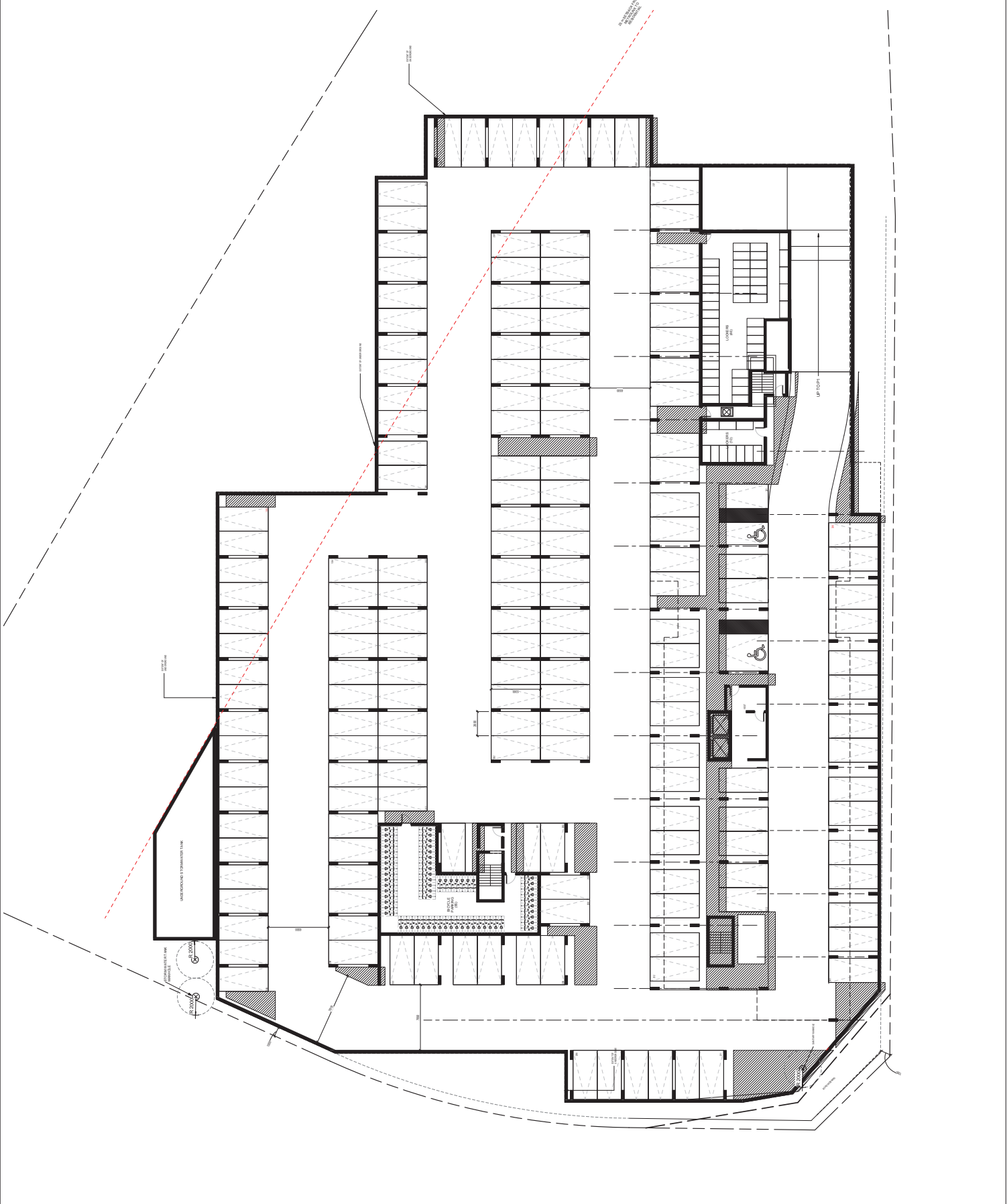
CLIENT
 Owner
 ADDRESS
 Whiteside Court
 4410 West 29th
 City, State, Zip
 PROJECT
 Site Plan

DATE
 2023.05.11
 DRAWN BY
 J. [Name]
 CHECKED BY
 [Name]

PROJECT NO.	2023.05.11
DATE	2023.05.11
DRAWN BY	J. [Name]
CHECKED BY	[Name]



- 01 CONCRETE
- 02 MASONRY
- 03 METAL DECKING
- 04 METAL CLADDING
- 05 GLASS CURTAIN WALL
- 06 GLASS PARTITION
- 07 CARPET
- 08 HARDWOOD FLOORING
- 09 PAINT
- 10 Gypsum Board
- 11 CEILING
- 12 MECHANICAL ELECTRICAL PLUMBING
- 13 FINISH
- 14 ELEVATOR
- 15 STAIR
- 16 STRUCTURAL
- 17 FLOOR FINISH
- 18 FLOOR
- 19 WALL FINISH
- 20 WALL
- 21 WINDOW
- 22 DOOR
- 23 SIGN
- 24 FURNITURE
- 25 LANDSCAPE
- 26 SITEWORK
- 27 EXTERIOR
- 28 INTERIOR
- 29 ELEVATOR
- 30 STAIR
- 31 MECHANICAL
- 32 ELECTRICAL
- 33 PLUMBING
- 34 FIRE
- 35 ACCESSIBILITY



CONCRETE
MASONRY
METAL DECKING
METAL CLADDING
GLASS CURTAIN WALL
GLASS PARTITION
CARPET
HARDWOOD FLOORING
PAINT
Gypsum Board
CEILING
MECHANICAL ELECTRICAL PLUMBING
FINISH
ELEVATOR
STAIR
STRUCTURAL
FLOOR FINISH
FLOOR
WALL FINISH
WALL
WINDOW
DOOR
SIGN
FURNITURE
LANDSCAPE
SITEWORK
EXTERIOR
INTERIOR
ELEVATOR
STAIR
MECHANICAL
ELECTRICAL
PLUMBING
FIRE
ACCESSIBILITY

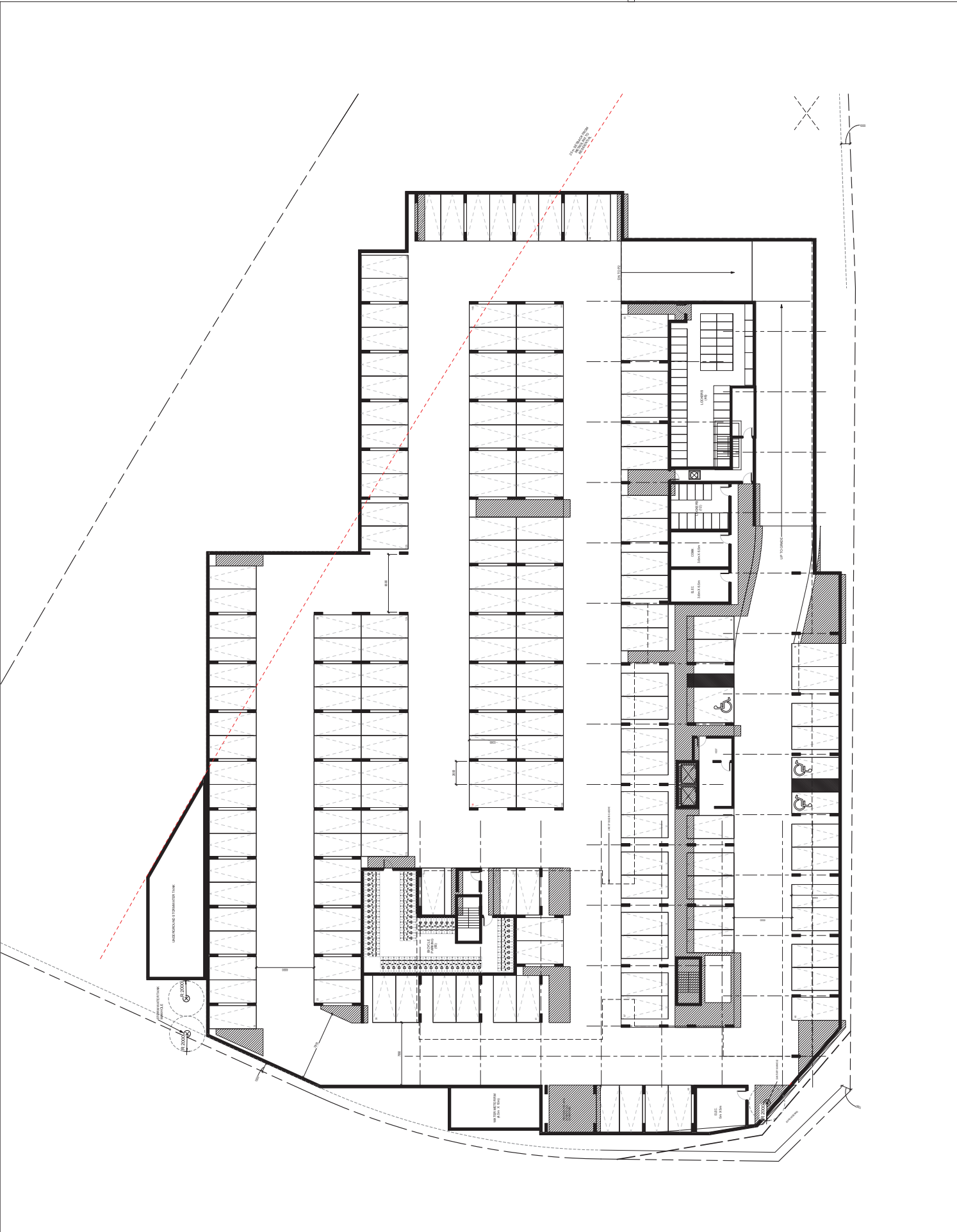


DATE: 05/20/2015

PROJECT: 20035 -
 SHEET: A-101
 DRAWING: PAVING PLAN

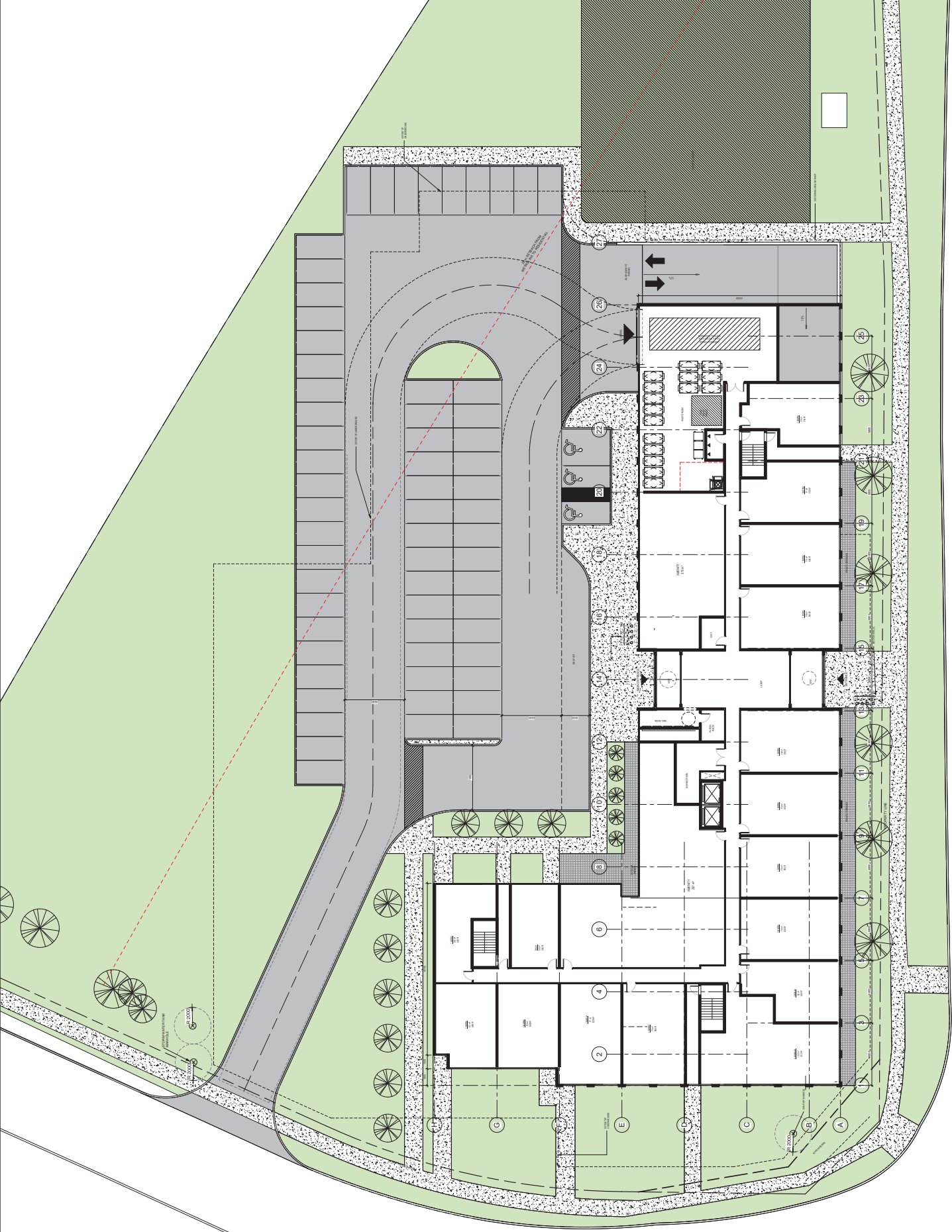
CLIENT: Overly
 ADDRESS: Overly Court
 441 Street
 City: Santa Ana, CA
 State: CA 92705
 PROJECT: 20035 -
 SHEET: A-101
 DRAWING: PAVING PLAN

PROJECT: 20035 -
 SHEET: A-101
 DRAWING: PAVING PLAN





DATE	ISSUED
2023.10.10	2023.10.10
PROJECT	PROJECT NO.
OWNER	PROJECT NO.
ARCHITECT	PROJECT NO.
CITY & STATE	PROJECT NO.
LEVEL	PROJECT NO.
LEVEL 1	PROJECT NO.



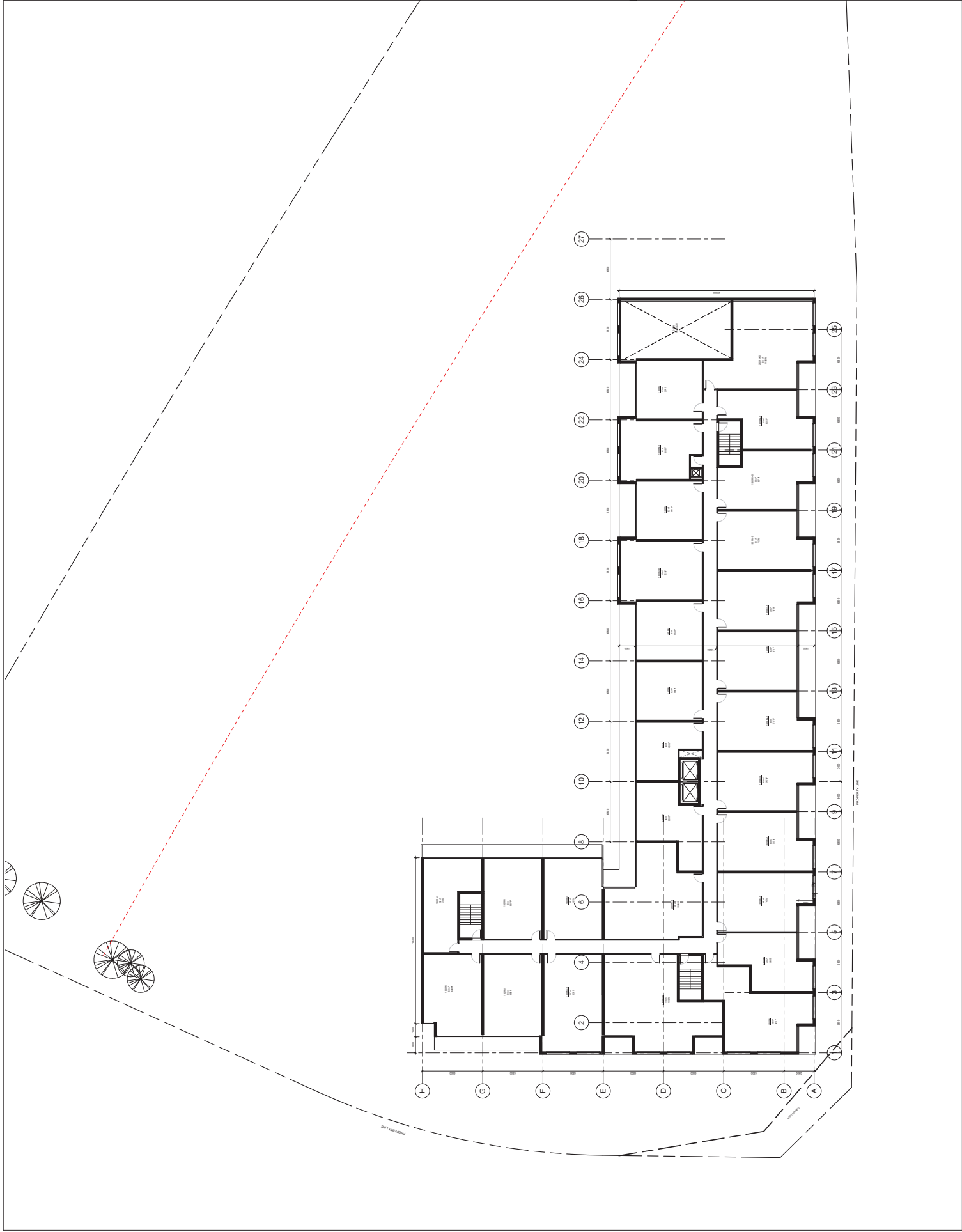


DATE: 10/20/2015
ISSUED

CLIENT: Owner
PROJECT: 10000th Court
14000th Street
City, State, Zip

PROJECT NO:

DATE: 10/20/2015
DRAWN BY: [Name]
CHECKED BY: [Name]
PROJECT NO: [Number]



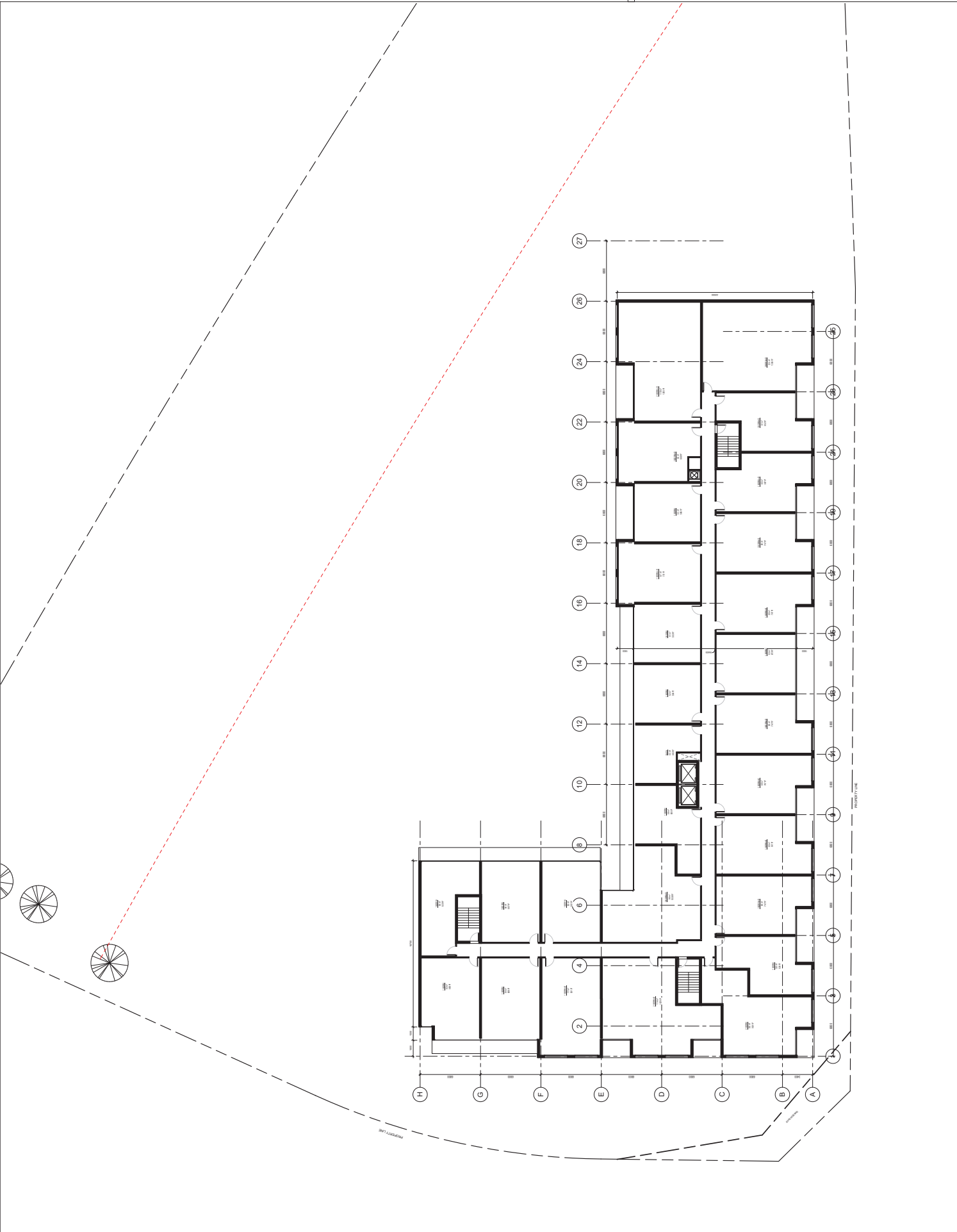


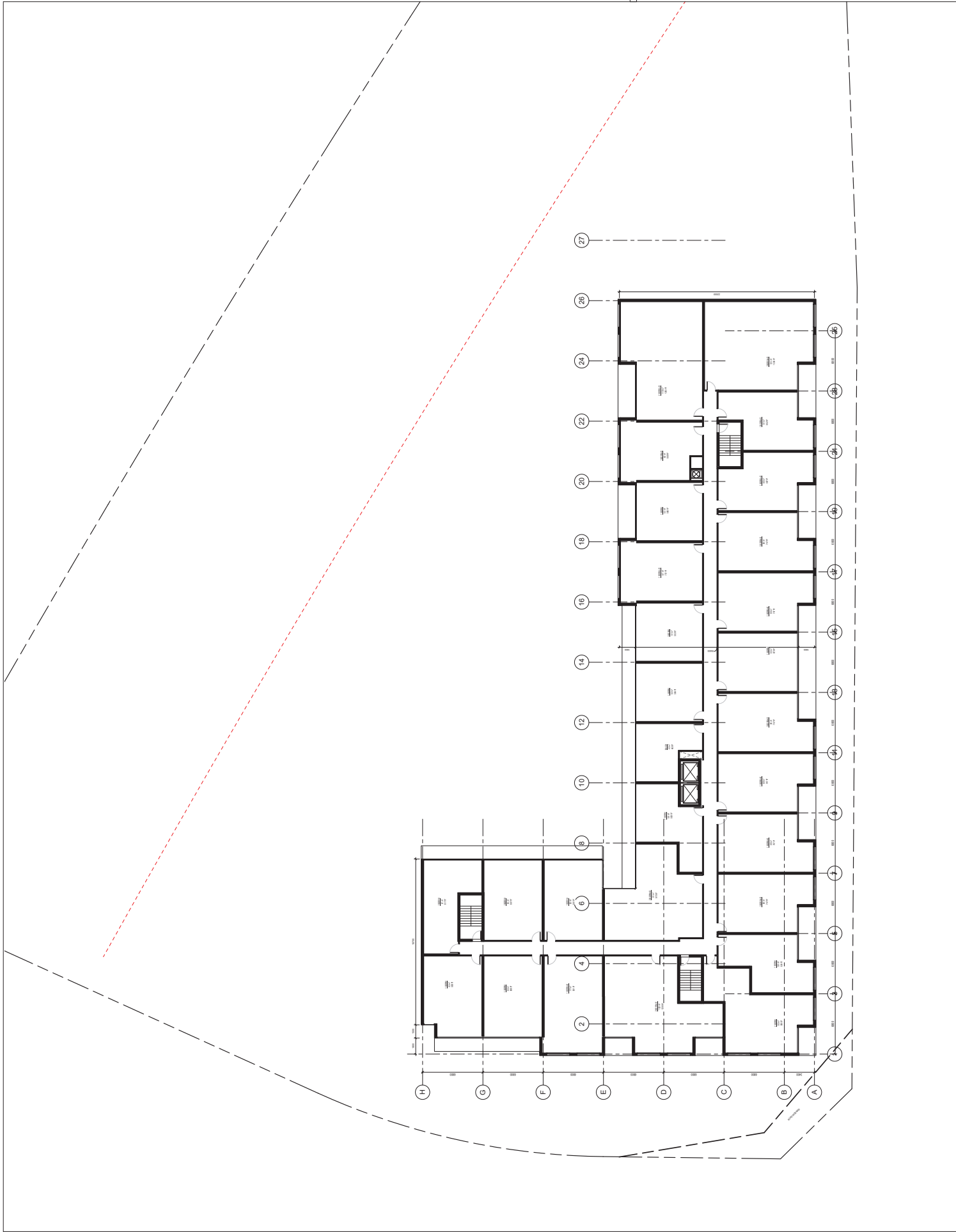
DATE: 05/20/2024
PROJECT: 200315 - 1100
DRAWING: 1100-1100-01-001

CLIENT: Owner
PROJECT: 1100
ADDRESS: 1100 West 10th Ave
CITY: Denver, CO
STATE: CO
ZIP: 80202

PROJECT: 200315 - 1100
DRAWING: 1100-1100-01-001
DATE: 05/20/2024
PROJECT: 200315 - 1100
DRAWING: 1100-1100-01-001

PROJECT: 200315 - 1100
DRAWING: 1100-1100-01-001
DATE: 05/20/2024
PROJECT: 200315 - 1100
DRAWING: 1100-1100-01-001







DATE ISSUED

CLIENT
Owner

ADDRESS
1000 West 10th Street
City: Vancouver

PROJECT
Level 5

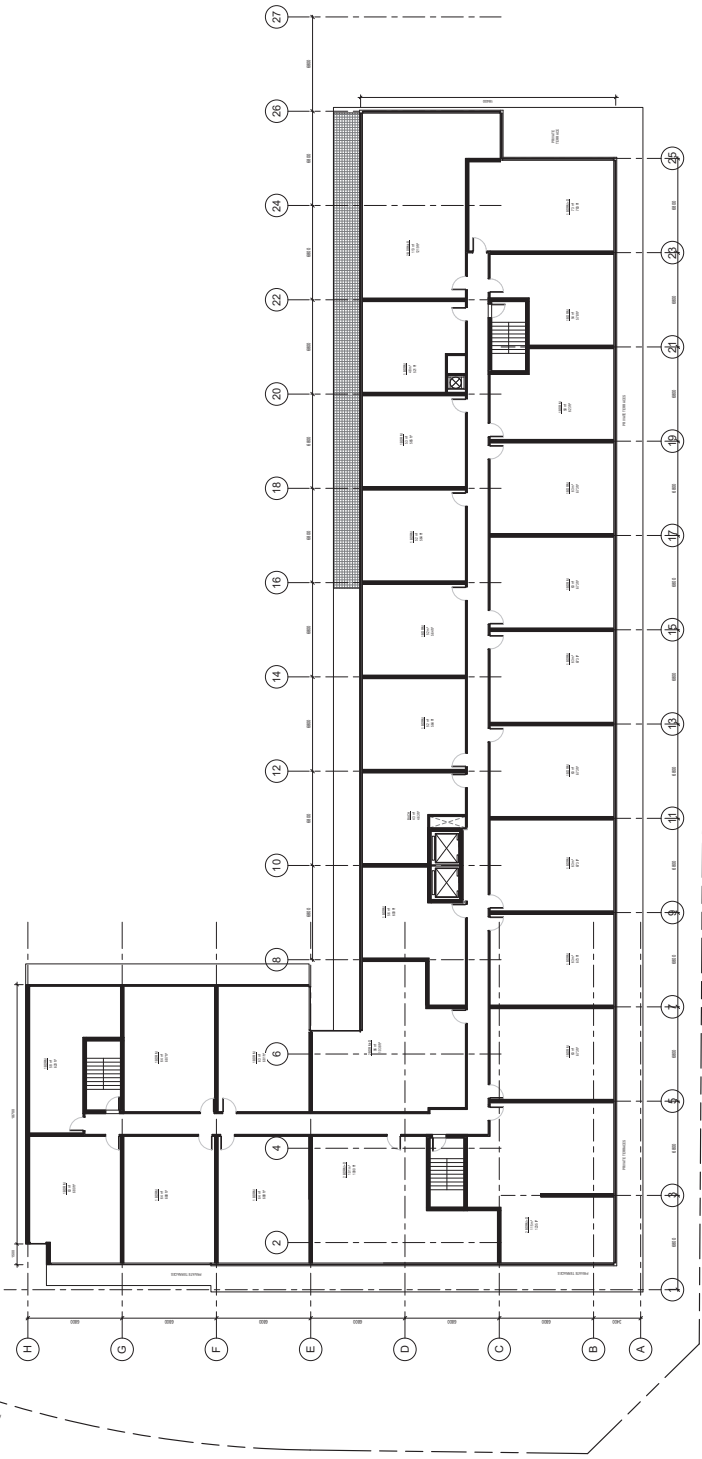
DATE
2023.05.15

PROJECT NO.
20230515-001

SCALE
1:100

PROJECT NAME
Level 5

A-106





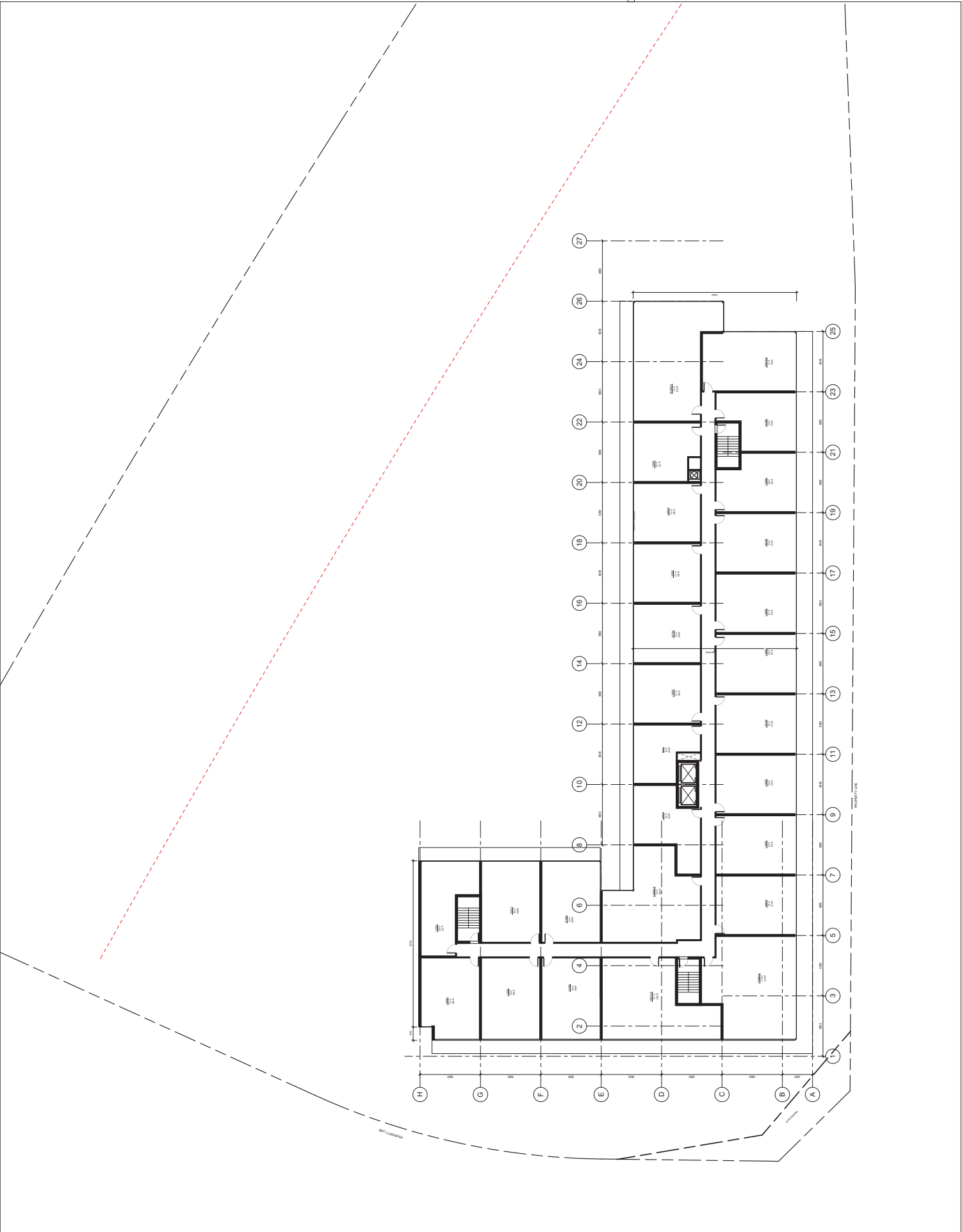
DATE: 12/15/2015
 DRAWN BY: [Name]
 CHECKED BY: [Name]
 PROJECT: [Name]

CLIENT: Owner
 ADDRESS: [Address]
 CITY: [City] State: [State]
 ZIP: [Zip]

PROJECT: [Project Name]
 SHEET: [Sheet Number]

LEVEL: Level 6

DATE	DESCRIPTION
2015.12.15	ISSUED FOR PERMITS
2015.11.15	ISSUED FOR CONSTRUCTION



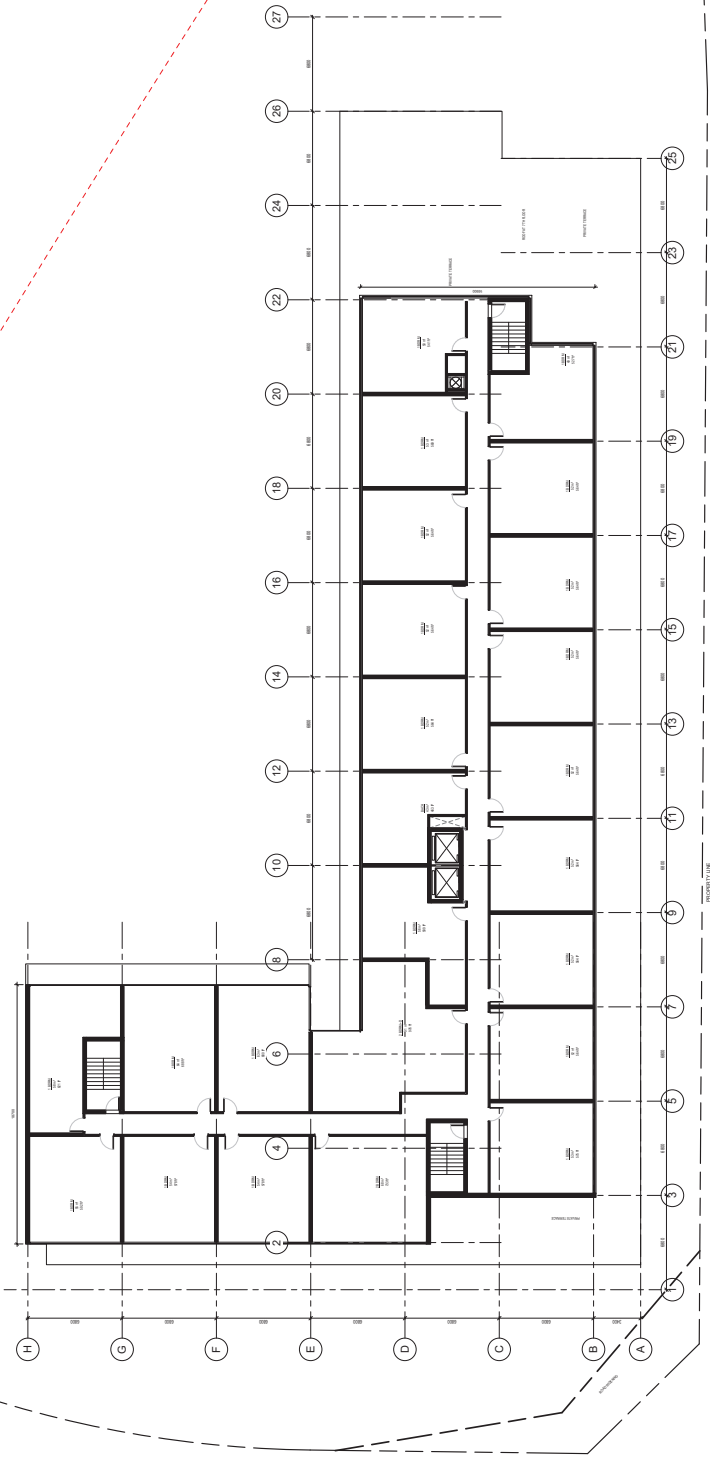


DATE: 05/20/2015

PROJECT: 200315-0001
SHEET: 11 OF 11

CLIENT: Owner
PROJECT: 200315-0001
PROJECT NAME: Court
City: Denver, CO
State: CO

PROJECT NO.: 200315-0001
SHEET NO.: 11 OF 11
DATE: 05/20/2015
DRAWN BY: [Signature]



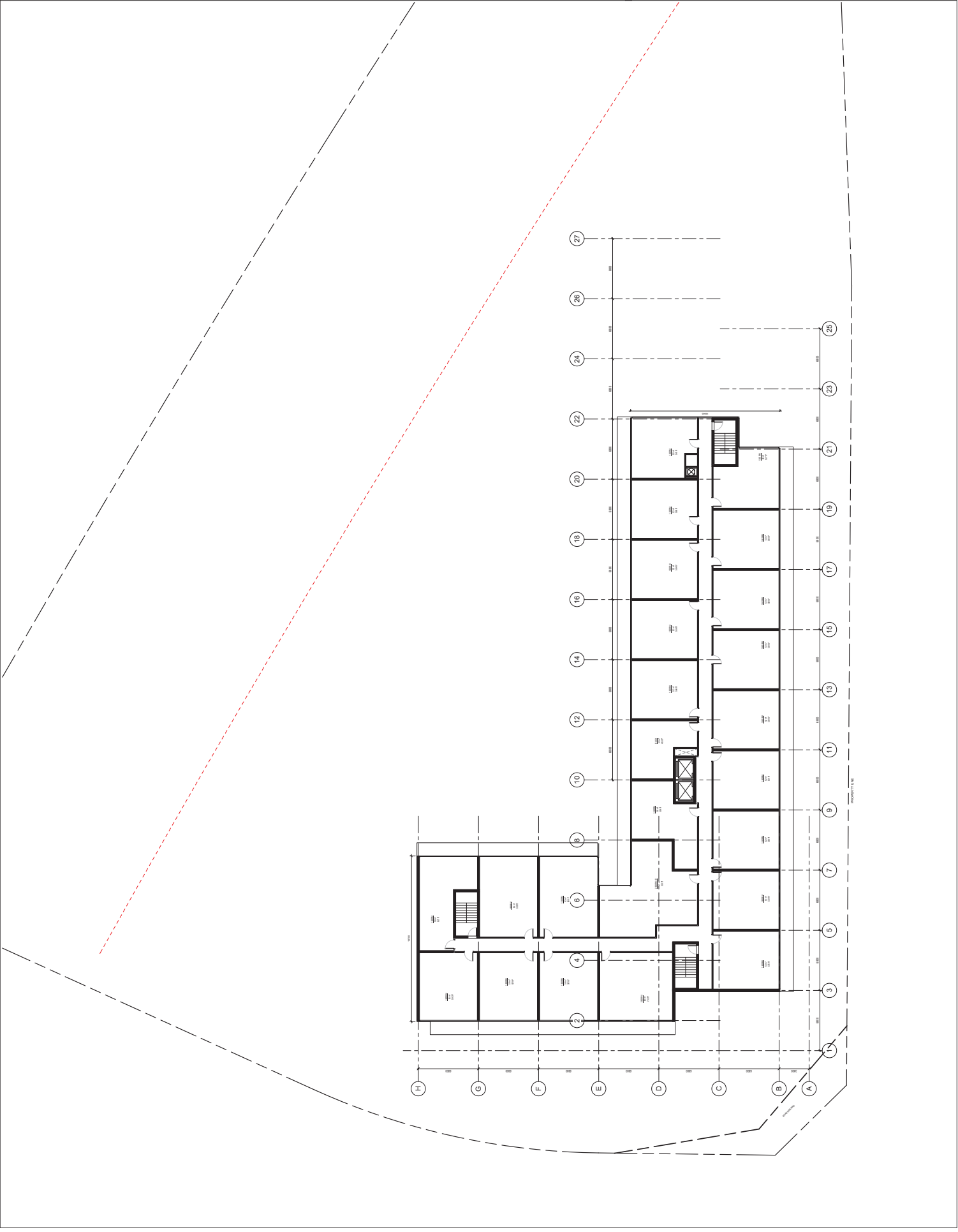


DATE: 05/20/2019
 DRAWN BY: DS

PROJECT: 200315 -
 11100 W. CENTURY BLVD., SUITE 100
 LOS ANGELES, CA 90045

CLIENT: Owner
 ARCHITECT: ONE SPACE ARCHITECTURE, INC.
 PROJECT: 200315 -
 11100 W. CENTURY BLVD., SUITE 100
 LOS ANGELES, CA 90045

PROJECT NO.	200315 -
DATE	05/20/2019
DESIGNED BY	DS
CHECKED BY	DS
DATE	05/20/2019





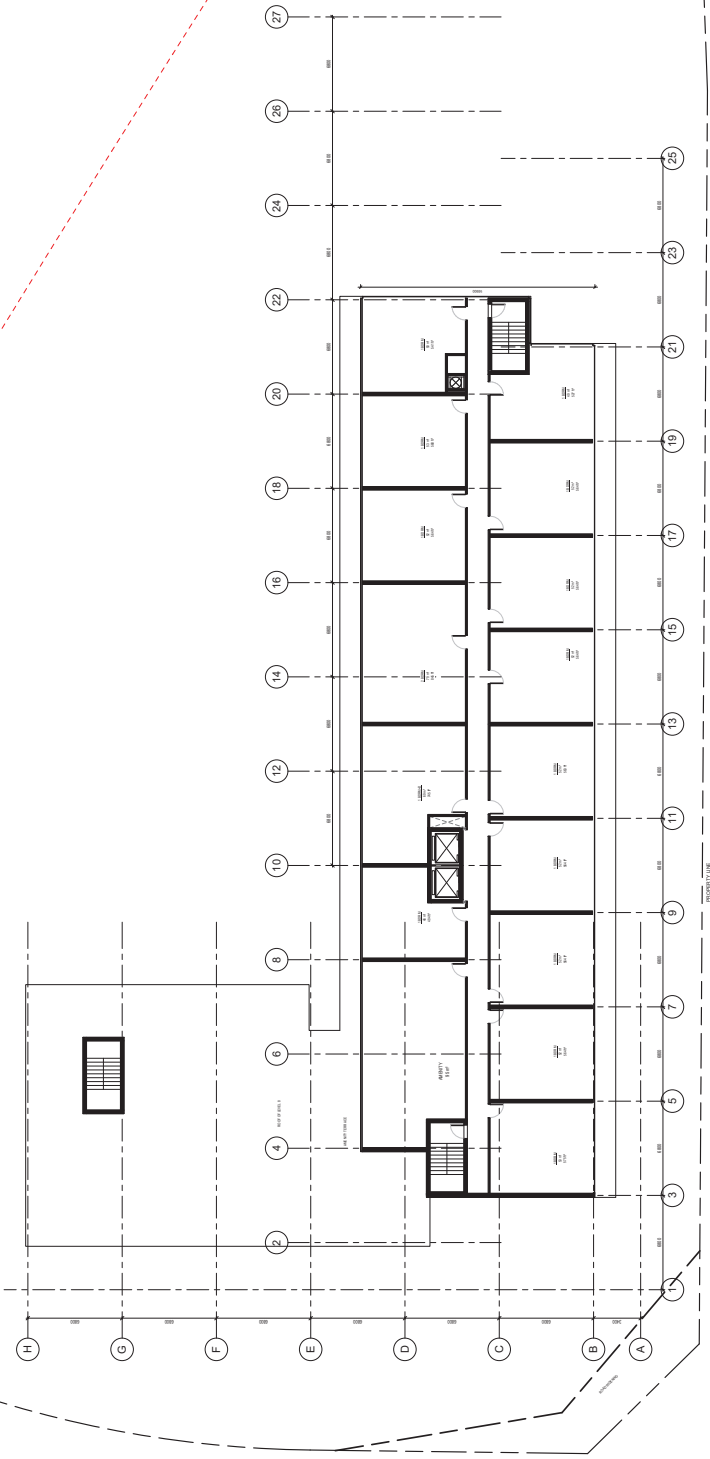
DATE: 05/24/2016
PROJECT: 10000 W. CENTURY BLVD. - 100000000000000

CLIENT: Owner
ARCHITECT: ONE SPACE ARCHITECTURE, INC.
PROJECT: 10000 W. CENTURY BLVD. - 100000000000000
CITY: DENVER, CO
STATE: COLORADO

PROJECT: 10000 W. CENTURY BLVD. - 100000000000000
CITY: DENVER, CO
STATE: COLORADO

CLIENT: Owner
ARCHITECT: ONE SPACE ARCHITECTURE, INC.
PROJECT: 10000 W. CENTURY BLVD. - 100000000000000
CITY: DENVER, CO
STATE: COLORADO

PROJECT: 10000 W. CENTURY BLVD. - 100000000000000	DATE: 05/24/2016
PROJECT: 10000 W. CENTURY BLVD. - 100000000000000	DATE: 05/24/2016
PROJECT: 10000 W. CENTURY BLVD. - 100000000000000	DATE: 05/24/2016



② Level 9
1:125

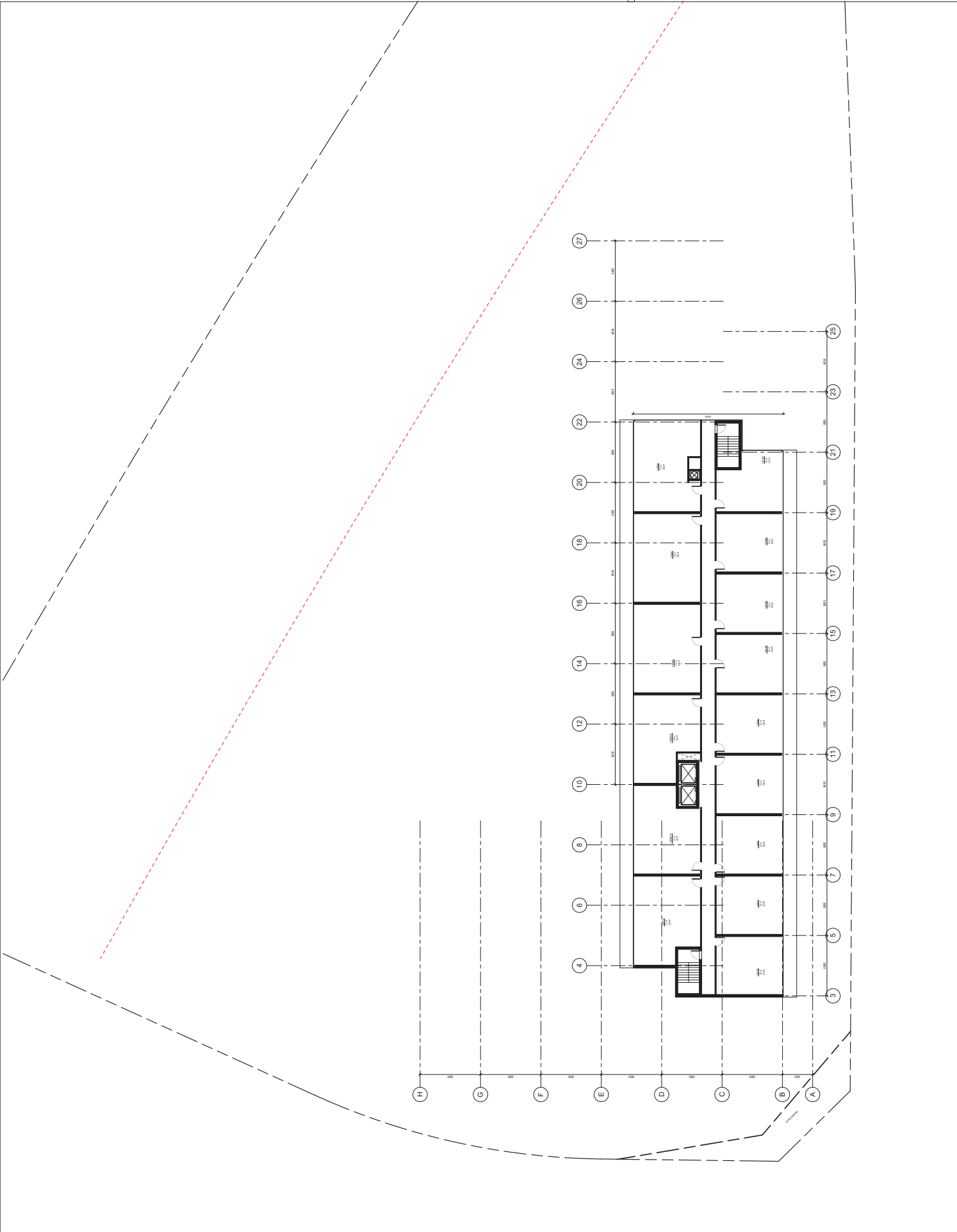


DATE: 05/20/2015
 PROJECT: [REDACTED]

CLIENT: [REDACTED]
 OWNER: [REDACTED]
 ADDRESS: [REDACTED]
 CITY: [REDACTED]

PROJECT: [REDACTED]
 SHEET: [REDACTED]
 TITLE: [REDACTED]

DATE	2015.05.20
BY	DAVID J. SEARLE
CHECKED	[REDACTED]

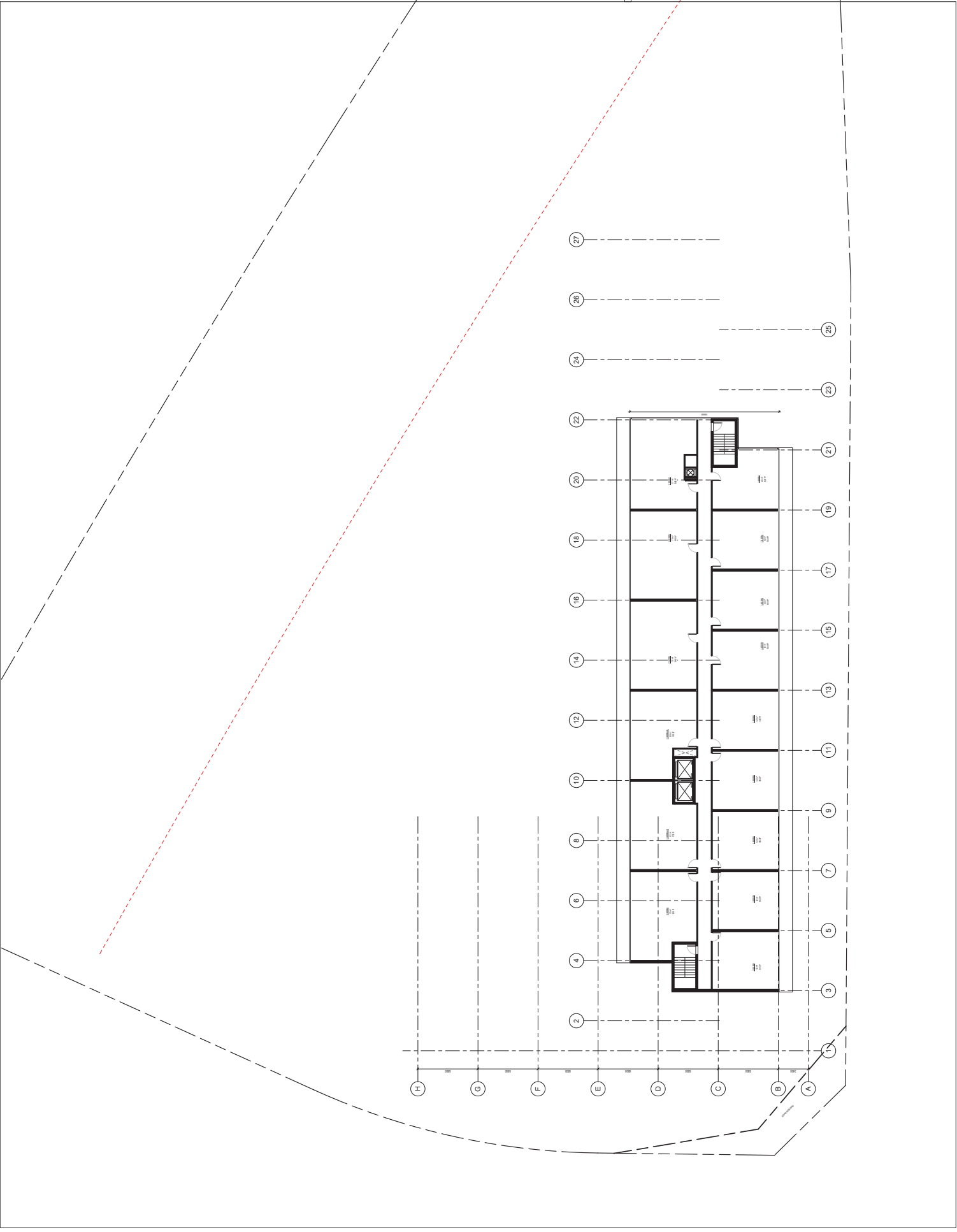




DRG. DATE: 05/24/20
ISSUED:

CLIENT: Owner
PROJECT: 2000 W. 10th Ave. Court
City: Denver, CO
State: CO
Zip: 80202

PROJECT NUMBER: 200015
DATE: 05/24/20
DRAWING NUMBER: 01-11
SHEET: 11 OF 11
LEVEL: Level 11



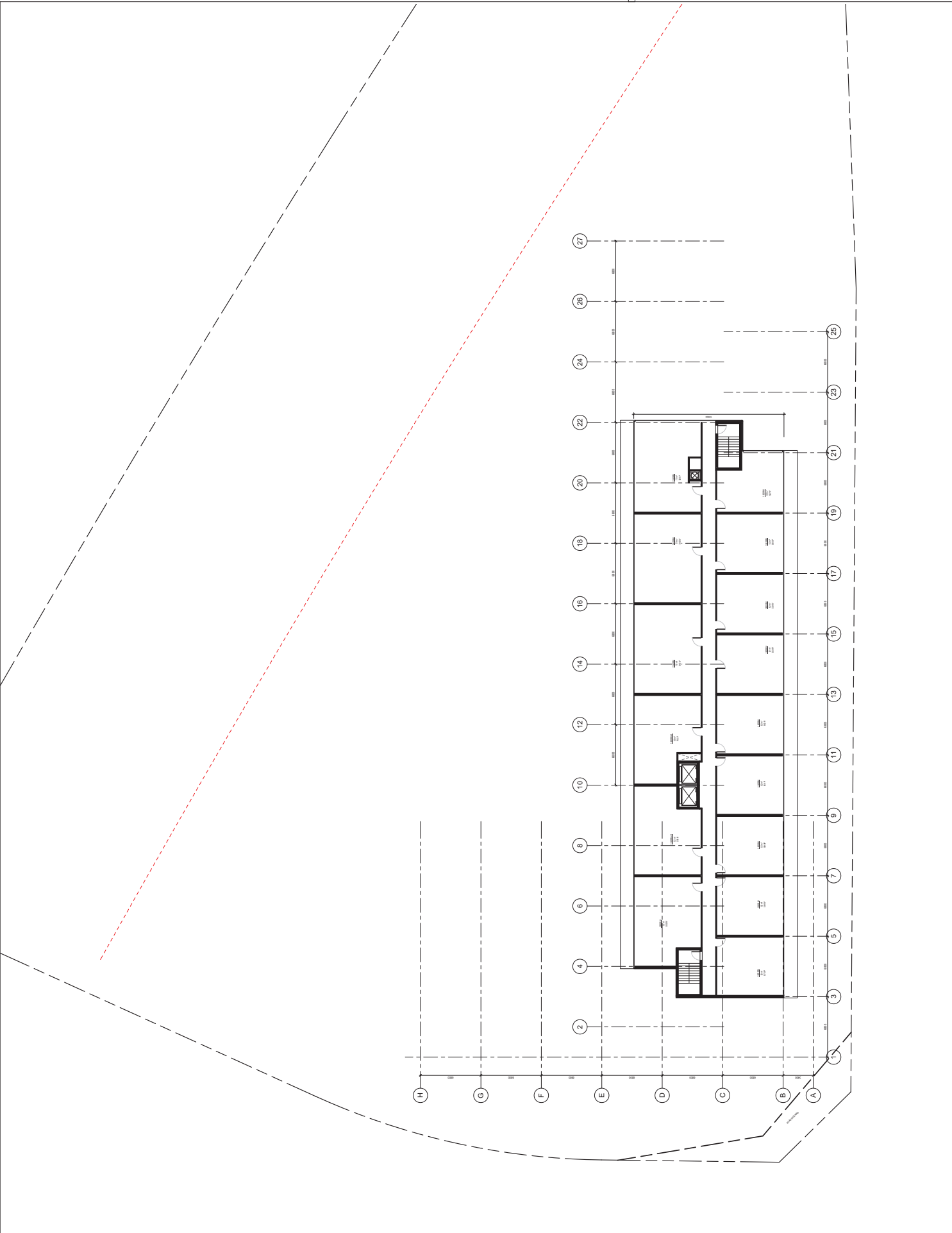


DATE: 05/20/2015
PROJECT: 200315-0001

CLIENT: Owner
PROJECT: 200315-0001
PROJECT NAME: 200315-0001
CITY: Denver, CO
STATE: CO
PROJECT NO: 200315-0001

PROJECT NO: 200315-0001
DATE: 05/20/2015
DRAWING NO: 01-101
SHEET TITLE: Level 12

DATE: 05/20/2015
DRAWING NO: 01-101
SHEET TITLE: Level 12





DATE: 05/24/2018

PROJECT: [REDACTED]

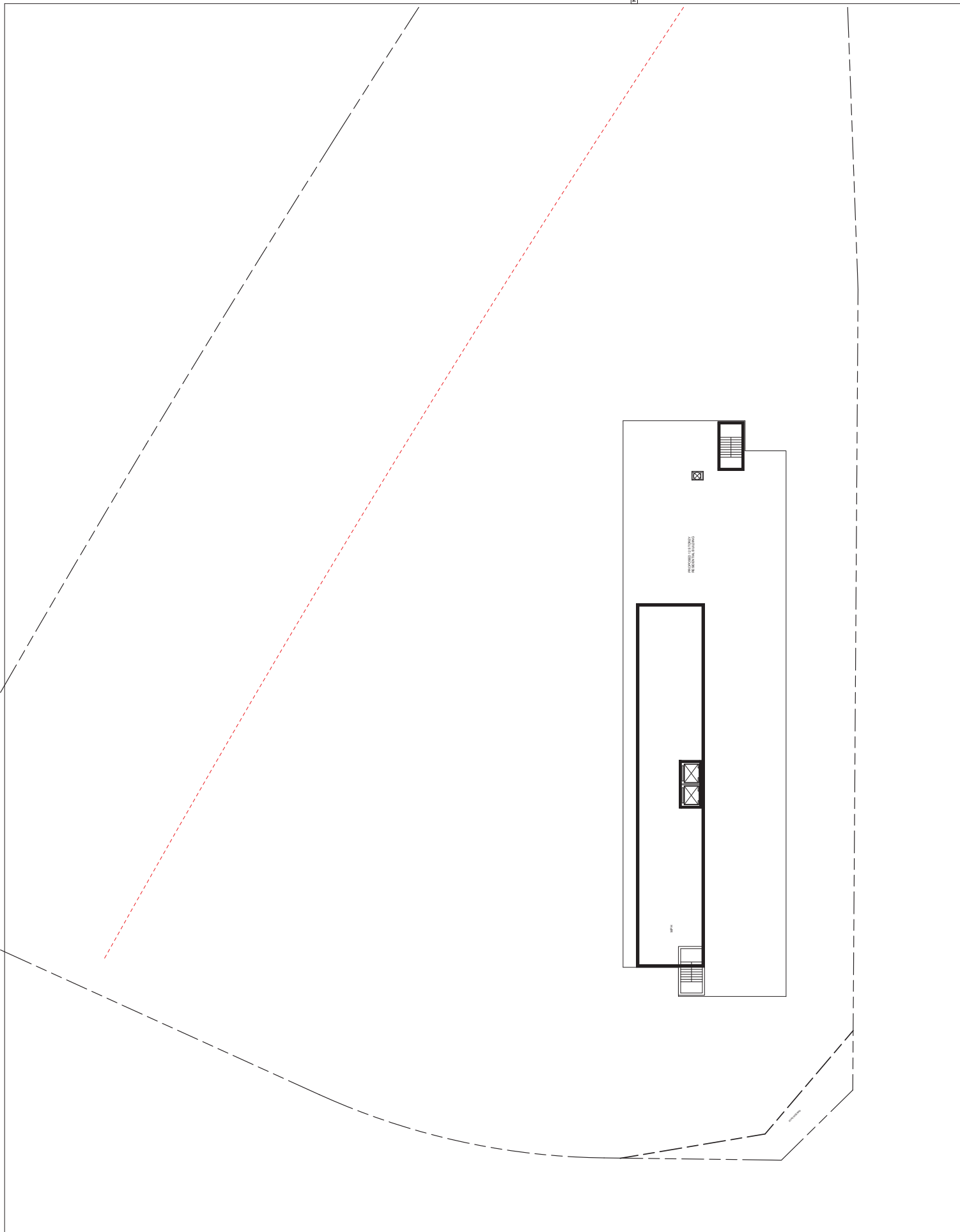
THIS PLAN IS THE PROPERTY OF ONE SPACE ARCHITECTS, INC. AND IS NOT TO BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT THE WRITTEN PERMISSION OF ONE SPACE ARCHITECTS, INC. ANY UNAUTHORIZED USE OF THIS PLAN IS STRICTLY PROHIBITED.

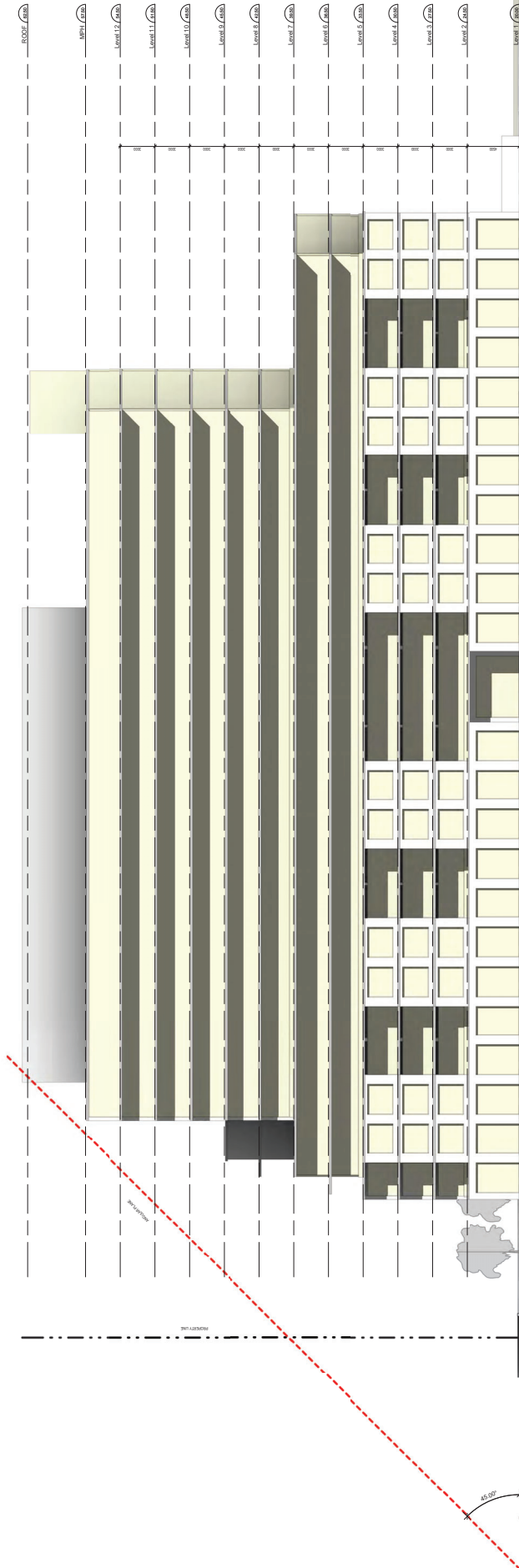
MPH PLAN

CLIENT: [REDACTED]
OWNER: [REDACTED]
ADDRESS: [REDACTED]
CITY: [REDACTED]

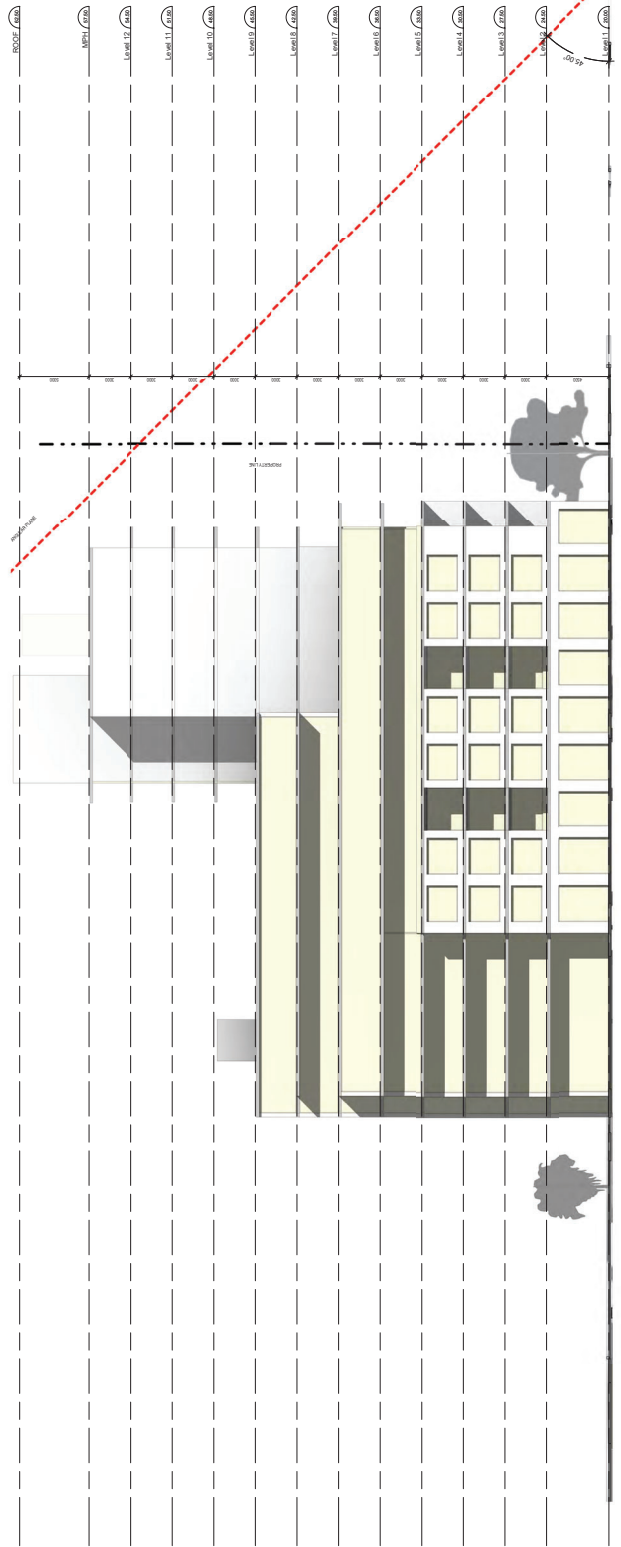
MPH PLAN

DATE	2018-05-24
BY	MSJ
CHECKED	[REDACTED]





1 East Elevation
1:125



2 South Elevation
1:125

NO.	DATE	ISSUED

ALL DIMENSIONS ARE IN FEET AND INCHES. DIMENSIONS IN PARENTHESES INDICATE TYPICAL CONDITIONS. DIMENSIONS IN FEET SHALL PRECEDE DIMENSIONS IN INCHES. DIMENSIONS SHALL BE TO FACE UNLESS OTHERWISE NOTED.

ARCHITECT
 CLIENT
 OWNER
 ADDRESS
 PROJECT NAME
 CITY, STATE, ZIP
 DRAWING TITLE
 BUILDING ELEVATIONS

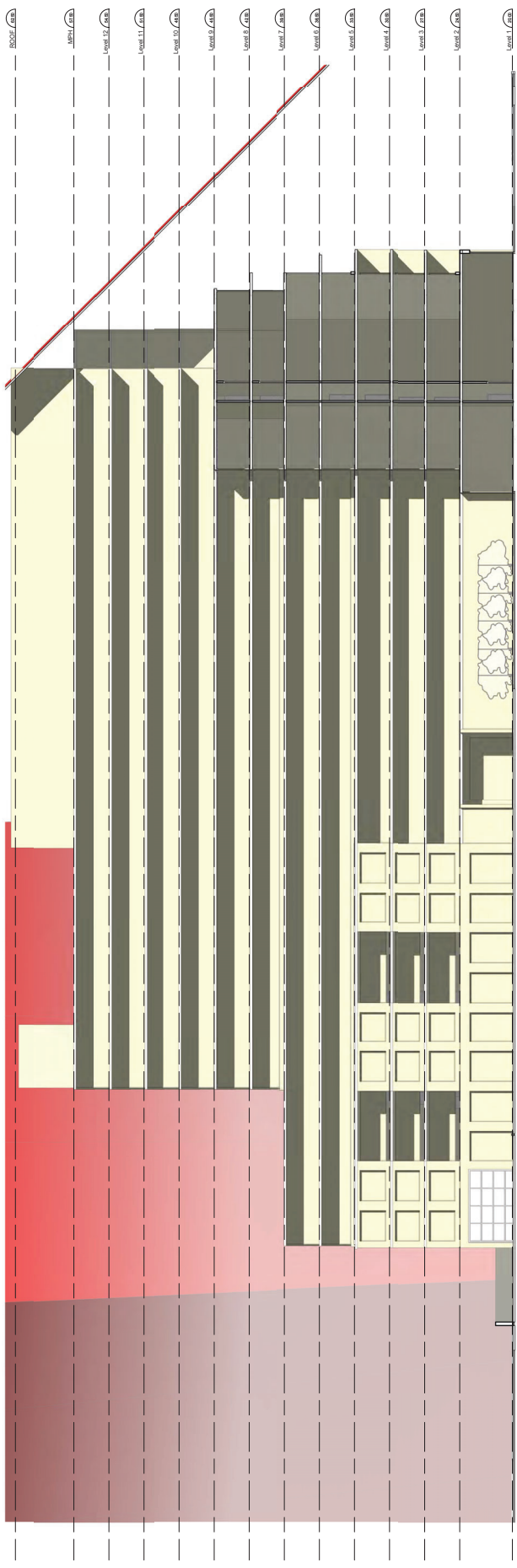
REVISIONS	DATE
2023.05.15	
2023.05.15	

NO.	DATE	ISSUED
1	11/15/2023	REVISED

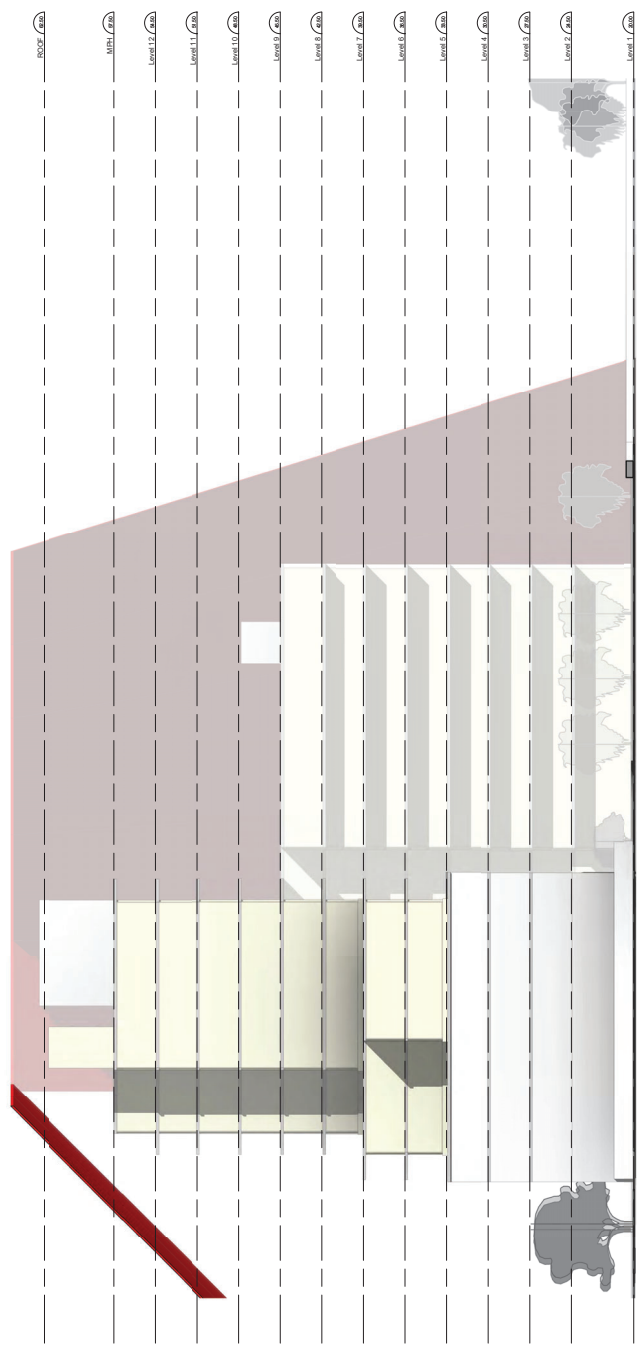
THIS DOCUMENT IS THE PROPERTY OF ONE SPACE ARCHITECTURE INC. IT IS TO BE USED ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREIN. ANY REUSE OR MODIFICATION OF THIS DOCUMENT WITHOUT THE WRITTEN CONSENT OF ONE SPACE ARCHITECTURE INC. IS STRICTLY PROHIBITED. THE USER OF THIS DOCUMENT AGREES TO HOLD ONE SPACE ARCHITECTURE INC. HARMLESS FROM AND AGAINST ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES, INCLUDING REASONABLE ATTORNEY'S FEES, ARISING OUT OF OR RESULTING FROM THE USE OF THIS DOCUMENT.

Architect/Engineer
 CLIENT: Owner
 ADDRESS: 1000 West 1st Street
 City: 97204
 Building Elevations

DATE: 11/15/2023
 DRAWN BY: J. HARRIS



1 West Elevation
1:125



2 North Elevation
1:125

Appendix B

Sample STAMSON Calculation

Filename: grango.te Time Period: Day/Night 16/8 hours
 Description: West Facade

Rail data, segment # 1: G0 Line (day/night)

Train Type	! Trains !	! Speed ! (km/h)	!# loc !/Train!	!# Cars !/Train!	Eng type	!Cont !weld
1. Passenger	! 123.0/26.0	! 150.0	! 1.0	! 12.0	!Diesel!	! Yes
2. Freight	! 16.0/5.0	! 105.0	! 4.0	!140.0	!Diesel!	! Yes
3. Passenger 2	! 77.0/10.0	! 150.0	! 2.0	! 12.0	!Diesel!	! Yes
4. Via	! 10.0/0.0	! 80.0	! 1.0	! 5.0	!Diesel!	! Yes

Data for Segment # 1: G0 Line (day/night)

 Angle1 Angle2 : -62.00 deg 38.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 78.02 / 78.02 m
 Receiver height : 36.00 / 30.00 m
 Topography : 3 (Elevated; no barrier)
 No Whistle
 Elevation : 7.00 m
 Reference angle : 0.00

Train # 1: Passenger, Segment # 1: G0 Line (day)

 LOCOMOTIVE (0.00 + 68.32 + 0.00) = 68.32 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-62	38	0.00	78.04	-7.16	-2.55	0.00	0.00	0.00	68.32

WHEEL (0.00 + 61.35 + 0.00) = 61.35 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-62	38	0.00	71.06	-7.16	-2.55	0.00	0.00	0.00	61.35

Segment Leq : 69.12 dBA

Train # 2: Freight, Segment # 1: G0 Line (day)

 LOCOMOTIVE (0.00 + 66.84 + 0.00) = 66.84 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-62	38	0.00	76.56	-7.16	-2.55	0.00	0.00	0.00	66.84

WHEEL (0.00 + 60.50 + 0.00) = 60.50 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
--------	--------	-------	--------	-------	-------	-------	-------	-------	--------

```
-----
-62    38    0.00  70.22  -7.16  -2.55   0.00   0.00   0.00  60.50
-----
```

Segment Leq : 67.75 dBA

Train # 3: Passenger 2, Segment # 1: GO Line (day)

LOCOMOTIVE (0.00 + 68.40 + 0.00) = 68.40 dBA

```
-----
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-----
-62    38    0.00  78.11  -7.16  -2.55   0.00   0.00   0.00  68.40
-----
```

WHEEL (0.00 + 59.64 + 0.00) = 59.64 dBA

```
-----
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-----
-62    38    0.00  69.35  -7.16  -2.55   0.00   0.00   0.00  59.64
-----
```

Segment Leq : 68.94 dBA

Train # 4: Via, Segment # 1: GO Line (day)

LOCOMOTIVE (0.00 + 52.69 + 0.00) = 52.69 dBA

```
-----
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-----
-62    38    0.00  62.40  -7.16  -2.55   0.00   0.00   0.00  52.69
-----
```

WHEEL (0.00 + 42.81 + 0.00) = 42.81 dBA

```
-----
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-----
-62    38    0.00  52.52  -7.16  -2.55   0.00   0.00   0.00  42.81
-----
```

Segment Leq : 53.11 dBA

Total Leq All Segments: 73.46 dBA

Train # 1: Passenger, Segment # 1: GO Line (night)

LOCOMOTIVE (0.00 + 64.58 + 0.00) = 64.58 dBA

```
-----
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-----
-62    38    0.00  74.30  -7.16  -2.55   0.00   0.00   0.00  64.58
-----
```

WHEEL (0.00 + 57.61 + 0.00) = 57.61 dBA

```
-----
Angle1 Angle2  Alpha RefLeq  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-----
-62    38    0.00  67.33  -7.16  -2.55   0.00   0.00   0.00  57.61
-----
```

Segment Leq : 65.38 dBA

Train # 2: Freight, Segment # 1: GO Line (night)

LOCOMOTIVE (0.00 + 64.80 + 0.00) = 64.80 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-62	38	0.00	74.52	-7.16	-2.55	0.00	0.00	0.00	64.80

WHEEL (0.00 + 58.46 + 0.00) = 58.46 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-62	38	0.00	68.18	-7.16	-2.55	0.00	0.00	0.00	58.46

Segment Leq : 65.71 dBA

Train # 3: Passenger 2, Segment # 1: GO Line (night)

LOCOMOTIVE (0.00 + 62.54 + 0.00) = 62.54 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-62	38	0.00	72.26	-7.16	-2.55	0.00	0.00	0.00	62.54

WHEEL (0.00 + 53.78 + 0.00) = 53.78 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-62	38	0.00	63.50	-7.16	-2.55	0.00	0.00	0.00	53.78

Segment Leq : 63.08 dBA

Train # 4: Via, Segment # 1: GO Line (night)

LOCOMOTIVE (0.00 + -9.71 + 0.00) = 0.00 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-62	38	0.00	0.00	-7.16	-2.55	0.00	0.00	0.00	-9.71

WHEEL (0.00 + -9.71 + 0.00) = 0.00 dBA

Angle1	Angle2	Alpha	RefLeq	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-62	38	0.00	0.00	-7.16	-2.55	0.00	0.00	0.00	-9.71

Segment Leq : 0.00 dBA

Total Leq All Segments: 69.64 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 73.46
(NIGHT): 69.64

Filename: granroad.te Time Period: Day/Night 16/8 hours
Description: East Facade POW

Road data, segment # 1: Whites (day/night)

Car traffic volume : 29821/3313 veh/TimePeriod
Medium truck volume : 1325/147 veh/TimePeriod
Heavy truck volume : 1988/221 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Whites (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 22.50 / 22.50 m
Receiver height : 12.00 / 12.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: 401 (day/night)

Car traffic volume : 216846/80203 veh/TimePeriod
Medium truck volume : 12462/4609 veh/TimePeriod
Heavy truck volume : 19940/7375 veh/TimePeriod
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: 401 (day/night)

Angle1 Angle2 : -20.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 436.83 / 436.83 m
Receiver height : 12.00 / 12.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 3: Bayly (day/night)

Car traffic volume : 20250/2250 veh/TimePeriod
Medium truck volume : 900/100 veh/TimePeriod
Heavy truck volume : 1350/150 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 3: Bayly (day/night)


```

-----
Angle1   Angle2       : -21.00 deg   0.00 deg
Wood depth      :          0   (No woods.)
No of house rows :          0 / 0
Surface         :          1   (Absorptive ground surface)
Receiver source distance : 106.90 / 106.90 m
Receiver height  :  12.00 / 12.00 m
Topography      :          1   (Flat/gentle slope; no barrier)
Reference angle  :          0.00

```

Road data, segment # 4: Oklahoma (day/night)

```

-----
Car traffic volume : 6762/588   veh/TimePeriod
Medium truck volume : 183/16    veh/TimePeriod
Heavy truck volume  : 381/33    veh/TimePeriod
Posted speed limit  : 40 km/h
Road gradient       : 0 %
Road pavement       : 1 (Typical asphalt or concrete)

```

Data for Segment # 4: Oklahoma (day/night)

```

-----
Angle1   Angle2       : -65.00 deg   0.00 deg
Wood depth      :          0   (No woods.)
No of house rows :          0 / 0
Surface         :          1   (Absorptive ground surface)
Receiver source distance : 96.20 / 96.20 m
Receiver height  :  12.00 / 12.00 m
Topography      :          1   (Flat/gentle slope; no barrier)
Reference angle  :          0.00

```

Result summary (day)

	! source !	Road !	Total !
	! height !	Leq !	Leq !
	! (m) !	(dBA) !	(dBA) !
1.Whites	! 1.57 !	70.67 !	70.67
2.401	! 1.68 !	58.59 !	58.59
3.Bayly	! 1.57 !	51.40 !	51.40
4.Oklahoma	! 1.51 !	47.92 !	47.92
Total			71.00 dBA

Result summary (night)

	! source !	Road !	Total !
	! height !	Leq !	Leq !
	! (m) !	(dBA) !	(dBA) !
1.Whites	! 1.57 !	64.14 !	64.14
2.401	! 1.68 !	57.28 !	57.28
3.Bayly	! 1.57 !	44.87 !	44.87
4.Oklahoma	! 1.51 !	40.32 !	40.32
Total			65.01 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 71.00

(NIGHT): 65.01

Appendix C

Road and Rail Traffic Data

Train Schedule:

Toronto - Kingston - Ottawa

- Locations in bold indicate a possible connection.
- Travel between Union Station and Pearson Airport on UP Express trains in 25 minutes, with departures every 15 minutes.
- No local service between Guildwood and Toronto.
- No local service between Fallowfield and Ottawa
- No local service between Toronto and Guildwood
- Schedules are valid all year round

# Train		50	52	40	42	44	46	54	48
Business class		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Baggage check-in		No	No	No	No	No	No	No	No
Dates		All year round	All year round	All year round	All year round	All year round	All year round	All year round	All year round
Days		Day 1 MTWTFSS	Day 1 MTWTFSS	Day 1 MTWTFSS	Day 1 MTWTFSS	Day 1 MTWTFSS	Day 1 MTWTFSS	Day 1 MTWTFSS	Day 1 MTWTFSS
Toronto, ON Shuttle service runs between the station and the airport.	Departure	06:47 Eastern Time	08:32 Eastern Time	10:32 Eastern Time	12:17 Eastern Time	14:17 Eastern Time	15:32 Eastern Time	17:32 Eastern Time	18:32 Eastern Time
Guildwood, ON	Arrival	07:04	-	-	-	-	-	-	-
	Departure	07:07	08:52	10:52	12:37	-	15:52	17:52	18:50
Oshawa, ON	Arrival	07:22	09:08	-	-	14:53	16:07	-	19:05
	Departure	07:26	09:11	-	12:55	14:56	16:10	18:08	19:08
Port Hope, ON	Departure	-	-	-	13:20	-	-	18:34	19:35
Cobourg, ON	Arrival	07:58	-	-	-	-	-	-	19:42
	Departure	08:01	09:43	-	13:29	-	16:43	18:42	19:45
Trenton Junction, ON	Departure	-	-	-	13:53	-	-	19:09	20:11
Belleville, ON	Arrival	08:33	-	-	-	-	-	-	20:25
	Departure	08:36	10:20	12:09	14:07	-	-	19:24	20:28
Napanee, ON	Arrival	-	-	-	-	-	-	-	20:45
	Departure	-	-	-	14:26	-	-	19:44	21:46
Kingston, ON	Arrival	09:14	10:57	12:46	-	16:34	17:52	20:03	21:05

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# Train		50	52	40	42	44	46	54	48
Smiths Falls, ON	Departure	10:46	12:25	-	16:08	17:52	-	21:26	22:25
Fallowfield, ON Stops to disembark. Conditional stop	Arrival	11:16	13:04	-	-	18:22	-	21:50	-
	Departure	11:19	13:08	14:32	16:40	18:26	19:52	21:53	22:52
Ottawa, ON OC Transpo offers frequent bus service from the Ottawa train station to downtown Ottawa. For Further information call (613) 560-5000.	Arrival	11:36 Eastern Time	13:25 Eastern Time	14:54 Eastern Time	16:57 Eastern Time	18:43 Eastern Time	20:14 Eastern Time	22:11 Eastern Time	23:08 Eastern Time

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Andrew DeFaria

From: Rail Data Requests <RailDataRequests@metrolinx.com>
Sent: Thursday, September 15, 2022 1:52 PM
To: Andrew DeFaria
Subject: RE: Traffic Data Request - Pickering GO

Hi Andrew,

Further to your request dated September 15, 2022, the subject lands (720 Granite Ct, Toronto) are located within 300 metres of the Metrolinx Kingston Subdivision (which carries Lakeshore East GO rail service).

It's anticipated that GO rail service on this Subdivision will be comprised of diesel and electric trains. The GO rail fleet combination on this Subdivision will consist of up to 2 locomotives and 12 passenger cars. The typical GO rail weekday train volume forecast near the subject lands, including both revenue and equipment trips is in the order of 236 trains. The planned detailed trip breakdown is listed below:

	1 Diesel Locomotive	2 Diesel Locomotives	1 Electric Locomotive	2 Electric Locomotives		1 Diesel Locomotive	2 Diesel Locomotives	1 Electric Locomotive	2 Electric Locomotives
Day (0700-2300)	35	35	88	42	Night (2300-0700)	8	2	18	8

The current track design speed near the subject lands is 100 mph (161 km/h).

There are no *anti-whistling by-laws* in affect near the subject lands.

With respect to future electrified rail service, Metrolinx is committed to finding the most sustainable solution for electrifying the GO rail network and we are currently working towards the next phase.

Options have been studied as part of the Transit Project Assessment Process (TPAP) for the GO Expansion program, currently in the procurement phase. The successful proponent team will be responsible for selecting and delivering the right trains and infrastructure to unlock the benefits of GO Expansion. The contract is in a multi-year procurement process and teams have submitted their bids to Infrastructure Ontario and Metrolinx for evaluation and contract award. GO Expansion construction will get underway in late 2022 or 2023.

However, we can advise that train noise is dominated by the powertrain at lower speeds and by the wheel-track interaction at higher speeds. Hence, the noise level and spectrum of electric trains is expected to be very similar at higher speeds, if not identical, to those of equivalent diesel trains.

Given the above considerations, it would be prudent at this time, for the purposes of acoustical analyses for development in proximity to Metrolinx corridors, to assume that the acoustical characteristics of electrified and diesel trains are equivalent. In light of the aforementioned information, acoustical models should employ diesel train parameters as the basis for analyses. We anticipate that additional information regarding specific operational parameters for electrified trains will become available in the future once the proponent team is selected.

Operational information is subject to change and may be influenced by, among other factors, service planning priorities, operational considerations, funding availability and passenger demand.

It should be noted that this information only pertains to Metrolinx rail service. It would be prudent to contact other rail operators in the area directly for rail traffic information pertaining to non-Metrolinx rail service.

I trust this information is useful. Should you have any questions or concerns, please do not hesitate to contact me.

Regards,
Tara

Tara Kamal Ahmadi

Junior Analyst

Third Party Projects Review, Capital Projects Group

Metrolinx | 20 Bay Street | Suite 600 | Toronto | Ontario | M5J 2W3



From: Andrew DeFaria <Andrew.DeFaria@ghd.com>
Sent: September 15, 2022 11:00 AM
To: Rail Data Requests <RailDataRequests@metrolinx.com>; Brandon Gaffoor <Brandon.Gaffoor@metrolinx.com>
Subject: Traffic Data Request - Pickering GO

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Hi Brandon,

GHD is working on a noise study for a proposed development located near the intersection of Whites Road South and Oklahoma Drive, Pickering. As part of this study, we need to evaluate rail noise impacts from the GO trains operating on the adjacent GO Transit - Kingston Subdivision Rail Line. Could you please provide the rail traffic data for this section of the rail line?

For ease of reference, please use the following link which indicates the approximate location of the site:
https://www.google.com/maps/place/720+Granite+Ct,+Pickering,+ON+L1W+3W7/data=!4m2!3m1!1s0x89d4d9526f2c1c4d:0x898cc768b2d71c46?sa=X&ved=2ahUKEWjk-LWP_Jb6AhWDplkEHSeoDiUQ8gF6BAgPEAE

Thanks so much,

Andrew DeFaria
Acoustical Engineer in Training

GHD

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455 Phillip Street Unit #100 Waterloo Ontario N2L 3X2 Canada

D +1 519 340 4242 E andrew.defaria@ghd.com

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Train Count Data

TRANSMITTAL

To: GHD
Destinataire : 455 Phillip Street Unit
#100 Waterloo ON
N2L 3X2

Project : KNG - 314.95 – Granite Court, Pickering ON

Att'n: Andrew DeFaria

Routing: Andrew.DeFaria@ghd.com

From: Umair Naveed
Expéditeur :

Date: 2022/10/06

Cc: Adjacent Development
CN via e-mail

Urgent For Your Use For Review For Your Information Confidential

**Re: Train Traffic Data – CN Kingston Subdivision near Granite Court
in Pickering ON**

Please find attached the requested Train Traffic Data; this data does not reflect GO Metrolinx Traffic. The application fee in the amount of **\$500.00** +HST will be invoiced.

Should you have any questions, please do not hesitate to contact the undersigned at permits.gld@cn.ca.

Sincerely,

Umair Naveed

Umair Naveed
Officer Public Works
Permits.gld@cn.ca

Date: 2022/10/06

Project Number KNG - 314.95 – Granite Court, Pickering ON

Dear Andrew:

Re: Train Traffic Data – CN Kingston Subdivision near Granite Court in Pickering ON

The following is provided in response to Andrew’s 2022/09/15 request for information regarding rail traffic in the vicinity of Granite Court in Pickering at approximately Mile 314.95 on CN’s Kingston Subdivision.

Typical daily traffic volumes are recorded below. However, traffic volumes may fluctuate due to overall economic conditions, varying traffic demands, weather conditions, track maintenance programs, statutory holidays and traffic detours that when required may be heavy although temporary. For the purpose of noise and vibration reports, train volumes must be escalated by 2.5% per annum for a 10-year period.

Typical daily traffic volumes at this site location are as follows:

***Maximum train speed is given in Miles per Hour**

	0700-2300			
Type of Train	Volumes	Max.Consist	Max. Speed	Max. Power
Freight	12	140	65	4
Way Freight	0	25	65	4
Passenger	34	10	95	2

	2300-0700			
Type of Train	Volumes	Max.Consist	Max. Speed	Max. Power
Freight	4	140	65	4
Way Freight	4	25	65	4
Passenger	1	10	95	2

The volumes recorded reflect westbound and eastbound freight and passenger operations on CN’s Kingston Subdivision.

Except where anti-whistling bylaws are in effect, engine-warning whistles and bells are normally sounded at all at-grade crossings. There is one at-grade crossing in the immediate vicinity of the study area at Mile 315.95 Rodd Avenue. Anti-whistling bylaws are in effect at this crossing. Please note that engine warning whistles may be sounded in cases of emergency, as a safety and or warning precaution at station locations and pedestrian crossings and occasionally for operating requirements.

With respect to equipment restrictions, the gross weight of the heaviest permissible car is 286,000 lbs.

The double mainline track is considered to be continuously welded rail throughout the study area. There are no switches in the immediate vicinity of the study area.

The Canadian National Railway continues to be strongly opposed to locating developments near railway facilities and rights-of-way due to potential safety and environmental conflicts. Development adjacent to the Railway Right-of-Way is not appropriate without sound impact mitigation measures to reduce the incompatibility. For

confirmation of the applicable rail noise, vibration and safety standards, Adjacent Development, Canadian National Railway Properties at Proximity@cn.ca should be contacted directly.

I trust the above information will satisfy your current request.

Sincerely,

Umair Naveed

Umair Naveed
Officer Public Works
Permits.gld@cn.ca

Ontario Traffic, Inc.
 17705 Leslie St., Unit 6
 Newmarket, Ontario L3Y 3E3
 Tel: (905) 898-7711 Fax: (905) 898-3664

Site Code: 22
 Station ID: D41
 Granite Court from Whites Rd (RR 38) to
 Ironstone Manor
 Date Start: 28-Nov-17
 Date End: 30-Nov-17
 Date Start: 28-Nov-17

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl		6 Axle		>6 Axl		Total
											Multi	Multi	Multi	Multi			
11/28/17	1	65	2	0	1	0	0	1	0	0	0	0	0	0	0	0	70
01:00	0	19	1	0	0	0	0	1	0	0	0	0	0	0	0	0	21
02:00	0	14	0	0	0	1	0	0	0	0	0	0	0	0	0	0	15
03:00	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	9
04:00	0	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	7
05:00	0	21	2	0	1	1	0	1	0	0	0	0	0	0	0	0	26
06:00	0	66	13	2	1	1	0	0	0	0	2	0	0	0	1	1	86
07:00	1	136	14	2	3	2	0	7	0	0	12	1	1	2	2	2	180
08:00	4	161	31	1	4	9	1	12	5	1	13	1	3	1	3	3	246
09:00	1	136	27	0	3	3	1	7	1	3	5	0	4	0	4	4	191
10:00	0	164	32	0	2	1	0	5	5	2	6	0	0	0	1	1	218
11:00	0	182	31	1	4	3	2	2	1	0	4	0	0	0	1	1	231
12 PM	1	254	46	1	5	6	0	9	3	1	8	2	2	2	2	2	338
13:00	2	192	30	0	3	3	0	9	2	2	8	0	1	0	1	1	252
14:00	3	186	20	0	2	5	0	5	3	3	5	1	3	1	3	3	236
15:00	2	265	39	0	5	1	0	9	2	0	10	0	1	0	1	1	334
16:00	2	403	36	1	5	0	0	10	0	0	26	0	0	0	4	4	487
17:00	0	353	36	2	3	1	1	18	1	3	15	0	7	0	7	7	440
18:00	1	233	23	2	1	1	0	1	1	0	6	1	1	1	1	1	271
19:00	0	159	15	2	1	0	1	3	1	0	3	0	0	0	0	0	185
20:00	1	105	7	0	1	1	0	3	0	0	2	0	0	0	0	0	120
21:00	2	64	1	0	0	0	0	1	0	0	0	0	0	0	1	1	69
22:00	0	43	5	0	1	0	0	0	0	0	0	0	0	0	0	0	49
23:00	1	56	5	0	0	0	0	0	0	0	0	0	0	0	0	0	62
Day Total	22	3290	419	14	46	39	6	104	25	15	125	6	32	6	32	32	4143
Percent	0.5%	79.4%	10.1%	0.3%	1.1%	0.9%	0.1%	2.5%	0.6%	0.4%	3.0%	0.1%	0.8%	0.1%	0.8%	0.8%	
AM Peak	08:00	11:00	10:00	06:00	08:00	08:00	11:00	08:00	08:00	09:00	08:00	07:00	09:00	07:00	09:00	09:00	08:00
Vol.	4	182	32	2	4	9	2	12	5	3	13	1	4	1	4	4	246
PM Peak	14:00	16:00	12:00	17:00	12:00	12:00	17:00	17:00	12:00	14:00	16:00	12:00	17:00	12:00	17:00	17:00	16:00
Vol.	3	403	46	2	5	6	1	18	3	3	26	2	7	2	7	7	487

Ontario Traffic, Inc.
 17705 Leslie St., Unit 6
 Newmarket, Ontario L3Y 3E3
 Tel: (905) 898-7711 Fax: (905) 898-3664

Site Code: 22
 Station ID: D41
 Granite Court from Whites Rd (RR 38) to
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 Date Start: 28-Nov-17
 Date End: 30-Nov-17
 Date Start: 28-Nov-17

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle		>6 Axle		Total
											Multi	Multi	Multi	Multi	
11/29/17	0	48	3	0	0	0	0	0	0	0	0	0	0	0	51
01:00	0	25	0	0	2	0	0	0	0	0	0	0	0	0	27
02:00	0	7	0	0	0	0	0	0	0	0	0	0	0	0	7
03:00	0	12	3	0	0	0	0	0	0	0	0	0	0	0	15
04:00	0	8	4	0	0	0	0	0	0	0	0	0	0	0	12
05:00	0	25	5	0	2	1	0	0	0	0	0	0	0	0	33
06:00	2	66	11	2	0	2	0	1	0	0	2	0	0	0	86
07:00	2	150	21	2	1	0	0	15	0	0	9	0	2	2	202
08:00	1	178	31	1	4	3	0	11	0	0	7	2	3	3	241
09:00	1	143	23	0	4	4	0	7	1	0	2	1	1	1	187
10:00	0	135	32	0	1	3	0	7	3	2	5	0	1	1	189
11:00	2	189	41	1	3	5	0	9	2	1	8	0	1	1	262
12 PM	0	258	37	0	4	5	0	8	5	3	12	1	5	5	338
13:00	0	175	32	0	4	3	0	8	2	1	4	1	2	2	232
14:00	1	171	26	0	2	3	0	6	3	1	7	0	2	2	222
15:00	1	264	45	0	4	1	0	13	3	0	8	0	4	4	343
16:00	2	407	35	3	3	2	0	23	2	1	16	0	3	3	497
17:00	0	317	36	0	2	0	1	16	3	1	8	0	15	15	399
18:00	0	228	18	2	4	1	0	6	1	0	5	0	0	0	265
19:00	0	183	10	1	0	0	0	3	0	0	3	0	0	0	200
20:00	0	110	9	0	1	0	0	3	0	0	2	0	0	0	125
21:00	0	70	3	0	0	0	0	1	0	0	0	0	0	0	74
22:00	0	54	3	0	1	0	0	0	0	0	0	0	0	0	58
23:00	1	47	4	0	0	0	0	1	1	0	0	0	0	0	54
Day Total	13	3270	432	12	42	33	1	138	26	10	98	5	39	39	4119
Percent	0.3%	79.4%	10.5%	0.3%	1.0%	0.8%	0.0%	3.4%	0.6%	0.2%	2.4%	0.1%	0.9%	0.9%	
AM Peak	06:00	11:00	11:00	06:00	08:00	11:00		07:00	10:00	10:00	07:00	08:00	08:00	08:00	11:00
Vol.	2	189	41	2	4	5		15	3	2	9	2	3	3	262
PM Peak	16:00	16:00	15:00	16:00	12:00	12:00	17:00	16:00	12:00	12:00	16:00	12:00	17:00	17:00	16:00
Vol.	2	407	45	3	4	5	1	23	5	3	16	1	15	15	497

Ontario Traffic, Inc.
 17705 Leslie St., Unit 6
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Site Code: 22
 Station ID: D41
 Granite Court from Whites Rd (RR 38) to
 Ironstone Manor
 Date Start: 28-Nov-17
 Date End: 30-Nov-17
 Date Start: 28-Nov-17

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl		>6 Axl		6 Axle		>6 Axl		Total
								Double	Multi	Double	Multi	Multi	Multi	Multi	Multi	
11/30/17	0	43	1	0	0	0	0	0	0	0	0	0	0	0	0	44
01:00	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	30
02:00	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	8
03:00	0	14	4	0	1	0	0	0	0	0	0	0	0	0	0	19
04:00	0	5	3	0	0	1	0	0	0	0	0	0	0	0	0	9
05:00	0	19	2	0	1	0	0	0	0	0	0	0	0	0	0	22
06:00	0	73	11	2	0	2	0	4	0	0	0	0	0	0	1	96
07:00	3	131	17	2	3	2	0	9	0	1	10	0	0	6	184	
08:00	1	167	39	1	5	5	0	10	0	2	9	2	0	0	241	
09:00	0	148	20	0	3	7	0	6	1	3	5	0	0	0	193	
10:00	0	167	31	0	3	2	0	9	2	1	4	0	0	0	219	
11:00	2	170	37	0	5	3	0	7	3	0	6	1	0	0	234	
12 PM	2	245	39	0	7	1	0	11	3	3	12	0	4	0	327	
13:00	1	199	32	0	4	5	1	3	1	4	10	0	2	2	262	
14:00	0	179	33	0	5	4	0	7	5	2	9	0	3	0	247	
15:00	3	249	37	0	7	2	0	9	0	0	11	0	2	2	320	
16:00	1	379	42	2	4	2	0	19	2	0	23	0	5	0	479	
17:00	2	356	36	0	2	0	0	18	2	0	14	0	0	8	438	
18:00	1	263	17	1	5	0	0	4	0	0	2	0	0	0	293	
19:00	0	172	14	0	3	0	0	1	0	0	3	1	0	0	194	
20:00	1	96	12	0	0	1	0	2	0	0	0	0	0	0	112	
21:00	0	67	12	0	1	0	0	0	0	0	1	0	0	0	81	
22:00	0	60	3	0	1	0	0	0	0	0	0	0	0	0	64	
23:00	1	56	6	0	0	1	0	0	0	0	0	0	0	0	64	
Day Total	18	3296	448	8	60	38	1	119	19	16	122	4	31	4	4180	
Percent	0.4%	78.9%	10.7%	0.2%	1.4%	0.9%	0.0%	2.8%	0.5%	0.4%	2.9%	0.1%	0.7%	0.1%	0.7%	
AM Peak Vol.	07:00	11:00	08:00	06:00	08:00	09:00	09:00	08:00	11:00	09:00	07:00	08:00	07:00	08:00	08:00	
	3	170	39	2	5	7	1	10	3	3	10	2	6	2	241	
PM Peak Vol.	15:00	16:00	16:00	16:00	12:00	13:00	13:00	16:00	14:00	13:00	16:00	19:00	17:00	17:00	16:00	
	3	379	42	2	7	5	1	19	5	4	23	1	8	1	479	
Grand Total	53	9856	1299	34	148	110	8	361	70	41	345	15	102	15	12442	
Percent	0.4%	79.2%	10.4%	0.3%	1.2%	0.9%	0.1%	2.9%	0.6%	0.3%	2.8%	0.1%	0.8%	0.1%	0.8%	

Ontario Traffic, Inc.
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Site Code: 22
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 Granite Court from Whites Rd (RR 38) to
 Ironstone Manor
 Date Start: 28-Nov-17
 Date End: 30-Nov-17
 Date Start: 28-Nov-17

WB	Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl		6 Axle		>6 Axl		Total
												Multi	Multi	Multi	Multi			
	11/28/17	0	12	5	0	0	0	0	0	0	0	0	0	0	0	0	0	17
	01:00	0	9	2	0	1	0	0	0	0	0	0	0	0	0	0	0	12
	02:00	0	6	0	0	0	1	0	0	0	0	0	0	0	0	0	0	7
	03:00	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	8
	04:00	0	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	9
	05:00	0	36	10	1	0	1	0	0	0	0	0	0	0	0	0	0	48
	06:00	0	143	24	2	1	5	0	0	0	0	2	2	0	0	0	0	177
	07:00	1	293	53	2	2	6	0	13	2	2	10	10	1	2	2	2	387
	08:00	2	367	60	2	4	5	0	12	4	1	17	4	4	6	6	6	484
	09:00	0	226	34	0	0	4	0	3	4	2	4	0	0	2	2	0	279
	10:00	0	158	29	0	4	0	1	3	4	1	7	2	0	0	0	0	209
	11:00	0	152	37	0	6	5	1	1	2	0	4	0	0	0	0	0	208
	12 PM	3	171	41	0	6	8	1	3	4	1	11	0	2	2	2	0	251
	13:00	4	182	43	0	5	5	0	6	3	2	10	0	4	4	0	0	264
	14:00	3	219	36	1	5	1	0	6	1	0	11	2	2	3	3	0	288
	15:00	0	194	37	2	5	0	0	9	4	0	11	0	0	2	0	0	264
	16:00	2	179	37	1	2	1	0	9	6	0	16	1	7	7	1	0	261
	17:00	2	142	26	1	0	3	1	7	1	0	15	0	4	4	0	0	202
	18:00	0	169	22	2	1	0	0	2	0	1	14	0	1	1	0	0	212
	19:00	0	123	22	2	2	1	0	2	1	0	6	0	0	0	0	0	159
	20:00	0	97	27	0	0	0	0	0	0	0	1	0	0	0	0	0	125
	21:00	1	96	8	0	2	0	0	0	1	0	1	0	0	0	0	0	109
	22:00	0	48	6	0	0	0	0	0	0	0	0	0	0	0	0	0	54
	23:00	1	31	9	0	0	0	0	0	0	0	0	0	0	0	0	0	41
Day	Total	19	3067	571	16	46	46	4	76	37	10	140	10	33	10	33	33	4075
Percent		0.5%	75.3%	14.0%	0.4%	1.1%	1.1%	0.1%	1.9%	0.9%	0.2%	3.4%	0.2%	0.8%	0.2%	0.8%	0.8%	
AM Peak	08:00	2	367	60	2	6	6	1	13	4	2	17	4	6	4	6	6	484
PM Peak	13:00	4	219	43	2	6	8	1	9	6	2	16	2	7	2	7	7	288

Ontario Traffic, Inc.
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Site Code: 22
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 Granite Court from Whites Rd (RR 38) to
 Ironstone Manor
 Date Start: 28-Nov-17
 Date End: 30-Nov-17
 Date Start: 28-Nov-17

WB	Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl		>6 Axl		6 Axle		>6 Axl		Total
									Double	Multi	Double	Multi	Multi	Multi			
	11/29/17	0	16	6	0	1	0	0	0	0	0	0	0	0	0	0	23
	01:00	0	11	2	0	1	0	0	0	0	0	0	0	0	0	0	14
	02:00	0	6	1	0	0	0	0	0	0	0	0	0	0	0	0	7
	03:00	0	3	2	0	0	0	0	0	0	0	0	0	0	0	0	5
	04:00	0	10	3	0	0	0	0	0	0	0	0	0	0	0	0	13
	05:00	0	44	10	0	1	0	0	1	0	0	0	0	0	0	0	56
	06:00	1	140	32	2	0	3	0	1	0	0	2	0	0	0	0	181
	07:00	0	307	51	1	2	1	0	11	2	2	8	2	2	4	4	391
	08:00	0	348	50	1	2	3	0	8	4	1	16	1	1	9	9	443
	09:00	1	224	36	2	5	8	0	8	3	2	11	1	1	2	2	303
	10:00	3	162	36	0	3	5	0	1	2	1	8	0	0	1	1	222
	11:00	1	133	30	0	7	5	0	4	5	2	8	1	1	3	3	199
	12 PM	0	163	42	1	6	4	0	4	4	3	13	1	1	5	5	246
	13:00	3	210	46	1	2	6	0	4	2	1	10	2	2	6	6	293
	14:00	0	210	44	1	6	2	0	2	4	2	11	1	1	1	1	284
	15:00	0	209	36	1	4	1	0	3	6	0	18	0	0	6	6	284
	16:00	1	154	29	1	5	1	1	1	3	0	18	1	1	8	8	223
	17:00	1	149	26	1	1	1	0	6	4	0	13	1	1	6	6	209
	18:00	0	139	22	2	1	0	0	3	1	0	6	0	0	1	1	175
	19:00	1	134	14	1	1	0	0	0	1	0	8	0	0	0	0	160
	20:00	0	112	14	0	1	0	0	2	1	0	4	0	0	1	1	135
	21:00	0	80	16	0	0	0	0	0	0	0	1	0	0	0	0	97
	22:00	0	77	7	0	2	0	0	0	0	0	1	0	0	0	0	87
	23:00	0	34	7	0	0	0	0	0	0	0	0	0	1	2	2	44
Day	Total	12	3075	562	15	51	40	1	59	42	14	156	12	55	55	55	4094
Percent		0.3%	75.1%	13.7%	0.4%	1.2%	1.0%	0.0%	1.4%	1.0%	0.3%	3.8%	0.3%	1.3%	1.3%	1.3%	
AM Peak	10:00	3	348	51	2	7	8	1	11	5	2	16	2	9	9	9	443
PM Peak	13:00	3	210	46	2	6	6	1	6	6	3	18	2	8	8	8	293

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Site Code: 22
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 Granite Court from Whites Rd (RR 38) to
 Ironstone Manor
 Date Start: 28-Nov-17
 Date End: 30-Nov-17
 Date Start: 28-Nov-17

WB	Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl		>6 Axl		6 Axle		>6 Axl		Total
									Double	Multi	Double	Multi	Multi	Multi	Multi	Multi	
	11/30/17	0	9	3	0	0	0	0	0	0	0	1	0	0	0	0	13
	01:00	0	10	4	0	0	0	0	0	0	0	0	0	0	0	0	14
	02:00	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	6
	03:00	0	10	4	0	0	0	0	0	0	0	0	0	0	0	0	14
	04:00	0	12	1	0	0	1	0	0	0	0	1	0	0	0	0	15
	05:00	0	39	15	1	0	0	0	0	0	0	0	0	0	0	0	55
	06:00	0	144	34	2	0	2	0	0	0	1	1	1	1	0	0	185
	07:00	0	311	42	2	1	4	1	7	3	2	9	0	0	10	0	392
	08:00	0	329	65	1	3	4	1	4	5	1	22	2	2	4	0	441
	09:00	3	207	48	0	5	5	0	10	2	1	7	1	1	5	0	294
	10:00	1	142	38	0	5	4	0	3	4	2	3	0	0	2	0	204
	11:00	1	148	42	0	8	3	0	5	5	2	12	0	0	4	0	230
	12 PM	0	177	39	0	7	2	0	6	3	0	14	3	3	4	0	255
	13:00	3	199	50	1	6	6	0	7	3	0	6	0	0	3	0	284
	14:00	1	217	36	1	8	1	1	5	5	0	12	0	0	1	0	288
	15:00	2	213	31	2	6	1	0	9	5	0	19	2	2	2	0	292
	16:00	0	128	32	2	2	2	0	12	5	0	19	0	0	6	0	208
	17:00	0	146	25	2	1	1	0	4	5	0	16	1	1	3	0	204
	18:00	0	155	24	2	3	0	0	5	1	0	9	0	0	0	0	199
	19:00	0	140	20	2	2	1	0	4	0	0	6	0	0	1	0	176
	20:00	0	104	17	0	2	0	1	1	0	0	1	0	0	1	0	127
	21:00	0	86	11	0	1	0	0	0	0	0	1	0	0	0	0	99
	22:00	0	67	5	0	1	0	0	0	0	0	0	0	0	0	0	73
	23:00	1	35	3	0	0	1	0	0	0	0	1	0	0	0	0	41
Day Total		12	3034	589	18	61	38	4	82	47	9	159	10	46	4109		
Percent		0.3%	73.8%	14.3%	0.4%	1.5%	0.9%	0.1%	2.0%	1.1%	0.2%	3.9%	0.2%	1.1%			
AM Peak	08:00	3	329	65	2	8	5	1	10	5	2	22	2	10	08:00	07:00	08:00
PM Peak	13:00	3	217	50	2	8	6	1	12	5	1	19	3	6	15:00	16:00	15:00
Grand Total		43	9176	1722	49	158	124	9	217	126	33	455	32	134	12278		
Percent		0.4%	74.7%	14.0%	0.4%	1.3%	1.0%	0.1%	1.8%	1.0%	0.3%	3.7%	0.3%	1.1%			

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 Granite Court from Whites Rd (RR 38) to
 Ironstone Manor
 Date Start: 28-Nov-17
 Date End: 30-Nov-17
 Date Start: 28-Nov-17

EB, WB	Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl		6 Axle		>6 Axl		Total
												Multi	Multi	Multi	Multi			
	11/28/17	1	77	7	0	1	0	0	1	0	0	0	0	0	0	0	0	87
	01:00	0	28	3	0	1	0	0	1	0	0	0	0	0	0	0	0	33
	02:00	0	20	0	0	0	2	0	0	0	0	0	0	0	0	0	0	22
	03:00	0	15	2	0	0	0	0	0	0	0	0	0	0	0	0	0	17
	04:00	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	16
	05:00	0	57	12	1	1	2	0	1	0	0	0	0	0	0	0	0	74
	06:00	0	209	37	4	2	6	0	0	0	0	4	0	0	0	0	1	263
	07:00	2	429	67	4	5	8	0	20	2	2	22	2	2	2	4	4	567
	08:00	6	528	91	3	8	14	1	24	9	2	30	5	9	9	9	730	
	09:00	1	362	61	0	3	7	1	10	5	5	9	0	6	0	6	6	470
	10:00	0	322	61	0	6	1	1	8	9	3	13	2	1	2	1	1	427
	11:00	0	334	68	1	10	8	3	3	3	0	8	0	1	0	1	1	439
	12 PM	4	425	87	1	11	14	1	12	7	2	19	2	4	2	4	4	589
	13:00	6	374	73	0	8	8	0	15	5	4	18	0	5	0	5	5	516
	14:00	6	405	56	1	7	6	0	11	4	3	16	3	6	3	6	6	524
	15:00	2	459	76	2	10	1	0	18	6	0	21	0	3	0	3	3	598
	16:00	4	582	73	2	7	1	0	19	6	0	42	1	11	1	11	748	
	17:00	2	495	62	3	3	4	2	25	2	3	30	0	11	0	11	642	
	18:00	1	402	45	4	2	1	0	3	1	1	20	1	2	1	2	483	
	19:00	0	282	37	4	3	1	1	5	2	0	9	0	0	0	0	344	
	20:00	1	202	34	0	1	1	0	3	0	0	3	0	0	0	0	245	
	21:00	3	160	9	0	2	0	0	1	1	0	1	0	0	0	1	178	
	22:00	0	91	11	0	1	0	0	0	0	0	0	0	0	0	0	103	
	23:00	2	87	14	0	0	0	0	0	0	0	0	0	0	0	0	0	103
Day Total		41	6357	990	30	92	85	10	180	62	25	265	16	65	16	65	8218	
Percent		0.5%	77.4%	12.0%	0.4%	1.1%	1.0%	0.1%	2.2%	0.8%	0.3%	3.2%	0.2%	0.8%	0.2%	0.8%	0.8%	
AM Peak	08:00	6	528	91	4	10	14	3	24	9	5	30	5	9	5	9	730	
PM Peak	13:00	6	582	87	4	11	14	2	25	7	4	42	3	11	3	11	748	

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 Date Start: 28-Nov-17
 Date End: 30-Nov-17
 Date Start: 28-Nov-17

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl		>6 Axl Double	<6 Axl		6 Axle		>6 Axl		Total
								Double	Multi		Multi	Multi	Multi	Multi			
11/29/17	0	64	9	0	1	0	0	0	0	0	0	0	0	0	0	0	74
01:00	0	36	2	0	3	0	0	0	0	0	0	0	0	0	0	0	41
02:00	0	13	1	0	0	0	0	0	0	0	0	0	0	0	0	0	14
03:00	0	15	5	0	0	0	0	0	0	0	0	0	0	0	0	0	20
04:00	0	18	7	0	0	0	0	0	0	0	0	0	0	0	0	0	25
05:00	0	69	15	0	3	1	0	1	0	0	0	0	0	0	0	0	89
06:00	3	206	43	4	0	5	0	2	0	0	4	0	0	0	0	0	267
07:00	2	457	72	3	3	1	0	26	2	2	17	2	2	6	6	6	593
08:00	1	526	81	2	6	6	0	19	4	1	23	3	3	12	12	12	684
09:00	2	367	59	2	9	12	0	15	4	2	13	2	2	3	3	3	490
10:00	3	297	68	0	4	8	0	8	5	3	13	0	0	2	2	2	411
11:00	3	322	71	1	10	10	0	13	7	3	16	1	1	4	4	4	461
12 PM	0	421	79	1	10	9	0	12	9	6	25	2	2	10	10	10	584
13:00	3	385	78	1	6	9	0	12	4	2	14	3	3	8	8	8	525
14:00	1	381	70	1	8	5	0	8	7	3	18	1	1	3	3	3	506
15:00	1	473	81	1	8	2	0	16	9	0	26	0	0	10	10	10	627
16:00	3	561	64	4	8	3	1	24	5	1	34	1	1	11	11	11	720
17:00	1	466	62	1	3	1	1	22	7	1	21	1	1	21	21	21	608
18:00	0	367	40	4	5	1	0	9	2	0	11	0	0	1	1	1	440
19:00	1	317	24	2	1	0	0	3	1	0	11	0	0	0	0	0	360
20:00	0	222	23	0	2	0	0	5	1	0	6	0	0	1	1	1	260
21:00	0	150	19	0	0	0	0	1	0	0	1	0	0	0	0	0	171
22:00	0	131	10	0	3	0	0	0	0	0	1	0	0	0	0	0	145
23:00	1	81	11	0	0	0	0	1	1	0	0	0	0	1	1	1	98
Day Total	25	6345	994	27	93	73	2	197	68	24	254	17	17	94	94	94	8213
Percent	0.3%	77.3%	12.1%	0.3%	1.1%	0.9%	0.0%	2.4%	0.8%	0.3%	3.1%	0.2%	0.2%	1.1%	1.1%	1.1%	
AM Peak	06:00	08:00	08:00	06:00	11:00	09:00		07:00	11:00	10:00	08:00	08:00	08:00	08:00	08:00	08:00	08:00
Vol.	3	526	81	4	10	12		26	7	3	23	3	3	12	12	12	684
PM Peak	13:00	16:00	15:00	16:00	12:00	12:00	16:00	16:00	12:00	12:00	16:00	13:00	13:00	17:00	17:00	17:00	16:00
Vol.	3	561	81	4	10	9	1	24	9	6	34	3	3	21	21	21	720

Ontario Traffic, Inc.
 17705 Leslie St., Unit 6
 Newmarket, Ontario L3Y 3E3
 Tel: (905) 898-7711 Fax: (905) 898-3664

Site Code: 22
 Station ID: D41
 Granite Court from Whites Rd (RR 38) to
 Ironstone Manor
 Date Start: 28-Nov-17
 Date End: 30-Nov-17
 Date Start: 28-Nov-17

EB, WB	Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl		>6 Axl		6 Axle		>6 Axl		Total	
									Double	Double	Double	Multi	Multi	Multi	Multi			
	11/30/17	0	52	4	0	0	0	0	0	0	0	0	0	0	0	0	0	57
	01:00	0	40	4	0	0	0	0	0	0	0	0	0	0	0	0	0	44
	02:00	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14
	03:00	0	24	8	0	1	0	0	0	0	0	0	0	0	0	0	0	33
	04:00	0	17	4	0	0	2	0	0	0	0	1	0	0	0	0	0	24
	05:00	0	58	17	1	1	0	0	0	0	0	0	0	0	0	0	0	77
	06:00	0	217	45	4	0	4	0	4	1	0	0	0	0	0	0	0	281
	07:00	3	442	59	4	4	6	1	16	3	3	19	0	0	16	0	0	576
	08:00	1	496	104	2	8	9	1	14	5	3	31	4	4	4	0	0	682
	09:00	3	355	68	0	8	12	0	16	3	4	12	1	1	5	0	0	487
	10:00	1	309	69	0	8	6	0	12	6	3	7	0	0	2	0	0	423
	11:00	3	318	79	0	13	6	0	12	8	2	18	1	4	4	0	0	464
	12 PM	2	422	78	0	14	3	0	17	6	3	26	3	8	3	0	0	582
	13:00	4	398	82	1	10	11	1	10	4	4	16	0	0	5	0	0	546
	14:00	1	396	69	1	13	5	1	12	10	2	21	0	4	4	0	0	535
	15:00	5	462	68	2	13	3	0	18	5	0	30	2	0	4	0	0	612
	16:00	1	507	74	4	6	4	0	31	7	0	42	0	0	11	0	0	687
	17:00	2	502	61	2	3	1	0	22	7	0	30	1	1	11	0	0	642
	18:00	1	418	41	3	8	0	0	9	1	0	11	0	0	0	0	0	492
	19:00	0	312	34	2	5	1	0	5	0	0	9	1	1	1	0	0	370
	20:00	1	200	29	0	2	1	1	3	0	0	1	0	0	1	0	0	239
	21:00	0	153	23	0	2	0	0	0	0	0	2	0	0	0	0	0	180
	22:00	0	127	8	0	2	0	0	0	0	0	0	0	0	0	0	0	137
	23:00	2	91	9	0	0	2	0	0	0	0	0	0	0	0	0	0	105
Day Total		30	6330	1037	26	121	76	5	201	66	25	281	14	77	77	0	0	8289
Percent		0.4%	76.4%	12.5%	0.3%	1.5%	0.9%	0.1%	2.4%	0.8%	0.3%	3.4%	0.2%	0.9%	0.9%	0	0	
AM Peak	07:00	3	496	104	4	13	12	1	16	8	4	31	4	16	16	0	0	682
PM Peak	15:00	5	507	82	4	14	11	1	31	10	4	42	3	11	11	0	0	687
Grand Total		96	19032	3021	83	306	234	17	578	196	74	800	47	236	236	0	0	24720
Percent		0.4%	77.0%	12.2%	0.3%	1.2%	0.9%	0.1%	2.3%	0.8%	0.3%	3.2%	0.2%	1.0%	1.0%	0	0	

Ontario Traffic, Inc.
 17705 Leslie St., Unit 6
 Newmarket, Ontario L3Y 3E3
 Tel: (905) 898-7711 Fax: (905) 898-3664

Site Code: 25
 Station ID: D117
 Oklahoma Dr from Eyer Dr to Hillcrest Rd

Date Start: 28-Nov-17
 Date End: 30-Nov-17
 Date Start: 28-Nov-17

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi		>6 Axle Multi		Total
											Multi	Multi	Multi	Multi	
11/28/17	0	17	1	0	0	0	0	0	0	0	0	0	0	0	18
01:00	0	7	0	0	0	0	0	0	0	0	0	0	0	0	7
02:00	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
03:00	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
04:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
05:00	0	11	1	1	0	0	0	0	0	0	0	0	0	0	13
06:00	0	19	4	5	1	0	0	0	0	0	0	0	0	1	30
07:00	0	129	25	7	2	1	2	5	0	0	9	0	0	0	180
08:00	0	84	16	4	2	0	0	5	1	1	6	0	0	1	120
09:00	0	50	24	2	2	0	0	1	1	0	1	0	0	0	81
10:00	0	84	17	2	0	0	0	2	1	0	3	0	0	0	109
11:00	1	92	20	2	4	1	0	3	2	0	3	0	0	0	128
12 PM	0	83	23	2	0	0	0	4	0	0	1	0	0	0	113
13:00	0	116	20	1	0	0	0	1	0	0	9	0	0	2	149
14:00	0	134	26	1	2	2	0	3	1	0	4	0	0	0	173
15:00	1	194	31	1	1	0	0	6	0	0	9	0	0	5	248
16:00	0	220	51	4	0	0	0	6	0	0	6	0	0	2	289
17:00	0	220	30	4	1	1	0	1	0	1	10	0	0	2	270
18:00	1	164	29	5	1	1	0	0	2	0	3	0	0	1	207
19:00	0	108	20	4	0	0	0	1	0	0	4	0	0	0	137
20:00	0	82	14	2	0	0	0	0	1	0	4	1	0	0	104
21:00	0	77	13	1	0	0	0	0	1	0	1	0	0	0	93
22:00	0	67	9	1	0	0	0	1	0	0	1	0	0	0	79
23:00	0	30	3	0	0	0	0	0	0	0	0	0	0	0	33
Day Total	3	1994	378	49	16	6	2	39	10	2	74	1	14	14	2588
Percent	0.1%	77.0%	14.6%	1.9%	0.6%	0.2%	0.1%	1.5%	0.4%	0.1%	2.9%	0.0%	0.5%	0.5%	
AM Peak Vol.	1	129	25	7	4	1	2	5	2	1	9	1	1	1	180
PM Peak Vol.	1	220	51	5	2	2	2	6	2	1	10	1	5	5	289

Ontario Traffic, Inc.
 17705 Leslie St., Unit 6
 Newmarket, Ontario L3Y 3E3
 Tel: (905) 898-7711 Fax: (905) 898-3664

Site Code: 25
 Station ID: D117
 Oklahoma Dr from Eyer Dr to Hillcrest Rd

Date Start: 28-Nov-17
 Date End: 30-Nov-17
 Date Start: 28-Nov-17

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	6 Axle		>6 Axle		Total
											Multi	Multi	Multi	Multi	
11/29/17	0	15	2	0	0	0	0	0	0	0	0	0	0	0	17
01:00	0	6	3	0	0	0	0	0	0	0	0	0	0	0	9
02:00	0	5	0	0	0	0	0	0	0	0	0	0	0	0	5
03:00	0	5	1	0	0	0	0	0	0	0	0	0	0	0	6
04:00	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
05:00	0	13	1	1	0	0	0	0	0	0	0	0	0	0	15
06:00	0	21	9	6	0	0	0	0	0	0	3	0	0	0	39
07:00	1	142	23	7	5	2	0	2	2	0	12	0	1	1	197
08:00	0	64	22	3	3	0	0	2	2	1	5	0	1	1	103
09:00	0	58	13	2	2	0	1	0	0	0	1	0	0	1	78
10:00	0	82	14	1	0	0	0	2	1	0	0	0	0	0	100
11:00	0	84	12	2	1	0	0	3	0	0	3	0	0	0	105
12 PM	0	91	17	2	0	0	0	0	0	0	3	0	0	0	113
13:00	0	87	20	3	0	0	0	3	0	0	2	0	0	0	115
14:00	0	127	24	2	3	0	0	2	1	0	6	0	1	1	166
15:00	0	147	41	2	2	0	0	1	0	0	4	0	1	1	198
16:00	0	221	32	4	0	0	0	2	3	0	9	0	0	0	271
17:00	0	219	45	4	0	0	1	6	3	0	9	0	2	2	289
18:00	0	133	22	6	0	0	0	1	0	0	3	0	0	0	165
19:00	0	115	18	3	0	1	0	2	2	0	3	0	0	0	144
20:00	0	98	12	2	0	0	0	0	0	0	2	0	0	0	114
21:00	0	81	14	1	0	0	0	0	0	0	0	0	0	0	96
22:00	0	58	7	1	0	0	0	0	0	0	2	0	0	0	68
23:00	0	30	6	0	0	0	0	0	0	0	1	0	0	0	37
Day Total	1	1906	358	52	16	3	2	26	14	1	68	0	7	7	2454
Percent	0.0%	77.7%	14.6%	2.1%	0.7%	0.1%	0.1%	1.1%	0.6%	0.0%	2.8%	0.0%	0.3%	0.3%	
AM Peak	07:00	142	23	7	5	2	1	3	2	1	12	0	1	1	197
PM Peak	17:00	221	45	6	3	1	1	6	3	1	9	0	2	2	289

Ontario Traffic, Inc.
 17705 Leslie St., Unit 6
 Newmarket, Ontario L3Y 3E3
 Tel: (905) 898-7711 Fax: (905) 898-3664

Site Code: 25
 Station ID: D117
 Oklahoma Dr from Eyer Dr to Hillcrest Rd

Date Start: 28-Nov-17
 Date End: 30-Nov-17
 Date Start: 28-Nov-17

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	6 Axle		>6 Axle		Total
											Multi	Multi	Multi	Multi	
11/30/17	0	9	3	0	0	0	0	0	0	0	0	0	0	0	12
01:00	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6
02:00	0	3	2	0	0	0	0	0	0	0	0	0	0	0	5
03:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
04:00	0	5	0	0	0	0	0	0	0	0	0	0	0	0	5
05:00	0	8	3	1	0	0	0	0	0	0	0	0	0	0	12
06:00	0	25	12	7	0	0	0	0	0	0	0	0	0	0	44
07:00	0	126	28	8	1	0	0	2	2	0	7	0	3	177	
08:00	0	70	14	3	5	0	1	4	2	0	10	0	3	112	
09:00	0	60	14	4	1	0	0	0	1	0	3	0	1	84	
10:00	0	71	10	2	1	0	0	2	0	0	2	0	0	88	
11:00	0	85	23	2	1	0	0	1	0	0	3	0	0	115	
12 PM	0	89	17	2	0	0	0	1	1	0	3	0	1	114	
13:00	0	89	20	2	6	1	0	2	0	0	3	0	0	123	
14:00	0	140	23	2	0	1	0	0	1	0	2	0	0	169	
15:00	0	141	30	0	2	0	0	1	1	0	6	0	3	184	
16:00	0	221	44	5	0	0	0	3	2	0	8	0	2	285	
17:00	0	224	31	4	0	0	0	5	0	0	11	0	0	275	
18:00	1	152	21	6	0	0	0	1	0	0	5	0	1	187	
19:00	0	120	21	4	0	1	0	1	2	1	3	0	1	154	
20:00	0	78	20	2	0	0	0	0	1	0	2	0	0	103	
21:00	0	57	11	1	0	0	0	0	0	0	0	0	0	69	
22:00	0	51	6	1	0	0	0	0	0	0	2	0	0	60	
23:00	0	34	4	0	0	0	0	0	0	0	0	0	0	38	
Day Total	1	1864	358	56	17	3	1	23	13	1	70	0	15	2422	
Percent	0.0%	77.0%	14.8%	2.3%	0.7%	0.1%	0.0%	0.9%	0.5%	0.0%	2.9%	0.0%	0.6%		
AM Peak Vol.	18:00	07:00	07:00	07:00	08:00	08:00	08:00	08:00	07:00	08:00	08:00	07:00	07:00	07:00	
PM Peak Vol.	18:00	17:00	16:00	18:00	13:00	13:00	17:00	17:00	16:00	19:00	17:00	15:00	16:00	16:00	
Grand Total	5	5764	1094	157	49	12	5	88	37	4	212	1	36	7464	
Percent	0.1%	77.2%	14.7%	2.1%	0.7%	0.2%	0.1%	1.2%	0.5%	0.1%	2.8%	0.0%	0.5%		

Ontario Traffic, Inc.
 17705 Leslie St., Unit 6
 Newmarket, Ontario L3Y 3E3
 Tel: (905) 898-7711 Fax: (905) 898-3664

Site Code: 25
 Station ID: D117
 Oklahoma Dr from Eyer Dr to Hillcrest Rd

Date Start: 28-Nov-17
 Date End: 30-Nov-17
 Date Start: 28-Nov-17

WB	Start Time	Cars & Trailers	Bikes	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl		6 Axle		>6 Axl		Total
												Multi	Multi	Multi	Multi			
	11/28/17	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
	01:00	6	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	7
	02:00	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
	03:00	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4
	04:00	14	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	17
	05:00	74	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	82
	06:00	119	0	16	4	0	0	0	0	0	0	0	0	0	0	0	0	139
	07:00	198	0	21	6	3	0	1	5	1	0	7	0	0	0	0	0	242
	08:00	257	4	37	3	2	0	0	8	2	0	4	0	0	0	0	3	320
	09:00	140	1	14	2	0	0	0	0	0	0	0	0	0	0	0	0	157
	10:00	114	0	22	2	1	0	0	1	0	0	4	0	0	0	0	0	145
	11:00	107	1	17	2	0	0	0	1	0	0	1	0	0	0	0	0	129
	12 PM	124	0	19	1	1	0	0	3	1	0	5	0	0	0	0	0	154
	13:00	110	0	11	1	0	1	0	2	0	0	4	0	0	0	1	1	130
	14:00	170	0	25	2	6	0	0	5	0	0	5	0	1	1	1	1	215
	15:00	161	3	19	1	4	0	0	6	2	0	6	0	0	0	0	5	207
	16:00	155	2	19	4	0	1	1	4	0	0	5	0	0	1	0	1	192
	17:00	151	0	18	5	1	0	0	9	1	0	10	0	0	0	2	2	197
	18:00	130	0	12	3	1	0	0	5	0	0	2	1	0	1	0	0	154
	19:00	103	0	15	4	0	0	0	0	0	0	2	0	0	0	1	1	125
	20:00	88	0	9	1	0	0	0	1	0	0	0	0	0	0	0	0	99
	21:00	82	0	7	1	0	0	0	0	0	0	1	0	0	0	1	1	92
	22:00	54	0	5	1	0	0	0	1	0	0	1	0	0	0	0	0	62
	23:00	23	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	26
Day Total		2398	11	301	44	19	3	2	51	7	0	57	2	15	2	15	2910	
Percent		82.4%	0.4%	10.3%	1.5%	0.7%	0.1%	0.1%	1.8%	0.2%	0.0%	2.0%	0.1%	0.5%	0.1%	0.5%	08:00	
AM Peak Vol.	08:00	257	4	37	6	3	1	1	8	2	0	7	0	3	0	3	320	
PM Peak Vol.	15:00	170	3	25	5	6	1	1	9	2	0	10	1	5	1	5	215	

Ontario Traffic, Inc.
 17705 Leslie St., Unit 6
 Newmarket, Ontario L3Y 3E3
 Tel: (905) 898-7711 Fax: (905) 898-3664

Site Code: 25
 Station ID: D117
 Oklahoma Dr from Eyer Dr to Hillcrest Rd

Date Start: 28-Nov-17
 Date End: 30-Nov-17
 Date Start: 28-Nov-17

WB	Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi		6 Axle Multi		>6 Axle Multi		Total
												Multi	Multi	Multi	Multi	Multi	Multi	
	11/29/17	0	15	3	1	0	0	0	0	0	0	0	0	0	0	0	0	19
	01:00	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4
	02:00	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
	03:00	0	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	8
	04:00	0	17	2	0	0	0	0	0	0	0	0	0	0	0	0	0	19
	05:00	0	66	8	0	0	0	0	0	0	0	0	1	0	0	0	0	75
	06:00	0	121	20	4	1	0	0	1	0	0	0	1	0	0	0	0	148
	07:00	0	209	27	5	3	0	0	7	0	0	0	7	1	0	0	2	261
	08:00	1	269	36	3	4	1	0	7	2	0	0	11	0	0	4	338	
	09:00	0	122	19	2	2	0	0	1	1	0	0	2	0	0	0	0	149
	10:00	0	107	17	2	1	0	0	2	0	0	0	1	0	0	1	1	131
	11:00	0	134	11	2	0	0	0	0	0	0	0	2	0	0	0	0	149
	12 PM	0	115	23	2	2	0	0	1	0	0	0	1	0	0	0	0	144
	13:00	0	120	14	2	0	0	0	4	0	0	0	2	0	0	0	0	142
	14:00	0	164	22	2	5	0	0	4	0	0	0	3	0	0	3	203	
	15:00	2	111	27	2	2	1	0	5	1	0	0	4	1	0	1	1	157
	16:00	0	132	15	5	0	0	0	3	0	0	0	4	0	0	2	0	161
	17:00	0	127	16	5	0	0	0	1	0	0	0	8	0	0	0	0	157
	18:00	0	107	22	3	0	0	0	3	0	0	0	4	0	0	0	0	139
	19:00	0	110	8	4	0	0	0	1	0	0	0	1	0	0	1	1	125
	20:00	0	90	7	1	0	0	0	0	0	0	0	1	0	0	0	0	99
	21:00	0	77	4	1	0	0	0	0	0	0	0	2	0	0	1	1	85
	22:00	0	49	5	1	0	0	0	0	0	0	0	0	0	0	0	0	55
	23:00	0	15	1	1	0	0	0	0	0	0	0	0	0	0	0	0	17
Day Total		3	2291	309	48	20	2	0	40	4	0	0	55	2	15	2	15	2789
Percent		0.1%	82.1%	11.1%	1.7%	0.7%	0.1%	0.0%	1.4%	0.1%	0.0%	0.0%	2.0%	0.1%	0.5%	0.1%	0.5%	
AM Peak Vol.	08:00	1	269	36	5	4	1	0	7	2	0	0	11	1	4	1	4	338
PM Peak Vol.	15:00	2	164	27	5	5	1	0	15	1	0	0	8	1	3	1	3	203

Ontario Traffic, Inc.
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Site Code: 25
 Station ID: D117
 Oklahoma Dr from Eyer Dr to Hillcrest Rd

Date Start: 28-Nov-17
 Date End: 30-Nov-17
 Date Start: 28-Nov-17

WB	Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle		6 Axle		>6 Axle		Total
												Multi	Multi	Multi	Multi			
	11/30/17	0	17	2	0	0	0	0	0	0	0	0	0	0	0	0	0	19
	01:00	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
	02:00	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
	03:00	0	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	7
	04:00	0	12	4	0	0	0	0	0	0	0	0	0	0	0	0	0	16
	05:00	0	77	9	0	0	0	0	0	0	0	0	0	0	0	0	0	86
	06:00	0	120	17	4	0	0	0	0	0	0	1	0	0	0	0	0	142
	07:00	1	219	25	6	4	0	0	5	0	0	6	0	0	0	0	3	269
	08:00	0	244	34	3	3	0	0	6	2	0	8	0	0	0	0	4	304
	09:00	0	139	17	2	0	0	0	1	0	0	1	0	0	0	0	0	160
	10:00	1	133	8	2	0	0	0	0	1	0	2	0	0	0	0	0	147
	11:00	0	131	23	2	0	0	0	1	0	0	3	0	0	0	0	0	160
	12 PM	0	120	14	1	0	0	1	2	0	0	5	0	0	0	0	0	143
	13:00	2	131	20	1	4	0	0	4	0	0	2	0	0	0	0	0	166
	14:00	1	169	15	6	3	0	0	2	0	0	2	0	0	0	0	1	199
	15:00	0	132	20	3	0	0	0	1	0	0	3	0	0	0	0	0	162
	16:00	0	129	20	5	0	0	1	5	0	0	4	0	0	0	0	1	166
	17:00	0	115	20	4	0	0	1	1	0	0	9	0	0	0	0	2	152
	18:00	0	137	14	2	0	0	1	1	0	0	2	0	0	0	0	0	157
	19:00	0	118	10	4	0	0	0	2	0	0	1	0	0	0	0	0	135
	20:00	0	83	1	1	0	0	0	0	0	0	1	0	0	0	0	0	86
	21:00	0	54	2	1	0	0	0	0	0	0	0	0	0	0	0	0	57
	22:00	0	43	4	1	0	0	0	0	0	0	0	0	0	0	0	0	48
	23:00	0	18	1	0	0	0	0	0	0	0	0	0	0	0	0	0	19
Day Total		5	2356	281	48	14	2	4	31	3	0	50	2	0	0	13	0	2809
Percent		0.2%	83.9%	10.0%	1.7%	0.5%	0.1%	0.1%	1.1%	0.1%	0.0%	1.8%	0.1%	0.0%	0.0%	0.5%	0.0%	0.5%
AM Peak	07:00	0	08:00	08:00	07:00	07:00	0	0	08:00	08:00	0	08:00	0	0	0	0	0	08:00
Vol.	1	244	34	6	4	4	6	2	8	2	0	8	0	0	0	4	0	304
PM Peak	13:00	13:00	13:00	14:00	13:00	13:00	15:00	12:00	16:00	08:00	0	17:00	13:00	0	0	0	0	14:00
Vol.	2	169	20	6	4	4	1	1	5	2	0	9	2	0	0	2	0	199
Grand Total		19	7045	891	140	53	7	6	122	14	0	162	6	0	0	43	0	8508
Percent		0.2%	82.8%	10.5%	1.6%	0.6%	0.1%	0.1%	1.4%	0.2%	0.0%	1.9%	0.1%	0.0%	0.5%	0.0%	0.5%	

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Site Code: 25
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 Oklahoma Dr from Eyer Dr to Hillcrest Rd

Date Start: 28-Nov-17
 Date End: 30-Nov-17
 Date Start: 28-Nov-17

EB, WB	Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	6 Axle		>6 Axl		Total
												Multi	Multi	Multi	Multi	
	11/28/17	0	29	1	0	0	0	0	0	0	0	0	0	0	0	30
	01:00	0	13	1	0	0	0	0	0	0	0	0	0	0	0	14
	02:00	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6
	03:00	0	4	2	0	0	0	0	0	0	0	0	0	0	0	6
	04:00	0	16	3	0	0	0	0	0	0	0	0	0	0	0	19
	05:00	0	85	9	1	0	0	0	0	0	0	0	0	0	0	95
	06:00	0	138	20	9	1	0	0	0	0	0	0	0	0	1	169
	07:00	0	327	46	13	5	1	3	10	1	0	16	0	0	0	422
	08:00	4	341	53	7	4	0	0	13	3	1	10	0	4	440	
	09:00	1	190	38	4	2	0	0	1	1	0	1	0	0	0	238
	10:00	0	198	39	4	1	1	0	3	1	0	7	0	0	0	254
	11:00	2	199	37	4	4	1	0	4	2	0	4	0	0	0	257
	12 PM	0	207	42	3	1	0	0	7	1	0	6	0	0	0	267
	13:00	0	226	31	2	0	1	0	3	0	0	13	0	3	0	279
	14:00	0	304	51	3	8	2	0	8	1	0	9	1	1	0	388
	15:00	4	355	50	2	5	0	0	12	2	0	15	0	10	455	
	16:00	2	375	70	8	0	1	1	10	0	0	11	0	3	481	
	17:00	0	371	48	9	2	1	0	10	1	1	20	0	4	467	
	18:00	1	294	41	8	2	1	0	5	2	0	5	1	1	361	
	19:00	0	211	35	8	0	0	0	1	0	0	6	0	1	262	
	20:00	0	170	23	3	0	0	0	1	1	0	4	1	0	203	
	21:00	0	159	20	2	0	0	0	0	1	0	2	0	1	185	
	22:00	0	121	14	2	0	0	0	2	0	0	2	0	0	141	
	23:00	0	53	5	1	0	0	0	0	0	0	0	0	0	59	
Day Total		14	4392	679	93	35	9	4	90	17	2	131	3	29	5498	
Percent		0.3%	79.9%	12.3%	1.7%	0.6%	0.2%	0.1%	1.6%	0.3%	0.0%	2.4%	0.1%	0.5%		
AM Peak	08:00	08:00	08:00	08:00	07:00	07:00	07:00	07:00	08:00	08:00	08:00	07:00	08:00	08:00	08:00	08:00
Vol.	4	341	53	13	5	1	3	3	13	3	1	16	4	4	440	
PM Peak	15:00	16:00	16:00	17:00	14:00	14:00	16:00	16:00	15:00	15:00	17:00	17:00	14:00	15:00	16:00	
Vol.	4	375	70	9	8	2	1	1	12	2	1	20	1	10	481	

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 Oklahoma Dr from Eyer Dr to Hillcrest Rd

Date Start: 28-Nov-17
 Date End: 30-Nov-17
 Date Start: 28-Nov-17

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl		6 Axle		>6 Axl		Total
											Multi	Multi	Multi	Multi			
11/29/17	0	30	5	1	0	0	0	0	0	0	0	0	0	0	0	0	36
01:00	0	9	4	0	0	0	0	0	0	0	0	0	0	0	0	0	13
02:00	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
03:00	0	12	2	0	0	0	0	0	0	0	0	0	0	0	0	0	14
04:00	0	21	2	0	0	0	0	0	0	0	0	0	0	0	0	0	23
05:00	0	79	9	1	0	0	0	0	0	0	0	1	0	0	0	0	90
06:00	0	142	29	10	1	0	0	1	0	0	0	4	0	0	0	0	187
07:00	1	351	50	12	8	2	0	9	2	0	19	1	3	458	3	458	
08:00	1	333	58	6	7	1	0	9	4	1	16	0	5	441	0	441	
09:00	0	180	32	4	4	0	1	1	1	0	3	0	1	227	0	227	
10:00	0	189	31	3	1	0	0	4	1	0	1	0	1	231	0	231	
11:00	0	218	23	4	1	0	0	3	0	0	5	0	0	254	0	254	
12 PM	0	206	40	4	2	0	0	1	0	0	4	0	0	257	0	257	
13:00	0	207	34	5	0	0	0	7	0	0	4	0	0	257	0	257	
14:00	0	291	46	4	8	0	0	6	1	0	9	0	4	369	0	369	
15:00	2	258	68	4	4	1	0	6	1	0	8	1	2	355	0	355	
16:00	0	353	47	9	0	0	0	5	3	0	13	0	2	432	0	432	
17:00	0	346	61	9	0	0	1	7	3	0	17	0	2	446	0	446	
18:00	0	240	44	9	0	0	0	4	0	0	7	0	0	304	0	304	
19:00	0	225	26	7	0	1	0	3	2	0	4	0	1	269	0	269	
20:00	0	188	19	3	0	0	0	0	0	0	3	0	0	213	0	213	
21:00	0	158	18	2	0	0	0	0	0	0	2	0	1	181	0	181	
22:00	0	107	12	2	0	0	0	0	0	0	2	0	0	123	0	123	
23:00	0	45	7	1	0	0	0	0	0	0	1	0	0	54	0	54	
Day Total	4	4197	667	100	36	5	2	66	18	1	123	2	22	5243	0	5243	
Percent	0.1%	80.0%	12.7%	1.9%	0.7%	0.1%	0.0%	1.3%	0.3%	0.0%	2.3%	0.0%	0.4%				
AM Peak	07:00	351	58	12	8	2	1	9	4	1	19	1	5	458	07:00	07:00	
PM Peak	15:00	353	68	9	8	1	1	7	3	1	17	1	4	446	15:00	17:00	

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 Oklahoma Dr from Eyer Dr to Hillcrest Rd

Date Start: 28-Nov-17
 Date End: 30-Nov-17
 Date Start: 28-Nov-17

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl		6 Axle		>6 Axl		Total
											Multi	Multi	Multi	Multi			
11/30/17	0	26	5	0	0	0	0	0	0	0	0	0	0	0	0	0	31
01:00	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
02:00	0	7	2	0	0	0	0	0	0	0	0	0	0	0	0	0	9
03:00	0	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	8
04:00	0	17	4	0	0	0	0	0	0	0	0	0	0	0	0	0	21
05:00	0	85	12	1	0	0	0	0	0	0	0	0	0	0	0	0	98
06:00	0	145	29	11	0	0	0	0	0	0	0	1	0	0	0	0	186
07:00	1	345	53	14	5	0	0	7	2	0	13	0	0	0	6	0	446
08:00	0	314	48	6	8	0	1	10	4	0	18	0	0	0	7	0	416
09:00	0	199	31	6	1	0	0	1	1	0	4	0	0	0	1	0	244
10:00	1	204	18	4	1	0	0	2	1	0	4	0	0	0	0	0	235
11:00	0	216	46	4	1	0	0	2	0	0	6	0	0	0	0	0	275
12 PM	0	209	31	3	0	0	1	3	1	0	8	0	0	0	1	0	257
13:00	2	220	40	3	10	1	0	6	0	0	5	0	0	2	0	0	289
14:00	1	309	38	8	3	1	0	2	1	0	4	0	0	0	1	0	368
15:00	0	273	50	3	2	1	0	2	1	0	9	0	0	0	5	0	346
16:00	0	350	64	10	0	1	1	8	2	0	12	0	0	0	3	0	451
17:00	0	339	51	8	0	0	1	6	0	0	20	0	0	0	2	0	427
18:00	1	289	35	8	0	0	1	2	0	0	7	0	0	0	1	0	344
19:00	0	238	31	8	0	1	0	3	2	1	4	0	0	0	1	0	289
20:00	0	161	21	3	0	0	0	0	1	0	3	0	0	0	0	0	189
21:00	0	111	13	2	0	0	0	0	0	0	0	0	0	0	0	0	126
22:00	0	94	10	2	0	0	0	0	0	0	2	0	0	0	0	0	108
23:00	0	52	5	0	0	0	0	0	0	0	0	0	0	0	0	0	57
Day Total	6	4220	639	104	31	5	5	54	16	1	120	2	28	2	28	28	5231
Percent	0.1%	80.7%	12.2%	2.0%	0.6%	0.1%	0.1%	1.0%	0.3%	0.0%	2.3%	0.0%	0.5%	0.0%	0.5%	0.5%	
AM Peak	07:00	345	07:00	07:00	08:00	08:00	08:00	08:00	08:00	08:00	08:00	08:00	08:00	08:00	08:00	08:00	07:00
Vol.	1	345	53	14	8	1	1	10	4	4	18	7	7	7	7	7	446
PM Peak	13:00	16:00	16:00	16:00	13:00	13:00	12:00	16:00	16:00	19:00	17:00	13:00	15:00	13:00	15:00	15:00	16:00
Vol.	2	350	64	10	10	1	1	8	2	1	20	2	5	2	5	5	451
Grand Total	24	12809	1985	297	102	19	11	210	51	4	374	7	79	7	79	79	15972
Percent	0.2%	80.2%	12.4%	1.9%	0.6%	0.1%	0.1%	1.3%	0.3%	0.0%	2.3%	0.0%	0.5%	0.0%	0.5%	0.5%	

Highway	Location Description From	Location Description To	Dist. (KM)	2016 AADT
401	BENNETT RD IC-435-NEWCASTLE	LIBERTY ST IC-432-REG RD 14-BOWMANVILLE	2.5	82,400
401	LIBERTY ST IC-432-REG RD 14-BOWMANVILLE	WAVERLEY RD IC-431-NEWCASTLE	1.2	85,600
401	WAVERLEY RD IC-431-NEWCASTLE	HOLT RD IC-428-NEWCASTLE	2.9	89,600
401	HOLT RD IC-428-NEWCASTLE	COURTICE RD IC-425-REG RD 34-NEWCASTLE	3.2	98,000
401	COURTICE RD IC-425-REG RD 34-NEWCASTLE	BLOOR ST/HARMONY RD IC-419-REG RD 33	5.5	98,500
401	BLOOR ST/HARMONY RD IC-419-REG RD 33	RITSON RD IC-418-REG RD 16-OSHAWA	1.4	124,200
401	RITSON RD IC-418-REG RD 16-OSHAWA	SIMCOE ST IC-417-REG RD 2-OSHAWA	0.8	128,700
401	SIMCOE ST IC-417-REG RD 2-OSHAWA	STEVENSON RD IC-415-OSHAWA	1.6	134,200
401	STEVENSON RD IC-415-OSHAWA	THICKSON RD IC-412-REG RD 26-WHITBY	2.4	129,100
401	THICKSON RD IC-412-REG RD 26-WHITBY	HWY 12 IC-410-BROCK ST-WHITBY	2.5	151,200
401	HWY 12 IC-410-BROCK ST-WHITBY	SALEM RD IC 404	6.2	166,900
401	SALEM RD IC 404	WESTNEY RD IC 401	2.2	202,800
401	WESTNEY RD IC 401	BROCK RD IC-399-REG RD 1-PICKERING	2.6	210,000
401	BROCK RD IC-399-REG RD 1-PICKERING	LIVERPOOL RD IC-397-REG RD 29-PICKERING	1.7	223,000
401	LIVERPOOL RD IC-397-REG RD 29-PICKERING	WHITES RD IC-394-REG RD 38-PICKERING	2.5	230,000
401	WHITES RD IC-394-REG RD 38-PICKERING	401-HWY 2 KINGSTON RD IC 392	3.7	226,000
401	401-HWY 2 KINGSTON RD IC 392	MEADOWVALE RD IC-389-SCARBOROUGH	1.3	230,000
401	MEADOWVALE RD IC-389-SCARBOROUGH	MORNINGSIDE AV IC-387-SCARBOROUGH	2.4	230,000
401	MORNINGSIDE AV IC-387-SCARBOROUGH	NEILSON RD IC-385	1.5	260,000
401	NEILSON RD IC-385	HWY 48 IC-383-MARKHAM RD-SCARBOROUGH	1.7	280,000
401	HWY 48 IC-383-MARKHAM RD-SCARBOROUGH	MCCOWAN RD IC-381-SCARBOROUGH	1.6	291,200
401	MCCOWAN RD IC-381-SCARBOROUGH	BRIMLEY RD IC-380	0.8	329,800
401	BRIMLEY RD IC-380	KENNEDY RD IC-379-SCARBOROUGH	1.6	330,000
401	KENNEDY RD IC-379-SCARBOROUGH	WARDEN AV IC-378-SCARBOROUGH	1.6	355,000
401	WARDEN AV IC-378-SCARBOROUGH	VICTORIA PARK AV IC-376-SCARBOROUGH	1.2	334,000
401	VICTORIA PARK AV IC-376-SCARBOROUGH	HWY 404 IC-375-DON VALLEY PKWY-NORTH YORK	1.4	333,000
401	HWY 404 IC-375-DON VALLEY PKWY-NORTH YORK	LESLIE ST IC-373-NORTH YORK	2.0	348,000
401	LESLIE ST IC-373-NORTH YORK	BAYVIEW AV IC-371-NORTH YORK	1.9	332,000
401	BAYVIEW AV IC-371-NORTH YORK	HWY 11 IC-369-YONGE ST-NORTH YORK	2.0	341,500
401	HWY 11 IC-369-YONGE ST-NORTH YORK	AVENUE RD IC-367-NORTH YORK	1.7	332,000
401	AVENUE RD IC-367-NORTH YORK	BATHURST ST IC-366-NORTH YORK	1.0	343,000
401	BATHURST ST IC-366-NORTH YORK	ALLEN RD IC-365-NORTH YORK	1.4	350,000
401	ALLEN RD IC-365-NORTH YORK	DUFFERIN ST IC-364-NORTH YORK	0.7	368,000
401	DUFFERIN ST IC-364-NORTH YORK	KEELE ST IC-362-NORTH YORK	1.9	387,700
401	KEELE ST IC-362-NORTH YORK	HWY 400 IC-359-NORTH YORK	3.0	397,100
401	HWY 400 IC-359-NORTH YORK	WESTON RD IC-357-NORTH YORK	1.4	416,500
401	WESTON RD IC-357-NORTH YORK	ISLINGTON AV IC-356-ETOBICOKE	1.3	411,600
401	ISLINGTON AV IC-356-ETOBICOKE	DIXON RD IC-354-ETOBICOKE	2.4	390,700
401	DIXON RD IC-354-ETOBICOKE	HWY 427 IC 352	2.4	275,000
401	HWY 427 IC 352	RENFORTH DR IC 349	0.7	385,000
401	RENFORTH DR IC 349	DIXIE RD IC 346	4.3	352,000
401	DIXIE RD IC 346	HWYS 410 & 403 IC-344 END OF COMPLEX FRWY	1.4	340,000
401	HWYS 410 & 403 IC-344 END OF COMPLEX FRWY	HWY 10 IC-342-HURONTARIO ST-MISSISSAUGA	2.7	210,500
401	HWY 10 IC-342-HURONTARIO ST-MISSISSAUGA	MAVIS ROAD IC	2.1	216,500

SEVEN DAY HOURLY REPORT

Station 1: 401DE0510DWC
 HIGHWAY: 401
 STREAM: COLLECTORS
 DIRECTION: WEST BOUND
 LHRS / OFFSET: 47610 / 2.5
 LOCATION: (43.817, -79.114)
 DESCRIPTION: WHITES

Station 2: 401DE0510DWE
 HIGHWAY: 401
 STREAM: EXPRESS
 DIRECTION: WEST BOUND
 LHRS / OFFSET: 47610 / 2.5
 LOCATION: (43.817, -79.114)
 DESCRIPTION: WHITES

CONFIDENCE LEVEL: 95%

HOUR-ENDING	MON		TUE		WED		THU		FRI		SAT		SUN	
	17-Feb-20		18-Feb-20		19-Feb-20		20-Feb-20		21-Feb-20		22-Feb-20		23-Feb-20	
	VDS1	VDS2	VDS1	VDS2	VDS1	VDS2	VDS1	VDS2	VDS1	VDS2	VDS1	VDS2	VDS1	VDS2
01:00	876	1037	N/A	733	N/A	564	N/A	461	N/A	N/A	778	880	899	919
02:00	N/A	611	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	620	N/A	692
03:00	N/A	N/A	N/A	N/A	N/A	447	N/A	N/A	N/A	N/A	N/A	515	N/A	N/A
04:00	N/A	N/A	N/A	N/A	N/A	541	N/A	N/A	N/A	N/A	N/A	493	N/A	N/A
05:00	N/A	N/A	870	1289	1147	1337	1250	1201	1089	1151	N/A	613	N/A	N/A
06:00	N/A	992	3005	3010	4023	4161	4278	3670	3631	3788	904	1207	N/A	736
07:00	1084	1119	3470	2564	5262	3427	5418	4357	4887	4236	1490	1609	963	1069
08:00	1020	1081	4527	3503	6344	4750	5851	4559	5054	4589	1706	1950	990	1078
09:00	1143	1233	4510	3249	5492	4127	5524	4298	5053	4017	2623	2636	1529	1599
10:00	1511	1720	4132	2750	4171	3543	4238	3490	3490	3427	3319	3297	2549	2580
11:00	1930	2375	3474	2251	3110	2954	3411	3250	3279	3371	3541	3476	3124	3073
12:00	2532	3133	2900	2640	3124	3051	3192	2967	3214	3235	3742	3721	3523	3277
13:00	2816	3511	2658	2545	2993	2950	3152	2911	3282	3381	3971	3705	3752	3537
14:00	3160	3856	2778	2565	2849	2766	2983	2814	3210	2518	3857	3598	3805	3704
15:00	3137	3952	2884	2673	3107	2745	3333	2889	3576	3278	4052	3578	3850	3773
16:00	3265	3748	3178	2580	3355	2759	3440	2634	3770	2931	3848	3569	3633	3765
17:00	3038	3484	3336	2539	3371	2820	3525	2682	3631	2959	3695	3556	3461	3713
18:00	3065	3649	3274	2630	3548	2881	3288	2686	3620	2825	3806	3442	3530	3509
19:00	2987	3610	2781	2356	2702	2329	3050	2806	3324	2952	3602	3294	3307	3784
20:00	2918	3617	2383	2071	2405	2403	2501	2799	3043	2745	2799	2621	2710	3299
21:00	2160	3299	2085	1625	1887	1894	1971	1996	2180	2251	2073	2058	2017	2750
22:00	1767	2797	1631	1393	1742	1597	1755	1649	1975	2023	1755	1855	1581	2193
23:00	1281	1823	1352	1129	1689	916	1769	1151	1616	1653	1594	1639	1286	1581
23:59	N/A	1120	828	770	973	590	1054	N/A	1144	1227	1286	1272	N/A	962

24 Hr Total	39,690	51,767	56,056	46,865	63,294	55,552	64,983	54,731	64,688	58,557	54,441	55,224	46,509	51,593
A.M. Total	10,096	13,301	26,888	21,989	32,673	28,902	33,162	28,253	30,317	27,814	18,103	21,017	13,577	15,023
P.M. Total	29,594	38,466	29,168	24,876	30,621	26,650	31,821	26,478	34,371	30,743	36,338	34,207	32,932	36,570
Noon-Noon			56,482	60,455	61,841	53,778	63,783	54,903	62,138	54,292	52,474	51,760	49,915	49,230
Highest Hour Starting	15:00	14:00	07:00	07:00	07:00	07:00	07:00	07:00	07:00	07:00	14:00	11:00	14:00	18:00
Highest Hour Volume	3,265	3,952	4,527	3,503	6,344	4,750	5,851	4,559	5,054	4,589	4,052	3,721	3,850	3,784
VDS1 ADT = 55,666 VDS 2 ADT = 53,470 VDS1 AWD = 61,061 VDS2 AWD = 55,857														

ADT (Average Daily Traffic)-The average daily volume of the days being displayed
 LHRS (Linear Highway Reference
 AWD (Average Weekday Traffic) - The average weekday traffic based on data taken from Monday @noon to Friday @noon.

SEVEN DAY HOURLY REPORT

Station 1: 401DE0550DEE
 HIGHWAY: 401
 STREAM: EXPRESS
 DIRECTION: EAST BOUND
 LHR5 / OFFSET: 47612 / 0.5
 LOCATION: (43.814, -79.118)
 DESCRIPTION: WHITES ROAD
Station 2: 401DE0530DEC
 HIGHWAY: 401
 STREAM: COLLECTORS
 DIRECTION: EAST BOUND
 LHR5 / OFFSET: 47612 / 0.5
 LOCATION: (43.814, -79.118)
 DESCRIPTION: WHITES ROAD

CONFIDENCE LEVEL: 95%

HOUR-ENDING	MON 04-Nov-19		TUE 05-Nov-19		WED 06-Nov-19		THU 07-Nov-19		FRI 08-Nov-19		SAT 09-Nov-19		SUN 10-Nov-19	
	VDS1	VDS2	VDS1	VDS2	VDS1	VDS2	VDS1	VDS2	VDS1	VDS2	VDS1	VDS2	VDS1	VDS2
	NITS	NITS	NITS	NITS	NITS	NITS	NITS	NITS	NITS	NITS	NITS	NITS	NITS	NITS
01:00	791	N/A	1075	N/A	1373	N/A	1179	543	1610	N/A	2419	N/A	1744	854
02:00	N/A	N/A	676	N/A	N/A	N/A	710	N/A	1033	N/A	1562	N/A	1234	617
03:00	N/A	N/A	584	N/A	N/A	N/A	N/A	N/A	900	N/A	1254	N/A	850	N/A
04:00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	779	N/A	944	N/A	N/A	N/A
05:00	N/A	N/A	695	N/A	N/A	N/A	620	N/A	N/A	N/A	765	N/A	N/A	N/A
06:00	1328	708	1425	719	1556	630	1148	730	1735	N/A	1077	N/A	N/A	N/A
07:00	2463	1393	2674	1472	2713	1430	2416	1428	2795	1107	1841	N/A	874	N/A
08:00	3377	1808	3498	1911	3432	1874	3066	1755	3574	1877	2657	539	1391	636
09:00	3022	1754	3097	1840	3092	1853	3015	1757	3372	1944	3170	1098	1897	948
10:00	2626	1512	2737	1611	2825	1616	2574	1554	3183	1709	3499	1664	2531	1350
11:00	2920	1515	2989	1731	2822	1626	2892	1529	N/A	N/A	3814	2078	3344	1758
12:00	3265	1738	3043	1745	3177	1689	3153	1668	3864	1942	3752	2159	3701	1929
13:00	3341	1811	3394	1917	3430	1855	3478	1826	4085	2066	4230	2279	4158	2130
14:00	3932	2034	3775	2077	3947	2136	3791	2067	4340	2295	4311	2440	4502	2297
15:00	4807	2530	4822	2619	4859	2680	4837	2688	5050	2778	4508	2516	4660	2477
16:00	5689	3049	5783	3165	5884	3188	5745	3049	5441	2874	4580	2387	4719	2325
17:00	5355	2820	5561	2538	5933	2910	5436	2627	5261	2598	4685	2402	4501	2064
18:00	4203	2763	5593	2542	5427	2705	4382	2544	5178	2548	4450	2123	4076	2018
19:00	4991	2485	4827	2481	4776	2500	4361	2338	4719	2418	3884	2010	3755	1776
20:00	2068	2068	4208	2169	4261	2143	4244	2074	4413	2281	1786	1786	3979	1714
21:00	3435	1768	3531	1777	3909	1991	3931	1923	4051	1924	3266	1491	3215	1417
22:00	2362	1451	3046	1538	3021	1476	3118	1421	3452	1397	2783	1274	2588	1143
23:00	2002	1146	2799	896	2431	1226	3111	950	3568	597	2907	1241	2107	1017
23:59	1755	839	2358	603	1905	1068	2569	N/A	2813	N/A	2582	1116	1444	751

24 Hr Total	67,209	35,192	72,190	35,351	70,773	36,596	69,776	34,371	75,216	32,355	72,809	30,603	61,270	29,221	
A.M. Total	19,792	10,428	22,493	11,029	20,990	10,718	20,773	10,964	22,845	8,579	26,754	7,538	17,566	8,092	
P.M. Total	47,417	24,764	49,697	24,322	49,783	25,878	49,003	23,407	52,371	23,776	46,055	23,065	43,704	21,129	
Noon-Noon			69,910	35,793	70,687	35,040	70,556	36,842	71,848	31,986	79,125	31,314	63,621	31,157	
Highest Hour Starting	15:00	15:00	15:00	15:00	16:00	15:00	15:00	15:00	15:00	15:00	16:00	14:00	15:00	14:00	
Highest Hour Volume	5,689	3,049	5,783	3,165	5,933	3,188	5,745	3,049	5,441	2,874	4,685	2,516	4,719	2,477	
VDS1 ADT = 69,892										VDS2 ADT = 33,384		VDS1 AWD = 70,750		VDS2 AWD = 34,915	

ADT (Average Daily Traffic) - The average daily volume of the days being displayed
 LHR5 (Linear Highway Reference
 AWD (Average Weekday Traffic) - The average weekday traffic based on data taken from Monday @noon to Friday @noon.

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Sep 22, 2022 12:00:19



The Regional Municipality of Durham

Planning and Economic
Development Department

Planning Division

605 ROSSLAND RD. E.
4TH FLOOR
P.O. BOX 623
WHITBY, ON L1N 6A3
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905-668-7711
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Brian Bridgeman, MCIP, RPP
Commissioner of Planning and
Economic Development

ROAD SEGMENT TRAFFIC FORECASTS FOR NOISE ANALYSES

This information is to be used as the basis for assessing the potential impacts of noise, generated by traffic on Provincial Highways and arterial roads, on proposed land uses that are sensitive (e.g., residential subdivisions). Arterial roads include existing and future Type A, B and C, as designated in the Durham Regional Official Plan.

Noise assessment reports recommend specific measures to be integrated into the design of sensitive developments to reduce road noise impacts to acceptable levels.

Provided For:

Name / Name of Firm: **Andrew DeFaria, GHD**
Address: **5 Greenbush Place, Whitby**
Telephone: **(905) 621-8041** Fax:

Location of Proposal:

720 Granite Court (west side of Whites Road, south of Bayly Street)

Municipality: **Pickering** Lot(s): Concession:
Durham Region File No. (if available):
Name of Property Owner (if available):

Date Request Received: September 14, 2022 Received By: **Chris Leitch**

Date Forecast Sent: September 29, 2022

Name of Road Segment	Forecasted AADT*	No. of Lanes	% of Trucks	Heavy : Medium		Speed (km/h)
				Truck	Truck Ratio	
Bayly St. (east of Whites Rd.)	25,000	4	10	60	40	60
	0	0	0	0	0	0
	0	0	0	0	0	0
	0	0	0	0	0	0

* Average Annual Daily Traffic. Forecast based on ultimate development according to the Durham Regional Official Plan.

Appendix D

Industry Noise Source Locations



Source: Google Satellite



LAND USE COMPATIBILITY STUDY
 1334281 ONTARIO LTD.
 720 GRANITE COURT



INDUSTRY NOISE SOURCE LOCATIONS

12594433
 17.03.2023

FIGURE D.1

CadnaA File: \\ghdnet\ghd\CAWater\proj\6621\2594433\Tech\Noise\04_Modelling\01_CadnaA\02_Noise_Models\12594433_720GraniteCourt_V2023.01.cna

Table D.1
Noise Source Sound Level Summary
1334281 Ontario Inc.
720 Granite Court, Pickering, Ontario

Cadastral ID	Noise Source Description	1/1 Octave Band Data											Unadjusted Total Sound Power Level (dBA)	Total Penalty Assessment (dBA)	Height Absolute (m)	Operating Time Day/Even/Night (min)	Vehicle Volumes Day/Even/Night (veh/hr)	Speed Reference/Comments (km/hr)
		32	63	125	250	500	1000	2000	4000	8000								
L-01	Truck Route	PWL (dB) correction -39.4	117.0	112.0	105.0	107.0	104.0	103.0	100.0	91.0	119.0	No	0	102.5	—	44/2	—	Referenced from UK Department for Environment, Food and Rural Affairs (Defra) 15 Transport Truck Route - 26ton 235kw - DEFRA Table 1(c)#16
L-02	Truck Route	PWL (dB) -39.4	90.8	95.9	96.4	103.6	103.0	104.2	101.0	89.9	109.9	No	0	102.5	—	44/2	—	Referenced from UK Department for Environment, Food and Rural Affairs (Defra) 15 Transport Truck Route - 26ton 235kw - DEFRA Table 1(c)#16
L-02	Truck Route	PWL (dB) -39.4	90.8	95.9	96.4	103.6	103.0	104.2	101.0	89.9	109.9	No	0	101.3	—	44/2	—	Referenced from UK Department for Environment, Food and Rural Affairs (Defra) 15 Transport Truck Route - 26ton 235kw - DEFRA Table 1(c)#16
S-01	Truck Idling	PWL (dB) -39.4	90.8	95.9	96.4	103.6	103.0	104.2	101.0	89.9	109.9	No	0	101.3	—	22/1	—	Referenced from UK Department for Environment, Food and Rural Affairs (Defra) 15 Transport Truck Route - 26ton 235kw - DEFRA Table 1(c)#16
S-02	Roof Mounted HVAC	PWL (dB) -39.4	60.8	74.9	81.4	83.8	83.0	81.2	74.0	64.9	88.9	No	0	104.3	60/60/60	—	—	GHD Reference Spectra
S-03	Roof Mounted HVAC	PWL (dB) -39.4	47.8	58.9	66.4	70.8	72.0	69.2	65.0	56.9	76.5	No	0	113.6	60/60/30	—	—	GHD Reference Spectra
S-04	Roof Mounted HVAC	PWL (dB) -39.4	71.4	74.3	77.1	81.6	83.9	83.9	78.7	72.3	87.6	No	0	113.6	60/60/30	—	—	GHD Reference Spectra
S-05	Roof Mounted HVAC	PWL (dB) -39.4	71.4	74.3	77.1	81.6	83.9	83.9	78.7	72.3	87.6	No	0	113.6	60/60/30	—	—	GHD Reference Spectra
S-06	Roof Mounted HVAC	PWL (dB) -39.4	71.4	74.3	77.1	81.6	83.9	83.9	78.7	72.3	87.6	No	0	113.6	60/60/30	—	—	GHD Reference Spectra
S-07	Roof Mounted HVAC	PWL (dB) -39.4	71.4	74.3	77.1	81.6	83.9	83.9	78.7	72.3	87.6	No	0	113.6	60/60/30	—	—	GHD Reference Spectra
S-08	Roof Mounted HVAC	PWL (dB) -39.4	71.4	74.3	77.1	81.6	83.9	83.9	78.7	72.3	87.6	No	0	113.6	60/60/30	—	—	GHD Reference Spectra
S-09	Truck Idling	PWL (dB) -39.4	90.8	95.9	96.4	103.6	103.0	104.2	101.0	89.9	109.9	No	0	100.0	60/60/60	—	—	GHD Reference Spectra
S-10	Roof Mounted HVAC	PWL (dB) -39.4	47.8	58.9	66.4	70.8	72.0	69.2	65.0	56.9	76.5	No	0	113.6	60/60/30	—	—	GHD Reference Spectra
S-11	Roof Mounted HVAC	PWL (dB) -39.4	47.8	58.9	66.4	70.8	72.0	69.2	65.0	56.9	76.5	No	0	113.6	60/60/30	—	—	GHD Reference Spectra
S-12	Roof Mounted HVAC	PWL (dB) -39.4	47.8	58.9	66.4	70.8	72.0	69.2	65.0	56.9	76.5	No	0	113.6	60/60/30	—	—	GHD Reference Spectra
S-13	Roof Mounted HVAC	PWL (dB) -39.4	47.8	58.9	66.4	70.8	72.0	69.2	65.0	56.9	76.5	No	0	113.6	60/60/30	—	—	GHD Reference Spectra
S-14	Roof Mounted HVAC	PWL (dB) -39.4	47.8	58.9	66.4	70.8	72.0	69.2	65.0	56.9	76.5	No	0	113.6	60/60/30	—	—	GHD Reference Spectra
S-15	Roof Mounted HVAC	PWL (dB) -39.4	47.8	58.9	66.4	70.8	72.0	69.2	65.0	56.9	76.5	No	0	113.6	60/60/30	—	—	GHD Reference Spectra
S-16	Roof Mounted HVAC	PWL (dB) -39.4	47.8	58.9	66.4	70.8	72.0	69.2	65.0	56.9	76.5	No	0	113.6	60/60/30	—	—	GHD Reference Spectra
S-17	Roof Mounted HVAC	PWL (dB) -39.4	47.8	58.9	66.4	70.8	72.0	69.2	65.0	56.9	76.5	No	0	113.6	60/60/30	—	—	GHD Reference Spectra
S-18	Roof Mounted HVAC	PWL (dB) -39.4	47.8	58.9	66.4	70.8	72.0	69.2	65.0	56.9	76.5	No	0	107.5	60/60/30	—	—	GHD Reference Spectra
		PWL (dB) -39.4	90.8	95.9	96.4	103.6	103.0	104.2	101.0	89.9	109.9	No	0	108.0	60/60/30	—	—	GHD Reference Spectra

Table D.1
Noise Source Sound Level Summary
1334281 Ontario Inc.
720 Granite Court, Pickering, Ontario

Cedna A ID	Noise Source Description	1/1 Octave Band Data											Unadjusted Total Sound Power Level (dBA)	Tonal Penalty Assessment (dBA)	Height Absolute (m)	Operating Time Day/Even/Night (min)	Vehicle Volumes Day/Even/Night (veh/hr)	Speed Reference/Comments (km/hr)
		32	63	125	250	500	1000	2000	4000	8000								
S-19	Roof Mounted HVAC	PWL (dB)	71.0	74.0	75.0	75.0	74.0	72.0	68.0	64.0	58.0	81.8	No	0	107.5	60/60/30	—	GHD Reference Spectra
		A-weighted correction	-31.6	-29.2	-28.2	-28.2	-29.2	-28.2	-28.2	-29.2	-31.6	76.5						
		PWL (dBA)	31.6	47.8	58.9	66.4	70.6	69.2	69.2	65.0	55.9	76.5						
S-20	Truck idling	PWL (dB)	84.0	87.0	89.0	87.0	83.0	80.0	80.0	75.0	66.0	95.8	No	0	100.0	60/60/60	—	GHD Reference Spectra
		A-weighted correction	-39.4	-36.2	-34.2	-34.2	-34.2	-34.2	-34.2	-34.2	-39.4	88.9						
		PWL (dBA)	44.6	60.8	74.9	81.4	83.8	83.0	81.2	74.0	64.9	98.9						
S-21	Roof Mounted HVAC	PWL (dB)	67.6	70.4	71.1	71.1	70.4	68.0	67.5	64.7	55.8	87.6	No	0	108.0	60/60/30	—	GHD Reference Spectra
		A-weighted correction	-39.4	-36.2	-34.2	-34.2	-34.2	-34.2	-34.2	-34.2	-39.4	87.6						
		PWL (dBA)	28.2	34.2	36.9	36.9	36.2	33.8	33.3	30.5	21.4	48.2						
S-22	Roof Mounted HVAC	PWL (dB)	67.6	70.4	71.1	71.1	70.4	68.0	67.5	64.7	55.8	87.6	No	0	108.0	60/60/30	—	GHD Reference Spectra
		A-weighted correction	-39.4	-36.2	-34.2	-34.2	-34.2	-34.2	-34.2	-34.2	-39.4	87.6						
		PWL (dBA)	28.2	34.2	36.9	36.9	36.2	33.8	33.3	30.5	21.4	48.2						
S-23	Roof Mounted HVAC	PWL (dB)	67.6	70.4	71.1	71.1	70.4	68.0	67.5	64.7	55.8	87.6	No	0	108.0	60/60/30	—	GHD Reference Spectra
		A-weighted correction	-39.4	-36.2	-34.2	-34.2	-34.2	-34.2	-34.2	-34.2	-39.4	87.6						
		PWL (dBA)	28.2	34.2	36.9	36.9	36.2	33.8	33.3	30.5	21.4	48.2						
S-24	Roof Mounted HVAC	PWL (dB)	71.0	74.0	75.0	75.0	74.0	72.0	68.0	64.0	58.0	81.8	No	0	108.0	60/60/30	—	GHD Reference Spectra
		A-weighted correction	-39.4	-36.2	-34.2	-34.2	-34.2	-34.2	-34.2	-34.2	-39.4	76.5						
		PWL (dBA)	31.6	47.8	58.9	66.4	70.8	72.0	69.2	65.0	55.9	76.5						
S-25	Roof Mounted HVAC	PWL (dB)	71.0	74.0	75.0	75.0	74.0	72.0	68.0	64.0	58.0	81.8	No	0	107.5	60/60/30	—	GHD Reference Spectra
		A-weighted correction	-39.4	-36.2	-34.2	-34.2	-34.2	-34.2	-34.2	-34.2	-39.4	76.5						
		PWL (dBA)	31.6	47.8	58.9	66.4	70.8	72.0	69.2	65.0	55.9	76.5						
S-26	Roof Mounted HVAC	PWL (dB)	71.0	74.0	75.0	75.0	74.0	72.0	68.0	64.0	58.0	81.8	No	0	107.5	60/60/30	—	GHD Reference Spectra
		A-weighted correction	-39.4	-36.2	-34.2	-34.2	-34.2	-34.2	-34.2	-34.2	-39.4	76.5						
		PWL (dBA)	31.6	47.8	58.9	66.4	70.8	72.0	69.2	65.0	55.9	76.5						
S-27	Roof Mounted HVAC	PWL (dB)	67.6	70.4	71.1	71.1	70.4	68.0	67.5	64.7	55.8	87.6	No	0	108.0	60/60/30	—	GHD Reference Spectra
		A-weighted correction	-39.4	-36.2	-34.2	-34.2	-34.2	-34.2	-34.2	-34.2	-39.4	87.6						
		PWL (dBA)	28.2	34.2	36.9	36.9	36.2	33.8	33.3	30.5	21.4	48.2						
S-28	Roof Mounted HVAC	PWL (dB)	71.0	74.0	75.0	75.0	74.0	72.0	68.0	64.0	58.0	81.8	No	0	107.5	60/60/30	—	GHD Reference Spectra
		A-weighted correction	-39.4	-36.2	-34.2	-34.2	-34.2	-34.2	-34.2	-34.2	-39.4	76.5						
		PWL (dBA)	31.6	47.8	58.9	66.4	70.8	72.0	69.2	65.0	55.9	76.5						
S-29	Roof Mounted HVAC	PWL (dB)	71.0	74.0	75.0	75.0	74.0	72.0	68.0	64.0	58.0	81.8	No	0	107.5	60/60/30	—	GHD Reference Spectra
		A-weighted correction	-39.4	-36.2	-34.2	-34.2	-34.2	-34.2	-34.2	-34.2	-39.4	76.5						
		PWL (dBA)	31.6	47.8	58.9	66.4	70.8	72.0	69.2	65.0	55.9	76.5						
S-30	Roof Mounted HVAC	PWL (dB)	71.0	74.0	75.0	75.0	74.0	72.0	68.0	64.0	58.0	81.8	No	0	107.5	60/60/30	—	GHD Reference Spectra
		A-weighted correction	-39.4	-36.2	-34.2	-34.2	-34.2	-34.2	-34.2	-34.2	-39.4	76.5						
		PWL (dBA)	31.6	47.8	58.9	66.4	70.8	72.0	69.2	65.0	55.9	76.5						
S-31	Roof Mounted HVAC	PWL (dB)	71.0	74.0	75.0	75.0	74.0	72.0	68.0	64.0	58.0	81.8	No	0	107.5	60/60/30	—	GHD Reference Spectra
		A-weighted correction	-39.4	-36.2	-34.2	-34.2	-34.2	-34.2	-34.2	-34.2	-39.4	76.5						
		PWL (dBA)	31.6	47.8	58.9	66.4	70.8	72.0	69.2	65.0	55.9	76.5						

Appendix E

Minimum Façade Sound Transmission Class Requirements



Source: Google Satellite



Notes:
 Minimum STC rating requirements shown above are based on window-to-floor area ratios described in this report. If the final design includes any window-to-floor area ratios greater than those described in this report, then the STC rating requirements should be re-evaluated to help ensure that the indoor sound level criteria of the MECPP are met.



LAND USE COMPATIBILITY STUDY
 13342811 ONTARIO LTD.
 720 GRANITE COURT

MINIMUM FACADE SOUND TRANSMISSION CLASS REQUIREMENTS

12594433
 17.03.2023

FIGURE E.1

Appendix F

Existing Nearby EASRs



Ministry
of the
Environment

Ministère
de
l'Environnement

AMENDED CERTIFICATE OF APPROVAL
AIR
NUMBER 6155-5J5HUR

Ontario

Long & McQuade Limited
operating as Yorkville Sound
550 Granite Court
Pickering, Ontario
L1W 3Y8

Site Location: 550 Granite Court
Pickering City, Regional Municipality of Durham
L1W 3Y8

You have applied in accordance with Section 9 of the Environmental Protection Act for approval of:

- three (3) paint spray booths for the application of solvent based coatings at a combined maximum rate of 9.3 litres per hour, each equipped with 8.6 square metres of dry type paint arrestor filters, each exhausting into the atmosphere at a volumetric flow rate of 7.0 actual cubic metres per second, through separate stacks, each having an exit diameter of 0.86 metre, extending 3.05 metres above the roof and 10.4 metres above grade;

all in accordance with two (2) applications for Certificates of Approval (Air), and all supporting information dated July 29, 2002 and December 24, 2002, both signed by Jim Leiper, P.Eng., Project Manager, Production Engineering, on behalf of Long & McQuade Limited operating as Yorkville Sound.

For the purpose of this Certificate of Approval and the terms and conditions specified below, the following definitions apply:

- (i) "Act" means the Environmental Protection Act;
- (ii) "Certificate" means this Certificate of Approval issued in accordance with the Act;
- (iii) "Company" means Long & McQuade Limited operating as Yorkville Sound;
- (iv) "Equipment" means the three (3) spray booths described in the Company's applications, this Certificate and in the supporting documentation referred to herein, to the extent approved by this Certificate;
- (v) "Manual" means a document or a set of documents that provide written instructions to staff of the Company; and
- (vi) "Ministry" means the Ontario Ministry of the Environment.

You are hereby notified that this approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

OPERATION AND MAINTENANCE

1. The Company shall ensure that the Equipment is properly operated and maintained at all times. The Company shall:

(1) prepare, not later than three (3) months after the date of this Certificate, and update as necessary, a Manual outlining the operating procedures and a maintenance program for the Equipment, including:

- (a) routine operating and maintenance procedures in accordance with good engineering practices and as recommended by the Equipment suppliers;

- (b) emergency procedures;
 - (c) procedures for any record keeping activities relating to operation and maintenance of the Equipment; and
 - (d) all appropriate measures to minimize odorous emissions from all potential sources; and
- (2) implement the recommendations of the operating and maintenance Manual; and
- (3) retain, for a minimum of two (2) years from the date of their creation, all records on the maintenance, repair and inspection of the Equipment, and make these records available for review by staff of the Ministry upon request.

The reasons for the imposition of these terms and conditions are as follows:

1. Condition No. 1 is included to emphasize that the Equipment must be maintained and operated according to a procedure that will result in compliance with the Act, the regulations and this Certificate.

In addition the Company is required to keep records and to provide information to staff of the Ministry so that compliance with the Act, the regulations and this Certificate can be verified.

This Certificate of Approval revokes and replaces Certificate(s) of Approval No. 7474-5E9KNQ issued on September 23, 2002.

In accordance with Section 139 of the Environmental Protection Act, R.S.O. 1990, Chapter E-19, as amended, you may by written Notice served upon me, the Environmental Review Tribunal and in accordance with Section 47 of the Environmental Bill of Rights, S.O. 1993, Chapter 28, the Environmental Commissioner, within 15 days after receipt of this Notice, require a hearing by the Tribunal. The Environmental Commissioner will place notice of your appeal on the Environmental Registry. Section 142 of the Environmental Protection Act, provides that the Notice requiring the hearing shall state:

- 1. The portions of the approval or each term or condition in the approval in respect of which the hearing is required, and;
- 2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

The Notice should also include:

- 3. The name of the appellant;
- 4. The address of the appellant;
- 5. The Certificate of Approval number;
- 6. The date of the Certificate of Approval;
- 7. The name of the Director;
- 8. The municipality within which the works are located;

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
2300 Yonge St., 12th Floor
P.O. Box 2382
Toronto, Ontario
M4P 1E4

AND

The Environmental Commissioner
1075 Bay Street, 6th Floor
Suite 605
Toronto, Ontario
M5S 2B1

AND

The Director
Section 9, *Environmental Protection Act*
Ministry of Environment and Energy
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

* Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the

CONTENT COPY OF ORIGINAL

Tribunal at: Tel: (416) 314-4600, Fax: (416) 314-4506 or www.ert.gov.on.ca

This instrument is subject to Section 38 of the Environmental Bill of Rights, that allows residents of Ontario to seek leave to appeal the decision on this instrument. Residents of Ontario may seek leave to appeal within 15 days from the date this decision is placed on the Environmental Registry. By accessing the Environmental Registry at www.ene.gov.on.ca, you can determine when the leave to appeal period ends.

The above noted works are approved under Section 9 of the Environmental Protection Act.

DATED AT TORONTO this 24th day of February, 2003

Aziz Ahmed, P.Eng.
Director
Section 9, *Environmental Protection Act*

LS/
c: District Manager, MOE York-Durham
Jim Leiper, P.Eng., Production Engineering



AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL
NUMBER 3029-8ZDQTH
Issue Date: December 13, 2012

Ellis Packaging Limited
1830 Sandstone Manor
Pickering, Ontario
L1W 3Y1

Site Location: 1830 Sandstone Manor
Pickering City, Regional Municipality of Durham
L1W 3Y1

You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:

Description Section

A printing facility, consisting of the following processes and support units:

- printing labels; and
- assembling card board boxes

including the *Equipment* and any other ancillary and support processes and activities, **operating at a Facility Production Limit of up to 49,000 kilograms per year of ink for lithographic printing presses and 1815 kilograms per year of ink for flexographic press**, exhausting to the atmosphere as described in the *ESDM Report*.

For the purpose of this environmental compliance approval, the following definitions apply:

1. "*Acoustic Assessment Report*" means the report, prepared in accordance with *Publication NPC-233* and Appendix A of the *Basic Comprehensive User Guide*, by Chris Kellar and Dalila Giusti, Jade Acoustics Inc., and dated October 22, 2012, submitted in support of the application, that documents all sources of noise emissions and *Noise Control Measures* present at the *Facility* and includes all up-dated *Acoustic Assessment Reports* as required by the Documentation Requirements conditions of this *Approval* to demonstrate continued compliance with the *Performance Limits* following the implementation of any *Modification*.
2. "*Acoustic Assessment Summary Table*" means a table prepared in accordance with the *Basic Comprehensive User Guide* summarising the results of the *Acoustic Assessment Report*, up-dated as required by the Documentation Requirements conditions of this *Approval*.
3. "*Acoustic Audit*" means an investigative procedure consisting of measurements and/or acoustic

modelling of all sources of noise emissions due to the operation of the *Facility*, assessed to determine compliance with the Performance Limits for the *Facility* regarding noise emissions, completed in accordance with the procedures set in *Publication NPC-103* and reported in accordance with *Publication NPC-233*.

4. "*Acoustic Audit Report*" means a report presenting the results of an *Acoustic Audit*, prepared in accordance with *Publication NPC-233*.

5. "*Acoustical Consultant*" means a person currently active in the field of environmental acoustics and noise/vibration control, who is familiar with *Ministry* noise guidelines and procedures and has a combination of formal university education, training and experience necessary to assess noise emissions from a *Facility*.

6. "*Air Standards Manager*" means the Manager, Human Toxicology and Air Standards Section, Standards Development Branch, or any other person who represents and carries out the duties of the Manager, Human Toxicology and Air Standards Section, Standards Development Branch, as those duties relate to the conditions of this *Approval*.

7. "*Approval*" means this entire Environmental Compliance Approval and any *Schedules* to it.

8. "*Basic Comprehensive User Guide*" means the *Ministry* document titled "Basic Comprehensive Certificates of Approval (Air) User Guide" dated March 2011, as amended.

9. "*Company*" means Ellis Packaging Limited that is responsible for the construction or operation of the *Facility* and includes any successors and assigns.

10. "*Compound of Concern*" means a contaminant that, based on generally available information, may be discharged to the air in a quantity from the *Facility* that:

(a) is non-negligible in accordance with section 26(1)4 of *O. Reg. 419/05* in comparison to the relevant *Ministry Point of Impingement Limit*; or

(b) if a *Ministry Point of Impingement Limit* is not available for the compound, may cause an adverse effect at a *Point of Impingement* based on generally available toxicological information.

11. "*Description Section*" means the section on page one of this *Approval* describing the *Company's* operations and the *Equipment* located at the *Facility* and specifying the *Facility Production Limit* for the *Facility*.

12. "*Director*" means a person appointed by the Minister pursuant to section 5 of the *EPA*.

13. "*District Manager*" means the District Manager of the appropriate local district office of the *Ministry*, where the *Facility* is geographically located.

14. "*Emission Summary Table*" means the most updated table contained in the *ESDM Report*, which is prepared in accordance with section 26 of *O. Reg. 419/05* and the *Procedure Document* listing the appropriate *Point of Impingement* concentration for each *Compound of Concern* from the *Facility* and providing comparison to the corresponding *Ministry Point of Impingement Limit* or *Maximum Concentration Level Assessment*, or *Jurisdictional Screening Level*.

15. "*Environmental Assessment Act*" means the Environmental Assessment Act, R.S.O. 1990, c.E.18, as amended.

16. "*EPA*" means the Environmental Protection Act, R.S.O. 1990, c.E.19, as amended.

17. "*Equipment*" means equipment or processes described in the *ESDM Report*, the *Acoustic Assessment Report*, this *Approval* and in the *Schedules* referred to herein and any other equipment or processes.

18. "*Equipment with Specific Operational Limits*" means any *Equipment* related to the thermal oxidation of waste or waste derived fuels, fume incinerators or any other *Equipment* that is specifically referenced in any published *Ministry* document that outlines specific operational guidance that must be considered by the *Director* in issuing an *Approval*

19. "*ESDM Report*" means the most current Emission Summary and Dispersion Modelling Report that describes the *Facility*. The *ESDM Report* is based on the *Original ESDM Report*, is prepared after the issuance of this *Approval* in accordance with section 26 of *O. Reg. 419/05* and the *Procedure Document* by the *Company* or its consultant.

20. "*Facility*" means the entire operation located on the property where the *Equipment* is located.

21. "*Facility Production Limit*" means the production limit placed by the *Director* on the main product(s) or raw materials used by the *Facility*.

22. "*Independent Acoustical Consultant*" means an *Acoustical Consultant* not representing the *Company*, and not involved in the noise impact assessment or the design/implementation of *Noise Control Measures* for the *Facility/Equipment*. The *Independent Acoustical Consultant* shall not be retained by the consultant involved in the noise/vibration impact assessment or the design/implementation of noise/vibration control measures for the *Facility/Equipment*.

23. "*Jurisdictional Screening Level*" means a screening level for a *Compound of Concern* that is listed in the *Ministry* publication titled "Jurisdictional Screening Level (JSL) List, A Screening Tool for Ontario Regulation 419: Air Pollution - Local Air Quality", dated February 2008, as amended.

24. "*Log*" means the up-to-date log that is used to track all *Modifications* to the *Facility* since the date of this *Approval* as required by the Documentation Requirements conditions of this *Approval*.

25. "*Maximum Concentration Level Assessment*" means the Maximum Concentration Level Assessment for the purposes of an *Approval*, described in the *Basic Comprehensive User Guide*, prepared by a *Toxicologist* using currently available toxicological information, that demonstrates that the concentration at any *Point of Impingement* for a *Compound of Concern* that does not have a *Ministry Point of Impingement Limit* is not likely to cause an adverse effect as defined by the *EPA*.

26. "*Ministry*" means the ministry of the government of Ontario responsible for the *EPA* and its regulations and includes all officials, employees or other persons acting on its behalf.

27. "*Ministry Point of Impingement Limit*" means the applicable Standard set out in Schedule 2 or 3 of *O.Reg. 419/05* or a limit set out in the *Ministry* publication titled "Summary of Standards and Guidelines to support Ontario Regulation 419: Air Pollution - Local Air Quality (including Schedule 6 of *O. Reg. 419* on Upper Risk Thresholds)", dated April 2012, as amended.

28. "*Modification*" means any construction, alteration, extension or replacement of any plant, structure, equipment, apparatus, mechanism or thing, or alteration of a process or rate of production at the *Facility* that may discharge or alter the rate or manner of discharge of a *Compound of Concern* to the air or discharge or alter noise or vibration emissions from the *Facility*.

29. "*Noise Abatement Action Plan*" means the noise abatement program developed by the *Company*, submitted to the *Director* and *District Manager* and approved by the *Director*, designed to achieve compliance with the sound level limits set in *Ministry Publication NPC-205*, as applicable. It also means the *Ellis Updated Noise Abatement Action Plan*, dated October 22, 2012 and signed by Chris Kellar and Dalila Giusti, Jade Acoustics Inc., described in *Schedule "B"*.

30. "*Noise Control Measures*" means measures to reduce the noise emissions from the *Facility* and/or *Equipment* including, but not limited to, silencers, acoustic louvers, enclosures, absorptive treatment, plenums and barriers, described in the *Company's* application, this *Approval* and in the supporting

documentation referred to herein, to the extent approved by this *Approval*

31. "*O. Reg. 419/05*" means the Ontario Regulation 419/05, Air Pollution – Local Air Quality, as amended.

32. "*Original ESDM Report*" means the Emission Summary and Dispersion Modelling Report which was prepared in accordance with section 26 of *O. Reg. 419/05* and the *Procedure Document* by Etcos Inc. and dated June 25, 2010 submitted in support of the application, and includes any changes to the report made up to the date of issuance of this *Approval*.

33. "*Performance Limits*" means the performance limits specified in Condition 3.2 of this *Approval* titled Performance Limits.

34. "*Point of Impingement*" has the same meaning as in section 2 of *O. Reg. 419/05*.

35. "*Point of Reception*" means Point of Reception as defined by *Publication NPC-205* and/or *Publication NPC-232*, as applicable.

36. "*Procedure Document*" means *Ministry* guidance document titled "Procedure for Preparing an Emission Summary and Dispersion Modelling Report" dated March 2009, as amended.

37. "*Processes with Significant Environmental Aspects*" means the *Equipment* which, during regular operation, would discharge a contaminant or contaminants into the air at an amount which is not considered as negligible in accordance with section 26(1)4 of *O. Reg. 419/05* and the *Procedure Document*.

38. "*Publication NPC-103*" means the *Ministry Publication NPC-103*, Procedures , August 1978;

39. "*Publication NPC-205*" means the *Ministry Publication NPC-205*, "Sound Level Limits for Stationary Sources in Class 1 & 2 Areas (Urban)", October, 1995, as amended.

40. "*Publication NPC-207*" means the *Ministry* draft technical publication "Impulse Vibration in Residential Buildings", November 1983, supplementing the Model Municipal Noise Control By-Law, Final Report, published by the *Ministry*, August 1978, as amended.

41. "*Publication NPC-232*" means the *Ministry Publication NPC-232*, "Sound Level Limits for Stationary Sources in Class 3 Areas (Rural)", October, 1995, as amended.

42. "*Publication NPC-233*" means the *Ministry Publication NPC-233*, "Information to be Submitted for Approval of Stationary Sources of Sound", October, 1995, as amended.

43. "*Schedules*" means the following schedules attached to this *Approval* and forming part of this *Approval* namely:

Schedule A - Supporting Documentation;

Schedule B - Noise Abatement Action Plan

44. "*Toxicologist*" means a qualified professional currently active in the field of risk assessment and toxicology that has a combination of formal university education, training and experience necessary to assess contaminants.

45. "*Written Summary Form*" means the electronic questionnaire form, available on the *Ministry* website, and supporting documentation, that documents the activities undertaken at the *Facility* in the previous calendar year that must be submitted annually to the *Ministry* as required by the section of this *Approval* titled Reporting Requirements.

You are hereby notified that this environmental compliance approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

GENERAL

1.1 Except as otherwise provided by this *Approval*, the *Facility* shall be designed, developed, built, operated and maintained in accordance with the terms and conditions of this *Approval* and in accordance with the following *Schedules* attached hereto:

Schedule A - Supporting Documentation

Schedule B - Noise Abatement Action Plan

2. LIMITED OPERATIONAL FLEXIBILITY

2.1 Pursuant to section 20.6(1) of the *EPA* and subject to Conditions 2.2 and 2.3 of this *Approval*, future construction, alterations, extensions or replacements are approved in this *Approval* if the future construction, alterations, extensions or replacements are *Modifications* to the *Facility* that:

(a) are within the scope of the operations of the *Facility* as described in the *Description Section* of this *Approval*;

(b) do not result in an increase of the *Facility Production Limit* above the level specified in the *Description Section* of this *Approval*; and

(c) result in compliance with the *Performance Limits*.

2.2 Condition 2.1 does not apply to:

(a) the addition of any new *Equipment with Specific Operational Limits* or to the *Modification* of any existing *Equipment with Specific Operational Limits* at the *Facility*; or

(b) *Modifications* to the *Facility* that would be subject to the *Environmental Assessment Act*.

2.3 Condition 2.1 of this *Approval* shall expire on February 1, 2020, unless this *Approval* is revoked prior to the expiry date. The *Company* may apply for renewal of Condition 2.1 of this *Approval* by including an *ESDM Report* and an *Acoustic Assessment Report* that describes the *Facility* as of the date of the renewal application.

3. REQUEST FOR MAXIMUM CONCENTRATION LEVEL ASSESSMENT AND PERFORMANCE LIMITS

3.1 REQUEST FOR MAXIMUM CONCENTRATION LEVEL ASSESSMENT

3.1.1 If the *Company* proposes to make a *Modification* to the *Facility*, the *Company* shall determine if the proposed *Modification* will result in:

(a) a discharge of a *Compound of Concern* that was not previously discharged; or

(b) an increase in the concentration at a *Point of Impingement* of a *Compound of Concern*.

3.1.2 If a proposed *Modification* mentioned in Condition 3.1.1 will result in the discharge of a *Compound of Concern* that was not previously discharged, the *Company* shall submit a *Maximum Concentration Level Assessment* to the *Director* for review by the *Air Standards Manager* in the following circumstances:

(a) The *Compound of Concern* does not have a *Ministry Point of Impingement Limit* or a *Jurisdictional Screening Level*.

(b) The *Compound of Concern* does not have a *Ministry Point of Impingement Limit* and the concentration at a *Point of Impingement* will exceed the *Jurisdictional Screening Level*.

(c) Prior to the proposed *Modification*, a contaminant was discharged in a negligible amount and the proposed *Modification* will result in the discharge of the contaminant being considered a *Compound of Concern* and the *Compound of Concern* does not have a *Ministry Point of Impingement Limit* or a *Jurisdictional Screening Level*.

(d) Prior to the proposed *Modification*, a contaminant was discharged in a negligible amount and the proposed *Modification* will result in the discharge of the contaminant being considered a *Compound of Concern*. Additionally, the *Compound of Concern* does not have a *Ministry Point of Impingement Limit* and the concentration at a *Point of Impingement* will exceed the *Jurisdictional Screening Level*.

3.1.3 If a proposed *Modification* mentioned in Condition 3.1.1 will result in an increase in the concentration at a *Point of Impingement* of a *Compound of Concern*, the *Company* shall submit a *Maximum Concentration Level Assessment* to the *Director* for review by the *Air Standards Manager* in the following circumstances:

(a) The *Compound of Concern* does not have a *Ministry Point of Impingement Limit* or a *Jurisdictional Screening Level* and the concentration at a *Point of Impingement* will exceed the *Acceptable Maximum Ground Level Concentration*.

(b) The *Compound of Concern* does not have a *Ministry Point of Impingement Limit* or a *Jurisdictional Screening Level* and the concentration at a *Point of Impingement* will exceed the most recently accepted *Maximum Concentration Level Assessment* submitted under Condition 3.1.2 or this Condition.

(c) The *Compound of Concern* does not have a *Ministry Point of Impingement Limit* and the concentration at a *Point of Impingement* will exceed the *Jurisdictional Screening Level* and the *Acceptable Maximum Ground Level Concentration*.

(d) The *Compound of Concern* does not have a *Ministry Point of Impingement Limit* and the concentration at a *Point of Impingement* will exceed the *Jurisdictional Screening Level* and the most recently accepted *Maximum Concentration Level Assessment* submitted under Condition 3.1.2 or this Condition.

(e) The *Compound of Concern* does not have a *Ministry Point of Impingement Limit*, *Acceptable Maximum Ground Level Concentration* or a *Maximum Concentration Level Assessment* and the concentration at a *Point of Impingement* will exceed the *Jurisdictional Screening Level*.

3.1.4 Subject to the Operational Flexibility set out in Condition 2 of this *Approval*, the *Company* may make the *Modification* if the submission of a *Maximum Concentration Level Assessment* under Condition 3.1.2 or 3.1.3 is not required.

3.1.5 A *Company* that is required to submit an assessment under Condition 3.1.2 or 3.1.3 shall submit the assessment at least thirty (30) days before the proposed *Modification* occurs.

3.1.6 The *Ministry* shall provide to the *Company* written confirmation of the receipt of the assessment under Condition 3.1.2 or 3.1.3.

3.1.7 If an assessment is submitted under Condition 3.1.2 or 3.1.3, the *Company* shall not modify the *Facility* unless the *Ministry* accepts the assessment.

3.1.8 If the *Ministry* notifies the *Company* that it does not accept the assessment submitted under Condition 3.1.2 or 3.1.3, the *Company* shall:

(a) revise and resubmit the assessment; or

(b) notify the *Ministry* that the *Company* will not be modifying the *Facility*.

3.1.9 The re-submission under Condition 3.1.8 (a) is considered by the *Ministry* as a new submission.

3.2. **PERFORMANCE LIMITS**

3.2.1 Subject to Condition 3.2.2, the *Company* shall, at all times, ensure that all *Equipment* that is a source of a *Compound of Concern* is operated to comply with the following *Performance Limits*:

(a) for a *Compound of Concern* that has a *Ministry Point of Impingement Limit*, the maximum concentration of that *Compound of Concern* at any *Point of Impingement* shall not exceed the corresponding *Ministry Point of Impingement Limit*;

(b) for a *Compound of Concern* that has an *Acceptable Maximum Ground Level Concentration* and no *Maximum Concentration Level Assessment*, the maximum concentration of that *Compound of Concern* at any *Point of Impingement* shall not exceed the corresponding *Acceptable Maximum Ground Level Concentration*; and

(c) for a *Compound of Concern* that has a *Maximum Concentration Level Assessment*, the maximum concentration of that *Compound of Concern* at any *Point of Impingement* shall not exceed the most recently accepted corresponding *Maximum Concentration Level Assessment*.

3.2.2 If the *Company* has modified the *Facility* and was not required to submit a *Maximum Concentration Level Assessment* with respect to a *Compound of Concern* under Condition 3.1.2 or 3.1.3, the *Company* shall, at all times, ensure that all *Equipment* that is a source of the *Compound of Concern* is operated such that the maximum concentration of the *Compound of Concern* shall not exceed the concentration listed for the *Compound of Concern* in the most recent version of the *ESDM Report*.

3.2.3 Following completion of the *Noise Abatement Action Plan* described in *Schedule "B"*, the *Company* shall, at all times, ensure that the noise emissions from the *Facility* comply with the limits set out in *Ministry Publication NPC-205*.

3.2.4 The *Company* shall, at all times, ensure that the vibration emissions from the *Facility* comply with the limits set out in *Ministry Publication NPC-207*.

3.2.5 The *Company* shall, at all times, operate any *Equipment with Specific Operational Limits* approved by this *Approval* in accordance with the *Original ESDM Report*.

4. **DOCUMENTATION REQUIREMENTS**

4.1 The *Company* shall, at all times, maintain documentation that describes the current operations of the *Facility*, including but not limited to:

(a) an *ESDM Report* that demonstrates compliance with the *Performance Limits* for the *Facility*;

(b) an *Acoustic Assessment Report* that demonstrates compliance with the *Performance Limits* for the *Facility*;

(c) an up-to-date *Log* that describes each *Modification* to the *Facility*; and

(d) a record of the changes to the *ESDM Report* and the *Acoustic Assessment Report* that documents how each *Modification* is in compliance with the *Performance Limits*.

4.2 The *Company* shall, during regular business hours, make the current *Emission Summary Table* and *Acoustic Assessment Summary Table* available for inspection at the *Facility* by any interested member of the public.

4.3 Subject to Condition 4.5, the *Company* shall prepare and complete no later than June 15 of each

year documentation that describes the activities undertaken at the *Facility* in the previous calendar year, including but not limited to:

- (a) a list of all *Compounds of Concern* for which a *Maximum Concentration Level Assessment* was submitted to the *Director* for review by the *Air Standards Manager* pursuant to Condition 3.1.2 or 3.1.3 of this *Approval*;
- (b) if the *Company* has modified the *Facility* and was not required to submit a *Maximum Concentration Level Assessment* with respect to a *Compound of Concern* under Condition 3.1.2 or 3.1.3, a list and concentration level of all such *Compounds of Concern*;
- (c) a review of any changes to *Ministry Point of Impingement Limits* that affect any *Compounds of Concern* emitted from the *Facility*; and
- (d) a table of the changes in the emission rate of any *Compound of Concern* and the resultant increase or decrease in the *Point of Impingement* concentration reported in the *ESDM Report*.

4.4 Subject to Condition 4.5, the *Company* shall, at all times, maintain the documentation described in Condition 4.3.

4.5 Conditions 4.3 and 4.4 do not apply if Condition 2.1 has expired.

4.6 The *Company* shall, within three (3) months after the expiry of Condition 2.1 of this *Approval*, update the *ESDM Report* and the *Acoustic Assessment Report* such that they describe the *Facility* as it was at the time that Condition 2.1 of this *Approval* expired.

5. REPORTING REQUIREMENTS

5.1 Subject to Condition 5.2, the *Company* shall provide the *Ministry* and the *Director* no later than June 15 of each year, a *Written Summary Form* that shall include the following:

- (a) a declaration of whether the *Facility* was in compliance with section 9 of the *EPA, O.Reg. 419/05* and the conditions of this *Approval*;
- (b) a summary of each *Modification* that took place in the previous calendar year that resulted in a change in the previously calculated concentration at the *Point of Impingement* for any *Compound of Concern* or resulted in a change in the sound levels reported in the *Acoustic Assessment Summary Table* at any *Point of Reception*.

5.2 Condition 5.1 does not apply if Condition 2.1 has expired.

6. OPERATION AND MAINTENANCE

6.1 The *Company* shall prepare and implement, not later than three (3) months from the date of this *Approval*, operating procedures and maintenance programs for all *Processes with Significant Environmental Aspects*, which shall specify as a minimum:

- (a) frequency of inspections and scheduled preventative maintenance;
- (b) procedures to prevent upset conditions;
- (c) procedures to minimize all fugitive emissions;
- (d) procedures to prevent and/or minimize odorous emissions;
- (e) procedures to prevent and/or minimize noise emissions; and
- (f) procedures for record keeping activities relating to the operation and maintenance programs.

6.2 The *Company* shall ensure that all *Processes with Significant Environmental Aspects* are operated and maintained at all times in accordance with this *Approval*, the operating procedures and maintenance programs.

7. COMPLAINTS RECORDING PROCEDURE

7.1 If at any time, the *Company* receives any environmental complaints from the public regarding the operation of the *Equipment* approved by this *Approval*, the *Company* shall respond to these complaints according to the following procedure:

- (a) the *Company* shall record and number each complaint, either electronically or in a log book, and shall include the following information: the time and date of the complaint and incident to which the complaint relates, the nature of the complaint, wind direction at the time and date of the incident to which the complaint relates and, if known, the address of the complainant;
- (b) the *Company*, upon notification of a complaint, shall initiate appropriate steps to determine all possible causes of the complaint, and shall proceed to take the necessary actions to appropriately deal with the cause of the subject matter of the complaint; and
- (c) the *Company* shall complete and retain on-site a report written within one (1) week of the complaint date, listing the actions taken to appropriately deal with the cause of the subject matter of the complaint and any recommendations for remedial measures, and managerial or operational changes to reasonably avoid the recurrence of similar incidents.

8. RECORD KEEPING REQUIREMENTS

8.1 Any information requested by any employee in or agent of the *Ministry* concerning the *Facility* and its operation under this *Approval*, including, but not limited to, any records required to be kept by this *Approval*, shall be provided to the employee in or agent of the *Ministry*, upon request, in a timely manner.

8.2 The *Company* shall retain, for a minimum of five (5) years from the date of their creation, except as noted below, all reports, records and information described in this *Approval* and shall include but not be limited to:

- (a) If the *Company* has updated the *ESDM Report* in order to comply with Condition 4.1(a) of this *Approval*, a copy of each new version of the *ESDM Report*;
- (b) If the *Company* has updated the *Acoustic Assessment Report*, in order to comply with Condition 4.1(b) of this *Approval*, a copy of each new version of the *Acoustic Assessment Report*;
- (c) supporting information used in the emission rate calculations performed in the *ESDM Reports* and *Acoustic Assessment Reports* to document compliance with the *Performance Limits*(superseded information must be retained for a period of three (3) years after *Modification*);
- (d) the *Log* that describes each *Modification* to the *Facility*;
- (e) all documentation prepared in accordance with Condition 4.3 of this *Approval*;
- (f) copies of any *Written Summary Forms* provided to the *Ministry* under Condition 5.1 of this *Approval*;
- (g) the operating procedures and maintenance programs, including records on the maintenance, repair and inspection of the *Equipment* related to all *Processes with Significant Environmental Aspects*; and
- (h) the complaints recording procedure, including records related to all environmental complaints made by the public as required by Condition 7.1 of this *Approval*.

9. REVOCATION OF PREVIOUS APPROVALS

9.1 This *Approval* replaces and revokes all Certificates of Approval (Air) issued under section 9 *EPA* and Environmental Compliance Approvals issued under Part II.1 *EPA* to the *Facility* in regards to the activities mentioned in subsection 9(1) of the *EPA* and dated prior to the date of this *Approval*.

10. NOISE ABATEMENT ACTION PLAN

10.1 The *Company* shall implement the *Noise Abatement Action Plan* described in *Schedule "B"*.

10.2 The *Company* shall ensure that the *Noise Abatement Action Plan* shall achieve compliance of the noise emissions from the *Facility* with the limits set out in *Ministry Publication NPC-205*.

10.3 The *Company* shall, not later than the date(s) specified in the *Noise Abatement Action Plan* detailed in *Schedule "B"*, ensure that all reports on the progress of the *Noise Abatement Action Plan* are submitted to the *District Manager* and the *Director*.

11. ACOUSTIC AUDIT

11.1 The *Company* shall carry out *Acoustic Audit* measurements on the actual noise emissions due to the operation of the *Facility*, following the completion of the *Noise Abatement Action Plan*. The *Company*:

(a) shall carry out *Acoustic Audit* measurements in accordance with the procedures in *Publication NPC-103*;

(b) shall submit an *Acoustic Audit Report* on the results of the *Acoustic Audit*, prepared by an *Independent Acoustical Consultant*, in accordance with the requirements of *Publication NPC-233*, to the *District Manager* and the *Director*, not later than three (3) months after the completion of the *Noise Abatement Action Plan* detailed in *Schedule "B"*.

SCHEDULE "A"

Supporting Documentation

(a) The updated Acoustic Assessment Report and the updated Noise Abatement Action Plan dated October 22, 2012 and signed by Chris Kellar and Dalila Giusti, Jade Acoustics Inc.

(b) The letter (e-mail) dated September 10, 2012 and provided by Don Smart, Plant Manager, Ellis Packaging Ltd.

(c) Revised Noise Abatement Action Plan dated September 7, 2012.

(d) Acoustic Audit Report and the Noise Abatement Action Plan dated April 19, 2012 and signed by Chris Kellar and Dalila Giusti, Jade Acoustics Inc.

(e) Acoustic Audit Reports dated July 7 and August 12, 2011, prepared and signed by Bhuwan Prasad, Genivar.

(f) The letters (e-mails) dated September 4-6, provided by Bhuwan Prasad, Genivar. Acoustic Audit Report.

(g) Application dated June 25, 2010, signed by Blain Welchel and submitted by the *Company* for a Certificate of Approval (Air & Noise).

(h) Emission Summary and Dispersion Modelling Report, dated June 25, 2010, prepared by Etcos Inc.

SCHEDULE "B"

Noise Abatement Action Plan

The *Noise Abatement Action Plan* shall consist of the *Noise Control Measures* identified as Phase 1 and Phase 2, as outlined in the Ellis Updated Noise Abatement Action Plan dated October 22, 2012 and signed by Chris Kellar and Dalila Giusti, Jade Acoustics Inc. The *Noise Abatement Action Plan* shall be implemented according to the following schedule:

- Complete Phase 1 *Noise Control Measures* not later than three (3) months after the date of this *Approval*.
- Submit, not later than four (4) months after the date of this *Approval*, an *Acoustic Audit Report*, prepared by an *Acoustical Consultant*, on the results of an *Acoustic Audit* conducted to demonstrate conditions following completion of the Phase 1 *Noise Control Measures*.
- Complete Phase 2 *Noise Control Measures* not later than six (6) months after the date of this *Approval*, representing completion of the *Noise Abatement Action Plan*,

The reasons for the imposition of these terms and conditions are as follows:

GENERAL

1. Condition No. 1 is included to require the *Approval* holder to build, operate and maintain the *Facility* in accordance with the Supporting Documentation in Schedule A considered by the *Director* in issuing this *Approval*.

LIMITED OPERATIONAL FLEXIBILITY, REQUEST FOR MAXIMUM CONCENTRATION LEVEL ASSESSMENT AND PERFORMANCE LIMITS

2. Conditions No. 2 and 3 are included to limit and define the *Modifications* permitted by this *Approval*, and to set out the circumstances in which the *Company* shall submit a *Maximum Concentration Level Assessment* prior to making *Modifications*. The holder of the *Approval* is approved for operational flexibility for the *Facility* that is consistent with the description of the operations included with the application up to the *Facility Production Limit*. In return for the operational flexibility, the *Approval* places performance based limits that cannot be exceeded under the terms of this *Approval*. *Approval* holders will still have to obtain other relevant approvals required to operate the *Facility*, including requirements under other environmental legislation such as the *Environmental Assessment Act*.

DOCUMENTATION REQUIREMENTS

3. Condition No. 4 is included to require the *Company* to maintain ongoing documentation that demonstrates compliance with the *Performance Limits* of this *Approval* and allows the *Ministry* to monitor on-going compliance with these *Performance Limits*. The *Company* is required to have an up to date *ESDM Report* and *Acoustic Assessment Report* that describe the *Facility* at all times and make the *Emission Summary Table* and *Acoustic Assessment Summary Table* from these reports, along with a list of contaminants registered by the *Company* on the *Technical Standards Registry* available to the public on an ongoing basis in order to maintain public communication with regard to the emissions from the *Facility*.

REPORTING REQUIREMENTS

4. Condition No. 5 is included to require the *Company* to provide a yearly *Written Summary Form* to the *Ministry*, to assist the *Ministry* with the review of the site's compliance with the *EPA*, the regulations and this *Approval*.

OPERATION AND MAINTENANCE

5. Condition No. 6 is included to require the *Company* to properly operate and maintain the *Processes with Significant Environmental Aspects* to minimize the impact to the environment from these processes.

COMPLAINTS RECORDING PROCEDURE

6. Condition No. 7 is included to require the *Company* to respond to any environmental complaints regarding the operation of the *Equipment*, according to a procedure that includes methods for preventing recurrence of similar incidents and a requirement to prepare and retain a written report.

RECORD KEEPING REQUIREMENTS

7. Condition No. 8 is included to require the *Company* to retain all documentation related to this *Approval* and provide access to employees in or agents of the *Ministry*, upon request, so that the *Ministry* can determine if a more detailed review of compliance with the *Performance Limits* is necessary.

REVOCAION OF PREVIOUS APPROVALS

8. Condition No. 9 is included to identify that this *Approval* replaces all Section 9 Certificate(s) of Approval and Part II.1 Approvals in regards to the activities mentioned in subsection 9(1) of the *EPA* and dated prior to the date of this *Approval*.

NOISE ABATEMENT ACTION PLAN

9. Condition No. 10 is included to require the *Company* to implement a *Noise Abatement Action Plan* designed to ensure that the noise emissions from the *Facility* will be in compliance with applicable limits set in the *Ministry*'s noise guidelines.

ACOUSTIC AUDIT

10. Condition No. 11 is included to require the *Company* to gather accurate information and submit an *Acoustic Audit Report* in accordance with procedures set in the *Ministry*'s noise guidelines, so that the environmental impact and subsequent compliance with the *EPA*, the regulation and this *Certificate* can be verified.

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). 6804-8A2QKT issued on December 20, 2010

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 142 of the Environmental Protection Act provides that the Notice requiring the hearing shall state:

1. The portions of the environmental compliance approval or each term or condition in the environmental compliance approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

Pursuant to subsection 139(3) of the Environmental Protection Act, a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The environmental compliance approval number;
6. The date of the environmental compliance approval;
7. The name of the Director, and;
8. The municipality or municipalities within which the project is to be engaged in.

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
655 Bay Street, Suite 1500
Toronto, Ontario
M5G 1E5

AND

The Director appointed for the
purposes of Part II.1 of the
Environmental Protection Act
Ministry of the Environment
2 St. Clair Avenue West, Floor
12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Review Tribunal 's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 314-4506 or www.ert.gov.on.ca**

The above noted activity is approved under s.20.3 of Part II.1 of the Environmental Protection Act.

DATED AT TORONTO this 13th day of December,
2012

Ian Greason, P.Eng.
Director
appointed for the purposes of Part II.1 of
the *Environmental Protection Act*

DZ/
c: District Manager, MOE York-Durham
Chris Kellar, Jade Acoustics Inc.


AMENDED CERTIFICATE OF APPROVAL
AIR

NUMBER 9201-7LTQN4

Issue Date: January 30, 2009

Web Offset Publications Limited
 1800 Ironstone Manor
 Pickering, Ontario
 L1W 3J9

Site Location: 1800 Ironstone Manor
 Pickering City, Regional Municipality of Durham, Ontario
 L1W 3J9

You have applied in accordance with Section 9 of the Environmental Protection Act for approval of:

Description Section

A printing company, producing full-colour magazines, tabloids, catalogues and flyers, consisting of the following processes and support units:

- sheet-fed printing presses;
- heat-set printing presses;
- natural gas fired dryers;
- cold-set, inkjet and digital printing presses;
- paper trimming;
- binding;

- one (1) regenerative thermal oxidation system, identified as I2, equipped with one (1) natural gas fired burner having a maximum heat input of 5.45 gigajoules per hour, exhausting into the atmosphere at a volumetric flow rate of 5.66 cubic metre per second at 160 degrees Celsius through a stack, having an exit diameter of 0.46 metre and extending 3.0 metres above the roof and 11.5 metres above grade, serving the heat-set printing presses; and

- one (1) thermal oxidizer, serving as back-up to the regenerative thermal oxidation system, identified as I1, equipped with one (1) natural gas fired burner having a maximum heat input of 2.11 gigajoules per hour, exhausting into the atmosphere at a volumetric flow rate of 8.21 cubic metres per second at 160 degrees Celsius through a stack, having an exit diameter of 0.46 metre and extending 3.66 metres above the roof and 12.16 metres above grade;

including the *Equipment* and any other ancillary and support processes and activities, **operating at a Facility Production Limit of up to 20,000 tonnes per year** exhausting to the atmosphere as described in the *ESDM Report*.

For the purpose of this Certificate of Approval and the terms and conditions specified below, the following definitions apply:

1. "*Air Standards Manager*" means the Manager, Human Toxicology and Air Standards Section, Standards Development Branch, or any other person who represents and carries out the duties of the Manager, Human Toxicology and Air Standards Section, Standards Development Branch, as those duties relate to the conditions of this *Certificate*.
2. "*Basic Comprehensive User Guide*" means the *Ministry* document titled "Basic Comprehensive Certificates of Approval (Air) User Guide" dated April 2004, as amended.
3. "*Certificate*" means this entire certificate of approval document, issued in accordance with section 9 of the *EPA* and includes all the *Schedules*, and the *Supporting Documentation*.

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4. "*Company*" means Web Offset Publications Limited that is responsible for the construction or operation of the *Facility* and includes any successors and assigns.
5. "*Compound of Concern*" means a contaminant that, based on generally available information, may be emitted to the atmosphere in a quantity from any source at the *Facility* that is significant either in comparison to the relevant *Ministry Point of Impingement Limit* or if a *Ministry Point of Impingement Limit* is not available for the compound then, based on generally available toxicological information, the compound has the potential to cause an adverse effect as defined by the *EPA* at a *Point of Impingement*.
6. "*Description Section*" means the section on page one of the *Certificate* describing the *Company's* operations and the *Equipment* located at the *Facility* and specifying the *Facility Production Limit* for the *Facility*.
7. "*Director*" means any person appointed in writing by the Minister of the Environment pursuant to section 5 of the *EPA* as a Director for the purposes of section 9 of the *EPA*.
8. "*District Manager*" means the District Manager of the appropriate local district office of the *Ministry*, where the *Facility* is geographically located.
9. "*Emission Summary Table*" means the table prepared in accordance with O. Reg. 419/05 and the *Procedure Document* listing the appropriate *Point of Impingement* concentrations of each *Compound of Concern* from the *Facility* and providing comparison to the corresponding *Ministry Point of Impingement Limit* or *Maximum Concentration Level Assessment*.
10. "*Environmental Assessment Act*" means the Environmental Assessment Act, R.S.O. 1990, c.E.18.
11. "*EPA*" means the Environmental Protection Act, R.S.O. 1990, c.E.19.
12. "*Equipment*" means equipment or processes described in the *ESDM Report*, this *Certificate* and in the *Supporting Documentation* referred to herein and any other equipment or processes.
13. "*Equipment with Specific Operational Limits*" means the thermal oxidizers described in the *Company's* application and any *Equipment* related to the thermal oxidation of waste or waste derived fuels, fume incinerators or any other *Equipment* that is specifically referenced in any published *Ministry* document that outlines specific operational guidance that must be considered by the *Director* in issuing of a Certificate of Approval.
14. "*ESDM Report*" means the Emission Summary and Dispersion Modelling Reports prepared in accordance with the *Procedure Document* by N.D. Groff Associates Inc. and dated December 8, 2005 and January 10, 2007 submitted in support of the applications, and includes any amendments to the *ESDM Report* listed in *Schedule A* and all up-dated *ESDM Reports* prepared as required by the Documentation Requirements conditions of this *Certificate*.
15. "*Facility*" means the entire operation located on the property where the *Equipment* is located.
16. "*Facility Production Limit*" means the production limit placed on the main product(s) or raw materials used by the *Facility* that represents the design capacity of the *Facility* and assists in the definition of the operations approved by the *Director*.
17. "*Log*" means the up-to-date log that is used to track all *Modifications* to the *Facility* since the date of this *Certificate* as required by the Documentation Requirements conditions of this *Certificate*.
18. "*Maximum Concentration Level Assessment*" means the Maximum Concentration Level Assessment for the purposes of a Basic Comprehensive Certificate of Approval, described in the *Basic Comprehensive User Guide*, prepared by a *Toxicologist* using currently available toxicological information, that demonstrates that the concentration at any *Point of Impingement* for a *Compound of Concern* that does not have a *Ministry Point of Impingement Limit* is not likely to cause an adverse effect as defined by the *EPA*. The concentration at *Point of Impingement* for a *Compound of Concern* must be calculated in accordance with O. Reg. 419/05.
19. "*Ministry*" means the ministry of the government of Ontario responsible for the *EPA* and includes all officials, employees or other persons acting on its behalf.
20. "*Ministry Point of Impingement Limit*" means the appropriate Standard from Schedule 1, 2 or 3 from O.Reg. 419/05

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and if a standard is not provided for a *Contaminant of Concern* the appropriate criteria listed in the *Ministry* publication titled "Summary of Standards and Guidelines to support Ontario Regulation 419: Air Pollution - Local Air Quality (including Schedule 6 of O. Reg. 419 on Upper Risk Thresholds)", dated February 2008, as amended.

21. "*Modification*" means any construction, alteration, extension or replacement of any plant, structure, equipment, apparatus, mechanism or thing, or alteration of a process or rate of production at the *Facility* that may discharge or alter the rate or manner of discharge of a *Compound of Concern* to the atmosphere.

22. "*Operating Envelope*" means the limits on the *Company's* approved operations set out in Conditions 2.3 to 2.7 of this *Certificate*.

23. "*O. Reg. 419/05*" means Ontario Regulation 419/05, Air Pollution - Local Air Quality.

24. "*Performance Limits*" means the performance limits specified in the section of this *Certificate* titled Performance Limits.

25. "*Point of Impingement*" means any point outside the facility in the natural environment and as defined by s. 2 of O. Reg. 419/05.

26. "*Procedure Document*" means *Ministry* Procedure titled "Procedure for Preparing an Emission Summary and Dispersion Modelling Report" dated July 2005, as amended.

27. "*Processes with Significant Environmental Aspects*" means the *Equipment* which, during regular operation or if not properly operated or maintained, may cause or are likely to cause an adverse effect.

28. "*Publication NPC-205*" means the *Ministry* Publication NPC-205, "Sound Level Limits for Stationary Sources in Class 1 & 2 Areas (Urban)", October, 1995 as amended.

29. "*Publication NPC-207*" means the *Ministry* draft technical publication "Impulse Vibration in Residential Buildings", November 1983, supplementing the Model Municipal Noise Control By-Law, Final Report, August 1978, published by the *Ministry*.

30. "*Publication NPC-232*" means the *Ministry* Publication NPC-232, "Sound Level Limits for Stationary Sources in Class 3 Areas (Rural)", October, 1995 as amended.

31. "*Schedules*" means the following schedules attached to the *Certificate* and forming part of the *Certificate* namely:

Schedule A - Supporting Documentation; and
Schedule B - Continuous Temperature Monitoring and Recording System.

32. "*Supporting Documentation*" means the documents listed in Schedule A of this *Certificate* which forms part of this *Certificate*.

33. "*Toxicologist*" means a qualified professional currently active in the field of risk assessment, risk management and toxicology that has a combination of formal university education, training and experience necessary to assess the *Compound of Concern* in question.

34. "*Written Summary*" means the written summary that must be submitted annually to the *Ministry* as required by the Section titled Reporting Requirements of this *Certificate*.

You are hereby notified that this approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. GENERAL

1.1 Except as otherwise provided by this *Certificate*, the *Facility* shall be designed, developed, built, operated and maintained in accordance with the terms and conditions of this *Certificate* and in accordance with the application, the

ESDM Report, plans, specifications and *Supporting Documentation* submitted and the following *Schedules* attached hereto:

Schedule A - Supporting Documentation; and

Schedule B - Continuous Temperature Monitoring and Recording System.

2. OPERATIONAL FLEXIBILITY

2.1 The *Company* may make *Modifications* to the *Facility* in accordance with this *Certificate*.

2.2 Despite Condition 2.1, all *Modifications* made by the *Company* shall be within the *Operating Envelope* of the *Facility* as defined by conditions 2.3 to 2.7.

2.3 Despite Condition 2.1, the *Company* shall not make *Modifications* to the *Facility* that are outside the scope of the intended operations of the *Facility* as described in the *Description Section*.

2.4 Despite Condition 2.1, the *Company* shall not make *Modifications* to the *Facility* that result in an increase of the *Facility Production Limit* above the level specified in this *Certificate*.

2.5 Despite Condition 2.1, the *Company* shall not make *Modifications* to the *Facility* that would add any *Equipment with Specific Operational Limits*. The *Company* shall operate *Equipment with Specific Operational Limits* approved by this *Certificate* in accordance with the original *ESDM Report* and Conditions 10 and 11 and Schedule B in the *Certificate*.

2.6 Despite Condition 2.1, the *Company* shall only make *Modifications* to the *Facility* which comply with the *Performance Limits*.

2.7 Despite Condition 2.1, the *Company* shall not make *Modifications* to the *Facility* if the *Modifications* would be subject to the *Environmental Assessment Act*.

2.8 Condition 2.1 of this *Certificate* shall expire five (5) years from the date of this *Certificate*, unless this *Certificate* is revoked prior to this date. Upon expiry of Condition 2.1 of this *Certificate*, the *Company* shall apply for amendment to include the current *ESDM Report* in Schedule A as *Supporting Documentation* to this *Certificate*.

3. PERFORMANCE LIMITS

3.1 The *Company* shall, at all times, ensure that all *Equipment* that are a source of a *Compound of Concern* from the *Facility* are operated to comply with the following *Performance Limits*:

(a) the maximum concentration of any *Compound of Concern* at a *Point of Impingement* shall not exceed the corresponding *Ministry Point of Impingement Limit*;

(b) for any *Compound of Concern* that does not have a *Ministry Point of Impingement Limit*, the maximum concentration of any *Compound of Concern* at a *Point of Impingement* shall not be greater than a level assessed as part of the original *ESDM Report*; or

(c) for any *Compound of Concern* that does not have a *Ministry Point of Impingement Limit*, the maximum concentration of any *Compound of Concern* at a *Point of Impingement* shall not be greater than the *Maximum Concentration Level Assessment* submitted to the *Ministry* and accepted by the *Air Standards Manager*.

3.2 The *Company* shall, no later than thirty (30) days prior to:

(a) the introduction of a new *Compound of Concern* that does not have a *Ministry Point of Impingement Limit*;

(b) an increase to the concentration at a *Point of Impingement* of a *Compound of Concern* that does not have a *Ministry Point of Impingement Limit* such that the resulting concentration at a *Point of Impingement* will be greater than the level that was reviewed as part of the original *ESDM Report*; or

(c) an increase to the concentration at a *Point of Impingement* of a *Compound of Concern* that does not have a *Ministry*

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Point of Impingement Limit such that the resulting concentration at a *Point of Impingement* will be greater than the corresponding *Maximum Concentration Level Assessment* previously accepted by the *Air Standards Manager*;

submit a proposed or revised *Maximum Concentration Level Assessment* for the *Compound of Concern* to the *Director* for review by the *Air Standards Manager*.

3.3 The *Company* may not use the *Maximum Concentration Level Assessment* prior to thirty (30) days from the date of an acknowledgment letter from the *Ministry* unless the *Company* receives written acceptance by the *Director*.

3.4 If the *Air Standards Manager* does not accept the proposed *Maximum Concentration Level Assessment*, the *Company* shall not introduce or increase the emission rate of the *Compound of Concern* without approval from the *Director*.

3.5 The *Company* shall, at all times, ensure that the noise emissions from the *Facility* comply with the limits set out in *Ministry Publication NPC-205* and/or *Publication NPC-232*, as applicable.

3.6 The *Company* shall, at all times, ensure that the vibration emissions from the *Facility* comply with the limits set out in *Ministry Publication NPC-207*.

4. DOCUMENTATION REQUIREMENTS

4.1 The *Company* shall, at all times, maintain documentation that describes the current operations of the *Facility*, including but not limited to:

(a) a current *ESDM Report* that demonstrates compliance with the *Performance Limits* for the *Facility* regarding all *Compounds of Concern*;

(b) an up-to-date *Log* that describes each *Modification* to the *Facility*; and

(c) a record of the changes to the *ESDM Report* that documents how each *Modification* is in compliance with the *Performance Limits*.

4.2 The *Company* shall, during regular business hours, make the current *Emission Summary Table* available for inspection at the *Facility* by any interested member of the public.

5. REPORTING REQUIREMENTS

5.1 The *Company* shall provide the *District Manager* and the *Director* no later than August 15 of each year, a *Written Summary* of activities undertaken in the previous calendar year that shall include the following:

(a) a signed statement that the *Facility* was in compliance with the *Performance Limits*;

(b) a summary of each *Modification* that took place in the previous calendar year and resulted in a change in the previously calculated concentration at the *Point of Impingement* for any *Compound of Concern*;

(c) a list of each *Compound of Concern* submitted to the *Air Standards Manager* for review in the previous calendar year;

(d) a review of any changes to a *Ministry Point of Impingement Limit* undertaken in the previous calendar year that affect a *Compound of Concern* emitted from the *Facility*;

(e) a tabulated summary of the changes in the emission rate of any *Compound of Concern* and the resultant increase or decrease in the *Point of Impingement* concentration reported in the *ESDM Report* over the previous calendar year; and

(f) the *Emission Summary Table* for the *Facility* as of December 31 from the previous calendar year.

6. OPERATION AND MAINTENANCE

6.1 The *Company* shall prepare and implement, not later than three (3) months from the date of this *Certificate*, operating procedures and maintenance programs for all *Processes with Significant Environmental Aspects*. The *Company* shall

ensure that all *Processes with Significant Environmental Aspects* are operated and maintained at all times in accordance with this *Certificate*, the operating procedures and maintenance programs. The operating procedures and maintenance programs shall specify as a minimum:

- (a) frequency of inspections and scheduled preventative maintenance;
- (b) procedures to prevent upset conditions;
- (c) procedures to minimize all fugitive emissions;
- (d) procedures to prevent and/or minimize odorous emissions; and
- (e) procedures for record keeping activities relating to the operation and maintenance programs.

7. COMPLAINTS RECORDING PROCEDURE

7.1 If at any time, the *Company* receives any environmental complaints from the public regarding the operation of the *Equipment* approved by this *Certificate*, the *Company* shall respond to these complaints according to the following procedure:

- (a) the *Company* shall record and number each complaint, either electronically or in a log book, and shall include the following information: the time and date of the complaint and incident to which the complaint relates, the nature of the complaint, wind direction at the time and date of the incident to which the complaint relates and the address of the complainant, if known;
- (b) the *Company*, upon notification of a complaint, shall initiate appropriate steps to determine all possible causes of the complaint, and shall proceed to take the necessary actions to appropriately deal with the cause of the subject matter of the complaint; and
- (c) the *Company* shall complete and retain on-site a report written within one (1) week of the complaint date, listing the actions taken to appropriately deal with the cause of the subject matter of the complaint and any recommendations for remedial measures, and managerial or operational changes to reasonably avoid the recurrence of similar incidents.

8. RECORD KEEPING REQUIREMENTS

8.1 Any information requested by the *Ministry* concerning the *Facility* and its operation under this *Certificate*, including, but not limited to, any records required to be kept by this *Certificate*, shall be provided to the *Ministry*, upon request, in a timely manner.

8.2 The *Company* shall retain, for a minimum of seven (7) years from the date of their creation, except as noted below, all reports, records and information described in this *Certificate* and shall include but not be limited to:

- (a) the current *ESDM Report*;
- (b) supporting information used in the emission rate calculations performed in the *ESDM Report* to document compliance with the *Performance Limits* (superseded information must be retained for a minimum period of three (3) years after *Modification*);
- (c) the *Log* that describes each *Modification* to the *Facility*;
- (d) the *Written Summaries* provided to the *Ministry*;
- (e) the operating procedures and maintenance programs, including records on the maintenance, repair and inspection of the *Equipment* related to all *Processes with Significant Environmental Aspects*; and
- (f) the complaints recording procedure, including records related to all environmental complaints made by the public as required by the section titled Complaints Recording Procedure of this *Certificate*.

9. REVOCATION OF PREVIOUS CERTIFICATES OF APPROVAL(Air & Noise)

9.1 This *Certificate* replaces and revokes all Section 9 Certificates of Approval issued to the *Facility* and dated prior to the date of this *Certificate*.

10. CONTINUOUS TEMPERATURE MONITORING AND RECORDING SYSTEM

10.1 The *Company* shall, install, continuously monitor and maintain a program to monitor and record continuously the operating temperature of the thermal oxidizers. The continuous temperature monitor shall be equipped with a continuous data recorder and shall comply with the requirements outline in Schedule B.

11. EQUIPMENT WITH SPECIFIC OPERATIONAL LIMITS

11.1 The *Company* shall ensure that the thermal oxidizer, identified as I2, is designed and operated to comply with a minimum operating temperature of 870 degrees Celsius, as measured by the Continuous Temperature Monitoring and Recording System.

11.2 The *Company* shall ensure that the thermal oxidizer, identified as I2, has reached its minimum operating temperature prior to the introduction of the gas emissions from the heat-set printing presses.

11.3 The *Company* shall ensure that the thermal oxidizer, identified as I1, is designed and operated to comply, at all times, with the following performance requirements:

(a) The concentration of carbon monoxide in the undiluted gas emitted from the thermal oxidizer shall not exceed 100 parts per million on a dry basis averaged over any ten-minute period,

(b) The concentration of total hydrocarbons expressed as methane in the undiluted gas emitted from the thermal oxidizer shall not exceed 100 parts per million on a dry basis averaged over any ten-minute period,

(c) The temperature of the combustion gases prior to entering the thermal oxidizer heat exchanger shall be at the minimum of 704 degrees Celsius, as measured by the Continuous Temperature Monitoring and Recording System, and

(d) The residence time of combustion gases prior to entering the thermal oxidizer heat exchanger is 0.76 second.

11.4 The *Company* shall ensure that the thermal oxidizers are properly operated and maintained at all times in accordance with good engineering practices and as recommended by the suppliers of the thermal oxidizers.

11.5 The *Company* shall ensure that the thermal oxidizers are maintained at their minimum operating temperatures at all times when they are in operation.

11.6 The *Company* shall not incinerate chlorinated and fluorinated compounds in the thermal oxidizers.

SCHEDULE "A"

Supporting Documentation

(a) Applications dated December 9, 2005 and January 29, 2007, signed by David Nicholls, Manager of Environmental Affairs, Purchasing & Data Systems and submitted by the *Company* for a Certificate of Approval (Air & Noise);

(b) Emission Summary and Dispersion Modelling Reports, dated December 8, 2005 and January 10, 2007;

(c) Application for a Certificate of Approval dated March 19, 2004, signed by Brian Jenkin, Manager, Purchasing & Plant Services and submitted by the *Company*;

(d) Application for a Certificate of Approval dated August 2, 2002, signed by Debbie Davis, Purchasing/Accounting Admin. and submitted by the *Company*, along with supporting information and documentation prepared by ND GROFF ASSOCIATES INC.; and

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(e) the correspondence dated October 31, 2002 and November 7, 2002 and email dated November 11, 2002 and other supporting information, all from Douglas Groff of ND GROFF ASSOCIATES INC. to Asad Khaja of the Ontario Ministry of the Environment.

SCHEDULE "B"

PARAMETER:	Temperature						
LOCATION:	The sample point for the continuous temperature monitoring and recording system shall be located at a location where the measurements are representative of the minimum temperature of the gases leaving the thermal oxidizer.						
PERFORMANCE:	The continuous temperature monitoring and recording system shall meet the following minimum performance specifications for the following parameters.						
DATA RECORDER:	<table border="1"> <thead> <tr> <th>PARAMETERS</th> <th>SPECIFICATION</th> </tr> </thead> <tbody> <tr> <td>Type:</td> <td>shielded "K" type thermocouple, or equivalent</td> </tr> <tr> <td>Accuracy:</td> <td>±1.5 percent of the minimum gas temperature</td> </tr> </tbody> </table>	PARAMETERS	SPECIFICATION	Type:	shielded "K" type thermocouple, or equivalent	Accuracy:	±1.5 percent of the minimum gas temperature
PARAMETERS	SPECIFICATION						
Type:	shielded "K" type thermocouple, or equivalent						
Accuracy:	±1.5 percent of the minimum gas temperature						
RELIABILITY:	<p>The data recorder must be capable of registering continuously the measurement of the monitoring system without a significant loss of accuracy and with a time resolution of 1 minute or better.</p> <p>The monitoring system shall be operated and maintained so that accurate data is obtained during a minimum of 95 percent of the time for each calendar quarter.</p>						

The reasons for the imposition of these terms and conditions are as follows:

1. GENERAL

Condition No. 1 is included to require the *Certificate* holder to build, operate and maintain the *Facility* in accordance with the *Supporting Documentation* considered by the *Director* in issuing this *Certificate*.

2. OPERATIONAL FLEXIBILITY AND PERFORMANCE LIMITS

Condition Nos. 2 and 3 are included to limit *Modifications* and define the operating envelope permitted by this *Certificate*. The holder of the *Certificate* is approved for operational flexibility for the *Facility* that is consistent with the description of the operations included with the application up to the *Facility Production Limit*. In return for the operational flexibility the *Certificate* places performance based limits that can not be exceeded under the terms of this *Certificate*. *Certificate* holders will still have to obtain other relevant approvals required to operate the *Facility*, including requirements under other environmental legislation such as the *Environmental Assessment Act*.

3. DOCUMENTATION REQUIREMENTS

Condition No. 4 is included to require the *Company* to maintain ongoing documentation that demonstrates compliance with the *Performance Limits* of this *Certificate* and allows the *Ministry* to monitor on-going compliance with the *Performance Limits*. The *Company* is required to have an up to date *ESDM Report* that describes the *Facility* at all times and make the *Emission Summary Table* from this report available to the public on an ongoing basis in order to maintain public

communication with regard to the emissions from the *Facility*.

4. REPORTING REQUIREMENTS

Condition No. 5 is included to require the *Company* to provide a yearly *Written Summary* to the *Ministry*.

5. OPERATION AND MAINTENANCE

Condition No. 6 is included to require the *Company* to properly operate and maintain the *Processes with Significant Environmental Aspects* to minimize the impact to the environment from these processes.

6. COMPLAINTS RECORDING PROCEDURE

Condition No. 7 is included to require the *Company* to respond to any environmental complaints regarding the operation of the *Equipment*, according to a procedure that includes methods for preventing recurrence of similar incidents and a requirement to prepare and retain a written report.

7. RECORD KEEPING REQUIREMENTS

Condition No. 8 is included to require the *Company* to retain all documentation related to this *Certificate* and provide access to *Ministry* staff, upon request, so that the *Ministry* can determine if a more detailed review of compliance with the *Performance Limits* is necessary.

8. REVOCATION OF PREVIOUS CERTIFICATES OF APPROVAL (Air & Noise)

Condition No. 9 is included to confirm that this *Certificate* replaces all Section 9 Certificate(s) of Approval that have been previously issued for this *Facility*.

9. CONTINUOUS TEMPERATURE MONITORING AND RECORDING SYSTEM

Condition No. 10 is included to require the *Company* to gather accurate information on a continuous basis so that the environmental impact and subsequent compliance with the *EPA*, the regulations and this *Certificate* can be verified.

10. EQUIPMENT WITH SPECIFIC OPERATIONAL LIMITS

Condition No. 11 is included to provide the minimum performance requirements considered necessary to prevent an adverse effect resulting from the operation of the thermal oxidizers. These conditions are also included to emphasize that the thermal oxidizers must be maintained and operated according to a procedure that will result in compliance with the *Act*, the regulations and this *Certificate*.

This Certificate of Approval revokes and replaces Certificate(s) of Approval No. 7941-5YFT29 issued on April 27, 2004

In accordance with Section 139 of the Environmental Protection Act, R.S.O. 1990, Chapter E-19, as amended, you may by written Notice served upon me, the Environmental Review Tribunal and in accordance with Section 47 of the Environmental Bill of Rights, S.O. 1993, Chapter 28, the Environmental Commissioner, within 15 days after receipt of this Notice, require a hearing by the Tribunal. The Environmental Commissioner will place notice of your appeal on the Environmental Registry. Section 142 of the Environmental Protection Act, provides that the Notice requiring the hearing shall state:

1. The portions of the approval or each term or condition in the approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

The Notice should also include:

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3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the works are located;

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
655 Bay Street, 15th Floor
Toronto, Ontario
M5G 1E5

AND

The Environmental Commissioner
1075 Bay Street, 6th Floor
Suite 605
Toronto, Ontario
M5S 2B1

AND

The Director
Section 9, *Environmental Protection Act*
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 314-4600, Fax: (416) 314-4506 or www.ert.gov.on.ca**

This instrument is subject to Section 38 of the Environmental Bill of Rights, that allows residents of Ontario to seek leave to appeal the decision on this instrument. Residents of Ontario may seek leave to appeal within 15 days from the date this decision is placed on the Environmental Registry. By accessing the Environmental Registry at www.ene.gov.on.ca, you can determine when the leave to appeal period ends.

The above noted works are approved under Section 9 of the Environmental Protection Act.

DATED AT TORONTO this 30th day of January, 2009

Ian Greason, P.Eng.
Director
Section 9, *Environmental Protection Act*

DJ/
c: District Manager, MOE York-Durham District Office
Douglas Groff, Groff Associates Inc.



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