



Transportation Noise Assessment

**Salvation Army Multi-Purpose Building
102 Bill Leathem Drive**

Ottawa, Ontario

REPORT: GWE15-009 - Transportation Noise R5

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November 19, 2021

EXECUTIVE SUMMARY

This document describes a transportation noise assessment performed for a proposed multi-purpose single-storey development at 102 Bill Leathem Drive in Ottawa, Ontario. Phases 1 and 2 will rise approximately 9.5 and 10.5 meters above local grade, respectively. Figure 1 illustrates a site plan with surrounding context. The major sources of roadway noise are Bill Leathem Drive and Leikin Drive. The site is also situated inside the Airport Operating Influence Zone [Noise Exposure Forecast (NEF) or Noise Prediction Forecast (NEP) 30]. The development represents an infill project on a severed lot in an established business park. Under provincial and City noise guidelines, the site is not considered to be noise sensitive; however, due to sensitivity of some spaces, a noise study was completed in conforming to good engineering practice.

Gradient Wind received updated architectural drawings in November 2021. Despite some changes to the building massing, the conclusions and recommendations of this report remain unchanged.

The assessment is based on: (i) theoretical noise prediction methods that conform to the Ontario Ministry of the Environment, Conservation and Parks (MECP) and City of Ottawa requirements; (ii) noise level criteria as specified by the City of Ottawa's Environmental Noise Control Guidelines (ENCG); (iii) future vehicular traffic volumes based on the City of Ottawa's Official Plan roadway classifications; (iv) future airport operation composite NEF and NEP contours, and (v) architectural drawings received from Vandenberg & Wildeboer Architects in November 2021.

The results of the current study indicate that predicted noise levels due to roadway traffic over the site will range between 60 and 68 dBA during the daytime period (07:00-23:00) and between 53 and 60 dBA during the nighttime period (23:00-07:00). The highest predicted noise level (i.e. 68 dBA) occurs on the south façade of Phase 1 (Receptor 3), which is nearest and most exposed to Leikin Drive.

In addition to surface transportation, the site is also impacted by aircraft noise. The site is situated between NEF/NEP contours of 30 and 35, just inside the NEF/NEP 30 contour (corresponding to a 24-hour equivalent sound pressure level (L_{eq}) or 61 dBA). To verify predicted existing (NEF) noise levels, on-site monitoring was conducted 24-hours a day for a period of one month. Results of on-site monitoring

indicate existing noise levels from airport operations are below an equivalent of the NEF 30 contour (61 dBA 24-hour L_{eq}). The on-site monitoring also accounted for impacts of roadway traffic. To protect the building from possible future increases in airport noise, the building components were designed to a maximum predicted 24-hour equivalent sound pressure level of 67 dBA, due to aircraft flyovers, corresponding to the NEF/NEP 35 contour. This is a conservative approach as the NEF/NEP 35 contour is more than one kilometer from the site.

For noise control measures, upgraded Sound Transmission Class (STC) ratings are required for building components as predicted noise levels are above the ENCG criteria for roadway traffic and aircraft traffic noise, respectively, as per Section 5. In addition to upgraded building components, the installation of central air conditioning will be required for the development. Furthermore, Warning Clauses will be required on all purchase, sale, and lease agreements, as per Section 6.

Under the ENCG and NPC-300, the development is not considered noise sensitive; therefore, in keeping with Federal¹ and Provincial policies, it is permissible between NEF 30 and 35. In addition, the Provincial Policy Statement indicates that if the development were considered noise sensitive, noise sensitive land uses may be considered above the NEF/NEP 30 for infill and redevelopment developments where it is demonstrated that there will be no negative impact on the long term function of the airport. Based on the proposed architectural drawings, building components are expected to achieve the required sound transmission ratings to control indoor noise levels to below ENCG criteria for places of worship at the proposed site. Furthermore, on-site monitoring has indicated that existing noise levels at the site are well below predicted sound levels (ref. GWE15-009 – Aircraft Noise Update, dated July 12, 2018). Therefore, no long-term impact on airport operations are anticipated.

¹ Transportation Canada, Land Use In The Vicinity of Aerodromes, Ninth Edition 2013/14

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1. INTRODUCTION

Gradient Wind Engineering Inc. (GWE) was retained by The Salvation Army to undertake a transportation noise study of a proposed multi-purpose single-floor building development at 102 Bill Leathem Drive in Ottawa, Ontario. This report summarizes the methodology, results, and recommendations related to a transportation noise assessment. GWE's scope of work involved assessing exterior and interior noise levels generated by local roadway traffic and aircraft. The assessment was performed on the basis of theoretical noise calculation methods conforming to the City of Ottawa² and Ontario Ministry of the Environment and Climate Change³ guidelines as well as on-site monitoring of roadway traffic and aircraft flyovers. Noise calculations were based on architectural drawings received from Vandenberg & Wildeboer Architects in November 2021 (see Appendix A), with future roadway traffic volumes corresponding to the City of Ottawa's Official Plan (OP) roadway classifications.

2. TERMS OF REFERENCE

The focus of this transportation noise assessment is a proposed single-storey, two-phase, multi-purpose building, to be used as a place of worship and a community centre. The development is located on vacant land at the northwest corner of the Bill Leathem Drive and Leikin Drive intersection, and as such is considered an infill development within an established business park. The Ottawa International Airport is located approximately 4 km to the northeast. The major sources of roadway noise are Bill Leathem Drive and Leikin Drive. The site is surrounded on all sides with mixed-use land, specifically Light Industrial and Parks and Open Space zones. Figure 1 illustrates a complete site plan with surrounding context.

Upon completion, Phases 1 and 2 will rise approximately 9.5 and 10.5 meters above local grade, respectively. No Outdoor Living Areas (OLAs) are currently located on or proposed for the site.

Under the City of Ottawa Noise Control Guidelines (ENCG) and the Ontario Ministry of Environment and Climate Change Environment Noise Guidelines (NPC-300), the proposed land uses, place of worship and community centre, are not considered noise sensitive. The guidelines only make reference to place of worship and identifies this on Tables 2.2c and 4.2b of ENCG and Tables C-9 and C-10 of NPC 300. In both

² City of Ottawa, Environmental Noise Control Guidelines, January 2016

³ Ontario Ministry of the Environment and Climate Change, Environmental Noise Guideline – Publication NPC-300, August 2013

cases, the preamble to these tables identifies the criteria for *land uses not generally considered noise sensitive but are provided as good design objectives*.

3. OBJECTIVES

The main objectives of this work are to: (i) calculate the future noise levels on the study building produced by local roadway traffic and aircraft traffic, (ii) determine the feasibility of incorporating noise sensitive land uses, such as places of worship and gathering centres, within the site, (iii) ensure that interior noise levels do not exceed the allowable limits specified by the City of Ottawa's Environmental Noise Control Guidelines (ENCG) as outlined in Section 4 of this report, and (iv) demonstrate that there will be no negative impacts on the long-term function of the airport.

4. METHODOLOGY

4.1 Background

Noise can be defined as any obtrusive sound. It is created at a source, transmitted through a medium, such as air, and intercepted by a receiver. Noise may be characterized in terms of the power of the source or the sound pressure at a specific distance. While the power of a source is characteristic of that particular source, the sound pressure depends on the location of the receiver and the path that the noise takes to reach the receiver. Measurement of noise is based on the decibel unit, dBA, which is a logarithmic ratio referenced to a standard noise level (2×10^{-5} Pascals). The 'A' suffix refers to a weighting scale, which better represents how the noise is perceived by the human ear. With this scale, a doubling of power results in a 3 dBA increase in measured noise levels and is just perceptible to most people. An increase of 10 dBA is often perceived to be twice as loud.

The ENCG specifies that surface transportation noise (road and rail) and airport noise should be evaluated separately. The overall building attenuation parameters are then combined. Section 4.2 and 4.3 address the methodology for the evaluation of roadway and aircraft noise respectively. Section 4.2 also provides criteria for railway noise as background information, there is however no railway noise influencing the site.

4.2 Roadway Traffic Noise

4.2.1 Criteria for Roadway Traffic Noise

For vehicle traffic, the equivalent sound energy level, L_{eq} , provides a measure of the time varying noise levels, which is well correlated with the annoyance of sound. It is defined as the continuous sound level, which has the same energy as a time varying noise level over a period of time. For roadways, the L_{eq} is commonly calculated on the basis of a 16-hour (L_{eq16}) daytime (07:00-23:00) / 8-hour (L_{eq8}) nighttime (23:00-07:00) split to assess its impact on residential buildings. The City of Ottawa's Environmental Noise Control Guidelines (ENCG) specifies that the recommended indoor noise limit range (that is relevant to this study) is 45 dBA for conference rooms and places of worship, as listed in Table 1. The criteria listed in Table 1 relates to land uses "**not generally considered noise sensitive**" but are "good practice design objectives"⁴.

TABLE 1: INDOOR SOUND LEVEL CRITERIA (ROAD & RAIL)⁵

Type of Space	Time Period	L_{eq} (dBA)	
		Road	Rail
General offices, reception areas, retail stores, etc.	07:00 – 23:00	50	45
Theatres, places of worship , libraries, individual or semi-private offices, conference rooms, reading rooms etc.	07:00 – 23:00	45	40
Sleeping quarters of hotels/motels	23:00 – 07:00	45	40
Sleeping quarters of residences, hospitals, nursing/retirement homes, etc.	23:00 – 07:00	40	35

Predicted noise levels at the plane of window (POW) dictate the action required to achieve the recommended sound levels. An open window is considered to provide a 10 dBA reduction in noise, while a standard closed window is capable of providing a minimum 20 dBA noise reduction⁶. Therefore, where noise levels exceed 55 dBA daytime and 50 dBA nighttime, the ventilation for the building should consider the need for having windows and doors closed, which normally triggers the need for central air

⁴ ENCG, Part 1, Section 2.2, Page 3

⁵ Adapted from ENCG 2016 – Table 2.2b,c

⁶ Burberry, P.B.. (2014). Mitchell's Environment and Services. Routledge, Page 125

conditioning. Where noise levels exceed 65 dBA daytime and 60 dBA nighttime, building components will require higher levels of sound attenuation⁷.

4.2.2 Roadway Traffic Volumes

The ENCG dictates that noise calculations should consider future sound levels based on a roadway's classification at the mature state of development. Therefore, traffic volumes are based on the roadway classifications outlined in the City of Ottawa's Official Plan (OP) and Transportation Master Plan⁸ which provides additional details on future roadway expansions. Average Annual Daily Traffic (AADT) volumes are then based on data in Table B1 of the ENCG for each roadway classification. Table 2 (below) summarizes the AADT values used for each roadway included in this assessment.

TABLE 2: ROADWAY TRAFFIC DATA

Roadway	Roadway Class	Speed Limit (km/h)	Official Plan AADT
Bill Leathem Drive	2-UMCU	60	12,000
Leikin Drive	2-UMCU	60	12,000

4.2.3 Theoretical Roadway Noise Predictions

Noise predictions were performed with the aid of the Ontario Ministry of the Environment, Conservation and Parks (MECP) computerized noise assessment program, STAMSON 5.04, for road analysis. Appendix B includes the STAMSON 5.04 input and output data.

Roadway noise calculations were performed by treating each road segment as separate line sources of noise, and by using existing building locations as noise barriers. In addition to the traffic volumes summarized in Table 4, theoretical noise predictions were based on the following parameters:

- Truck traffic on all roadways was taken to comprise 5% heavy trucks and 7% medium trucks, as per ENCG requirements for noise level predictions
- The day/night split was taken to be 92% / 8% respectively for all streets

⁷ MECP, Environmental Noise Guidelines, NPC 300 – Part C, Section 7.1.3

⁸ City of Ottawa Transportation Master Plan, November 2013

- Absorptive and reflective intermediate ground surfaces based on specific source-receiver path ground characteristics
- The study site was treated as having flat topography

Noise receptors were strategically placed at seven locations around the study area (see Figure 2).

4.2.4 Indoor Noise Calculations Roadway

When calculations reveal that outdoor noise levels are sufficiently high as to require investigation of indoor noise levels, calculations are performed to verify the Sound Transmission Class (STC) requirements for building components. The difference between outdoor and indoor noise levels is the noise attenuation provided by the building envelope. According to common industry practice, complete walls and individual wall elements are rated according to the Sound Transmission Class (STC). The STC ratings of common residential walls⁹ built in conformance with the Ontario Building Code (2012) typically exceed STC 35, depending on exterior cladding, thickness and interior finish details. For example, brick veneered walls can achieve STC 55. Standard good quality double-glazed non-operable windows can have STC ratings ranging from 25 to 40 depending on the window manufacturer, pane thickness and inter-pane spacing. As previously mentioned, the windows are the known weak point in a partition, according to the ENCG, when daytime noise levels (from road and rail sources) at the plane of the window exceed 65 dBA, calculations must be performed to evaluate the sound transmission quality of the building components to ensure acceptable indoor noise levels. The calculation procedure¹⁰ considers:

- Window type and total area as a percentage of total room floor area
- Exterior wall type and total area as a percentage of the total room floor area
- Acoustic absorption characteristics of the room
- Outdoor noise source type and approach geometry
- Indoor sound level criteria, which varies according to the intended use of a space

⁹ Bradley, J.S., Birta J.A. Laboratory Measurements of the Sound Insulation of Building Façade Elements, National Research Council of Canada, October 2000

¹⁰ Building Practice Note: Controlling Sound Transmission into Buildings by J.D. Quirt, National Research Council of Canada, September 1985

Based on published research¹¹, exterior walls and windows possess specific sound attenuation characteristics that are used as a basis for calculating the indoor noise levels to ensure compliance with ENCG criteria. Calculations were based on the architectural assemblies and are available in Appendix C

4.3 Aircraft Traffic Noise

4.3.1 Criteria for Aircraft Traffic Noise

The ENCG outlines the sound level criteria for aircraft noise based on a site's location near the Ottawa International Airport. The Ottawa Airport Vicinity Development Zone (AVDZ) is a zone around the airport defined by Noise Exposure Forecast (NEF) or Noise Exposure Projections (NEP) contour lines that follow fixed features, such as roads or lot boundaries. NEF/NEP contours reflect the predetermined noise levels which would impact sensitive areas around airports. These contours include the influences of noise levels from aircraft flight, take-off, and ground operations to specific urban areas. Noise generated from aircraft traffic is represented as Effective Perceived Noise Levels (EPNL), a unit of noise measurement that accounts for variations in the human perception of pure tones and noise duration. Predicted noise levels are plotted geographically to generate NEF/NEP contour maps, where lower NEF/NEP levels correspond to lower average outdoor noise levels. The AVDZ generally represents the 25 NEF/NEP contour. The Ottawa Airport Operating Influence Zone (AOIZ) generally represents the NEF/NEP 30 contour, where commercial aircraft traffic may negatively influence noise-sensitive developments. Within the AOIZ, noise-sensitive development is not permitted, although infill and redevelopment may occur in specific areas within the zone in keeping with the criteria set out in the Official Plan, and be subject to detailed studies to demonstrate there will be no negative impact on long term airport operations. As stated previously, the proposed development is not considered to be noise sensitive, however, good engineering practices should incorporate noise mitigation into the design of the building to minimize noise impacts.

According to accepted research¹², Health and Welfare Canada states that people continuously exposed to NEF/NEP values less than 35 will not suffer adverse physical or psychological effects. Sociological surveys¹³ have indicated that negative community reactions to noise levels may start at about 25 NEF/NEP. Table 5 identifies the sound level criteria for relevant indoor spaces exposed to aircraft noise. Transport Canada guidelines related to aircraft noise indicated churches and other places of worship can tolerate noise levels

¹¹ CMHC, Road & Rail Noise: Effects on Housing

¹² Report of the Special Meeting on Aircraft Noise in the Vicinity of Aerodromes, Montreal ICAO, 1969.

¹³ Noise in Urban and Suburban Areas. Bolt, Beanik and Newman, Inc., Washington, January 1967.

up to NEF/NEP 35 where noise attenuation is considered in the building construction¹⁴. Where developments are within the AVDZ, building components must be designed to achieve the indoor criteria outlined in Table 3.

TABLE 3: SUPPLEMENTARY SOUND LEVEL CRITERIA¹⁵

Type of Space	NEF/NEP	Approximate $L_{eq}(24Hr)$
General offices, reception areas, retail stores, etc.	15	46 dBA
Individual or semi-private offices, conference rooms, etc.	10	41 dBA
Sleeping quarters of, hospitals/motels, nursing/retirement homes, etc. Living/dining areas of, theatres, libraries, places of worship , etc.	5	36 dBA

4.3.2 Theoretical Aircraft Noise Predictions

The impact of aircraft noise on the indoor environment was determined using INSUL by Marshal Day Acoustics. This software calculates indoor noise levels for standard roof, wall and window construction details for appropriate aircraft noise source spectra. Since aircraft produce uniform noise levels over large areas, building construction is more carefully considered than specific building location for interior noise level calculations. For this project, the building components were designed to an NEF value of 35 as a conservative measure to protect long term operations of the airport. However, the site is just inside the NEF contour 30, as illustrated in Figure 1. The NEF 35 contour is situated more than one kilometer from the site and noise levels are expected to be closer to NEF 30. Gradient Wind conducted a supplemental Aircraft Noise Monitoring report (ref. GWE15-009 – Aircraft Noise Update, dated July 12, 2018) confirming the NEF 35 value is conservative. No Outdoor Living Areas (OLAs) are currently located on or proposed for the site.

The influence of aircraft noise is based on NEF/NEP contours, geographically plotted values that quantify the noise levels from airport traffic on adjacent properties. The ENCG guidelines state that locations corresponding to NEF/NEP 25 or greater require improvements to the typical building envelope components, including exterior walls, roofs, windows and doors, to ensure adequate noise attenuation by the building envelope. In INSUL, construction elements are rated on the basis of STC and Outdoor-

¹⁴ <https://www.tc.gc.ca/eng/civilaviation/publications/tp1247-part4-1436.htm>

¹⁵ Adapted from ENCG 2016 – Tables 4.2a and b

Indoor Transmission Class (OITC). Estimates of STC performance of building assemblies have been determined using the software INSUL, which is based on extensive empirical data from countries around the world.

Based on the STC/OITC performance of the building assemblies, INSUL can determine indoor sound levels based on room size, partition area, and room absorption. Building elements with the lowest STC/OITC rating of the proposed assemblies were selected as a worst-case approach for the calculations. The resulting interior noise level was then determined using similar construction elements and room dimensions. Calculations were based on a worst-case representation of the most sensitive rooms. Details of the wall assemblies proposed are included in Appendix A. Details of the calculations are provided in Appendix D.

5. RESULTS AND DISCUSSION

5.1 Roadway Traffic Noise Levels

Appendix B contains the complete set of input and output data from all STAMSON 5.04 calculations. The results of the roadway noise calculations are summarized in Table 4 below. A sample of STAMSON 5.04 input parameters for Receptor 3 is shown in Figure 3.

TABLE 4: EXTERIOR NOISE LEVELS DUE TO ROADWAY TRAFFIC

Receptor Number	Plane of Window	Noise Level (dBA)	
		Day	Night
1	POW – Phase 1 – 7 m – North Façade	63	56
2	POW – Phase 1 – 3.2 m – East Façade	65	57
3	POW – Phase 1 – 7 m – South Façade	68	60
4	POW – Phase 1 – 1.5 m – West Façade	62	55
5	POW – Phase 1 – 1.5 m – West Façade	62	54
6	POW – Phase 2 – 1.5 m – West Façade	60	53
7	POW – Phase 2 – 7 m – South Façade	65	57

The results of the current analysis indicate that noise levels will range between 60 and 68 dBA during the daytime period (07:00-23:00) and between 53 and 60 dBA during the nighttime period (23:00-07:00). The

highest noise level (i.e. 68 dBA) occurs on the south façade of Phase 1 (Receptor 3), which is nearest and most exposed to Leikin Drive.

Because of elevated noise levels from roadway traffic, central air conditioning will be required to allow windows and doors to remain closed while maintaining a comfortable and quiet indoor environment.

Under the ENCG guidelines, surface transportation and aircraft noise are evaluated separately, and aircraft noise was found to be the governing source when considering a 24-hour L_{eq} up to 67 dBA for design of the building components. It should also be noted that the indoor criteria for aircraft is more stringent (see Section 5.2.1. as well as Table 1 and 5).

5.1.1 Roadway Traffic Noise STC Requirements

The current selected exterior wall and window assemblies for the development, as described below, have been rated for a particular STC rating based on the performance evaluated using INSUL software. As a conservative approach, the exterior wall assembly with the lowest STC rating was considered in our analysis and consisted of the following:

Typical Exterior Wall Construction (EX2)

- Pre-Finished Metal Siding
- Semi-Rigid Insulation (No Acoustic Value)
- 22 mm Horiz. Furring (No Acoustic Value)
- Sheathing Membrane (No Acoustic Value)
- 13 mm Exterior Sheathing
- 16 mm Wood Sheathing
- 152 mm Steel Stud
- Batt Insulation
- Vapour Barrier (No Acoustic Value)
- 16 mm Type X Gypsum Board

STC 53 – INSUL Estimated

Typical Glazing Construction

- 6 mm Inner Pane
- 13 mm Air Space
- 8 mm Outer Pane

STC 36 – INSUL Estimated

Note: Glazing elements assumed based on STC 35 (OITC 29) requirements. Window assembly may vary provided STC requirements are maintained.

The noise levels predicted due to roadway traffic exceed the criteria for upgraded building components. As discussed in Section 4.3, the anticipated indoor noise levels in various sensitive rooms have been estimated based on the methodology developed by the National Research Council. Appendix C contains the complete set of calculations performed to verify the required exterior wall and window STC performance. Detailed STC calculations show that key façades, built to a typical EX2 wall construction or better with STC 35 rated windows, would provide the necessary attenuation to control interior noise levels. The indoor noise level results are summarized in Table 5 below.

TABLE 5: INDOOR NOISE LEVELS DUE TO ROADWAY TRAFFIC

Room Location	Indoor Noise Level $L_{eq(16\text{ Hr})}$ (dBA)	
	NRC-Calc (dBA)	ENCG Criteria
Multi-Purpose Room	35	45
Sanctuary (Phase 2)	36	45

5.1.2 Aircraft Noise STC Requirements

Similar to roadway traffic noise, the roof assembly was evaluated for sound transmission to control aircraft noise. The current selected roof assembly for the development, as described below, has been rated for a particular STC rating based on INSUL software. As a conservative approach, the roof assembly with the lowest STC rating is considered, as a worst case example.

Typical Roof Assembly Construction:

- Metal Roof
 - Synthetic Under Roofing (No Acoustic Value)
 - Protection Board Underlayment (No Acoustic Value)
 - Roof Insulating Board (No Acoustic Value)
 - Wood Roof Sheathing
 - Steel Deck
 - Sloped Roof Trusses
 - 100 mm Batt Insulation
 - 41 mm Metal Channels @400 mm O.C.
 - Resilient Channel @400 mm O.C.
 - One Layer 16 mm Type X Gypsum Board
- STC 53 – INSUL Estimated

The window and wall assemblies in Section 5.1.1 were also considered in the INSUL calculations. Appendix D contains the complete set of input and output data from all INSUL calculations. The results of the aircraft noise assessment are summarized in Table 7 below.

TABLE 7: INDOOR NOISE LEVELS DUE TO AIRCRAFT

Room Location	Indoor Noise Level $L_{eq}(24 \text{ Hr})$ (dBA)	
	INSUL-Calc	ENCG Criteria
Multi-Purpose Room	36	36
Sanctuary (Phase 2)	36	36

The results of the current analysis indicate that with the proposed wall and window assemblies, predicted noise levels will be compliant to the ENCG criteria for aircraft noise. Due to aircraft noise, central air conditioning will be required to allow windows and doors to remain closed to maintain a comfortable and quiet indoor environment.

6. CONCLUSIONS AND RECOMMENDATIONS

The results of the current study indicate that predicted noise levels due to roadway traffic over the site will range between 60 and 68 dBA during the daytime period (07:00-23:00) and between 53 and 60 dBA during the nighttime period (23:00-07:00). The highest predicted noise level (i.e. 68 dBA) occurs on the south façade of Phase 1 (Receptor 3), which is nearest and most exposed to Leikin Drive.

In addition to surface transportation, the site is also impacted by aircraft noise. The site is situated between NEF/NEP contours of 30 and 35, just inside the NEF/NEP 30 contour (corresponding to a 24-hour equivalent sound pressure level ($L_{eq(24 Hr)}$) or 61 dBA). To verify predicted noise levels, on-site monitoring was conducted 24-hours a day for a period of one month. Results of on-site monitoring indicate existing noise levels from airport operations are below an equivalent of the NEF 30 contour (61 dBA $L_{eq(24 Hr)}$). The on-site monitoring also accounted for impacts of roadway traffic. To protect the building from possible future increases in airport noise, the building components were designed to a maximum predicted 24-hour equivalent sound pressure level of 67 dBA, due to aircraft flyovers, corresponding to the NEF/NEP 35 contour. This is a conservative approach, as the NEF/NEP 35 contour is more than one kilometer from the site.

For noise control measures for the building, upgraded Sound Transmission Class (STC) ratings are required for building components where noise levels are above the ENCG criteria for roadway traffic and aircraft traffic noise, respectively, as per Section 5. The development will be serviced with central air conditioning, which meet the ventilation requirements for noise control. As per ENCG requirements, the following Warning Clause¹⁶ in all Agreements of Lease, Purchase and Sale will be required:

¹⁶ City of Ottawa, Environmental Noise Control Guidelines, January 2016

“Purchasers/tenants are advised that despite the inclusion of noise control features in the development, sound levels due to increasing roadway traffic may, on occasion, interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the City and Ministry of the Environment

To help address the need for sound attenuation, this development includes:

Upgraded exterior walls comprising the following minimum features or brick veneer:

- Pre-Finished Metal Siding
- Semi-Rigid Insulation (No Acoustic Value)
- 22 mm Horiz. Furring (No Acoustic Value)
- Sheathing Membrane (No Acoustic Value)
- 13 mm Exterior Sheathing
- 16 mm Wood Sheathing
- 152 mm Steel Stud
- Batt Insulation
- Vapour Barrier (No Acoustic Value)
- 16 mm Type X Gypsum Board

STC 53 – INSUL Estimated

Upgraded glazing elements comprising the following features:

Minimum STC 35

Typical Roof Assembly Construction or higher rated assembly:

- Metal Roof
- Synthetic Under Roofing (No Acoustic Value)
- Protection Board Underlayment (No Acoustic Value)
- Roof Insulating Board (No Acoustic Value)
- Wood Roof Sheathing
- Steel Deck
- Sloped Roof Trusses
- 100 mm Batt Insulation
- 41 mm Metal Channels @400 mm O.C.
- Resilient Channel @400 mm O.C.
- One Layer 16 mm Type X Gypsum Board

STC 53 – INSUL Estimated

To ensure that provincial sound level limits are not exceeded, it is important to maintain these sound attenuation features.

This development has also been designed with central air conditioning. Installation of central air conditioning will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the City and the Ministry of the Environment.”

Also, because the development is located inside the Airport Operating Influence Zone (AOIZ) but outside the NEP 35 contour, the following Warning Clause related to aircraft noise influence on-site will be required:

“Purchasers/building occupants are forewarned that this property is located in a noise sensitive area due to its proximity to Ottawa Macdonald-Cartier International Airport.

In order to reduce the impact of aircraft noise in the indoor spaces, the development has been designed and built to meet provincial standards for noise control by the use of components and building systems that provide sound attenuation. In addition to the building components (i.e. walls, windows, doors, ceiling-roof), since the benefit of sound attenuation is lost when windows or doors are left open, this development has been fitted with central air conditioning.

Despite the inclusion of noise control features within the development, noise due to aircraft operations may continue to interfere with some indoor activities and with outdoor activities, particularly during the summer months. The purchaser/building occupant is further advised that the Airport is open and operates 24 hours a day, and that changes to operations or expansion of the airport facilities, including the construction of new runways, may affect the living environment of the residents of this property/area.

The Ottawa Macdonald-Cartier International Airport Authority, its acoustical consultants and the City of Ottawa are not responsible if, regardless of the implementation of noise control features, the purchaser/occupant of this development finds that the indoor and/or outdoor noise levels due to aircraft operations are offensive.”

Under the ENCG and NPC-300, the development is not considered noise sensitive; therefore, in keeping with Federal¹⁷ and Provincial policies, it is permissible between NEF 30 and 35. In addition, the Provincial Policy Statement indicates that if the development were considered noise sensitive, noise sensitive land uses may be considered above the NEF/NEP 30 for infill and redevelopment developments where it is demonstrated that there will be no negative impact on the long term function of the airport. Based on the proposed architectural drawings, building components are expected to achieve the required sound transmission ratings to control indoor noise levels to below ENCG criteria for places of worship at the proposed site. Furthermore, on-site monitoring has indicated that existing noise levels at the site are well below predicted sound levels (ref. GWE15-009 – Aircraft Noise Update, dated July 12, 2018). Therefore, no long-term impact on airport operations are anticipated.

This concludes our assessment and report. If you have any questions or wish to discuss our findings please advise us. In the interim, we thank you for the opportunity to be of service.

Yours truly,

Gradient Wind Engineering Inc.

A handwritten signature in blue ink, appearing to read 'M. Lafortune'.

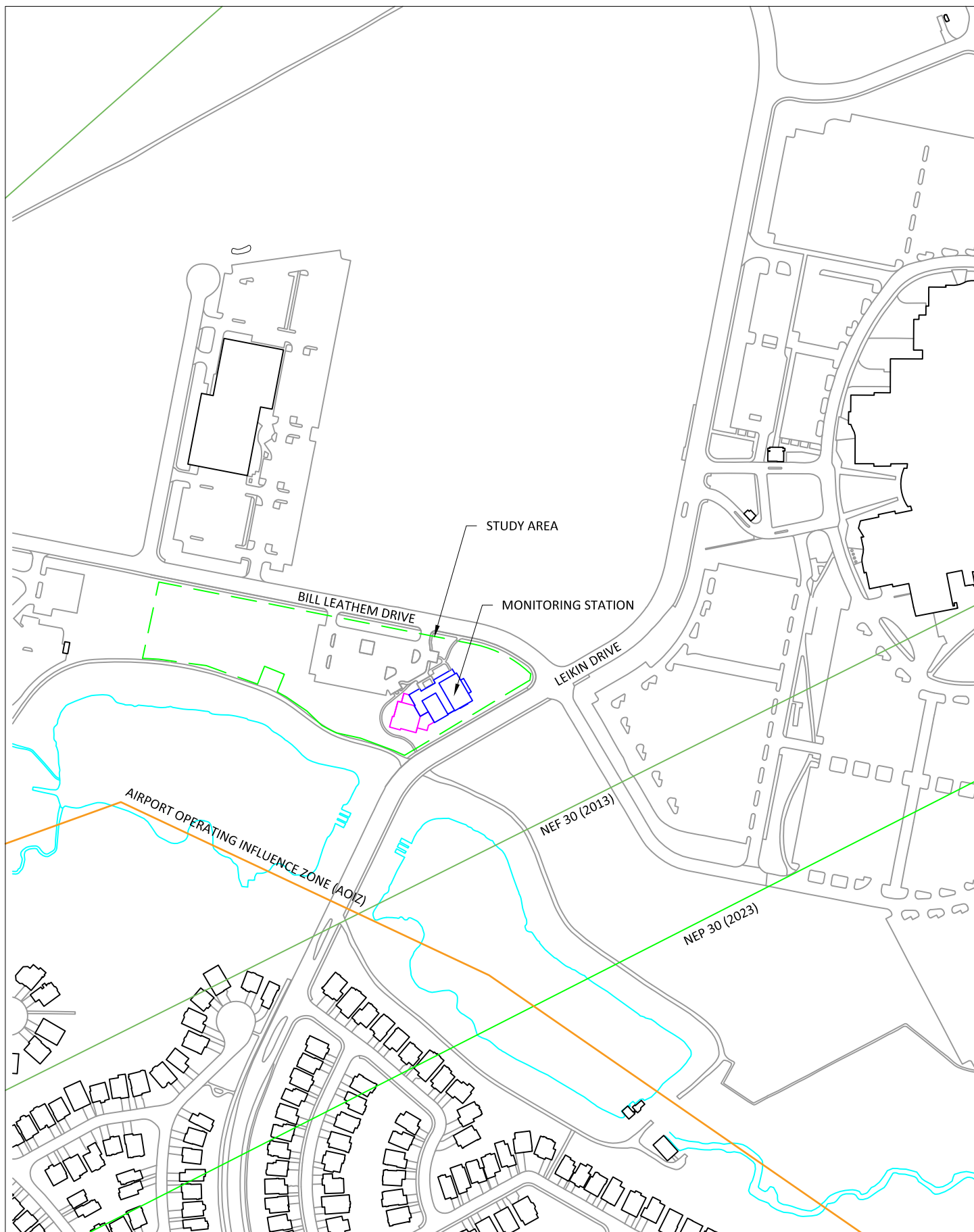
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GWE15-009 - Transportation Noise R5

¹⁷ Transportation Canada, Land Use In The Vicinity of Aerodromes, Ninth Edition 2013/14



127 Walgreen Road
Ottawa, Ontario
Canada K0A 1L0

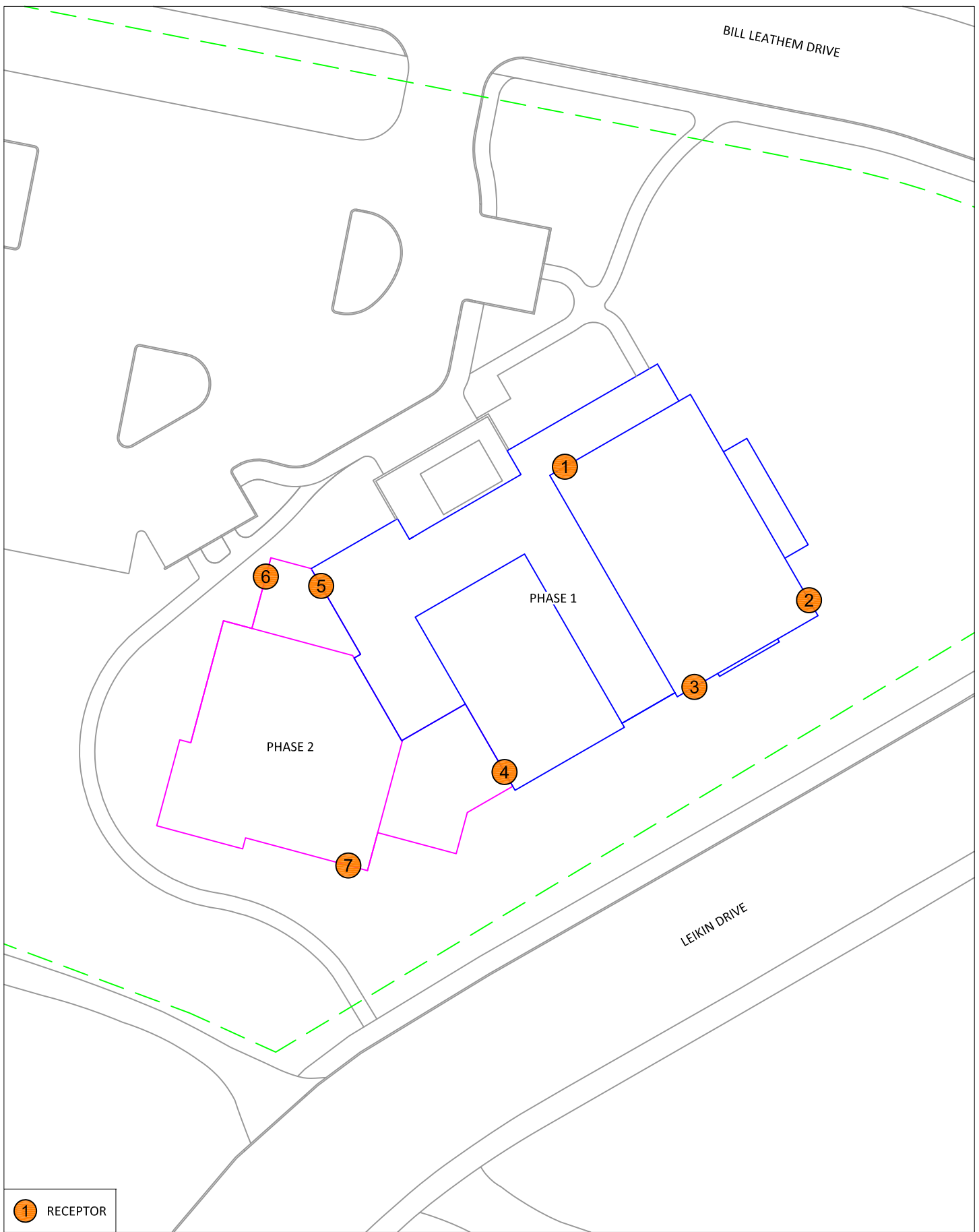
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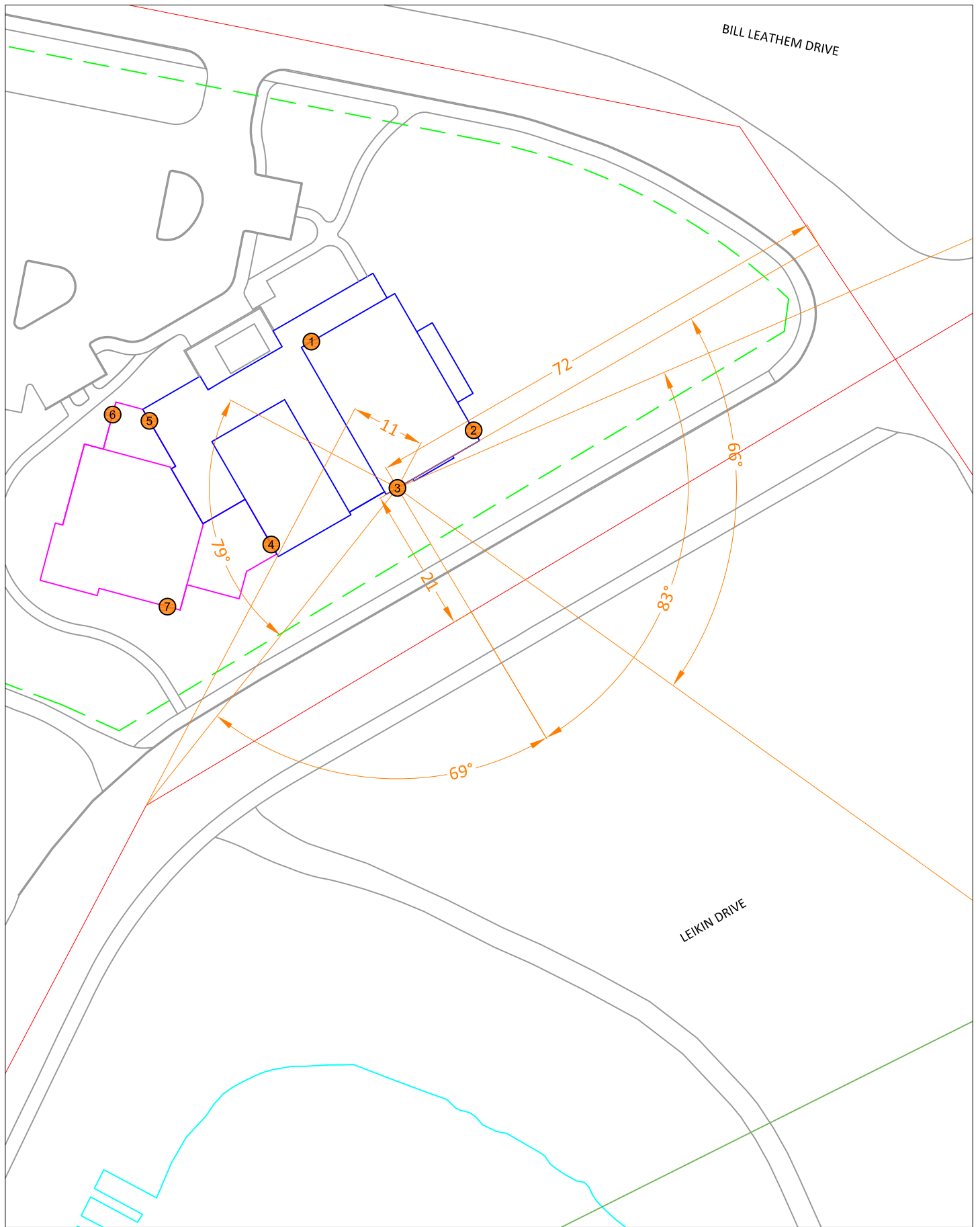
PROJECT		SALVATION ARMY CHURCH - TRANSPORTATION NOISE STUDY	
SCALE	1:4000 (APPROX.)	DRAWING NO.	GWE15-009-1
DATE	OCTOBER 23, 2017	DRAWN BY	M.L.

DESCRIPTION

FIGURE 1:
SITE PLAN AND SURROUNDING CONTEXT







127 Walgreen Road
Ottawa, Ontario
Canada K0A 1L0

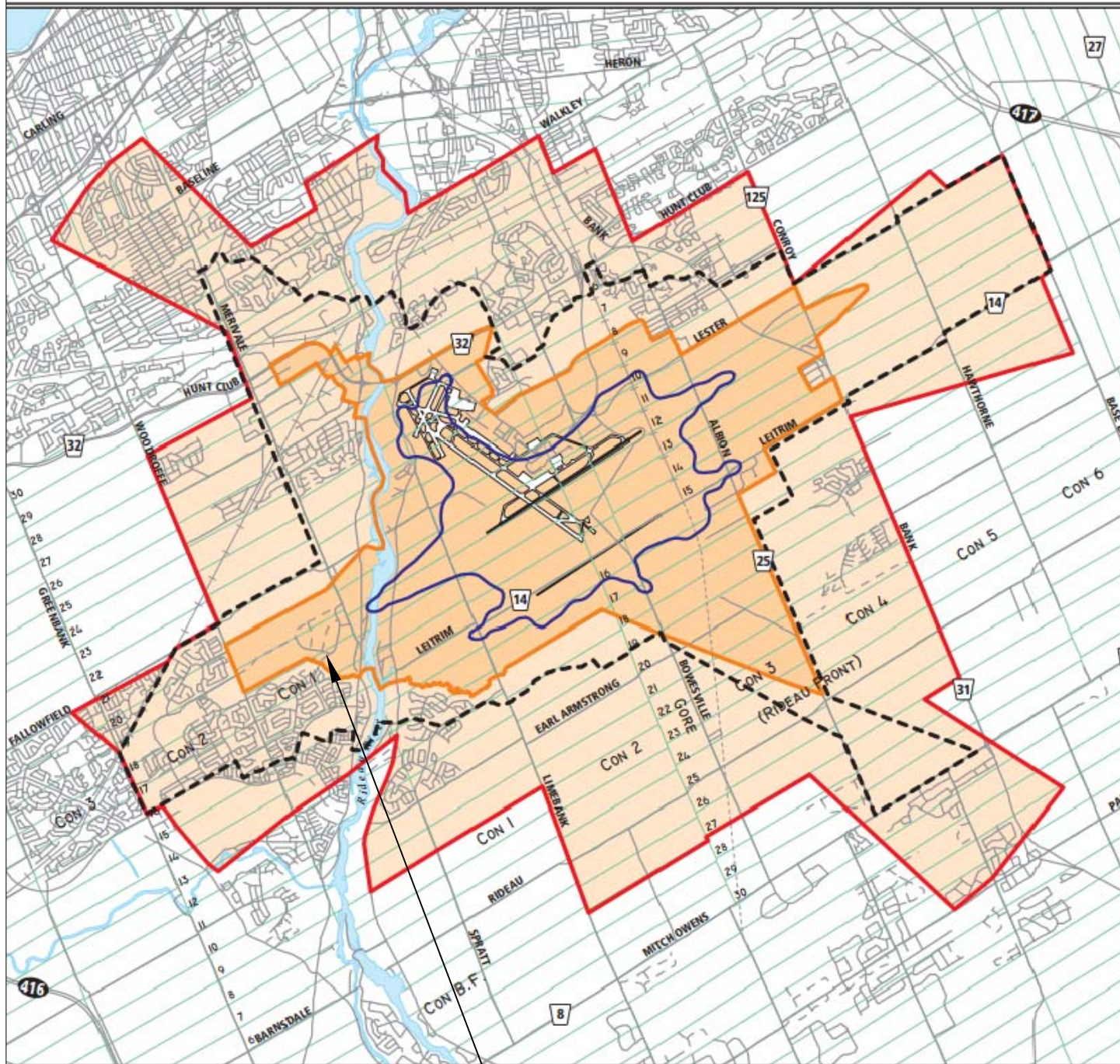
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PROJECT		SALVATION ARMY CHURCH - TRANSPORTATION NOISE STUDY	
SCALE	1:750 (APPROX.)	DRAWING NO.	GWE15-009-3
DATE	OCTOBER 23, 2017	DRAWN BY	M.L

DESCRIPTION

FIGURE 3:
STAMSON SAMPLE INPUT





STUDY AREA

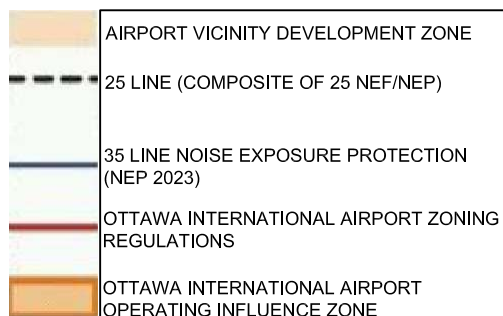


FIGURE REPRODUCED FROM THE CITY OF OTTAWA OFFICIAL PLAN - ANNEX 10 (LAND USE CONSTRAINTS DUE TO AIRCRAFT NOISE) PREPARED IN SEPTEMBER 2011



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Canada K0A 1L0

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PROJECT
SALVATION ARMY CHURCH - TRANSPORTATION NOISE STUDY

SCALE
NTS

DATE
OCTOBER 23, 2017

DRAWING NO.
GWE15-009-4

DRAWN BY
M.L

DESCRIPTION

FIGURE 4:
DEVELOPMENT LOCATION IN REFERENCE TO THE
OTTAWA AIRPORT OPERATING INFLUENCE ZONE



APPENDIX A

Architectural Drawings and Assemblies

SALVATION ARMY BARRHAVEN CHURCH



102 BILL LEATHEM DRIVE, BARRHAVEN, ONTARIO, K2J 0R3

ISSUED FOR TENDER - NOVEMBER 5th, 2021

PROJECT TEAM:

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SURVEYOR
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CIVIL
Douglas Gray Douglas B. Gray Engineering Inc. 700 Long Point Circle, Gloucester, Ontario K1T 4E9 Tel: 613-425-8044
LANDSCAPE
Rudy Levstek Levstek Consultants Inc. 5871 Hugh Crescent, Ottawa, Ontario K0A 2W0 Tel: 613-826-0518

DRAWING LIST:

<u>ARCHITECTURAL:</u> A000 - Title Sheet A001 - Site Plan A002 - Life Safety / OBC Matrix A003 - Notes & Assemblies A004 - Schedules A005 - Window Tie-In Details A101 - Foundation/Ground Plans A102 - Clerestory/Roof Plans A120 - Reflected Ceiling Plan A201 - Elevations A301 - Building Sections A401 - Wall Sections A501 - Plan Details A502 - Plan Details A551 - Section Details A552 - Section Details A601 - Finishes Plan & Notes A701 - Universal Washroom Plan & Details A702 - Washroom Plan & Details A720 - Stair & Ramp Details A801 - Kitchen Plan & Details	<u>STRUCTURAL:</u> S000 - General Notes & Details S001 - General Notes & Details S002 - General Notes & Details S100 - Foundation / Ground Plan S101 - Roof Plan S102 - Anticipated Roof Plan w/ Future Expansion S200 - Sections & Details S201 - Sections & Details S301 - Brace Frame Elevations <u>MECHANICAL:</u> M1 - Plumbing & Piping M2 - HVAC M3 - Specifications <u>ELECTRICAL:</u> E1 - Site Plan, Electrical Room Layout, Single Line Diagram & Legend E2 - Electrical Specification E3 - Electrical Power & Systems E4 - Electrical Lighting E5 - Electrical Roof Plan & Lightning Protection
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1. THE INFORMATION PRESENTED IN THESE DRAWINGS HAS BEEN DESIGNED AND ANALYZED IN ACCORDANCE WITH THE 2012 ONTARIO BUILDING CODE AND THE 2010 NATIONAL BUILDING CODE OF CANADA AND ALL OTHER APPLICABLE CODES.
2. OBSERVE CONSTRUCTION SAFETY MEASURES OF THE BUILDING CODE, PROVINCIAL GOVERNMENT OCCUPATIONAL HEALTH AND SAFETY ACT, AND THE REGULATIONS GOVERNING THE COUNCIL WORKMANS COMPENSATION BOARD AND MUNICIPAL AUTHORITIES, MOST STRINGENT REQUIREMENTS APPLY.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROCUREMENT OF PERMITS, LICENSES, INSPECTIONS AND CERTIFICATES WHICH ARE NECESSARY FOR THE PERFORMANCE OF THE WORK CUSTOMARILY OBTAINED BY CONTRACTORS AFTER ISSUANCE OF BUILDING PERMIT. THE CONTRACT PRICE INCLUDES THE COST FOR SUCH PERMITS, LICENSES, INSPECTIONS, CERTIFICATES AND THEIR PROCUREMENT.
4. EXAMINE SITE AND ALL CONDITIONS THAT WILL AFFECT THIS WORK SUBMISSION OF TENDER DEMED CONFIRMATION THAT TENDERER HAS INSPECTED SITE AND IS KNOWLEDGEABLE OF EXISTING CONDITIONS. CONTRACTOR IS TO INFORM THE CONSULTANT OF ANY DISCREPANCIES OR CHANGES OF SITE CONDITIONS, ANY DISCREPANCY WITH THE DRAWING SHALL BE REPORTED TO THE CONSULTANT PRIOR TO DEMOLITION.
5. CONTRACTOR TO PROVIDE ADEQUATE PROTECTION OF ALL EXISTING COMPONENTS DURING CONSTRUCTION. DAMAGE OCCURRING TO NEW OR EXISTING COMPONENTS SHALL BE REPAIRED OR REPLACED AT THE CONTRACTORS' EXPENSE. CONTRACTOR IS TO PROVIDE ADEQUATE PROTECTION OF NEW FLOORING GOODS DURING CONSTRUCTION. ON CARPET PROTECT WITH LINOLEUM ON WOOD, PROTECT WITH LAYERS OF CARDBOARD. PROTECT FINISHED WORK AGAINST DAMAGE UNTIL MOVE-IN.
6. ALL MATERIALS SHALL BE NEW AND CONFORM TO THE MINIMUM APPLICABLE STANDARDS OF THE CANADIAN STANDARDS BOARD, THE ONTARIO BUILDING CODE AND THE APPLICABLE PROVINCIAL AND MUNICIPAL CODES.
7. DURING CONSTRUCTION, THE SITE SHALL BE KEPT IN A NEAT AND ORDERLY CONDITION WITH GARBAGE REMOVED DAILY. UPON COMPLETION OF EACH PHASE, CONTRACTOR SHALL REMOVE ALL DEBRIS AND ARE TO REMOVE ALL SURPLUS MATERIALS, RUBBISH AND GARBAGE, AND LEAVE THE PREMISES IN A CLEAN STATE READY FOR THE CLIENT TO MOVE IN.
8. CONTRACTOR IS TO ENSURE THAT ALL TRADES: ELECTRICAL, MECHANICAL, TELECOMMUNICATIONS ETC. HAVE COMPLETED THEIR PORTION OF WORK BEFORE BOARDING UP BOTH SIDES OF THE STUDS. THIS IS TO INCLUDE ALL INSPECTIONS AS REQUIRED BY LOCAL AND PROVINCIAL BY-LAWS AND BUILDING CODES.
9. THE CONTRACTOR SHALL NOTIFY THE CHIEF BUILDING OFFICIAL AT THE RESIDENCE AT COMPLETION OF CONSTRUCTION STAGES AS PER 24.5.1, (2), AND 24.5.2 OF BUILDING CODE. THE CONTRACTOR SHALL BE PRESENT AT EACH INSPECTION AS APPLICABLE UNDER 24.5.3. OF THE CODE.
10. THE CONTRACTOR SHALL FORWARD ALL CITY INSPECTION REPORTS TO APPLICABLE CONSULTANTS AS SOON AS RECEIVED.
11. SOIL CONSULTANT TO REVIEW AND VERIFY SOIL CONDITIONS PRIOR TO POURING FOOTINGS
12. THE CONTRACTOR IS RESPONSIBLE TO ENSURE ALL MATERIALS USED IN BUILDING COMPONENTS AND ASSEMBLIES SEPARATING DISSIMILAR ENVIRONMENTS AND ASSEMBLIES EXPOSED TO THE EXTERIOR, INCLUDING CONNECTIONS, SHALL BE COMPATIBLE WITH ADJOINING MATERIALS AND RESISTANT TO MECHANISMS OF DEGRADATION THAT MAY BE REASONABLY EXPECTED.
13. WHERE POSSIBLE, MATERIALS OR COMBINATIONS OF MATERIALS USED TO SEPARATE DISSIMILAR ENVIRONMENTS AND ASSEMBLIES SHOULD BE PART OF A SYSTEM DESIGNED FOR THE PURPOSE INTENDED.
14. CONTRACTOR IS TO INFORM THE CONSULTANT OF ANY MATERIAL THAT IS UNAVAILABLE AS SPECIFIED OR REQUIRING A DELIVERY TIME WHICH CANT MATCH CONSTRUCTION SCHEDULE / PROJECT DELIVERY DATE.
15. CAD VERSIONS OF THE ARCHITECTURAL DRAWINGS SHALL BE MADE AVAILABLE TO THE CONTRACTOR FOR A STIPULATED COST UPON THE COMPLETION OF A RELEASE FORM INDEMNIFYING THE CONSULTANT FROM ANY ERRORS OR OMISSIONS ASSOCIATED WITH THE CAD FILES.
16. DO NOT SCALE DRAWINGS. DIMENSIONS SHALL BE VERIFIED ON SITE BY CONTRACTOR WHO SHALL BE FULLY RESPONSIBLE FOR THEIR ACCURACY.
17. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
18. INTERIOR DIMENSIONS ARE MEASURED FROM THE FACE OF FINISHED WALL AND/OR FINISHED FRAMES AT OPENINGS.
19. EXTERIOR DIMENSIONS ARE MEASURED FROM CENTRE OF GRIDLINE AND/OR FACE OF STRUCTURE.
20. CONTRACTOR IS TO VERIFY ALL DOOR AND WINDOW SIZES PRIOR TO FRAMING OF ALL OPENINGS. PROVIDE UNIT SUPPORT AS REQUIRED ABOVE OPENINGS IN CMU WALLS OR OTHER AS PER STRUCTURAL DRAWINGS & SPECIFICATIONS.
21. CONTRACTOR TO SITE VERIFY ALL HEADROOM CLEARANCES ARE IN CONFORMANCE WITH BUILDING CODE DURING CONSTRUCTION. REPORT TO CONSULTANT ANY DISCREPANCIES WHICH MAY ADVERSELY AFFECT THE REQUIRED HEADROOM CLEARANCES.
22. ALL WALLS TO BE CONSTRUCTED AT 45° AND 90° TO EACH OTHER UNLESS NOTED OTHERWISE.
23. ALL FIREWALLS TO BE EXTENDED TO EDGE OF FASCIA.
24. ASSUME ALL WALLS IDENTIFIED FOR REMOVAL ARE FULL HEIGHT AND SPAN FROM SLAB TO SLAB.
25. SITE VERIFY ALL DIMENSIONS FOR MILLWORK, DOORS, STAIRS, MAILBOX, ETC. PRIOR TO CONSTRUCTION AND INSTALLATION.
26. CHECK ALL WALLS AFFECTED BY RENOVATION FOR DEVICES THAT MAY NEED TO BE REMOVED AND RELOCATED.
27. STEEL STUDS GAUGE AND SPACING TO BE CO-ORDINATED WITH MECHANICAL IN STUDDOOR ROOMS. UNISTRUTS TO BE FASTENED TO STEEL STUDS TO SUPPORT UNIT HEATERS.
28. CONTRACTOR TO ALLOW FOR WINDOW FRAMINGS SINKAGE IN THE VERTICAL DIRECTION AT THE WINDOW/MASSORY JUNCTIONS. ENSURE SUFFICIENT SPACE IS PROVIDED BETWEEN BOTTOM OF WINDOW SILL AND TOP OF MASONRY SILL. ALSO, PROVIDE SINKAGE JOINTS IN THE GYPSUM BOARD AT THE FLOOR LEVEL AND ALL FLOOR-TO-FLOOR STAIRCASES.
29. CONTRACTOR TO PROVIDE ADEQUATE/SECURE BULKHEADS IN PARTITIONS WHERE REQUIRED FOR WALL MOUNTED UNITS SUCH AS COULTER TOPS, SHELVES, MILLWORK, WALL HUNG UNITIES, VALANCES, GRAB BARS, AND WASHROOM ACCESSORIES PER O.B.C. SECTION 3.3.4.8.
30. ALL CLOTHES CLOSETS TO HAVE A MINIMUM CLEAR INTERIOR DIMENSION OF 610mm. EACH COAT CLOSET IS TO BE COMPLETE WITH COAT ROD AND HAT SHELF. SHELF TO BE 400mm DEEP C/W WALL SUPPORT CLEATS 3 SIZES.
31. ALL GYPSUM BOARD ABUTTING CONCRETE OR BLOCK TO BE EDGED WITH METAL "J" TRIM.
32. ALL DRAIN PIPING TO BE WRAPPED CONTINUOUSLY WITH 1" (25mm) MINIMUM SOUND ATTENUATION BARI INSULATION.
33. EACH TRADY TO PROVIDE FIRE STOPPING WHEN PENETRATING A FIRE SEPARATION. FIRE STOPPING TO BE A CUL LISTED SYSTEM APPLICABLE FOR THE PENETRATION CONDITIONS WITH A RATING NOT LESS THAN AFFECTED FIRE SEPARATION.
34. GYPSUM BOARD TO BE SEALED AGAINST ALL NEW AND EXISTING PENETRATIONS, PIPES, EQUIPMENT AND DUCTWORK WHERE REQUIRED TO MAINTAIN SOUND CONTROL AND FIRE RESISTANCE RATINGS.
35. REFER TO ACOUSTICAL CONSTRUCTION NOTES FOR ELECTRICAL AND MECHANICAL COMPONENTS IN PARTY WALLS.
36. ALL ELECTRICAL SWITCHES TO BE LOCATED 100 - 200mm FROM ENTRANCE DOOR TO A ROOM. LOCATE STUDS TO ACCOMMODATE SWITCH LOCATIONS. HORIZONTALLY ALIGN LIGHT SWITCHES WITH THERMOSTATS AND OTHER RELATED SWITCHING DEVICES WHERE FEASIBLE. PROVIDE SITE MOCK-UP FOR ARCHITECT REVIEW AND APPROVAL.
37. DESIGN RAILINGS/GUARDS & CONNECTIONS TO O.B.C. VERTICAL AND HORIZONTAL WALL AND REQUIREMENT FOR PROTECTIVE DOWNWARD STATE OF REGISTERED QUALIFIED PRO. ENG. REGISTERED IN PROVINCE OF ONTARIO

1. WHERE NOTED, CONSTRUCT ALL ASSEMBLIES IN ACCORDANCE WITH THE REQUIREMENTS OF THE IDENTIFIED LABELING AGENCY. ALL MATERIALS SHALL BE AS SPECIFIED IN THE ULC DESIGN AND ULC LABELLED.
2. CONTRACTOR IS RESPONSIBLE TO CO-ORDINATE ALL LOCATIONS OF FIRE RATINGS WITH FIRE SEPARATION DRAWINGS. ENSURE ALL FIRE RATINGS ARE CONTINUOUS AND MAINTAINED FOR ENTIRE LENGTH / EXTENT OF WALL AND CEILING.
3. ALL PARTITION SHALL BE TYPE 'N1' UNLESS OTHERWISE NOTED ON DRAWINGS.
4. ALL FURRING SHALL BE 1" UNLESS NOTED OTHERWISE.
5. ALL LIGHTWEIGHT STEEL STUD INTERIOR FRAMING SHALL BE 25-ga. (0.455 mm min. THICKNESS) INCLUDING FRAMED OPENINGS FOR DOORS UP TO 810 mm (2'-8") WIDE AND NOT MORE THAN 45 kg (100 lbs).
6. ROUGH FRAMING FOR DOORS WIDER THAN 810 mm (2'-8") AND UP TO 91 kg (200 lbs) ARE TO BE REINFORCED USING 20-ga. (1.634 mm) STEEL STUDS AND RUNNERS. HEAVY DOORS UP TO 1220 mm (4'-0") WIDE AND 136 kg (300 lb) MAX ARE TO USE TWO 20-ga. STUDS.
7. MOISTURE BARRIER MUST BE PROVIDED IN ALL AREAS WHERE UNREATED WOOD IS IN CONTACT WITH CONCRETE OR CONCRETE MASONRY UNITS.
8. BUILD OUT WALLS AS REQUIRED TO ACCOMMODATE RECESSED ELECTRICAL PANELS AND MECHANICAL SERVICES. ALLOW MINIMUM 25mm FRAME CLEARANCE AROUND DRAIN PIPES FOR INSULATION WRAP.
9. ALL ELECTRICAL SWITCHES TO BE LOCATED 100 - 200mm FROM ENTRANCE DOOR TO A ROOM. LOCATE STUDS TO ACCOMMODATE SWITCH LOCATIONS. HORIZONTALLY ALIGN LIGHT SWITCHES WITH THERMOSTATS AND OTHER RELATED SWITCHING DEVICES WHERE POSSIBLE. PROVIDE SUITE MOCK-UP FOR ARCHITECT REVIEW AND APPROVAL.
10. ALL ELECTRICAL BOXES ON OPPOSING FACES OF WALLS SHALL BE LOCATED IN SEPARATE STUD CAVITIES.
11. WHERE ELECTRICAL PANELS ARE LOCATED IN ACoustic OR FIRE RATED WALLS, EXTEND FIRE RATED GYPSUM BOARD ALONG SIDES AND BACK OF PANELS TO MAINTAIN SOUND ATTENUATION OR FIRE RATING.
12. SUBSTITUTE GYPSUM BOARD WITH FIRE RATED GYPSUM BOARD FOR ALL SOUND CONTROL ASSEMBLIES.
13. SUBSTITUTE GYPSUM BOARD WITH MOISTURE OR MOULD RESISTANT GYPSUM BOARD (TO ASTM D 3723) IN WASHROOMS, KITCHENS AND WHEREVER MOISTURE IS A FACTOR, EXCLUDING WALL SCHEDULE FOR TILE FINISH.
14. SUBSTITUTE GYPSUM BOARD WITH GLASS MAT TILE BACKER BOARD (TO ASTM C 1178) FOR ALL WALLS TO RECEIVE TILE FINISH. ASSUME ALL SHOWERS AND BATHTUBS TO HAVE TILE FINISH.
15. ALL LAYERS OF GYPSUM BOARD SHOULD HAVE NO GAPS OVER 6mm.
16. INNER LAYERS OF GYPSUM BOARD SHALL BE TAPED AND COMPOUNDED.
17. PROVIDE COMPRESSIBLE BACKER ROD FOR SEALANT JOINTS OVER 6mm.
18. ALL GYPSUM BOARD FINISHES, ACCESSORIES AND INTERIOR VENEER MATERIAL SHALL BE FLOOR ASSEMBLY MATCH TO ADJACENT AREAS AND THAT ALL EDGES ARE SUPPORTED EXCEPT THAT 15.2 TYPE X GYPSUM BOARD MAY BE INSTALLED HORIZONTALLY WITH HORIZONTAL JOINTS UNBOARDED WHEN FRAMING MEMBERS ARE SPACED AT 400 C.O.C. MAX.
19. ALL PARTITIONS INSULATED FOR SOUND CONTROL TO HAVE GYPSUM BOARD SEALED CONTINUOUS, INCLUDES SILL PLATES, END WALLS, AND TOP PARTS.
20. ALL GYPSUM BOARD CONTRIBUTING TO FIRE RESISTANCE RATING OF A WALL, ROOF OR FLOOR ASSEMBLY SHALL BE PROTECTED WITH FINISHES THAT ALL EDGES ARE SUPPORTED EXCEPT THAT 15.2 TYPE X GYPSUM BOARD MAY BE INSTALLED HORIZONTALLY WITH HORIZONTAL JOINTS UNBOARDED WHEN FRAMING MEMBERS ARE SPACED AT 400 C.O.C. MAX.
21. GALVANIZED METAL RESILIENT OR FURRING CHANNELS (0.5 mm MINIMUM THICKNESS SPACED NOT MORE THAN 610 mm) CAN BE USED TO ATTACH GYPSUM BOARD AS FIRE RATED FLOOR OR ROOF ASSEMBLY. ENSURE SPICES ARE OVERLAPPED AS REQUIRED TO MEET CODE AND END CLEARANCES PROVIDED FOR.
22. PROVIDE MINIMUM ALLOWABLE FASTENER PENETRATION INTO WOOD MEMBERS PER SB-2 TABLE 2.3.9, WHERE MEMBRANE USED FOR FIRE RATING.
23. SEAL ALL FIRE RATED PARTITIONS TO FLOOR SLAB AND TO UNDERSIDE OF STRUCTURE ABOVE WITH APPROVED FIRE STOP MATERIALS OR SYSTEMS. PROVIDE CONTINUOUS FIRE STOPPING AT JUNCTIONS OF FIRE RATED PARTITIONS AND SOLID CONCRETE/CMU WALLS.
24. REFER TO GENERAL CONSTRUCTION NOTES AND SPECIFICATIONS DOCUMENT FOR ADDITIONAL INFORMATION.

A diagram showing a cross-section of a slope. A retaining wall is shown on the left, with a pile of logs or debris behind it. The slope is labeled "SLOPE".

EX1

FL1

SLAB
REINFORCED
FLOOR
REINFORCED
10
XP
CO
UN
MI
EN
(S)

EF1

The diagram shows a vertical rectangular structure. The top portion is filled with a hatched pattern, while the bottom portion is filled with a dotted pattern. A horizontal line separates the two sections. The structure is bounded by vertical lines on the left and right, and a horizontal line at the bottom.

P1

A vertical column with a width of 124 units. The column is filled with a repeating pattern of horizontal lines and dots, representing a cross-section of a material. The width is indicated by a dimension line at the bottom with the value 124.

F1

MEMBRANE FIRE SEPARATION (ELEC. AND JANITOR ROOM - SEE LIFE SAFETY PLANS AND RCPs)
1 HR. FRR PER TABLE 2.3.1.2 (Fire Resistance for Ceiling Membranes)

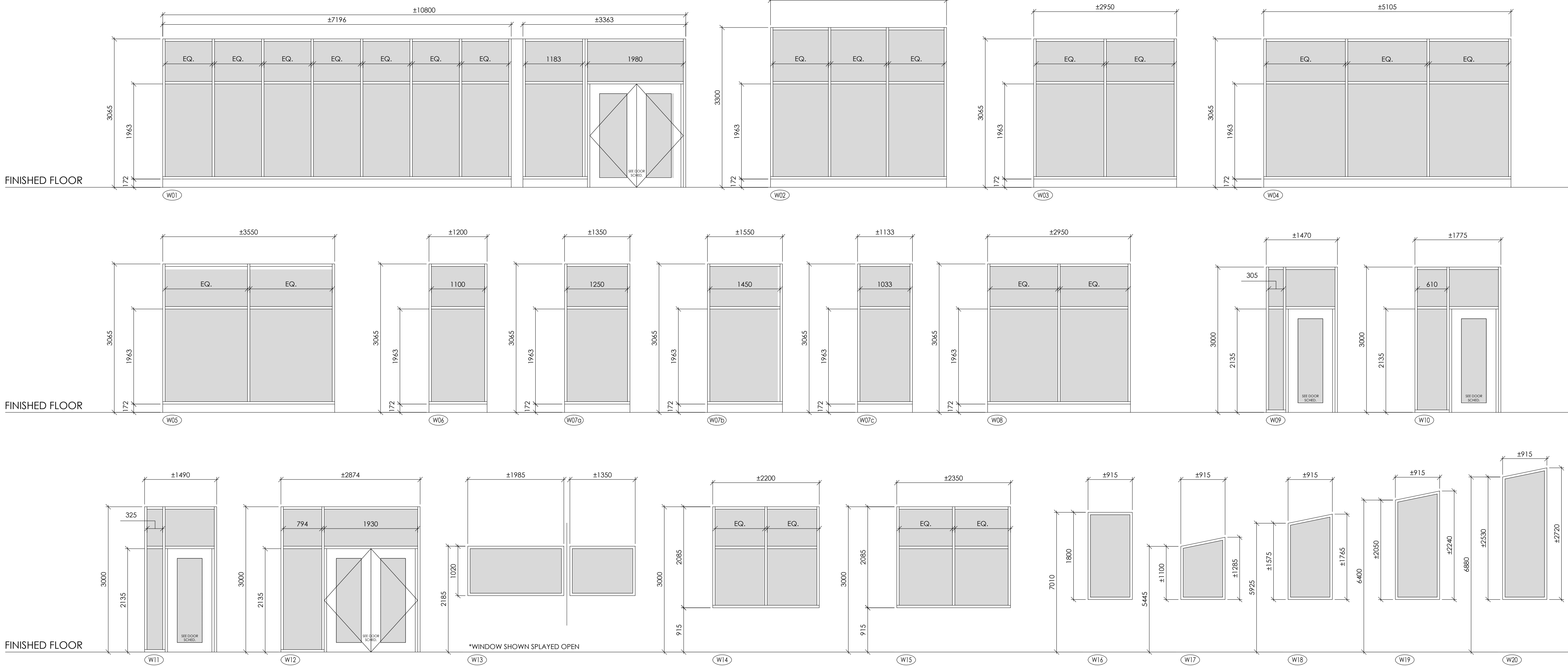
Labels in diagram:

- 1 GALV. STEEL HANGER WIRE
- 2 38 COLD ROLLED GALVANIZED STEEL CHANNELS
- 3 GALV. STEEL TIE WIRE
- 4 22 FURRING CHANNELS
- 5 2 - 16 TYPE X GYPSUM BOARD

ONTARIO ASSOCIATION
ARCHITECTS
RALPH A. CAMPEN BERG
LICENCE
4308



WINDOW TYPES:



WINDOW SPECIFICATIONS:

- COMMERCIAL ALUMINUM
- FRAMING:
- CURTAIN WALL, THERMALLY BROKEN
 - COLOR: BLACK
- GLAZING:
- DOUBLE GLAZED TEMPERED (6+13+6mm)
 - GLASS COATING: LOW-E S860 OR APPROVED EQUIVALENT ON SURFACE #2
 - VT%: 55 (+5% RANGE)
 - SHGC: 0.50 (+0.5 RANGE)
 - SHADING COEF: 0.55 (+0.5 RANGE)
 - LOW CONDUCTIVITY SPACERS
 - 95% ARGON GAS INSERT FILL
 - GREY TINTED
- FIXED FRAMING PERFORMANCE:
- MAX. U-VALUE: U-2.15
 - MAX. SHGC: 0.40
- ENTRANCE DOOR PERFORMANCE:
- MAX. U-VALUE: U-3.94
 - MAX. SHGC: 0.40

NAFS PARAMETERS

- Performance Grade (PG): 25
- Min Design Pressure: 1200 Pa
- Water Penetration pressure: 180 Pa
- Min. Can. Air Infiltration: A2

All NAFS Parameters provided are to be verified by P.Eng licensed in Ontario and provided with the shop drawings, signed and stamped.

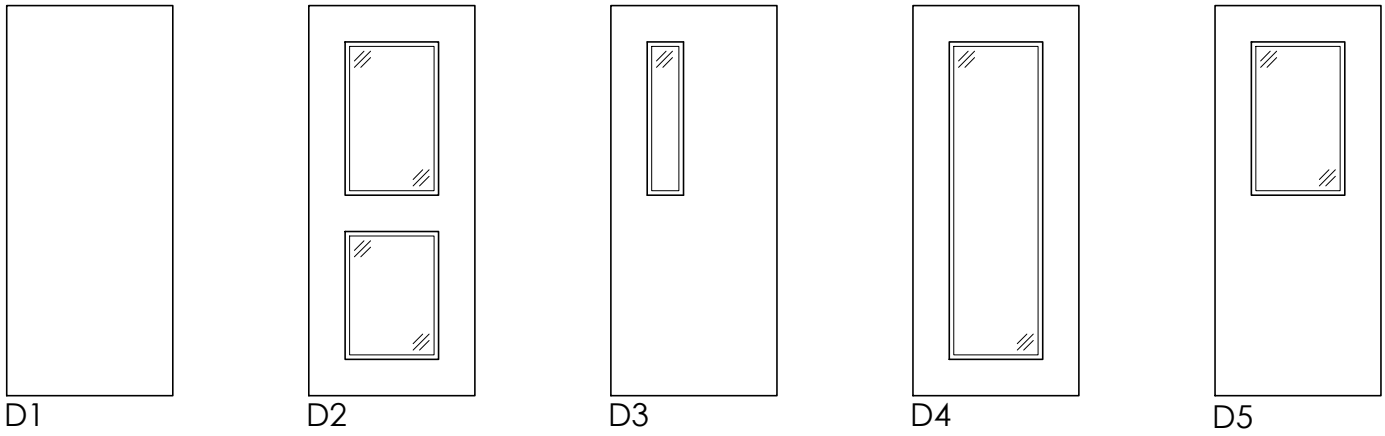
GENERAL WINDOW NOTES:

- WINDOW FRAME DIMENSIONED UNLESS NOTED OTHERWISE.
- SITE VERIFY ALL OPENINGS MEASURES PRIOR TO WINDOW MANUFACTURE.
- VERIFY ALL QUANTITIES PRIOR TO WINDOW MANUFACTURE
- REFER TO SECTION DETAILS FOR TYPICAL WINDOW TIE-INS.
- REFER TO SCHEDULE FOR WINDOW OPERABILITY.
- IN ACCORDANCE WITH OBC 4.1.5.1.6, WHERE FLOOR ELEVATION ON ONE SIDE OF WALL IS MORE THAN 600 mm HIGHER THAN FLOOR OR GROUND ON OTHER SIDE, THE WALLS AND WINDOWS SHALL BE DESIGNED TO RESIST LIVE LOADS AS PRESCRIBED IN SECTION 4.1.5.
- OPERABLE WINDOWS WHERE THE BOTTOM EDGE OF OPENABLE PORTION IS LOCATED MORE THAN 1070 ABOVE FINISHED FLOOR OR 1800 ABOVE FLOOR OR GROUND ON THE OTHER SIDE SHALL BE EQUIPPED WITH A RESTRICTOR LIMITING THE OPENING TO 100 mm MAX. PER OBC 3.3.4.8.
- IN ACCORDANCE WITH OBC 3.3.1.18(a), WINDOWS LESS THAN 1070 FROM FLOOR IN PUBLIC AREAS ABOVE THE SECOND STOREY TO BE NON-OPERABLE AND DESIGNED TO RESIST HORIZONTAL LOAD OF 0.75 kN/m OR CONCENTRATED LOAD OF 1.0 kN IN CONFORMANCE WITH OBC 4.1.5.14.(1)(c).
- ALL PENETRATION TO COMPLY WITH BUILDING ENVELOPE REQUIREMENTS PER SB-10, DIVISION 3, TABLE SB5.5-6.

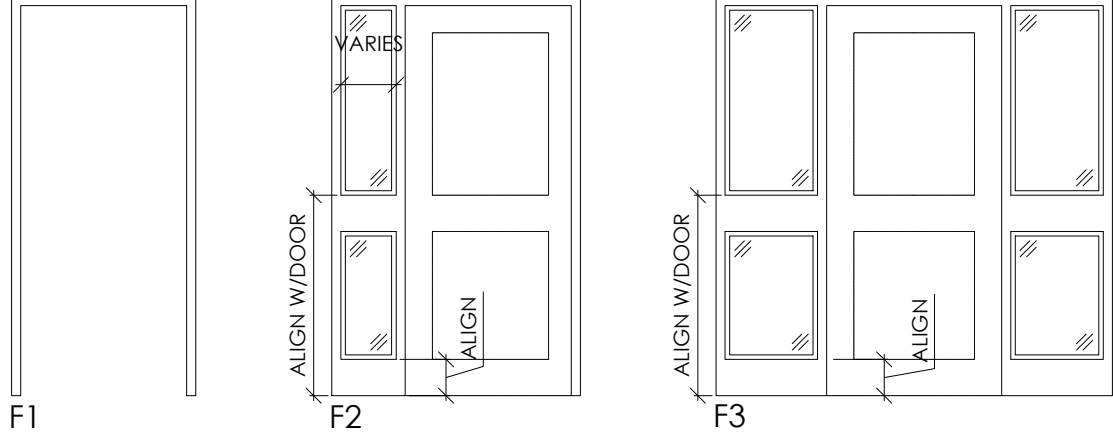
DOORS SCHEDULE

DOORS										FRAMES					REMARKS
DOOR NO.	ROOM NO.	RM. NAME	TYPE	SIZE (mm)	THICK (mm)	MATERIAL	FINISH	LABEL (HR.)	GLASS	FRAME TYPE	MATERIAL	FINISH	LABEL (HR.)	GLASS	
101A	101	VESTIBULE	D4	2-965 x 2135	44	AL-TB	BLACK	--	IG-LT	SEE WIN. SCHEDULE	AL-TB	BLACK	--	IG-T	LK-EX, ED-T/C, CL, WST, SW, TH-BF, ADO
101B	101	VESTIBULE	D4	2-965 x 2135	44	AL	BLACK	--	FG-T	SEE WIN. SCHEDULE	AL	BLACK	--	FG-T	P/P, CL, ADO, DS-F
101C	101	VESTIBULE	D4	965 x 2135	44	AL	BLACK	--	FG-T	SEE WIN. SCHEDULE	AL	BLACK	--	FG-T	P/P, CL, ADO, DS-F
102	102	LOBBY	D1	4743 x 3065	44	SCW	ST	--	--	4 DOOR SLIDING w/ TRACK AND ALL ASSOCIATED HARDWARE. SEE SPECS.					MANUAL OPERATION
103	103	ELEC.	D1	965 x 2135	44	HMD	PT	45 MIN.	--	F1	HMF	PT	45 MIN.	--	CL, LK-S
104	104	UNIV. W/C	D1	965 x 2135	44	SCW	ST	--	--	F1	HMF	PT	--	--	LK-P, DS-W, HK-BF, ACCESSIBILITY SIGNAGE, WASHROOM SIGNAGE, ECK
105A	105	KITCHEN	D3	965 x 2135	44	SCW	ST	--	FG-T	F1	HMF	PT	--	--	LK-C, DS-O/H, KP
105B	105	KITCHEN	1800W x 1285H PAINTED METAL ROLLING COUNTER SHUTTER - REFER TO SPEC.												HARDWARE BY MANUFACTURER, ALIGN HEAD W/ ADJACENT OPENINGS
106	106	TABLES/CHAIRS	D1	2-965 x 2135	44	SCW	ST	--	--	F1	HMF	PT	--	--	CL
107	107	MEN'S W/C	D1	965 x 2135	44	SCW	ST	--	--	F1	HMF	PT	--	--	LK-P, DS-O/H
108	108	WOMEN'S W/C	D1	965 x 2135	44	SCW	ST	--	--	F1	HMF	PT	--	--	LK-P, DS-W
109A	109	MULTIPURPOSE	D2	965 x 2135	44	SCW	ST	--	FG-T	SEE WIN. SCHEDULE	HMF	PT	--	FG-T	P/P, CL, DS-W
109B	109	MULTIPURPOSE	D1	2715 x 3065	44	SCW	ST	--	--	SLIDING DOOR w/ TRACK AND ALL ASSOCIATED HARDWARE. SEE SPECS.					MANUAL OPERATION
109C	109	MULTIPURPOSE	D3	965 x 2135	44	SCW	ST	--	FG-T	F1	HMF	PT	--	--	P/P, CL, DS-O/H
109D	109	MULTIPURPOSE	D1	965 x 2135	44	HMD-1	PT	--	---	F1	HMF-1	PT	--	--	LK-EX, ED-T/C, CL, WST, SW, TH
109E	109	MULTIPURPOSE	D1	11800 x 3065		OPERABLE PARTITION w/ TRACK AND ALL ASSOCIATED HARDWARE. SEE SPECS.									STC S2, MANUAL OPERATION
110	110	OFFICE	D5	965 x 2135	44	SCW	ST	--	FG-T	F1	HMF	PT	--	--	LK-O, DS-F
111	111	NURSERY	D4	965 x 2135	44	SCW	ST	--	FG-T	SEE WIN. SCHEDULE	HMF	PT	--	FG-T	LK-C, DS-F
112	112	SUNDAY SCHOOL	D4	965 x 2135	44	SCW	ST	--	FG-T	SEE WIN. SCHEDULE	HMF	PT	--	FG-T	LK-C, DS-F
113	113	INSTRUMENTS	D3	965 x 2135	44	SCW	ST	--	FG-T	SEE WIN. SCHEDULE	HMF	PT	--	FG-T	LK-O, DS-F
114	114	OFFICE	D4	965 x 2135	44	SCW	ST	--	FG-T	SEE WIN. SCHEDULE	HMF	PT	--	FG-T	LK-O, DS-F
115	115	OFFICE	D4	965 x 2135	44	SCW	ST	--	FG-T	SEE WIN. SCHEDULE	HMF	PT	--	FG-T	LK-O, DS-F
116	116	OFFICE	D4	965 x 2135	44	SCW	ST	--	FG-T	SEE WIN. SCHEDULE	HMF	PT	--	FG-T	LK-O, DS-F
117	117	JANITOR	D1	965 x 2135	44	HMD	PT	45 MIN.	--	F1	HMF	PT	30 MIN.	--	LK-S, DS-W, CL
118	118	AV CLOSET	D1	915 x 2135	44	SCW	PT	--	--	F1	HMF	PT	--	--	DS-O/H
119	119	CORRIDOR	D4	965 x 2135	44	SCW	PT	--	--	SEE WIN. SCHEDULE	HMF	PT	--	FG-T	DS-W

DOOR TYPES



FRAME TYPES



LEGEND

HARDWARE

- ADO AUTOMATIC DOOR OPERATOR
- AS-MS ASTRAGAL-MEETING STILE
- AS-S ASTRAGAL-SECURITY
- BF BARRIER FREE
- BF-E BARRIER FREE - ENTRANCE
- CL CLOSER - OVERHEAD
- CL-H/S CLOSER - HOLD OPEN & STOP
- CL-S/H CLOSER - SPRING HINGE TYPE
- CR CARD READER
- DH DUMMAY HANDLE
- DS-F DOOR STOP - FLOOR
- DS-H DOOR STOP - HINGE
- DS-K/D DOOR STOP - KICK DOWN
- DS-O/H DOOR STOP - OVERHEAD
- DS-W DOOR STOP - WALL
- ECK DOOR CONTACT, RELAY, ELECTRIC STRIKE, EMERGENCY CALL KIT (PUSH FOR EMERGENCY, ANNUNCIATORS, SIGNAGE)
- ED-C/C EXIT DEVICE - CROSSBAR, CONCEALED ROD
- ED-C/S EXIT DEVICE - CROSSBAR, SURFACE ROD
- ED-P/P EXIT DEVICE - PUSH/PULL LATCH TYPE
- ED-T/C EXIT DEVICE - TOUCHBAR, CONCEALED ROD
- ED-T/R EXIT DEVICE - TOUCHBAR, RIM TYPE
- ED-T/S EXIT DEVICE - TOUCHBAR, SURFACE ROD
- ES ELECTRIC STRIKE (FAIL-SAFE)
- FB FLUSH BOLT
- FP FLUSH PULL
- HK HOOK - CLOTHING
- KP KICKPLATE

HARDWARE con't.

- LK-C LOCKABLE - CLASSROOM
- LK-DB LOCKABLE - DEAD-BOLT (STORE)
- LK-E LOCKABLE - ENTRANCE
- LK-EI LOCKABLE - ENTRANCE, INTERCONNECTED
- LK-EX LOCKABLE - EXIT
- LK-O LOCKABLE - OFFICE
- LK-PR LOCKABLE - PRIVACY (WASHROOM)
- LK-S LOCKABLE - STOREROOM (FIXED, KEY ONLY)
- MAG-HO ELECTROMAGNETIC HOLD-OPEN (FIRE ALARM INTERCONNECTED)
- MAG-LK ELECTROMAGNETIC LOCK (FAIL-SAFE)
- MUL DB, DOOR MULLION
- P/P PUSH/PULL BAR HANDLES
- PP/PH PUSH PLATE/PULL HANDLE
- PROX PROXIMITY SENSOR
- PV PEEPHOLE VIEWER
- RA-KF RESTRICTED ACCESS - KEY FOB
- RA-KP RESTRICTED ACCESS - KEY PAD
- RL ROLLER LATCH
- RM REMOVABLE MULLION
- RP RECESSED PULL
- S-E SIGNAGE: "EMERGENCY EXIT ONLY - ALARM WILL SOUND IF DOOR IS OPENED"
- SDSL DOOR SOUND SEALS (ASTM E90), FULL PERIMETER GASKETING W/AUTO DOOR BOTTOM
- SW SWEEP
- TH THRESHOLD
- TH-BF THRESHOLD - BARRIER FREE
- VG VENTILATION GRILLE
- ST STAINED
- WST WEATHERSTRIP

MATERIALS AND FINISHES

- AG ANNEALED GLASS
- AL ALUMINUM
- AL-TB ALUMINUM - THERMALLY BROKEN
- ANDOD ANODIZED
- AP ARMOUR PLATE
- BR BLAST RESISTANT
- CLR CLEAR FINISH (CLEAR STAIN)
- FG FLAT GLASS - FLOAT
- FG-FR FLAT GLASS - FIRE RATED
- FG-L FLAT GLASS - LAMINATED
- FG-M FLAT GLASS - MIRROR
- FG-SP FLAT GLASS - SPANDREL
- FG-T FLAT GLASS - TEMPERED
- FG-T/I FLAT GLASS - TEMPERED / ONE WAY VISION
- FG-W FLAT GLASS - WIRED
- HCW HOLLOW CORE WOOD OR HARDBOARD
- HMD HOLLOW METAL DOOR
- HMD-I HOLLOW METAL DOOR - INSULATED
- HMF HOLLOW METAL FRAME
- HMF-I HOLLOW METAL FRAME - INSULATED
- IG INSULATED GLASS UNIT
- IG-L INSULATED GLASS UNIT - LOW E
- IG-T INSULATED GLASS UNIT - LOW E/TEMPERED
- IG-TI INSULATED GLASS UNIT - TEMPERED
- PT PAINT
- PLAM PLASTIC LAMINATE
- SCW SOLID CORE WOOD
- SMD-I SECTIONAL METAL DOOR - INSULATED
- SR SOUND RETARDANT
- ST STAINED
- U.N.O. UNLESS NOTED OTHERWISE

GENERAL NOTES FOR DOORS & HARDWARE:

- ALL PRODUCTS AND MATERIALS TO BE NEW U.N.O.
- ALL DOORS TO BE LATCHING U.N.O.
- ALL GLASS IN DOORS AND SIDELITES TO BE TEMPERED U.N.O.
- ALL EXTERIOR DOORS AND FRAMES INCLUDING GLASS UNITS TO BE INSULATED U.N.O.
- ALL INSULATED GLASS TO BE ARGON GAS FILLED, LOW-E TEMPERED GLASS.
- SITE VERIFY ROUGH OPENING DIMENSIONS AND CONFIRM WALL THICKNESS AND JAMB TYPES PRIOR TO ORDERING DOORS AND MANUFACTURING FRAMES.
- ALL OPENINGS AND DOORS TO COMPLY WITH SB-10 TABLE 5.5.6 VALUES:
 - 7.1. OPAQUE DOOR ASSEMBLIES MAX. U-VALUE: **U-2.50**
 - 7.2. METAL FRAME, METAL EXTERIOR DOOR PENETRATION MAX. U-VALUE: **U-3.44**
 - 7.3. METAL ENTRANCE DOOR PENETRATION MAX. U-VALUE: **U-3.48**
- FIRE RATED DOORS & FRAMES TO COMPLY WITH DESIGNATED RATING AND O.B.C. REQUIREMENTS IN SECTION 3.1.8 & 9.10.13. PROVIDE LABELS ON EDGE OF DOORS AND FRAMES AS REQUIRED. GLASS AND TEMPERATURE RES LIMIT TO COMPLY WITH 3.1.6.15.
- DOOR SOUND SEALS ARE COMPOSED OF ADHESIVE APPLIED PERIMETER GASKETING AND FULLY MORTISED AUTOMATIC DOOR BOTTOMS. ALL PRODUCTS TESTED IN ACCORDANCE WITH ASTM E90.
- SUPPLY CATALOGUE CUTS AND SCHEDULES FOR REVIEW AS PART OF SUBMITTAL PROCESS.
- INSTALL HARDWARE AND ACCESSORIES PER MANUFACTURER'S REQUIREMENTS AND INSTRUCTIONS.
- PROVIDE RUBBER BUMPERS ON ALL DOOR FRAMES AND AT SLIDING DOORS.
- DOOR THRESHOLDS TO SUIT EACH APPLICATION. EXTEND THRESHOLD FULL WIDTH OF OPENING AND COPE AT FRAME. FOR SUB-ON-GRATES, EXTEND THRESHOLD BEYOND FOUNDATION AND COVER ISOLATION JOINT.
- COORDINATE KEYING WITH HARDWARE SUPPLIER AND CLIENT.
- ALL NEW AND EXISTING DOORS IN FIELD OF RENOVATION TO HAVE PROTECTION FROM CONSTRUCTION.
- PROVIDE BLOCKING FOR ALL WALL STOPS.
- PROVIDE A CONTINUOUS BEAD OF PAINTABLE CAULKING ALONG ALL FRAME/WALL INTERFACES.
- ALL ELECTRICAL STRIKES TO BE ON BATTERY BACK-UP OR EMERGENCY POWER.
- COORDINATE ALL ELECTRONIC RESTRICTED ACCESS WITH SECURITY SYSTEM CONTRACTOR.
- ALLOW FOR NEW STEEL LINTEL SUPPORTS WHERE NOTED FOR FABRICATION AT HEAD OF DOOR/WINDOW FRAMES.
- CHECK DOOR SWINGS AS PER FLOOR PLANS AND O.B.C. 3.4.6.12.
- CONTRACTOR TO SITE CONFIRM FLOOR ELEVATION PRIOR TO MANUFACTURING DOORS. NOTIFY ARCHITECT IF A CHANGE IN FLOOR ELEVATION WILL AFFECT THE UNDERCUT OF A DOOR.
- ENSURE EXIT DEVICES INSTALLED PER O.B.C. 3.4.6.15. HOLD OPEN DEVICES OF ANY TYPE ARE PROHIBITED FROM USE ON DOORS WITH CLOSERS IN A FIRE SEPARATION.
- BARRIER-FREE UNIVERSAL WASHROOM DOOR PER OBC 3.8.3.12(1)(B):
 - 19.1. CLOSER, GRAVITY OR SPRING TYPE SELF-CLOSING IF STALL DOOR OPENS OUTWARD.
 - 19.2. SPECIFICALLY LOCATED DOOR PULL IF DOOR OPENS OUTWARD.
 - 19.3. GRASPABLE MECHANISM 900 TO 1000 A-F-F.
 - 19.4. LOCK RELEASABLE ON OUTSIDE.
 - 19.5. PROVIDE ACCESSIBILITY SIGNS TO BE INSTALLED AS PER O.B.C. 3.8.3.1
 - 19.6. PROVIDE FLOOR SOCKET AT THRESHOLD AND DOOR OPEN POSITION.
- DOORS WITH GLASS IN BARRIER FREE PATH OF TRAVEL TO COMPLY WITH 3.8.3.3(14) FOR VISION PANEL DIMENSIONS.

NO.	REVISION	DATE
1	ISSUED FOR COORDINATION	OCT. 1, 2021
2	ISSUED FOR BUILDING PERMIT	OCT. 15, 2021
3	ISSUED FOR TENDER	NOV. 5, 2021

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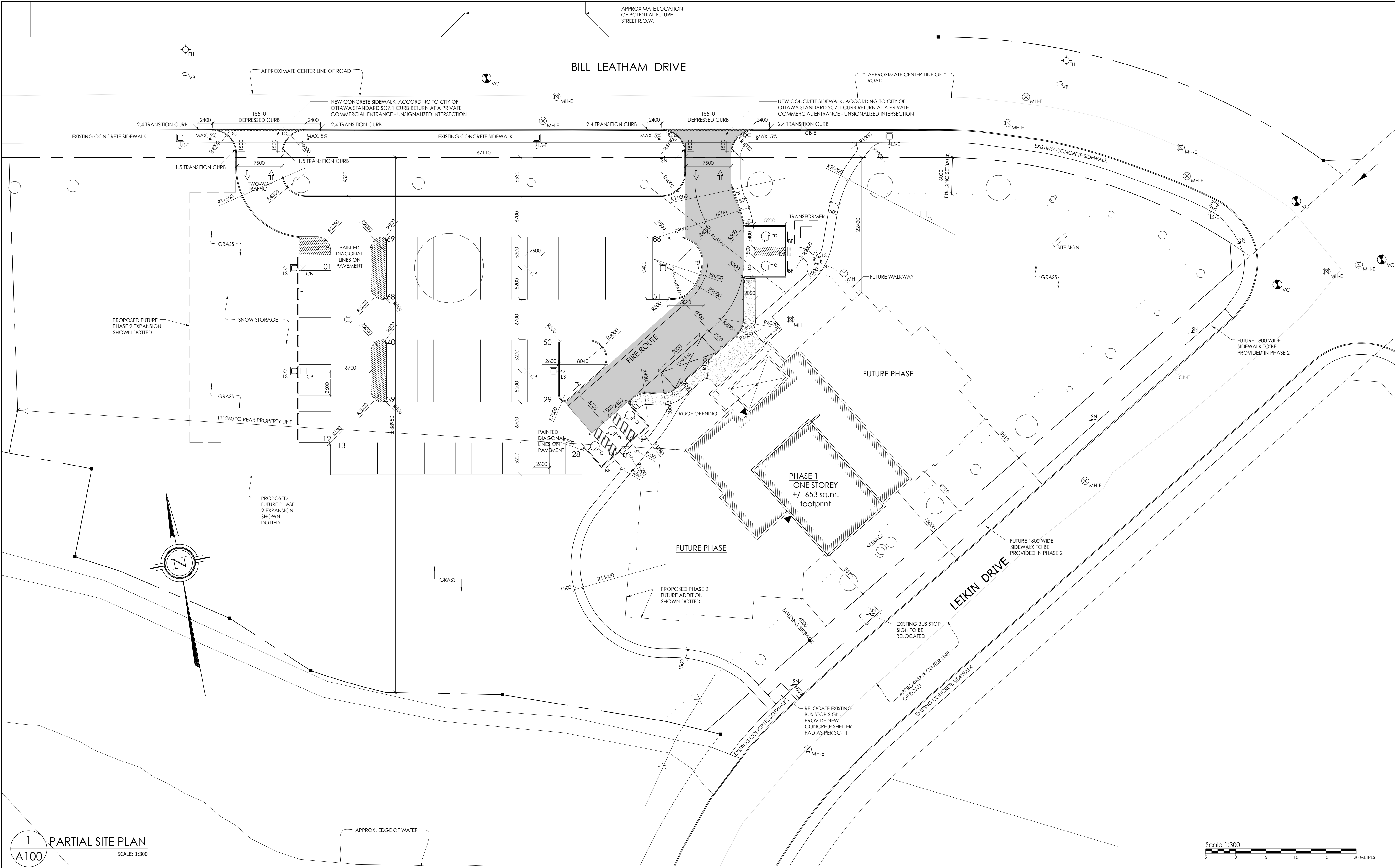
PROJECT TITLE
THE SALVATION ARMY BARRHAVEN CHURCH
102 BILL LEATHAM DRIVE, NEPEAN ON, K2J 0R3

DRAWING TITLE
SCHEDULES

DESIGNED BY: RALPH VANDENBERG
DRAWN BY: JN, DV
START DATE: 2015
SCALE: AS SHOWN
PROJECT NO. 1502

DESIGNING FIRM
A004

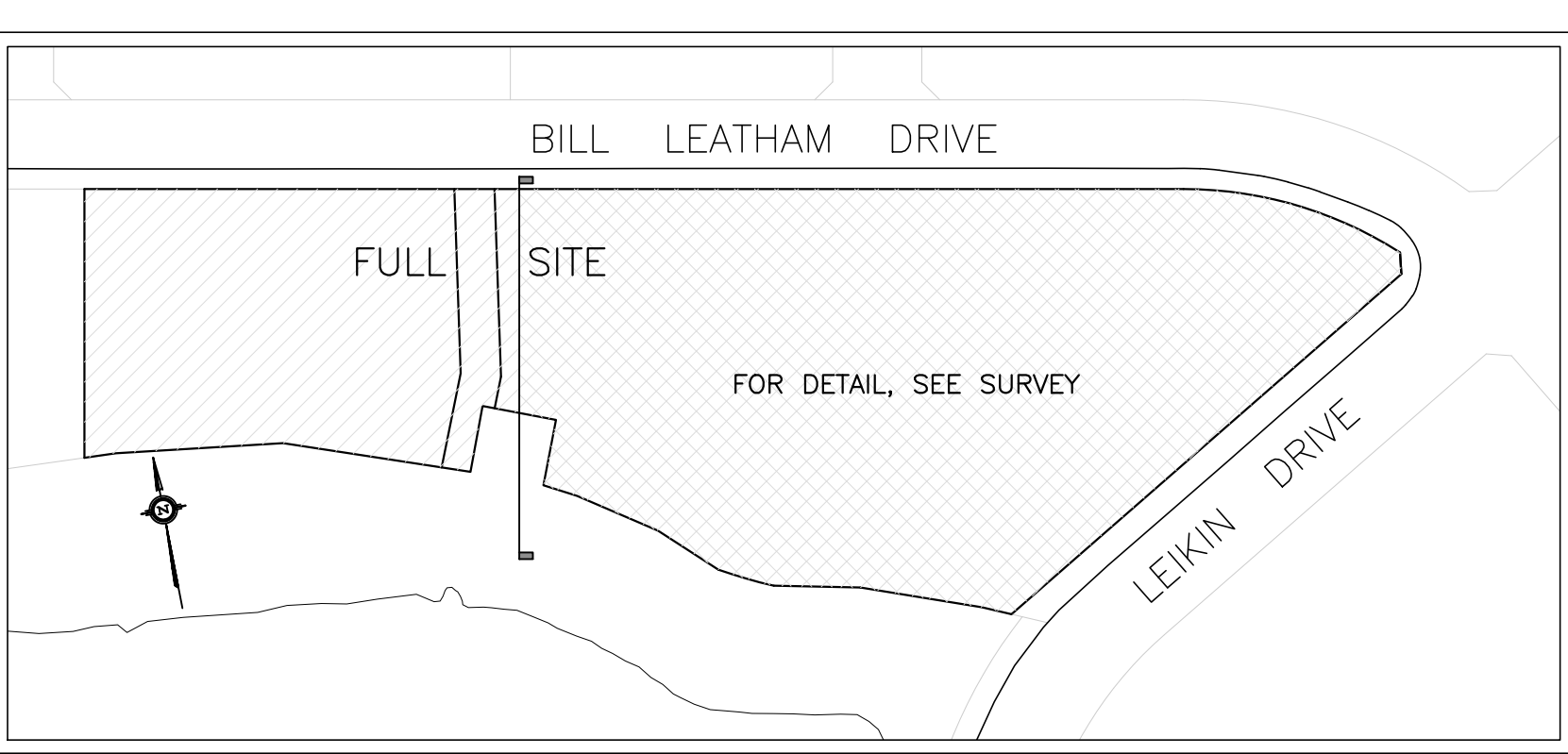
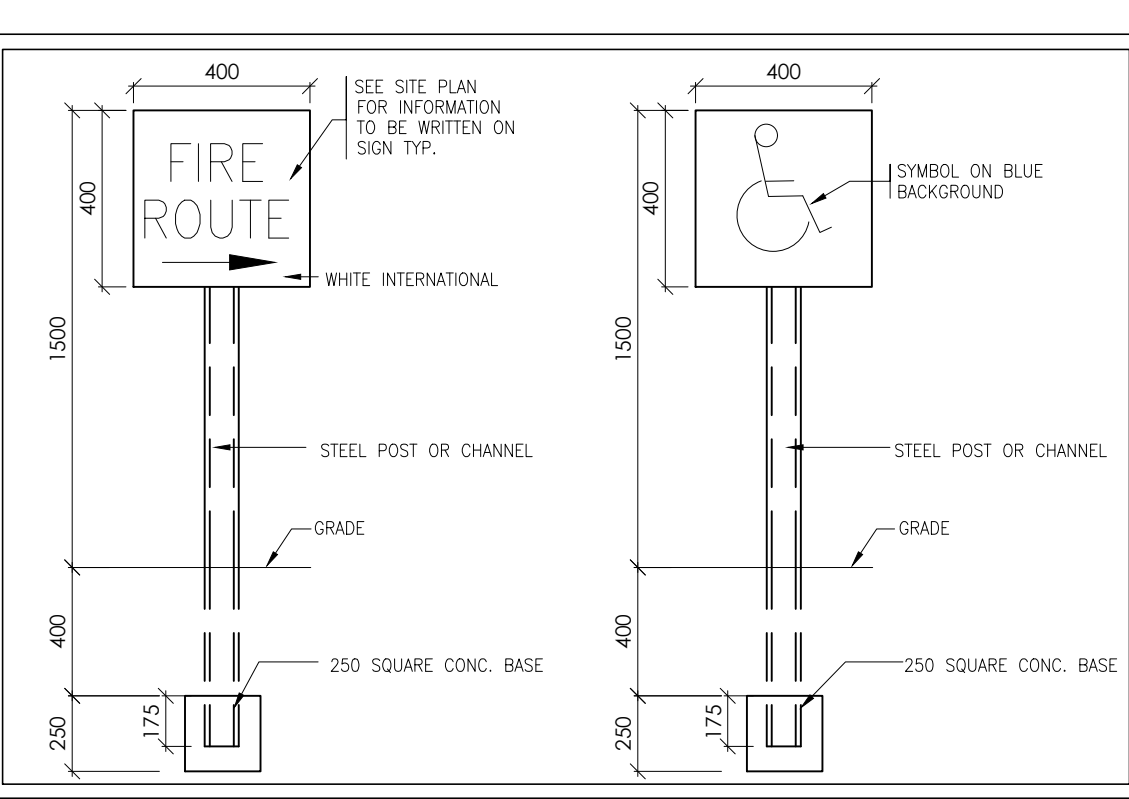




LEGEND

MH	EXISTING MANHOLE - SANITARY AND STORM ('E' DENOTES EXISTING)		BICYCLE RACK
CB	EXISTING CATCHBASIN ('E' DENOTES EXISTING)	BF	DESIGNATED BARRIER FREE PARKING SPACE
FH	FIRE HYDRANT	FS	FIRE ROUTE SIGN
U/P	UTILITY POLE	SN	EXISTING SIGN
GP	GUY WIRE	VC	VALVE CHAMBER
□	LIGHT STANDARD W/POLE BASE ('E' DENOTES EXISTING)	VB	VALVE BOX
▲	DENOTES BUILDING EXIT	—	PROPERTY LINE
—	CURB (REFER: CITY OF OTTAWA STANDARDS)	—	PROPERTY SETBACK
—	DEPRESSED CURB (REFER: CITY OF OTTAWA STANDARDS)	—	PROPOSED CONCRETE WALKWAY
○	EXISTING TREE (REFER TO LANDSCAPE PLAN)		

- GENERAL NOTES:**
1. ALL WALKWAYS TO BE ASPHALT PAVING UNLESS NOTED OTHERWISE.
 2. ALL NEW PARKING AREAS TO BE ASPHALT UNLESS NOTED OTHERWISE.
 3. REFER TO LEGAL SURVEY FOR SITE SPECIFIC LEGAL INFORMATION.
 4. REFER TO CIVIL FOR COMPLETE GRADE INFORMATION.

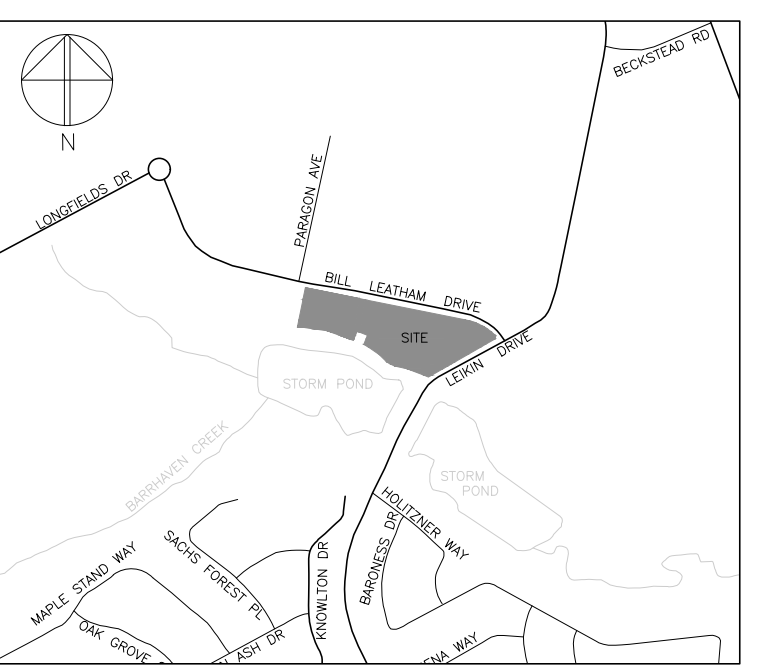


NO.	REVISION	DATE
6	ISSUED FOR COORDINATION	OCT 17/2016
7	RE-ISSUED FOR SITE PLAN CONTROL	OCT 21/2016
8	RE-ISSUED FOR SITE PLAN CONTROL	JULY 21/2017
9	ISSUED FOR CLASS 'C' BUDGET	JUNE 10/2021
10	ISSUED FOR COORDINATION	OCT. 1/2021
11	ISSUED FOR BUILDING PERMIT	OCT. 15/2021
12	ISSUED FOR TENDER	NOV. 5/2021

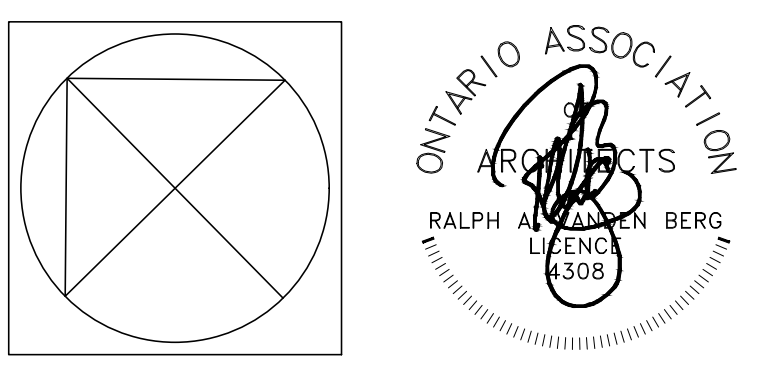
KEY PLAN

Property Information:

Legal Description:
PART OF LOTS 17 & 18
Concession 1 (Rideau Front)
(Geographic Township of Nepean)
City of Ottawa



BUILDING AREA (FOOTPRINT): 653.0 m² LOT AREA: 19578 m² ZONE: IL9 - LIGHT INDUSTRIAL		
MECHANISM	REQUIRED	PROVIDED
MINIMUM LOT AREA	3000 m²	19578 m²
MINIMUM LOT WIDTH	50 m	± 89.2 m
MINIMUM FRONT YARD SETBACK	6 m	8.5 m
MINIMUM CORNER SIDE YARD SETBACK	6 m	22.4 m
MINIMUM REAR YARD SETBACK	6 m	111.3 m
MAXIMUM LOT COVERAGE	60 %	5.8 %
MAXIMUM BUILDING HEIGHT	22 m	9.55 m
MAXIMUM FLOOR SPACE INDEX	2	0.033
MAX. WIDTH LANDSCAPE AREA (AROUND PARKING LOT)	NO MIN.	N.A.
MIN. WIDTH OF LANDSCAPE AREA	ABUTTING A STREET: 3 m OTHER CASES: NO MIN.	6.5 m N.A.
MIN. # PARKING SPACES	PLACE OF ASSEMBLY, WORSHIP: 10/100m² GFA OF ASSEMBLY AREA: 114.8 OFFICES: 91.7 SCHOOL: 30.3 SUM: 236.8 m² CARS REQ. 3	91
VEHICLE PARKING SPACE SIZE PROVISIONS	2.6m x 5.2m	2.6 m x 5.2 m
MIN AISLE WIDTH	6.7 m	6.7 m
MIN. # BICYCLE PARKING SPACES	1 PER 1500 m² GFA BICYCLE PARKING REQ.: 1	6
BICYCLE PARKING SPACE SIZE PROVISIONS	0.6m x 1.8m	0.6 m x 1.8 m
LOADING SPACE	1: 3.5m x 9m	1



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PROJECT TITLE
THE SALVATION ARMY BARRHAVEN CHURCH
NEPEAN

DRAWING TITLE
PHASE 1 SITE PLAN

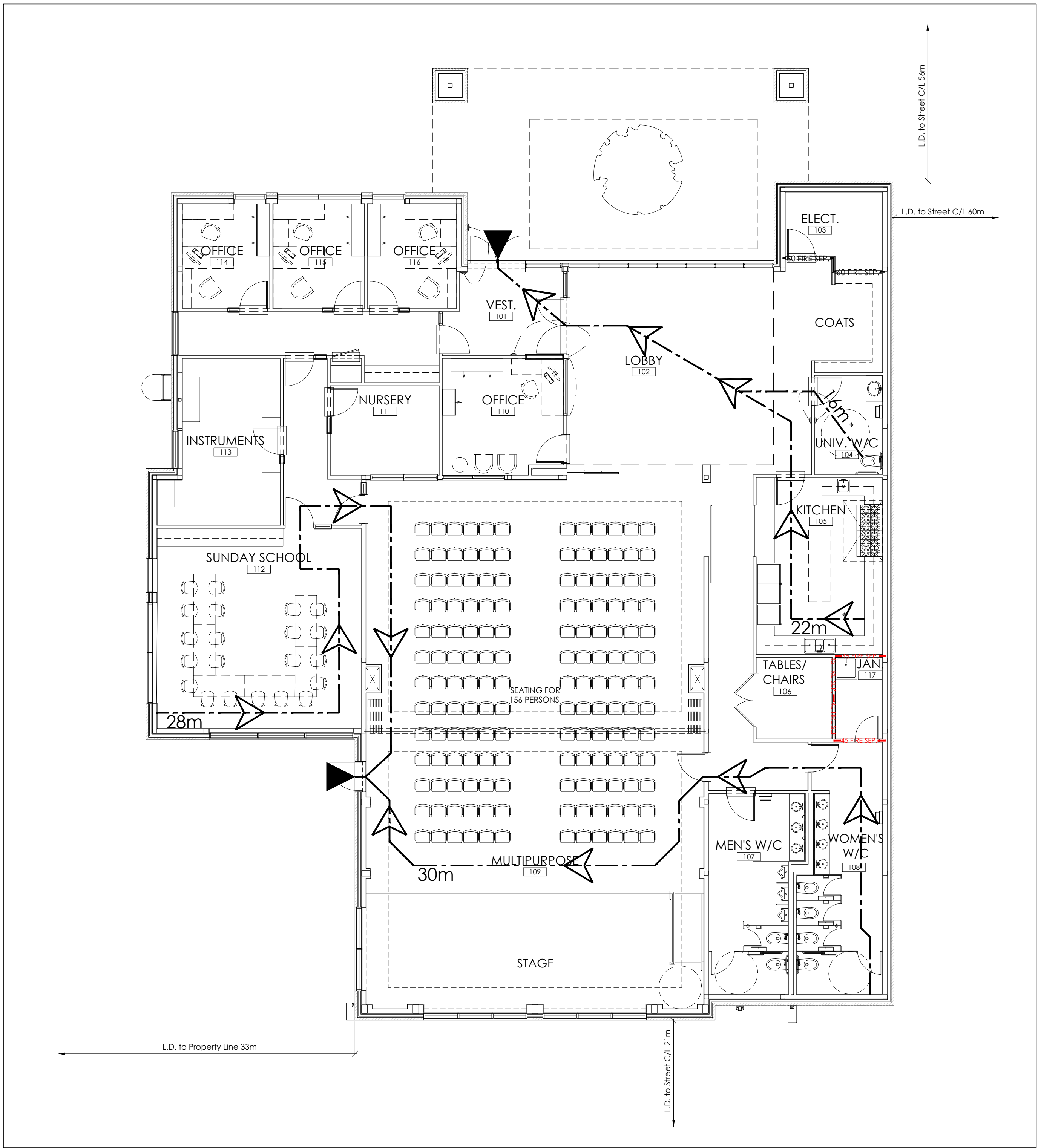
DESIGNED BY: RALPH VANDENBERG
DRAWN BY: LV, MD
START DATE: 2015
SCALE: AS SHOWN
PROJECT NO. 1502

DATE: NOV. 5, 2021

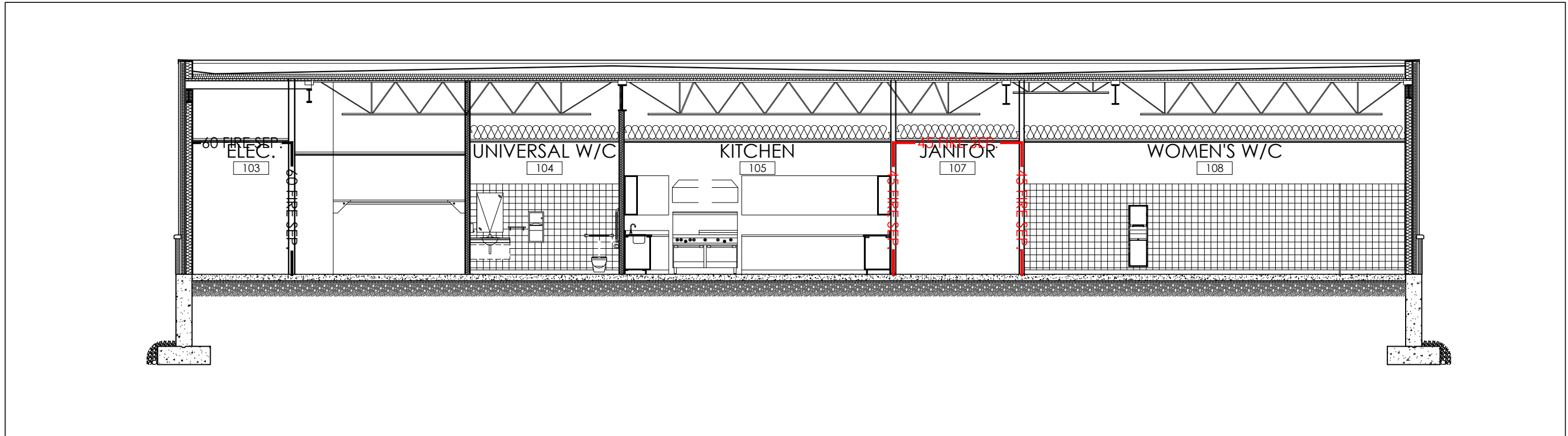
A001

Firm's name: Vandenberg & Wildeboer Architects Inc. Company Info: 160 Flamborough Way Kanata, Ontario K2K 3H9 613.287.0144 Name of Project: 1502 Salvation Army Barrhaven Church Project location: Nepean, ON										THE ARCHITECT NOTED ABOVE HAS EXERCISED RESPONSIBLE CONTROL WITH RESPECT TO DESIGN ACTIVITIES. THE ARCHITECT'S SEAL NUMBER IS THE ARCHITECT'S DESIGNATION.	
Item											

ADDITIONAL BUILDING CODE ANALYSIS		
REQUIRED RATINGS: EXIT FACILITY: 45 Min. JANITOR ROOM: SERVICE (ELEC.) ROOM:	45 MIN FRR 45min. FRR & SEPARATION 1HR. FRR & SEPARATION	O.B.C. 3.4.4.1(1) O.B.C. 3.3.1.20 (1) & (2) O.B.C. 3.6.2.1
FIRE SEPARATION DESIGNATION: REFER TO LIFE SAFETY PLAN A003		
EXITS TYPICAL FLOORS: EXIT DOOR WIDTH REQUIRED: EXIT CORRIDOR WIDTH REQUIRED: DEAD END CORRIDOR: MAX. TRAVEL DISTANCE TO AN EXIT:	790mm (2'-7") 1100mm (3'-7") NO 30m	O.B.C. 3.4.3.2(7)(g) O.B.C. 3.4.3.2(7)(g) O.B.C. 3.3.3.3 O.B.C. 3.4.2.5(1)(f)
W/C CALCULATIONS: WASHROOMS REQUIRED: REQUIRED: 1 FIXTURE PER 150 PERSONS OF EACH SEX OCCUPANT LOAD: 470 PERSONS, 235 MALES, 235 FEMALES. 332 / 150 = 3 FIXTURES PER SEX		O.B.C. 3.7.4.3(16)
WASHROOMS PROVIDED: 1 FEMALE WASHROOM WITH 3 WATER CLOSETS, 1 BF WATER CLOSET AND 4 SINKS 1 MALE WASHROOM WITH 1 WATER CLOSET, 1BF WATER CLOSET, 3 URINALS, & 3 SINKS 1 UNIVERSAL WASHROOM WITH 1 WATER CLOSET & 1 SINK		
PART 12 - RESOURCE CONSERVATION SB-10 Division 3 - 1.1.2.1 (1) (a) - ANSI/ASHRAE/ESNA 90.1 & CHAPTER 2 ASSEMBLY U VALUES / R VALUES FROM: TABLE SB5.5-6 - ZONE 6 - NON RESIDENTIAL		



1 LIFE SAFETY PLAN
A002 1:100



2 LIFE SAFETY SECTION
A002 1:100

NO.	REVISION	DATE
1	ISSUED FOR COORDINATION	OCT. 1, 2021
2	ISSUED FOR BUILDING PERMIT	OCT. 15, 2021
3	ISSUED FOR TENDER	NOV. 5, 2021

MINIMUM REQUIRED FIRE RESISTANCE RATINGS:
45 Min. FRR FIRE SEPARATION —45 FIRE SEP.—45 FIRE SEP.—
60 Min. FRR FIRE SEPARATION —60 FIRE SEP.—60 FIRE SEP.—
TRAVEL DISTANCE ———>———
DESIGNATED EXIT ▼

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PROJECT TITLE
THE SALVATION ARMY BARRHAVEN CHURCH
102 BILL LEATHAM DRIVE, NEPEAN ON, K2J 0R3

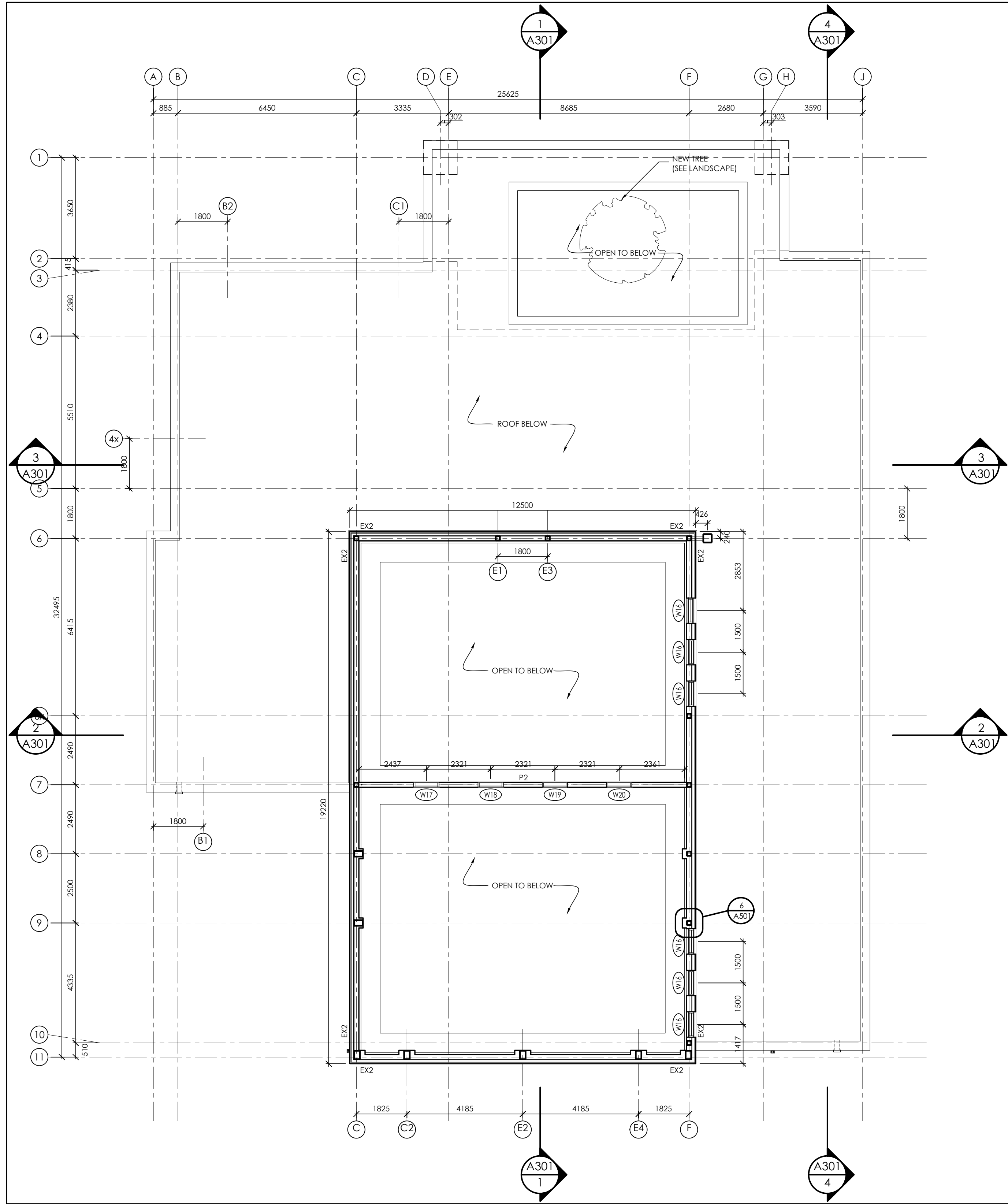
DRAWING TITLE
LIFE SAFETY PLAN & SECTIONS

DESIGNED BY: RALPH VANDENBERG
DRAWN BY: JN, DV
START DATE: 2015
SCALE: AS SHOWN
PROJECT NO. 1502

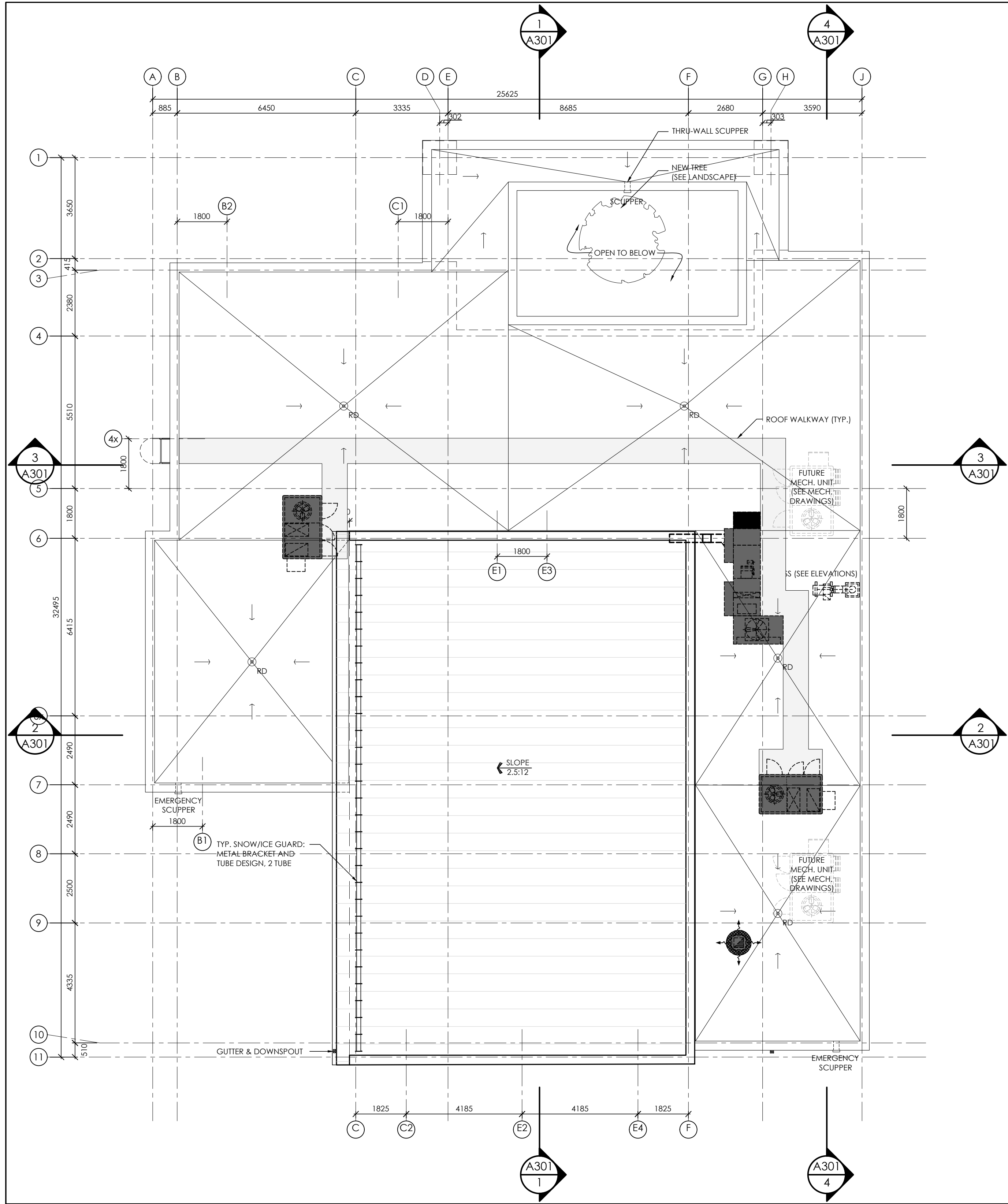
DESIGNING FIRM
A002

PL01 DATE: November 5, 2021

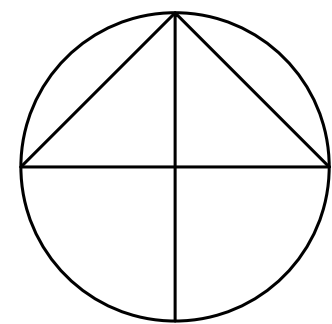
NO.	REVISION	DATE
1	ISSUED FOR COORDINATION	OCT. 1, 2021
2	ISSUED FOR BUILDING PERMIT	OCT. 15, 2021
3	ISSUED FOR TENDER	NOV. 5, 2021



1 CLERESTORY PLAN
1:100



2 ROOF PLAN
1:100





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PROJECT TITLE

THE SALVATION ARMY BARRHAVEN CHURCH
102 BILL LEATHAM DRIVE, NEPEAN ON, K2J 0R3

DRAWING TITLE

FLOOR PLANS

DESIGNED BY: RALPH VANDENBERG
DRAWN BY: JN, DV
START DATE: 2015
SCALE: AS SHOWN
PROJECT NO. 1502

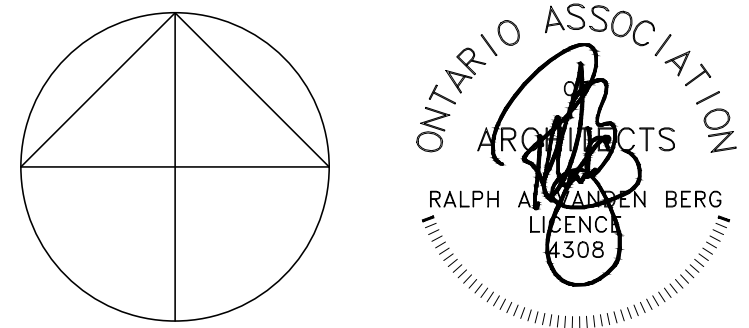
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DRAWN BY: JN, DV
START DATE: 2015
SCALE: AS SHOWN
PROJECT NO. 1502

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REFLECTED CEILING PLAN LEGEND

	MECHANICAL DIFFUSERS: (SUPPLY, RETURN) (SEE MECH. PLAN)
	MECHANICAL DIFFUSERS (ROUND): (SUPPLY) (SEE MECH. PLAN)
	MECHANICAL DIFFUSERS (LINEAR): (SUPPLY) (SEE MECH. PLAN)
	FLUORESCENT LIGHTS IN-CEILING (24X24, 24X48, 12X48)
	FLUORESCENT LIGHTS SURFACE MOUNT (24X24, 24X48, 12X48)
	SPOTLIGHTS
	VALANCE LIGHTING (UNDER-CABINET)
	PENDANT LIGHT FIXTURE
	WALL SCONCE
	RECESSED LIGHTING
	EMERGENCY LIGHTING SINGLE OR DBL WALL MTD
	EXIT LIGHT
	GYPSUM BOARD CEILING - 1 LAYER 16mm TYPE X GYPSUM BOARD
	FIRE RATED GYPSUM BOARD CEILING - 2 LAYERS 16mm TYPE X GYPSUM BOARD (SEE LIFE SAFETY PLANS AND ASSEMBLIES)
	ACOUSTIC WOOD CEILING (SEE SPECS)
	PRE-FIN METAL SOFFIT
	#### A.F.F. CEILING HEIGHT DESIGNATION IN MILLIMETERS ABOVE FINISHED FLOOR SURFACE
	CEILING FAN (SEE MECH.)



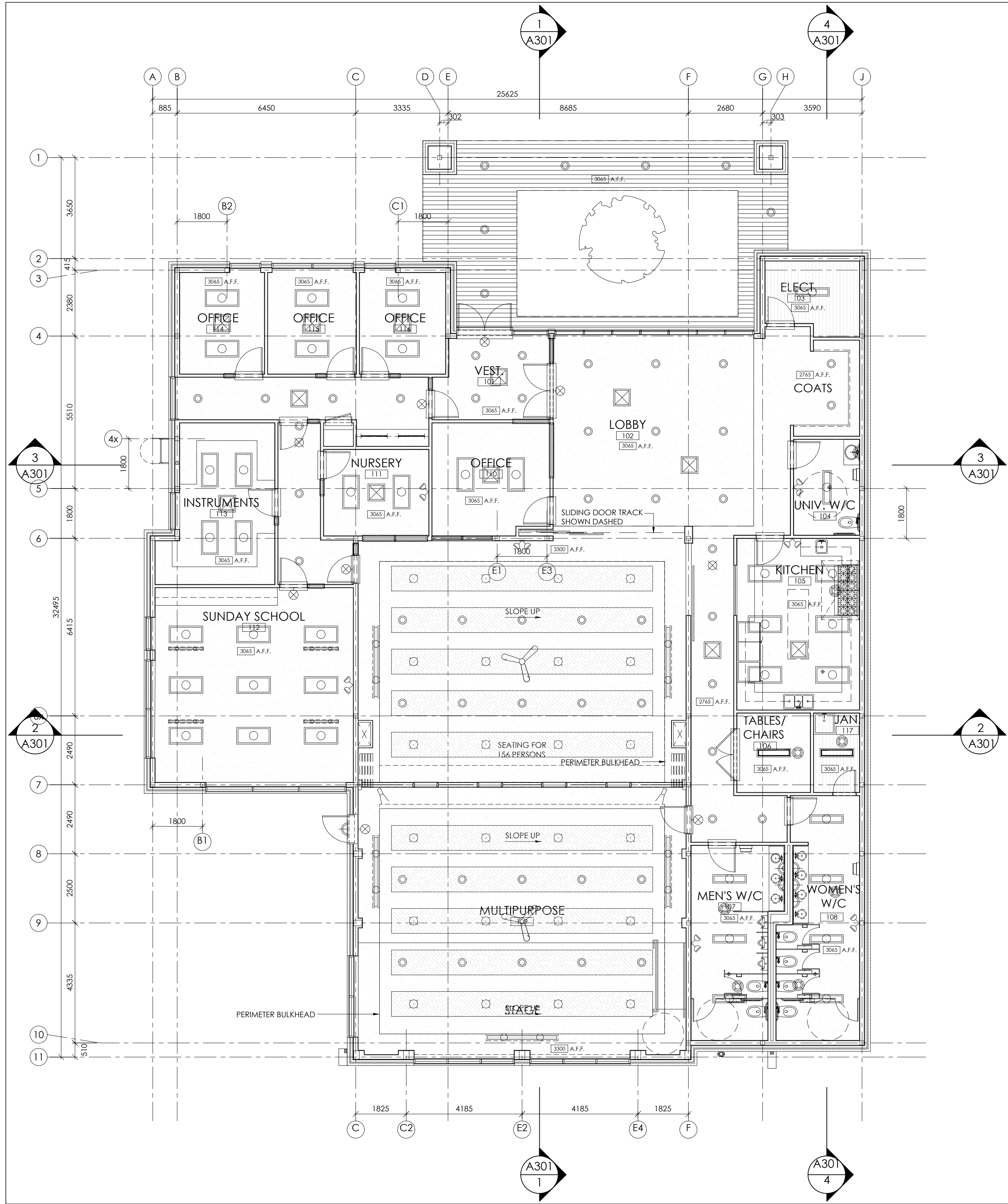
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PROJECT TITLE
THE SALVATION ARMY BARRHAVEN CHURCH
102 BILL LEATHAM DRIVE, NEPEAN ON, K2J 0R3

DRAWING TITLE
REFLECTED CEILING PLAN

DESIGNED BY: RALPH VANDENBERG
DRAWN BY: JN, DV
START DATE: 2015
SCALE: AS SHOWN
PROJECT NO.: 1502

A120

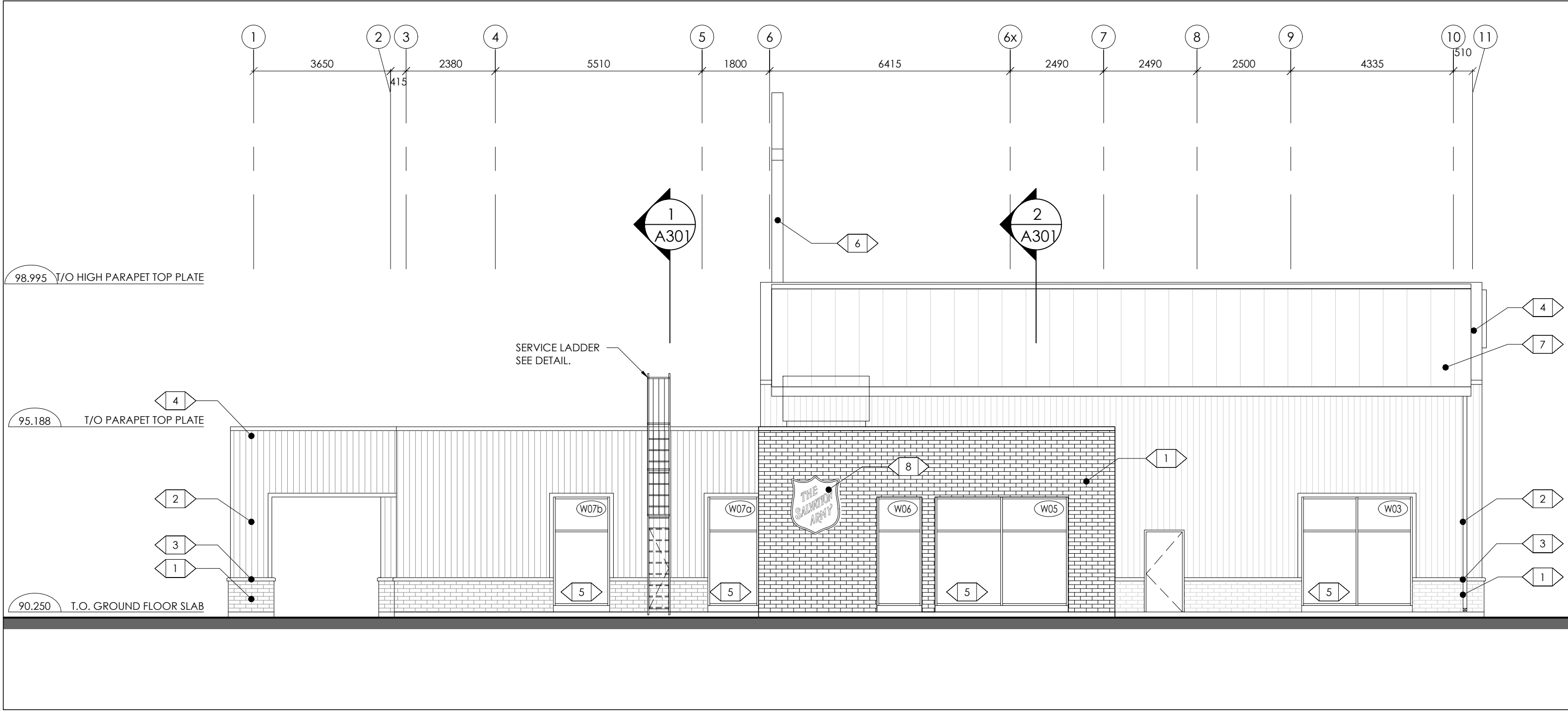


1
A150
REFLECTED CEILING PLAN
1:100

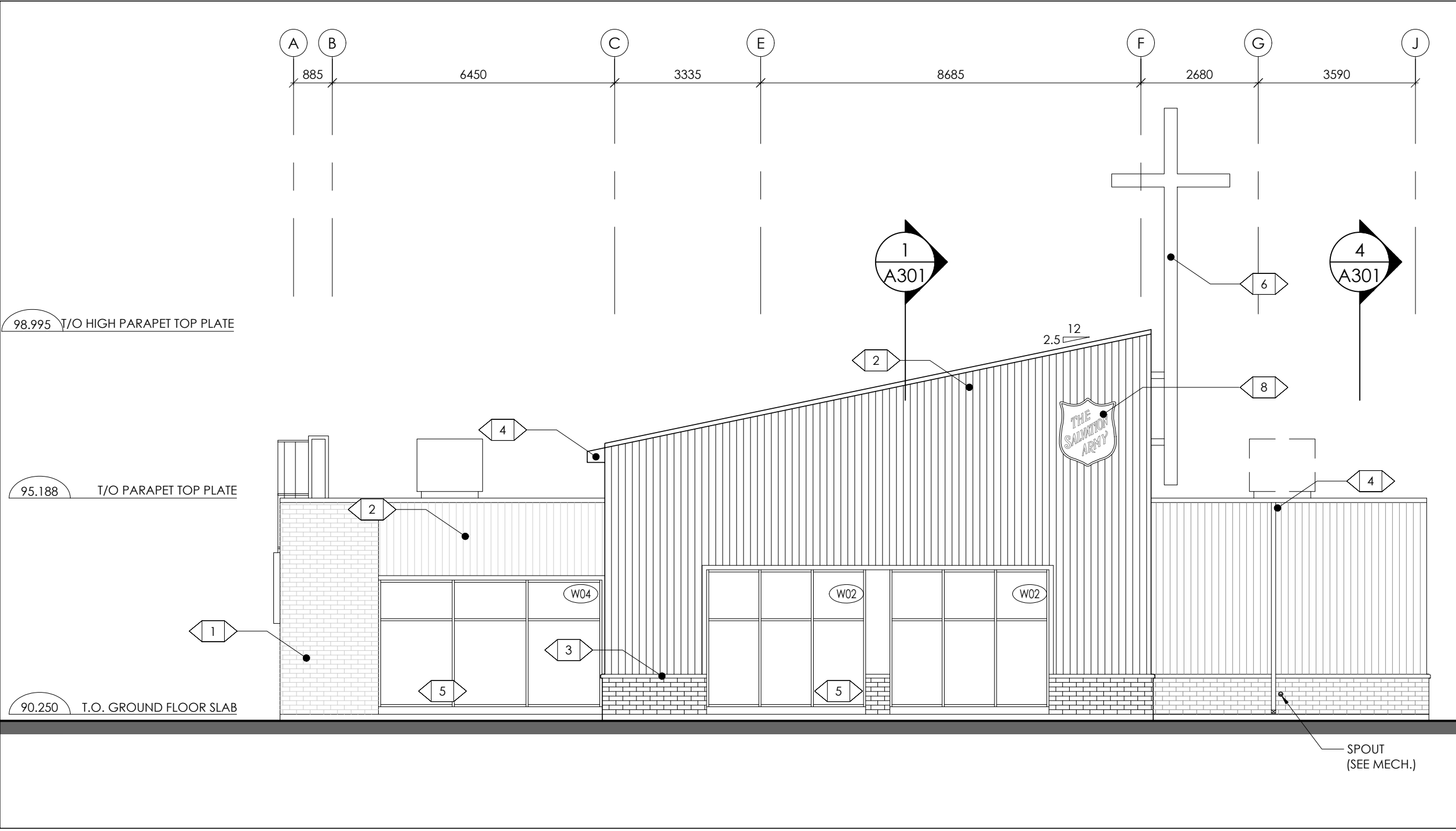
REFLECTED CEILING NOTES

- ALL ELEVATIONS ARE TO BE MEASURED ABOVE FINISHED FLOOR.
- CEILINGS ARE TO BE 3065 A.F.F. UNLESS NOTED OTHERWISE.
- ALL CEILINGS ARE TO BE GYPSUM BOARD FINISH UNLESS NOTED OTHERWISE
- MECH AND ELEC DEVICES ARE IN PART SHOWN DIAGRAMMATIC AND INTENDED TO CONVEY ARCHITECTURAL INTENT ONLY- REFER TO MECH AND ELEC FOR COORDINATION. REPORT ANY DISCREPANCIES WITH PLACEMENT TO THE ARCHITECT FOR VERIFICATION PRIOR TO PLACEMENT.
- ALL MECHANICAL AND ELECTRICAL DEVICES REQUIRING ACCESS DOORS ARE TO BE COORDINATED WITH ARCHITECT AND GENERAL CONTRACTOR AND CONFIRMED PRIOR TO INSTALLATION.
- ACCESS PANELS QUANTITIES ARE TO BE MINIMIZED BY LOCATING SUCH DEVICES IN SUSPENDED ACOUSTIC TILE CEILINGS WHERE POSSIBLE.
- UNLESS OTHERWISE NOTED, ALL NEW DRYWALL CEILINGS AND BULKHEADS ARE TO RECEIVE PAINT FINISH.
- ALL SUSPENDED CEILINGS AND DEVICES ARE TO BE INSTALLED IN ACCORDANCE TO LOCAL SEISMIC REQUIREMENTS.

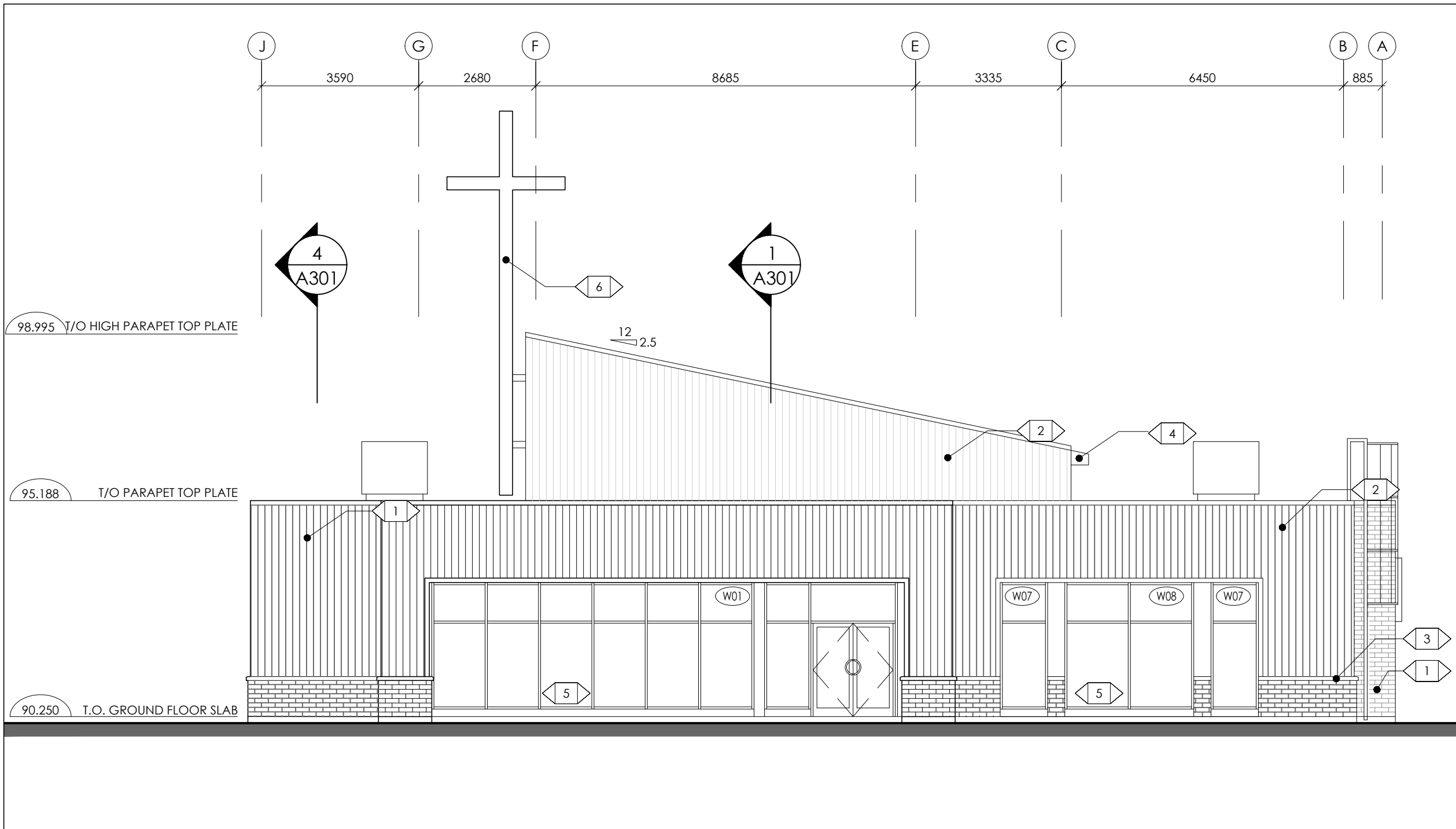
NO.	REVISION	DATE
1	ISSUED FOR COORDINATION	OCT. 1, 2021
2	ISSUED FOR BUILDING PERMIT	OCT. 15, 2021
3	ISSUED FOR TENDER	NOV 5, 2021



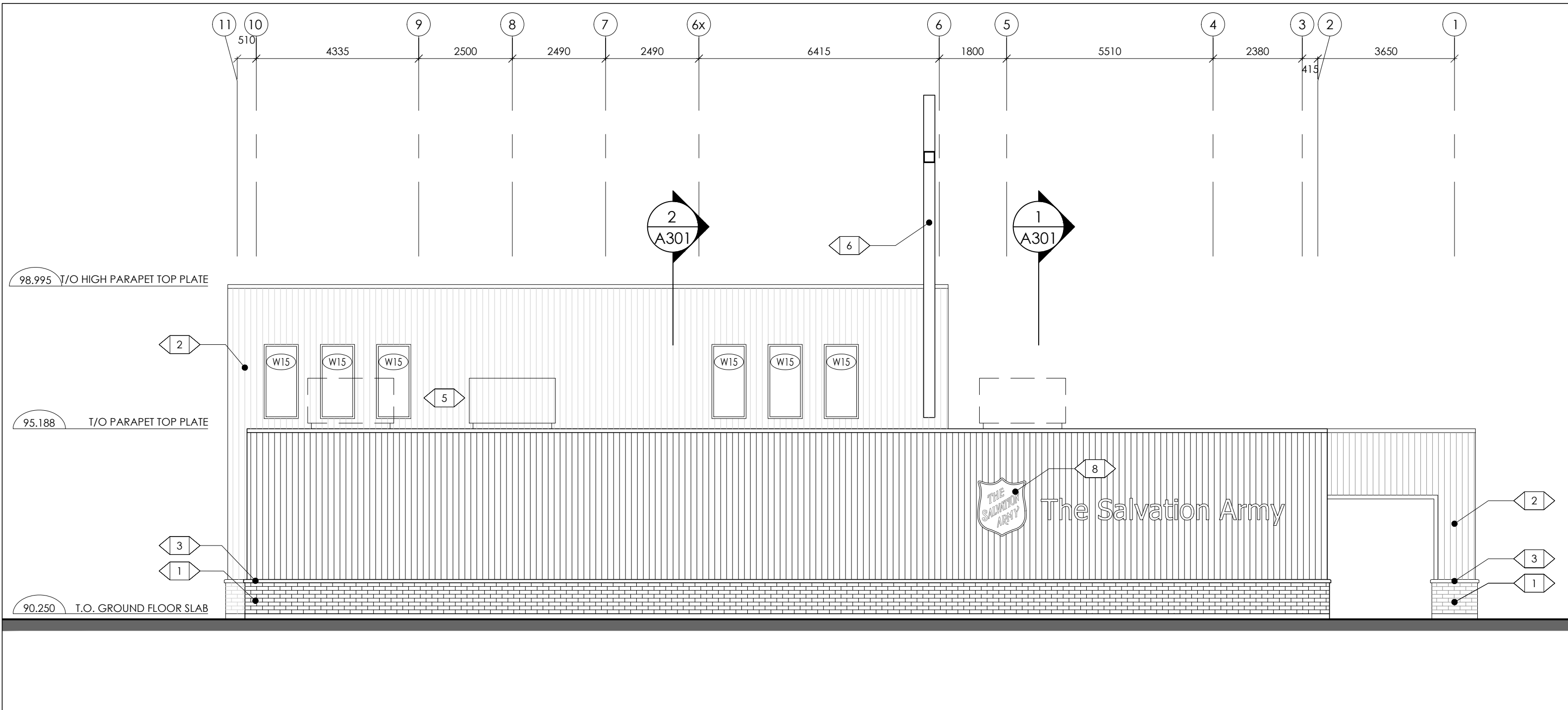
1 WEST ELEVATION
A201 1:100



2 SOUTH ELEVATION
A201 1:100



3 NORTH ELEVATION
A201 1:100

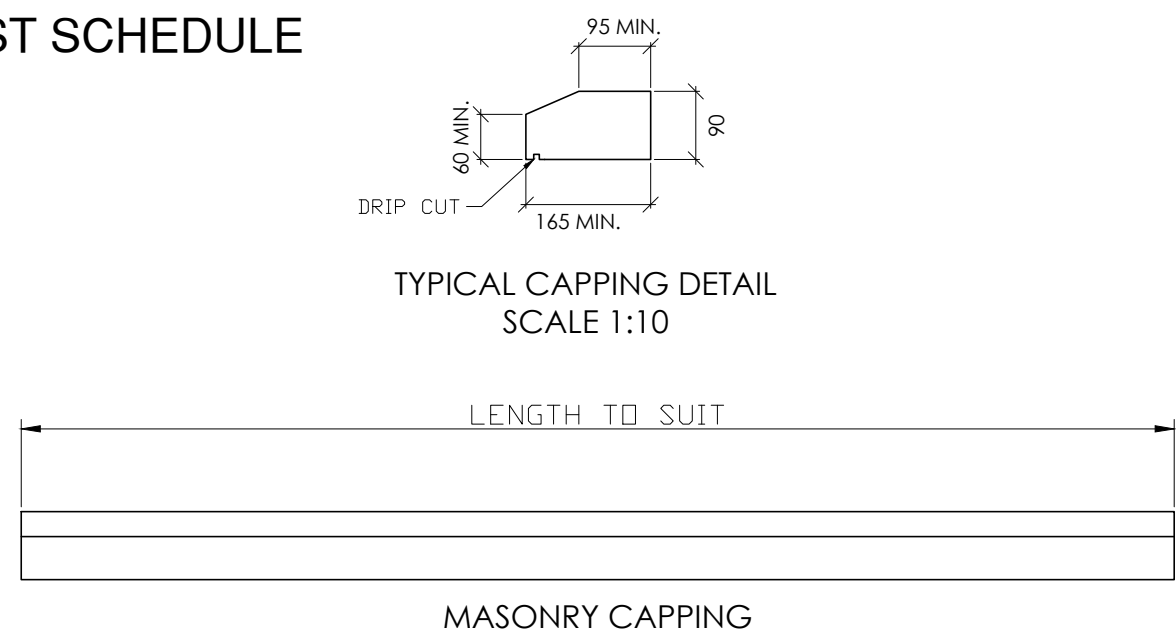


4 EAST ELEVATION
A201 1:100

LEGEND

- | | | | | | | | |
|---|------------------------------------|---|---|---|---|---|---|
| 1 | BRICK MASONRY
COLOUR: RED | 3 | PRECAST CONCRETE - SILL
SIZE: SEE SCHEDULE | 6 | PAINTED HOLLOW METAL
COLOUR: TO MATCH WINDOW | 7 | METAL ROOFING
COLOUR: DARK GREY |
| 2 | METAL SIDING
COLOUR: LIGHT GREY | 4 | REFINISHED METAL
COLOUR: LIGHT GREY | 5 | WINDOW
MATERIAL: ALUMINUM
COLOUR: BLACK | 8 | INTERNALLY LIT BUILDING SIGN
"THE SALVATION ARMY" LOGO |

PRECAST SCHEDULE



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PROJECT TITLE
THE SALVATION ARMY BARRHAVEN CHURCH
102 BILL LEATHERM DRIVE, NEPEAN ON, K2J 0R3

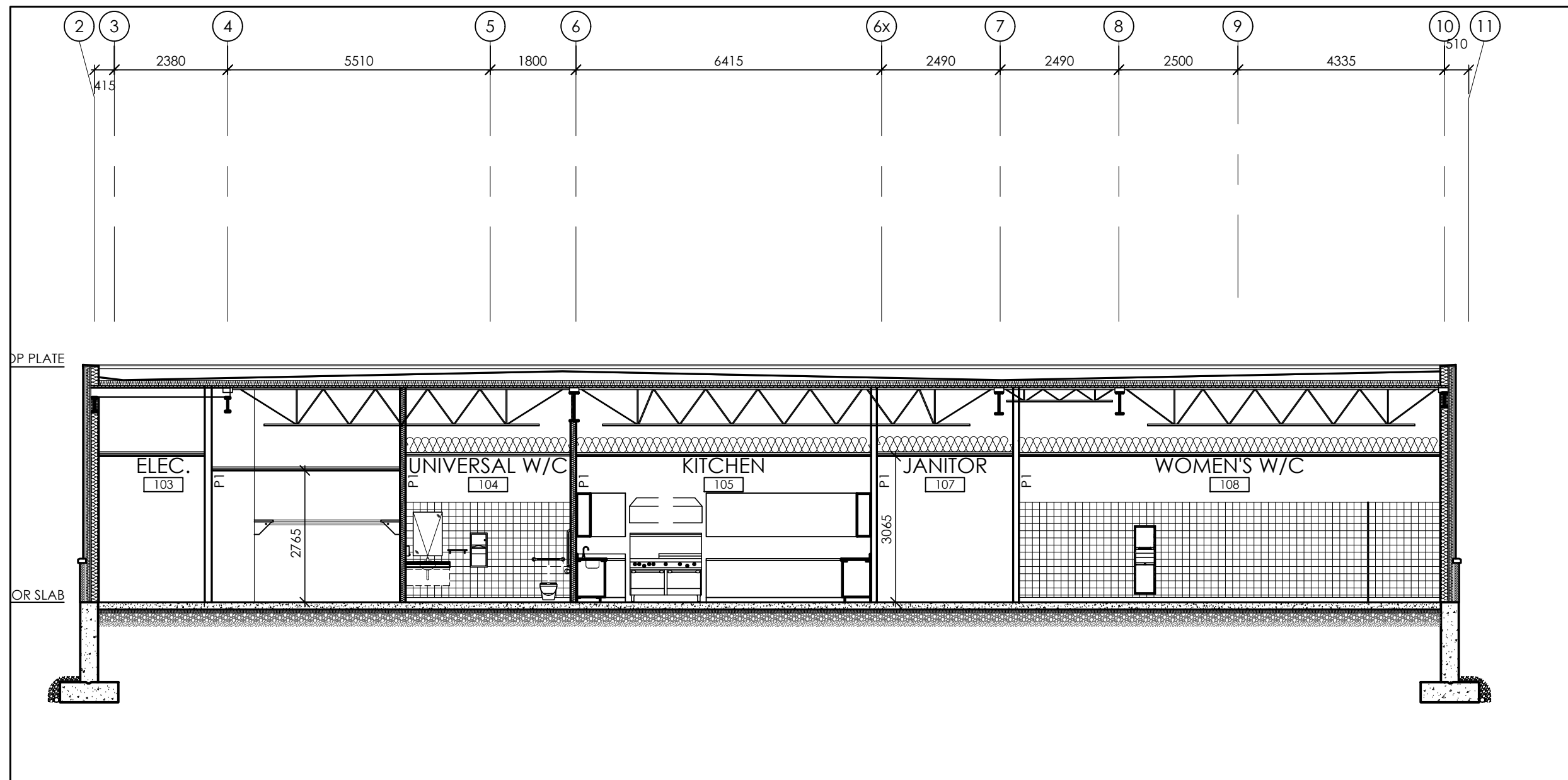
DRAWING TITLE
ELEVATIONS

DESIGNED BY: RALPH VANDENBERG
DRAWN BY: JN, DV
START DATE: 2015
SCALE: AS SHOWN
PROJECT NO. 1502

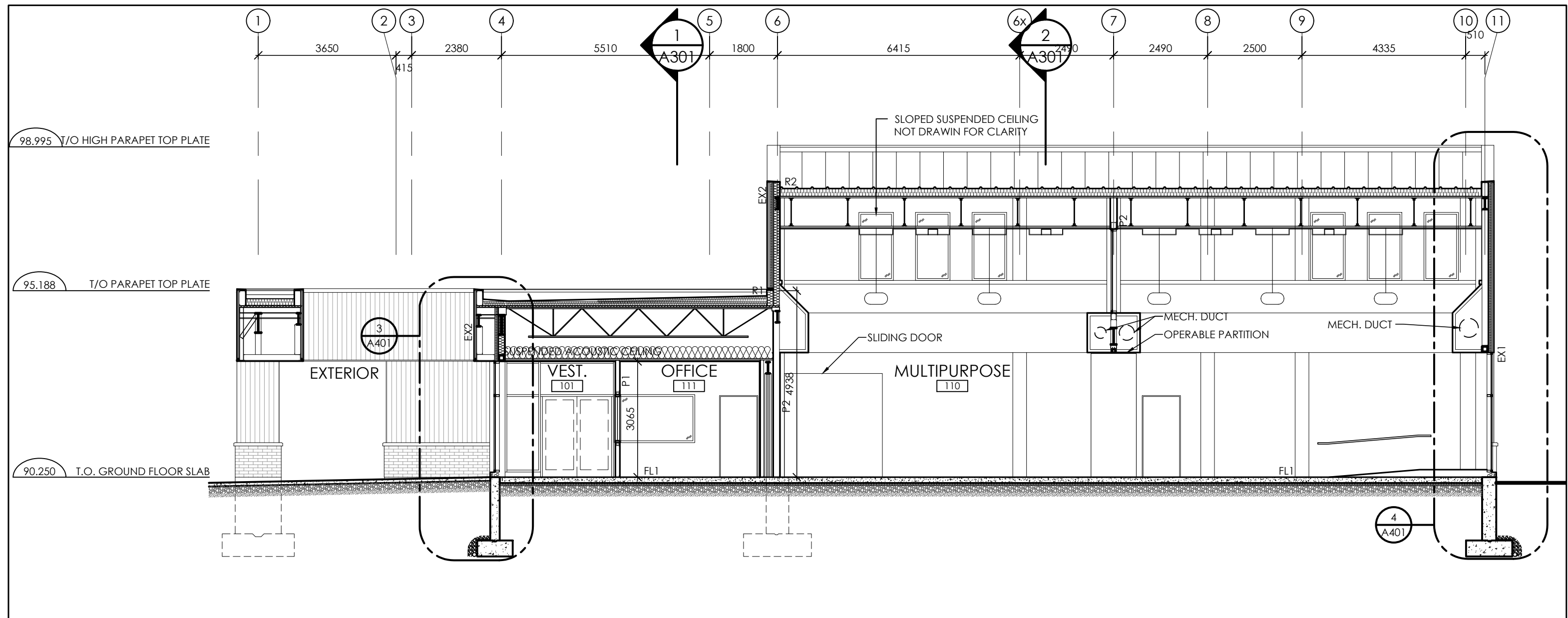
DRAWING NO.
A201



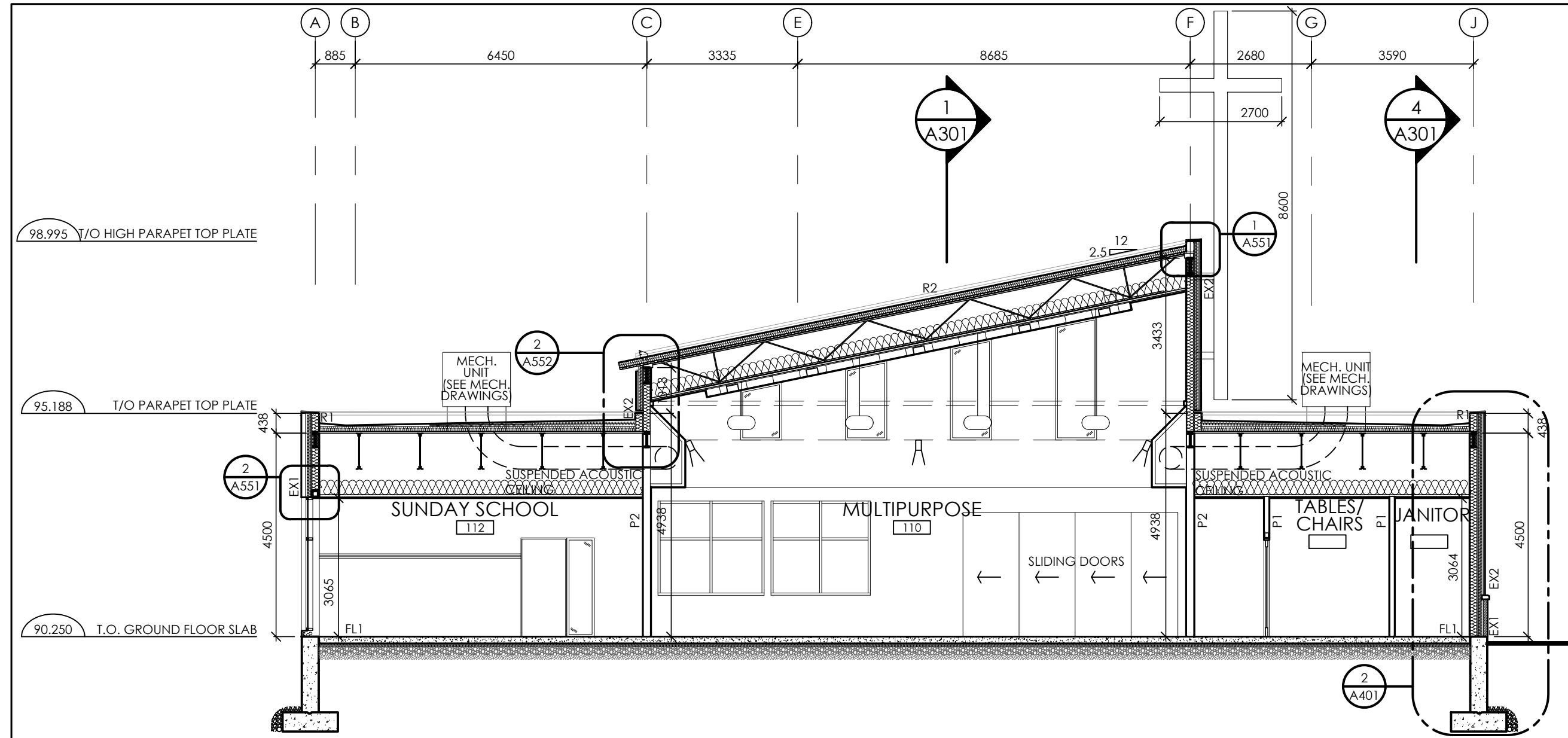
NO.	REVISION	DATE
1	ISSUED FOR COORDINATION	OCT. 1, 2021
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3	ISSUED FOR TENDER	NOV. 5, 2021



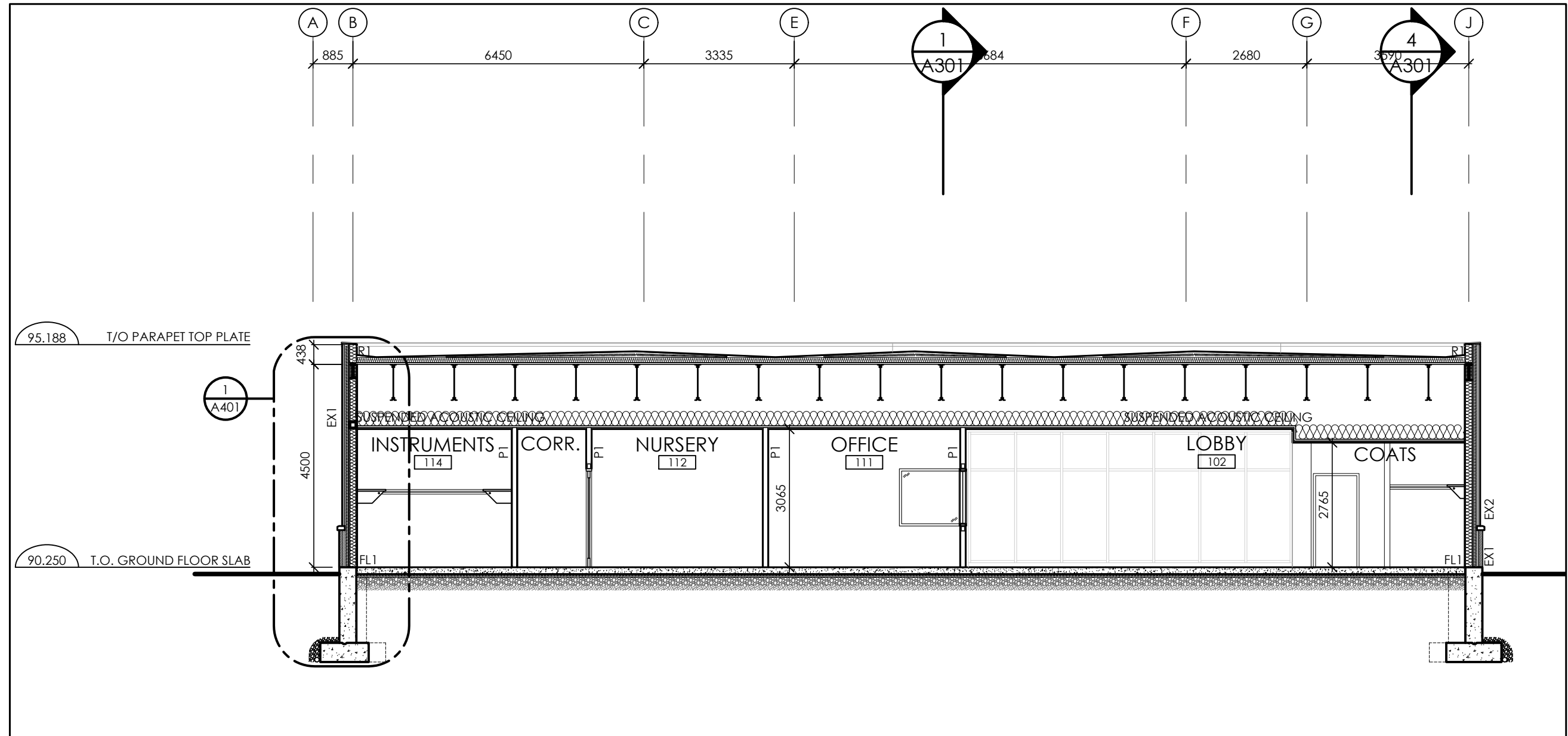
4 BUILDING SECTION
A301 1:100



1 BUILDING SECTION
A301 1:100



2 BUILDING SECTION
A301 1:100



3 BUILDING SECTION
A301 1:100



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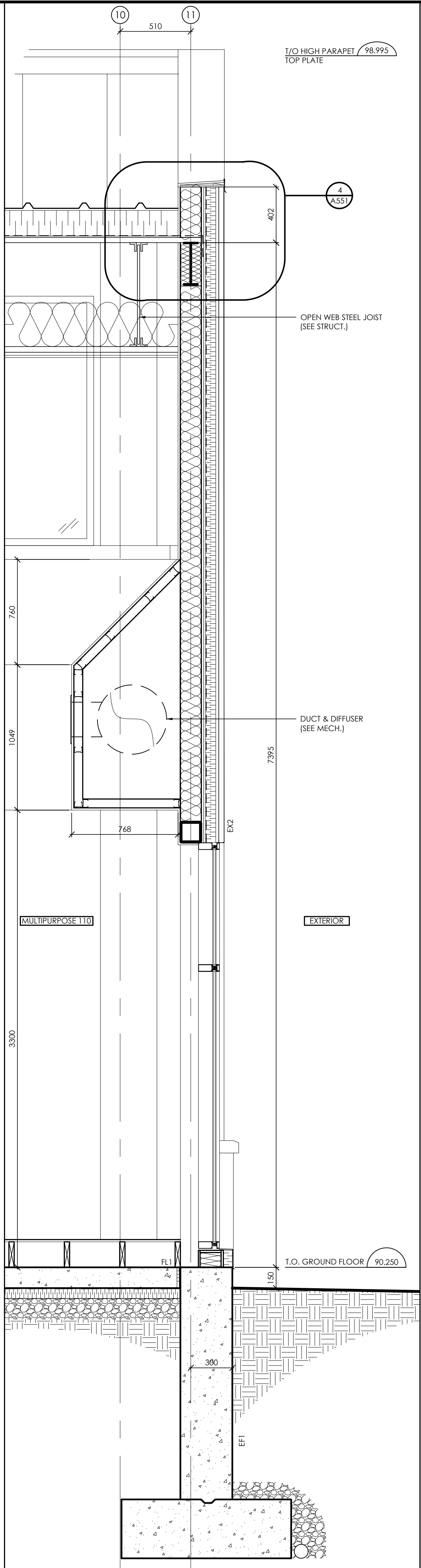
PROJECT TITLE
THE SALVATION ARMY BARRHAVEN CHURCH
102 BILL LEATHER DRIVE, NEPEAN ON, K2J 0R3

DRAWING TITLE
BUILDING SECTIONS

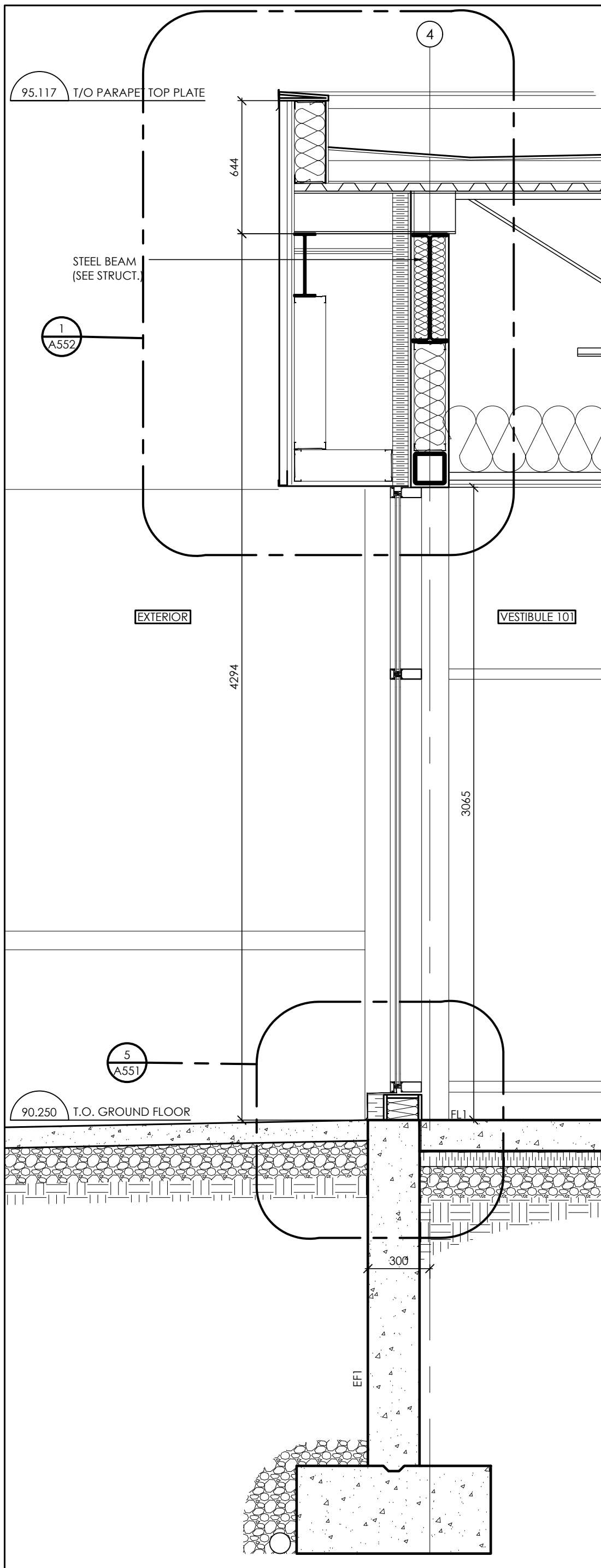
DESIGNED BY: RALPH VANDENBERG
DRAWN BY: JN, DV
START DATE: 2015
SCALE: AS SHOWN
PROJECT NO: 1502

A301

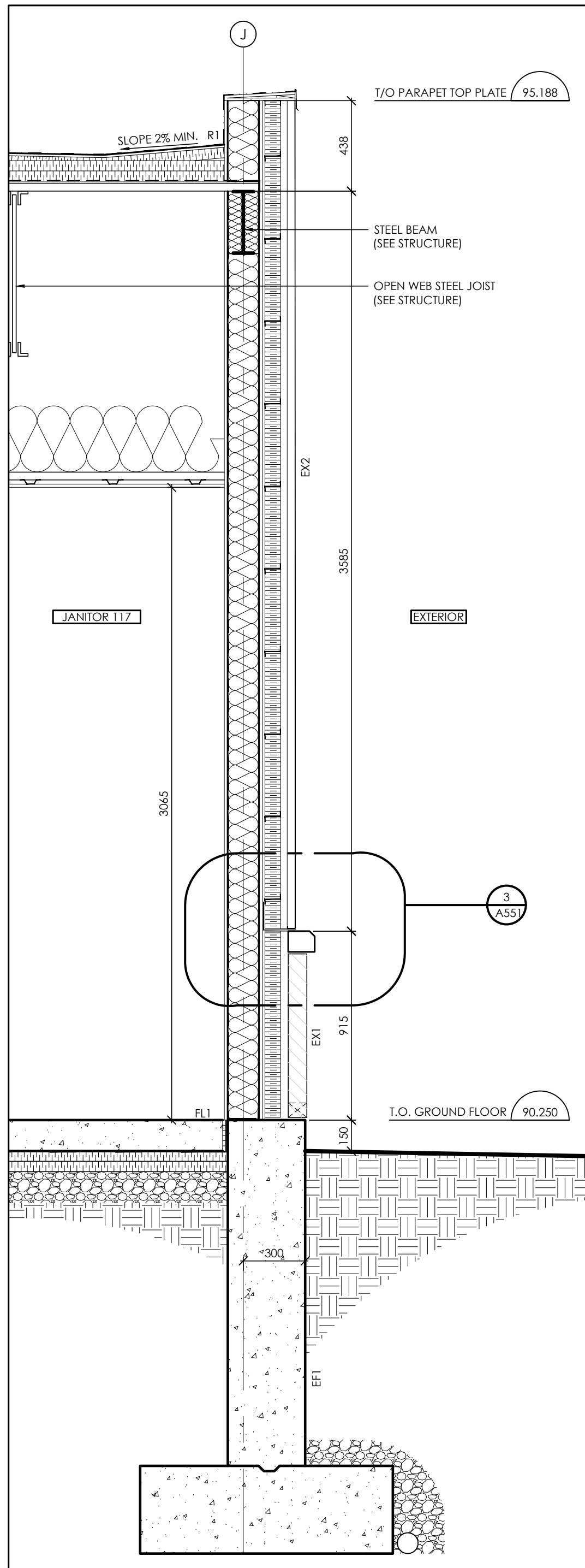
NO.	REVISION	DATE
1	ISSUED FOR COORDINATION	OCT. 1, 2021
2	ISSUED FOR BUILDING PERMIT	OCT. 15, 2021
3	ISSUED FOR TENDER	NOV. 5, 2021



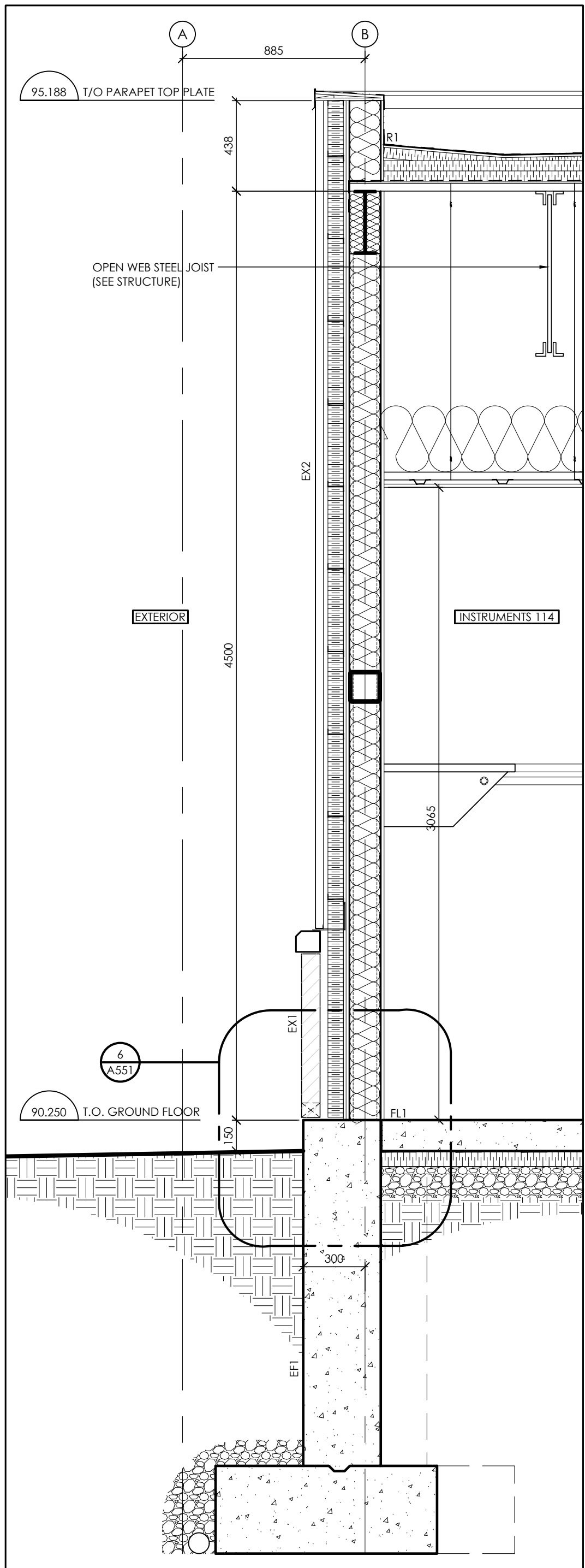
4 WALL SECTION 4
A401 1:20



3 WALL SECTION 3
A401 1:20



2 WALL SECTION 2
A401 1:20



1 WALL SECTION 1
A401 1:20



**Vandenberg & Wildeboer**
A · R · C · H · I · T · E · C · T · S

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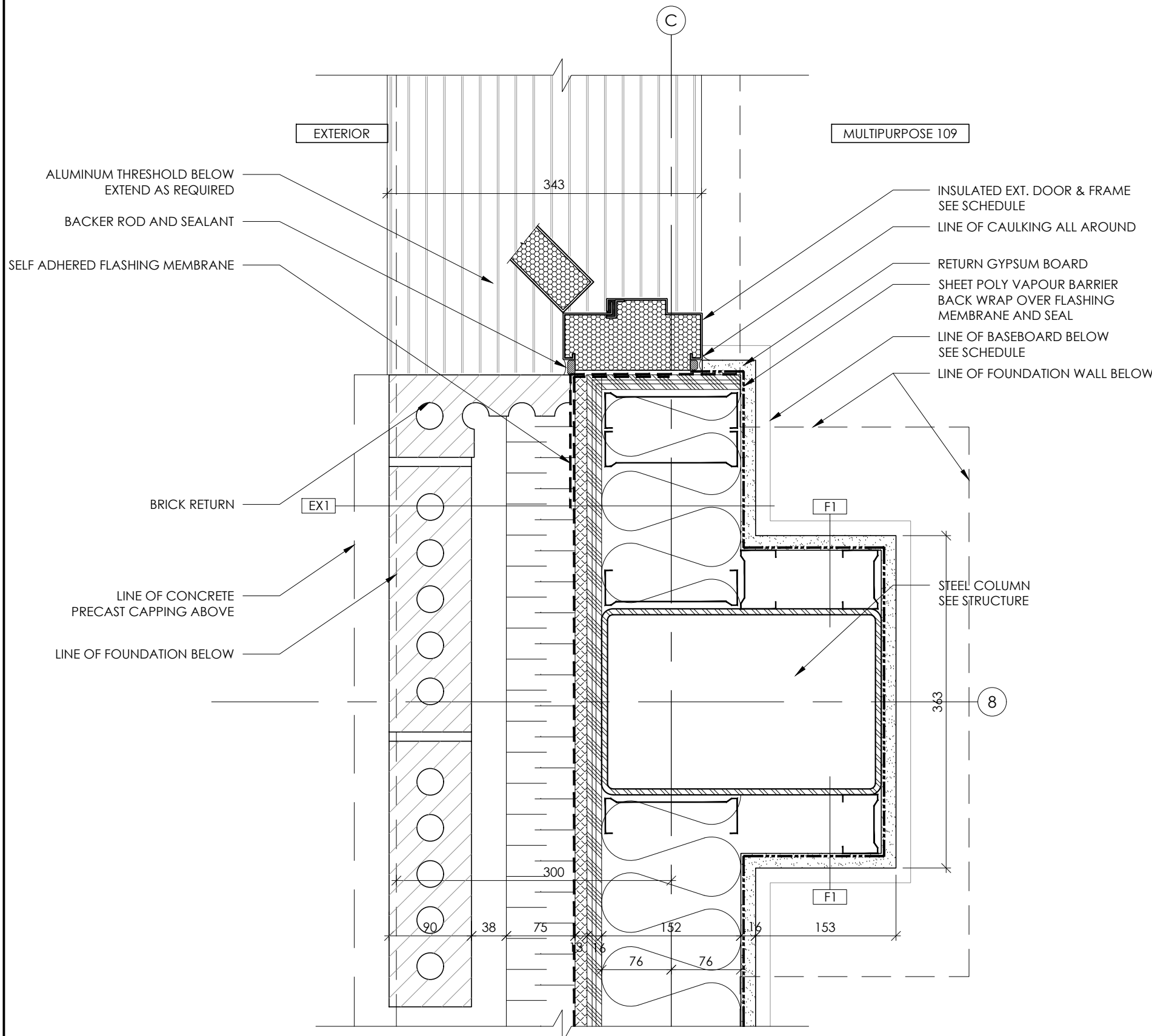
PROJECT TITLE
THE SALVATION ARMY BARRHAVEN CHURCH
102 BILL LEATHAM DRIVE, NEPEAN ON, K2J 0R3

DRAWING TITLE
WALL SECTIONS

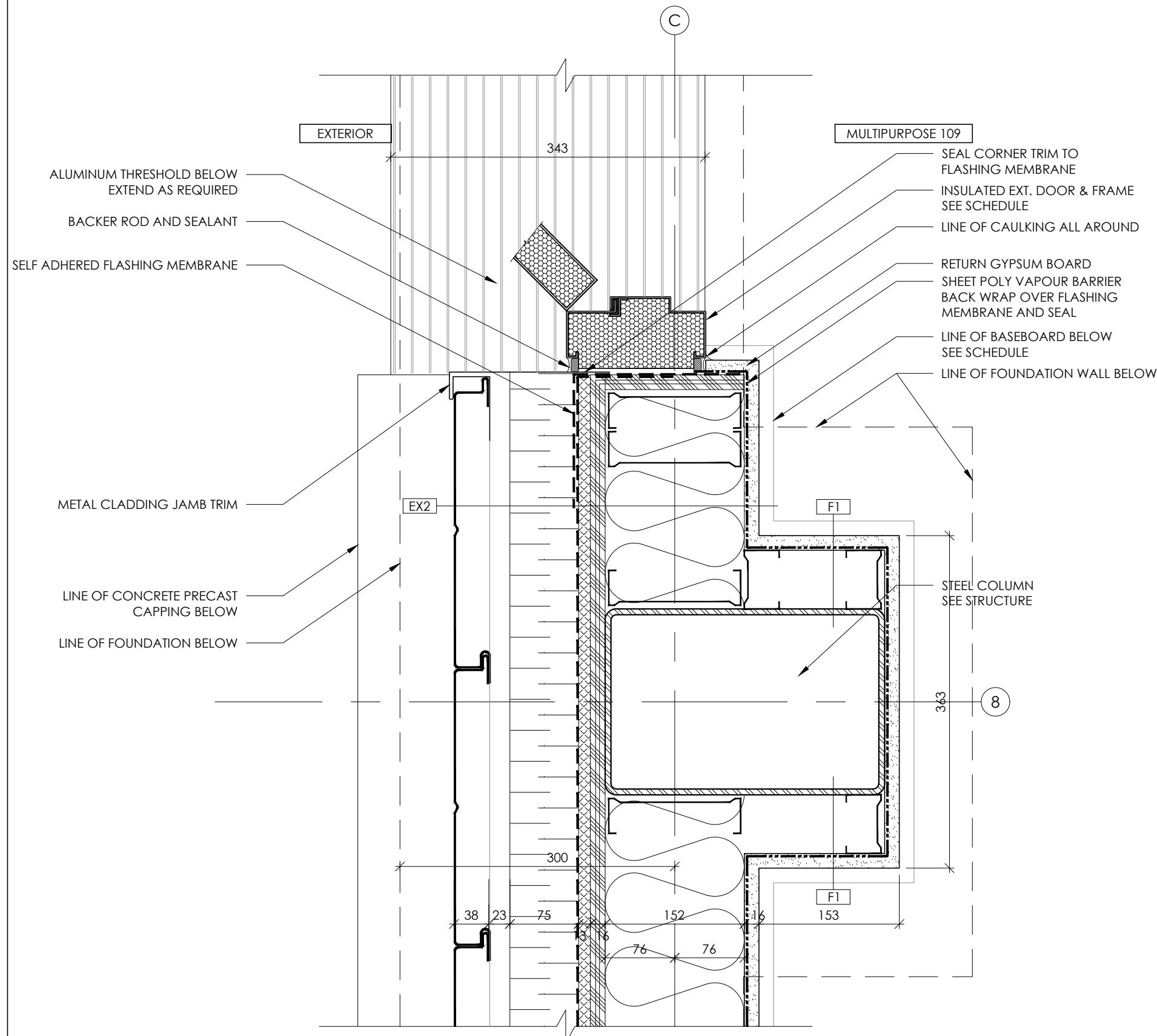
DESIGNED BY: RALPH VANDENBERG
DRAWN BY: JN, DV
START DATE: 2015
SCALE: AS SHOWN
PROJECT NO: 1502

2020/09/03
A401

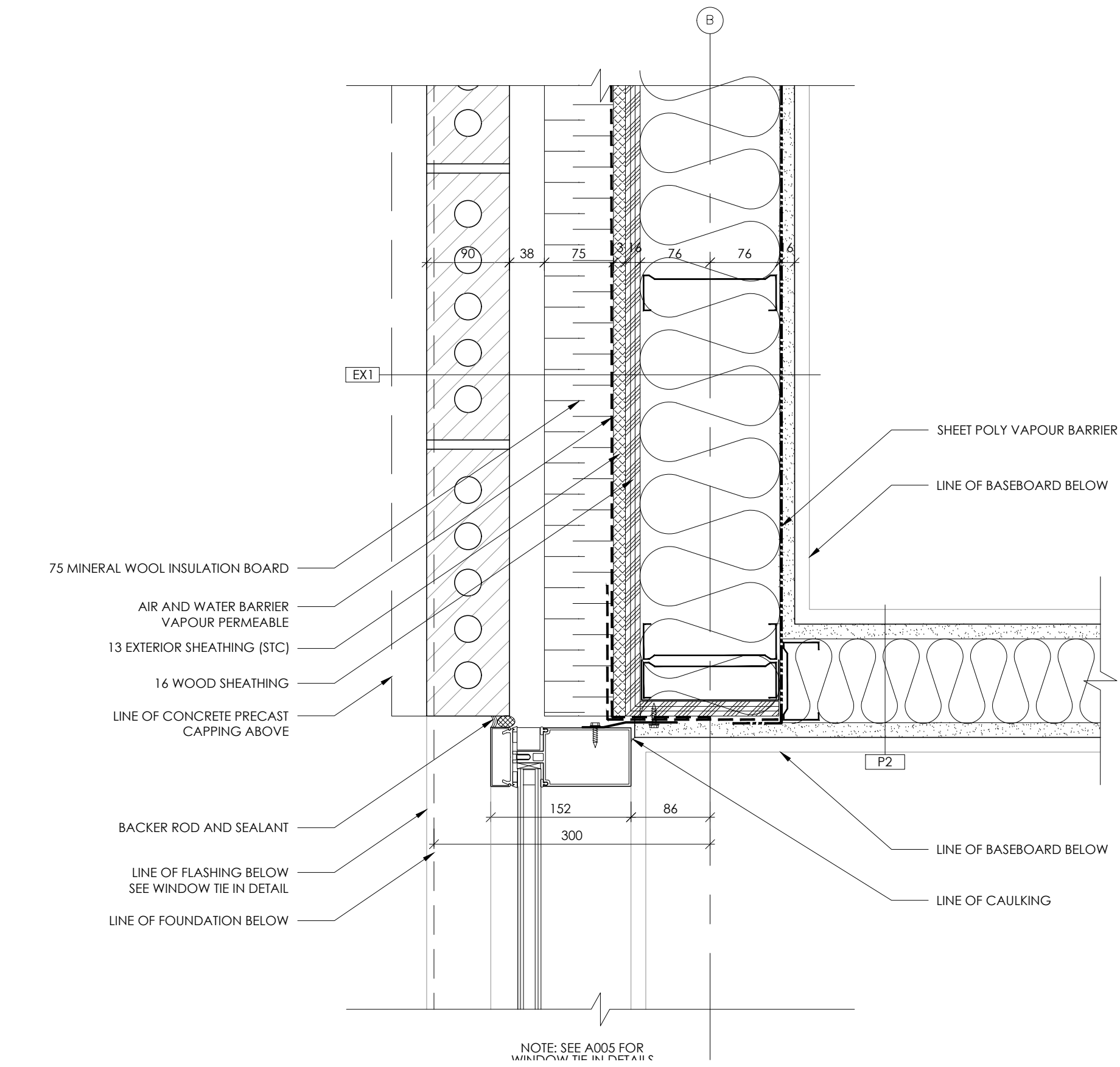
NO.	REVISION	DATE
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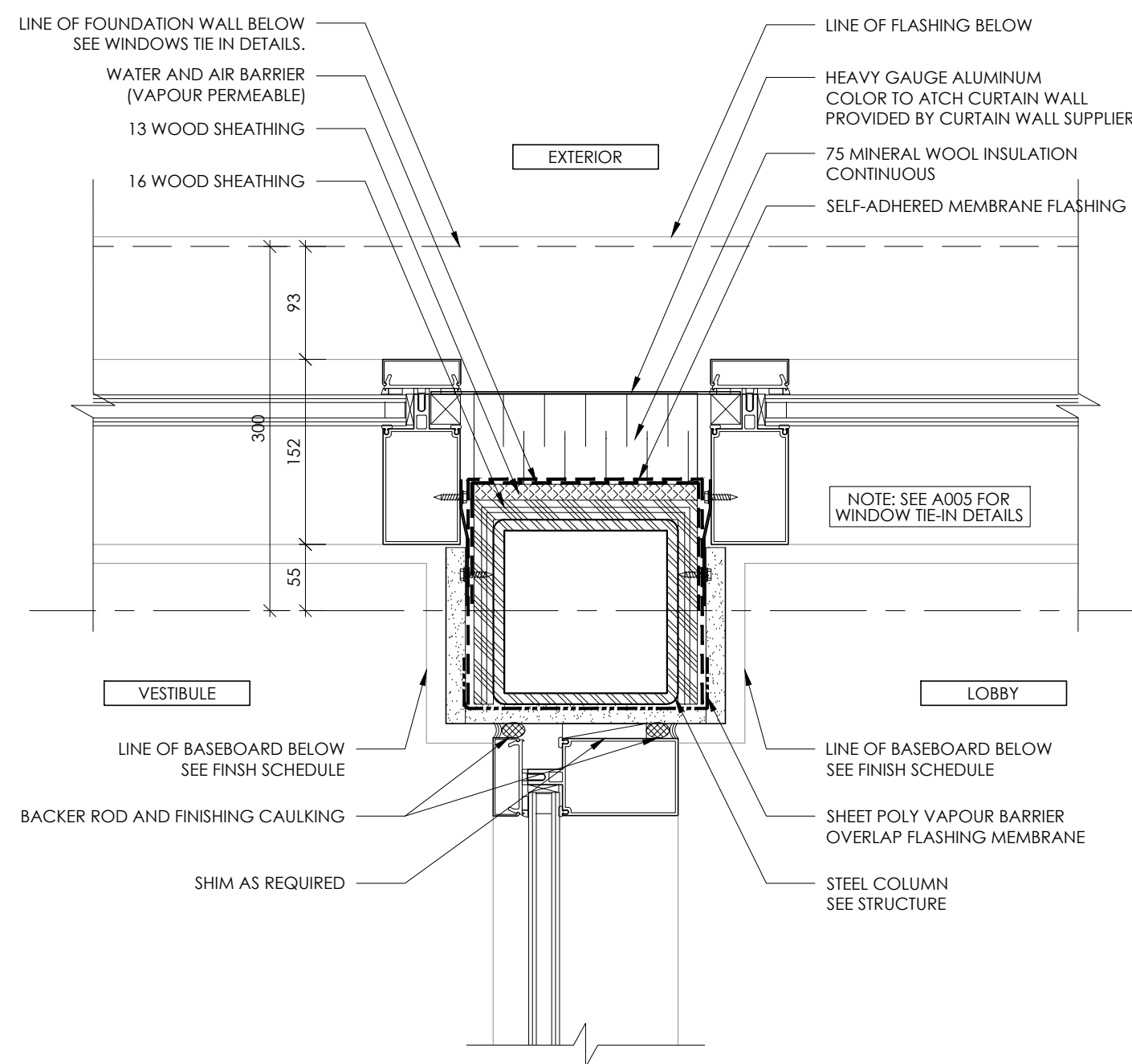
1
A501 EXIT DOOR JAMB @ BRICK MASONRY
1/5



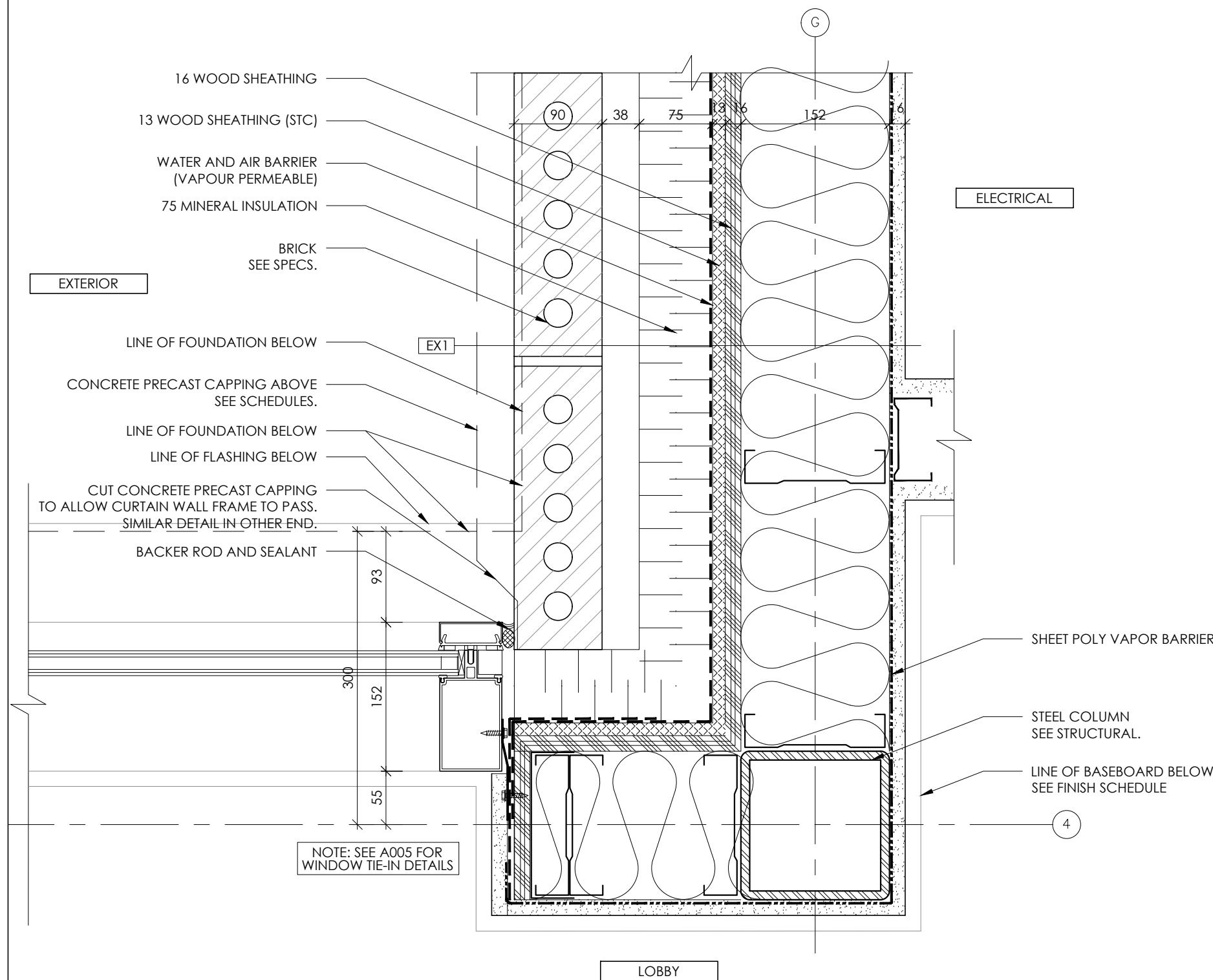
2
A501 EXIT DOOR JAMB @ METAL SIDING
1/5



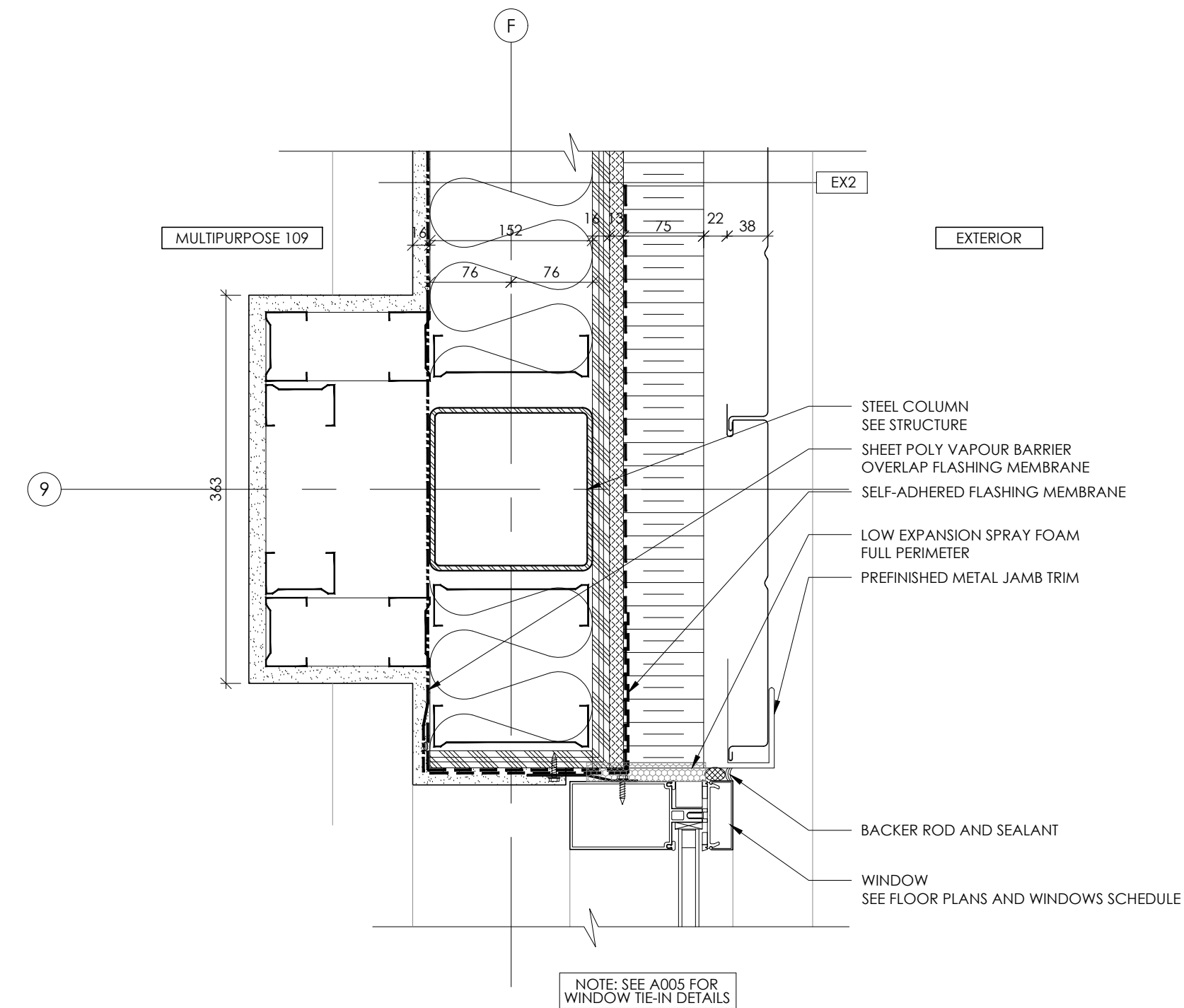
3
A501 WINDOW JAMB @ BRICK MASONRY
1/5



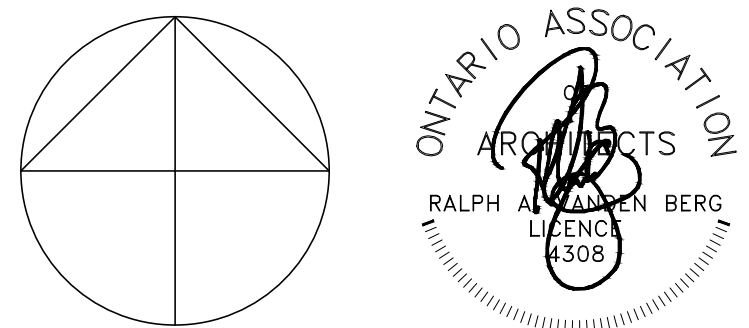
4
A501 CURTAIN WALL @ STRUCTURAL COLUMN
1/5



5
A501 CURTAIN WALL DETAIL
1/5



6
A501 CLERESTORY WINDOWS DETAIL
1/5



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PROJECT TITLE
THE SALVATION ARMY BARRHAVEN CHURCH
102 BILL LEATHERM DRIVE, NEPEAN ON, K2J 0R3

DRAWING TITLE
PLAN DETAILS

DESIGNED BY: RALPH VANDENBERG
DRAWN BY: JN, DV
START DATE: 2015
SCALE: AS SHOWN
PROJECT NO.: 1502

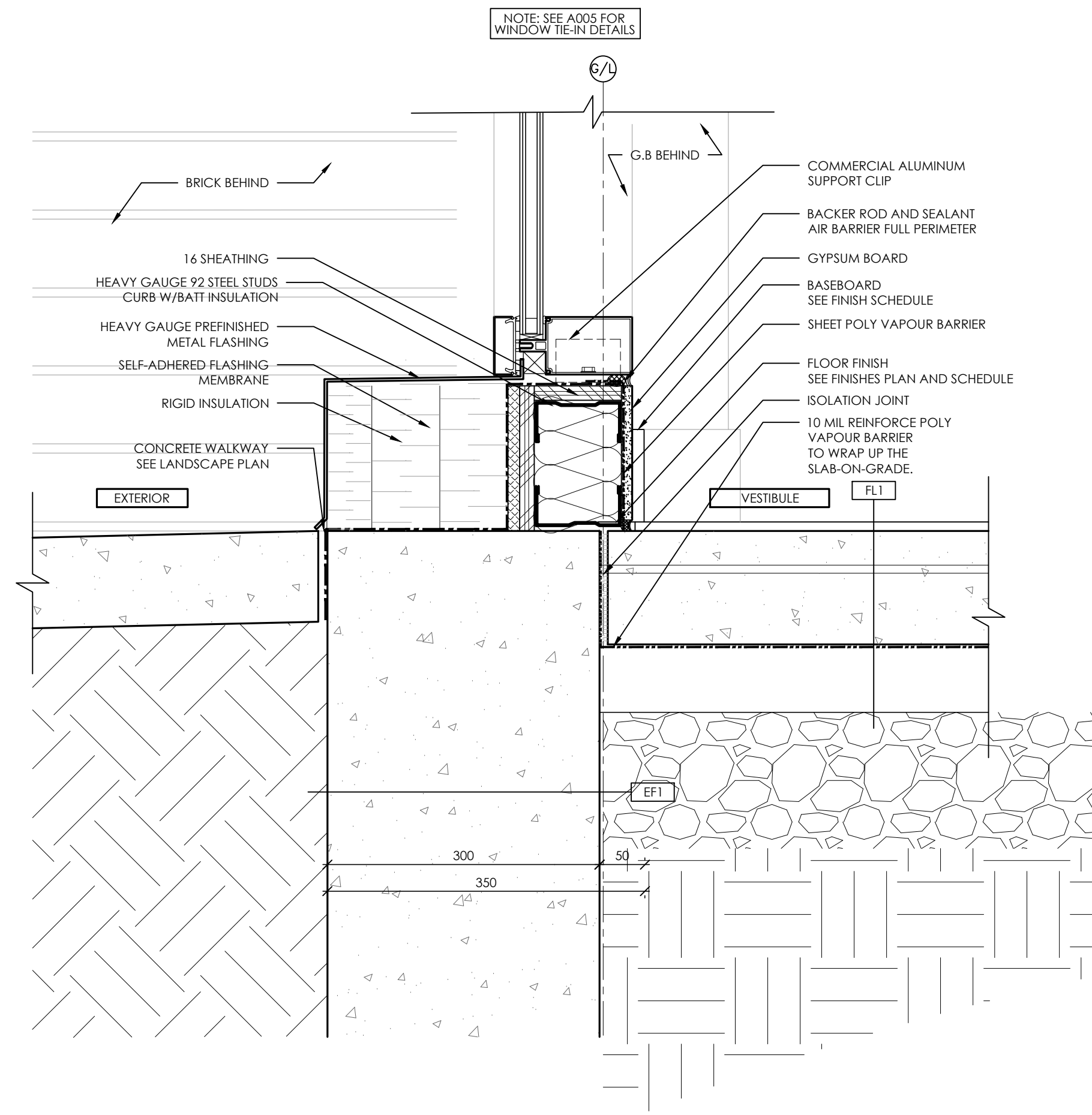
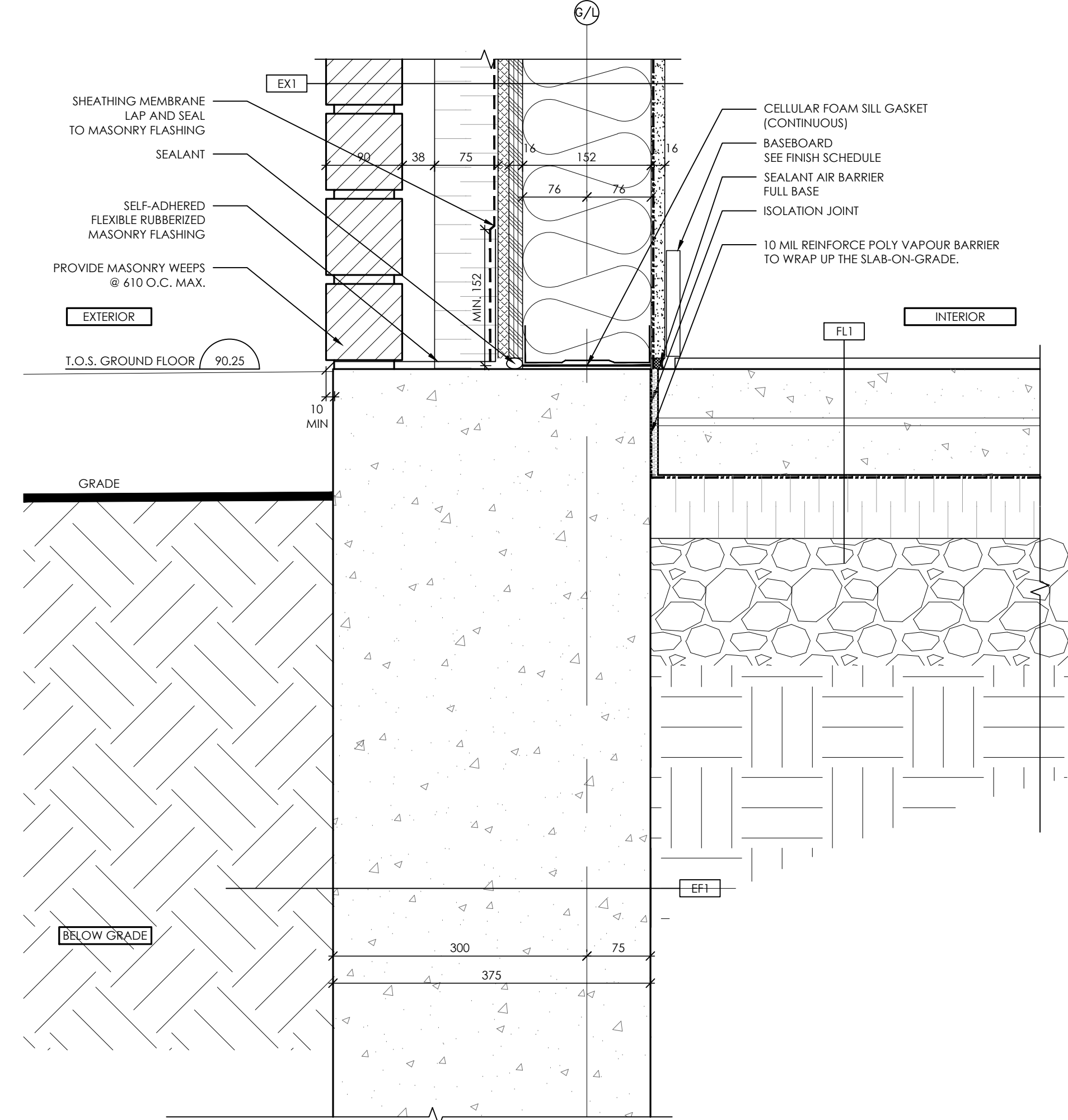
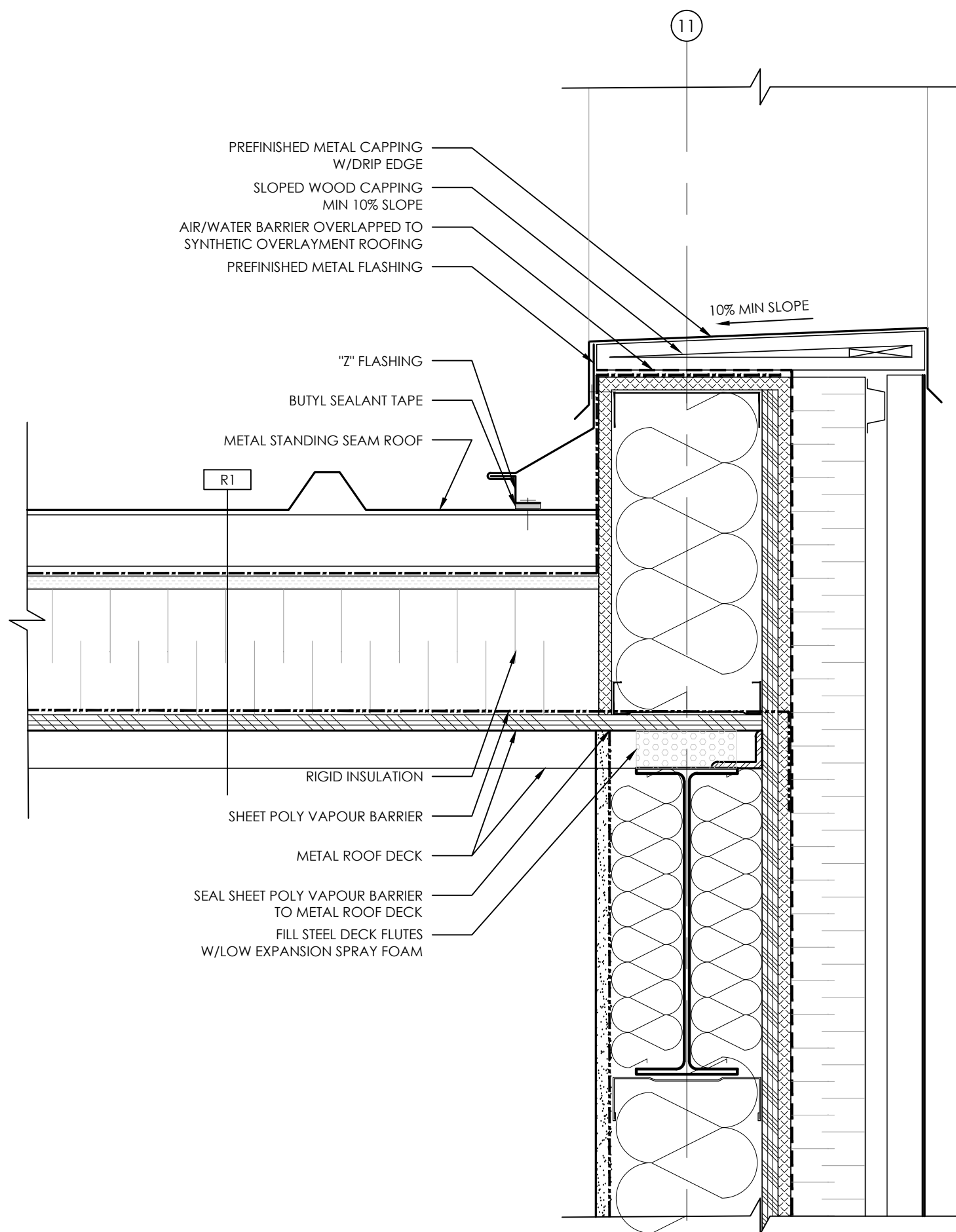
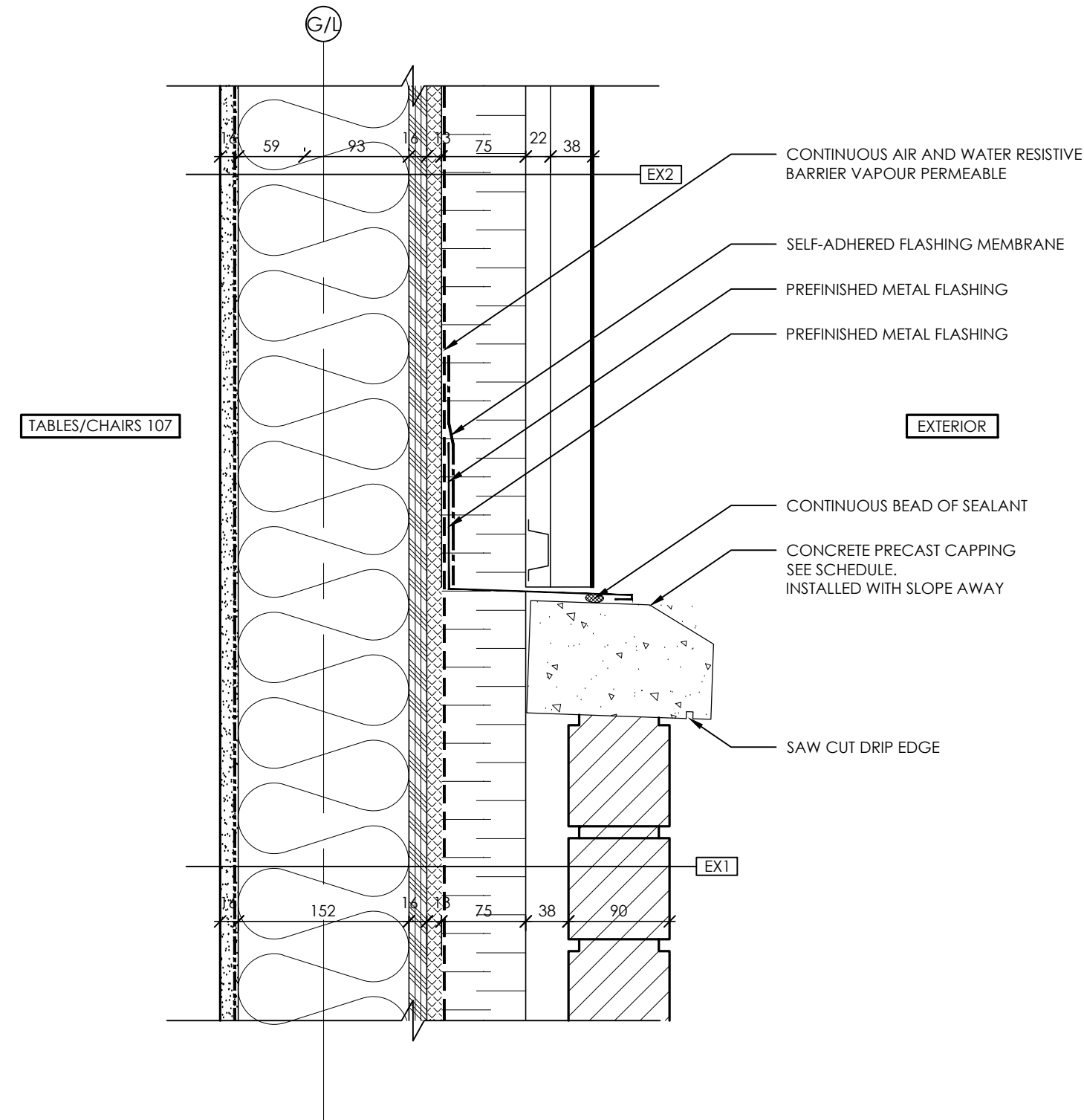
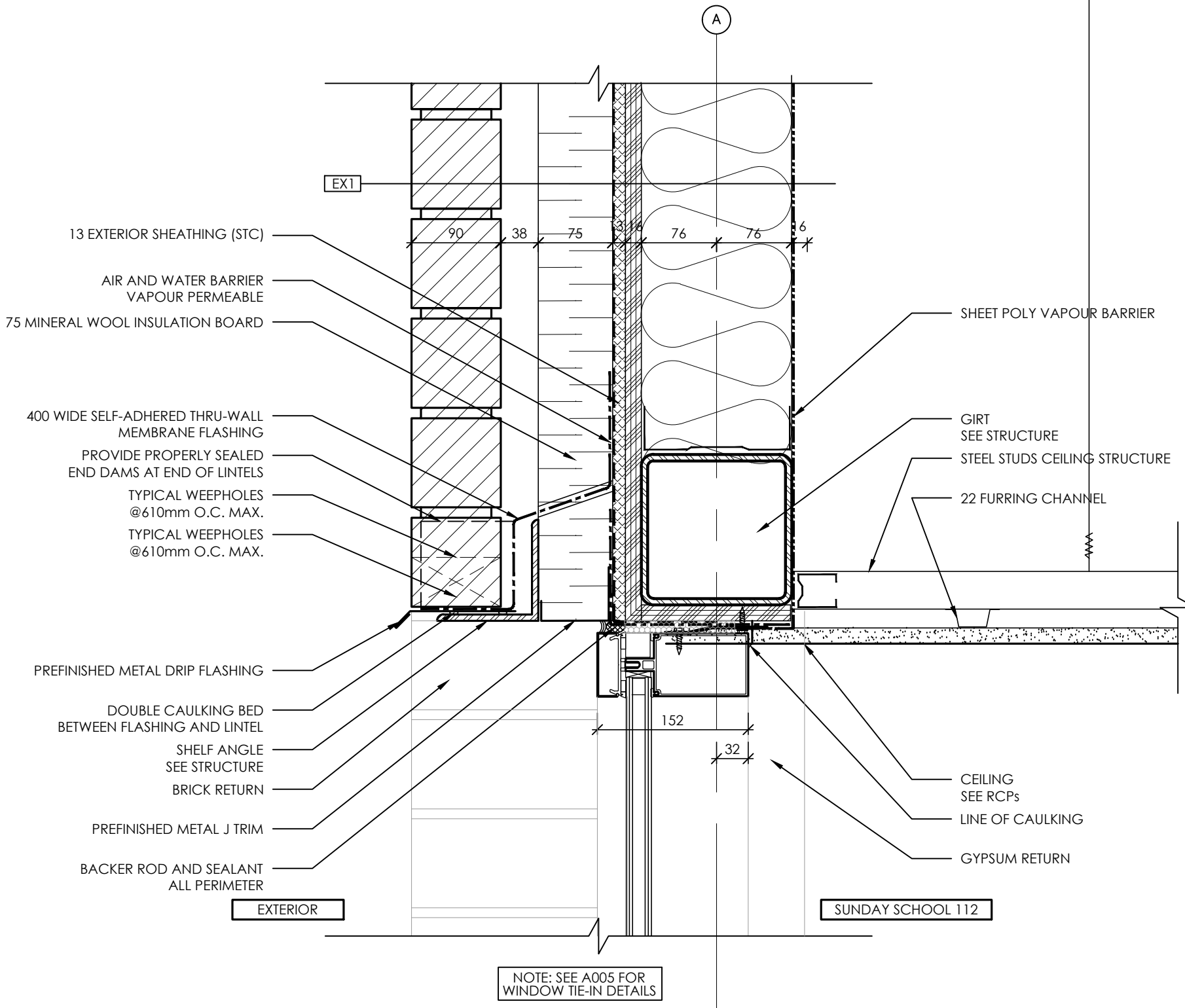
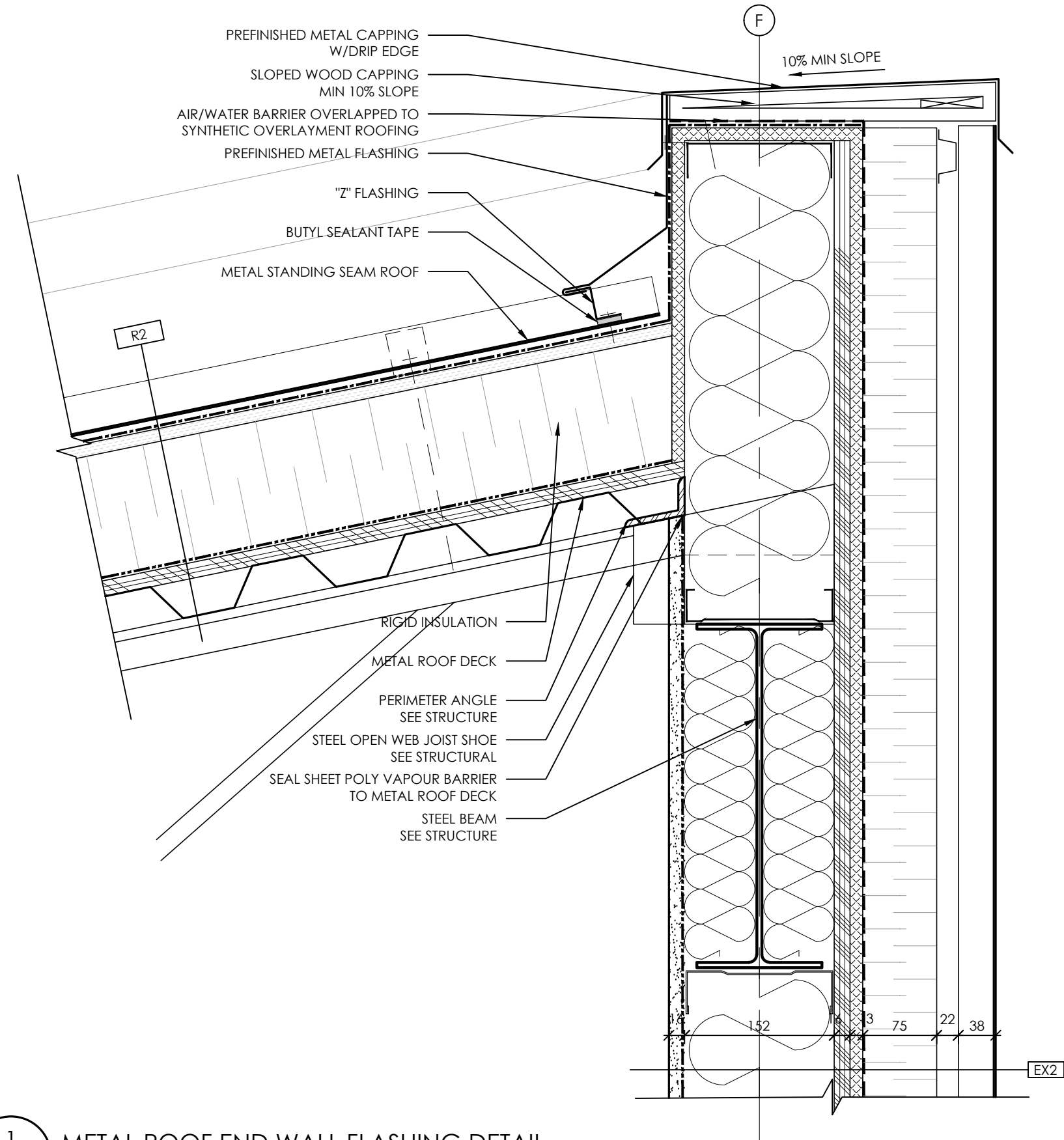
DESIGNING NO.
A501



2 METAL SIDING @ COLUMN (TYP.)
A502 1:5



NO.	REVISION	DATE
1	ISSUED FOR COORDINATION	OCT. 1, 2021
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3	ISSUED FOR TENDER	NOV. 5, 2021



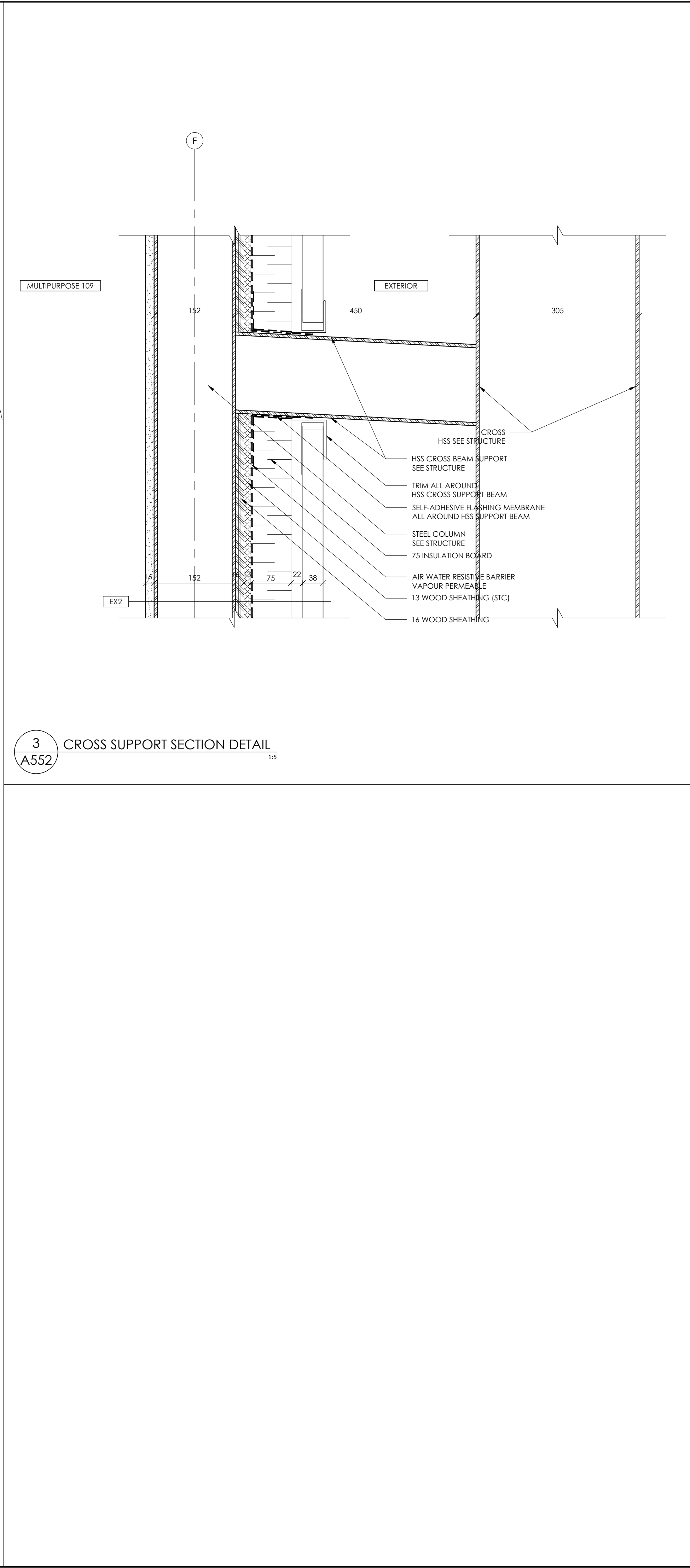
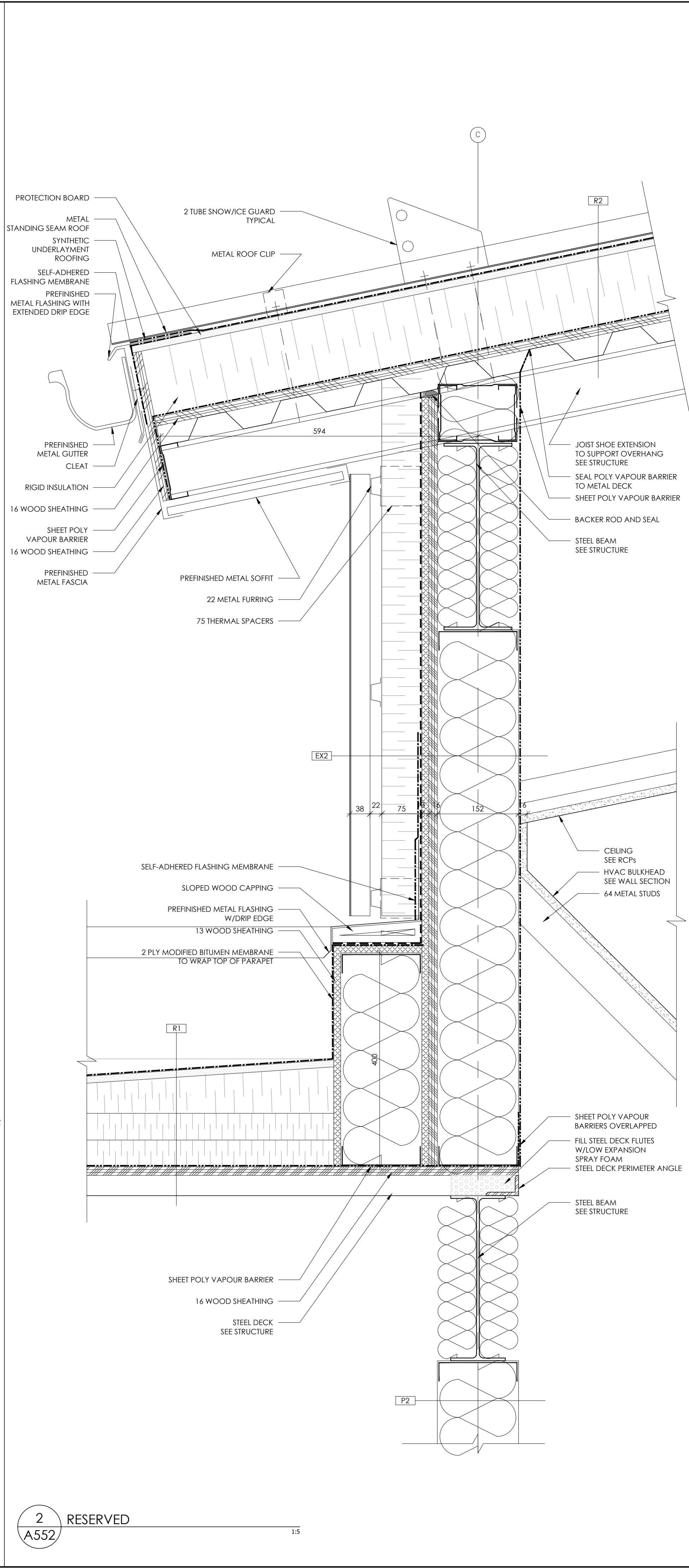
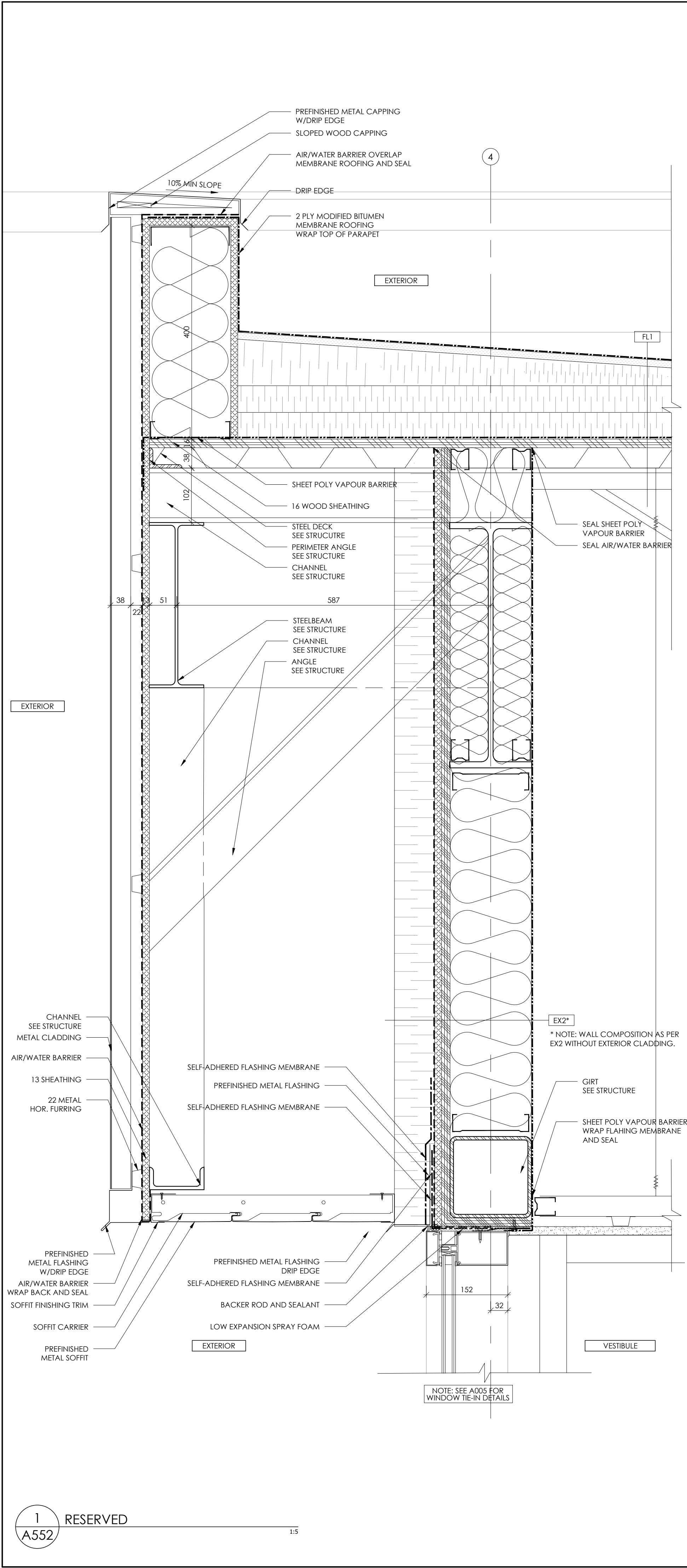
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PROJECT TITLE
THE SALVATION ARMY BARRHAVEN CHURCH
102 BILL LEATHERMAN DRIVE, NEPEAN ON, K2J 0R3

DRAWING TITLE
SECTION DETAILS

DESIGNED BY: RALPH VANDENBERG
DRAWN BY: JN, DV
START DATE: 2015
SCALE: AS SHOWN
PROJECT NO. 1502

A551



NO.	REVISION	DATE
1	ISSUED FOR COORDINATION	OCT. 1, 2021
2	ISSUED FOR BUILDING PERMIT	OCT. 15, 2021
3	ISSUED FOR TENDER	NOV. 5, 2021

ONTARIO ASSOCIATION
OF ARCHITECTS
RALPH ALLENBERG
LICENCE
4308

Vandenberg & Wildeboer
ARCHITECTS

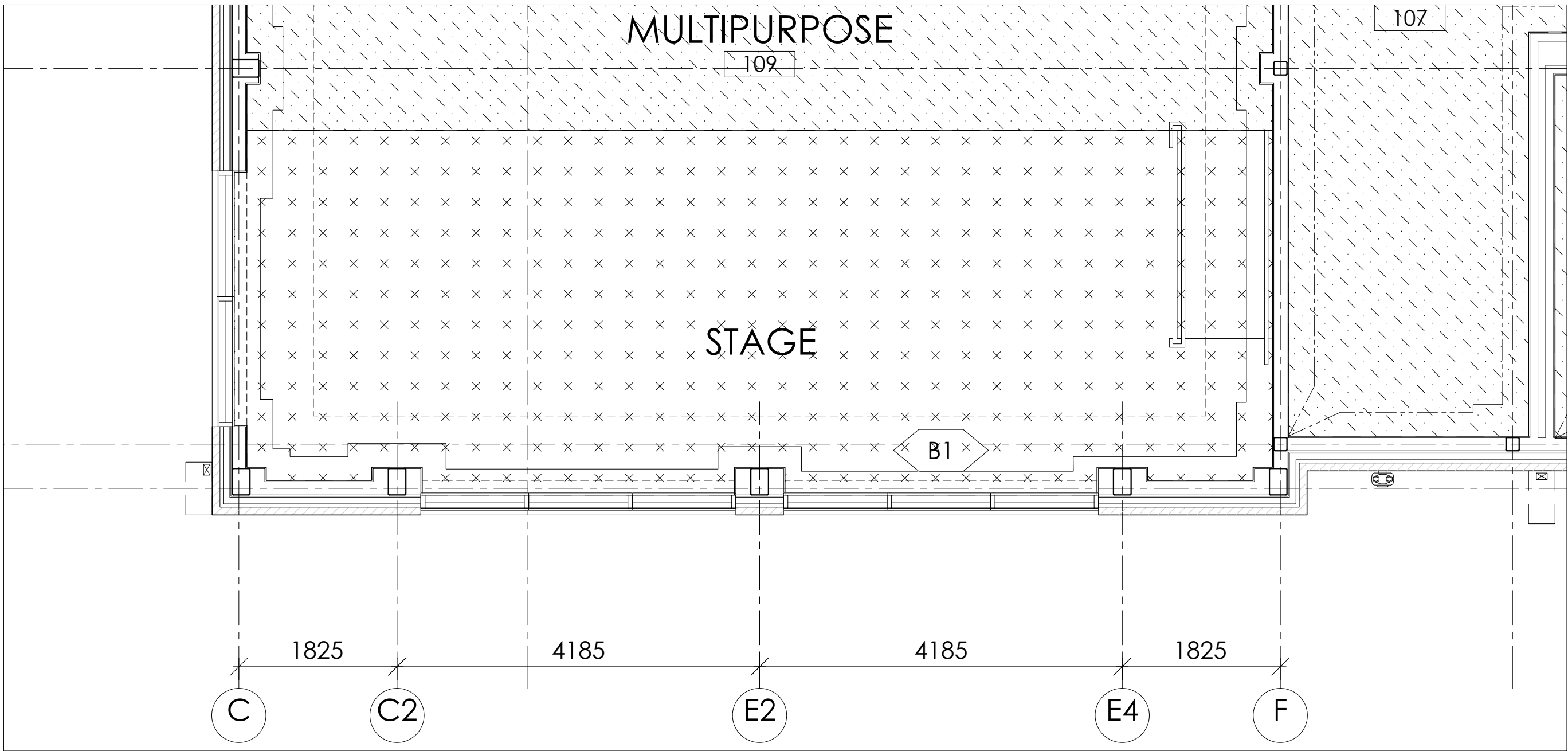
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PROJECT TITLE
THE SALVATION ARMY BARRHAVEN CHURCH
102 BILL LEATHER DRIVE, NEPEAN ON, K2J 0R3

DRAWING TITLE
SECTION DETAILS

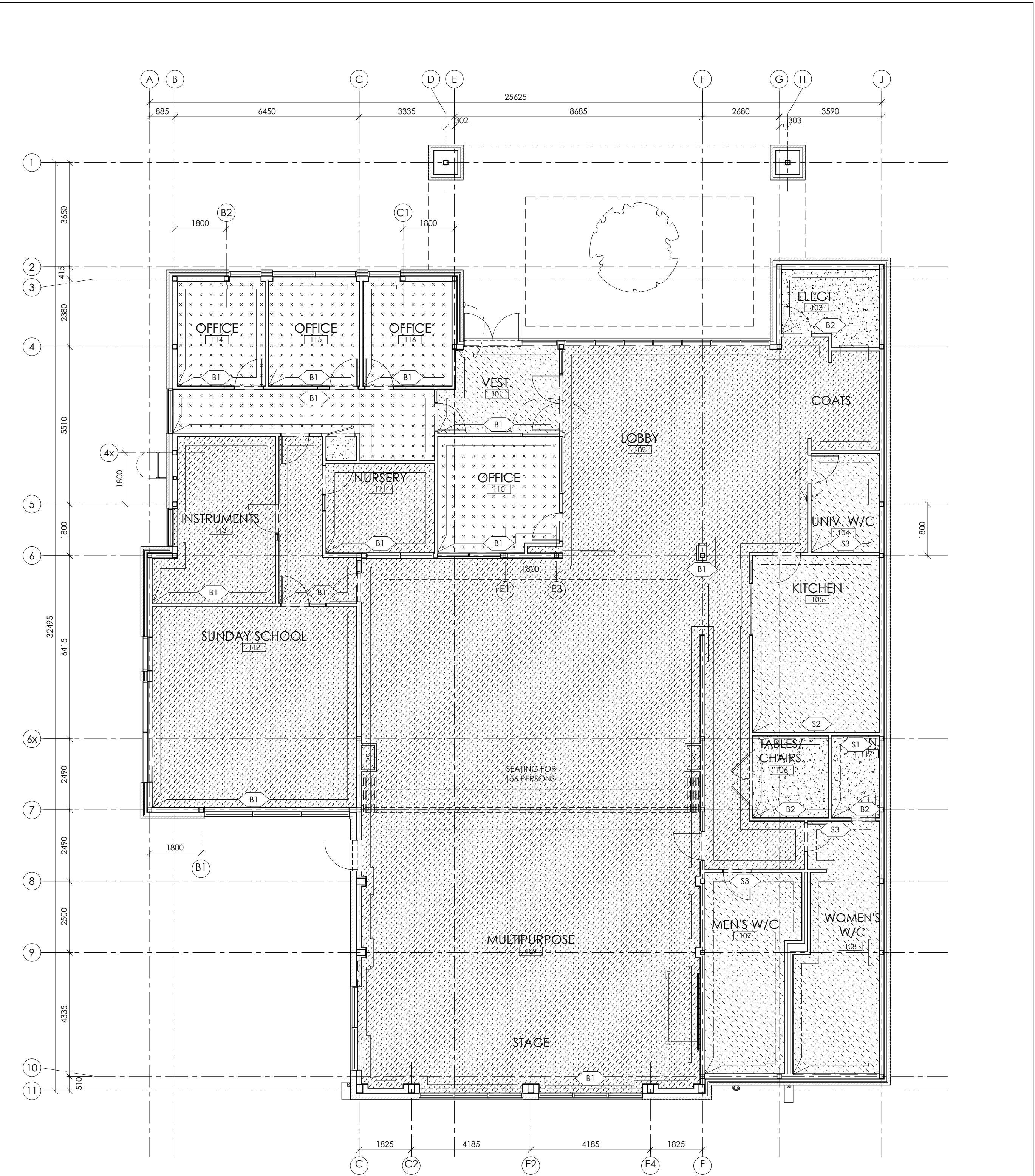
DESIGNED BY: RALPH VANDENBERG
DRAWN BY: JN, DV
START DATE: 2015
SCALE: AS SHOWN
PROJECT NO. 1502

DESIGNING NO.
A552



2 PARTIAL PLAN - STAGE PLATFORM FINISH
A101 1:50

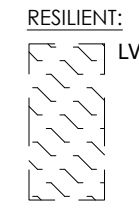
FINISHES SCHEDULE						
Level	#	Room Name	Base	Walls	Floor	Ceiling
GROUND LEVEL	GR-01	VESTIBULE	4.5" PAINTED MDF (Modern Profile)	PAINT	CERAMIC TILE	PAINT
	GR-02	LOBBY	4.5" PAINTED MDF (Modern Profile)	PAINT	LUXURY VINYL TILE	PAINT
	GR-03	ELECTRICAL	---	PAINT	SEALED CONCRETE	PAINT
	GR-04	UNIVERSAL W/C	4.5" PAINTED MDF (Modern Profile)	PAINT	CERAMIC TILE	PAINT
	GR-05	KITCHEN	4.5" PAINTED MDF (Modern Profile)	PAINT	LUXURY VINYL TILE	PAINT
	GR-06	TABLES/CHAIRS	4" VINYL WALL BASE	PAINT	SEALED CONCRETE	PAINT
	GR-07	MEN'S W/C	4.5" PAINTED MDF (Modern Profile)	PAINT	CERAMIC TILE	PAINT
	GR-08	WOMEN'S W/C	4.5" PAINTED MDF (Modern Profile)	PAINT	CERAMIC TILE	PAINT
	GR-09	MULTIPURPOSE	4.5" PAINTED MDF (Modern Profile)	PAINT	LUXURY VINYL TILE	PAINT
	GR-10	OFFICE	4.5" PAINTED MDF (Modern Profile)	PAINT	LUXURY VINYL TILE	PAINT
	GR-11	NURSERY	4.5" PAINTED MDF (Modern Profile)	PAINT	LUXURY VINYL TILE	PAINT
	GR-12	SUNDAY SCHOOL	4.5" PAINTED MDF (Modern Profile)	PAINT	LUXURY VINYL TILE	PAINT
	GR-13	INSTRUMENTS	4" VINYL WALL BASE	PAINT	LUXURY VINYL TILE	PAINT
	GR-14	CORRIDOR	4.5" PAINTED MDF (Modern Profile)	PAINT	LUXURY VINYL TILE	PAINT
	GR-15	OFFICES	4.5" PAINTED MDF (Modern Profile)	PAINT	LUXURY VINYL TILE	PAINT



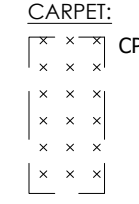
LEGEND:



PORCELAIN TILE
MAN: OLYMPIA TILE+STONE INTERNATIONAL INC.
SERIE: COLORS SERIES, MATTE
COLOUR: GREY
SIZE: 610 x 610 mm
PATTERN / LAYOUT: STRAIGHT



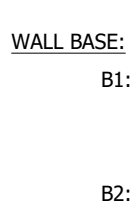
LUXURY VINYL TILE
MAN: INTERSOURCE
SERIE: DURA SERIES
COLOUR: POPLAR WHITE
SIZE: 178W x 152H, 5.5T mm
PATTERN / LAYOUT: STAGGERED



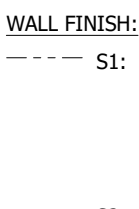
CARPET TILE
MAN: VENTURE CARPETS INC.
SERIE: FRASER SERIES
COLOUR: LAMP CHARCOAL
SIZE: 500 x 500 mm
PATTERN / LAYOUT: STRAIGHT



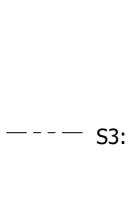
SEALED CONCRETE



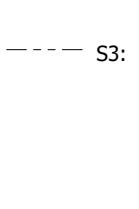
4.5" PAINTED MDF BASE
MANUFACTURER:
PATTERN:
COLOUR: TO MATCH WALL COLOR
B2: 4" VINYL WALL BASE
COLOUR: DARK GREY



FIBERGLASS REINFORCED PLASTIC (FRP)
MANUFACTURER:
NUMBER:
NAME:



CERAMIC WALL TILE
MANUFACTURER: OLYMPIA TILE+STONE INTERNATIONAL INC.
SERIE: PLAIN WALL - GLAZED
COLOR: WHITE



CERAMIC WALL TILE
MANUFACTURER: OLYMPIA TILE+STONE INTERNATIONAL INC.
SERIE: SHADEBRICK - GLAZED
COLOR: OFF WHITE

NOTES:

- ALL PRODUCTS ARE PERMITTED TO BE SUBSTITUTED SUBJECT TO COMPLIANCE WITH ALL THE REQUIRED SPECIFICATIONS.
- INDICATED SERIES AND COLORS ARE FOR REFERENCE, FINAL SELECTION WILL BE MADE FROM MANUFACTURER'S STANDARD RANGE SAMPLES.

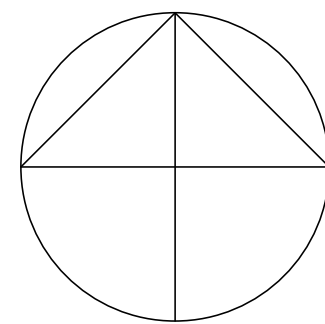
FLOOR FINISH NOTES

1. THE CONTRACTOR ASSUMES RESPONSIBILITY FOR INSTALLATION OF FLOOR FINISH UPON ACCEPTANCE OF SUBSTRATE AND EXISTING CONDITIONS. CONTRACTOR ASSUMES RESPONSIBILITY TO FLAG AND MAKE OWNER AWARE OF ANY DEFECTIVE PRODUCT OR MATERIAL PRIOR TO INSTALLATION. INSTALLATION OF MATERIALS IN QUESTION SHALL NOT PROCEED WITHOUT OWNER'S APPROVAL.
2. THE GENERAL CONTRACTOR SHALL INSTALL ALL NEW FLOOR FINISHES AS PER MANUFACTURER'S INSTALLATION SPECIFICATIONS.
3. ALL FLOORING MATERIALS TO BE INSTALLED PRIOR TO INSTALLATION OF BASE.
4. NEW CARPET TO BE ROLLED OUT IN A WELL VENTILATED WAREHOUSE, REMOTE FROM THE BUILDING, FOR TWO TO THREE DAYS PRIOR TO INSTALLATION.
5. FLOORING PATTERNS TO BE CHALKED OUT FOR APPROVAL BY DESIGN CONSULTANT PRIOR TO COMMENCING WORK.
6. SUPPLY AND INSTALL TRANSITION STRIPS OF SATIN ANODIZED ALUMINUM OR SIMILAR AT JUNCTIONS OF ALL DISSIMILAR FLOOR FINISHES.
7. THE GENERAL CONTRACTOR SHALL APPLY FLOOR CURING AND SEALING COMPOUNDS TO MANUFACTURER'S INSTRUCTIONS TO ALL SLABS ON GRADE. CURE TO MANUFACTURER'S RECOMMENDATIONS.
8. PROTECT NEWLY LAID FLOOR MATERIALS FROM CONSTRUCTION TRAFFIC FOR A PERIOD OF FIVE DAYS.
9. GENERAL CONTRACTOR TO PROVIDE INITIAL CLEANING AND WAXING OF ALL SHEET AND TILE FLOORING AS PER FLOOR MATERIAL MANUFACTURER'S GUIDELINES AND INSTRUCTIONS.
10. ALL LVT FLOORING TO HAVE A VINYL BASE.

WALL FINISH NOTES

1. THE CONTRACTOR SHALL PROVIDE SAMPLES FOR APPROVAL BY DESIGNER OF ALL FINISHES SPECIFIED. 12" x 12" SAMPLES TO BE TAGGED ACCORDING TO PAINT FINISHES LEGEND. ALL PAINT SAMPLES SHALL BE APPROVED BY DESIGNER PRIOR TO APPLICATION.
2. UNLESS OTHERWISE NOTED, ALL INTERIOR EXPOSED SURFACES OF GYPSUM BOARD WALLS, PARTITIONS AND CEILINGS ARE TO RECEIVE PAINT FINISH.
3. PAINT FINISH: PRIME WITH ONE COAT LATEX SEALER. REPAIR DEPRESSIONS ETC., WITH DRYWALL COMPOUND. SAND ALL SURFACES. SPOT PRIME ALL PATCHED AREAS. PRIME AND PREPARE FOR PAINT. APPLY MIN. TWO COATS PAINT TYPE AND COLOUR AS SPECIFIED. TOUCH UP AS REQUIRED.
4. WHERE DARK COLOURS HAVE BEEN SPECIFIED, APPLY 3 THIN COATS OF PAINT TO WALL. IN MAIN CORRIDORS OR HIGH TRAFFIC AREAS, APPLY ONE COAT OF MATTE CLEAR COAT TO PROTECT COLOUR. CONTRACTOR IS TO ENSURE THAT ALL DARK COLOURED WALLS HAVE A DARK BASE PRIMER APPLIED.
5. EXCEPT WHERE OTHERWISE NOTED, PAINT FINISH FOR WALLS TO BE LATEX FINISH WITH 25% TO 35% SHEEN. PAINTED DOORS TO RECEIVE 45%.
6. ONCE PAINT HAS CURED, FINISHES TO BE DURABLE ENOUGH TO ENABLE CLEANING OF FINGER MARKS AND MINOR SCUFFING WITHOUT DISRUPTING THE ORIGINAL PAINT SHEEN.
7. CONTRACTOR TO USE ENVIRONMENTALLY FRIENDLY, NON-TOXIC, WATER-BASED PAINTS WITH FAST-OUT-GAS CHARACTERISTICS.
8. ALL PREPARATION, PAINT AND APPLICATION TO CONFORM TO MPI (MASTER PAINTERS INSTITUTE) AND CQSB STANDARDS.

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3	ISSUED FOR TENDER	NOV. 5, 2021



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PROJECT TITLE
THE SALVATION ARMY BARRHAVEN CHURCH
102 BILL LEATHAM DRIVE, NEPEAN ON, K2J 0R3

DRAWING TITLE
FINISHES PLAN & NOTES

DESIGNED BY: RALPH VANDENBERG
DRAWN BY: J.N. DV
START DATE: 2015
SCALE: AS SHOWN
PROJECT NO: 1502

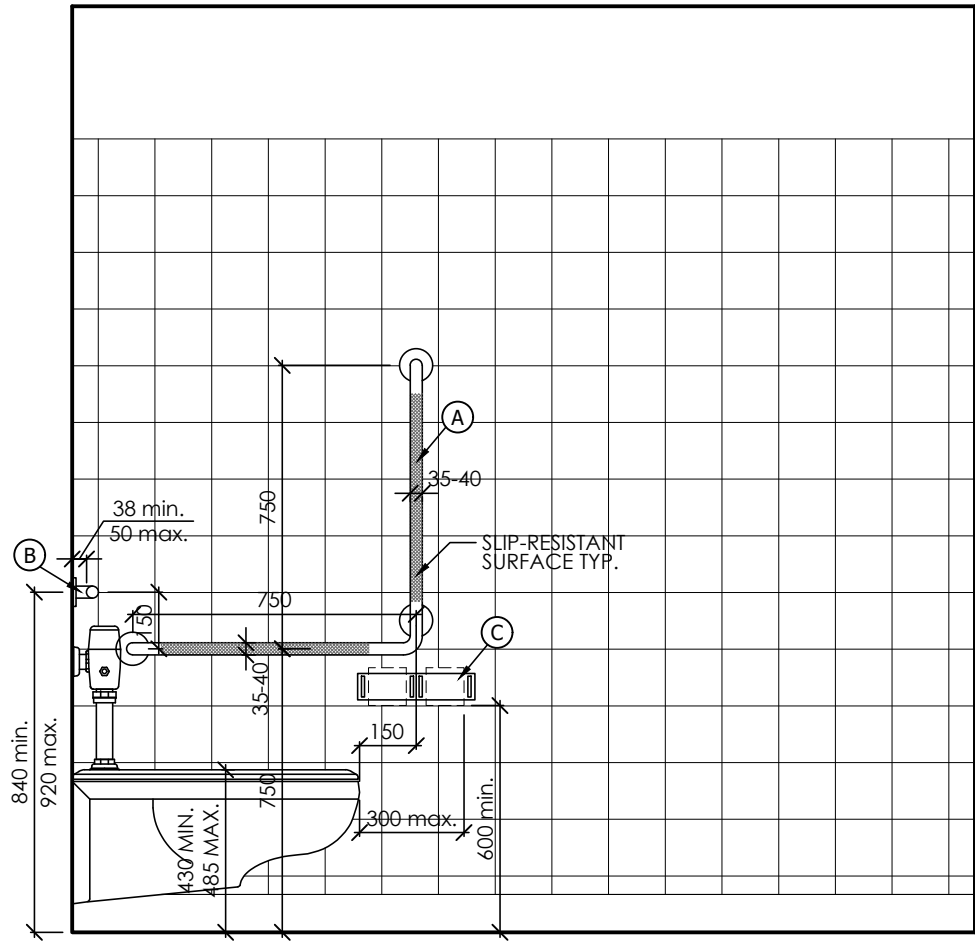
DRAWING NO:
A601

NOTES: WASHROOMS

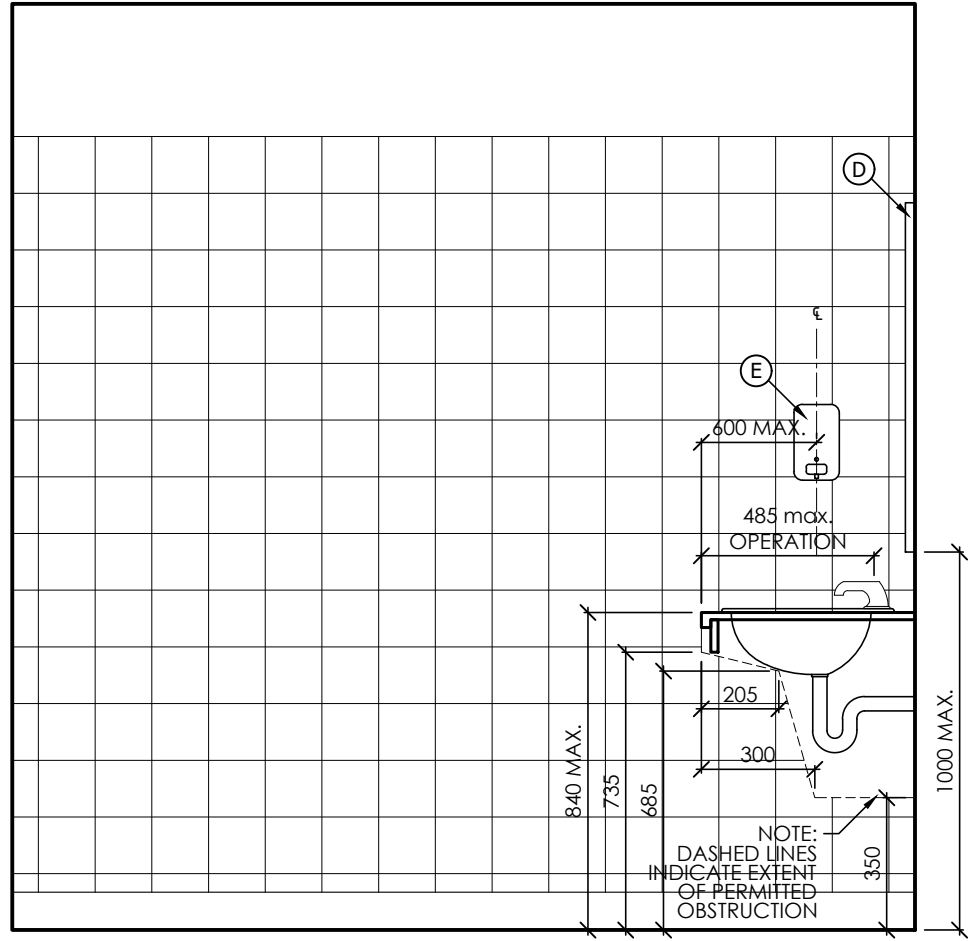
1. ALL MATERIALS SHALL BE NEW AND CONFORM TO MINIMUM APPLIC STANDARDS OF CANADIAN GENERAL STANDARDS BOARD, THE ONT CODE AND ALL APPLICABLE PROVINCIAL AND MUNICIPAL CODES.
2. CONTRACTOR TO VERIFY LOCATIONS AND PROVIDE ADEQUATE SEC IN PARTITIONS AS REQ'D BY THE O.B.C., TO RECEIVE WALL MOUNTED COUNTERTOPS, SHELVES, MILLWORK, HUNG LAVATORIES, VALANCE CHANGE TABLES, SHOWER BENCHES AND ALL OTHER WASHROOM V.
3. SITE VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION AND INSTAL
4. SHOP DRAWINGS TO BE PROVIDED FOR REVIEW OF ALL W.C. ACCE & ELECT FIXTURES PRIOR TO PURCHASE AND FABRICATION.
5. CAULK AROUND ALL COUNTERTOPS AND MILLWORK; COLOUR AS / ARCHITECT.
6. MOUNT ALL COAT HOOKS AT 1200mm ABOVE FINISHED FLOOR UNL OTHERWISE.
7. PROVIDE INSULATED PIPES COMPLETE WITH RIGID PVC SLEEVE WHER BARRIER FREE WASHROOMS.
8. ALL ACCESSORIES TO BE INSTALLED PER MANUFACTURER'S SPECIFIC RECOMMENDED MOUNTING HEIGHTS FOR BARRIER-FREE DESIGN.
9. RETURN ALL VALANCES TO WALL AT EXPOSED ENDS OF UPPER CABIN
10. REFER TO WASHROOM PLANS FOR DIMENSIONS RELATING TO LAYO COUNTERTOPS, CENTRELINE FOR ROUGH-INS AND FIXTURES.
11. PROVIDE UNDER-COUNTER CABINERY FOR NON BARRIER-FREE WA
12. REFER TO FINISHES PLANS FOR FLOOR FINISH SELECTIONS AND LAYO
13. REFER TO REFLECTED CEILING PLAN REGARDING CEILING FINISH LAI AND MATERIALS.
14. COORDINATE MILLWORK WITH GYPSUM CONTRACTOR REGARDING AND CEILING HEIGHTS.
15. COORDINATE MILLWORK WITH MECHANICAL AND ELECTRICAL SERI
16. NOTCH OR BORE MILLWORK WHERE REQUIRED FOR PLUMBING AND WORK.
17. WASHROOM EQUIPMENT TO BE UL/ULC LISTED AND INSTALLED IN AC WITH APPLICABLE CODES AND STANDARDS.
18. CONTRACTOR TO REPORT ALL DISCREPANCIES TO ARCHITECT.

WASHROOM ACCESSORIES

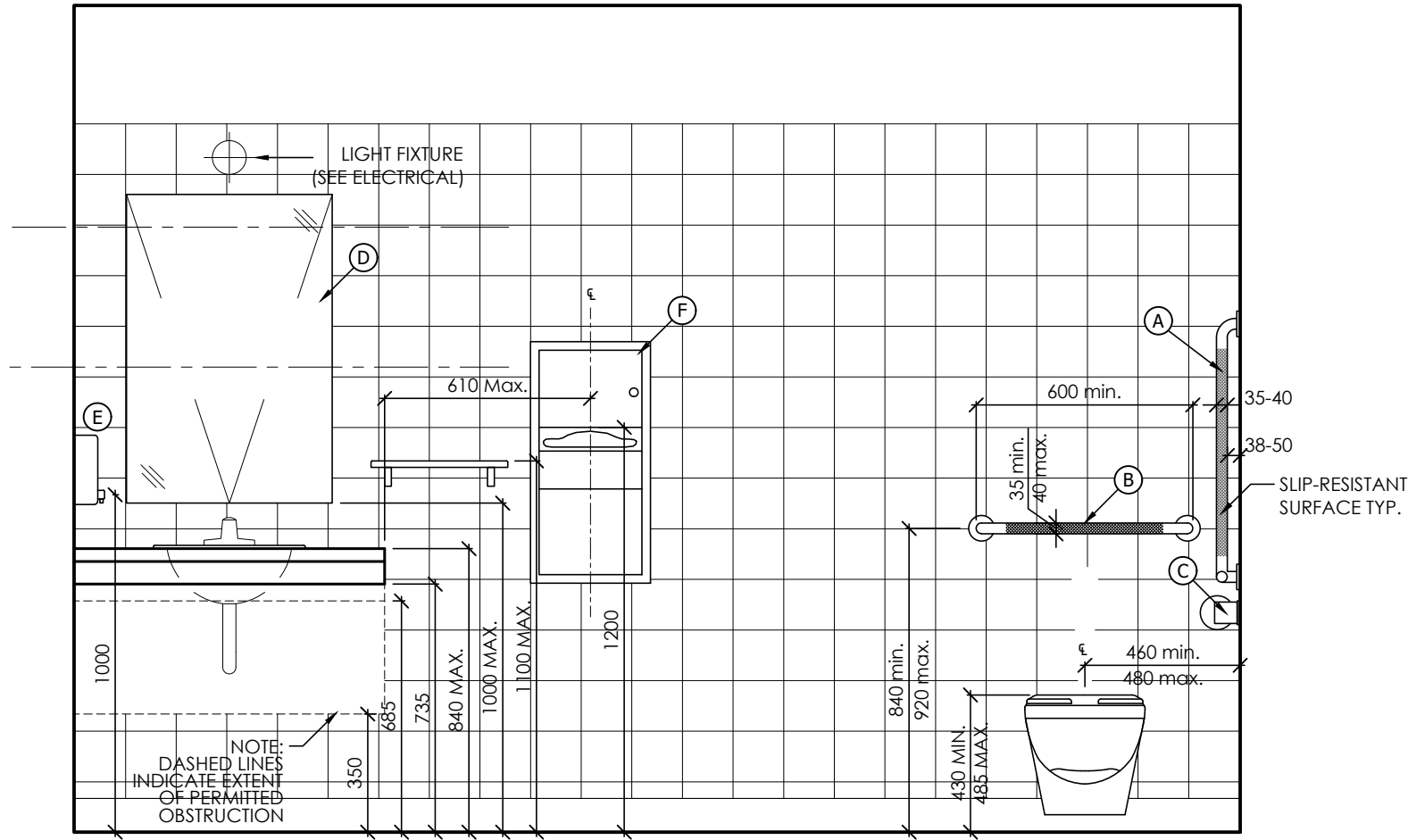
- (A) GRAB BAR (L-SHAPED): BOBRICK OR APPROVED EQUAL 760 x 760, FEENED FINISH, CONCEALED MOUNTING
- (B) GRAB BAR (STRAIGHT): BOBRICK B-5804.99 x 24 610 FEENED FINISH, CONCEALED MOUNTING
- (C) TOILET TISSUE DISPENSER: BOBRICK B-245 OR APPROVED EQUAL CHROME, DBL ROLL, SURFACE MOUNT
- (D) TEMPERED MIRROR: BOBRICK B-165.2434 OR APPROVED EQUAL 610W x 915H, STAINLESS STEEL CHANNEL FRAME
- (E) SOAP DISPENSER: BOBRICK B-7212 OR APPROVED EQUAL STAINLESS STEEL, 1.2L HORIZ., WALL MOUNT
- (F) COMBINATION TOWEL/WASTE UNIT: BOBRICK B-369 STAINLESS STEEL, C-FOLD TOWELS, 7.6L RECESSED
- (G) SANITARY NAPKIN DISPOSAL: BOBRICK B-970 STAINLESS STEEL SURFACE MOUNT
- (H) CLOTHES HOOK: BOBRICK B-233 OR APPROVED EQUAL STAINLESS STEEL, MOUNT 1200 A.F.F., MAX. W/50 MAX. PROJ.
- (I) DIAPER CHANGING STATION: KOALA KB-101, VERTICAL WALL MOUNTED BABY CHANGING TABLE, COLOUR T.B.D.
- (J) SIGN POSTED ABOVE EMERGENCY BUTTON READING: IN THE EVENT OF AN EMERGENCY PUSH EMERGENCY BUTTON AND AN AUDIBLE AND VISUAL SIGNAL WILL ACTIVATE LETTERS TO BE MIN. 25mm H. W/ 5mm STROKE.
- (K) POWER DOOR OPERATOR CONTROL: SEE DOOR HARDWARE MOUNT AT 1000mm A.F.F.
- (L) GRAB BAR: BOBRICK B-5804.99 x 30 OR APPROVED EQUAL 760 FEENED FINISH, CONCEALED MOUNTING
- (M) TOILET TISSUE DISPENSER: BOBRICK B-2892 OR APPROVED EQUAL STAINLESS STEEL, TWIN JUMBO-ROLL
- (N) TOILET TISSUE DISPENSER: BOBRICK B-2820 OR APPROVED EQUAL CHROME, SINGLE JUMBO ROLL, SURFACE MOUNT
- (O) TEMPERED MIRROR: BOBRICK B-165.4834 OR APPROVED EQUAL 1220W x 915H, STAINLESS STEEL CHANNEL FRAME
- (P) SOAP DISPENSER: BOBRICK B-8221 OR APPROVED EQUAL MANUAL PUMP, LAV MOUNTED, POLISHED FINISH
- (Q) SOAP DISPENSER: BOBRICK B-72111 OR APPROVED EQUAL STAINLESS STEEL, 1.2L VERT., WALL MOUNT
- (R) PAPER TOWEL DISPENSER (HANDS-FREE): BOBRICK B-72974 OR APPROVED EQUAL ROLL PAPER, AUTOMATIC, SURFACE MOUNTED
- (S) COMBINATION TOWEL/WASTE UNIT: BOBRICK B-39419 OR APPROVED EQUAL ROLL PAPER, SURFACE MOUNTED W/WASTE RECEPTACLE
- (T) CLOTHES HOOK: RICHIELEU 8044145 OR APPROVED EQUAL COLOUR: 145
- (X) PAPER TOWEL DISPENSER: BOBRICK B-35903 OR APPROVED EQUAL FOLDED PAPER, RECESSED MOUNTED



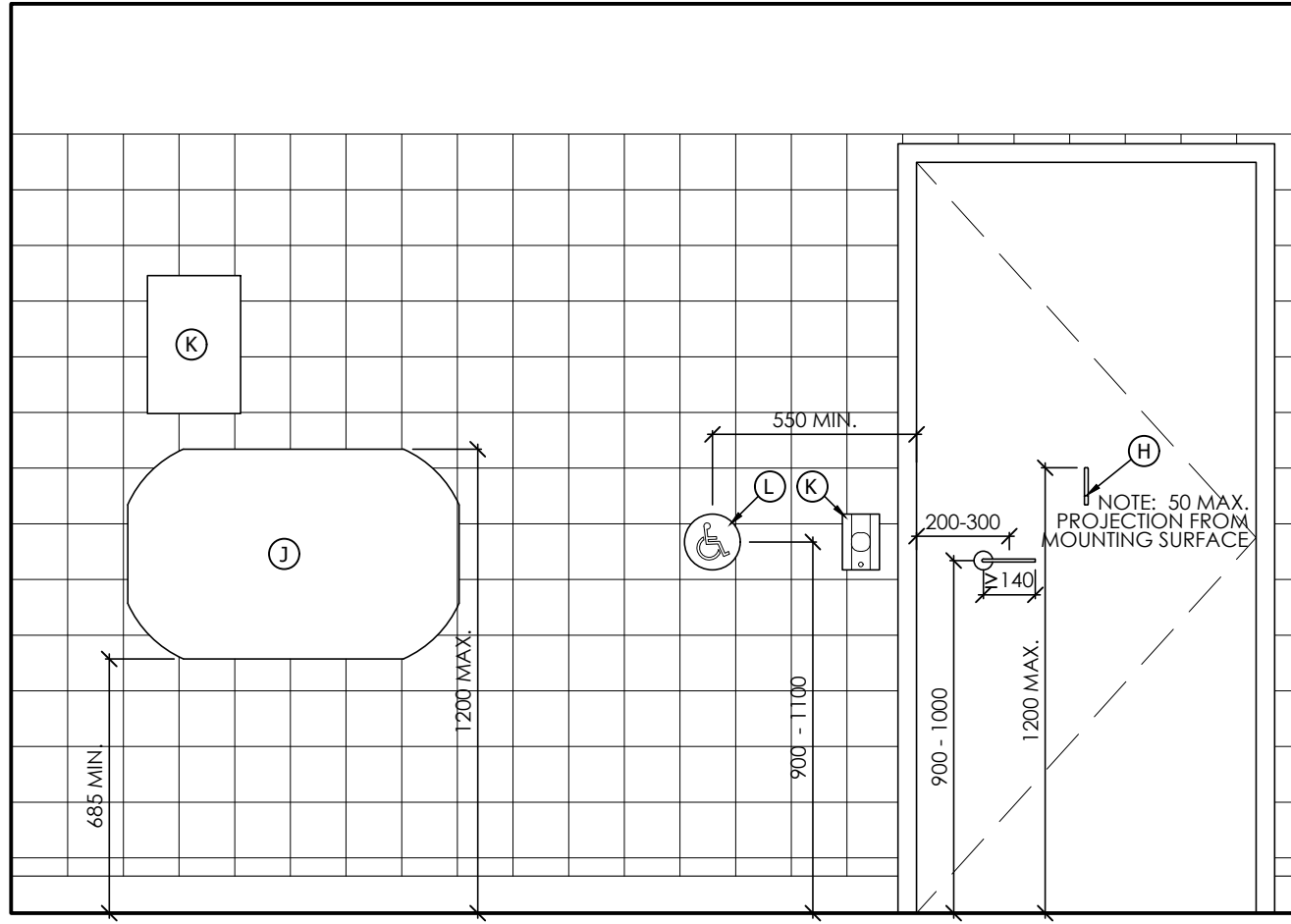
5 UNIVERSAL WASHROOM ELEVATION
A701 1:20



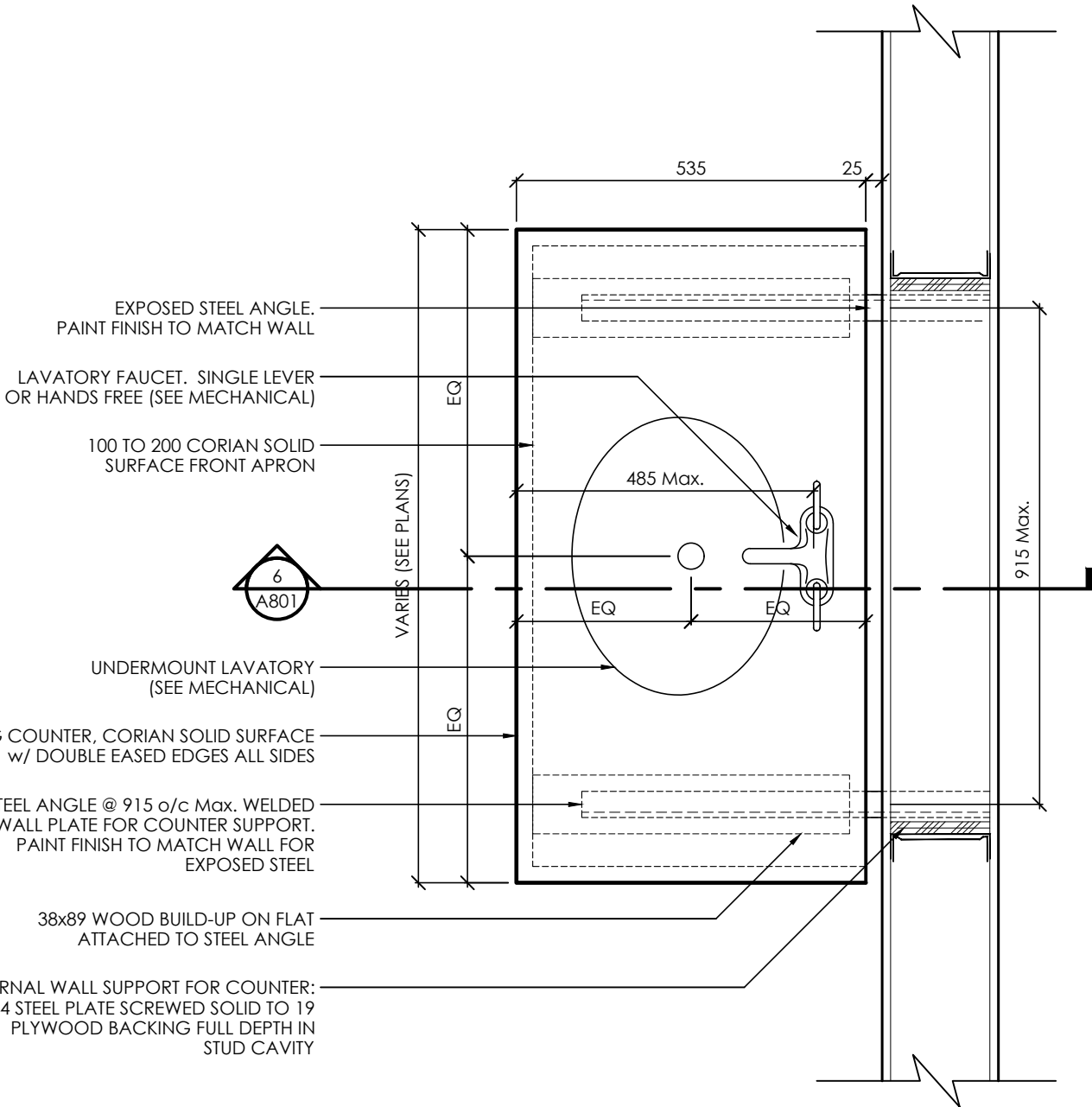
3 UNIVERSAL WASHROOM ELEVATION
A701 1:20



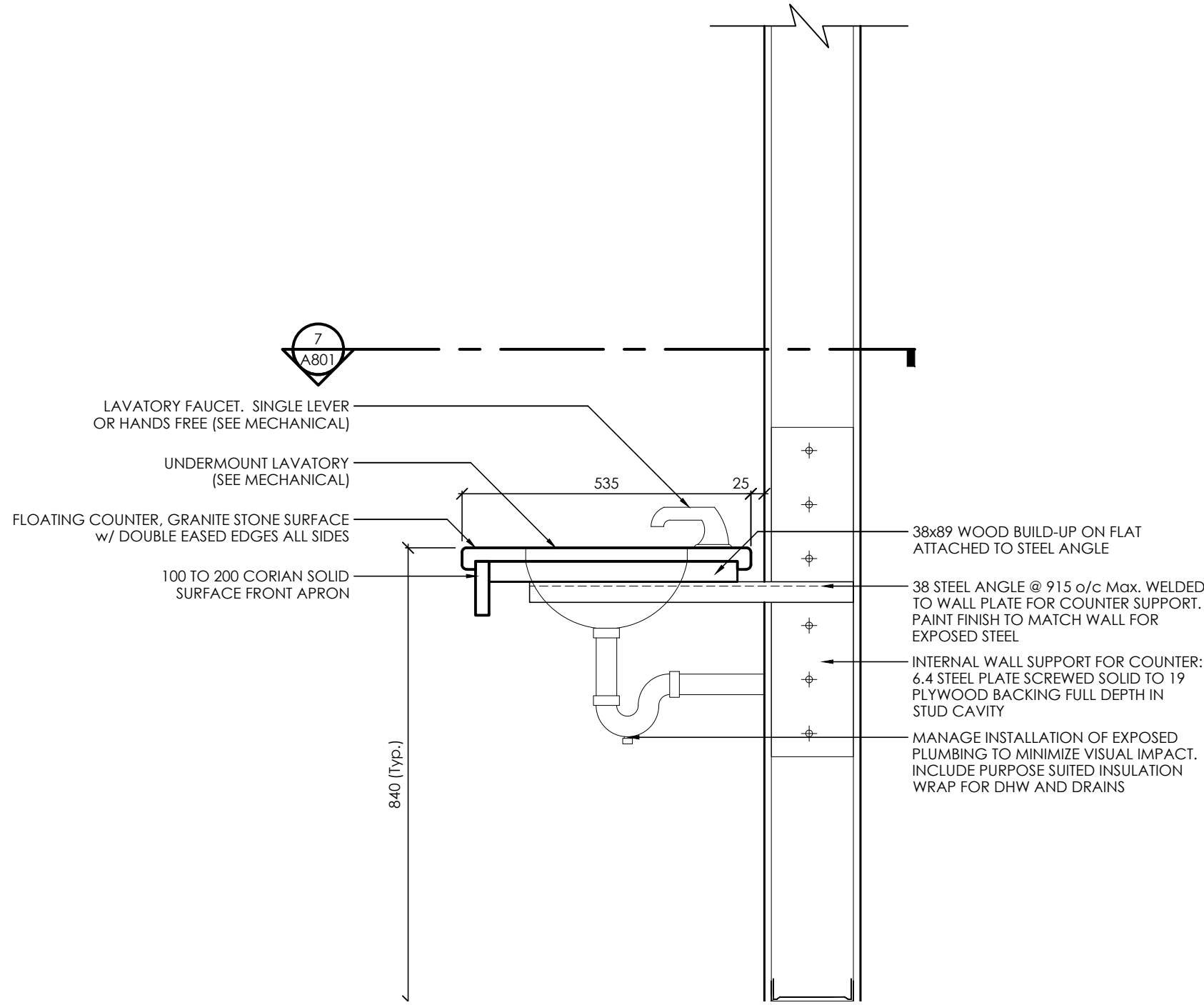
4 UNIVERSAL WASHROOM ELEVATION
A701 1:20



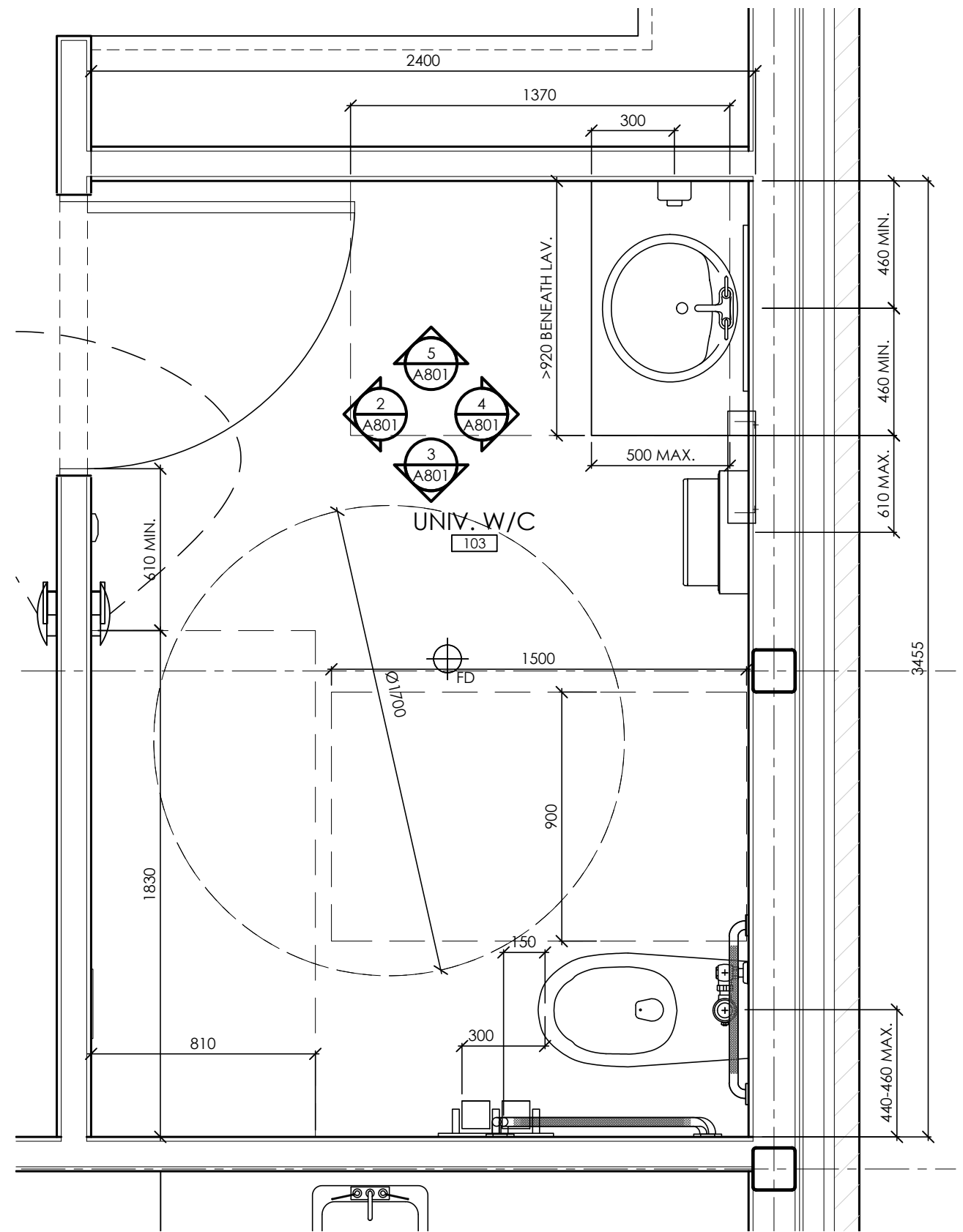
2 UNIVERSAL WASHROOM ELEVATION
A701 1:20



7 FLOATING COUNTERTOP PLAN DETAIL
A701 1:10

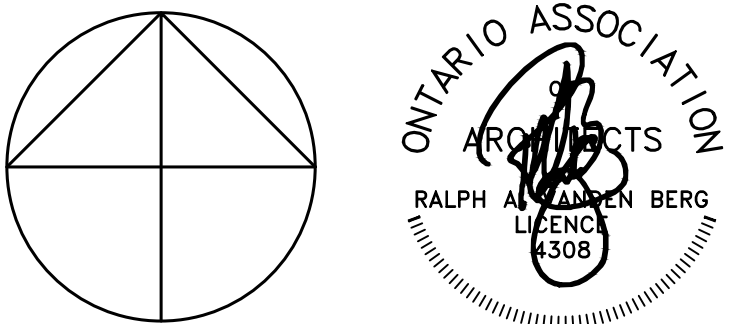


6 FLOATING COUNTERTOP SECTION
A701 1:10



1 UNIVERSAL WASHROOM PLAN
A701 1:20

NO.	REVISION	DATE
1	ISSUED FOR COORDINATION	OCT. 1, 2021
2	ISSUED FOR BUILDING PERMIT	OCT. 15, 2021
3	ISSUED FOR TENDER	NOV. 5, 2021



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705.662.5706 1-800-461-1000 1-800-461-1000 1-800-461-1000 1-800-461-1000

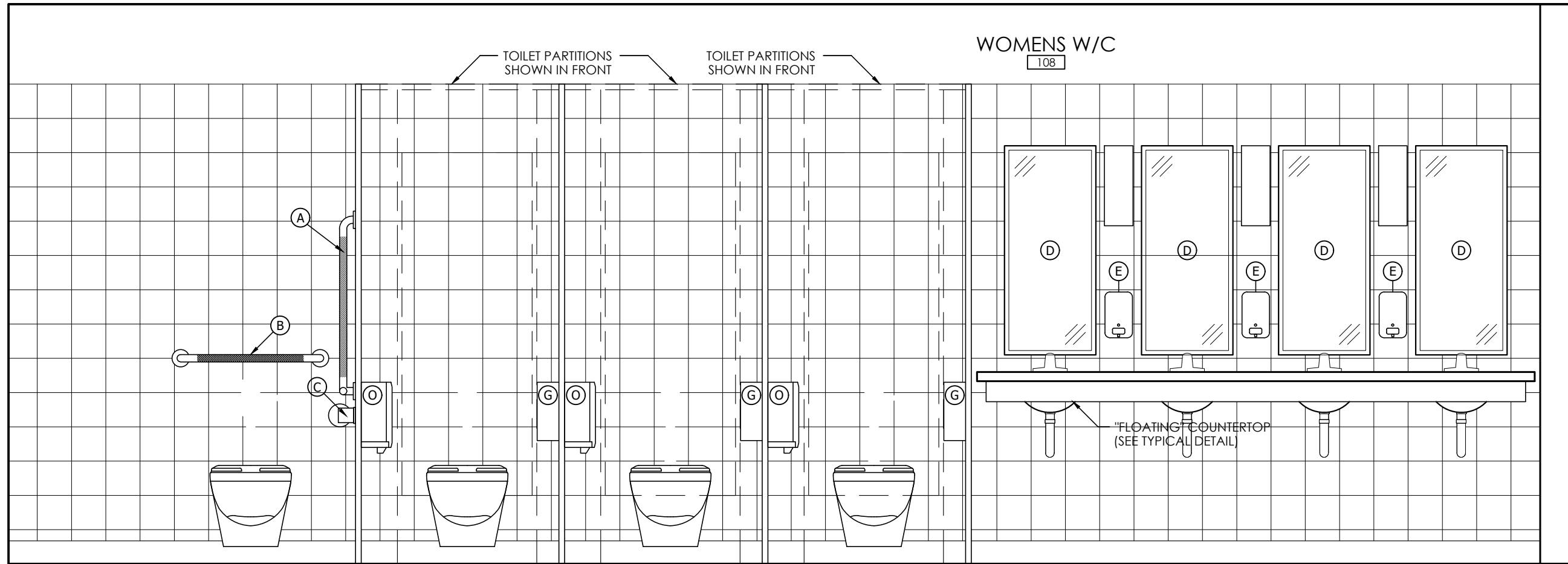
PROJECT TITLE
THE SALVATION ARMY BARRHAVEN CHURCH
102 BILL LEATHAM DRIVE, NEPEAN ON, K2J 0R3

DRAWING TITLE
WASHROOM PLAN & DETAILS

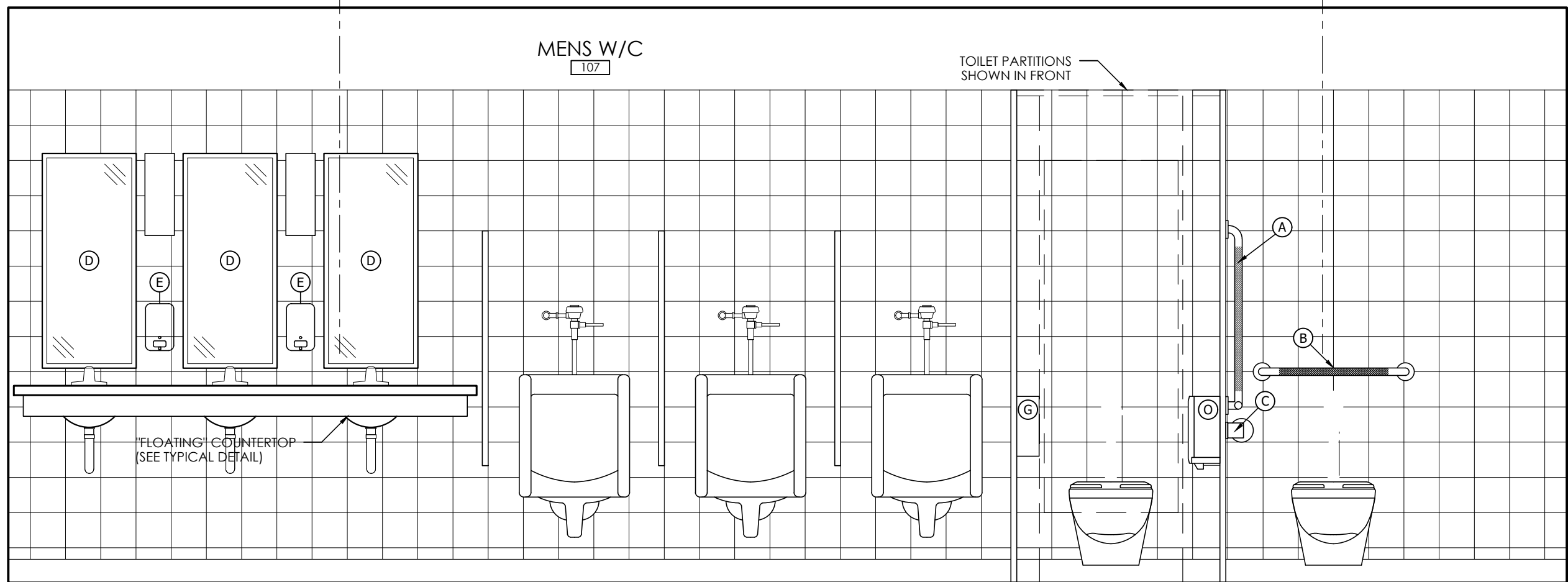
DESIGNED BY: RALPH VANDENBERG
DRAWN BY: JN, DV
START DATE: 2015
SCALE: AS SHOWN
PROJECT NO: 1502

A701

NO.	REVISION	DATE
1	ISSUED FOR COORDINATION	OCT. 1, 2021
2	ISSUED FOR BUILDING PERMIT	OCT. 15, 2021
3	ISSUED FOR TENDER	NOV. 5, 2021



2 WOMENS WASHROOM ELEVATION
A702 1:20



3 MENS WASHROOM ELEVATION
A702 1:20

NOTES: WASHROOMS

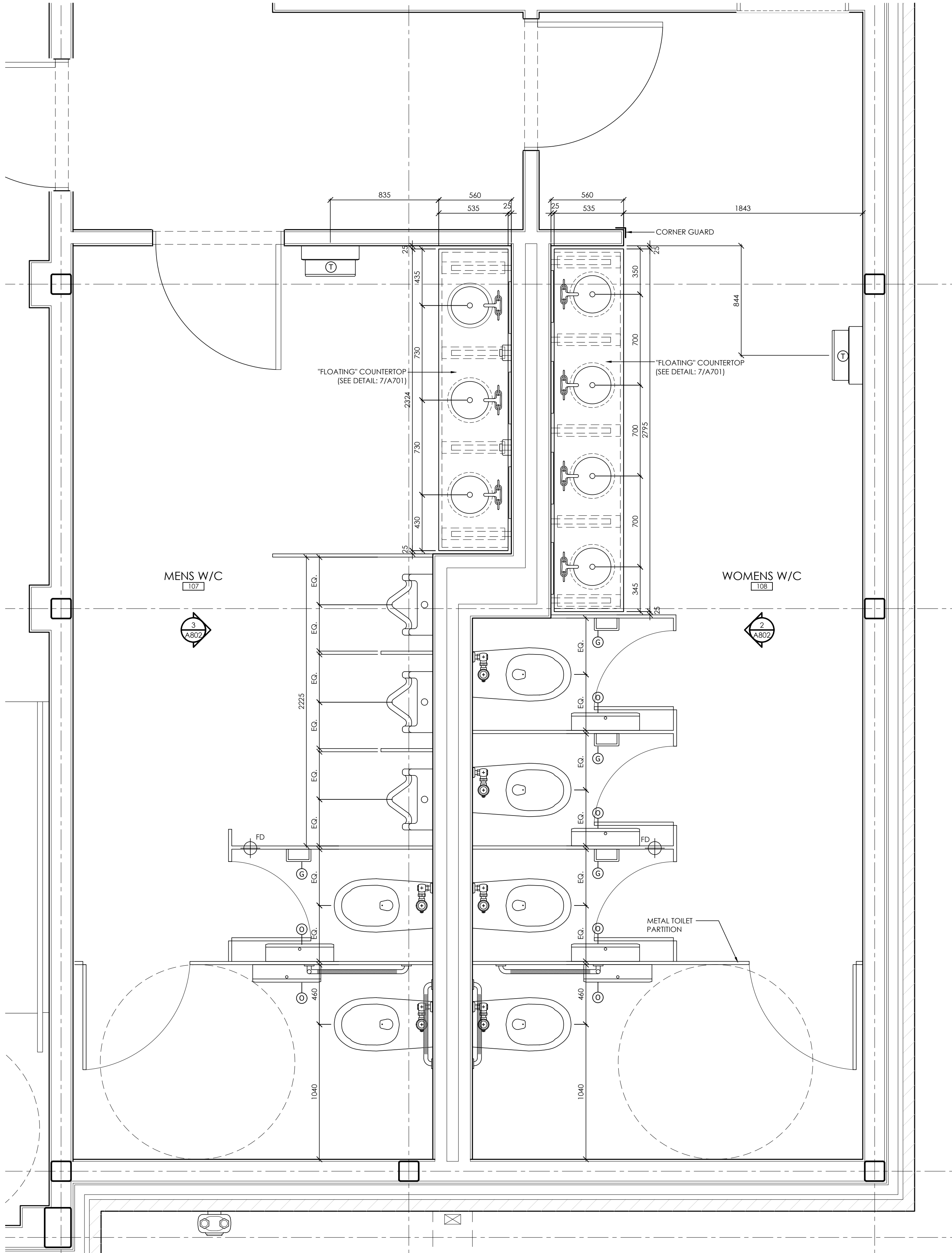
- ALL MATERIALS SHALL BE NEW AND CONFORM TO MINIMUM APPLICABLE STANDARDS OF CANADIAN GENERAL STANDARDS BOARD, THE ONTARIO BUILDING CODE AND ALL APPLICABLE PROVINCIAL AND MUNICIPAL CODES.
- CONTRACTOR TO VERIFY LOCATIONS AND PROVIDE ADEQUATE SECURE BLOCKING IN PARTITIONS AS REQUIRED BY THE O.B.C. TO RECEIVE WALL MOUNTED UNITS SUCH AS COUNTERTOPS, SHELVES, MILLWORK, HUNG LAVATOIRES, VALANCES, GRAB BARS, CHANGE TABLES, SHOWER BENCHES AND ALL OTHER WASHROOM ACCESSORIES.
- SITE VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION AND INSTALLATION.
- SHOP DRAWINGS TO BE PROVIDED FOR REVIEW OF ALL W.C. ACCESSORIES, MECH. & ELECT FIXTURES PRIOR TO PURCHASE AND FABRICATION.
- CAULK AROUND ALL COUNTERTOPS AND MILLWORK; COLOUR AS APPROVED BY ARCHITECT.
- MOUNT ALL COAT HOOKS AT 1200mm ABOVE FINISHED FLOOR UNLESS NOTED OTHERWISE.
- PROVIDE INSULATED PIPES COMPLETE WITH RIGID PVC SLEEVE WHERE EXPOSED IN BARRIER FREE WASHROOMS.
- ALL ACCESSORIES TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS AND RECOMMENDED MOUNTING HEIGHTS FOR BARRIER-FREE DESIGN.
- RETURN ALL VALANCES TO WALL AT EXPOSED ENDS OF UPPER CABINETS.
- REFER TO WASHROOM PLANS FOR DIMENSIONS RELATING TO LAYOUTS, COUNTERTOPS, CENTRELINE FOR ROUGH-INS AND FIXTURES.
- PROVIDE UNDER-COUNTER CABINETRY FOR NON BARRIER-FREE WASHROOMS.
- REFER TO FINISHES PLANS FOR FLOOR FINISH SELECTIONS AND LAYOUTS.
- REFER TO REFLECTED CEILING PLAN REGARDING CEILING FINISH LAYOUT, HEIGHTS AND MATERIALS.
- COORDINATE MILLWORK WITH GYPSUM CONTRACTOR REGARDING BULKHEADS AND CEILING HEIGHTS.
- COORDINATE MILLWORK WITH MECHANICAL AND ELECTRICAL SERVICES.
- NOTCH OR BORE MILLWORK WHERE REQUIRED FOR PLUMBING AND ELECTRICAL WORK.
- WASHROOM EQUIPMENT TO BE UL/ULC LISTED AND INSTALLED IN ACCORDANCE WITH APPLICABLE CODES AND STANDARDS.
- CONTRACTOR TO REPORT ALL DISCREPANCIES TO ARCHITECT.

WASHROOM ACCESSORIES

- GRAB BAR (L-SHAPED): BOBRICK B-5804.99 x 30 OR APPROVED EQUAL 760 PEENED FINISH, CONCEALED MOUNTING
- GRAB BAR (STRAIGHT): BOBRICK B-5804.99 x 24 610 PEENED FINISH, CONCEALED MOUNTING
- TOILET TISSUE DISPENSER: BOBRICK B-2890 OR APPROVED EQUAL CHROME, DBL ROLL, SURFACE MOUNT
- TEMPERED MIRROR: BOBRICK B-145 2438 OR APPROVED EQUAL 610W x 915H, STAINLESS STEEL CHANNEL FRAME
- SOAP DISPENSER: BOBRICK B-2112 OR APPROVED EQUAL STAINLESS STEEL, 1.2L VERT. WALL MOUNT
- COMBINATION TOWEL/WASTE UNIT: BOBRICK B-369 STAINLESS STEEL, 7.6L RECESSED
- SANITARY NAPKIN DISPOSAL: BOBRICK B-270 STAINLESS STEEL, SURFACE MOUNT
- CLOTHES HOOK: BOBRICK B-233 OR APPROVED EQUAL STAINLESS STEEL, MOUNT 1200 A.F.F. MAX. W/50 MAX. PROJ.
- DIAPER CHANGING STATION: KOALA KB-101, VERTICAL WALL MOUNTED BABY CHANGING TABLE, COLOUR T.B.D.
- SIGN POSTED ABOVE EMERGENCY BUTTON READING: "IN THE EVENT OF AN EMERGENCY PUSH EMERGENCY BUTTON AND AN AUDIBLE AND VISUAL SIGNAL WILL ACTIVATE LETTERS TO BE MIN. 25mm H. W/ 5mm STROKE.
- POWER DOOR OPERATOR CONTROL: SEE DOOR HARDWARE MOUNT AT 1000mm A.F.F.

- GRAB BAR: BOBRICK B-5804.99 x 30 OR APPROVED EQUAL 760 PEENED FINISH, CONCEALED MOUNTING
- TOILET TISSUE DISPENSER: BOBRICK B-2892 OR APPROVED EQUAL STAINLESS STEEL TWIN JUMBO-ROLL
- TOILET TISSUE DISPENSER: BOBRICK B-2890 OR APPROVED EQUAL CHROME, SINGLE JUMBO ROLL, SURFACE MOUNT
- TEMPERED MIRROR: BOBRICK B-145 4834 OR APPROVED EQUAL 1220W x 915H, STAINLESS STEEL CHANNEL FRAME
- SOAP DISPENSER: BOBRICK B-2021 OR APPROVED EQUAL MANUAL PUMP, LAV MOUNTED, POLISHED FINISH
- SOAP DISPENSER: BOBRICK B-2111 OR APPROVED EQUAL STAINLESS STEEL, 1.2L VERT. WALL MOUNT
- PAPER-TOWEL DISPENSER (HANDS-FREE): BOBRICK B-2974 OR APPROVED EQUAL ROLL PAPER, AUTOMATIC, SURFACE MOUNTED
- COMBINATION TOWEL/WASTE UNIT: BOBRICK B-3619 OR APPROVED EQUAL ROLL PAPER, SURFACE MOUNTED W/WASTE RECEPTACLE
- CLOTHES HOOK: RICHELIEU 60434145 OR APPROVED EQUAL COLOUR 145
- PAPER-TOWEL DISPENSER: BOBRICK B-35903 OR APPROVED EQUAL FOLDED PAPER, RECESSED MOUNTED
- SHELF: BOBRICK B-295 x 14 STAINLESS STEEL, 405L x 125W

1 MEN & WOMENS WASHROOM PLAN
A702 1:20



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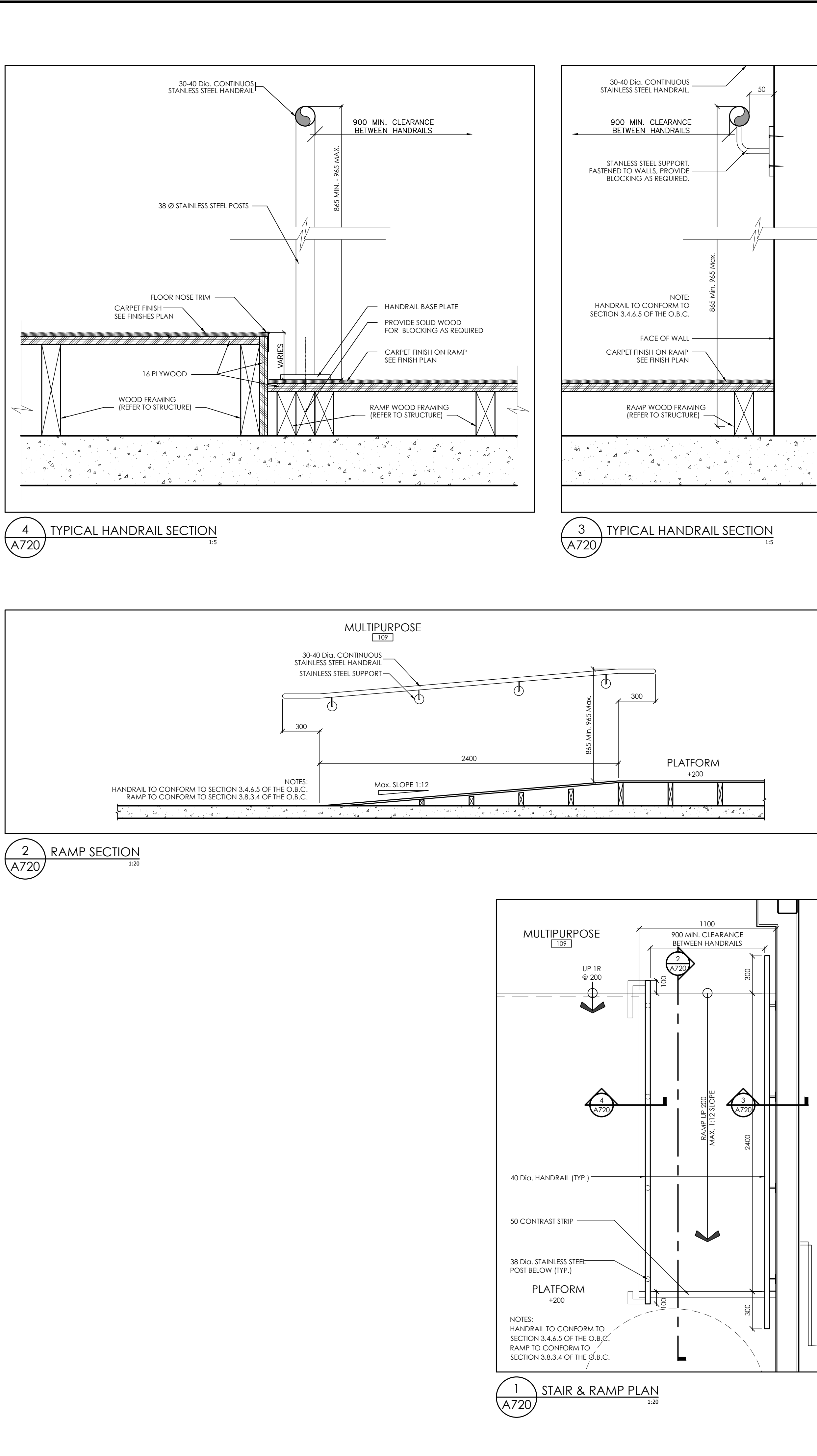
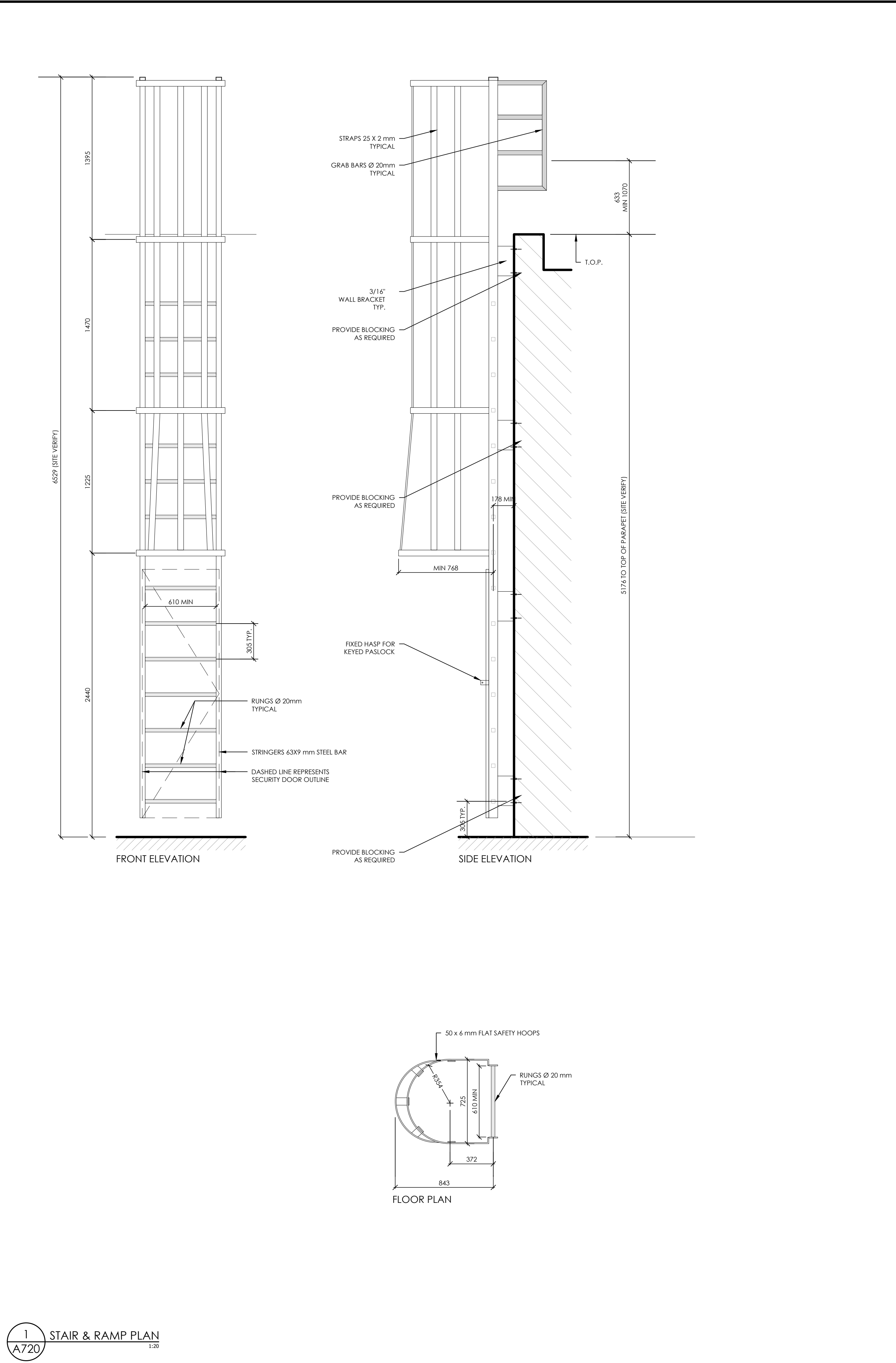
www.vandenberg.ca Telephone 613.357.8144 Fax/Info 613.371.8609 email@vandenberg.ca
• 705 OLD STONE LODGE • 100 RAINBOWCREEK WAY • CRYSTAL BROOK • ONTARIO • L6E 0P4 •

PROJECT TITLE
THE SALVATION ARMY BARRHAVEN CHURCH
102 BILL LEATHAM DRIVE, NEPEAN ON, K2J 0R3

DRAWING TITLE
WASHROOM PLAN & DETAILS

DESIGNED BY: RALPH VANDENBERG
DRAWN BY: JN, DV
START DATE: 2015
SCALE: AS SHOWN
PROJECT NO: 1502

20200003-001
A702



NO.	REVISION	DATE
1	ISSUED FOR COORDINATION	OCT. 1, 2021
2	ISSUED FOR BUILDING PERMIT	OCT. 15, 2021
3	ISSUED FOR TENDER	NOV. 5, 2021



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PROJECT TITLE

THE SALVATION ARMY BARRHAVEN CHURCH
102 BILL LEATHAM DRIVE, NEPEAN ON, K2J 0R3

DRAWING TITLE

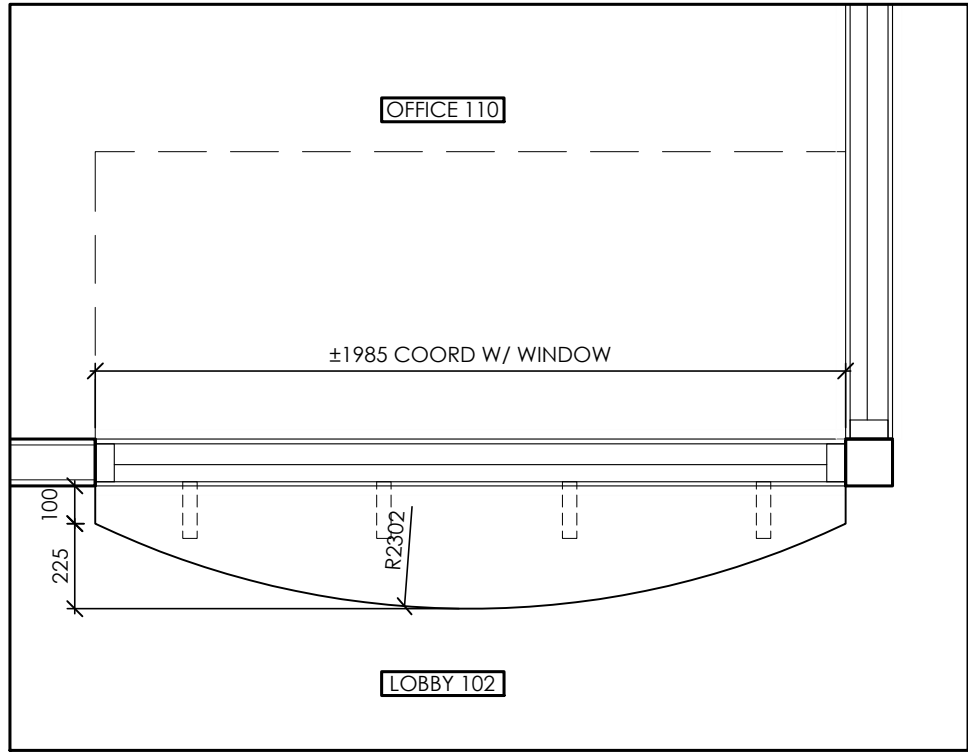
STAIR, RAMP & LADDER DETAILS

DESIGNED BY: RALPH VANDENBERG
DRAWN BY: JN, DV
START DATE: 2015
SCALE: AS SHOWN
PROJECT NO: 1502

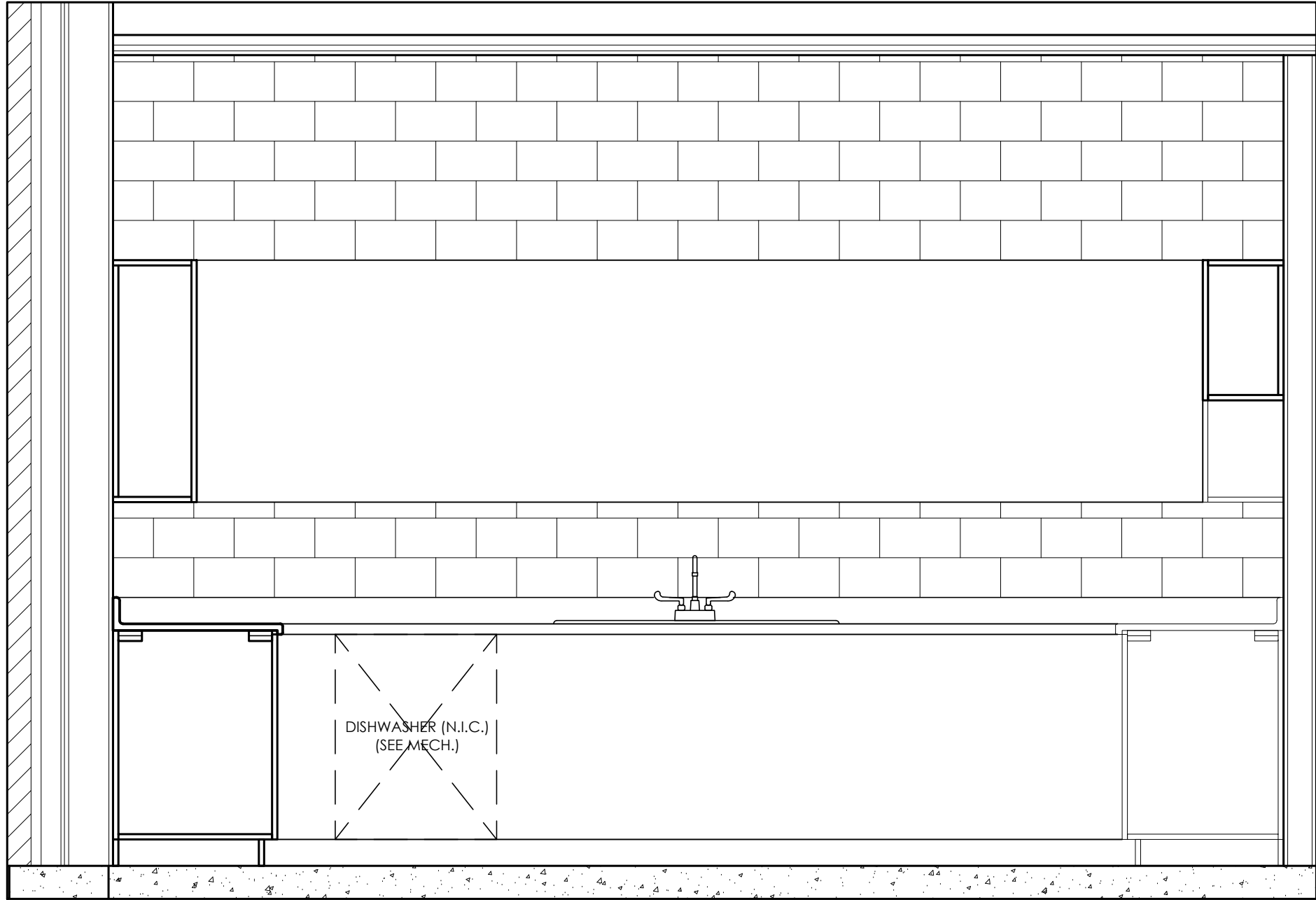
20200003-001
A720

NO.	REVISION	DATE
1	ISSUED FOR COORDINATION	OCT. 1, 2021
2	ISSUED FOR BUILDING PERMIT	OCT. 15, 2021
3	ISSUED FOR TENDER	NOV. 5, 2021

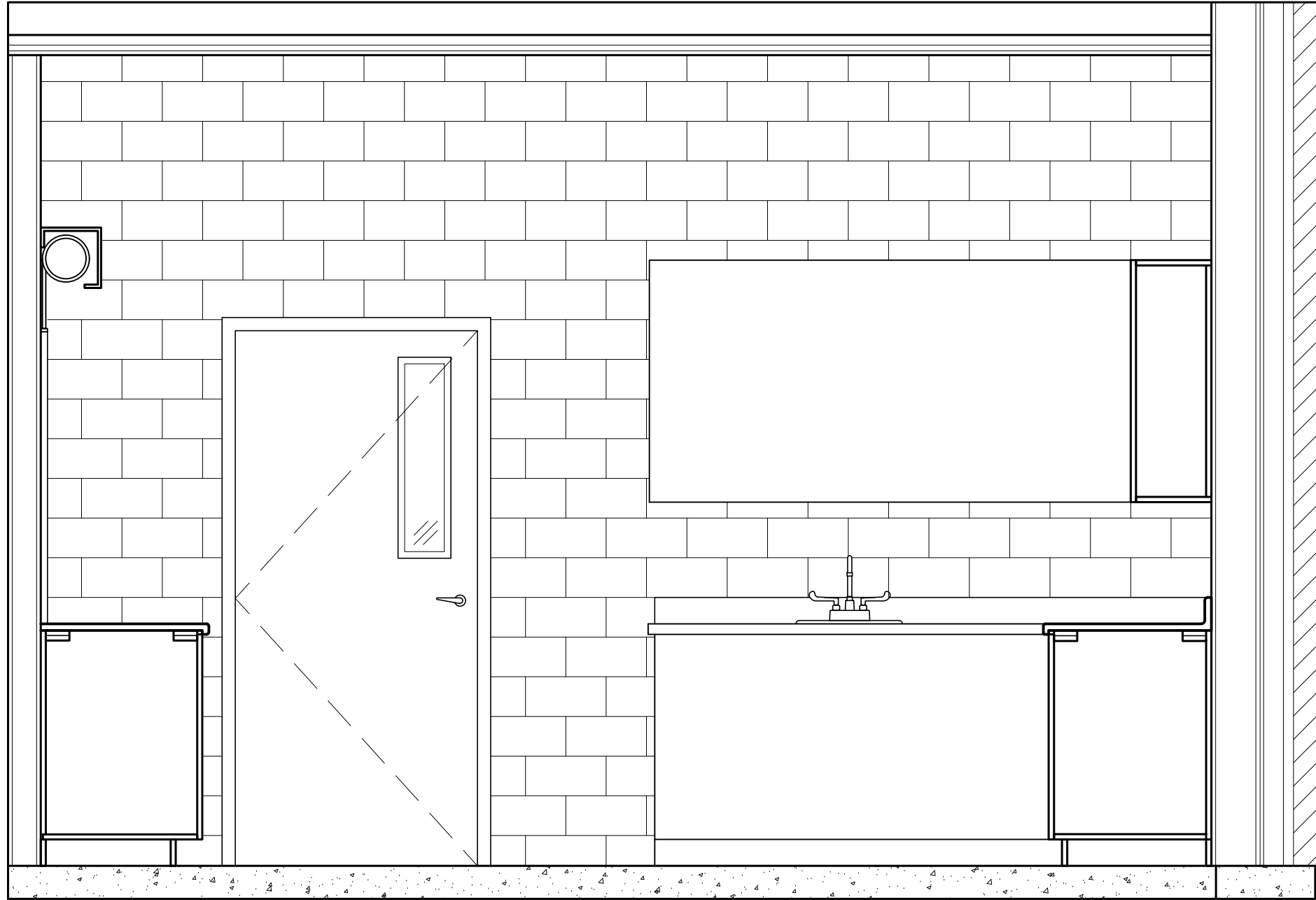
KITCHEN EQUIPMENT AND COUNTERS TO BE COMMERCIAL GRADE AS PER KITCHEN CONSULTANT DRAWINGS



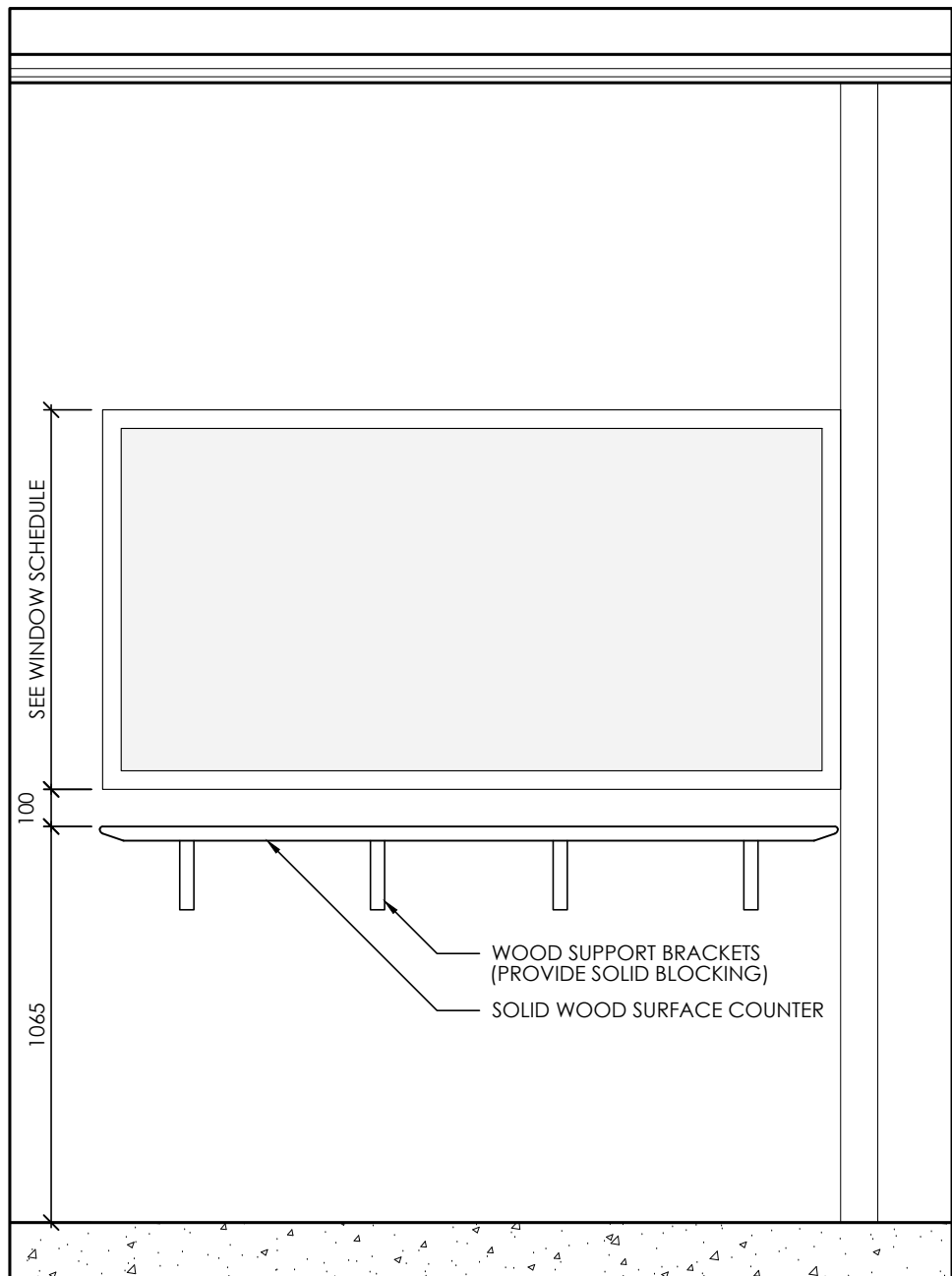
8 MILLWORK SHELF @ OFFICE 110 PLAN VIEW
A801 1:20



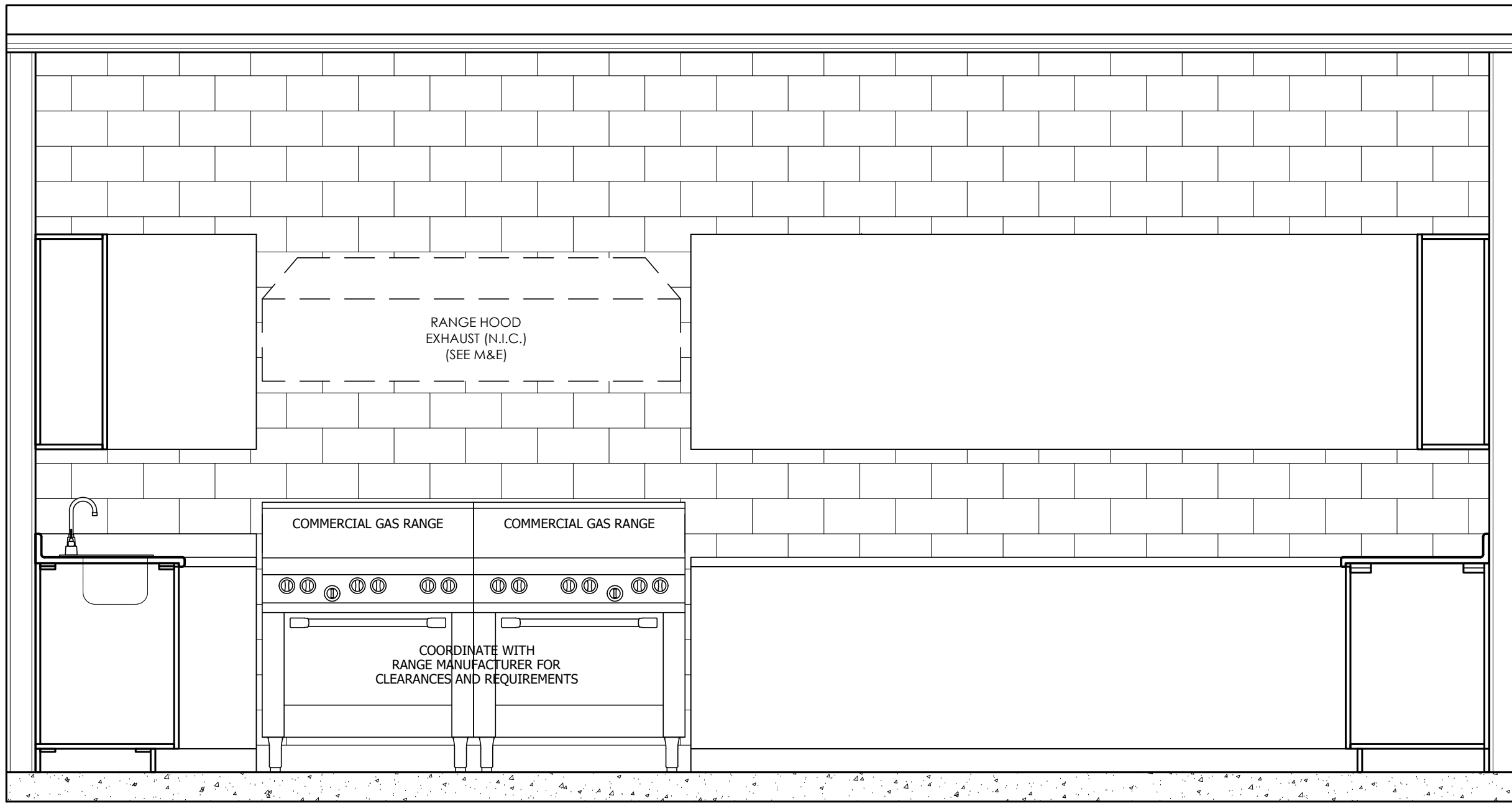
3 KITCHEN - SOUTH ELEVATION
A801 1:20



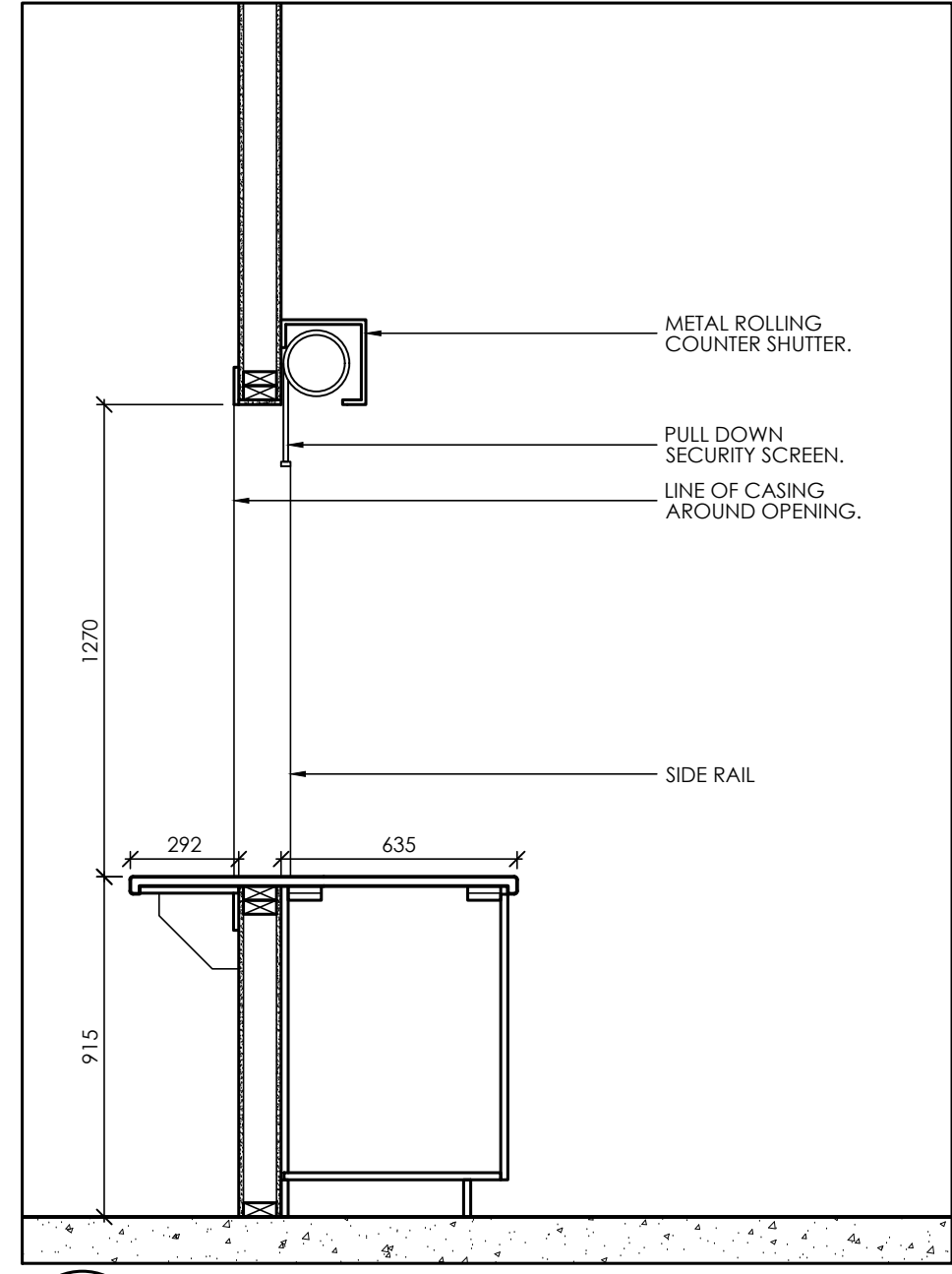
2 KITCHEN - NORTH ELEVATION
A801 1:20



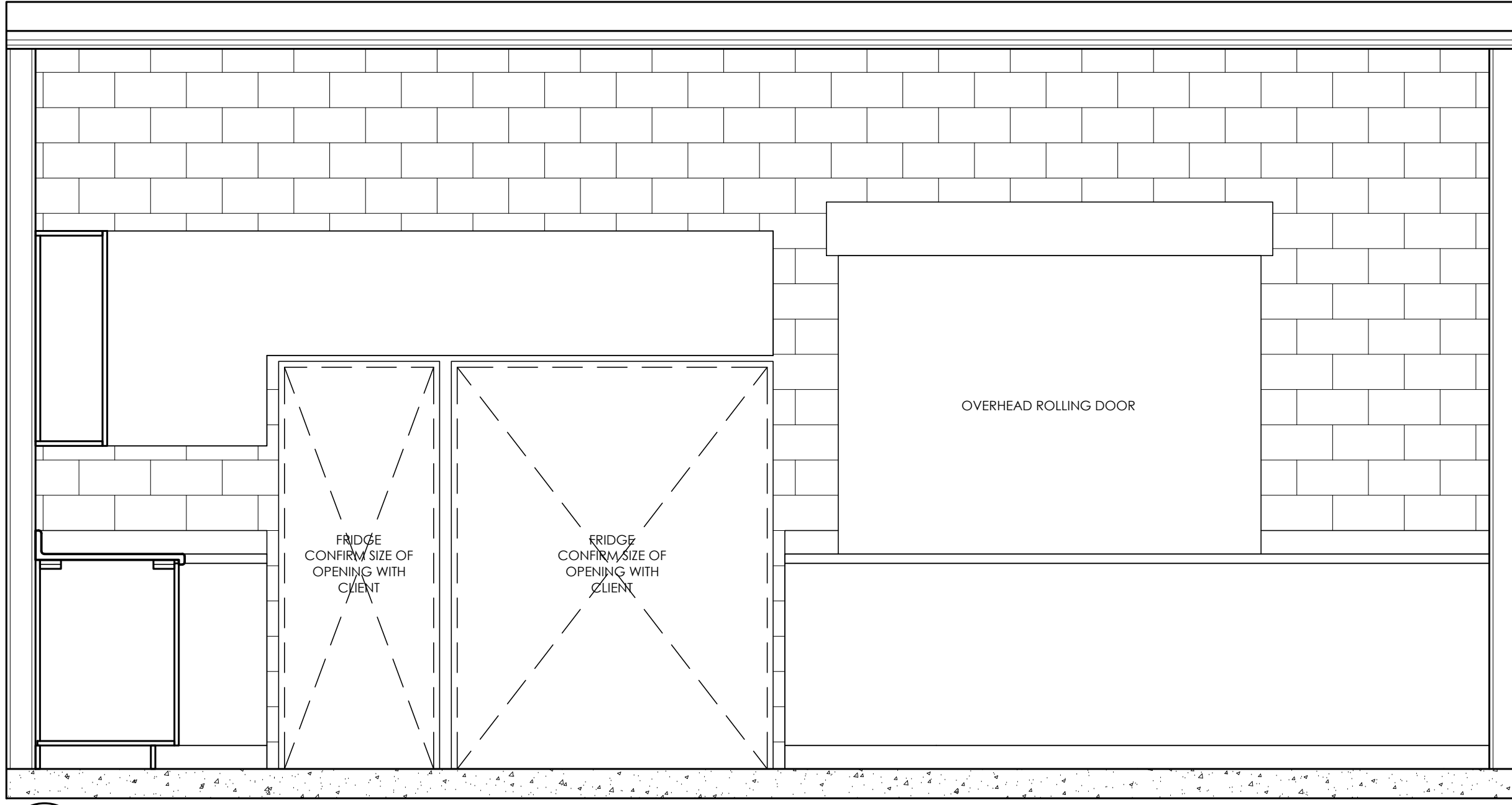
7 MILLWORK COUNTER @ OFFICE 110 ELEV.
A801 1:20



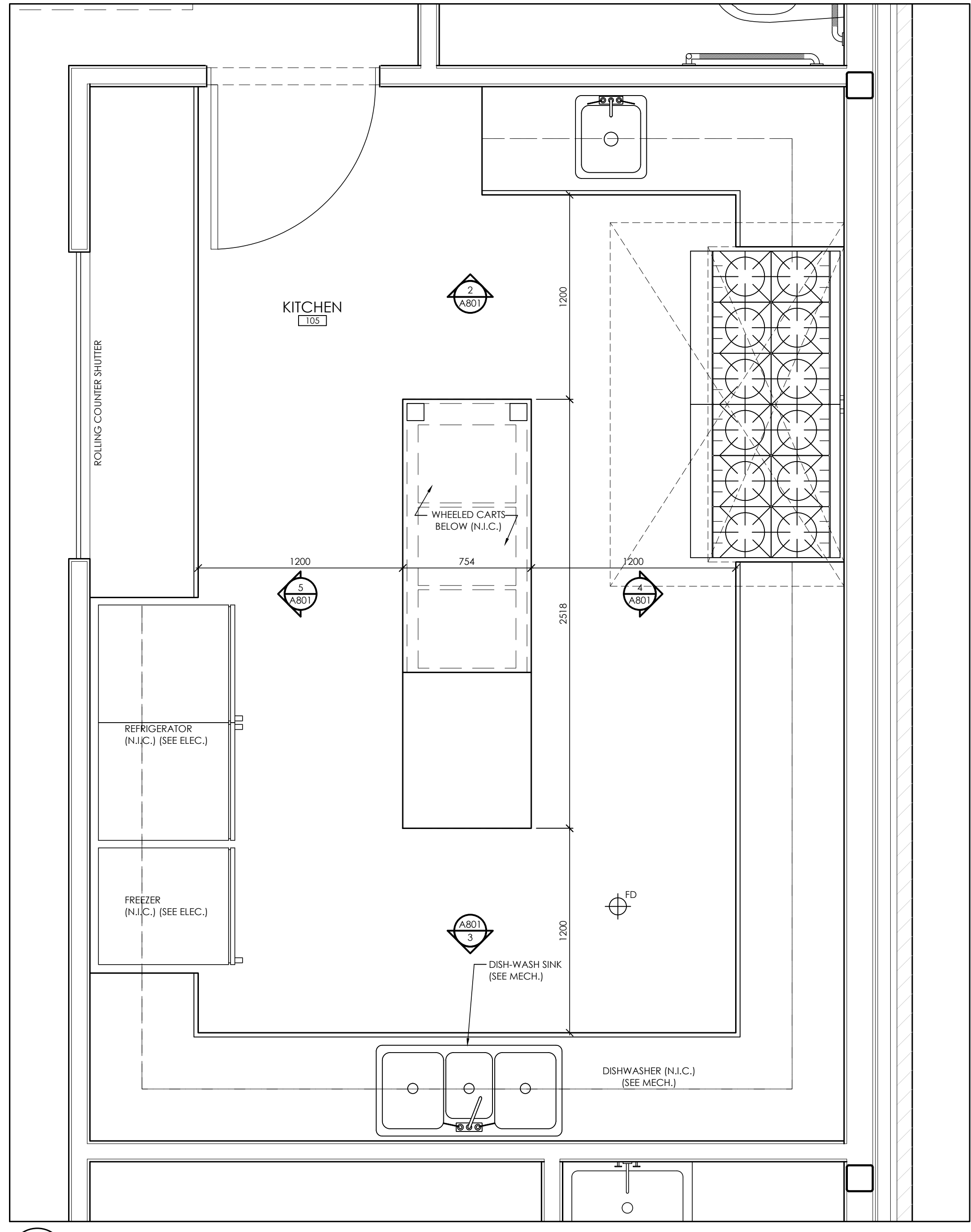
4 KITCHEN - EAST ELEVATION
A801 1:20



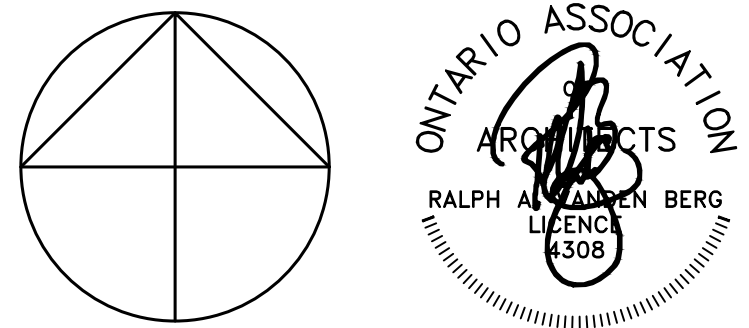
6 ROLLING COUNTER SHUTTER SECTION
A801 1:20



5 KITCHEN - WEST ELEVATION
A801 1:20



1 KITCHEN PLAN
A801 1:20





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PROJECT TITLE

THE SALVATION ARMY BARRHAVEN CHURCH
102 BILL LEATHAM DRIVE, NEPEAN ON, K2J 0R3

DRAWING TITLE

KITCHEN PLAN & DETAILS

DESIGNED BY: RALPH VANDENBERG
DRAWN BY: JN, DV
START DATE: 2015
SCALE: AS SHOWN
PROJECT NO: 1502

20200803-001
A801

APPENDIX B

STAMSON 5.04 - INPUT AND OUTPUT DATA

STAMSON 5.0 NORMAL REPORT Date: 01-04-2016 10:20:10
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r1.te Time Period: Day/Night 16/8 hours
 Description:

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

```
-----
Car traffic volume   : 9715/845   veh/TimePeriod  *
Medium truck volume : 773/67    veh/TimePeriod  *
Heavy truck volume  : 552/48    veh/TimePeriod  *
Posted speed limit  : 60 km/h
Road gradient       : 0 %
Road pavement      : 1 (Typical asphalt or concrete)
```

* Refers to calculated road volumes based on the following input:

```
24 hr Traffic Volume (AADT or SADT): 12000
Percentage of Annual Growth         : 0.00
Number of Years of Growth           : 0.00
Medium Truck % of Total Volume      : 7.00
Heavy Truck % of Total Volume        : 5.00
Day (16 hrs) % of Total Volume      : 92.00
```

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

```
-----
Angle1  Angle2      : -90.00 deg  49.00 deg
Wood depth          : 0          (No woods.)
No of house rows    : 0 / 0
Surface             : 2          (Reflective ground surface)
Receiver source distance : 43.00 / 43.00 m
Receiver height     : 7.00 / 7.00 m
Topography          : 1          (Flat/gentle slope; no barrier)
Reference angle     : 0.00
```




Results segment # 1: Bill (day)

Source height = 1.50 m

ROAD (0.00 + 63.33 + 0.00) = 63.33 dBA

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

-90	49	0.00	69.03	0.00	-4.57	-1.12	0.00	0.00	0.00
63.33									

Segment Leq : 63.33 dBA

Total Leq All Segments: 63.33 dBA

Results segment # 1: Bill (night)

Source height = 1.50 m

ROAD (0.00 + 55.73 + 0.00) = 55.73 dBA

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

-90	49	0.00	61.43	0.00	-4.57	-1.12	0.00	0.00	0.00
55.73									

Segment Leq : 55.73 dBA

Total Leq All Segments: 55.73 dBA

TOTAL Leq FROM ALL SOURCES (DAY) : 63.33
(NIGHT) : 55.73

STAMSON 5.0 NORMAL REPORT Date: 28-06-2017 10:08:48
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r2.te Time Period: Day/Night 16/8 hours
 Description:

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

```
-----
Car traffic volume   : 9715/845   veh/TimePeriod  *
Medium truck volume : 773/67    veh/TimePeriod  *
Heavy truck volume  : 552/48    veh/TimePeriod  *
Posted speed limit  : 60 km/h
Road gradient       : 0 %
Road pavement       : 1 (Typical asphalt or concrete)
```

* Refers to calculated road volumes based on the following input:

```
24 hr Traffic Volume (AADT or SADT): 12000
Percentage of Annual Growth         : 0.00
Number of Years of Growth           : 0.00
Medium Truck % of Total Volume      : 7.00
Heavy Truck % of Total Volume       : 5.00
Day (16 hrs) % of Total Volume      : 92.00
```

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

```
-----
Angle1  Angle2      : -41.00 deg  30.00 deg
Wood depth          : 0          (No woods.)
No of house rows    : 0 / 0
Surface             : 1          (Absorptive ground surface)
Receiver source distance : 52.00 / 52.00 m
Receiver height      : 3.20 / 3.20 m
Topography           : 2          (Flat/gentle slope; with barrier)
Barrier angle1       : -41.00 deg  Angle2 : -12.00 deg
Barrier height       : 6.00 m
Barrier receiver distance : 5.00 / 5.00 m
Source elevation      : 0.00 m
Receiver elevation    : 0.00 m
Barrier elevation     : 0.00 m
Reference angle       : 0.00
```

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

Car traffic volume	:	9715/845	veh/TimePeriod	*
Medium truck volume	:	773/67	veh/TimePeriod	*
Heavy truck volume	:	552/48	veh/TimePeriod	*
Posted speed limit	:	60 km/h		
Road gradient	:	0 %		
Road pavement	:	1	(Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT):	12000
Percentage of Annual Growth	: 0.00
Number of Years of Growth	: 0.00
Medium Truck % of Total Volume	: 7.00
Heavy Truck % of Total Volume	: 5.00
Day (16 hrs) % of Total Volume	: 92.00

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

Angle1	Angle2	:	-15.00 deg	24.00 deg
Wood depth	:	0	(No woods.)	
No of house rows	:	0 / 0		
Surface	:	2	(Reflective ground surface)	
Receiver source distance	:	58.00 / 58.00	m	
Receiver height	:	3.20 / 3.20	m	
Topography	:	1	(Flat/gentle slope; no barrier)	
Reference angle	:	0.00		

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

Car traffic volume	:	9715/845	veh/TimePeriod	*
Medium truck volume	:	773/67	veh/TimePeriod	*
Heavy truck volume	:	552/48	veh/TimePeriod	*
Posted speed limit	:	60 km/h		
Road gradient	:	0 %		
Road pavement	:	1	(Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT):	12000
Percentage of Annual Growth	: 0.00
Number of Years of Growth	: 0.00
Medium Truck % of Total Volume	: 7.00
Heavy Truck % of Total Volume	: 5.00
Day (16 hrs) % of Total Volume	: 92.00

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

Angle1	Angle2	:	-81.00 deg	0.00 deg
Wood depth	:	0	(No woods.)	
No of house rows	:	0 / 0		
Surface	:	2	(Reflective ground surface)	
Receiver source distance	:	23.00 / 23.00	m	
Receiver height	:	3.20 / 3.20	m	
Topography	:	1	(Flat/gentle slope; no barrier)	
Reference angle	:	0.00		

Results segment # 1: BilllL (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	3.20	3.04	3.04

ROAD (0.00 + 37.51 + 53.93) = 54.02 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-41	-12	0.25	69.03	0.00	-6.74	-8.06	0.00	0.00	-16.71
37.51									
-12	30	0.61	69.03	0.00	-8.69	-6.41	0.00	0.00	0.00
53.93									

Segment Leq : 54.02 dBA



Results segment # 2: BillR (day)

Source height = 1.50 m

ROAD (0.00 + 56.51 + 0.00) = 56.51 dBA

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

SubLeq

--									
-15	24	0.00	69.03	0.00	-5.87	-6.64	0.00	0.00	0.00
56.51									

--

Segment Leq : 56.51 dBA

Results segment # 3: Leikin (day)

Source height = 1.50 m

ROAD (0.00 + 63.70 + 0.00) = 63.70 dBA

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

SubLeq

--									
-81	0	0.00	69.03	0.00	-1.86	-3.47	0.00	0.00	0.00
63.70									

--

Segment Leq : 63.70 dBA

Total Leq All Segments: 64.83 dBA

Results segment # 1: BillL (night)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	3.20	3.04	3.04

ROAD (0.00 + 29.91 + 46.33) = 46.42 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-41	-12	0.25	61.43	0.00	-6.74	-8.06	0.00	0.00	-16.71

SubLeq
29.91

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-12	30	0.61	61.43	0.00	-8.69	-6.41	0.00	0.00	0.00

SubLeq
46.33

Segment Leq : 46.42 dBA

Results segment # 2: BillR (night)

Source height = 1.50 m

ROAD (0.00 + 48.91 + 0.00) = 48.91 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-15	24	0.00	61.43	0.00	-5.87	-6.64	0.00	0.00	0.00

SubLeq
48.91

SubLeq
48.91

Segment Leq : 48.91 dBA



Results segment # 3: Leikin (night)

Source height = 1.50 m

ROAD (0.00 + 56.10 + 0.00) = 56.10 dBA

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

SubLeq

--									
-81	0	0.00	61.43	0.00	-1.86	-3.47	0.00	0.00	0.00
56.10									

--

Segment Leq : 56.10 dBA

Total Leq All Segments: 57.23 dBA

TOTAL Leq FROM ALL SOURCES (DAY) : 64.83
(NIGHT) : 57.23

STAMSON 5.0 NORMAL REPORT Date: 01-04-2016 10:20:23
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r3.te Time Period: Day/Night 16/8 hours
 Description:

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

```
-----
Car traffic volume   : 9715/845   veh/TimePeriod  *
Medium truck volume : 773/67    veh/TimePeriod  *
Heavy truck volume  : 552/48    veh/TimePeriod  *
Posted speed limit  : 60 km/h
Road gradient       : 0 %
Road pavement       : 1 (Typical asphalt or concrete)
```

* Refers to calculated road volumes based on the following input:

```
24 hr Traffic Volume (AADT or SADT): 12000
Percentage of Annual Growth         : 0.00
Number of Years of Growth           : 0.00
Medium Truck % of Total Volume      : 7.00
Heavy Truck % of Total Volume       : 5.00
Day (16 hrs) % of Total Volume      : 92.00
```

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

```
-----
Angle1  Angle2      : 0.00 deg  66.00 deg
Wood depth          : 0        (No woods.)
No of house rows    : 0 / 0
Surface             : 2        (Reflective ground surface)
Receiver source distance : 72.00 / 72.00 m
Receiver height     : 7.00 / 7.00 m
Topography          : 1        (Flat/gentle slope; no barrier)
Reference angle     : 0.00
```


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

```

-----
Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)
  
```

* Refers to calculated road volumes based on the following input:

```

24 hr Traffic Volume (AADT or SADT): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00
  
```

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

```

-----
Angle1 Angle2 : -83.00 deg 69.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 21.00 / 21.00 m
Receiver height : 7.00 / 7.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00
  
```

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

```

-----
Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)
  
```

* Refers to calculated road volumes based on the following input:

```

24 hr Traffic Volume (AADT or SADT): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00
  
```

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

```

-----
Angle1   Angle2       : -90.00 deg   -79.00 deg
Wood depth      :          0       (No woods.)
No of house rows :          0 / 0
Surface         :          2       (Reflective ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height  :  7.00 / 7.00 m
Topography      :          1       (Flat/gentle slope; no barrier)
Reference angle  :          0.00
  
```

Results segment # 1: Bill (day)

Source height = 1.50 m

ROAD (0.00 + 57.86 + 0.00) = 57.86 dBA

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

```

-----
--
--      0      66      0.00      69.03      0.00      -6.81      -4.36      0.00      0.00      0.00
57.86
-----
--
  
```

Segment Leq : 57.86 dBA

Results segment # 2: LeikinL (day)

Source height = 1.50 m

ROAD (0.00 + 66.83 + 0.00) = 66.83 dBA

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

```

-----
--
--     -83      69      0.00      69.03      0.00      -1.46      -0.73      0.00      0.00      0.00
66.83
-----
--
  
```

Segment Leq : 66.83 dBA



Results segment # 3: LeikinR (day)

Source height = 1.50 m

ROAD (0.00 + 56.89 + 0.00) = 56.89 dBA

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

-90	-79	0.00	69.03	0.00	0.00	-12.14	0.00	0.00	0.00
56.89									

Segment Leq : 56.89 dBA

Total Leq All Segments: 67.72 dBA

Results segment # 1: Bill (night)

Source height = 1.50 m

ROAD (0.00 + 50.26 + 0.00) = 50.26 dBA

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

0	66	0.00	61.43	0.00	-6.81	-4.36	0.00	0.00	0.00
50.26									

Segment Leq : 50.26 dBA

Results segment # 2: LeikinL (night)

Source height = 1.50 m

ROAD (0.00 + 59.23 + 0.00) = 59.23 dBA

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

-83	69	0.00	61.43	0.00	-1.46	-0.73	0.00	0.00	0.00
59.23									



Segment Leq : 59.23 dBA

Results segment # 3: LeikinR (night)

Source height = 1.50 m

ROAD (0.00 + 49.29 + 0.00) = 49.29 dBA

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

SubLeq

--

-90	-79	0.00	61.43	0.00	0.00	-12.14	0.00	0.00	0.00
-----	-----	------	-------	------	------	--------	------	------	------

49.29

--

Segment Leq : 49.29 dBA

Total Leq All Segments: 60.12 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 67.72

(NIGHT): 60.12

STAMSON 5.0 NORMAL REPORT Date: 01-04-2016 10:20:33
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r4.te Time Period: Day/Night 16/8 hours
 Description:

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

```
-----
Car traffic volume   : 9715/845   veh/TimePeriod  *
Medium truck volume : 773/67    veh/TimePeriod  *
Heavy truck volume  : 552/48    veh/TimePeriod  *
Posted speed limit  : 60 km/h
Road gradient       : 0 %
Road pavement       : 1 (Typical asphalt or concrete)
```

* Refers to calculated road volumes based on the following input:

```
24 hr Traffic Volume (AADT or SADT): 12000
Percentage of Annual Growth         : 0.00
Number of Years of Growth           : 0.00
Medium Truck % of Total Volume      : 7.00
Heavy Truck % of Total Volume       : 5.00
Day (16 hrs) % of Total Volume      : 92.00
```

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

```
-----
Angle1   Angle2       : -90.00 deg   -41.00 deg
Wood depth : 0         (No woods.)
No of house rows : 0 / 0
Surface     : 2         (Reflective ground surface)
Receiver source distance : 74.00 / 74.00 m
Receiver height : 1.50 / 1.50 m
Topography    : 2         (Flat/gentle slope; with barrier)
Barrier angle1 : -84.00 deg   Angle2 : -41.00 deg
Barrier height : 4.20 m
Barrier receiver distance : 1.00 / 1.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle  : 0.00
```

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

Car traffic volume	:	9715/845	veh/TimePeriod	*
Medium truck volume	:	773/67	veh/TimePeriod	*
Heavy truck volume	:	552/48	veh/TimePeriod	*
Posted speed limit	:	60 km/h		
Road gradient	:	0 %		
Road pavement	:	1	(Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT):	12000
Percentage of Annual Growth	: 0.00
Number of Years of Growth	: 0.00
Medium Truck % of Total Volume	: 7.00
Heavy Truck % of Total Volume	: 5.00
Day (16 hrs) % of Total Volume	: 92.00

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

Angle1	Angle2	:	0.00 deg	56.00 deg
Wood depth	:	0	(No woods.)	
No of house rows	:	0 / 0		
Surface	:	2	(Reflective ground surface)	
Receiver source distance	:	24.00 / 24.00	m	
Receiver height	:	1.50 / 1.50	m	
Topography	:	1	(Flat/gentle slope; no barrier)	
Reference angle	:	0.00		

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

Car traffic volume	:	9715/845	veh/TimePeriod	*
Medium truck volume	:	773/67	veh/TimePeriod	*
Heavy truck volume	:	552/48	veh/TimePeriod	*
Posted speed limit	:	60 km/h		
Road gradient	:	0 %		
Road pavement	:	1	(Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT):	12000
Percentage of Annual Growth	: 0.00
Number of Years of Growth	: 0.00
Medium Truck % of Total Volume	: 7.00
Heavy Truck % of Total Volume	: 5.00
Day (16 hrs) % of Total Volume	: 92.00

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

Angle1	Angle2	:	88.00 deg	90.00 deg
Wood depth	:	0	(No woods.)	
No of house rows	:	0 / 0		
Surface	:	2	(Reflective ground surface)	
Receiver source distance	:	15.00 / 15.00	m	
Receiver height	:	1.50 / 1.50	m	
Topography	:	1	(Flat/gentle slope; no barrier)	
Reference angle	:	0.00		

Results segment # 1: Bill (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	1.50	1.50	1.50

ROAD (47.32 + 39.92 + 0.00) = 48.05 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-90	-84	0.00	69.03	0.00	-6.93	-14.77	0.00	0.00	0.00

SubLeq

47.32

39.92

Segment Leq : 48.05 dBA

Results segment # 2: LeikinL (day)

Source height = 1.50 m

ROAD (0.00 + 61.92 + 0.00) = 61.92 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
0	56	0.00	69.03	0.00	-2.04	-5.07	0.00	0.00	0.00

SubLeq

61.92

Segment Leq : 61.92 dBA

Results segment # 3: LeikinR (day)

Source height = 1.50 m

ROAD (0.00 + 49.48 + 0.00) = 49.48 dBA

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

88	90	0.00	69.03	0.00	0.00	-19.54	0.00	0.00	0.00
49.48									

Segment Leq : 49.48 dBA

Total Leq All Segments: 62.33 dBA

Results segment # 1: Bill (night)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	1.50	1.50	1.50

ROAD (39.73 + 32.32 + 0.00) = 40.45 dBA

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

-90	-84	0.00	61.43	0.00	-6.93	-14.77	0.00	0.00	0.00
39.73									

-84	-41	0.00	61.43	0.00	-6.93	-6.22	0.00	0.00	-15.96
32.32									

Segment Leq : 40.45 dBA



Results segment # 2: LeikinL (night)

Source height = 1.50 m

ROAD (0.00 + 54.32 + 0.00) = 54.32 dBA

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

SubLeq

0	56	0.00	61.43	0.00	-2.04	-5.07	0.00	0.00	0.00
54.32									

Segment Leq : 54.32 dBA

Results segment # 3: LeikinR (night)

Source height = 1.50 m

ROAD (0.00 + 41.89 + 0.00) = 41.89 dBA

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

SubLeq

88	90	0.00	61.43	0.00	0.00	-19.54	0.00	0.00	0.00
41.89									

Segment Leq : 41.89 dBA

Total Leq All Segments: 54.73 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 62.33
(NIGHT): 54.73

STAMSON 5.0 NORMAL REPORT Date: 01-04-2016 10:20:41
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r5.te Time Period: Day/Night 16/8 hours
 Description:

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

```
-----
Car traffic volume   : 9715/845   veh/TimePeriod  *
Medium truck volume : 773/67    veh/TimePeriod  *
Heavy truck volume  : 552/48    veh/TimePeriod  *
Posted speed limit  : 60 km/h
Road gradient       : 0 %
Road pavement      : 1 (Typical asphalt or concrete)
```

* Refers to calculated road volumes based on the following input:

```
24 hr Traffic Volume (AADT or SADT): 12000
Percentage of Annual Growth         : 0.00
Number of Years of Growth           : 0.00
Medium Truck % of Total Volume      : 7.00
Heavy Truck % of Total Volume       : 5.00
Day (16 hrs) % of Total Volume      : 92.00
```

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

```
-----
Angle1  Angle2      : -90.00 deg  -41.00 deg
Wood depth          : 0          (No woods.)
No of house rows    : 0 / 0
Surface             : 2          (Reflective ground surface)
Receiver source distance : 60.00 / 60.00 m
Receiver height     : 1.50 / 1.50 m
Topography          : 1          (Flat/gentle slope; no barrier)
Reference angle     : 0.00
```

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

Car traffic volume	:	9715/845	veh/TimePeriod	*
Medium truck volume	:	773/67	veh/TimePeriod	*
Heavy truck volume	:	552/48	veh/TimePeriod	*
Posted speed limit	:	60 km/h		
Road gradient	:	0 %		
Road pavement	:	1	(Typical asphalt or concrete)	

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT):	12000
Percentage of Annual Growth	: 0.00
Number of Years of Growth	: 0.00
Medium Truck % of Total Volume	: 7.00
Heavy Truck % of Total Volume	: 5.00
Day (16 hrs) % of Total Volume	: 92.00

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

Angle1	Angle2	:	0.00 deg	31.00 deg
Wood depth	:	0	(No woods.)	
No of house rows	:	0 / 0		
Surface	:	2	(Reflective ground surface)	
Receiver source distance	:	49.00 / 49.00	m	
Receiver height	:	1.50 / 1.50	m	
Topography	:	2	(Flat/gentle slope; with barrier)	
Barrier angle1	:	0.00 deg	Angle2 :	6.00 deg
Barrier height	:	4.20 m		
Barrier receiver distance	:	8.00 / 8.00	m	
Source elevation	:	0.00 m		
Receiver elevation	:	0.00 m		
Barrier elevation	:	0.00 m		
Reference angle	:	0.00		

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

```

-----
Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

```

* Refers to calculated road volumes based on the following input:

```

24 hr Traffic Volume (AADT or SADT): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

```

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

```

-----
Angle1 Angle2 : 63.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 26.00 / 26.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

```

Results segment # 1: Bill (day)

Source height = 1.50 m

ROAD (0.00 + 57.36 + 0.00) = 57.36 dBA

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

```

-----
--
-90 -41 0.00 69.03 0.00 -6.02 -5.65 0.00 0.00 0.00
57.36
-----
--

```

Segment Leq : 57.36 dBA

Results segment # 2: LeikinL (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	1.50	1.50	1.50

ROAD (0.00 + 34.20 + 55.31) = 55.35 dBA

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

0	6	0.00	69.03	0.00	-5.14	-14.77	0.00	0.00	-14.92
34.20									

6	31	0.00	69.03	0.00	-5.14	-8.57	0.00	0.00	0.00
55.31									

Segment Leq : 55.35 dBA

Results segment # 3: LeikinR (day)

Source height = 1.50 m

ROAD (0.00 + 58.40 + 0.00) = 58.40 dBA

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

63	90	0.00	69.03	0.00	-2.39	-8.24	0.00	0.00	0.00
58.40									

Segment Leq : 58.40 dBA

Total Leq All Segments: 61.98 dBA

Results segment # 1: Bill (night)

Source height = 1.50 m

ROAD (0.00 + 49.76 + 0.00) = 49.76 dBA

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

-90	-41	0.00	61.43	0.00	-6.02	-5.65	0.00	0.00	0.00
49.76									

Segment Leq : 49.76 dBA

Results segment # 2: LeikinL (night)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	1.50	1.50	1.50

ROAD (0.00 + 26.60 + 47.71) = 47.75 dBA

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

0	6	0.00	61.43	0.00	-5.14	-14.77	0.00	0.00	-14.92
26.60									

6	31	0.00	61.43	0.00	-5.14	-8.57	0.00	0.00	0.00
47.71									

Segment Leq : 47.75 dBA



Results segment # 3: LeikinR (night)

Source height = 1.50 m

ROAD (0.00 + 50.80 + 0.00) = 50.80 dBA

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

SubLeq

--									
	63	90	0.00	61.43	0.00	-2.39	-8.24	0.00	0.00
	50.80								

--

Segment Leq : 50.80 dBA

Total Leq All Segments: 54.38 dBA

TOTAL Leq FROM ALL SOURCES (DAY) : 61.98
(NIGHT) : 54.38

STAMSON 5.0 NORMAL REPORT Date: 01-04-2016 10:20:46
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r6.te Time Period: Day/Night 16/8 hours
 Description:

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

```
-----
Car traffic volume   : 9715/845   veh/TimePeriod  *
Medium truck volume : 773/67    veh/TimePeriod  *
Heavy truck volume  : 552/48    veh/TimePeriod  *
Posted speed limit  : 60 km/h
Road gradient       : 0 %
Road pavement       : 1 (Typical asphalt or concrete)
```

* Refers to calculated road volumes based on the following input:

```
24 hr Traffic Volume (AADT or SADT): 12000
Percentage of Annual Growth         : 0.00
Number of Years of Growth           : 0.00
Medium Truck % of Total Volume      : 7.00
Heavy Truck % of Total Volume       : 5.00
Day (16 hrs) % of Total Volume      : 92.00
```

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

```
-----
Angle1  Angle2      : -90.00 deg  4.00 deg
Wood depth          : 0          (No woods.)
No of house rows    : 0 / 0
Surface             : 2          (Reflective ground surface)
Receiver source distance : 60.00 / 60.00 m
Receiver height      : 1.50 / 1.50 m
Topography           : 1          (Flat/gentle slope; no barrier)
Reference angle      : 0.00
```



Results segment # 1: Bill (day)

Source height = 1.50 m

ROAD (0.00 + 60.19 + 0.00) = 60.19 dBA

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

SubLeq

-90	4	0.00	69.03	0.00	-6.02	-2.82	0.00	0.00	0.00
-----	---	------	-------	------	-------	-------	------	------	------

60.19

--

Segment Leq : 60.19 dBA

Total Leq All Segments: 60.19 dBA

Results segment # 1: Bill (night)

Source height = 1.50 m

ROAD (0.00 + 52.59 + 0.00) = 52.59 dBA

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

SubLeq

-90	4	0.00	61.43	0.00	-6.02	-2.82	0.00	0.00	0.00
-----	---	------	-------	------	-------	-------	------	------	------

52.59

--

Segment Leq : 52.59 dBA

Total Leq All Segments: 52.59 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 60.19
(NIGHT): 52.59

STAMSON 5.0 NORMAL REPORT Date: 01-04-2016 10:20:52
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r7.te Time Period: Day/Night 16/8 hours
 Description:

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

```
-----
Car traffic volume   : 9715/845   veh/TimePeriod  *
Medium truck volume : 773/67    veh/TimePeriod  *
Heavy truck volume  : 552/48    veh/TimePeriod  *
Posted speed limit  : 60 km/h
Road gradient       : 0 %
Road pavement      : 1 (Typical asphalt or concrete)
```

* Refers to calculated road volumes based on the following input:

```
24 hr Traffic Volume (AADT or SADT): 12000
Percentage of Annual Growth       : 0.00
Number of Years of Growth         : 0.00
Medium Truck % of Total Volume    : 7.00
Heavy Truck % of Total Volume     : 5.00
Day (16 hrs) % of Total Volume    : 92.00
```

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

```
-----
Angle1  Angle2      : -44.00 deg  37.00 deg
Wood depth          : 0          (No woods.)
No of house rows    : 0 / 0
Surface             : 2          (Reflective ground surface)
Receiver source distance : 24.00 / 24.00 m
Receiver height     : 7.00 / 7.00 m
Topography          : 1          (Flat/gentle slope; no barrier)
Reference angle     : 0.00
```

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

```

-----
Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

```

* Refers to calculated road volumes based on the following input:

```

24 hr Traffic Volume (AADT or SADT): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

```

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

```

-----
Angle1 Angle2 : 68.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height : 7.00 / 7.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

```

Results segment # 1: LeikinL (day)

Source height = 1.50 m

ROAD (0.00 + 63.52 + 0.00) = 63.52 dBA

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

```

-----
--
-44 37 0.00 69.03 0.00 -2.04 -3.47 0.00 0.00 0.00
63.52
-----
--

```

Segment Leq : 63.52 dBA



Results segment # 2: LeikinR (day)

Source height = 1.50 m

ROAD (0.00 + 59.90 + 0.00) = 59.90 dBA

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

SubLeq

--									
	68	90	0.00	69.03	0.00	0.00	-9.13	0.00	0.00
59.90									

--

Segment Leq : 59.90 dBA

Total Leq All Segments: 65.09 dBA

Results segment # 1: LeikinL (night)

Source height = 1.50 m

ROAD (0.00 + 55.92 + 0.00) = 55.92 dBA

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

SubLeq

--									
	-44	37	0.00	61.43	0.00	-2.04	-3.47	0.00	0.00
55.92									

--

Segment Leq : 55.92 dBA



Results segment # 2: LeikinR (night)

Source height = 1.50 m

ROAD (0.00 + 52.30 + 0.00) = 52.30 dBA

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

SubLeq

68	90	0.00	61.43	0.00	0.00	-9.13	0.00	0.00	0.00
52.30									

Segment Leq : 52.30 dBA

Total Leq All Segments: 57.49 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 65.09
(NIGHT): 57.49

APPENDIX C

Detailed STC Calculations

Aircraft Noise Sound Insulation - Scenario Calculation Results

Project: Salvation Army - Sancturary

Date: 9/23/2016 **ProjectID:** GWE15-009

Outdoor level: NEF 35 or Leq24 67 or Ldn 68 dBA

Source Spectrum details:

100% Standard Aircraft

Corrections:

Receiving room:

Floor Area: 441 m²

Absorbtion: 80% of floor area

Construction Description:

Element 1: EX2

Construction Type: Custom Wall

Area: 394.00 m²

Test ID: EX2

Test Date: 4/4/2016

Element 2: GL3_AIR13_GL6

Construction Type: Window

Area: 60.00 m²

Test ID: CMHC177.961.13

Test Date: 11/1/1996

Wood casement

Element 3: R2

Construction Type: Custom Roof-ceiling

Area: 441.00 m²

Test ID: InsulR2

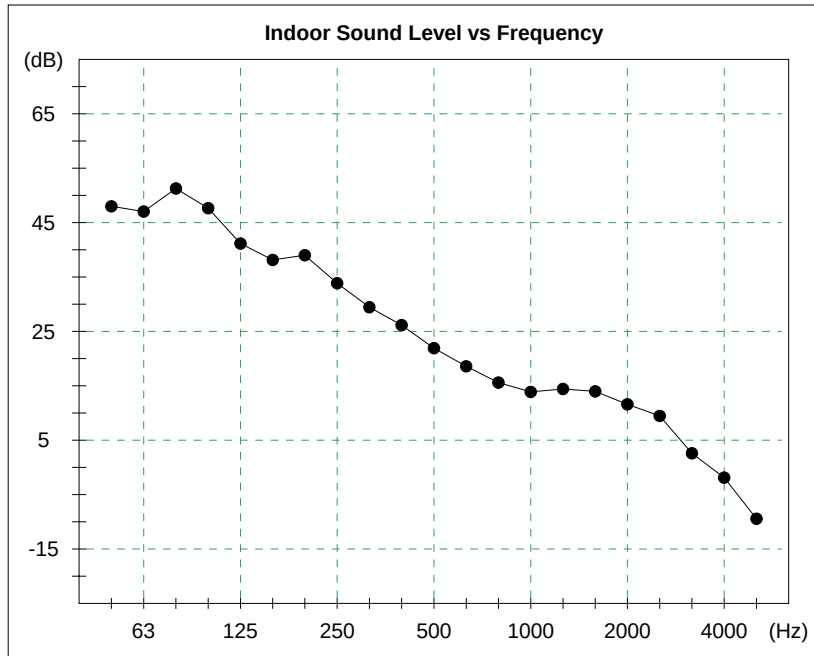
Test Date: 9/23/2016



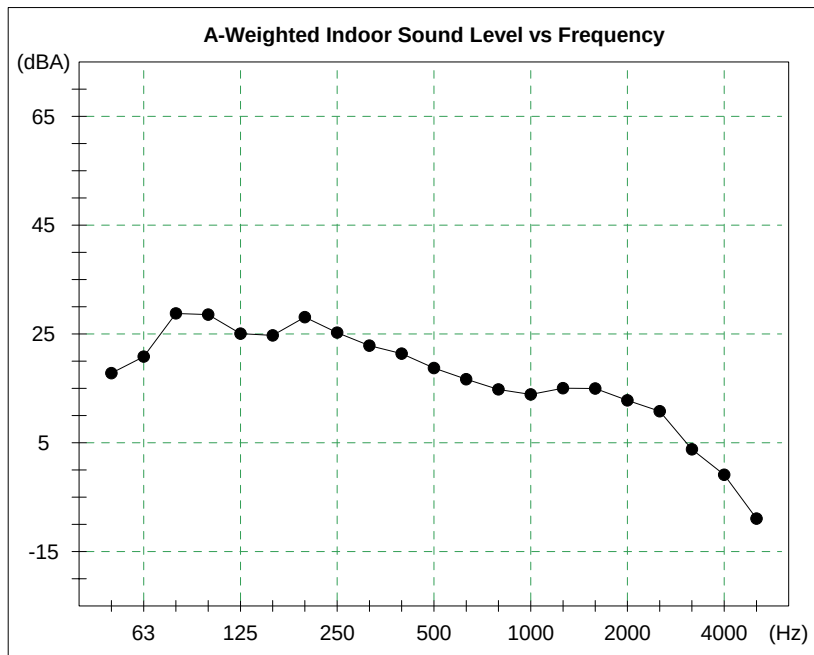
Aircraft Noise Sound Insulation - Scenario Calculation Results

Project: Salvation Army - Sanctuary

Date: 9/23/2016 **ProjectID:** GWE15-009



Frequency (Hz)	Sound Level (dB)
50	48.0
63	47.0
80	51.3
100	47.7
125	41.1
160	38.1
200	39.0
250	33.9
315	29.4
400	26.2
500	21.9
630	18.6
800	15.6
1000	13.9
1250	14.4
1600	14.0
2000	11.6
2500	9.5
3150	2.6
4000	-1.9
5000	-9.4



Frequency (Hz)	Sound Level (dBA)
50	17.8
63	20.8
80	28.8
100	28.6
125	25.0
160	24.7
200	28.1
250	25.3
315	22.8
400	21.4
500	18.7
630	16.7
800	14.8
1000	13.9
1250	15.0
1600	15.0
2000	12.8
2500	10.8
3150	3.8
4000	-0.9
5000	-8.9

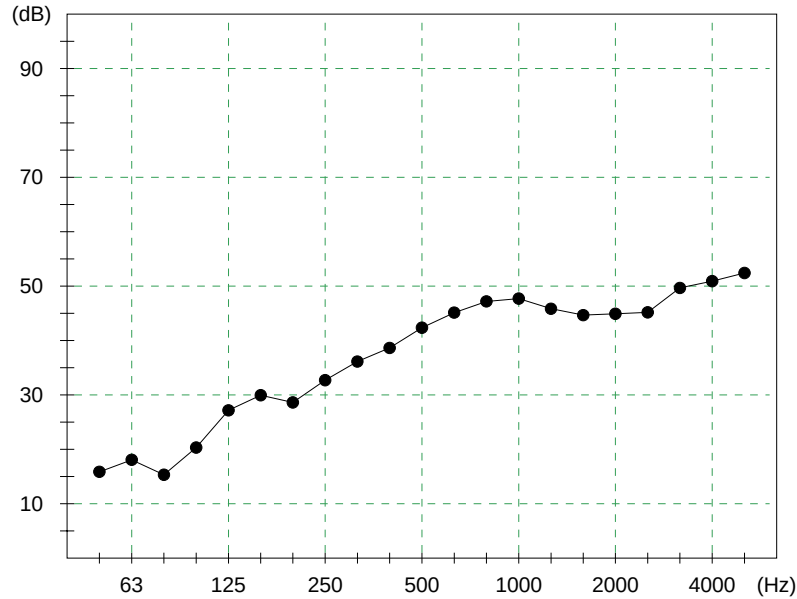


Aircraft Noise Sound Insulation - Scenario Calculation Results

Project: Salvation Army - Sanctuary

Date: 9/23/2016 **ProjectID:** GWE15-009

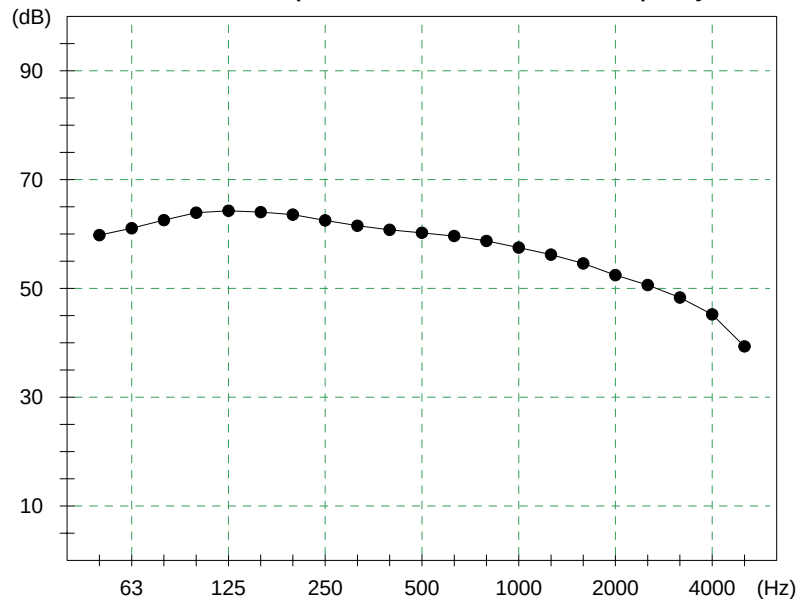
Transmission Loss vs Frequency



Frequency (Hz) TL (dB)

50	16
63	18
80	15
100	20
125	27
160	30
200	29
250	33
315	36
400	39
500	42
630	45
800	47
1000	48
1250	46
1600	45
2000	45
2500	45
3150	50
4000	51
5000	52

Source NEF-Leq24 Calibrated Sound Level vs Frequency



Frequency (Hz) Sound Level (dB)

50	59.8
63	61.0
80	62.5
100	63.9
125	64.3
160	64.0
200	63.5
250	62.5
315	61.5
400	60.8
500	60.2
630	59.6
800	58.7
1000	57.5
1250	56.2
1600	54.6
2000	52.4
2500	50.6
3150	48.3
4000	45.2
5000	39.3

Single Number Ratings:

Outdoor Sound Level:	67 dBA
Indoor Sound Level:	36 dBA
A-wtd Level Reduction:	31 dB
A-wtd Reduction re Standard Source:	31 dB
OITC Rating:	32 dB



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Aircraft Noise Sound Insulation - Scenario Calculation Results

Project: Salvation Army - Multi-Purpose

Date: 9/23/2016 **ProjectID:** GWE15-009

Outdoor level: NEF 35 or Leq24 67 or Ldn 68 dBA

Source Spectrum details:

100% Standard Aircraft

Corrections:

Receiving room:

Floor Area: 120 m²

Absorbtion: 80% of floor area

Construction Description:

Element 1: EX2

Construction Type: Custom Wall

Area: 5.00 m²

Test ID: EX2

Test Date: 4/4/2016

Element 2: GL3_AIR13_GL6

Construction Type: Window

Area: 30.00 m²

Test ID: CMHC177.961.13

Test Date: 11/1/1996

Wood casement

Element 3: R2

Construction Type: Custom Roof-ceiling

Area: 120.00 m²

Test ID: InsulR2

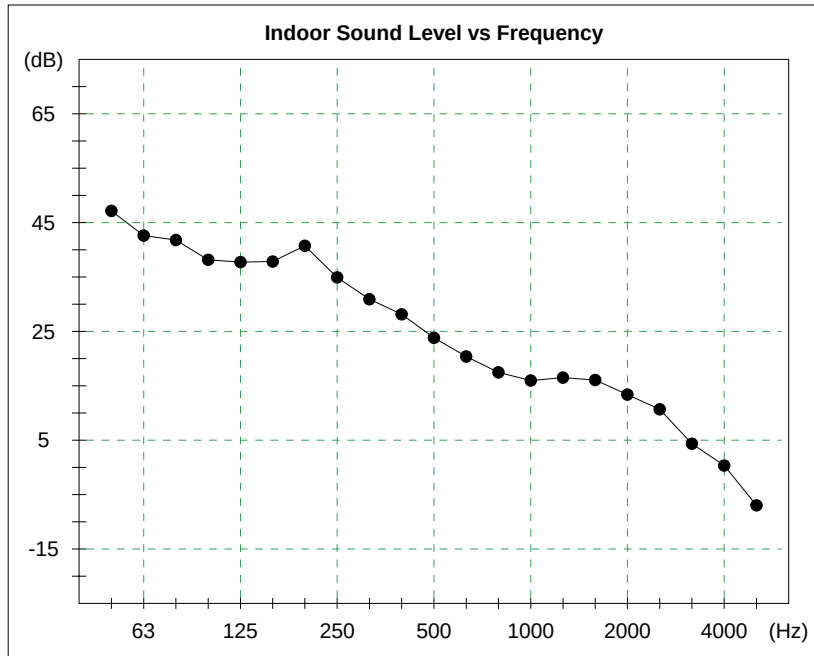
Test Date: 9/23/2016



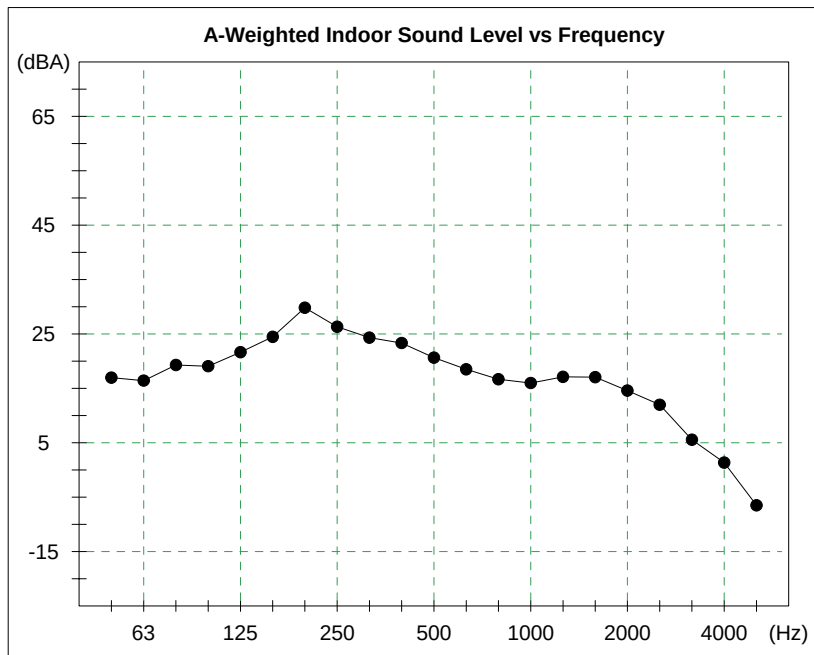
Aircraft Noise Sound Insulation - Scenario Calculation Results

Project: Salvation Army - Multi-Purpose

Date: 9/23/2016 **ProjectID:** GWE15-009



Frequency (Hz)	Sound Level (dB)
50	47.2
63	42.6
80	41.8
100	38.2
125	37.7
160	37.8
200	40.7
250	34.9
315	30.9
400	28.1
500	23.8
630	20.4
800	17.5
1000	16.0
1250	16.5
1600	16.0
2000	13.4
2500	10.7
3150	4.4
4000	0.3
5000	-7.0



Frequency (Hz)	Sound Level (dBA)
50	17.0
63	16.4
80	19.3
100	19.1
125	21.6
160	24.4
200	29.8
250	26.3
315	24.3
400	23.3
500	20.6
630	18.5
800	16.7
1000	16.0
1250	17.1
1600	17.0
2000	14.6
2500	12.0
3150	5.6
4000	1.3
5000	-6.5

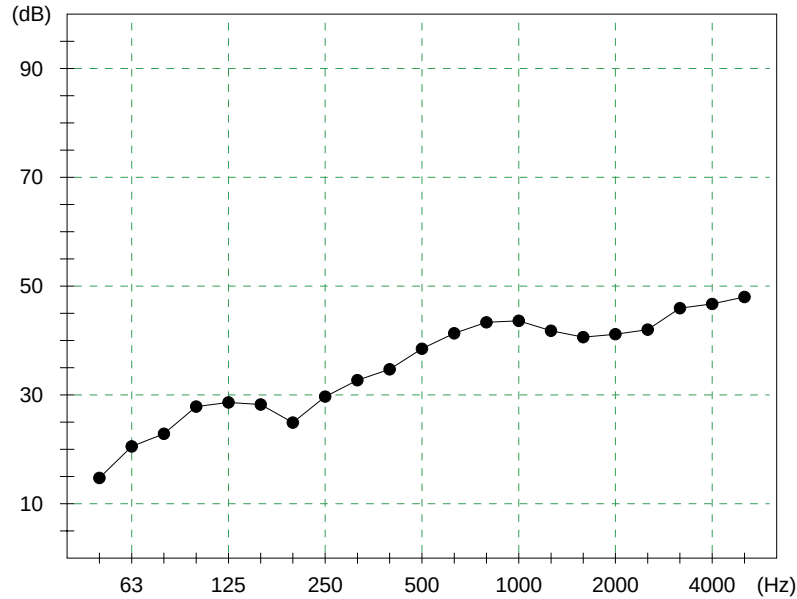


Aircraft Noise Sound Insulation - Scenario Calculation Results

Project: Salvation Army - Multi-Purpose

Date: 9/23/2016 **ProjectID:** GWE15-009

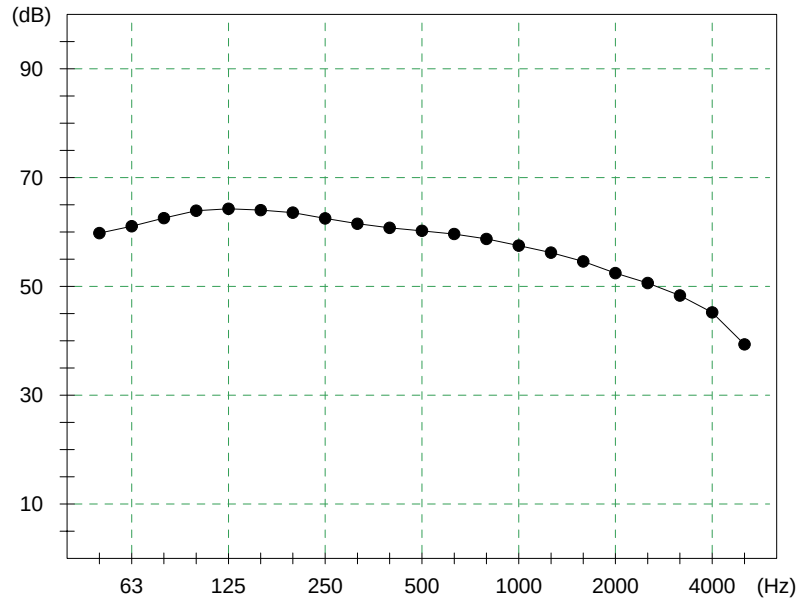
Transmission Loss vs Frequency



Frequency (Hz) TL (dB)

50	15
63	21
80	23
100	28
125	29
160	28
200	25
250	30
315	33
400	35
500	38
630	41
800	43
1000	44
1250	42
1600	41
2000	41
2500	42
3150	46
4000	47
5000	48

Source NEF-Leq24 Calibrated Sound Level vs Frequency



Frequency (Hz) Sound Level (dB)

50	59.8
63	61.0
80	62.5
100	63.9
125	64.3
160	64.0
200	63.5
250	62.5
315	61.5
400	60.8
500	60.2
630	59.6
800	58.7
1000	57.5
1250	56.2
1600	54.6
2000	52.4
2500	50.6
3150	48.3
4000	45.2
5000	39.3

Single Number Ratings:

Outdoor Sound Level:	67 dBA
Indoor Sound Level:	35 dBA
A-wtd Level Reduction:	32 dB
A-wtd Reduction re Standard Source:	32 dB
OITC Rating:	34 dB



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APPENDIX D

INSUL Calculations

Outdoor To Indoor Sound Transmission (v9.0.20)

Program copyright Marshall Day Acoustics 2017

Margin of error is generally within STC ± 3 dB

- Key No. 4807

Job Name:

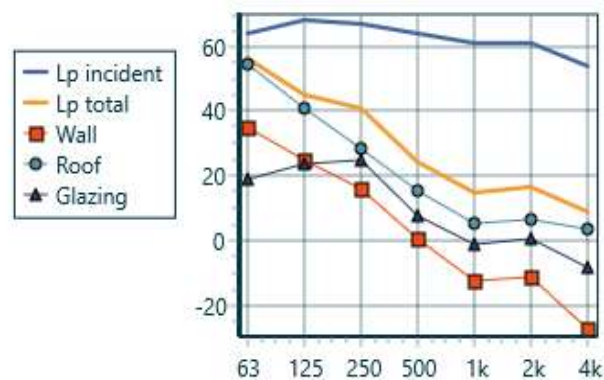
Job No.:

Initials:mlafortune

Date:11/19/2021

Sanctuary

Comment:



Octave Band Centre Frequency (Hz)

Octave Band Centre Frequency (Hz)								
Source	63	125	250	500	1k	2k	4k	Overall dBA
Incident sound level (freefield)	64.0	68.0	67.0	64.0	61.0	61.0	54.0	67
Path								
Element 1 ,Wall STL	-17	-31	-39	-51	-61	-60	-69	13
Facade Shape factor Level diff.	0	0	0	0	0	0	0	
Insertion Loss	0	0	0	0	0	0	0	
Area(+10LogA) [394 m²]	26	26	26	26	26	26	26	
Element sound level contribution	35	25	16	1	-12	-11	-27	
Element 2 ,Roof STL	-13	-31	-42	-52	-59	-58	-54	30
Facade Shape factor Level diff.	0	0	0	0	0	0	0	
Insertion Loss	0	0	0	0	0	0	0	
Area(+10LogA) [441 m²]	26	26	26	26	26	26	26	
Element sound level contribution	55	41	29	16	6	7	4	
Element 3 ,Glazing STL	-25	-24	-22	-36	-42	-40	-42	17
Facade Shape factor Level diff.	0	0	0	0	0	0	0	
Insertion Loss	0	0	0	0	0	0	0	
Area(+10LogA) [60 m²]	18	18	18	18	18	18	18	
Element sound level contribution	19	24	25	8	-1	1	-8	
Receiver								
Room volume(-10LogV) [3528 m3]	-35	-35	-35	-35	-35	-35	-35	36
Reverberation time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
RT (+10LogT)	1.8	1.8	1.8	1.8	1.8	1.8	1.8	
Equation Constant	11	11	11	11	11	11	11	
Room sound level	56	45	41	24	15	17	9	

Outdoor To Indoor Sound Transmission (v9.0.20)

Program copyright Marshall Day Acoustics 2017

Margin of error is generally within STC ± 3 dB

- Key No. 4807

Job Name:

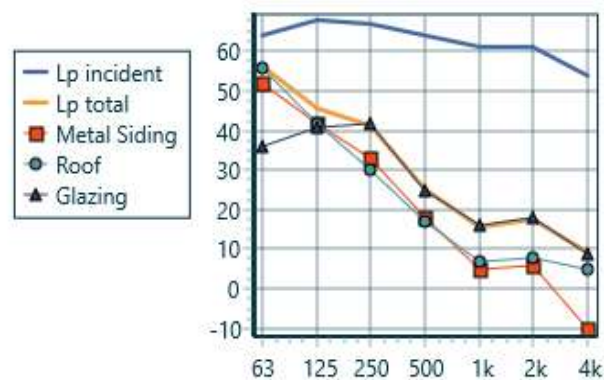
Job No.:

Initials:mlafortune

Date:11/19/2021

Multi-Purpose

Comment:



Octave Band Centre Frequency (Hz)								
Source	63	125	250	500	1k	2k	4k	Overall dBA
Incident sound level (freefield)	64.0	68.0	67.0	64.0	61.0	61.0	54.0	67
Path								
Element 1 ,Metal Siding STL	-17	-31	-39	-51	-61	-60	-69	30
Facade Shape factor Level diff.	0	0	0	0	0	0	0	
Insertion Loss	0	0	0	0	0	0	0	
Area(+10LogA) [300 m²]	25	25	25	25	25	25	25	
Element sound level contribution	52	42	33	18	5	6	-10	
Element 2 ,Roof STL	-13	-31	-42	-52	-59	-58	-54	32
Facade Shape factor Level diff.	0	0	0	0	0	0	0	
Insertion Loss	0	0	0	0	0	0	0	
Area(+10LogA) [230 m²]	24	24	24	24	24	24	24	
Element sound level contribution	56	42	30	17	7	8	5	
Element 3 ,Glazing STL	-25	-24	-22	-36	-42	-40	-42	34
Facade Shape factor Level diff.	0	0	0	0	0	0	0	
Insertion Loss	0	0	0	0	0	0	0	
Area(+10LogA) [36 m²]	16	16	16	16	16	16	16	
Element sound level contribution	36	41	42	25	16	18	9	
Receiver								
Room volume(-10LogV) [1824 m3]	-33	-33	-33	-33	-33	-33	-33	36
Reverberation time (s)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
RT (+10LogT)	1.8	1.8	1.8	1.8	1.8	1.8	1.8	
Equation Constant	11	11	11	11	11	11	11	
Room sound level	57	46	42	25	16	17	9	

Sound Insulation Prediction (v9.0.20)

Program copyright Marshall Day Acoustics 2017

Margin of error is generally within STC ± 3 dB

- Key No. 4807

Job Name:

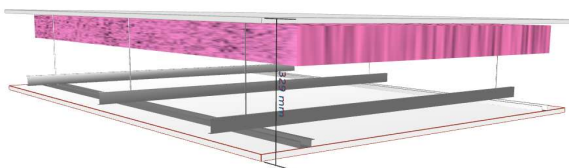
Job No.:

Initials:mlafortune

Date:11/18/2021

File Name:R2 R1.ixl

Notes:



STC 53

OITC 39

Mass-air-mass resonant frequency = 43 Hz

Panel Size = 2.7 m x 4.0 m

Partition surface mass = 21 kg/m²

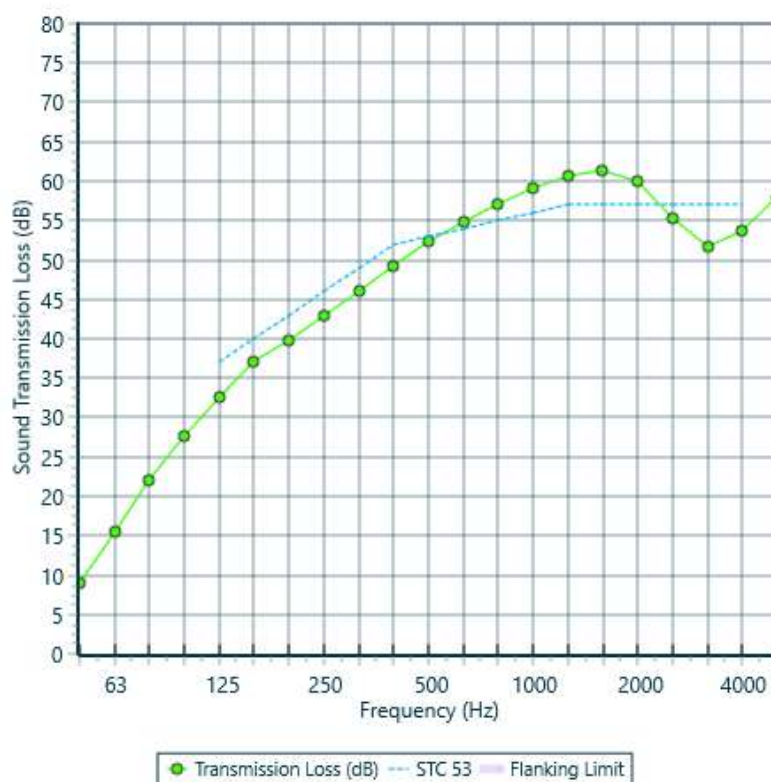
System description

Panel 1 : 1 x 12.7 mm DensGlass® Sheathing Georgia Pa

Frame: Suspended Light Steel Grid (3E2 mm x 45 mm), Stud spacing 600 mm ; Cavity Width 300 mm , 1 x fiberglass (0.6 lb/ft³) Thickness 100 mm

Panel 2 : 1 x 15.9 mm Type X Gypsum Board

freq.(Hz)	TL(dB)	TL(dB)
50	9	
63	16	13
80	22	
100	28	
125	33	31
160	37	
200	40	
250	43	42
315	46	
400	49	
500	52	52
630	55	
800	57	
1000	59	59
1250	61	
1600	61	
2000	60	58
2500	55	
3150	52	
4000	54	54
5000	58	



Sound Insulation Prediction (v9.0.20)

Program copyright Marshall Day Acoustics 2017

Margin of error is generally within STC ± 3 dB

- Key No. 4807

Job Name:

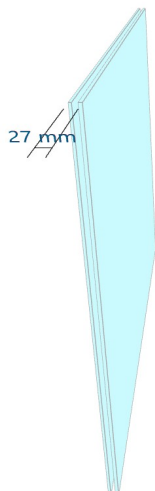
Job No.:

Date:11/19/2021

File Name:R2 R1.ixl

Initials:mlafortune

Notes:



STC 36

OITC 29

Mass-air-mass resonant frequency = 179 Hz

Panel Size = 2.0 m x 1.5 m

Partition surface mass = 35 kg/m²

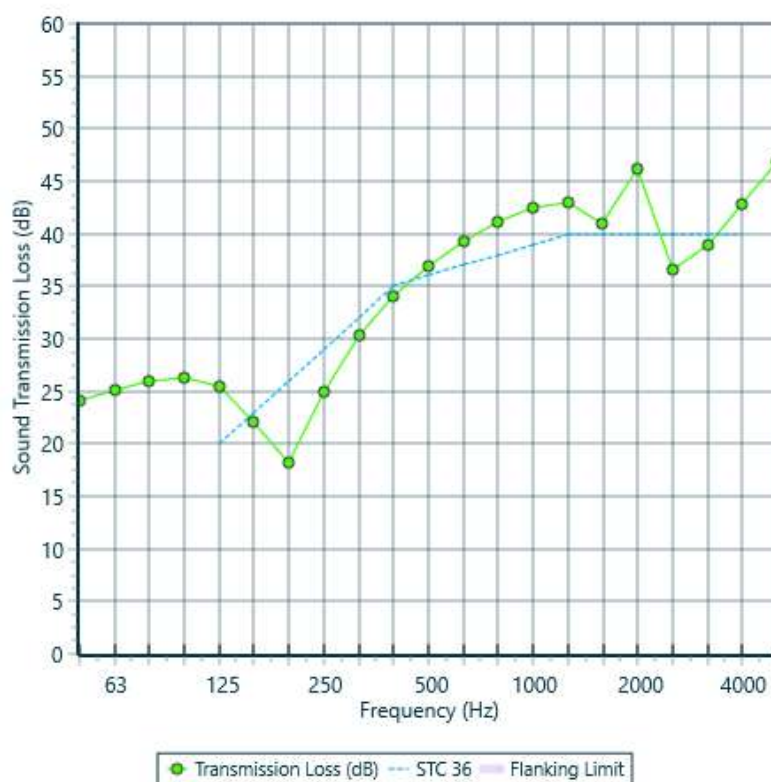
System description

Pane 1 : 1 x 6 mm Glass

air: 13 mm

Pane 2 : 1 x 8 mm Glass

freq.(Hz)	TL(dB)	TL(dB)
50	24	
63	25	25
80	26	
100	26	
125	25	24
160	22	
200	18	
250	25	22
315	30	
400	34	
500	37	36
630	39	
800	41	
1000	42	42
1250	43	
1600	41	
2000	46	40
2500	37	
3150	39	
4000	43	42
5000	47	



Sound Insulation Prediction (v9.0.20)

Program copyright Marshall Day Acoustics 2017

Margin of error is generally within STC ± 3 dB

- Key No. 4807

Job Name:

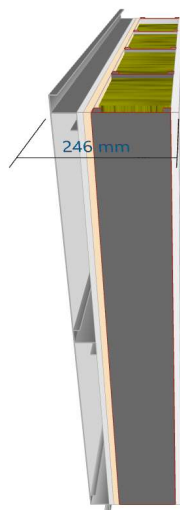
Job No.:

Date:11/18/2021

File Name:EX2 R1.ixl

Initials:mlafortune

Notes:



STC 53
OITC 38

Mass-air-mass resonant frequency = 58 Hz , 236 Hz

Panel Size = 2.7 m x 4.0 m

Partition surface mass = 32.6 kg/m²

System description

Panel 1 : 1 x 0.7 mm Aluminium

Frame: Z Girt (50 mm x 38 mm), Stud spacing 599 mm ; Cavity Width 50 mm

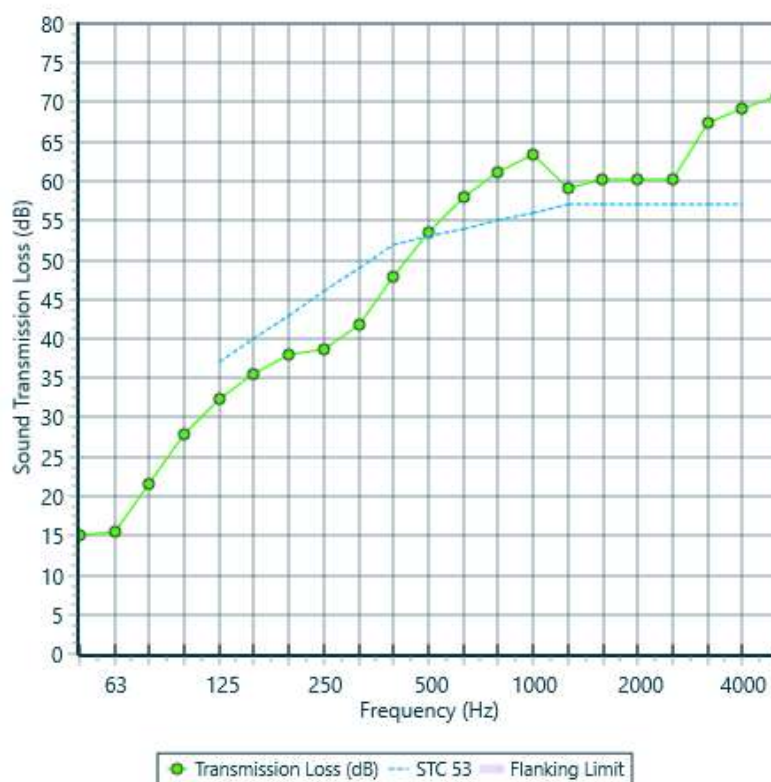
Panel 2 : 1 x 12.7 mm DensGlass® Sheathing Georgia Pa

+ 1 x 15.1 mm OSB (Oriented Strand Board)

Frame: Steel Stud (0.55mm) (1.5E2 mm x 38 mm), Stud spacing 400 mm ; Cavity Width 152 mm , 1 x Fibreglass (10kg/m³) Thickness 152 mm

Panel 3 : 1 x 15.9 mm Type X Gypsum Board

freq.(Hz)	TL(dB)	TL(dB)
50	15	
63	15	17
80	22	
100	28	
125	32	31
160	36	
200	38	
250	39	39
315	42	
400	48	
500	53	51
630	58	
800	61	
1000	63	61
1250	59	
1600	60	
2000	60	60
2500	60	
3150	67	
4000	69	69
5000	71	



APPENDIX E

Ottawa International Airport Authority Correspondence

Michael Lafortune

From: Stecky-Efantis, Alexander <alexander.stecky-efantis@yow.ca>
Sent: October-04-16 3:24 PM
To: Beth Henderson; Kealey, Krista
Cc: Joshua Foster
Subject: RE: Barrhaven Salvation Army proposal

Hi Beth,

Thank you for coming to the airport last week to meet with us regarding the development proposal and for your follow-up call.

As requested, I would like to provide some additional information on the limited operations on runway 07/25 this August. There were three weeks when the runway was open; however, taxiway bravo, which is one of the ways to access runway 07/25 was restricted to certain size aircraft due to construction. During this time from August 6th to the end of the month, aircraft movement on runway 07/25 were limited. There were also two days (August 9th and 10th) where the runway was closed for pest control. Finally, the runway was also closed on August 31st and September 2nd for rubber removal maintenance.

Please let me know if you have any questions or require additional information.

Regards,
Alex

Alexander Stecky-Efantis
Manager, Airport Planning and Municipal Affairs
Ottawa International Airport Authority
Gestionnaire, Planification aéroportuaire et affaires municipales
Administration de l'aéroport international d'Ottawa

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Fax / Téléc. : 613-248-2021



From: Beth Henderson [<mailto:bethhenderson@bell.net>]
Sent: September-28-16 3:57 PM
To: Stecky-Efantis, Alexander; Kealey, Krista

Cc: Jeff_Barrett@can.salvationarmy.org; James_Mercer@can.salvationarmy.org; 'Joshua Foster'; Miguel Tremblay; Michaela_Jones@can.salvationarmy.org

Subject: Barrhaven Salvation Army proposal

Good afternoon Krista and Alex

Thank you for taking the time to meet with us today to discuss the Salvation Army Church's proposal at 102 Bill Leathem Drive. I believe the exchange of information and ideas was constructive and beneficial as we move forward in the development application process.

Through this email I will request that Joshua Foster contact Alex to obtain the dates that the main east west runway was not active or significantly below the normal usage due to the resurfacing during the on site monitoring that was conducted by Gradient engineering on the proposed site.

Also it would be great if you could send the proposed 2043 contour mapping that was discussed.

As discussed I will contact the city planner on this file and ensure that the airport authority is circulated on the next submission.

Thank you again for your time and consideration and we look forward to discussing the application with you or answering any of your questions that may arise upon review of the second submission.

Sincerely,
Beth Henderson