Flexible. Dependable. On-site Engineering.

King EPCM
Unit 211, 3780 14th Ave
Markham, ON L3R 9Y5
T: 647-459-5647
General@KingEPCM.com
www.KingEPCM.com

Geotechnical Investigation Report

&

Geotechnical Foundation Design Recommendations Report

at

26 Anderson Blvd, Uxbridge
L9P 0C7, ON

PREPARED:

Rocco Schipano Architalcan Design

September 5, 2024

Table of Contents

1 Introduction

King EPCM was commissioned by Rocco Schipano of Architalcan Design to conduct a geotechnical subsurface investigation for the proposed commercial development located at 26 Anderson Blvd in Uxbridge, Ontario. The aim of the investigation was to assess the general subsurface conditions at the site and offer geotechnical recommendations for the design and construction of the proposed building/development. This was accomplished through the drilling of four (4) boreholes.

The report presented here outlines the results of tests conducted in accordance with the specified scope of work. It has been prepared exclusively to address the geotechnical aspects of design and construction, based on the development site plans provided at the time of investigation.

2 Site Descriptions

The subject property is located on the west side of Local Highway 47 at Anderson Blvd in the city of Uxbridge, specifically at 26 Anderson Blvd. The site is surrounded by commercial buildings and is currently open land with no existing development. The proposed development for the site includes the construction of a commercial warehouse with extended parking facilities designed to accommodate heavy vehicles.

3 Subsurface Investigation

3.1 Method of Investigation

Fieldwork for the geotechnical investigation was conducted on May 28 and 29, 2024. During this period, a total of four (4) boreholes (BH101 – BH104) were drilled to depths ranging from approximately 5m to 5.5m below current ground elevation. The approximate locations of these boreholes, along with their elevations, are detailed in the Site Plan provided in Appendix I.

All boreholes were drilled using a continuous flight auger. Subsurface strata were sampled at regular depth intervals from the auger. To assess the current ground conditions, static cone penetrometer tests and in-situ shear vane tests were conducted at specific depths.

Furthermore, monitoring wells were installed in three boreholes to facilitate groundwater observations, sampling, and testing throughout the investigation process.

3.2 Subsurface Conditions

The subsurface conditions encountered in the boreholes are documented on the Borehole Log Sheets provided in Appendix II. These logs comprehensively outline the stratification observed at each borehole location, along with detailed descriptions of the soil encountered.

Borehole ID	Coordinates		Surface Elevation (m)	Termination Depth (m)	Termination Elevation (m)
	Northing (m)	Easting (m)			
BH101	642165.160	4875970.098	345.538	5.5	340.038
BH102	642127.444	4876000.365	346.530		341.030
BH103	642099.864	4876070.856	348.744		343.244
BH104	642136.255	4876055.270	348.392		342.892

Table 1, Boreholes Coordinates

Silty Sand / Sandy Silty, Some Gravel

A soil layer consisting of silty sand / sandy silt with some gravel was found in all boreholes (BH101, BH102, BH103, and BH104). The thickness of this layer ranges from 1m to 1.6m below the current ground elevation. The soil in this layer is grey in color and exhibits moist conditions.

Sand, Trace to Some Silt

In BH101, immediately following the silty sand layer is a grey, moist sand layer with trace to some silt, extending to a depth of 5.5m. Within this layer, static cone penetrometer test results range from 800 kPa to 1000 kPa with less than 5 mm displacement. The compactness of this grey sand layer varies from compact to dense.

Sandy Silt, Trace Gravel

In borehole BH102, BH103 and BH104, the silty sand, some gravel encountered in all boreholes is followed by a layer of grey sandy silt with trace gravel, extending to a depth of 5.5m. Within this layer, static cone penetrometer test results range from 1000 kPa to 1200 kPa with less than 5 mm displacement. The compactness of this grey sandy silt layer varies from dense to very dense.

Boulders and cobbles are encountered in this layer during the drilling process of the boreholes.

3.3 Groundwater Conditions

The boreholes were advanced using dry solid stem auguring. All boreholes were found to be dry on completion of respective drilling operations.

Monitoring wells were installed in three boreholes to observe groundwater levels/water sampling and for testing.

Borehole ID	Coordinates (UTM 17)		Surface Elevation (m)	Termination Depth (m)	Screen Depth (m)	Groundwater Depth (m)	Groundwater Elevation (m)
	Northing (m)	Easting (m)					
BH101	642165.160	4875970.098	345.538	5.5	4m to 5.5m	DRY	DRY
BH102	642127.444	4876000.365	346.530	5.5	4m to 5.5m		
BH104	642136.255	4876055.270	348.392	5.5	4m to 5.5m		

Table 2, Groundwater Elevation Summary

4 Geotechnical Discussion and Recommendations

The following discussion and recommendations are based on the factual data obtained from this investigation and are intended for the use of the owner and the design engineer. Contractor's bidding or providing services on this project should review the factual data and determine their own conclusions regrading construction methods and scheduling.

This report is provided on the basic of these terms of reference and on the assumptions that the design features relevant to the geotechnical analyses will be in accordance with applicable codes, standards and guidelines of practices. If there are any changes to the site development features or is any additional information relevant to the interpretations made of the subsurface information with respect to the geotechnical analyses or other recommendations, then King EPCM should be retained to review the implications of these changes with respect to the contents of this report.

The proposed development entails the construction of a commercial warehouse building, featuring an extend parking for heavy vehicles with two storey office building.

The subsequent sections offer overarching geotechnical recommendations for design and construction purposes.

4.1 Foundation Considerations

The borehole data suggests that the natural soils (undisturbed soil) may be suitable for foundation support, utilizing conventional strip footing for each side of warehouse and slab on grade concrete slab for central area for this new proposed development.

As per the current site plan, the underside of the footing will be at an elevation of 344.16 m, and the finished floor elevation will be 347.55 m. The footing is to be placed on undisturbed soil consisting of silty sand with trace amounts of gravel.

Considering the variability in soil strength across the site and at different depths, Table 3 outlines the soil bearing pressures for footings placed over undisturbed soils, along with approximate founding depths/elevations.

Borehole ID	Surface Elevation (m)	Estimated Footing Founding Elevation	Soil Stratum	Soil Bearing Capacity	
				net SLS (kPa)	Factored ULS (kPa)
BH101	345.538	344.038	Silty Sand	200	300
BH102	346.530	345.030	Silty Sand	200	300
BH103	348.744	347.244	Silty Sand	200	300
BH104	348.392	346.892	Silty Sand	200	300

Table 3, Approximate Footing Founding Elevations

4.1.1 Reinforced Concrete Slab on Grade

As per the architectural drawings, an 8-inch reinforced concrete slab-on-grade is proposed for the central area of the new warehouse development. It is essential that this slab-on-grade includes a drainage layer and capillary moisture barrier, achieved by placing the slab on a minimum 300 mm thick layer of 19 mm clear stone (OPSS.MUNI 1004), compacted to a dense state.

The conventional slab-on-grade should be constructed on stiff native soils. Prior to placing the 19 mm clear stone on the subgrade, the subgrade soil must be inspected by a geotechnical engineer. Any loose or compromised soil beneath the concrete slab must be removed and replaced with non-recycled Granular B material. The replacement material should be compacted in situ, proof-rolled, and inspected under the supervision of King EPCM to identify any visibly loose or disturbed areas, or areas containing excessive deleterious materials or moisture. Any material deemed unacceptable by King EPCM must be excavated and replaced with Granular B (OPSS.MUNI 1010), compacted to a minimum of 98% Standard Proctor Maximum Dry Density (SPMDD). The modulus of subgrade reaction suitable for designing the slab-on-grade on compacted native soils is 20,000 kPa/m.

Before pouring concrete, a King EPCM soils engineer should inspect the subsoil conditions at the base of the concrete slab to ensure that the design soil bearing pressures are achieved.

For footings exposed to seasonal winter weather, such as exterior wall and column footings, it is recommended that they be founded at least 1.6 m below the adjacent finished grades to prevent potential damage from frost penetration.

4.1.2 Strip Footings

Based on the current information, the underside of the footing is designed at an elevation of 344.16 m, with the finished floor elevation set at 347.55 m. The strip footing will be placed on undisturbed sandy silt soil. During the excavation process, if any loose or compromised soil is exposed, it must be removed and replaced with granular material or suitable native soil. Before using the native soil for backfill, it should be inspected and approved by King EPCM.

Based on the borehole's information within the proposed commercial warehouse footprint (Boreholes BH101 to BH104), the warehouse foundations may be supported on undisturbed silty sand to sandy silt deposit of compact to very dense relative density. The undisturbed native silty sand to sandy silt deposit is considered suitable to support the proposed structure foundations. A maximum net geotechnical reaction of 200kPa (Serviceability Limit State, SLS) and a maximum factored geotechnical resistance of 300kPa (Ultimate Limit State, ULS) is recommended for design of conventional strip footing foundations (for vertical and concentric loads) supported on the underlying competent undisturbed silty sand to sandy silt of compact to very dense relative density. The final grading plan and design drawings should be reviewed by King EPCM to better assess the design foundation elevations and to provide updated foundation bearing pressure (geotechnical reaction and resistance) recommendations prior to development.

The underside of footing elevations must be designed to provide a minimum of 1.6m of soil cover or equivalent insulation to the foundation subgrade for frost protection considerations in unheated areas.

The geotechnical resistance(s) as recommended allow for up to 25mm of total settlement. This settlement will occur as load applied and is linear elastic and non-recoverable. Differential settlement is a function of spacing, loading, and foundation size.

4.1.3 Foundation Installation

It is recommended that all excavated footing base must be evaluated by a qualified geotechnical engineer to ensure that the founding soils exposed at the excavation base are consistent with the design bearing pressure intended by the geotechnical engineer.

Prior to pouring foundation concrete, the foundation subgrade should be cleaned of all deleterious materials such as topsoil, fill, softened, disturbed or caved materials, as well as any standing water. If construction is proceeds during freezing weather conditions, adequate temporary frost protection for the foundation subgrade and concrete must be provided.

It is noted that the native soils tend to weather rapidly and deteriorate on exposure to the atmosphere or surface water. Hence, foundation bases which remains open for an extended period should be protected by a skim coat of lean concrete. Provisions should be made to minimize disturbance to the exposed foundation subgrade.

4.2 Frost Susceptibility

Silt and clay are considered as highly frost susceptible material and shall not be used for backfilling or raising the grade within the frost depth. A frost depth of 1.6 m is recommended for this site for design purposes as per Foundation Frost Penetration Depths for Southern Ontario OPSD 3090.101.

Brief Description	Category No.	MTO Classification (MTO, 1980)	Drainage Characteristics	Susceptibility to Frost Action
Rock, rock fill, shattered rock, boulders/cobbles	1	Boulders/ cobbles	Excellent	None
Well graded gravels and sands suitable as granular borrow	2	GW, SW	Excellent	Negligible
Poorly graded gravels and sands	3	GP, SP	Excellent to fair	Negligible to slight
Silty gravels and sands	4	GM, SM	Fair to semi-impervious	Slight to moderate
Clayey gravels and sands	5	GC, SC	Practically impervious	Negligible to slight
Silts and sandy silts	6	ML, MI	Poor	Severe
Low plasticity clays and compressible silts	7	CL, MH	Practically impervious	Slight to severe
Medium to high plasticity clays	8	CI; CH	Semi-impervious to impervious	Negligible to severe

Table 4, Different types of soil susceptibility to frost action

4.3 Earthquake Considerations

As per Subsection 4.1.8 of the 2012 Ontario Building Code (OBC), buildings must adhere to the Earthquake Load and Effects requirements. Site Classification for Seismic Site Response, outlined in Table 4.1.8.4.A, is determined based on the average Standard Penetration Resistance (N60) and/or the undrained shear strength (Su) of soils within the upper 30m.

From the results of static cone penetrometer conducted in the current geotechnical investigation, which are limited to specific depths, the anticipated site designation for seismic analysis applicable to the proposed building is "Class C." However, shear wave velocity measurements may be necessary to confirm the Site Class as 'C.'

NBC 2020 - 2%/50 years (0.000404 per annum) probability							
0.2, XC)	Sa(0.5, XC)	Sa(1.0, XC)	Sa(2.0, XC)	Sa(5.0, XC)	Sa(10.0, XC)	PGA(XC)	PGV(XC)
0.254	0.17	0.0948	0.0454	0.0121	0.00419	0.125	0.111
The log-log interpolated 2%/50 year $S_a(4.0, X_C)$ value is : **0.0167**							

Table 5, Seismic Classification as per NBC 2020

The National Building Code of Canada (NBC) 2020 as prescribed in Article 1.1.3.1. of Division B of the NBC 2020.

4.4 Earth Pressure Design Parameters

Walls or bracings subjects to unbalanced earth pressure must be designed to resist a pressure that can be calculated based on the following equation:

$$\mathbf{P = K(\gamma (h-h_w) + \gamma' h_w + q) + \gamma_w h_w}$$

Where:

P = the horizontal pressure (kPa)
K = the earth pressure coefficient
h = the depth below the ground surface (m)
h_w = the depth below the ground water level (m)
γ = the bulk unit weight of soil (kN/m^3)
γ_w = the bulk unit weight of water (9.8 kN/m^3)
γ' = the submerged unit weight of the exterior soil
q = the complete surcharge loading (kPa)

where the wall backfill can be drained effectively to determine hydrostatic pressure on the wall, this equation can be simplified to:

$$\mathbf{P = K(\gamma h + q)}$$

The possible effects of frost on retaining earth structures must be considered. In frost susceptible soils, pressures induced by freezing pore water are basically irresistible. Insulation typically addresses this issue. Alternatively, non-frost-susceptible backfill may be specified.

Foundation resistance to sliding is proportional to the friction between the soil subgrade and the base of the footing. The factored geotechnical resistance to friction (Rf) at ULS provided in the following equation:

$$Rf = \Phi N \tan \varphi$$

Where:

Rf = frictional resistance (kN)
Φ = reduction factor per Canadian Foundation Engineering Manual (CFEM) Ed. 4 (0.8)
N = normal load at base of footing (kN)
φ = internal friction angle (see table above)

Stratum / Parameter	Internal Friction Angle (ϕ)	Unit Weight (kN/m3)	Coefficient of Earth Pressure		
			Ka	Kp	Ko
Earth Fill	28	19	0.36	2.76	0.53
Silty Sand to Sandy Silt / Sand	32	21	0.31	3.25	0.47
Clayey Silt	30	21	0.33	3.00	0.50

Table 6, Earth Pressure Design Parameters

Where:

γ = soil bulk unit weight (kN/m3)
φ = internal friction angle (degrees)
Ka = active earth pressure coefficient (Rankine, dimensionless)
Ko = at-rest earth pressure coefficient (Rankine, dimensionless)
Kp = passive earth pressure coefficient (Rankine, dimensionless)

The above values of the earth pressure coefficients are for the horizontal backfill grade behind the wall. The earth pressure coefficients for inclined grade will vary based on the inclinations of the retained ground surface.

4.5 Excavations

The borehole data indicate the earth fill/weathered/disturbed material and undisturbed native soils would be encountered in the excavation process. Excavation process must be carried out in accordance with the *Occupational Health and Safety Act and Regulations for Construction Projects*. These regulations designate four (4) broad categories of soils to stipulate measures for excavation safely.

Types of Soil

The Construction Regulation sets out four soil types. If you are unsure about the soil type, have the soil tested to confirm the type.

Type 1 soil:

- is hard, very dense and only able to be penetrated with difficulty by a small sharp object,
- has a low natural moisture content and a high degree of internal strength,
- has no signs of water seepage, and
- can be excavated only by mechanical equipment.

Type 2 soil:

- is very stiff, dense and can be penetrated with moderate difficulty by a small sharp object,
- has a low to medium natural moisture content and a medium degree of internal strength, and
- has a damp appearance after it is excavated.

Type 3 soil:

- is previously excavated soil, or
- soil that is stiff to firm or compact to loose in consistency and has one or more of the following characteristics:
  - it exhibits signs of surface cracking.
  - it exhibits signs of water seepage.
  - if it is dry, it may run easily into a well-defined conical pile.
  - it has a low degree of internal strength.

Type 4 soil:

- is soft to very soft and very loose in consistency, very sensitive and upon disturbance is significantly reduced in natural strength
- runs easily or flows, unless it is completely supported before excavating procedures,
- has almost no internal strength,
- is wet or muddy, and
- exerts substantial fluid pressure on its supporting system.

Table 7, Soil Classification as per Ontario Regulations. 213/91, section 226 (1)

The earth fill material as well as undisturbed native soil deposit encountered in the boreholes are classified as Type 2 and Type 3.

Where workmen must enter excavation advanced deeper than 1.2m, the trench walls should be suitably sloped and/or braced in accordance with the Occupational Health and Safety Act and Regulations for Construction Projects. The regulation stipulates slopes of excavation by soil type as follows:

Soil Type	Base of Slope	Steepest Slope Inclination
1	within 1.2m of bottom of trench	1H:1V
2	within 1.2m of bottom of trench	1H:1V
3	from bottom of trench	1H:1V
4	from bottom of trench	3H:1V

Table 8, Stable Slope Inclination Parameters

4.6 Groundwater Control

Current Geotechnical investigation, groundwater is not encountered up to 5.5m from the current grade.

During construction process, there is chance of encounter with groundwater due to Seasonal fluctuation.

During construction, sump pump should be installed at site to carry out the groundwater from close proximately of foundation and create the stable base for proposed footing. Groundwater level should be maintained 1m below the proposed underside of footing.

For Excavations extending below the prevailing groundwater level, it will be necessary to lower the groundwater level and maintain it below the excavation base prior to and during the subsurface construction. To avoid loosening and sloughing of the base and sides, considering should be given to install a skin coat of lean concrete (mud-slab) in conjunction with positive groundwater control to preserve the subgrade integrity to provide support to foundations and utilities, and a working platform, as needed. In general, prior dewatering and ground water control provisions are required for excavations. Pumping from sumps, in general may be effective for shallow excavations, up to about 1m below the groundwater level.

4.7 Pavement

It is understood that the paved area at this site would consists of driveway and parking lot. Design recommendation for pavement structures are provided in this section.

4.7.1 Pavement Design

The asphalt pavement design for the front and backside parking lots, and side entrance for backside access is provided in the following table.

Pavement Structure Layers	Light Duty Road / Parking Lot	Heavy Duty Road / Fire Route
HMA Surface Course, OPSS 1150 HL 3	40 mm	40 mm
HMA Surface Course, OPSS 1150 HL 8 (two (2) layers with binder)	50 mm	85 mm
Granular Base Course, OPSS MUNI 1010 Granular A (non- recycle)	150 mm	150 mm
Granular Subbase Course, OPSS MUNI 1010 Granular B Type II (non - recycle)	300 mm	450 mm
Total Thickness	**540 mm**	**725 mm**

Table 9, Minimum Flexible Pavement Structure Thicknesses

Physical Property Requirements

Laboratory Test	MTO Test Number	Granular O	Granular A	Granular S	Granular B Type I and Type II	Granular M	Select Subgrade Material
Coarse Aggregate Petrographic Requirement	LS-609	(Note 2)	(Note 1) (Note 2)	(Note 2)	(Note 1) (Note 2)	(Note 1) (Note 2)	(Note 2)
Freeze-Thaw Loss, % maximum	LS-614	15	N/A	N/A	N/A	N/A	N/A
Fine Aggregate Petrographic Requirement	LS-616 LS-709	(Note 3)					
Micro-Deval Abrasion Coarse Aggregate loss, % maximum	LS-618	21	25	25	30 (Note 4)	25	30 (Note 4)
Micro-Deval Abrasion Fine Aggregate loss, % maximum	LS-619	25	30	30	35	30	N/A
Plasticity Index	LS-704	0	0	0	0	0	0
Percent crushed, minimum	LS-607	100	50	50	N/A	50	N/A
2 or more crushed faces, % minimum	LS-617	85	N/A	N/A	N/A	N/A	N/A
Asphalt Coated Particles, % maximum	LS-621	N/A	30	30	(Note 5)	30	N/A

Notes:

1. Granular A, B Type I, or M may contain up to 15% by mass of crushed glass and ceramic material combined.
2. Granular A, B Type I, M, and S shall not contain more than 1% by mass of deleterious material. Granular O, Granular B Type II, and SSM shall not contain more than 0.1% by mass of wood. Petrographic classification of rock type need not be reported. This requirement is only to be reported when such material is present.
3. Test required for materials north of the French and Mattawa Rivers only. For materials with greater than 5.0% passing the 75 μm sieve, the amount of mica passing the 150 μm sieve and retained on the 75 μm sieve, shall not exceed 10% of the material in that sieve fraction unless either testing according to LS-709 determines permeability values to be greater than 1.0×10^{-4} cm/s or field experience show satisfactory performance. Prior data demonstrating compliance with this requirement shall be acceptable provided such testing has been done within the past five years and that field performance of these materials has been satisfactory.
4. The coarse aggregate Micro-Deval abrasion loss test requirements shall be waived if the material has more than 80% passing the 4.75 mm sieve.
5. Granular B Type I may contain up to 30% asphalt coated particles. Granular B Type II shall not contain RAP or asphalt coated products.

Table 10, Physical Property Requirements of Granular Materials

HL 3 and HL 8 hot mix asphalt should be designed, produced and placed in conformance with OPSS 1150 and OPSS.MUNI 310 requirements and the relevant city’s requirements.

For heavy-duty or very heavy-duty loading driveways, it may be necessary to use additional gravel or a rigid concrete surface. This ensures the driveway can withstand the increased weight and traffic load without experiencing damage or degradation. Enhanced structural support through extra gravel layers or a robust concrete surface provides durability and longevity for areas subjected to heavy use.

The granular base materials should adhere to O.P.S.S. Form 1010 specifications and be compacted to at least 100% of their Standard Proctor Maximum Dry Densities (SPMDDs). Similarly, asphaltic concretes must meet the requirements outlined in O.P.S.S. Form 1150 for specified grades and be compacted to at least 97% of their Marshall Densities.

HL 3 HS hot mix asphalt is recommended as padding, padding should be placed in lifts not exceeding 50mm.

Performed graded asphalt cement, PG 58-28, conforming to OPSS.MUNI 1101 requirements, should be used in both HMA binder and surface course.

A tack coat (SS1) should be applied to all construction joints prior to placing hot mix asphalt to create n adhesive bond. SS1 tack coat should be applied between hot mix asphalt and surface courses.

Prior to the placement of granular bases, any loose or compressible organic fill should be removed from the subgrade areas intended for paving. Additionally, the finished subgrade should be contoured to eliminate depressions and sloped at a minimum of 2% towards catch basins or drains to facilitate proper drainage of subgrade and base materials.

4.7.2 Drainage

Control of water is a critical factor in achieving a good pavement life. The need for adequate subgrade drainage cannot be over-emphasized. The subgrade must be free of depressions and sloped (preferably at a minimum grade of 3%) to provide effective drainage toward subgrade drains. Grading adjacent to the pavement areas should be designed to ensure that water is not allowed to pond adjacent to the outside edges of the pavement.

Continuous pavement subdrains should be provided along both sides of the driveway and drained into respective catch basins to facilitate drainage of the subgrade and granular materials. Continuous subdrains should also be provided for the parking lot/driveway pavement areas along the curb-lines/sidewalk and at all catch basins within the parking areas. Two lengths of subdrain (each a minimum of about 3 m long) should be installed at each catch basin. The subdrain invert should be maintained at least 0.3 m below subgrade level.

4.7.3 Subgrade Preparation

All topsoil, organics, soft/loose, and otherwise disturbed/weathered soils should be stripped from the subgrade areas. The subgrade is expected to consist of silty sand materials or fill material, and these soils will be weakened by construction traffic when wet, especially if site work is carried out during periods of wet weather. An allowance for minor surface removal would be likely required to minimize subgrade disturbance and protect its integrity in wet periods.

Upon exposing and preparing the granular subbase, the exposed subgrade should be compacted and then proof-rolled using a heavy rubber-tired vehicle (such as a loaded gravel truck). The subgrade should be inspected for significant deflections or depressions. Areas displaying signs of significant displacement or instability during proof-rolling should be excavated and replaced with free-draining Granular B Type I Backfill material compacted in maximum lifts of 300 mm to at least 100% of SPMDD. The final subgrade surface should be sloped at a grade of 3% to provide positive subgrade drainage.

4.8 Pipe Bedding and Cover/Embedment

The design information for the underground services was not available at the time of this report preparation. The following subsections provide preliminary geotechnical engineering information for the design of underground services with relatively shallow inverts. Trench excavation should be carried out in accordance with the Occupational Health and Safety Act (OHSA) and Regulations for Construction Projects (O.Reg. 213/91 with recent amendments). Trench bedding, backfilling, and compaction should be carried out in accordance with OPSD 802.010, OPSD 802.030, OPSD 802.031, OPSD 802.032, and/or OPSS MUNI 401, as appropriate.

The undisturbed native soil or shale bedrock encountered will be suitable for supporting buried services that are properly bedded. Where disturbance of the trench base has occurred due to groundwater seepage or construction traffic, the disturbed soils should be sub-excavated and replaced with suitably compacted granular material. Any accumulation of water at the base of the excavation and any soft/loose soils should be removed prior to placing the pipe bedding/embankment. Placement of the pipe bedding/embedment must be done in dry conditions.

Concrete pipes should be installed in conformance with the OPSD 802.030, OPSD 802.031, OPSD 802.032, or OPSD 802.033 requirements, as appropriate. PVC or HDPE pipes should be installed in conformance with the OPSD 802.010 or OPSD 802.013 requirements, as appropriate. The bedding and embedment material include OPSS.MUNI 1010 Granular A, while the cover material for rigid pipes includes OPSS.MUNI 1010 Granular B with 100 percent passing 26.5 mm sieve. Further detailed information on bedding/embedment and cover materials can be provided at the detailed design phase.

The bedding, embedment, and cover materials should be placed in layers not exceeding 200 mm in thickness and compacted to a minimum of 95% SPMDD or vibrated into a dense state in the case of clear stone-type bedding.

4.9 Backfill

Any engineered fill placed below the foundation should be added in successive lifts appropriate for the type of compaction equipment used and compacted to a minimum of 100% of the Standard Proctor Maximum Dry Density (SPMDD), as verified by nuclear densometer testing. The imported engineered fill material should be clean, non-organic, and free of chemical contamination or deleterious substances. The moisture content of the engineered fill should be near optimum at the time of placement to ensure effective compaction. Materials meeting the specifications of OPSS 1010 Granular B Type II, or an approved equivalent are recommended.

Foundation wall backfill material should consist of free draining imported granular material. This backfill should be placed in layers no thicker than 300 mm and compacted to a minimum of 95% of Standard Proctor Maximum Dry Density, taking care not to damage any utility pipes during compaction.

For the upper 300 mm below the pavement subgrade elevation, the backfill material should be compacted to 100% of SPMDD in all areas.

Outside the footprint of the foundation, native soil or engineered fill should be used for backfilling. However, before using native soil for this purpose, it must be approved by King EPCM, and it should be compacted to 98% of SPMDD.

5 General Considerations

This report is limited to the items explicitly mentioned in the text, and no additional testing or design calculations have been conducted unless specifically stated. The discussions and recommendations provided are intended solely for the guidance of the named client and their design consultants and should not be relied upon for any other purpose. Contractors undertaking the work should conduct their own investigations and interpretations of the borehole results, especially regarding soil classification and potential soil reuse. It is recommended that King EPCM be consulted for assistance in interpreting the borehole records before any work is carried out. The client acknowledges that King EPCM's employees and principals bear no personal liability for any claims arising from the report and agrees not to pursue legal action against them.

6 Closing

We believe that the information provided meets your current requirements. However, if you need further details or assistance, we are more than willing to review the contents of this report in greater depth. Please feel free to reach out to our office if you require additional services or support in this matter.

Prepared by,

Dhaval Patel, EIT
Geotechnical
King EPCM

Reviewed by,

LICENSED PROFESSIONAL ENGINEER
Y. T. WANG
100228476
09/09/2024
PROVINCE OF ONTARIO

Tony Wang, P. Eng
Principal Engineer
King EPCM

Appendix I – Borehole Locations

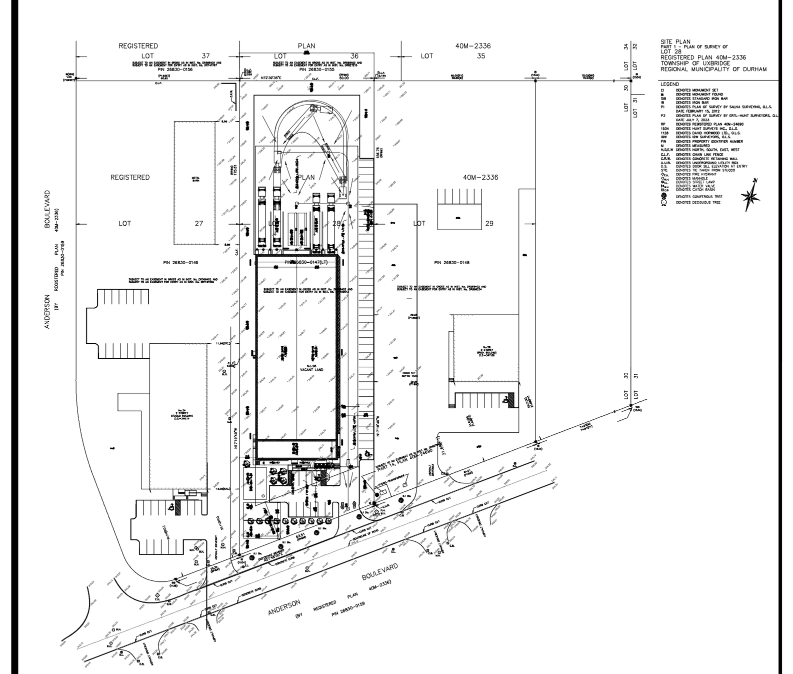
SCALE : NTS

Municipality Notes

DRAWN	STAMP
DP	
DATE	
June 10, 2024	

KEY MAP

N.T.S.



KING EPCM
3780 14th Ave, Unit 211
Markham, ON, L3R 9Y5
www.KingEPCM.com
647-459-5647

CLIENT
26 Anderson Blvd

PROJECT NAME
26 Anderson Blvd

PROJECT LOCATION
26 Anderson Blvd, Uxbridge

PRINT TITLE
26 Anderson Blvd

FILE No.
EGR - 1.1

No.	ISSUED FOR:	DATE	DRAW BY	CHECK
V1	INTERNAL REVIEW	June 10,2024	DP	TW

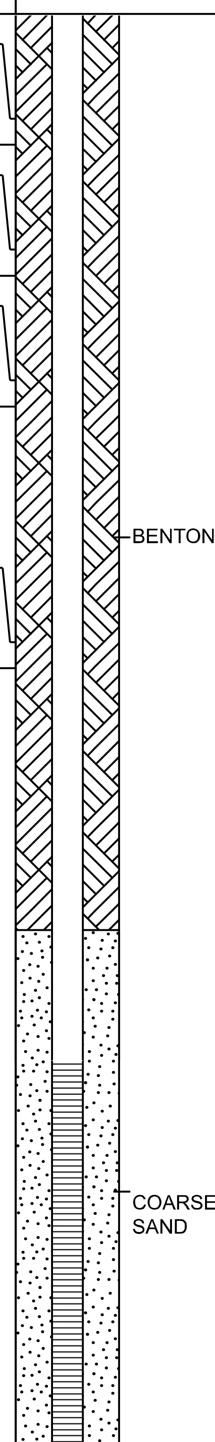
Appendix II – Borehole Logs

GEOTECHNICAL LOG BH101

PROJECT NUMBER 26 Anderson Blvd	**DRILLING DATE** 2024-05-28	**COORDINATES** 622165.160, 4875970.098
PROJECT NAME 26 Anderson Blvd, Uxbridge	**TOTAL DEPTH** 5.5	**COORD SYS** UTM-17
CLIENT	**DIAMETER**	**COMPLETION** 2024-05-28
ADDRESS 26 Anderson Blvd, Uxbridge, ON	**CASING** uPVC	**SURFACE ELEVATION** 345.538
LICENCE NO.	**SCREEN** uPVC Factory Slotted	**WELL TOC**

COMMENTS

LOGGED BY DP
CHECKED BY TW

Depth (m)	Graphic Log	Material Description	USCS	Additional Observations	Well Diagram	Elevation (m)
0.2, 0.4, 0.6, 0.8		SILTY SAND / SANDY SILT, SOME GRAVEL, MOIST, GREY	USCS - SP, SM	900kPa Resistance with less than 5mm displacement. shear vane is tested minimum 60kPa. 800kPa Resistance with less than 5mm displacement. shear vane is tested minimum 50kPa.		345.4, 345.2, 345, 344.8, 344.6
1, 1.2, 1.4, 1.6, 1.8, 2, 2.2, 2.4, 2.6, 2.8, 3, 3.2, 3.4, 3.6, 3.8, 4, 4.2, 4.4, 4.6, 4.8, 5, 5.2, 5.4		SAND, TRACE TO SOME SILT, MOIST, GREY	USCS - SW	800kPa Resistance with less than 5mm displacement. shear vane is tested minimum 60kPa. 1000kPa Resistance with less than 5mm displacement. shear vane is tested minimum 50kPa.		344.4, 344.2, 344, 343.8, 343.6, 343.4, 343.2, 343, 342.8, 342.6, 342.4, 342.2, 342, 341.8, 341.6, 341.4, 341.2, 341, 340.8, 340.6, 340.4, 340.2
5.6		Termination Depth at:5.5, No Groundwater found till 5.5m.				340

Disclaimer

GEOTECHNICAL LOG BH102

PROJECT NUMBER 26 Anderson Blvd	**DRILLING DATE** 2024-05-28	**COORDINATES** 642127.444, 4876000.365
PROJECT NAME 26 Anderson Blvd, Uxbridge	**TOTAL DEPTH** 5.5	**COORD SYS** UTM-17
CLIENT	**DIAMETER**	**COMPLETION** 2024-05-28
ADDRESS 26 Anderson Blvd, Uxbridge, ON	**CASING** uPVC	**SURFACE ELEVATION** 346.530
LICENCE NO.	**SCREEN** uPVC Factory Slotted	**WELL TOC**

COMMENTS	**LOGGED BY** DP **CHECKED BY** TW

Depth (m)	Graphic Log	Material Description	USCS	Additional Observations	Well Diagram	Elevation (m)
0.2		SILTY SAND / SANDY SILT, SOME GRAVEL, MOIST, GREY	USCS - SP, SM			346.4
0.4				900kPa Resistance with less than 5mm displacement. shear vane is tested minimum 60kPa.		346.2
0.6						346
0.8				1200kPa Resistance with less than 5mm displacement. shear vane is tested minimum 60kPa.		345.8
1						345.6
1.2				1000kPa Resistance with less than 5mm displacement. shear vane is tested minimum 70kPa.		345.4
1.4		SILTY SAND TO SANDY SILT, TRACE GRAVEL, MOIST, GREY BOULDERS AND COBBLES ENCOUNTERED	USCS - SW, SM			345.2
1.6						345
1.8						344.8
2					BENTONI	344.6
2.2				1200kPa Resistance with less than 5mm displacement. shear vane is tested minimum 70kPa.		344.4
2.4						344.2
2.6						344
2.8						343.8
3						343.6
3.2						343.4
3.4						343.2
3.6						343
3.8						342.8
4						342.6
4.2						342.4
4.4						342.2
4.6					COARSE SAND	342
4.8						341.8
5						341.6
5.2						341.4
5.4						341.2
5.6		Termination Depth at:5.5, No Groundwater found till 5.5m.				341

Disclaimer

produced by ESlog.ESdat.net on 05 Jun 2024

GEOTECHNICAL LOG BH103

PROJECT NUMBER 26 Anderson Blvd	**DRILLING DATE** 2024-05-29	**COORDINATES** 642099.864, 4876070.856
PROJECT NAME 26 Anderson Blvd, Uxbridge	**TOTAL DEPTH** 5.5	**COORD SYS** UTM-17
CLIENT	**DIAMETER**	**COMPLETION** 2024-05-29
ADDRESS 26 Anderson Blvd, Uxbridge, ON	**CASING**	**SURFACE ELEVATION** 348.744
LICENCE NO.	**SCREEN**	**WELL TOC**

COMMENTS

LOGGED BY DP
CHECKED BY TW

Depth (m)	Graphic Log	Material Description	USCS	Additional Observations	Elevation (m)
0.2		SILTY SAND / SANDY SILT, SOME GRAVEL, MOIST, GREY	USCS - SP, SM		348.6
0.4				900kPa Resistance with less than 5mm displacement. shear vane is tested minimum 60kPa.	348.4
0.6					348.2
0.8				1000kPa Resistance with less than 5mm displacement. shear vane is tested minimum 50kPa.	348
1					347.8
1.2					347.6
1.4				1200kPa Resistance with less than 5mm displacement. shear vane is tested minimum 70kPa.	347.4
1.6					347.2
1.8		SANDY SILT, TRACE GRAVEL, MOIST, GREY COBBLES AND BOULDERS ENCOUTERED.	USCS - SM		347
2					346.8
2.2					346.6
2.4				1200kPa Resistance with less than 5mm displacement. shear vane is tested minimum 70kPa.	346.4
2.6					346.2
2.8					346
3					345.8
3.2					345.6
3.4					345.4
3.6					345.2
3.8					345
4					344.8
4.2					344.6
4.4					344.4
4.6					344.2
4.8					344
5					343.8
5.2					343.6
5.4					343.4
5.6		Termination Depth at:5.5, No Groundwater found till 5.5m.			343.2

Disclaimer

GEOTECHNICAL LOG BH104

PROJECT NUMBER 26 Anderson Blvd	**DRILLING DATE** 2024-05-29	**COORDINATES** 642136.255, 4876055.270
PROJECT NAME 26 Anderson Blvd, Uxbridge	**TOTAL DEPTH** 5.5	**COORD SYS** UTM-17
CLIENT	**DIAMETER**	**COMPLETION** 2024-05-29
ADDRESS 26 Anderson Blvd, Uxbridge, ON	**CASING** uPVC	**SURFACE ELEVATION** 348.392
LICENCE NO.	**SCREEN** uPVC Factory Slotted	**WELL TOC**

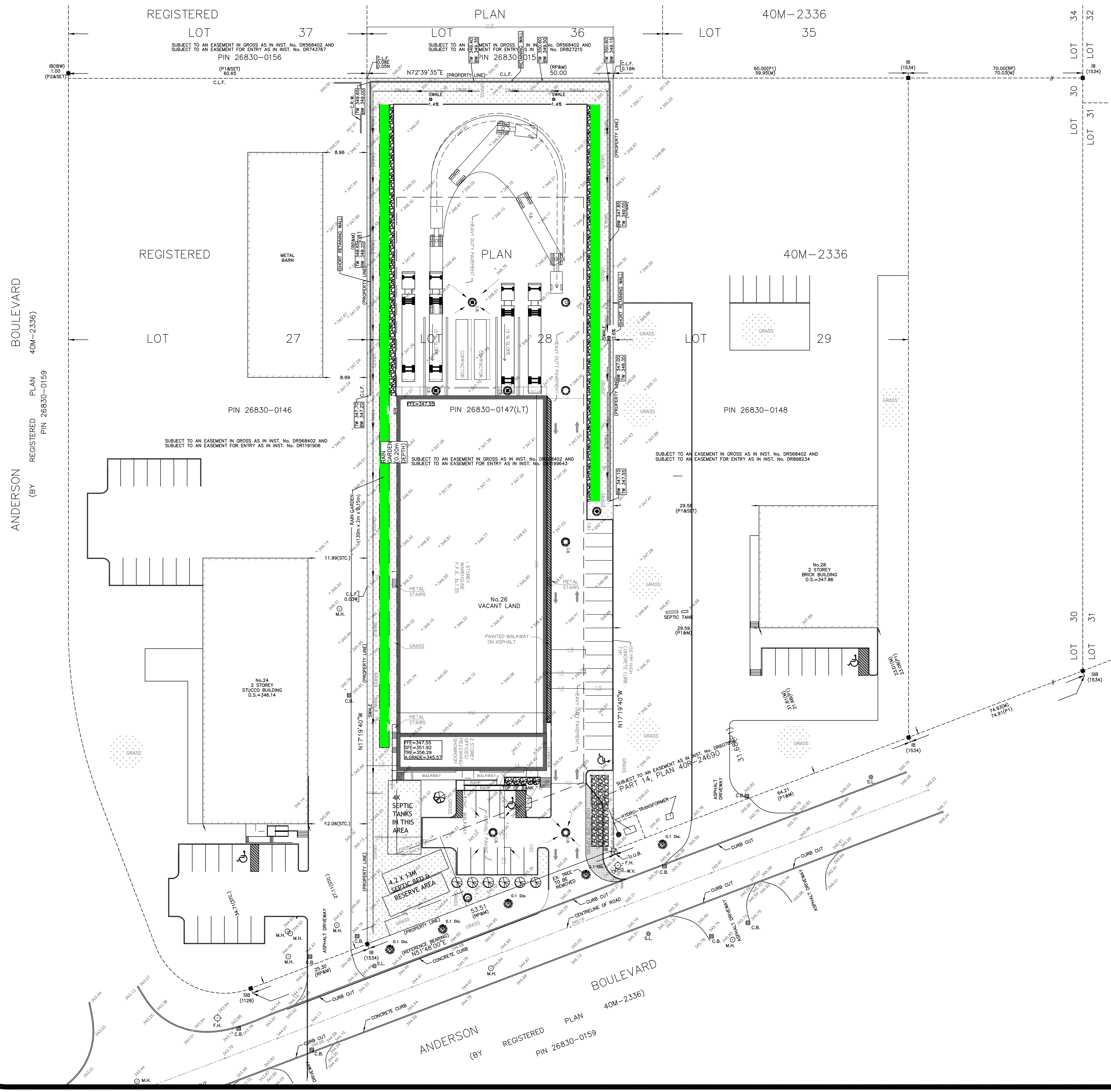
COMMENTS

LOGGED BY DP
CHECKED BY TW

Depth (m)	Graphic Log	Material Description	USCS	Additional Observations	Well Diagram	Elevation (m)
		SILTY SAND / SANDY SILT, SOME GRAVEL, MOIST, GREY	USCS - SP, SM			
0.2				1000kPa Resistance with less than 5mm displacement. shear vane is tested minimum 60kPa.		348.2
0.4						348
0.6						347.8
0.8				1200kPa Resistance with less than 5mm displacement. shear vane is tested minimum 50kPa.		347.6
1						347.4
1.2				1400kPa Resistance with less than 5mm displacement. shear vane is tested minimum 70kPa.		347.2
1.4						347
1.6		SANDY SILT, TRACE GRAVEL, MOIST, GREY COBBLES AND BOULDERS ENCOUTERED.	USCS - SM			346.8
1.8						346.6
2					BENTONI	346.4
2.2				1200kPa Resistance with less than 5mm displacement. shear vane is tested minimum 70kPa.		346.2
2.4						346
2.6						345.8
2.8						345.6
3						345.4
3.2						345.2
3.4						345
3.6						344.8
3.8						344.6
4						344.4
4.2						344.2
4.4						344
4.6					COARSE SAND	343.8
4.8						343.6
5						343.4
5.2						343.2
5.4						343
5.6		Termination Depth at:5.5, No Groundwater found till 5.5m.				342.8

Disclaimer

Appendix III – Proposed Site Plan



SITE PLAN
PART 1 – PLAN OF SURVEY OF
LOT 28
REGISTERED PLAN 40M–2336
TOWNSHIP OF UXBRIDGE
REGIONAL MUNICIPALITY OF DURHAM

LEGEND

□	DENOTES MONUMENT SET
■	DENOTES MONUMENT FOUND
SIB	DENOTES STANDARD IRON BAR
IB	DENOTES IRON BAR
P1	DENOTES PLAN OF SURVEY BY SALNA SURVEYING, O.L.S. DATE FEBRUARY 15, 2012
P2	DENOTES PLAN OF SURVEY BY ERTL–HUNT SURVEYORS, O.L.S. DATE JULY 7, 2023
RP	DENOTES REGISTERED PLAN 40M–24690
1534	DENOTES HUNT SURVEYS INC., O.L.S.
1128	DENOTES DAVID HORWOOD LTD., O.L.S.
IBW	DENOTES IBW SURVEYORS, O.L.S.
PIN	DENOTES PROPERTY IDENTIFIER NUMBER
M	DENOTES MEASURED
N,S,E,W	DENOTES NORTH, SOUTH, EAST, WEST
C.L.F.	DENOTES CHAIN LINK FENCE
C.R.W.	DENOTES CONCRETE RETAINING WALL
U.U.B.	DENOTES UNDERGROUND UTILITY BOX
D.S.	DENOTES DOOR SILL ELEVATION AT ENTRY
STC.	DENOTES TIE TAKEN FROM STUCCO
F.H.	DENOTES FIRE HYDRANT
M.H.	DENOTES MANHOLE
S.L.	DENOTES STREET LAMP
W.V.	DENOTES WATER VALVE
C.B.	DENOTES CATCH BASIN
0.2 Dia.	DENOTES CONIFEROUS TREE
0.1 Dia.	DENOTES DECIDUOUS TREE

STATISTIC:

LOT AREA= 8,314.13 SQ.M
GFA MAIN FLOOR = 69.675 SQ.M
GFA SEC. FLOOR= 68 SQ.M
TOTAL GFA= 137.6 SQ.M
137.6 SQ.FT / 8,314.13 SQ.M = 1.65%

COVERAGE:
BUILDING COV. =2,322.5 SQ.M
2,322.5 SQ.FT / 8,314.13 SQ.M = 27.93%

PARKING: 1 PER 100 SQ.M WAREHOUSE
1 PER 20 SQ.M OFFICE

WAREHOUSE=2,090.2 SQ.M/ 100 = 21
(PRIVATE SERVICE LAND)
OFFICE=137.6 SQ.M / 20= 7
TOTAL PARKING REQ.=28
PROVIDED=28

LANDSCAPING=
SOFT LANDSCAPE 2,084.33/8,314.13=
25.06%

SEWAGE CAPACITY =	2733lt	
LOADING DOCKS =	4 x 150lt	600lt
WAREHOUSE =	1 x 950lt	950lt
REMAINING OFFICE AREA=		1,183 lt

1,183/75lt=15.77 > 15 people
15 PEOPLE x 9.3m2 AS PER T. OBC 3.1.17.1 = 139.5 SQ.M

General Notes

AIC
HOME DESIGN
BUILDING
CONSULTANT
www.architalcandesign.com

THIS DRAWING NOT TO BE SCALED. FOLLOW NOTED DIMENSIONS ONLY.

THE CONTRACTOR SHALL VERIFY THAT ALL DIMENSIONS, DATUM AND INFORMATION SHOWN ARE CORRECT AND IN ACCORDANCE WITH THE SITE PRIOR TO THE COMMENCEMENT OF WORK. VARIATIONS AND MODIFICATIONS TO THE WORK SHOWN REQUIRE THE WRITTEN CONSENT OF THE DESIGNER IN ADVANCE. THE CONTRACTOR SHALL NOTIFY THE DESIGNER OF ANY DISCREPANCIES AS THEY BECOME APPARENT.

THIS DRAWING NOT TO BE USED FOR CONSTRUCTION PURPOSES UNLESS SIGNED BY THE DESIGNER.

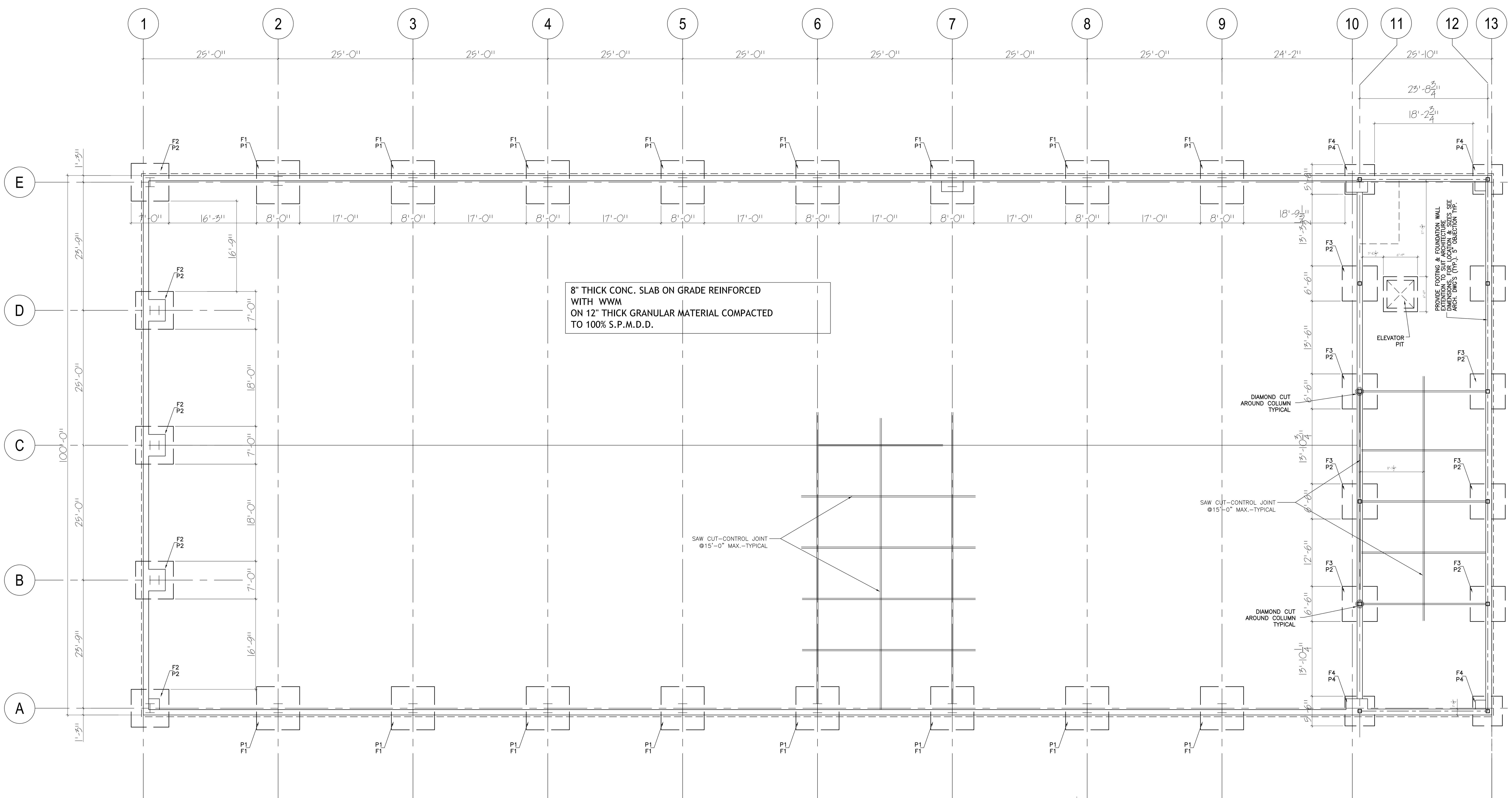
ALL DRAWINGS AND PRINTS ARE THE PROPERTY OF THE DESIGNER AND MUST BE RETURNED UPON COMPLETION OF THE WORK.

No.	Revision/Issue	Date

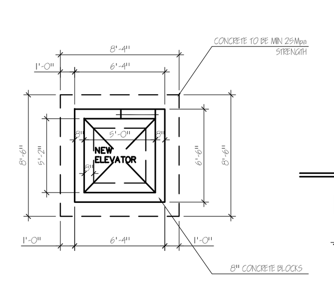
Firm Name and Address
ARCHITALCAN DESIGN INC.
Rocco Schipano
2842 Bloor St. West,
Suite 10 TORONTO ON.

Project Name and Address
26 ANDERSON BLVD
UXBRIDGE ON

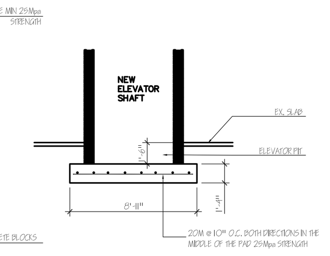
Project
Date
AUG. 30,2024
Scale
1/32" = 1'-0"
Sheet
A1



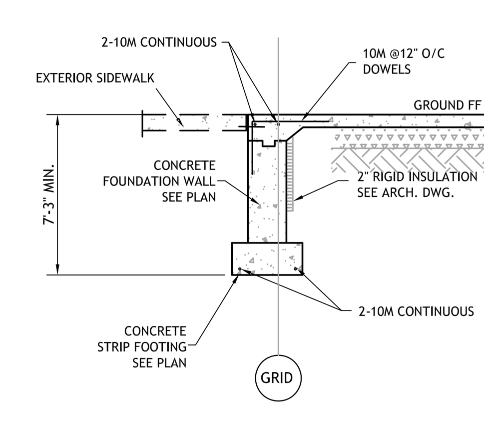
FOUNDATION PLAN -STRUCTURAL



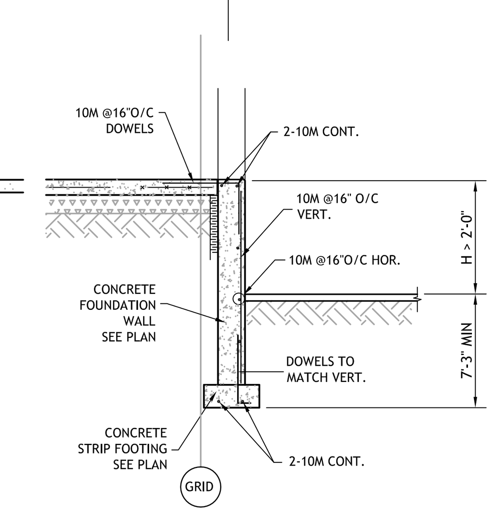
ELEVATOR SHAFT



ELEVATOR PIT



TYPICAL SECTION
AT DOOR LOCATION



TYPICAL SECTION FOR WALL
WHERE H > 2'-0"

FOUNDATION PLAN NOTES:

01. SEE SOIL INVESTIGATION REPORT BY "King EPCM"
REF.: DATE June 10, 2024

02. FOOTING SHALL BE CARRIED DOWN
ENGINEERED FILL CAPABLE OF MAXIMUM NET ALLOWABLE
BEARING PRESSURE 200Kpa (SEE SOIL REPORT page 5).

03. SOIL AT THE UNDERSIDE OF THE FOOTING IS TO BE INSPECTED
AND APPROVED BY SOIL CONSULTANT PRIOR TO PLACING CONCRETE.

04. ALL REINFORCING STEEL TO BE DEFORMED BARS TO CONFORM
TO CSA G30.18-M1992 WITH MIN. Fy=400 MPa U/N.
STIRRUPS AND TIES TO BE DEFORMED BARS TO CONFORM TO
CSA G30.18 WITH MIN. Fy=350 MPa.

05. ALL EXTERIOR FOOTINGS SHALL BE MINIMUM 5'-3" min (1.6m) BELOW
FINISHED GRADE WITH RIGID INSULATION (TO BE CONFIRMED
BY SOIL ENGINEERED) OR 4'-0" MIN BELOW FINISH GRADE WITHOUT INSULATION.

06. THE LINE OF SLOP BETWEEN ADJACENT FOOTING IS TO BE
A MAX. OF 7 IN 10, STEPS TO BE 2'-0" MAX.

07. ALL SLAB ON GRADE SHOULD BE CONSTRUCTED ON COMPACTED
GRANULAR MATERIAL AND TO BE APPROVED BY SOIL CONSULTANT.

08. CONCRETE SLAB ON GRADE SEE PLAN FOR DETAILS.

09. CONCRETE COMPRESSIVE STRENGTH FOR FOOTINGS TO BE
20 MPa AT 28 DAYS.

10. CONCRETE COMPRESSIVE STRENGTH FOR ALL SLAB ON GRADE FOUNDATION
WALL, COLUMN PIERTO BE 25 MPa AT 21 DAYS.

11. ALL CONCRETE WORK SHALL CONFORM TO CAN/CSA-A23.1-M90
AND CAN/CSA-A23.2-M90.

12. THIS DRAWING TO BE READ IN CONJUNCTION WITH THE
RELEVANT ARCHITECTURAL DRAWINGS.

13. CONCRETE CONTRACTOR TO SET ALL LOOSE MEMBERS THAT
ARE TO BE EMBEDDED IN THE CONCRETE.
SEE STRUCTURAL, PREFAB-SHOP DRAWINGS AND MECHANICAL DRAWINGS.

14. FORMWORK CONTRACTOR TO FORM ALL HOLES, CHASES etc.
AND TO SET INSERTS, ANCHOR BOLTS AND OTHER EMBEDDED
MEMBERS ARE REQUIRED TO BE HELD IN PLACE BY THE
FORMWORK BEFORE POURING THE CONCRETE.
SEE STRUCTURAL, ARCHITECTURAL AND MECHANICAL DRAWINGS
FOR LOCATION.

15. REINFORCING BARS IN FOOTINGS AND SLABS ON EARTH AND
CONCRETE MEMBERS EXPOSED FOR ARCHITECTURAL REASONS
TO WEATHER, SHALL BE SUPPORTED IN DESIGNATED POSITION
BY MEANS OF PRECAST CONCRETE SUPPORTS OR EQUIPMENT.

16. ALL POURED CONCRETE TO BE VIBRATED THOROUGHLY.

17. PROVIDE CONTROL JOINT AT OUTSIDE FACE OF FOUNFATION WALL
AT 30'-0" O/C (TYPICAL U/N).

18. CENTER LINE OF COLUMN SHOULD BE AT CENTER OF FOOTING
(TYPICAL U/N).

BACKFILL

01. SLABS ON GRADE ON ALL STRUCTURAL ELEMENTS FRAMED INTO
THE WALLS, WHICH ARE RETAINING EARTH, MUST BE IN PLACE
BEFORE BACKFILLING.

02. AT GRADE WALL CONDITIONS BACKFILL EACH SIDE OF WALL
SIMULTANEOUSLY.

FOOTING SCHEDULE

	DATA \ MARK	F1	F2	F3	F4	F5	F6
CONCRETE FOOTINGS	SIZE	8'-0"x8'-0"	7'-0"x7'-0"	6'-6"x6'-6"	5'-6"x5'-6"	5'-0"x5'-0"	3'-6"x3'-6"
	DEPTH	16"	14"	13"	12"	12"	12"
	BOTT. REINF.	7-20M EACH WAY	7-15M EACH WAY	7-15M EACH WAY	5-15M EACH WAY	5-15M EACH WAY	4-15M EACH WAY

PIER SCHEDULE

		DATA \ MARK	P1	P2	P3	P4
CONCRETE PIERS		SIZE	17"x17"	13"x17"	13"X13"	16"x16" CORNER SEE DETAIL ON DWG. S-03
	REINF.T	VERT.	4-15M	4-15M	4-15M	4-15M
		TIES	10M @ 12"O/C	10M @ 12"O/C	10M @ 12"O/C	10M @ 12"O/C

NOTE : FOR BASE PLATES AND ANCHOR BOLTS SEE
COLUMN SCHEDULE ON DWG. S-03

General Notes

AIC

HOME DESIGN
BUILDING
CONSULTANT
www.architalcandesign.com

THIS DRAWING NOT TO BE SCALED. FOLLOW NOTED DIMENSIONS ONLY.

THE CONTRACTOR SHALL VERIFY THAT ALL DIMENSIONS, DATUM AND INFORMATION SHOWN ARE CORRECT AND IN ACCORDANCE WITH THE SITE PRIOR TO THE COMMENCEMENT OF WORK. VARIATIONS AND MODIFICATIONS TO THE WORK SHOWN REQUIRE THE WRITTEN CONSENT OF THE DESIGNER IN ADVANCE. THE CONTRACTOR SHALL NOTIFY THE DESIGNER OF ANY DISCREPANCIES AS THEY BECOME APPARENT.

THIS DRAWING NOT TO BE USED FOR CONSTRUCTION PURPOSES UNLESS SIGNED BY THE DESIGNER.

No.	Revision/Issue	Date

Firm Name and Address
ARCHITALCAN DESIGN INC.
Rocco Schipano
2842 Bloor St. West,
Suite 10 TORONTO ON.

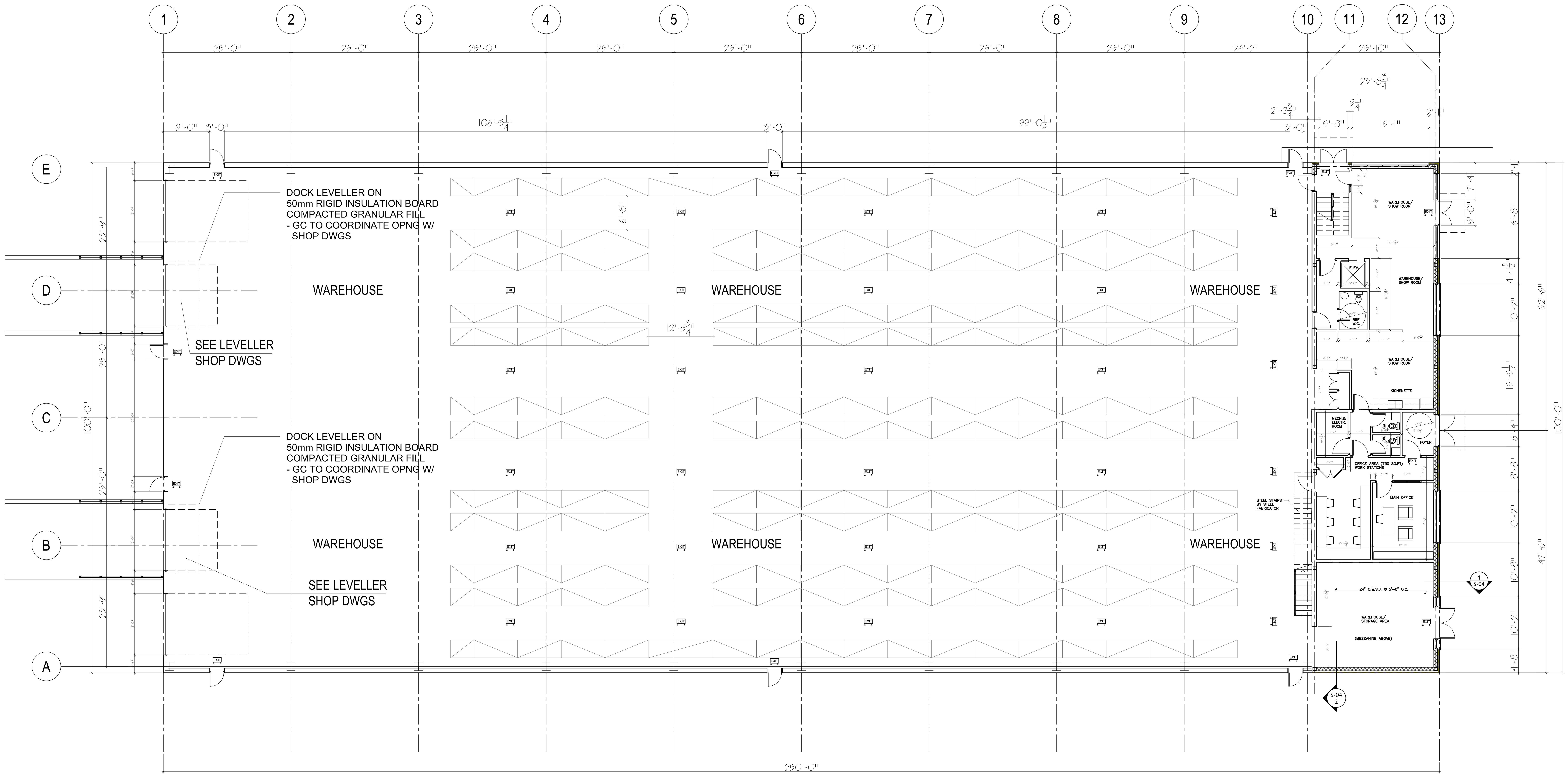
Project Name and Address
26 ANDERSON BLVD
UXBRIDGE ON

Project

Date
AUG. 30,2024

Scale
3/32" = 1'-0"

Sheet
A2



OFFICE (MAIN FLOOR)

General Notes

AIC

HOME DESIGN
BUILDING
CONSULTANT
www.architalcandesign.com

THIS DRAWING NOT TO BE SCALED. FOLLOW NOTED DIMENSIONS ONLY.

THE CONTRACTOR SHALL VERIFY THAT ALL DIMENSIONS, DATUM AND INFORMATION SHOWN ARE CORRECT AND IN ACCORDANCE WITH THE SITE PRIOR TO THE COMMENCEMENT OF WORK. VARIATIONS AND MODIFICATIONS TO THE WORK SHOWN REQUIRE THE WRITTEN CONSENT OF THE DESIGNER IN ADVANCE. THE CONTRACTOR SHALL NOTIFY THE DESIGNER OF ANY DISCREPANCIES AS THEY BECOME APPARENT.

THIS DRAWING NOT TO BE USED FOR CONSTRUCTION PURPOSES UNLESS SIGNED BY THE DESIGNER.

ALL DRAWINGS AND PRINTS ARE THE PROPERTY OF THE DESIGNER AND MUST BE RETURNED UPON COMPLETION OF THE WORK.

No.	Revision/Issue	Date

Firm Name and Address
ARCHITALCAN DESIGN INC.
Rocco Schipano
2842 Bloor St. West,
Suite 10 TORONTO ON.

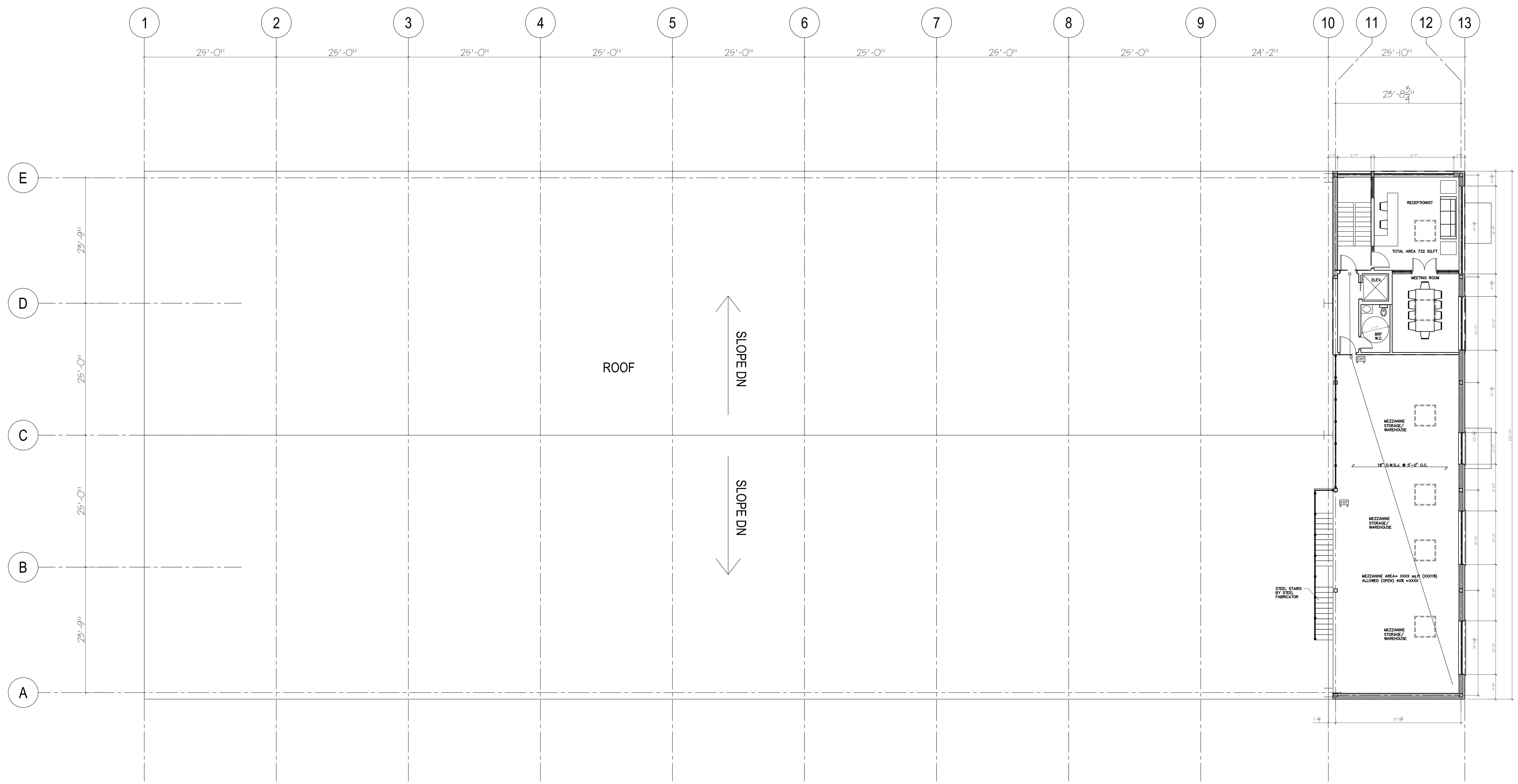
Project Name and Address
26 ANDERSON BLVD
UXBRIDGE ON

Project

Sheet
A3

Date
AUG. 30,2024

Scale
3/32" = 1'-0"



OFFICE (SECOND FLOOR)

General Notes

AIC

HOME DESIGN
BUILDING
CONSULTANT

www.architalcandesign.com

THIS DRAWING NOT TO BE SCALED. FOLLOW NOTED DIMENSIONS ONLY.

THE CONTRACTOR SHALL VERIFY THAT ALL DIMENSIONS, DATUM AND INFORMATION SHOWN ARE CORRECT AND IN ACCORDANCE WITH THE SITE PRIOR TO THE COMMENCEMENT OF WORK. VARIATIONS AND MODIFICATIONS TO THE WORK SHOWN REQUIRE THE WRITTEN CONSENT OF THE DESIGNER IN ADVANCE. THE CONTRACTOR SHALL NOTIFY THE DESIGNER OF ANY DISCREPANCIES AS THEY BECOME APPARENT.

THIS DRAWING NOT TO BE USED FOR CONSTRUCTION PURPOSES UNLESS SIGNED BY THE DESIGNER.

ALL DRAWINGS AND PRINTS ARE THE PROPERTY OF THE DESIGNER AND MUST BE RETURNED UPON COMPLETION OF THE WORK.

No.	Revision/Issue	Date

Firm Name and Address
ARCHITALCAN DESIGN INC.
Rocco Schipano
2842 Bloor St. West,
Suite 10 TORONTO ON.

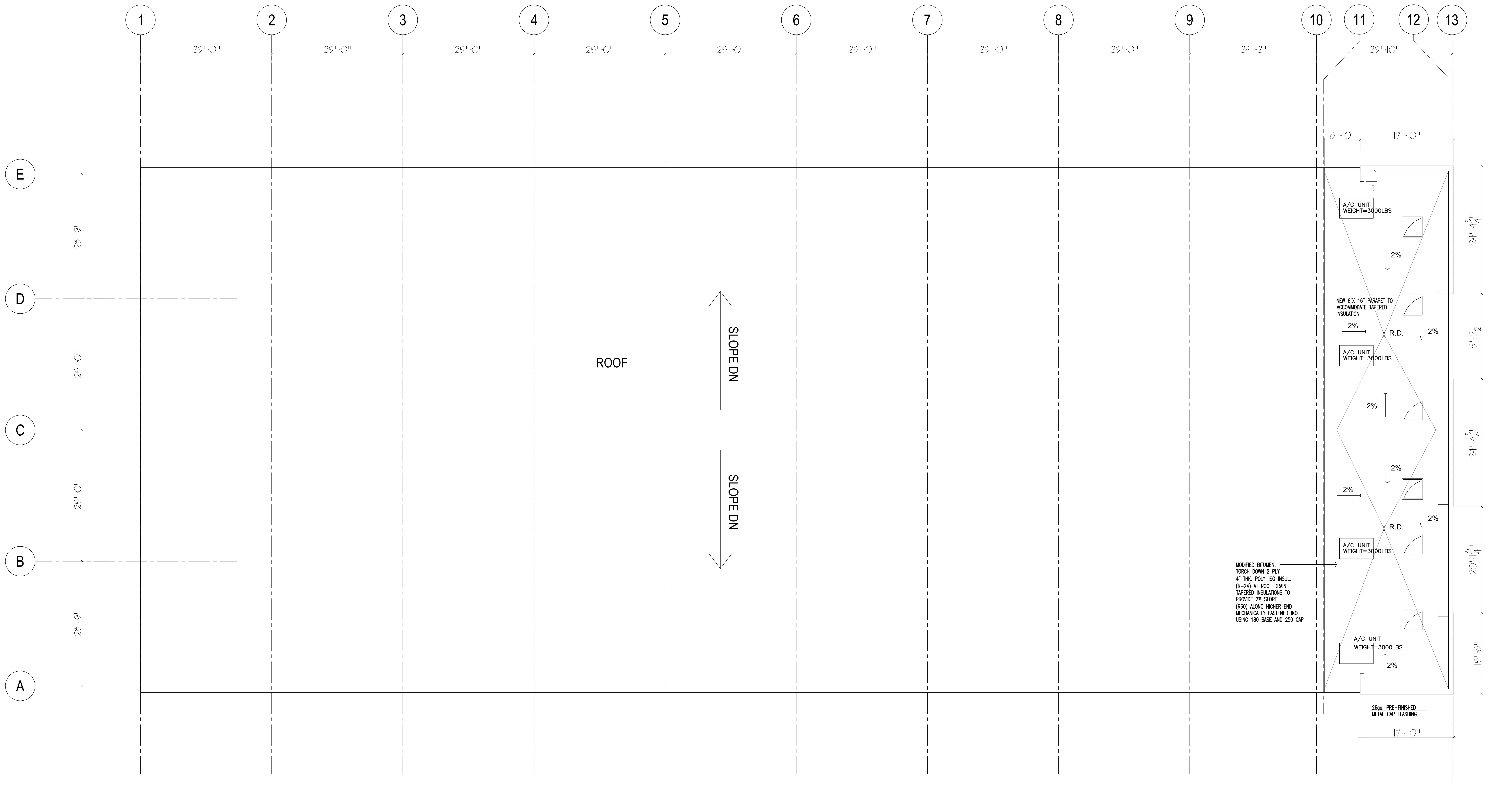
Project Name and Address
26 ANDERSON BLVD
UXBRIDGE ON

Project

Date
AUG. 30,2024

Scale
3/32" = 1'-0"

Sheet
A4



ROOF PLAN

General Notes

AIC

HOME DESIGN
BUILDING
CONSULTANT

www.architalcandesign.com

THIS DRAWING NOT TO BE SCALED. FOLLOW NOTED DIMENSIONS ONLY.

THE CONTRACTOR SHALL VERIFY THAT ALL DIMENSIONS, DATUM AND INFORMATION SHOWN ARE CORRECT AND IN ACCORDANCE WITH THE SITE PRIOR TO THE COMMENCEMENT OF WORK. VARIATIONS AND MODIFICATIONS TO THE WORK SHOWN REQUIRE THE WRITTEN CONSENT OF THE DESIGNER IN ADVANCE. THE CONTRACTOR SHALL NOTIFY THE DESIGNER OF ANY DISCREPANCIES AS THEY BECOME APPARENT.

THIS DRAWING NOT TO BE USED FOR CONSTRUCTION PURPOSES UNLESS SIGNED BY THE DESIGNER.

ALL DRAWINGS AND PRINTS ARE THE PROPERTY OF THE DESIGNER AND MUST BE RETURNED UPON COMPLETION OF THE WORK.

No.	Revision/Issue	Date

Firm Name and Address
ARCHITALCAN DESIGN INC.
Rocco Schipano
2842 Bloor St. West,
Suite 10 TORONTO ON.

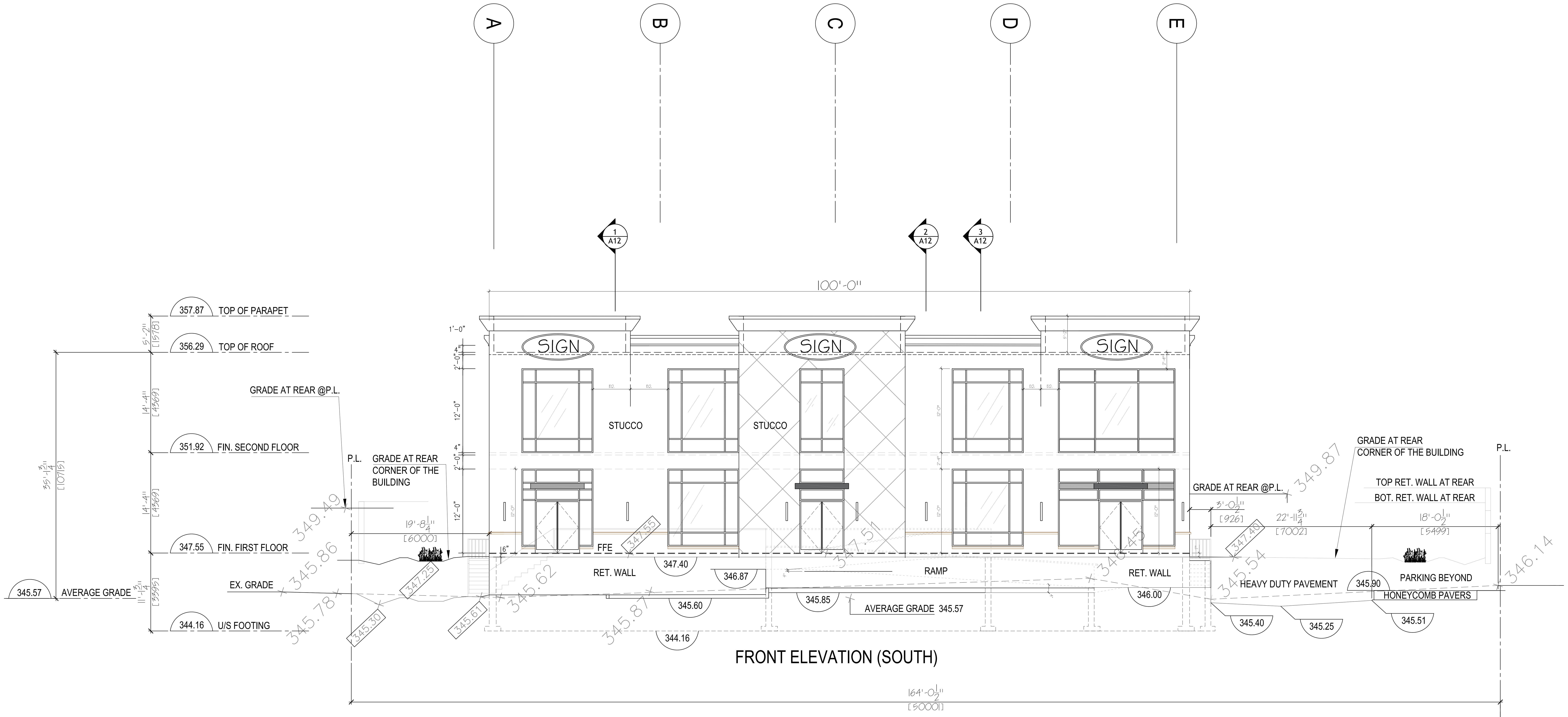
Project Name and Address
26 ANDERSON BLVD
UXBRIDGE ON

Project

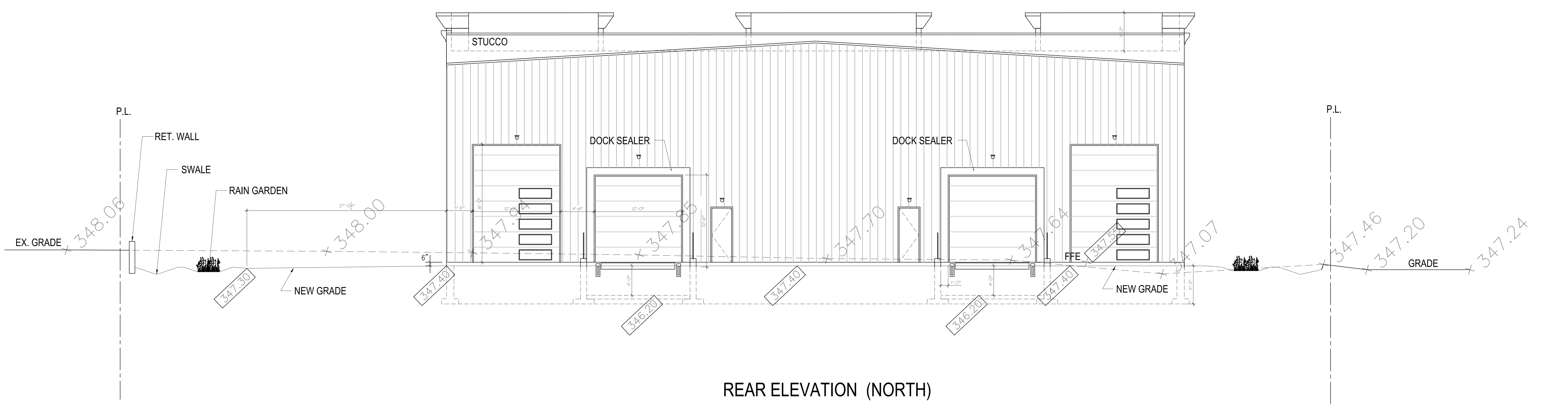
Date
AUG. 30,2024

Scale
3/32" = 1'-0"

Sheet
A5



FRONT ELEVATION (SOUTH)



REAR ELEVATION (NORTH)

General Notes

AIC

HOME DESIGN
BUILDING
CONSULTANT
www.architalcandesign.com

THIS DRAWING NOT TO BE SCALED. FOLLOW NOTED DIMENSIONS ONLY.

THE CONTRACTOR SHALL VERIFY THAT ALL DIMENSIONS, DATUM AND INFORMATION SHOWN ARE CORRECT AND IN ACCORDANCE WITH THE SITE PRIOR TO THE COMMENCEMENT OF WORK. VARIATIONS AND MODIFICATIONS TO THE WORK SHOWN REQUIRE THE WRITTEN CONSENT OF THE DESIGNER IN ADVANCE. THE CONTRACTOR SHALL NOTIFY THE DESIGNER OF ANY DISCREPANCIES AS THEY BECOME APPARENT.

THIS DRAWING NOT TO BE USED FOR CONSTRUCTION PURPOSES UNLESS SIGNED BY THE DESIGNER.

ALL DRAWINGS AND PRINTS ARE THE PROPERTY OF THE DESIGNER AND MUST BE RETURNED UPON COMPLETION OF THE WORK.

No.	Revision/Issue	Date

Firm Name and Address
ARCHITALCAN DESIGN INC.
Rocco Schipano
2842 Bloor St. West,
Suite 10 TORONTO ON.

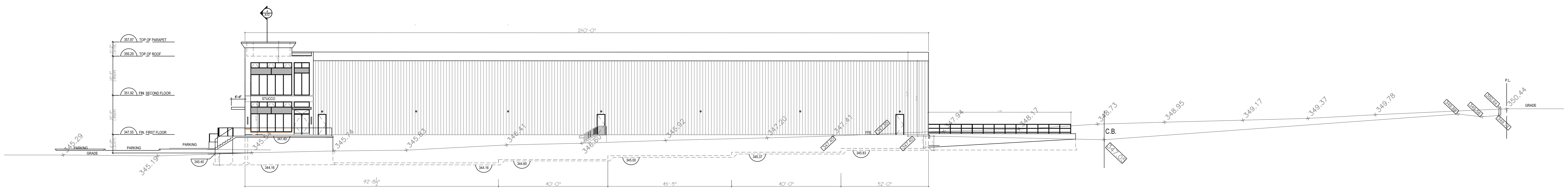
Project Name and Address
26 ANDERSON BLVD
UXBRIDGE ON

Project

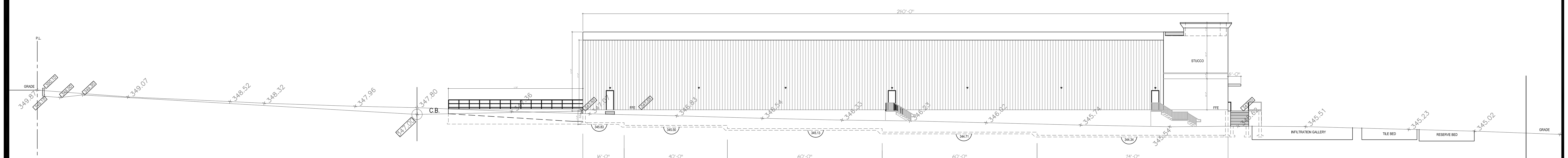
Date
AUG. 30,2024

Scale
1/8" = 1'-0"

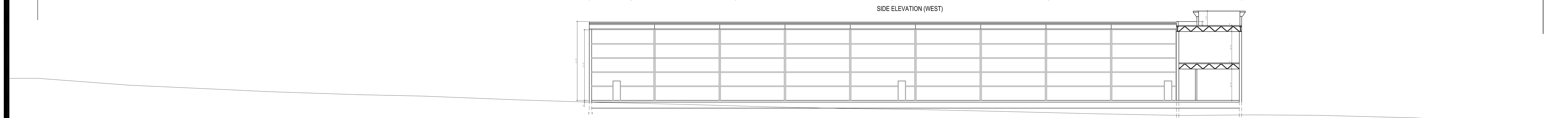
Sheet
A6



SIDE ELEVATION (EAST)



SIDE ELEVATION (WEST)



SECTION A-A

General Notes

AIC

HOME DESIGN
BUILDING
CONSULTANT

www.architalcandesign.com

THIS DRAWING NOT TO BE SCALED. FOLLOW NOTED DIMENSIONS ONLY.

THE CONTRACTOR SHALL VERIFY THAT ALL DIMENSIONS, DATUM AND INFORMATION SHOWN ARE CORRECT AND IN ACCORDANCE WITH THE SITE PRIOR TO THE COMMENCEMENT OF WORK. VARIATIONS AND MODIFICATIONS TO THE WORK SHOWN REQUIRE THE WRITTEN CONSENT OF THE DESIGNER IN ADVANCE. THE CONTRACTOR SHALL NOTIFY THE DESIGNER OF ANY DISCREPANCIES AS THEY BECOME APPARENT.

THIS DRAWING NOT TO BE USED FOR CONSTRUCTION PURPOSES UNLESS SIGNED BY THE DESIGNER.

ALL DRAWINGS AND PRINTS ARE THE PROPERTY OF THE DESIGNER AND MUST BE RETURNED UPON COMPLETION OF THE WORK.

No.	Revision/Issue	Date

Firm Name and Address
ARCHITALCAN DESIGN INC.
Rocco Schipano
2842 Bloor St. West,
Suite 10 TORONTO ON.

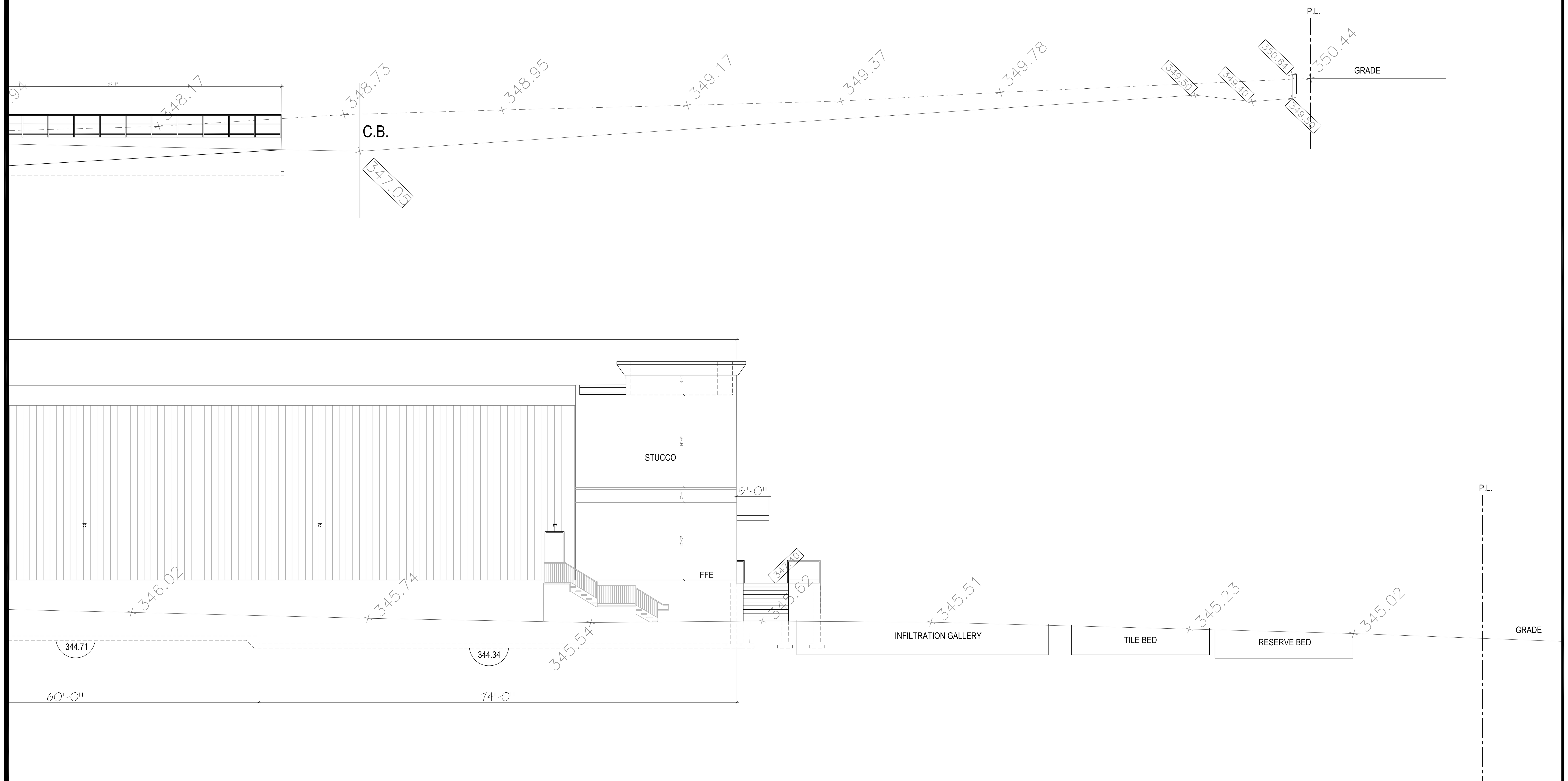
Project Name and Address
26 ANDERSON BLVD
UXBRIDGE ON

Project

Date
AUG. 30,2024

Scale
1/8" = 1'0"

Sheet
A7



General Notes

AIC

HOME DESIGN
BUILDING
CONSULTANT
www.architalcandesign.com

THIS DRAWING NOT TO BE SCALED. FOLLOW NOTED DIMENSIONS ONLY.

THE CONTRACTOR SHALL VERIFY THAT ALL DIMENSIONS, DATUM AND INFORMATION SHOWN ARE CORRECT AND IN ACCORDANCE WITH THE SITE PRIOR TO THE COMMENCEMENT OF WORK. VARIATIONS AND MODIFICATIONS TO THE WORK SHOWN REQUIRE THE WRITTEN CONSENT OF THE DESIGNER IN ADVANCE. THE CONTRACTOR SHALL NOTIFY THE DESIGNER OF ANY DISCREPANCIES AS THEY BECOME APPARENT.

THIS DRAWING NOT TO BE USED FOR CONSTRUCTION PURPOSES UNLESS SIGNED BY THE DESIGNER.

ALL DRAWINGS AND PRINTS ARE THE PROPERTY OF THE DESIGNER AND MUST BE RETURNED UPON COMPLETION OF THE WORK.

No.	Revision/Issue	Date

Firm Name and Address
ARCHITALCAN DESIGN INC.
Rocco Schipano
2842 Bloor St. West,
Suite 10 TORONTO ON.

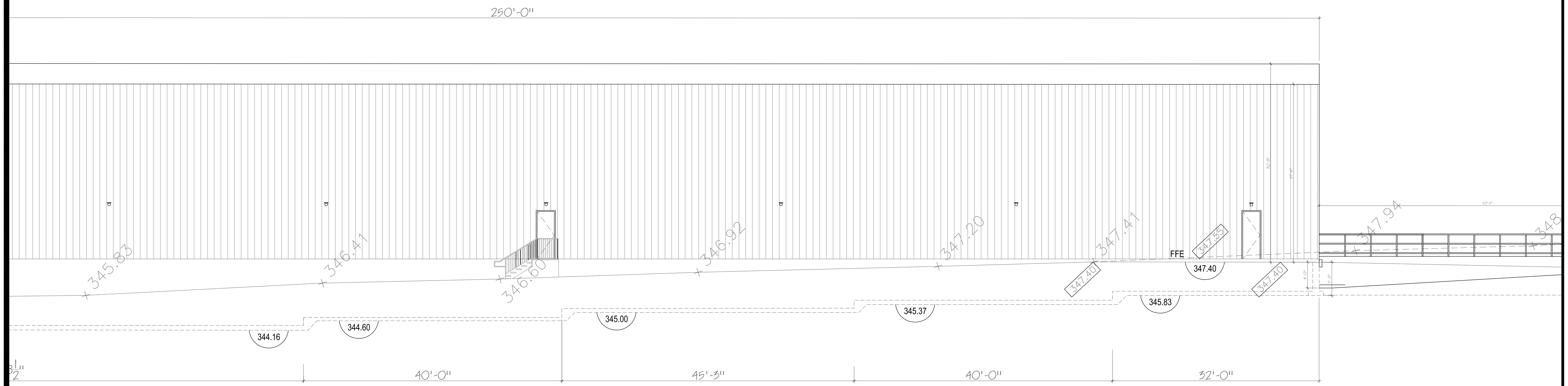
Project Name and Address
26 ANDERSON BLVD
UXBRIDGE ON

Project

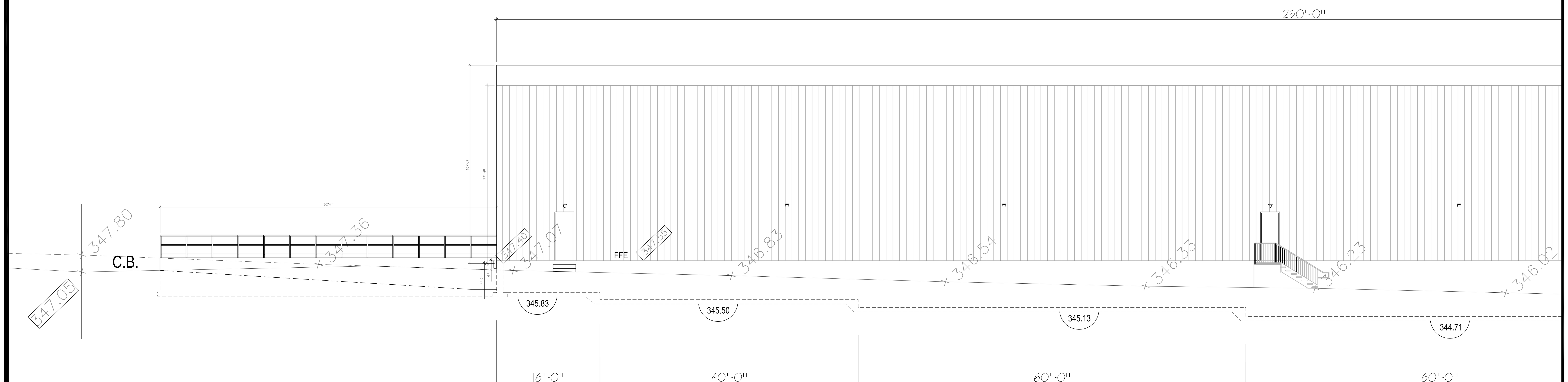
Date
AUG. 30,2024

Scale
1/8" = 1'-0"

Sheet
A8



SIDE ELEVATION (EAST)



SIDE ELEVATION (WEST)

General Notes

AIC

HOME DESIGN
BUILDING
CONSULTANT

www.architalcandesign.com

THIS DRAWING NOT TO BE SCALED. FOLLOW NOTED DIMENSIONS ONLY.

THE CONTRACTOR SHALL VERIFY THAT ALL DIMENSIONS, DATUM AND INFORMATION SHOWN ARE CORRECT AND IN ACCORDANCE WITH THE SITE PRIOR TO THE COMMENCEMENT OF WORK. VARIATIONS AND MODIFICATIONS TO THE WORK SHOWN REQUIRE THE WRITTEN CONSENT OF THE DESIGNER IN ADVANCE. THE CONTRACTOR SHALL NOTIFY THE DESIGNER OF ANY DISCREPANCIES AS THEY BECOME APPARENT.

THIS DRAWING NOT TO BE USED FOR CONSTRUCTION PURPOSES UNLESS SIGNED BY THE DESIGNER.

ALL DRAWINGS AND PRINTS ARE THE PROPERTY OF THE DESIGNER AND MUST BE RETURNED UPON COMPLETION OF THE WORK.

No.	Revision/Issue	Date

Firm Name and Address
ARCHITALCAN DESIGN INC.
Rocco Schipano
2842 Bloor St. West,
Suite 10 TORONTO ON.

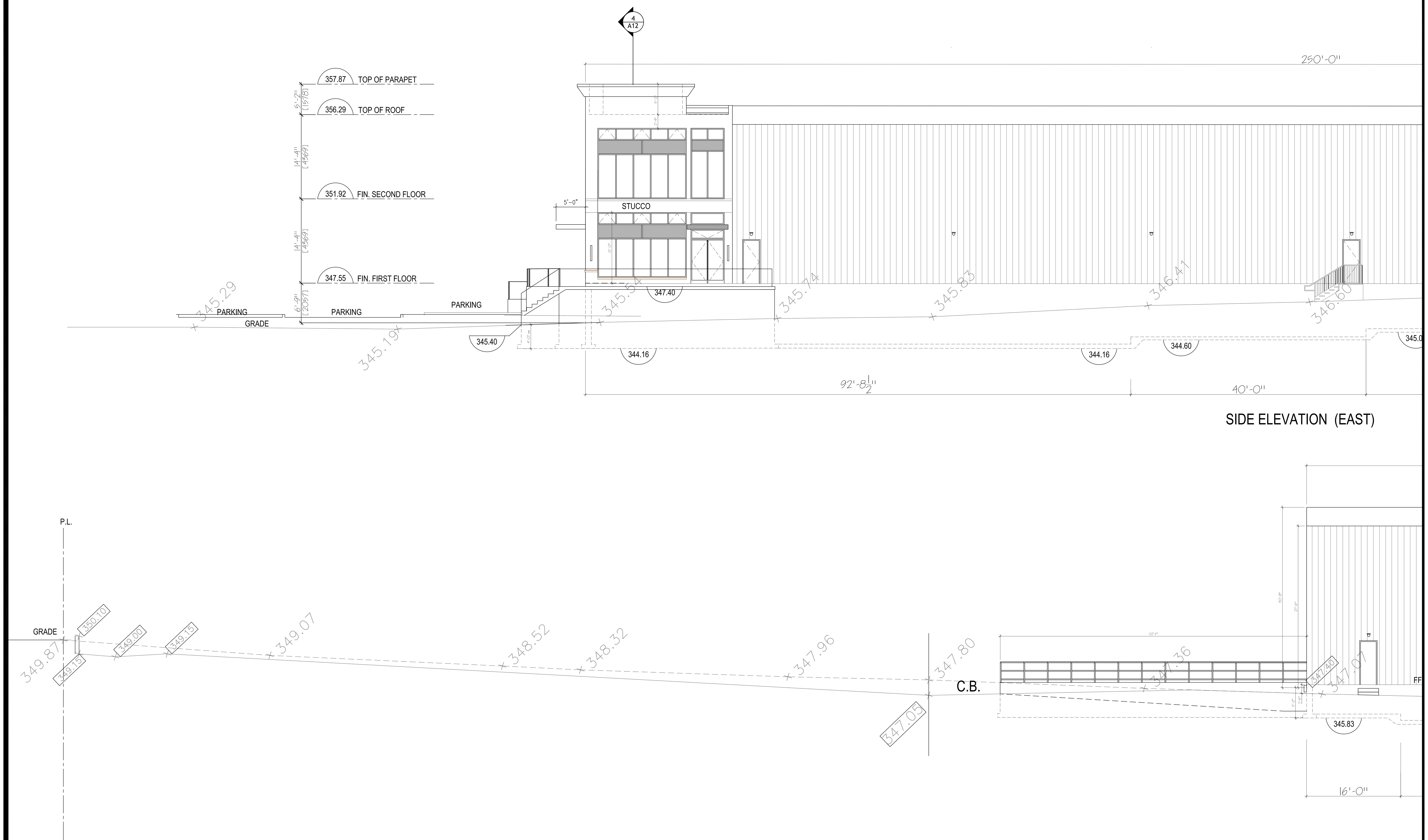
Project Name and Address
26 ANDERSON BLVD
UXBRIDGE ON

Project

Date
AUG. 30,2024

Scale
1/8" = 1'-0"

Sheet
A9



SIDE ELEVATION (EAST)

General Notes

AIC

HOME DESIGN
BUILDING
CONSULTANT
www.architalcandesign.com

THIS DRAWING NOT TO BE SCALED. FOLLOW NOTED DIMENSIONS ONLY.

THE CONTRACTOR SHALL VERIFY THAT ALL DIMENSIONS, DATUM AND INFORMATION SHOWN ARE CORRECT AND IN ACCORDANCE WITH THE SITE PRIOR TO THE COMMENCEMENT OF WORK. VARIATIONS AND MODIFICATIONS TO THE WORK SHOWN REQUIRE THE WRITTEN CONSENT OF THE DESIGNER IN ADVANCE. THE CONTRACTOR SHALL NOTIFY THE DESIGNER OF ANY DISCREPANCIES AS THEY BECOME APPARENT.

THIS DRAWING NOT TO BE USED FOR CONSTRUCTION PURPOSES UNLESS SIGNED BY THE DESIGNER.

ALL DRAWINGS AND PRINTS ARE THE PROPERTY OF THE DESIGNER AND MUST BE RETURNED UPON COMPLETION OF THE WORK.

No.	Revision/Issue	Date

Firm Name and Address
ARCHITALCAN DESIGN INC.
Rocco Schipano
2842 Bloor St. West,
Suite 10 TORONTO ON.

Project Name and Address
26 ANDERSON BLVD
UXBRIDGE ON

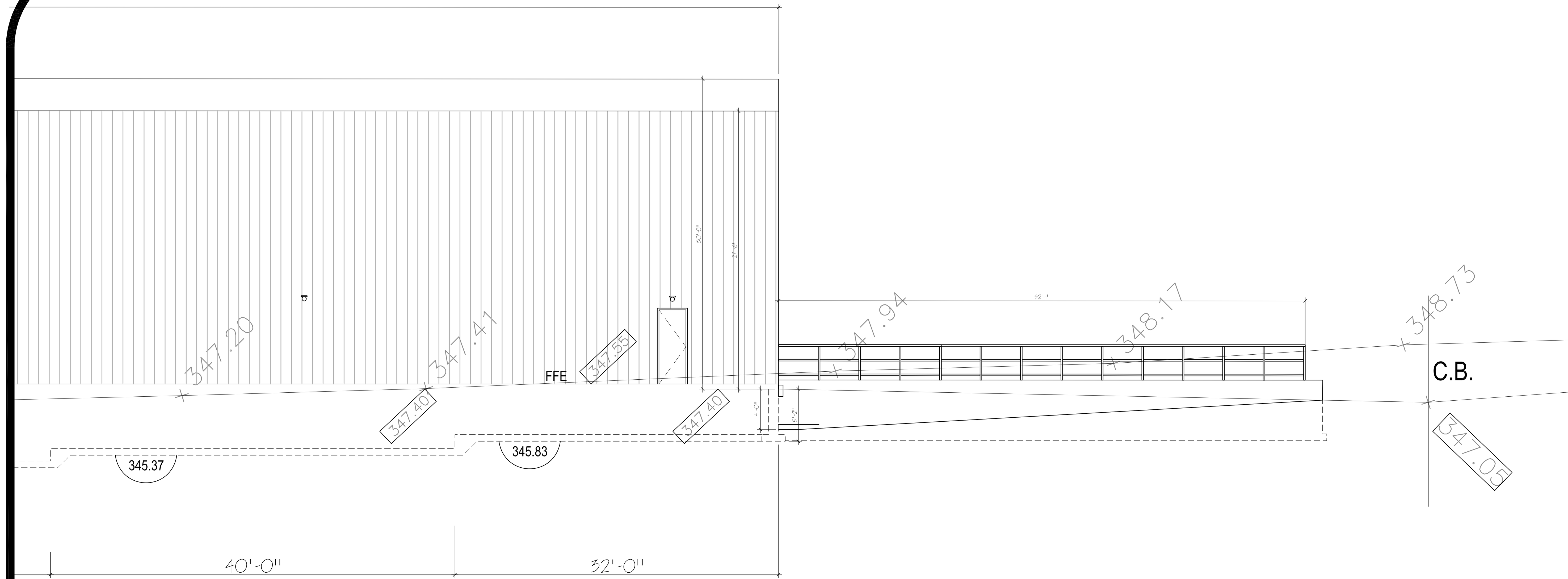
Project

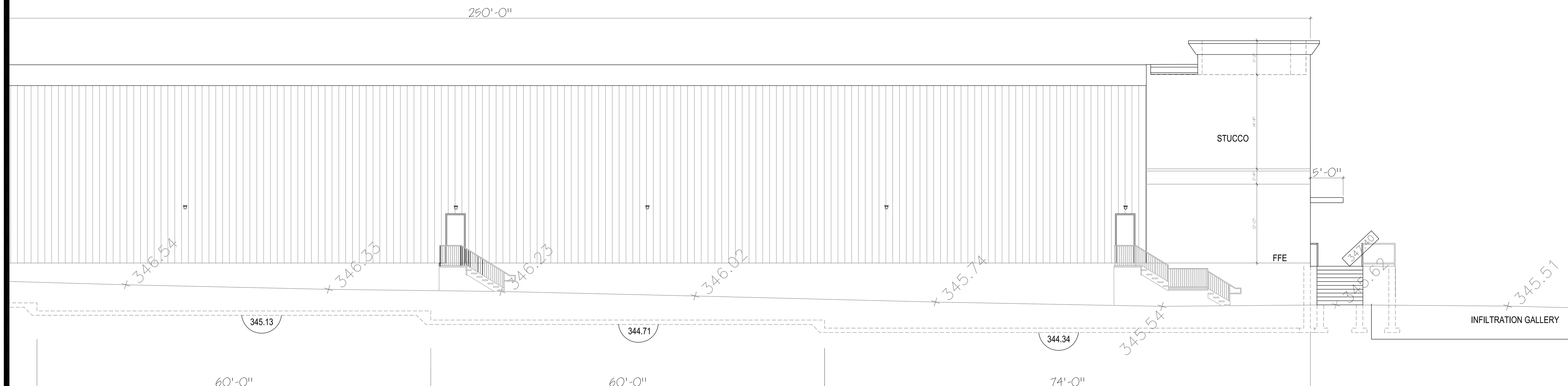
Sheet

Date
AUG. 30,2024

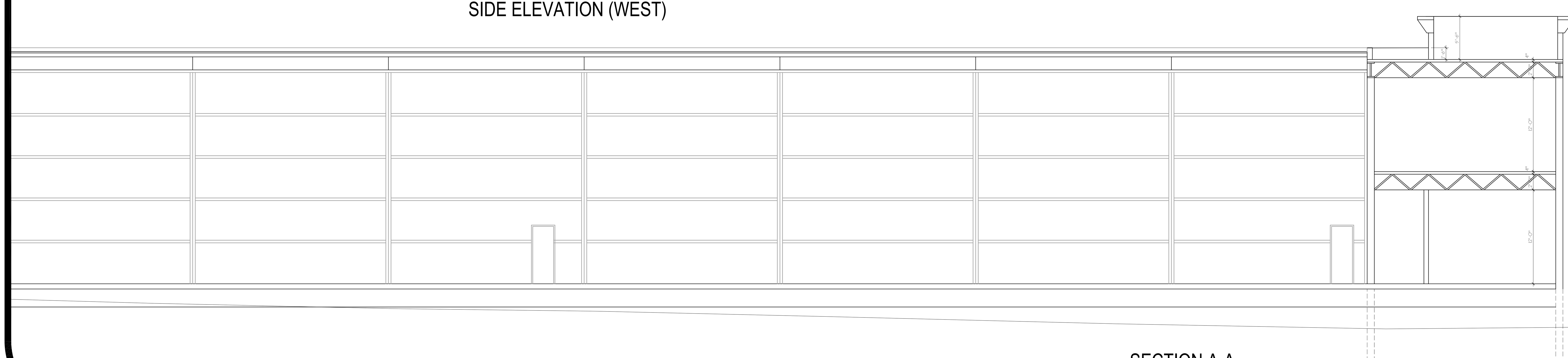
Scale
1/8" = 1'-0"

A10





SIDE ELEVATION (WEST)



SECTION A-A

General Notes

AIC

HOME DESIGN
BUILDING
CONSULTANT
www.architalcandesign.com

THIS DRAWING NOT TO BE SCALED. FOLLOW NOTED DIMENSIONS ONLY.

THE CONTRACTOR SHALL VERIFY THAT ALL DIMENSIONS, DATUM AND INFORMATION SHOWN ARE CORRECT AND IN ACCORDANCE WITH THE SITE PRIOR TO THE COMMENCEMENT OF WORK. VARIATIONS AND MODIFICATIONS TO THE WORK SHOWN REQUIRE THE WRITTEN CONSENT OF THE DESIGNER IN ADVANCE. THE CONTRACTOR SHALL NOTIFY THE DESIGNER OF ANY DISCREPANCIES AS THEY BECOME APPARENT.

THIS DRAWING NOT TO BE USED FOR CONSTRUCTION PURPOSES UNLESS SIGNED BY THE DESIGNER.

ALL DRAWINGS AND PRINTS ARE THE PROPERTY OF THE DESIGNER AND MUST BE RETURNED UPON COMPLETION OF THE WORK.

No.	Revision/Issue	Date

Firm Name and Address
ARCHITALCAN DESIGN INC.
Rocco Schipano
2842 Bloor St. West,
Suite 10 TORONTO ON.

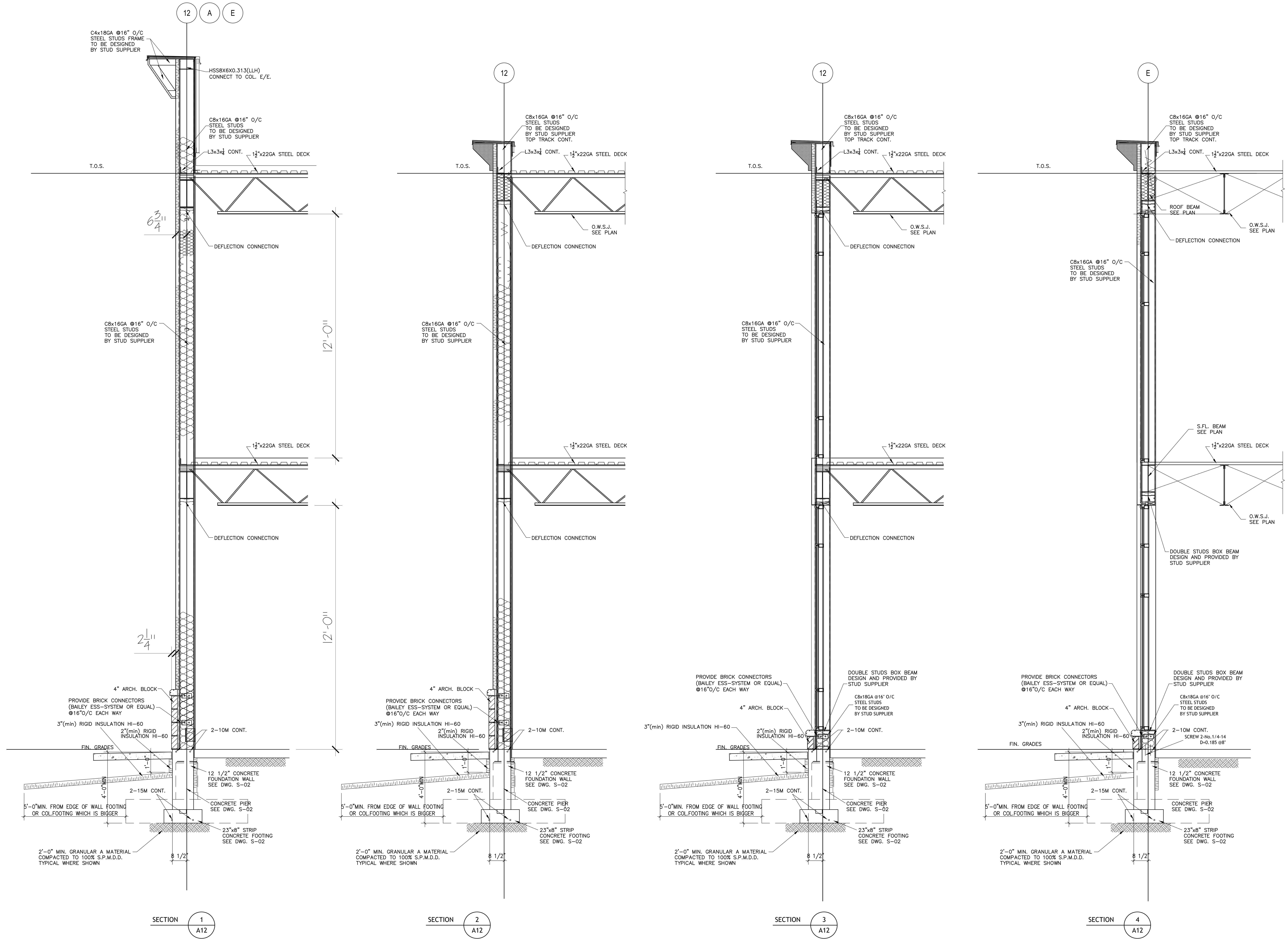
Project Name and Address
26 ANDERSON BLVD
UXBRIDGE ON

Project

Sheet
A11

Date
AUG. 30,2024

Scale
1/8" = 1'-0"



General Notes

AIC

HOME DESIGN
BUILDING
CONSULTANT

www.architalcandesign.com

THIS DRAWING NOT TO BE SCALED. FOLLOW NOTED DIMENSIONS ONLY.

THE CONTRACTOR SHALL VERIFY THAT ALL DIMENSIONS, DATUM AND INFORMATION SHOWN ARE CORRECT AND IN ACCORDANCE WITH THE SITE PRIOR TO THE COMMENCEMENT OF WORK. VARIATIONS AND MODIFICATIONS TO THE WORK SHOWN REQUIRE THE WRITTEN CONSENT OF THE DESIGNER IN ADVANCE. THE CONTRACTOR SHALL NOTIFY THE DESIGNER OF ANY DISCREPANCIES AS THEY BECOME APPARENT.

THIS DRAWING NOT TO BE USED FOR CONSTRUCTION PURPOSES UNLESS SIGNED BY THE DESIGNER.

ALL DRAWINGS AND PRINTS ARE THE PROPERTY OF THE DESIGNER AND MUST BE RETURNED UPON COMPLETION OF THE WORK.

No.	Revision/Issue	Date

Firm Name and Address
ARCHITALCAN DESIGN INC.
Rocco Schipano
2842 Bloor St. West,
Suite 10 TORONTO ON.

Project Name and Address
26 ANDERSON BLVD
UXBRIDGE ON

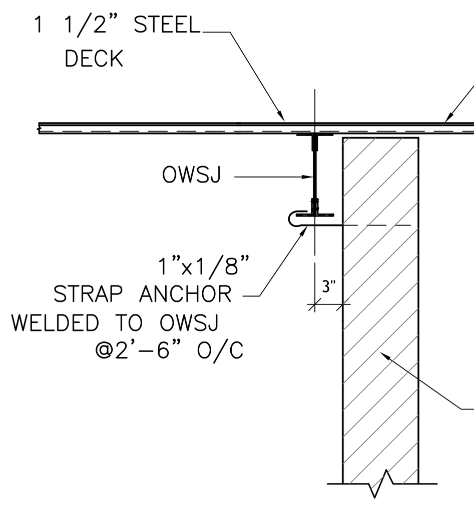
Project

Sheet

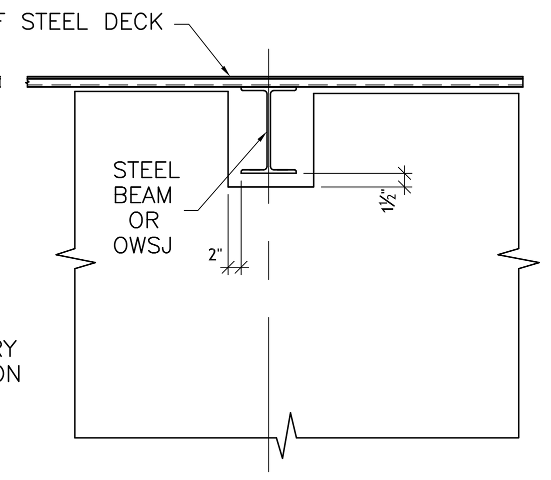
Date
AUG. 30,2024

Scale
NTS

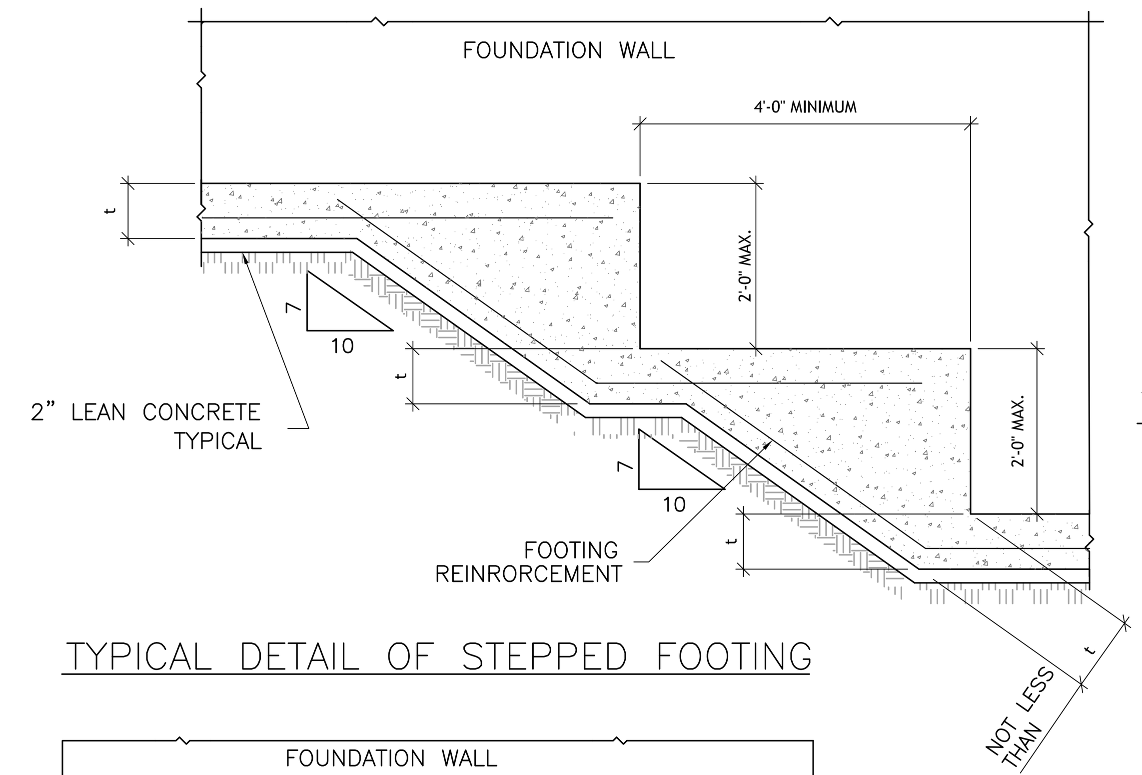
A12



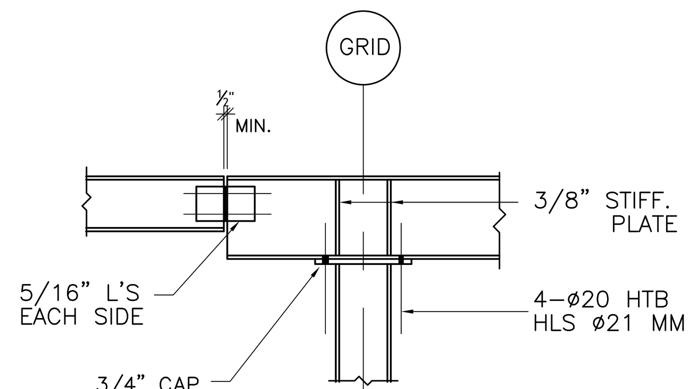
PARTITION LATERAL SUPPORT @ OWSJ



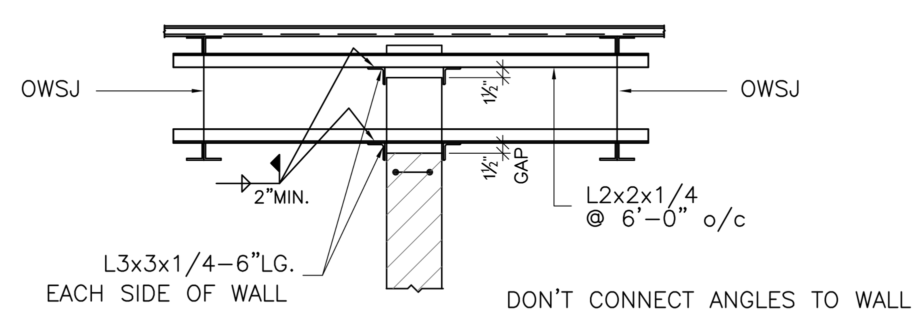
MASONRY PARTITION POCKETS @ OWSJ OR BEAMS



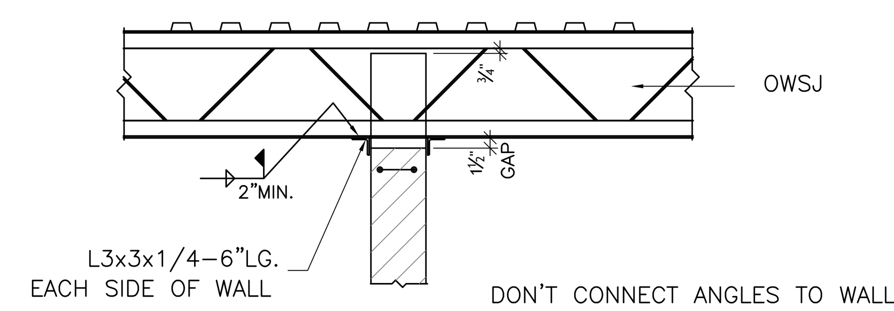
TYPICAL DETAIL OF STEPPED FOOTING



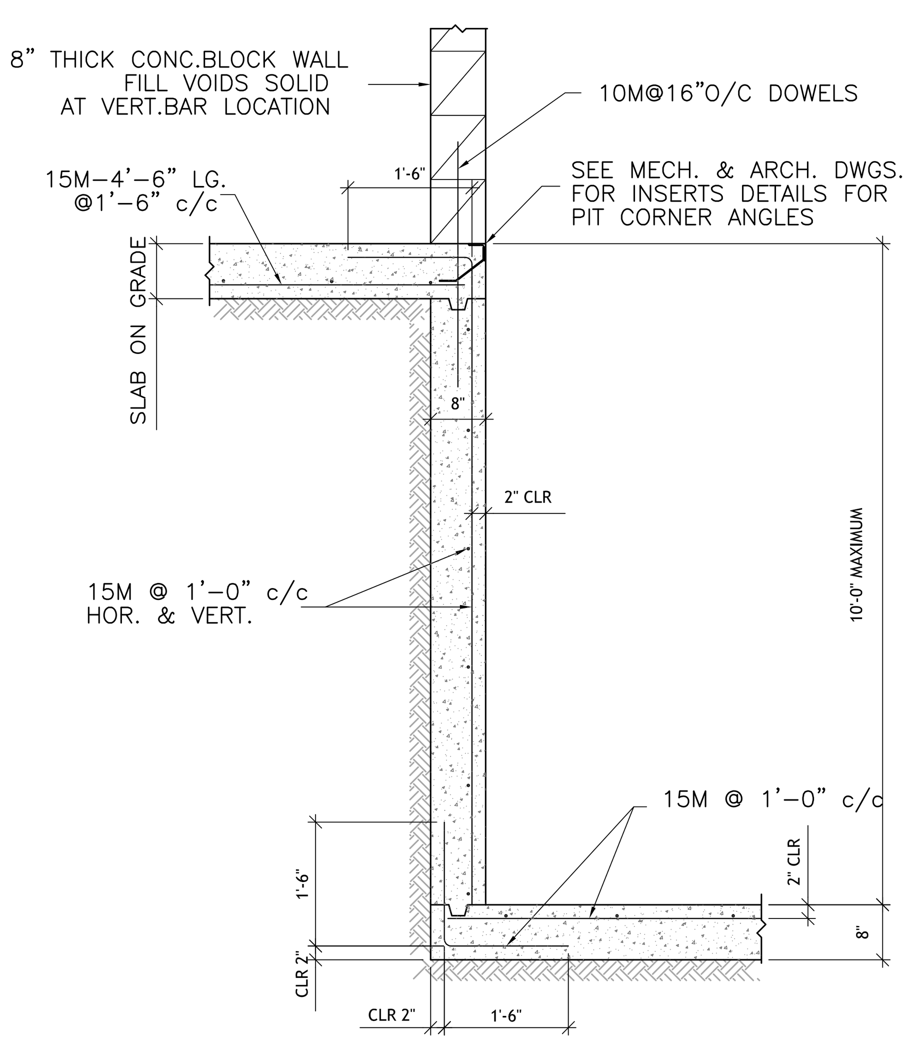
TYPICAL CANTILEVERED BEAM



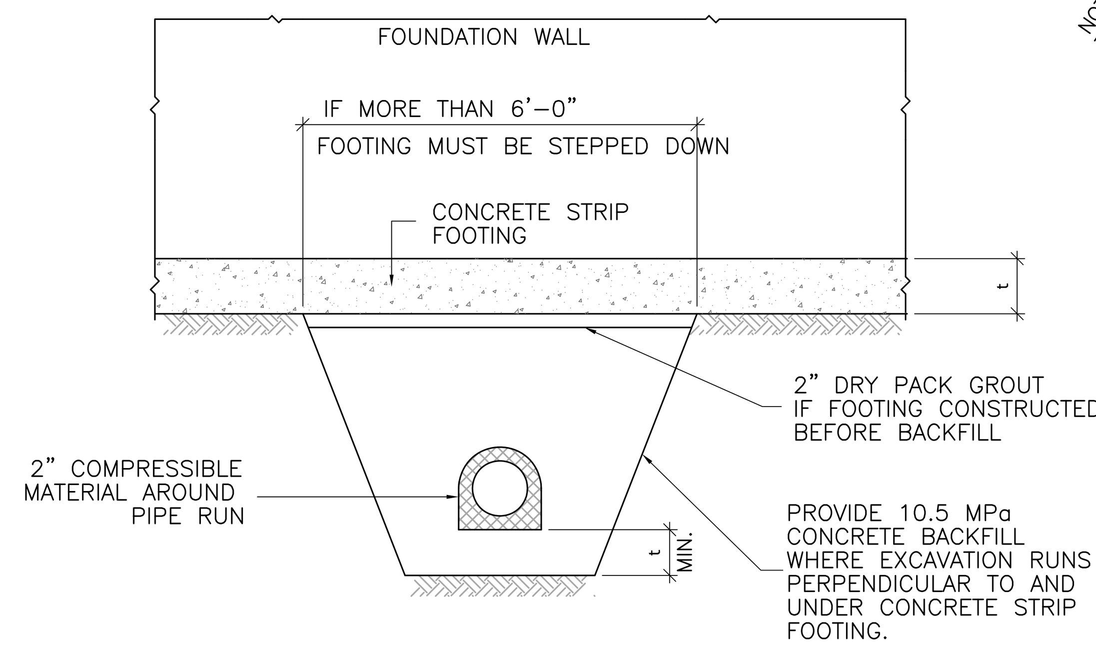
TYPICAL PARTITION WALL SUPPORT BETWEEN JOISTS



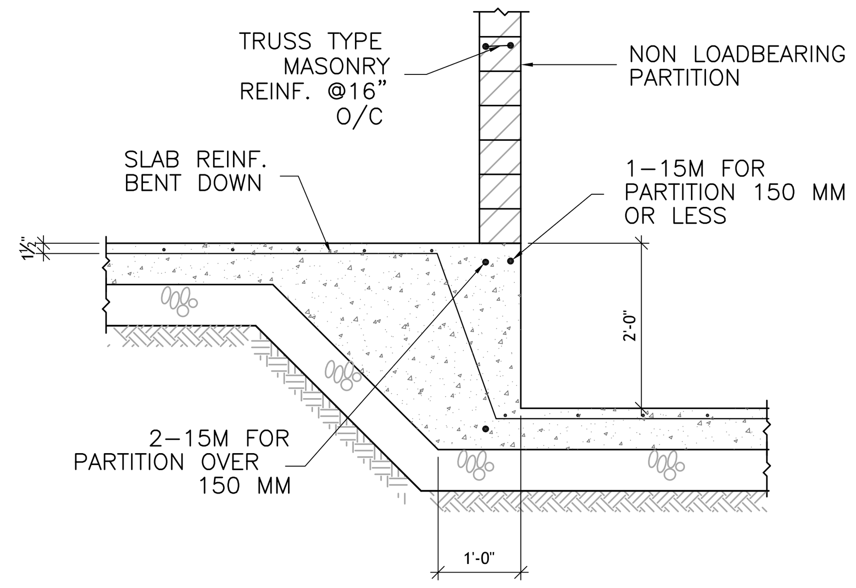
TYPICAL PARTITION WALL SUPPORT BY JOIST



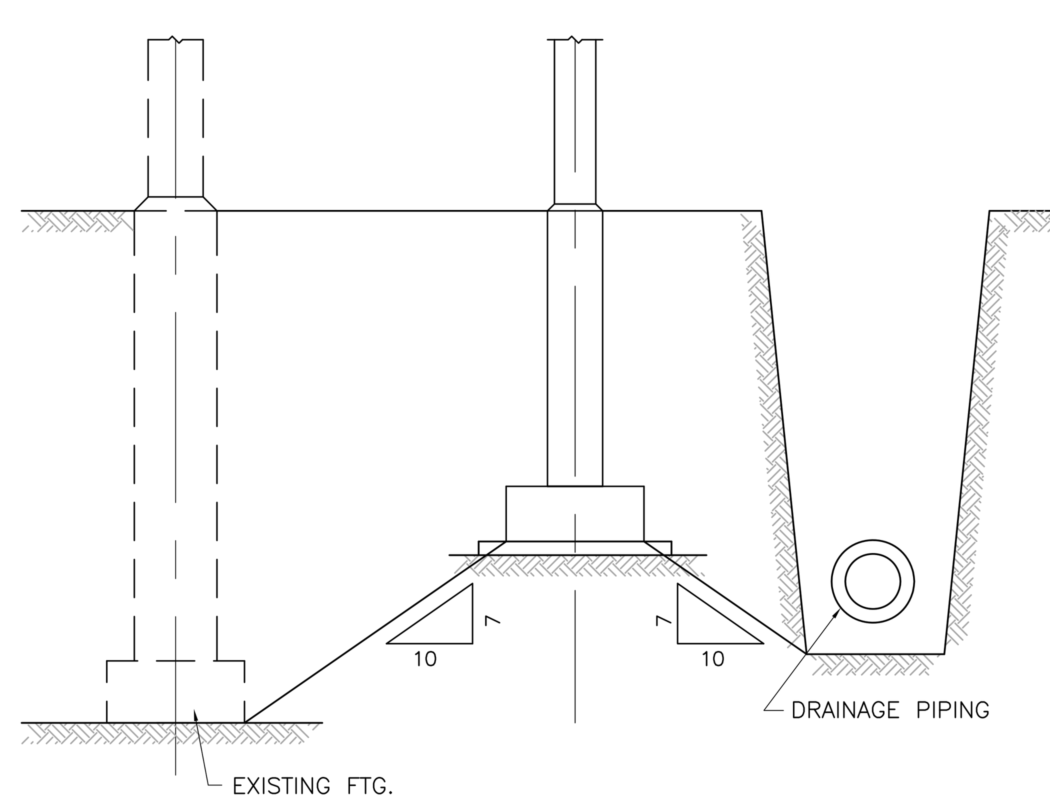
TYPICAL PIT DETAIL



BACKFILL UNDER CONCRETE STRIP FOOTING

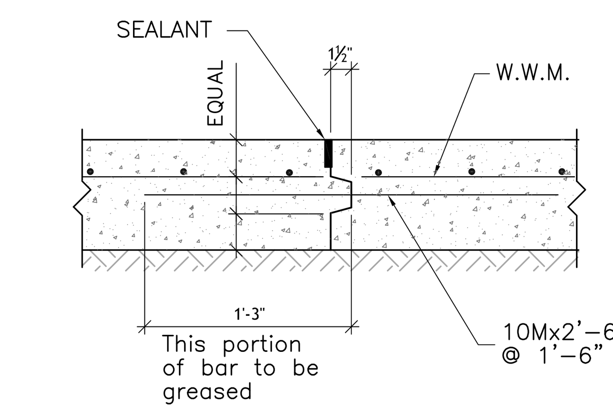


TYPICAL DETAIL FOR STEP IN SLAB ON GRADE

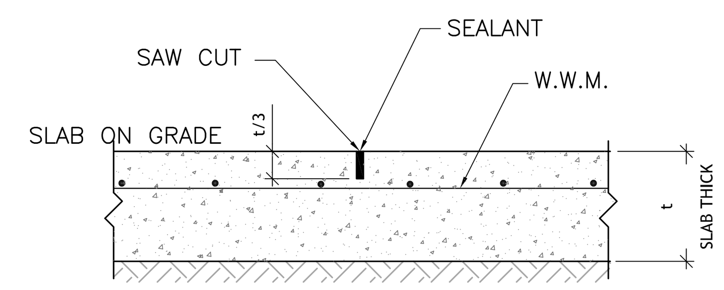


EXAMINE DRAINAGE INVERTS PRIOR TO CONSTRUCTION OF FOOTINGS. FOOTINGS IN THE VICINITY OF DRAINS ETC. SHALL BE LOWERED TO SUIT MAX. SLOPE OF 7 IN 10.

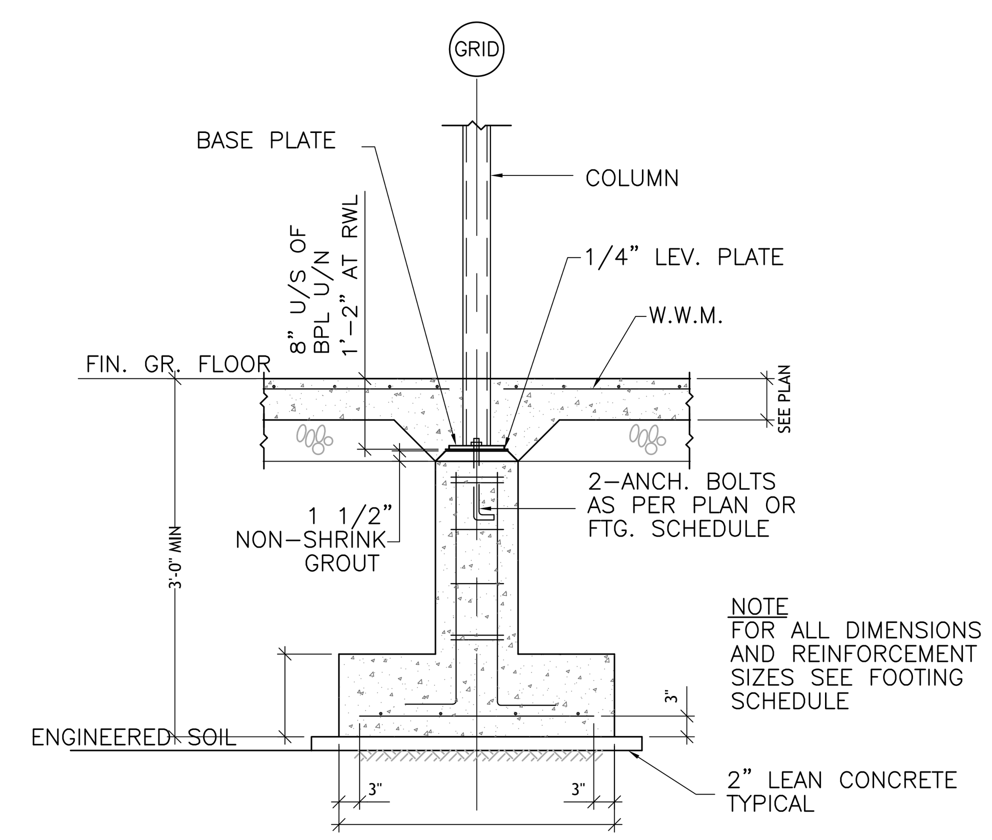
ELEVATIONS OF ADJACENT FOOTING EXCAVATION



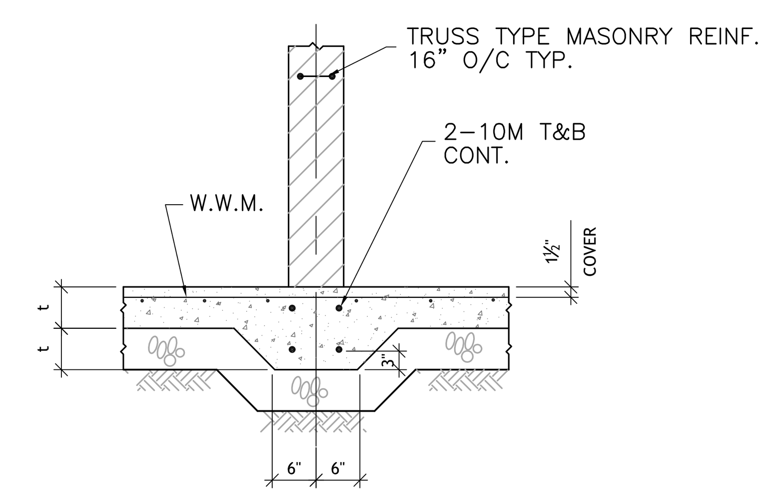
TYPICAL DETAIL OF CONSTRUCTION JOINT



TYPICAL DETAIL OF CONTROL JOINT



TYPICAL INTERIOR COLUMN FOOTING



TYPICAL DETAIL OF SLAB THICKENING UNDER NONBEARING WALL 8" OR LESS

LINTELS IN NON-LOADBEARING BLOCK WALLS				
WALL THICK. / CL.OPENING	4"	8"	10"	12"
4'-0" OR LESS	1L3 1/2x3 1/2x1/4	2L3 1/2x3 1/2x1/4	1L3 1/2x3 1/2x1/4 1L5x3 1/2x1/4(SLV)	3L3 1/2x3 1/2x1/4
5'-0"	1L3 1/2x4x1/4	2L3 1/2x4x1/4	1L3 1/2x4x1/4 1L5x3 1/2x1/4(SLV)	3L3 1/2x4x1/4
6'-0"	1L3 1/2x5x1/4	2L3 1/2x5x1/4	1L3 1/2x5x1/4 1L5x5x5/16	3L3 1/2x5x1/4
7'-0"	1L3 1/2x5x5/16	2L3 1/2x5x5/16	1L3 1/2x5x5/16 1L5x5x5/16	3L3 1/2x5x5/16

NOTES
1. All long leg angles to be placed LLV unless noted.
2. Minimum bearing each end = 6".
3. All back to back angles to be bolted with 1/2"ø bolts @2'-0" c/c.

GENERAL NOTES:

1. All dimensions and details given on Structural Drawings must be checked with the Architect's Drawings and any inconsistency must be reported to the Structural Engineer before proceeding with the work.
2. Drawings must not be scaled.

STRUCTURAL STEEL

1. All fabrication and erection to conform to CAN/CSA-S16-01 latest edition.
2. All structural steel to be Grade 350W .
3. Steel beams bearing on masonry walls shall have a min. bearing of 8" unless otherwise noted on Plan.
4. Provide holes where required for the attachement of other materials.
5. Provide wall anchors for ends of all beams bearing on masonry.
6. Provide adjustable anchors @ 1'-4" max. vertically for all columns in contact and adjacent with masonry.
7. All structural steel Shop Drawings to be submitted to the Structural Engineer for review and approval before proceeding with work.
8. Joists material and construction shall conform to current edition of The National Building Code.
9. Joists design details, calculations and shop drawings, including welding details and cambers, etc. stamped and signed by a P. Engineer of Ontario, to be submitted to design Engineer for review and approval.
10. Minimum bearing for joists to be 2 1/2" on steel beams and 4" on masonry or concrete.
11. Do not connect any structural members, piping or equipment to chords of joists between panel points unless chords have been designed for extra stress or an additional diagonal has been inserted at the point of connection.
12. Provide ceiling extension for joists where required by Architects.
13. Shop details and connection calculations, bearing stamp of a registered Professional Engineer, to be submitted to the Design Engineer for review and approval before proceeding with the fabrication as requested.
14. Do not put holes in top flanges of beams, where they cantilever over columns.
15. All bridging shall be completely installed before any construction loads are placed on joists.
16. All joists to be designed for loads shown on structural drawings.
17. All field bolts shall be ASTM A325 high strength bolts. Anchor bolts to be ASTM A307.
18. All welds shall conform to CSA Standards W59.

MASONRY

1. All available bearing areas of masonry units shall be fully covered with mortar, spreaded in an even layer and vertical joints shall be filled solidly with mortar.
2. All intersecting masonry walls to have masonry bond or heavy duty (block-lock) or equivalent at 8" vertically maximum.
3. For bonding brick and block use heavy duty truss type reinforcing or equivalent @ 8" vertically, maximum completely embedded in mortar.
4. Masonry walls shall be adequately braced to resist wind pressure.
5. All solid masonry shall be laid with full head and bed joints.
6. Provide all enclosures, heating and undertake methods of laying masonry in cold weather, in accordance with CSA Standard A224.
7. Provide lintels over all openings and recesses for mechanical and electrical trades as specified on Plans. See Architectural and Mechanical drawings for locations and sizes of openings and recesses.
8. Concrete and steel beams bearing on masonry walls shall have a minimum bearing of 8" unless otherwise noted on Plan.
9. Provide 3 courses of solid brick masonry under all bearing plates bearing on masonry for a distance of not less than 8" past bearing plate on each side.
10. Mortar shall be type "S" with a minimum compressive strength of a 9.5 MPa based on a net cross-sectional area.
11. Solid concrete block masonry with mortar type "M" or "S" shall have a minimum ultimate compressive strength of 7.5 MPa - f'm.
12. Hollow concrete block masonry with mortar type "M" or "S" shall have a minimum ultimate compressive strength of 9.8 MPa - f'm.
13. Compressive strength of concrete blocks shall be 15 MPa minimum, based on net cross-sectional area.

STEEL DECK

1. All fabrication and design confirm to CSA S136-1974 and to CSB B1 Standard Specification.
2. Allow for reinforcing at all opening up to 12" diameter as per Architect's and Mechanical Drawings.
3. Weld steel deck to joists, beams with 3/4" diameter fusion welds for diaphragm action as per steel deck suppliers design. Side joints shall be mechanically clinched together @ 2'-0" maximum. Connect steel deck to supporting steel for shear value as shown on the drawings.
4. All roof decks to be 1 1/2"x22GA L.Z.C. deck, continuous over 3 supports minimum unless noted otherwise on plan.
5. Minimum thickness to be 0.030" (22GA) unless noted otherwise on drawings.
6. Transverse weld spacing 12" o/c.
7. Side lap button punching 24" o/c.
8. Longitudinal weld spacing 36" o/c.

CONCRETE AND REINFORCEMENT

1. Concrete strength shall in no case be less than 25 MPa (U/N) after 28 days and concrete shall conform to CSA Specifications CAN/CSA-A23.1-M90.
2. All reinforcing steel to be deformed bars to conform to CSA G30.12-M1977 with minimum fy=400 MPa unless otherwise noted on plan. Stirrups and ties to be deformed bars to conform to CSA G30.12 with minimum fy=350 MPa .
3. Concrete contractor to set all loose members that are to be embedded in the concrete. See Structural, Architectural and Mechanical Drawings.
4. Formwork contractor to form all holes, chases etc. and to set inserts, anchor bolts and other embedded members which are required to be held in place by the formwork before pouring the concrete. See Structural, Architectural and Mechanical Drawings.
5. Reinforcing bars in footings and slabs on earth and concrete members exposed for architectural reasons to weather, shall be supported in designated position by means of precast concrete supports or equivalent.
6. All poured concrete to be vibrated thoroughly.

BACKFILLING

1. Slabs on grade on all structural elements framed into the walls, which are retaining earth, must be in place before backfilling. At grade wall conditions backfill each side of wall simultaneously.

MINIMUM REINFORCING FOR ANY WALL U/N TO BE AS FOLLOWS:						
t	150	175	200	250	300	350
Vertical	10@440 CL	10@300 CL	10@460 EF	10@460 EF	10@440 EF	10@380 EF
Horizontal	10@360 CL	10@300 CL	10@460 EF	10@400 EF	10@360 EF	10@280 EF
t	6"	7"	8"	10"	12"	14"
Vertical	10@18" CL	10@15" CL	10@18" EF	10@18" EF	10@18" EF	10@15" EF
Horizontal	10@14" CL	10@12" CL	10@18" EF	10@16" EF	10@14" EF	10@11" EF

METAL STUD NOTES

1. STUD SIZES SHALL BE AS SHOWN ON DWG.
2. ERECTION, BRIDGING AND SHEATHING SHALL CONFIRM TO MANUFACTURER'S SPECIFICATIONS.
3. SUBMIT SHOP DRAWINGS PREPARED & STAMPED BY A REGISTERED PROFESSIONAL ENGINEER FOR REVIEW AND APPROVAL.

General Notes

AIC

HOME DESIGN BUILDING CONSULTANT

www.architalcandesign.com

No.	Revision/Issue	Date

Firm Name and Address
ARCHITALCAN DESIGN INC.
Rocco Schipano
2842 Bloor St. West,
Suite 10 TORONTO ON.

Project Name and Address
26 ANDERSON BLVD
UXBRIDGE ON

Project

Sheet

Date
AUG. 30,2024

Scale
NTS

A13