

Date: June 4, 2025

To: City of Airdrie Council

From: Kyle Wilkin, P.Eng., Manager, Roads and Parks Operations

Re: Review of MGA Section 545 Enforcement Order for 196 Edwards Way

Council is being asked to review the Enforcement Order dated April 25, 2025 issued by Airdrie Municipal Enforcement pursuant to section 545 of the Municipal Government Act (MGA). The order was made because of unauthorized interference and damage to City watermain and streets (Edwards Way SW). This took place because of the development activities on 196 Edwards Way, legally described as Lot 6; Block 1; Plan 1511409 and unauthorized offsite excavations.

On August 7, 2024, Development Permit PL2300906 (Attachment #1) was approved and issued for a Mixed Use Development, General, which is identified as a Permitted Use under the M3, Downtown Core Mixed Use District in the Land Use Bylaw. The Development consists of a six-storey residential apartment building with ground-floor commercial units and an underground parkade. The property is owned by Creekside Corp, and the property is being developed by Strategic Group.

Following approval of the development permit, a building permit was issued and construction began on the site on December 6, 2024. Since then, several enforcement actions have been taken to address non-compliance with the conditions of approval, such as the unauthorized encroachment into the City's road right-of-way. A verbal warning was issued on December 13, 2024 to stop work and immediately take action to install erosion and sediment control barriers. Following non-compliance with the verbal warning and development permit conditions, a warning letter was issued on January 23, 2025 (Attachment #2) requesting immediate action to address conditions 41, 2, and 2.

Following non-compliance with the January 23, 2025 warning letter, a Stop Order, issued on January 27, 2025 (Attachment #3), outlining three directives to bring the site into compliance. One of the orders within the Stop Order was a geotechnical engineering assessment to confirm the stability of the site excavations. Additionally, a request to have frost protection measures applied to the Edwards Way SW excavation due to the encroachment on the City's watermain on Edwards Way which the developer and their contractor failed to have located, compromising the operation and integrity of the City's main.

Genesis Place 800 East Lake Blvd NE Airdrie, AB T4A 2K9 F: 403.948.0604 City Hall 400 Main Street SE Airdrie, AB T4B 3C3 F: 403.948.6567 Tel: 403.948.8800 1.888.AIRDRIE airdrie.ca Parks/Public Works 23 East Lake Hill NE Airdrie, AB T4A 2K3 F: 403.948.8403 Municipal Enforcement 2 Highland Park Way NE Airdrie, AB T4A 0R1 F: 403.948.0619

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The developers geotechnical engineering assessment dated February 3, 2025 (Attachment #4), indicated that the excavated slopes would remain stable for a period of two to three months and the City closed the west parking lane on Edwards Way SW to reduce vehicle loading onto the excavation. The Stop Order was lifted on February 19, 2025, following the submission of a survey plan, an application for "Work On or Within a City of Airdrie Street or Within a Road Right of Way", and acceptance of the Erosion and Sediment Control Plan (ESC Plan).

On April 24, 2025, representatives from Public Works, Utility Operations, and Municipal Enforcement attended the site to inspect a reported failure of the Edwards Way SW excavated slope which had impacted the City's watermain valve casing and valve stem, and the Edwards Way SW road structure. Upon inspection, a 10-metre-long section of the sidewalk portion of the road right-of-way had collapsed at the location of the City's watermain isolation valve resulting in movement and inability to access the valve stem. Additionally, a 100mm deep void between the asphalt and granular base course of the roadway extending 1.5 metres into the roadway throughout the length of the excavation collapse was identified. City representatives immediately extended the parking lane closure on Edwards Way SW to a partial road closure, closing the southbound travel lane and utilizing the northbound travel lane and the east parking lane to maintain two-way traffic, and isolated the City's watermain through the failure area which resulted in two fire hydrants within the vicinity of the site to be put out of service.

An Enforcement Order was issued on April 25, 2025 (Attachment #5), pursuant to section 545 of the MGA. The order set out the following conditions:

- 1. Immediately discontinue all excavation and development activities on the Lands within 5 metres of the east boundary of the Lands, with the exception of activities required to maintain site security, compliance, with OH&S regulations, and to comply with the directives of this Order or any other Order that the City may issue.
- 2. Take immediate action to implement interim shoring and stabilization measures to secure and protect the excavated slope along Edwards Way to prevent further deterioration of the roadway, sidewalk, and slope; and
- 3. Within 7 days of the date of this order:
 - a. Direct your Geotechnical and Civil Engineer to prepare an engineered design for a sheet pile wall or equivalent alternative shoring system, designed to support loading of the adjacent roadway, and for the stabilization and reestablishment of the wrongfully excavated and undermined portion of the road right of way; and
 - b. Submit the required design to the City's Engineering Department for review and approval.

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- 4. Within 14 days of the date of this Order, you shall provide the City's Engineering Department the name of the proposed contractor intended to undertake the work (which shall not be any party named in this Order), which contractor shall have a minimum of 10-years experience related to shoring, slope stabilization and road construction and repair, carry a minimum of \$5 Million in general liability insurance, either hold or be willing to obtain a valid business licence for the City of Airdrie, and hold a Certificate of Recognition (COR) and current WCB account.
- 5. Within 30 days of the date design and proposed contractor have been approved by the City, you shall complete the installation of the shoring system and all required repairs necessary for the restoration of the road right of way. Confirmation of completion shall be provided to the City in writing by the contractor retained to undertake the work, confirming that all work has been completed in accordance with the approved design.

On April 28, 2025, representatives from Engineering Services and Public Works identified damages to 1st Avenue NW roadway assets. On April 30, 2025, representatives from Engineering Services and Public Works attended the site with an independent third-party geotechnical engineering firm, Tetra Tech, to review the condition of the excavations. During this review, several concerns were noted regarding the excavations on Edwards Way SW and 1st Avenue NW that indicated ongoing movement of the excavated slopes resulting in movement and damages to the adjacent roadway assets. This movement was indicative of ongoing slope instability and that a further collapse of the excavation along Edwards Way SW and the evacuation along 1st Avenue NW could occur should immediate action not be taken. It was noted by Tetra Tech that this instability is likely to be accelerated by large rainfall events and by the poor application of a shotcrete product on 1st Avenue NW that was adding weight to the slope and holding back water. The imminent risk of pending failure of this excavation constituted an emergency as it put the health and safety of the public at risk and was causing ongoing damages to public infrastructure.

On April 30, 2025, a verbal notice under section 551 of the MGA was issued informing the developer that the City was taking appropriate actions to address the emergency to protect the public and public infrastructure from imminent danger. A written order under section 551 of the MGA on May 3, 2025 (Attachment #6), was issued due to interference by members of the developer's contractor to prevent the City's contractor, EllisDon, from completing the work necessary to address the emergency.

On May 2, 2025, the developer provided a backfilling review memo (Attachment #7) which had not been requested by the City, however, upon review of the memo, it failed to indicate whether

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the foundation was structural sound to support the backfilling of material or how material was to be placed and compacted without the use of machinery within 4 metres of the excavated slope as recommended by the developers geotechnical engineering consultant.

Strategic Group sent a letter to Council, dated May 9, 2025, requesting review of the Enforcement Order (Attachment #8) and asks Council to amend section 3 of the Enforcement Order. On May 23, 2025, Roads and Parks Operations received a copy of the May 9, 2025, letter to Council.

On June 3, 2025, a letter was sent by Brownlee LLP on behalf of the City of Airdrie (Attachment #9), addressing the proposed amendments in the May 9, 2025, letter to Council. Administration's position on this matter is stated within the June 3, 2025, Brownlee LLP letter.

Sincerely,

Kyle Wilkin, P.Eng. Manager, Roads and Parks Operations

Attachments:

- 1. Development Permit August 7, 2024
- 2. Warning Letter January 23, 2025
- 3. Stop Order January 27, 2025
- 4. Geotechnical Assessment February 3, 2025
- 5. 545 Enforcement Order April 24, 2025
- 6. 551 Order May 3, 2025
- 7. North Shoring Wall and Backfilling Review Memo May 2, 2025
- 8. Letter to Council May 9, 2025
- 9. Brownlee LLP Letter June 3, 2025

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Planning & Development 400 Main Street SE, Airdrie, AB T4B 3C3 Phone: 403.948.8848 Email: planning@airdrie.ca www.airdrie.ca/planning

Date Printed: August 07,2024

CASOLA KOPPE ARCHITECTS 300, 1410 1 STREET SW CALGARY, AB T2R 0V8

Permit Number: PL2300906 Approved Use: Mixed Use Development with Major Variance (Parking)

Property Address 196 EDWARDS WAY SW, AIRDRIE, AB Legal Description Lot: 6, Block: 1, Plan: 1511409

DEVELOPMENT PERMIT

Dear Applicant,

Your Development Permit application was reviewed by the Development Authority and **APPROVED** and is now Issued, subject to compliance with the conditions of approval attached.

Read the attached permanent conditions of approval as they form part of the approval decision. Advisory comments, if applicable, are also attached and are intended to help obtain additional permits and information for your development.

If the development approved by this permit does not *begin* within 12 months from the date of this letter, August 07, 2025 the Development Permit shall be deemed void unless the applicant applied for an extension within 40 days to this deadline.

Further, development approved by this permit shall be completed to the satisfaction of the Development Authority within 24 months of the date of the letter, August 07, 2026. You may apply for an extension within forty days of the expiration of this Development Permit.

Pursuant to provincial statues, there is a mandatory 21-day appeal period where the decision must be advertised. During this appeal period, the decision and/or the conditions of the decision may be appealed. The appeal period starts from first date of publication August 07, 2024 at www.airdrie.ca/developments and ends on August 28, 2024.

This permit may be reviewed at any time for non-compliance with the conditions of approval and the Land Use Bylaw.

If you have any questions regarding this matter please contact the file manager Tracey Tester at Tracey.Tester@airdrie.ca.

Yours truly,

Gail R. Gibeau RPP, MCIP Development Officer Planning & Development City of Airdrie

Phone: 403-948-8832 Email: planning@airdrie.ca

CONDITIONS OF APPROVAL & ADVISORY COMMENTS

Application Number: PL2300906 Approved Use: Mixed Use Development with Major Variance (Parking)

Property Address 196 EDWARDS WAY SW, AIRDRIE, AB Legal Description Lot: 6, Block: 1, Plan: 1511409

Conditions of Approval

- 1. This development is classified as Mixed Use Development, General and is a Permitted Use in the M3, Downtown Core Mixed Use District, on the lands legally described as Lot 6, Block 1, Plan 1511409.
- 2. All development, including the location, orientation, capacity, intensity, and use of buildings and any landscaping and site improvements, must be completed in accordance with Approved Plans.
- 3. Any changes to the design, format, location, orientation, capacity, intensity or use of any part of the development requires approval by the Development Authority.
- 4. All development must be carried out in accordance with the Land Use Bylaw and the Engineering Standards.
- 5. A major variance of 28.0% is granted to Section 4.4, Table 5 of Land Use Bylaw No. B-01/2016, to allow for a parking reduction as shown on the approved drawings. The Land Use Bylaw requires 1.75 stalls per dwelling. This development is approved to be 0.89 parking stalls per dwelling as recommended in the Parking Review Study by Bunt & Associates Engineering Ltd., dated January 17, 2024.
- 6. The Developer shall provide minimum TWO HUNDRED AND FOURTEEN [214] on-site parking stalls as indicated on the Approved Plan. All parking stalls shall be hard surfaced with asphalt pavement, concrete or other similar paving material. SIX [6] of the required stalls shall be accessible parking stalls. These parking stalls shall be hard-surfaced, level, located close to an entrance, and shall be designated with the International Symbol of Access.
- 7. Of the required parking stalls, the Developer shall provide TWENTY-ONE [21] parking stalls to be designated as visitor stalls and identified with permanent signage.
- 8. Of the required parking stalls, the Developer shall provide ELEVEN [11] parking stalls to be designated as commercial stalls and identified with permanent signage.
- 9. SIXTY [60] bicycle stalls shall be provided in accordance with the approved plans.
- 10. Prior to commencing any activity on the lands, the Developer shall enter into and abide by a development agreement in accordance with section 650 of the Municipal Government Act, containing terms acceptable to the City, including, but not limited to street improvements on Edwards Way and the taking of security to secure the terms of the agreement.
- 11. Site lighting shall adhere to the site lighting plan and light fixture standards as depicted in the Approved Plan, to the satisfaction of the Development Authority.
- 12. This development shall be constructed in accordance with the recommendations and requirements of the Nose Creek Riparian Assessment, dated June 17, 2024 prepared by Matrix Solutions Inc. consulting services.
- 13. The Developer shall adhere to the recommendations of the Phase I Environmental Site Assessment, dated December 4, 2023, to the satisfaction of the Development Authority.
- 14. Prior to construction commencing, performance security, in a form deemed acceptable to the municipality shall be provided to the satisfaction of the Development Authority.
- 15. The Developer shall not dump grass clippings or other landscaping debris into the Nose Creek riparian corridor to prevent the spread of weeds.
- 16. The Developer shall educate dog-owning residents with signage about existing on and off-leash regulations, and the potential impacts dogs can have on sensitive riparian areas, fish habitat, and water quality. The Developer shall submit a letter outlining the education plan and communication plan with the residents prior to occupancy.

- 17. All signs identified in the Approved Plans may be constructed and installed without need of a new Development Permit. All other signage will require a separate Development Permit application and approval prior to placement.
- 18. This development shall adhere to the new municipal address and/or addressing plan as provided by the Development Authority.
- 19. The Developer shall submit a complete set of as-built drawings, to the Development Authority at the time of application for Development Completion Certificate.
- 20. A Development Completion Certificate is required when the approved development has been completed.
- 21. The Developer shall apply to Engineering Services Department for excavations within public right-of-ways and roads. Contact engineering.services@airdrie.ca.
- 22. Any excess fill must be deposited on a site approved by the City of Airdrie. Please contact the Engineering Services Department at engineering.services@airdrie.ca to discuss fill deposit locations.
- 23. The Developer shall submit a Fire Safety Plan to be approved by the Airdrie Fire Department and implemented by the Developer prior to construction commencing.
- 24. Airdrie Fire Dept. will require firefighting access during construction by means of an all-weather road that is maintained at all times. The road must be a minimum width of 6 metres wide. The access road must have access to a main arterial roadway unobstructed at all times. The roadway must be capable of supporting 37,000kgs. If the road is in excess of 90 metres long, a turnaround must be provided. Must be installed in the early stages of the development or in conjunction with the primary access. Requirements set out in ABC article 3.2.5.6. Please complete a Swept Path Analysis and return it to the Fire Department for review. Contact Russ McKeage with further questions at (403) 948-8800 ext 7896.
- 25. The Developer must provide unobstructed access to fire hydrants and a water supply suitable for firefighting. The Fire Department must have access to these fire hydrants at all times and they must be operational before and during all phases of construction.
- 26. Municipal street address shall be posted and clearly visible at all times (Standata FCI-09-03) Affixed in a visible location 2 metres from the ground or taped to the inside of the front-facing window. Street signs should be present. The unit or suite number is required to be visible on the primary entrance.
- 27. Prior to commencing construction activity, the Developer and the City of Airdrie shall enter into a utility rightof-way agreement, in keeping with the approved plan for the provision of private utilities.
- 28. Site lighting shall adhere to the site lighting plan and light fixture standards as depicted in the Approved Plan, to the satisfaction of the Development Authority.
- 29. The Developer shall abide by the approved landscaping plan.
- 30. Any temporary or auxiliary buildings/signs placed on site during construction shall be removed prior to Development Completion Certificate.
- 31. The area around the construction site shall be kept clear of equipment and debris, and construction materials, including garbage, shall be stored so as not to create a nuisance to neighbouring properties.
- 32. There shall be no unauthorized use of any adjoining Public Utility Lot or Reserve Land during the course of the approved development.
- 33. This development shall be constructed in accordance with the recommendations and requirements of the "Nose Creek Riparian Assessment", dated June 17, 2024 prepared by Matrix Solutions Inc. consulting services.
- 34. This development shall be constructed in accordance with the recommendations and requirements of the "Nose Creek Floodway and Setback Delineation", dated May 16, 2024 prepared by Matrix Solutions Inc. consulting services.
- 35. The Developer shall submit a landscape plan in accordance with the Deferred Servicing Agreement, dated April 22, 20215, to the satisfaction of the Parks Department.
- 36. Prior to the issuance of a Development Permit, the Detailed Site Servicing Plan (DSSP) shall be approved by the Development Authority.

Riparian Protection – During Construction:

- 37. The Developer shall install comprehensive sediment and erosion control practices during construction.
- 38. The Developer shall compensate or replace any impacts or disturbances to the riparian area with native plant species to maintain the natural riparian function.
- 39. The Developer shall implement physical barriers to prevent vehicles from entering the riparian setback area outside of the development footprint.
- 40. The Developer shall preserve natural vegetation outside of the development footprint. Limit construction activities, material laydown, construction equipment, or vehicles from disturbing or damaging lands within the riparian area.
- 41. The Developer shall ensure erosion and sediment control measures are in place according to the City of Calgary guidelines before any construction begins. The Developer is responsible for conducting weekly erosion and sediment control inspections in accordance with the City of Calgary guidelines and submit to Engineering Services at esc@airdrie.ca.
- 42. The Developer shall ensure any vegetation or landscaping that is removed, damaged or disturbed during construction shall be replaced at the Developer's sole cost.

Advisory Comments

- a) All other necessary permits and inspections are the responsibility of the applicant including, but not limited to, Building Permits and Fire Approval and shall be submitted to the City as required. Please contact the Building Department at 403-948-8832 and/or the Fire Department at 403-948-8880.
- b) Environmental professionals must be consulted to provide guidance if any odor or stains are encountered during the future excavation or disturbance of the surface or subsurface soil.
- c) Administration is directed to collect relevant off-site levies, as well as voluntary recreation contributions in the amount of \$255,600.00 (calculated on the basis of \$1200 per residential unit), in accordance with Bylaw No. B-11/2019.
- d) Based on City of Airdrie Council Resolution 2022-C-046, City of Airdrie collaborates with Building Industry and Land Development Association (BILD) - Calgary Region and the local school boards to secure land assembly funding for future high school sites. According to the Memorandum of Understanding (MOU) between BILD and City of Airdrie dated January 31, 2022, the charge for the high school land assembly is \$608.56 per residential lot or dwelling unit, subject to annual inflation adjustment. The charge is \$129,623.28 for 213 units.
- e) Bottom joists of the first floor or the top surface of the slab on grade shall be located above 1:100-year water level: 1,082.74m. Any floor level below the 1:100-year flood level should be designed and constructed to withstand periodic floods by using appropriate design materials, sump pumps, and include flood proofed electrical outlets and easily moveable fixtures.
- f) All electrical, heating, air coditioning and mechanicial equipment shall be located above the 1:100-year water level and provide an additional 0.6m freeboard.
- g) Any storage facilities (ie. underground stormwater tanks or other vessels) or substructure situated below the 1:100-year flood level should be specifically designed to resist flotation.
- h) The ramp to the underground parkade should be graded to prevent the 1:100-year flood waters from entering the parkade.
- If building openings or parkade ramp elevations are below the estimated 1:100-year flood level plus 0.6m of freeboard, dry floodproofing measures should be implemented. These measures can include flood shields, gates, stop logs, or other components designed to withstand hydrostatic pressure and keep floodwaters out during events greater than the 1:100-year flood level.
- j) The Developer, not the City of Airdrie, shall responsible for the collection of garbage, waste, compost and recycling.
- k) The Developer shall contact utility providers (gas, electric, telecommunications) and arrange for utilities to be installed or relocated in accordance with the utility provider requirements, at the Developer's sole cost.
- Street Address: Occupancy municipal street address shall be posted and clearly visible at all times (Standata FCI-09-03). Affixed in a visible location 2 meters from the ground or taped to the inside of the front-facing

window. Street signs should be present. The unit or suite number is required to be visible at the primary entrance.

- m) The Development Authority may approve this permitted use under Land Use Bylaw Section 2.4.3 (1)(b) with or without conditions, even if the proposed development does not conform with this Bylaw, if, in the opinion of the Development Authority there would not be an undue impact on the use, enjoyment, amenity and value of the adjacent properties and/or neighbourhood, or if the impact on such properties could be mitigated through the adherence of specific conditions of approval.
- n) Council adopted on April 16, 2024, Land Use Bylaw Amendment (Bylaw B-17/2024) that the Development Officer shall decide on all development permit applications in the Community Revitalization Levy boundary area. This development permit approval is with Administration and does not require a meeting with the Community Infrastructure Strategic Growth (CISG) Committee, formerly the MPC.
- o) Engineering Services have advised following the requirements from the Fire Flow Letter to propose a 2-hour fire-rated firewall inside the building without unprotected openings.
- p) Engineering Services have advised following the requirements from the Fire Flow Letter to propose a complete automatic sprinkler system.



DATE Printed: January 23, 2025

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WARNING LETTER

Civic: 196 Edwards Way SW

Legal: Lot 6, Block 1, Plan 1511409

RE: Contravention of Development Permit Approval – PL2300906

Attention: Umber Khan, Site Supervisor UK One Construction Ltd. 353 Santana Bay NW Calgary, AB T3K 3N6 Cell: 587-223-1214 Email: khan@zeusservice.ca

Dear Mr. Khan,

In accordance with the provisions of the Municipal Government Act Part 17 and the Land Use Bylaw B-01/2016 Section 2.8.1, the City of Airdrie has the authority to enforce the conditions of the development permit issued for the construction at 196 Edwards Way SW.

A verbal warning was issued on December 13, 2024, to stop work and take immediate action to install the erosion and sediment control barriers and comply with development permit requirement to submit weekly Erosion Sediment Control (ESC) reports. This verbal warning was lifted on December 20, 2024. The development at 196 Edwards Way SW has not complied with the development permit conditions and now serving this warning letter for your action.

The contraventions are as follow with steps to comply.

1. Condition #41: The Developer shall ensure erosion and sediment control measures are in place according to the City of Calgary guidelines before any construction begins. The Developer is responsible for conducting weekly erosion



and sediment control inspections in accordance with the City of Calgary guidelines and submit to Engineering Services at esc@airdrie.ca.

Action Required:

- The ESC Revised Plan remains outstanding and shall be submitted to City of Airdrie to esc@airdrie.ca on Friday January 24, 2025 by 4pm.
- The ESC weekly reports have not been submitted. The last ESC Report submitted to City of Airdrie was on December 17, 2024. You are required to submit the ESC Report on Monday January 27, 2025 by 4pm. Effective immediately, your weekly ESC Reports are due every Monday by 4pm to esc@airdrie.ca.
- 2. Condition #2: All development, including the location, orientation, capacity, intensity, and use of buildings and any landscaping and site improvements, must be completed in accordance with Approved Plans.

Action Required:

- The City is requiring you to show the concrete formwork is located in the approved location. A survey, completed by a certified surveyor, shall be submitted on Friday January 24, 2025 by 4pm.
- Current Planning and Engineering Services shall review and confirm if acceptable before the pouring of concrete begins. No pouring of concrete work shall commence until the survey plan has been accepted.
- 3. Condition #21: The Developer shall apply to Engineering Services Department for excavations within public right-of-ways and roads. Contact <u>engineering.services@airdrie.ca</u>.

Action Required:

- Your excavation work excavated into the City's road right-of-way and you failed to call for the City to locate infrastructure. According to the City's records, there is an existing W 350 YJ steel pipe located 3.05m off-site from the east property line. This means the horizontal distance from the centre of the water pipe to the excavation is only about 1-1.5m. As a result, the City's water pipe is currently at risk.
- You have not applied to "Work On or Within a City of Airdrie Street or Within a Road Right of Way" application which can be found on the City of Airdrie website. <u>www.airdrie.ca</u> You are required to submit on Friday January 27, 2025 by 4pm.



If these items are not remedied, the City may take further enforcement action such as issuing a Stop Order and/or tickets.

This letter is hand delivered on this date, sent by registered mail and emailed to you and others identified on this Warning Letter.

Sincerely,

Gail Gibeau, RPP, MCIP Development Officer/Team Lead Current Planning Tel: 403-948-8832 Email: Planning@airdrie.ca

cc. Brady Christensen, Development & Design Manager, Strategic Group (<u>bchristensen@strategicgroup.ca</u>) Tracey Tester, Senior Planner, City of Airdrie, (<u>Tracey.Tester@airdrie.ca</u>) Shannon McCarron, Development Compliance Officer, City of Airdrie (<u>Shannon.McCarron@airdrie.ca</u>) Stephanie Martin, Team Lead, Building Inspections (<u>Stephanie.Martin@airdrie.ca</u>)



STOP ORDER

Delivered by Hand/Registered Mail

Issued: January 27, 2025

To: **Umber Khan, UK One Construction Ltd.** 353 Santana Bay NW, Calgary, AB, T3K 3N6

Re: Illegal Development on Lot 6; Block 1; Plan 1511409 (the "Lands")

Further to our Warning Letter, dated January 23, 2024, in my capacity as Development Officer I am hereby issuing a Stop Order pursuant to section 645 of the *Municipal Government Act*, with respect to the aforementioned Lands.

It has come to the City of Airdrie's (the "City") attention that the Lands do not comply with Development Permit **PL2300906** (the "DP"), issued for the construction of a Mixed Use Development. An inspection of the Lands reveals the following contraventions:

- 1. DP Condition #2: All development, including the location, orientation, capacity, intensity, and use of buildings and any landscaping and site improvements, must be completed in accordance with Approved Plans.
 - Survey by certified surveyor showing the concrete formwork is located in the approved location is outstanding.
- 2. DP Condition #21: The Developer shall apply to Engineering Services Department for excavations within public right-of-ways and roads. Contact <u>engineering.services@airdrie.ca</u>.
 - You have not applied to "Work On or Within a City of Airdrie Street or Within a Road Right of Way" application. which can be found on the City of Airdrie website. www.airdrie.ca.
 - Your excavation work excavated into the City's road right-of-way and you failed to call for the City to locate infrastructure. According to the City's records, there is an existing W 350 YJ steel pipe located 3.05m off-site from the east property line. As a result, the City's water pipe is currently at risk.

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- 3. DP Condition #41: The Developer shall ensure erosion and sediment control measures are in place according to the City of Calgary guidelines before any construction begins. The Developer is responsible for conducting weekly erosion and sediment control inspections in accordance with the City of Calgary guidelines and submit to Engineering Services at esc@airdrie.ca.
 - Acceptable erosion and sediment control plans are outstanding.
 - Weekly erosion and sediment controls reports have not been submitted. The last report submitted on December 17, 2024.

In accordance with section 645 of the *Municipal Government*, RSA 2000, c M-25 (the "Act") and section 2.8.8 of the City's *Land Use Bylaw*, **YOU ARE ORDERED TO:**

- 1. <u>IMMEDIATELY cease all construction activity on the Lands.</u>
- 2. <u>By 4:00 PM on Friday, January 31, 2025, establish compliance on the</u> Lands, to the satisfaction of the Development Authority, by the following:
 - (a) Submit a complete erosion sediment control plan that includes the "v" ditch on the drawing and in the plan.
 - (b) **Submit weekly erosion and sediment control reports in the correct template.** Reports are to be submitted every Monday.
 - (c) Submit an application for "Work On or Within a City of Airdrie Street or Within a Road Right of Way" permit. The site and excavation must be inspected by a Geotechnical Engineer who must confirm, in an authenticated letter to the City, that (1) all site excavations are stable and safe; (2) the excavation adjacent to 1st Avenue and Edwards Way is suitable to withstand live loading from traffic, including City of Airdrie Fire Trucks and other heavy vehicles, and (3) the site and excavation will remain stable throughout construction. The letter must set forth an inspection schedule by the Geotechnical Engineer until the site is backfilled and brought to rough final grade. This is required to assess the road closure implemented on Edwards Way.
 - (d) Submit a survey of the formwork, certified by an Alberta Land Surveyor, to confirm the formwork is in the correct location before proceeding with any concrete pouring. This certified survey plan must be submitted to confirm that the concrete will be poured accurately and to prevent costly errors. Receiving this survey plan prior to pouring is imperative. Without a survey plan prepared by a certified Alberta Land Surveyor, the City cannot confirm that the excavation aligns with the

Genesis Place 800 East Lake Blvd NE Airdrie, AB T4A 2K9 F: 403.948.0604 City Hall 400 Main Street SE Airdrie, AB T4B 3C3 F: 403.948.6567 Tel: 403.948.8800 1.888.AIRDRIE airdrie.ca Parks/Public Works 23 East Lake Hill NE Airdrie, AB T4A 2K3 F: 403.948.8403 Municipal Enforcement 2 Highland Park Way NE Airdrie, AB T4A 0R1 F: 403.948.0619



approved plans and maintains the required property and setback boundaries. Therefore, the survey plan must clearly indicate the excavated area and its distance from the property line.

If you fail to comply with this Stop Order, the City will take whatever actions the City determines necessary to bring the Lands into compliance. This may require seeking legal action for a court order or other relief from the Court of King's Bench pursuant to section 554 of the Act, or imposing fines (minimum fine \$500, maximum fine \$10,000). Further, the City has the authority to add the costs and expenses for carrying out this Stop Order to the tax roll of your Lands pursuant to Section 553(1)(h.1) of the Act.

<u>You may appeal this Stop Order</u>, within 21 days of the date of issuance, to the Airdrie Subdivision and Development Appeal Board (the "SDAB") in accordance with section 686 of the Act. **If you appeal this Stop Order, you must cease development activity on the Lands until the SDAB issues a decision on the appeal.**

Gail R. Gibeau, RPP, MCIP Development Officer

ENQUIRIES regarding this Stop Order and official letter may be made to the person who signed the Stop Order, during office hours only, at City Hall, 400 Main Street SE, Airdrie or by phone at 403.948.8800 ext. 8496.

cc. Brady Christensen, Development & Design Manager, Strategic Group (<u>bchristensen@strategicgroup.ca</u>) Tracey Tester, Senior Planner, City of Airdrie, (<u>Tracey.Tester@airdrie.ca</u>) Shannon McCarron, Development Compliance Officer, City of Airdrie (<u>Shannon.McCarron@airdrie.ca</u>) Stephanie Martin, Team Lead, Building Inspections (<u>Stephanie.Martin@airdrie.ca</u>)

Genesis Place 800 East Lake Blvd NE Airdrie, AB T4A 2K9 F: 403.948.0604 **City Hall** 400 Main Street SE Airdrie, AB T4B 3C3 F: 403.948.6567 Tel: 403.948.8800 1.888.AIRDRIE airdrie.ca Parks/Public Works 23 East Lake Hill NE Airdrie, AB T4A 2K3 F: 403.948.8403 Municipal Enforcement 2 Highland Park Way NE Airdrie, AB T4A 0R1 F: 403.948.0619 3

GEOTECHNICAL INVESTIGATION EXCAVATION WALL SLOPE STABILITY ASSESSMENT ALONG 196 EDWARDS WAY SW IN AIRDRIE, AB

Submitted to: **UK One Construction** Calgary, AB

Submitted by:

AR Geotechnical Engineering Ltd Calgary, Alberta

February 3, 2025

BNG25-1014

Slope Stability Assessment Along Excavation Wall near Edwards Way SW, Airdrie, AB ARGEO File No. BNG24-1014 February 2025

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Slope Stability Assessment Along Excavation Wall near Edwards Way SW, Airdrie, AB ARGEO File No. BNG24-1014 February 2025

1.0 INTRODUCTION

This report presents the results of a slope stability assessment undertaken along the excavation wall near Edwards Way SW in Airdrie, AB

1.1 Objective and Scope of Services

The primary objectives of the geotechnical investigation are to assess the subsurface soil and groundwater conditions along the excavation wall, evaluate the current slope stability, and provide recommendations for mitigating potential instability, if required. Additionally, the study aims to assess the stability of the excavated wall.

The scope of work for this project includes:

- Conducting a desktop study and field mapping.
- Performing a field program, including a reconnaissance study to characterize the site's soil and geomorphology, as well as drilling, logging, and sampling four exploration test holes.
- Carrying out a laboratory testing program to classify subsurface soils and determine the native soil's angle of friction.
- Completing office-based tasks, such as data correlation, engineering analyses, and reporting.

2.0 SITE AND PROJECT DESCRIPTION

The excavation wall created by bulk excavation for parking is situated on the west side of Edwards Way SW in Airdrie, AB. It extends approximately 76 meters, with a depth ranging from 2.2 to 2.7 meters.

During the field investigation, the excavated wall remained stable with no visible tension cracks. Given the prevailing weather conditions, the ground is expected to be in a frozen state for most of the wall.

This study is intended to evaluate the stability of the road concerning the adjacent slope conditions. The recommended setback distance will be based on a factor of safety of 1.2 for short-term conditions.

Slope Stability Assessment Along Excavation Wall near Edwards Way SW, Airdrie, AB ARGEO File No. BNG24-1014 February 2025

3.0 BACKGROUND INFORMATION

3.1 Topography of Site and Slope Conditions

The topography of the site above the excavation wall is flat, transitioning into a steep slope where balk excavation was carried out. The balk excavation was conducted 4 to 6 meters from the road and completed within the development footprint. Near the crest (existing road), the excavation was performed at a 1:1 slope for about 3 feet (1.0 m), followed by a 90-degree cut for the remaining 5 feet (1.5 m).

During our site reconnaissance, no signs of soil erosion or surface instability were observed on the slope or along the neighboring road or shoulder. Additionally, the land at the top of the slope showed no evidence of tension cracks associated with the slope.

There is an existing waterline with varying distances of 1.85 m to 2.95 m from the excavation line as shown on the survey plan in appendix C.

3.2 Desk Top Study and Field Mapping

A desktop study was completed which involved review of available topographical and geological records, maps, and any other information relevant to the geology, history and present condition of the site. A site reconnaissance visit was completed to confirm information obtained from the desktop study, field drilling by site observations.

3.3 Vehicle load Assessment

For the slope stability assessment, ARGEO considered a fire truck with a maximum load of 85,000 pounds on the road surface. The truck's wheel spacing of about 10 feet was converted into a line load of 125 kN/m. Additionally, a safe distance of 3.7 meters was maintained between the center of the fire truck and the excavation wall, which was used as the central load point for the stability evaluation.

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4.0 FIELD PROGRAM

4.1 Subsurface Investigation

On January 28, 2025, four test holes (2025-01 to 2025-04) were drilled at the site, all located near the east side excavation (near Edwards Way SW).

The drilling was carried out using a truck-mounted continuous flight solid stem auger drill. Supervision of the drilling, soil sampling, and logging of the various soil strata was performed by an ARGEO geotechnical engineer. The findings from this investigation were used to assess the slope stability conditions of the adjacent property.

During the drilling, the following sampling and testing procedures were followed:

- 1. The soil profile was examined in the field and logged using the Modified Unified Soil Classification System.
- 2. Disturbed and undisturbed soil samples for moisture content and other tests were collected at depth intervals of 0.30 m and/or 1.0 m in all test holes.
- 3. Shelby tubes were driven at selected depths to obtain in-situ soil samples for laboratory testing.
- 4. The samples were labeled with the project number, test hole number, and depth. They were then encased in polyethylene plastic wrapping to prevent moisture loss and transported to the laboratory.

Groundwater conditions were monitored during the drilling process, and the level of accumulated groundwater in the test holes was visually observed.

4.2 Laboratory Testing

Visual classification and moisture content tests were performed on all soil samples. In addition, particle distribution using gradation, Atterberg limits and direct shear tests were also performed on selected soil samples.

Laboratory tests were carried out in a number of selected soil samples in order to acquire necessary information with regards to the physical and mechanical properties of the soil layers and further on to evaluate and determine the parameters required for the calculations. All phases of the laboratory-testing program were performed in general accordance with the applicable ASTM Specifications.

The following tests were conducted on the selected soil samples:

• 10 Moisture Tests;

The samples collected will be stored for 60 days from the date of issue of this report, and then disposed of unless otherwise instructed in writing by the client.

Slope Stability Assessment Along Excavation Wall near Edwards Way SW, Airdrie, AB ARGEO File No. BNG24-1014 February 2025

5.0 SUBSURFACE CONDITIONS

5.1 Subsurface Investigation

The primary objective of the field drilling was to evaluate groundwater conditions and assess soil characteristics below the excavated depth. Due to the urgency of the project, drilling was conducted exclusively at the bottom of the excavation. Where possible, the upper soil conditions were assessed through observations of the exposed excavation wall, while the road structure was evaluated based on prior experience.

The general soil profile encountered at the test hole locations at the bottom of the excavation consisted of silty sand, overlying sandy silt with bedrock fragments, which was further underlain by sandstone bedrock.

5.2 Groundwater Conditions

Groundwater was primarily observed on the north side of the property, likely due to water accumulation from the creek or stormwater pond. During field drilling, most of the test holes were dry, with the exception of those located in the far northern areas.

6.0 SLOPE STABILITY EVALUATION AND RECOMMENDATIONS

6.1 General

A slope stability analysis was performed to evaluate the potential impacts of the excavation wall to the existing road and other infrastructure. Representative cross-sections of the slope profile, labeled "A-A" was interpolated from field notes and a review of existing drawings. A uniform slope profile was assumed between certain points during the development of these cross-sections.

Slope stability is assessed in terms of the factor of safety (FOS) against slope failure. The FOS is the ratio of total forces resisting failure to the sum of forces driving failure. Generally, an FOS less than 1.0 indicates that failure is likely, while an FOS greater than 1.0 suggests stability. Over time, a steepened slope will naturally slump back to a more stable profile, based on the existing soil and groundwater conditions. Given the variability of soil types, fluctuations in groundwater, erosion, and other factors, slopes with an FOS between 1.0 and 1.3 are considered marginally stable, while slopes with an FOS above 1.5 are regarded as "long-term" stable.

The critical failure surface is defined as the failure surface with the lowest FOS that intersects the existing road or area of concern. For short-term conditions, the recommended setback distance should ensure that the FOS at the closest property line (in this case, the road and associated infrastructure) is at least 1.20. For permanent structures such as detention ponds, houses, or other occupied buildings, a higher FOS is recommended.

Slope Stability Assessment Along Excavation Wall near Edwards Way SW, Airdrie, AB ARGEO File No. BNG24-1014 February 2025

ARGEO conducted a detailed slope stability assessment using test hole log data, subsurface profile information gathered during site reconnaissance, soil parameters estimated from field and laboratory tests, and available literature. The goals of this stability analysis were to:

- Perform a limit equilibrium analysis and determine the factors of safety for the existing slope.
- Evaluate the suitability of the slope and the safe setback distance for the long-term stability of the proposed water detention pond project.

6.2 Stability Analyses

Limit equilibrium analysis was carried out using the Visual Slope[™] software program to evaluate the factor of safety (FOS) for the representative slope profile. The FOS was calculated using the Bishop Method and were compared to values of Spencer Method.

To evaluate slope stability, information on shear strength of the earth materials, surface and subsurface geometry is required. Based on laboratory testing and local experience, the following soil parameters were used for the different type of soils encountered on site, as shown on Table 1 below.

Soil Unit	Total Unit Weight γ (KN/m³)	Friction Angle Φ' (degree)	Cohesion C' (KPa)	Piezometric Surface
Gravel Fill	22	36	0	1
Clay Fill	18	27	18	1
Silty sand	19.0	32	15	1
Sand	18	37	0	1
Bedrock	24	37	0	

Table 1: Summary of Parameters Used for Stability Analyses

The slope section shown as "A"-"A" represents the typical slope in Figures 2A. ARGEO recommends completing construction while the ground is frozen to enhance slope stability.

The existing slope profiles were analyzed to assess global stability, with the groundwater level set at 0.5 m. The analysis showed that the slope is stable, with a factor of safety (FOS) of 1.21 for section "A"-"A." By preventing parking space

ARGEO acknowledges that parking will not be allowed on the east side of Edwards Way, which will enhance the stability of the excavation wall.

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6.3 Result of Slope Stability Evaluations

Slope stability evaluations were conducted assuming that the failure mode would involve either circular or block-type surfaces. Potential failure surfaces were identified and analyzed to determine the factor of safety. The results from the stability analyses, including computer-generated outputs, are provided in Appendix D.

This study has validated the available data and offers a basis for establishing appropriate slope setback distances in relation to the slope crest.

The assessment indicates that the excavated slope will remain stable for a short period, approximately 2 to 3 months. Additionally, frost conditions, which were not included in this analysis, are expected to further enhance stability.

The stability analysis included a line load of 125 kN/m to simulate the impact of a fire truck positioned approximately 3.7 meters from the slope's edge. This distance represents the truck's center of gravity, measured from the midpoint between its wheels.

7.0 CLOSURE

We trust that this report will assist you in the design and construction of the proposed project. ARGEO appreciates the opportunity to provide our services on this project and looks forward to working with you during construction and on future projects. Should you have any questions, please do not hesitate to contact us.

Yours truly,

AR Geotechnical Engineering Ltd,



Ayoub Ramadan, P.Eng. Geotechnical Engineer



Slope Stability Assessment Along Excavation Wall near Edwards Way SW, Airdrie, AB ARGEO File No. BNG24-1014 February 2025

> **APPENDIX A** LIMITATIONS

This report was prepared for the exclusive use of UK One Construction & City of Airdrie for evaluating the proposed development. The report may not be relied upon by any other person or entity without the written permission of UK One Construction and City of Airdrie. This report was prepared in accordance with current, generally accepted geotechnical engineering practices. No other warrantee is provided.

ARGE should be allowed the opportunity to review the geotechnical aspects of plans and specifications prior to construction, to allow confirmation of the correct interpretation of the recommendations provided in this report.

Foundation, earthworks and underground construction should be undertaken only with full time monitoring by qualified personnel. ARGEO can provide these services on request.

The conclusions and recommendations submitted in this report are based upon the data obtained from a limited number of subsurface explorations. The nature and extent of variations between these explorations may not become evident until construction or further investigation. If variations or other latent conditions do become evident, it will be necessary to re-evaluate the recommendations of this report.

The recommendations contained herein are not intended to dictate construction methods or sequences. Instead, they are furnished solely to help designers identify potential construction problems related to foundation and earth plans and specifications, based upon findings derived from sampling. Depending upon the final design chosen for the project, the recommendations may also be useful to personnel who observe construction activity. Potential contractors for the project must evaluate potential construction problems on the basis of their review of the contract documents, their own knowledge of and experience in the local area, and on the basis of similar projects in other localities, taking into account their own proposed methods and procedures.

APPENDIX B

Explanation of Terms and Symbols

EXPLANATION OF TERMS AND SYMBOLS

The terms and symbols used on the borehole logs to summarize the results of field investigation and subsequent laboratory testing are described in these pages.

It should be noted that materials, boundaries and conditions have been established only at the borehole locations at the time of investigation and are not necessarily representative of subsurface conditions elsewhere across the site.

TEST DATA

Data obtained during the field investigation and from laboratory testing are shown at the appropriate depth interval.

Abbreviations, graphic symbols, and relevant test method designations are as follows:

*C	Consolidation test	*ST	Swelling test
D _R	Relative density	TV	Torvane shear strength
*k	Permeability coefficient	VS	Vane shear strength
*MA	Mechanical grain size analysis	w	Natural Moisture Content (ASTM D2216)
	and hydrometer test	WI	Liquid limit (ASTM D 423)
Ν	Standard Penetration Test (CSA A119.1-60)	Wp	Plastic Limit (ASTM D 424)
Nd	Dynamic cone penetration test	Ef	Unit strain at failure
NP	Non plastic soil	γ	Unit weight of soil or rock
рр	Pocket penetrometer strength	γd	Dry unit weight of soil or rock
*q	Triaxial compression test	ρ	Density of soil or rock
qu	Unconfined compressive strength	ρ _d	Dry Density of soil or rock
*SB	Shearbox test	Cu	Undrained shear strength
SO4	Concentration of water-soluble sulphate	\rightarrow	Seepage
		<u> </u>	Observed water level

The results of these tests are usually reported separately

Soils are classified and described according to their engineering properties and behaviour.

The soil of each stratum is described using the Unified Soil Classification System¹ modified slightly so that an inorganic clay of "medium plasticity" is recognized.

The modifying adjectives used to define the actual or estimated percentage range by weight of minor components are consistent with the Canadian Foundation Engineering Manual².

Relative Density and Consistency:

Cohesion	less Soils	Cohesive Soils					
Relative Density	SPT (N) Value	Consistency	Undrained Shear Strength c _u (kPa)	Approximate SPT (N) Value			
Very Loose	0-4	Very Soft	0-12	0-2			
Loose	4-10	Soft	12-25	2-4			
Compact	10-30	Firm	25-50	4-8			
Dense	30-50	Stiff	50-100	8-15			
Very Dense	>50	Very Stiff	100-200	15-30			
-		Hard	>200	>30			

Standard Penetration Resistance ("N" value)

The number of blows by a 63.6kg hammer dropped 760 mm to drive a 50 mm diameter open sampler attached to "A" drill rods for a distance of 300 mm after an initial penetration of 150 mm.

"Unified Soil Classification System", Technical Memorandum 36-357 prepared by Waterways Experiment Station, Vicksburg, Mississippi, Corps of Engineers, U.S. Army. Vol. 1 March 1953.

2 "C

"Canadian Foundation Engineering Manual", 3rd Edition, Canadian Geotechnical Society, 1992.

	MODIFIED UNIFIED CLASSIFICATION SYSTEM FOR SOILS														
MAJOR DIVISION			N	GROUP SYMBOL	GRAF SYMB	PH OL	COLOUR CODE	T	TYPICAL DESCRIPTION		LABORATORY CLASSIFICATION CRITERIA				
jμm)	N N mm	CLEAN		GW	2222	170 170	RED	WELL MIXT	L GRADI URES, L	ED GRAVEL	5, GRAVEL O FINES	-SAND	$C_{U} = \frac{D_{60}}{D_{10}} >$	>4; $C_{\rm C} = \frac{(D_{30})^2}{D_{10} \times D_{60}} = 1 \text{ to } 3$	
THAN 7	VELS N HALF FRACTIC IAN 4.75	FIN	NES)	GP		444	RED	POOF GRAV NO FI	RLY GR/ VEL-SAN	DED GRAV D MIXTURE	ELS, S, LITTLE (OR		NOT MEETING ABOVE REQUIREMENTS	
SOILS ARGER T	GRA RE THA OARSE I GGER TH		GRAVELS	GM			YELLOW	SILTY	Y GRAVE URES	LS, GRAVE	L-SAND-SI	LT	CONTENT OF FINES	ATTERBERG LIMITS BELOW "A" LINE OR P.I. LESS THAN 4	
AINED	LAF O MO	FIN	NES)	GC			YELLOW	CLAY CLAY	YEY GRA Y MIXTUI	VELS, GRAY RES	/EL-SAND-		EXCEEDS 12 %	ATTERBERG LIMITS ABOVE "A" LINE P.I. MORE THAN 7	
RSE GR = BY WE	THE ON 5mm	CLEAN (LITTLE	I SANDS E OR NO	SW			RED	WELL	L GRADI	D SANDS, 0 E OR NO FI	GRAVELLY		$C_{U} = \frac{D_{60}}{D_{10}} > 6; \ C_{C} = \frac{(D_{60})^2}{D_{10} \times D_{60}} = 1 \text{ to } 3$		
COA AN HALF	NDS NN HALF FRACTI FHAN 4.7	FIN	NES)	SP			RED	POOF	OORLY GRADED SANDS, GRAVELLY ANDS, LITTLE OR NO FINES		NOT MEETING ABOVE REQUIREMENTS				
ORE TH	SA DRE THA COARSE	DIRTY (WITH	SANDS SOME	SM			YELLOW	SILTY	Y SANDS	, SAND-SIL	r mixture	S	CONTENT OF FINES	ATTERBERG LIMITS BELOW "A" LINE OR P.I. LESS THAN 4	
(WC	M M M	FIN	NES)	SC			YELLOW	CLAY	YEY SAN URES	DS, SAND-C	LAY		12 %	ATTERBERG LIMITS ABOVE "A" LINE P.I. MORE THAN 7	
V 75μm)	_TS "A" LINE IGIBLE ANIC TENT	W _L < 5	50%	ML			GREEN	NORGANIC SILTS AND VERY FINE SANDS, {OCK FLOUR, SILTY SANDS OF SLIGHT ?LASTICITY			SANDS, GHT				
ER THAI	BELOW NEGL ORG CON	W _L >	50%	MH			BLUE	INOR DIATO SILTY	GANIC S OMACEO Y SOILS	ILTS, MICA DUS, FINE S	CEOUS OR ANDS OR	l			
SOILS	CLAYS ABOVE "A" LINE NEGLIGIBLE ORGANIC CONTENT	W _L < 3	30%	CL			GREEN	INOR PLAS OR SI	GANIC (TICITY, ILTY CL	LAYS OF LO GRAVELLY, AYS, LEAN O	OW SANDY CLAYS			CLASSIFICATION IS BASED UPON PLASTICITY CHART (SEE BELOW)	
RAINED		30% <w< td=""><td>/_L< 50%</td><td>CI</td><td></td><td></td><td>GREEN- BLUE</td><td>INOR PLAS</td><td>GANIC (TICITY,</td><td>LAYS OF M</td><td>EDIUM S</td><td></td><td colspan="3" rowspan="2">_</td></w<>	/ _L < 50%	CI			GREEN- BLUE	INOR PLAS	GANIC (TICITY,	LAYS OF M	EDIUM S		_		
FINE-G		W _L > 5	50%	СН			BLUE	INOR PLAS	GANIC (TICITY,	LAYS OF H AT CLAYS	GH				
THAN H	IC SILTS AYS "A" LINE	W _L < 5	50%	OL			GREEN	ORGA CLAY	ANIC SIL 'S OF LC	TS AND OR W PLASTIC	GANIC SIL' ITY	ΤY	WHENEVER THE NATURE OF THE FINE CONTENT HAS NOT BEEN DETERMINED		
(MORE	ORGAN & CL BELOW	W _L > 5	50%	ОН			BLUE	ORGANIC CLAYS OF HIGH PLASTICITY			ITY	IS DESIGNATED BY THE LETTER "F", E.G. S IS A MIXTURE OF SAND WITH SILT OR CLA' IS A MIXTURE OF SAND WITH SILT OR CLA'			
	HIGHLY ORG	ANIC SOI	ILS	Pt			ORANGE	PEAT ORGA	YEAT AND OTHER HIGHLY STRONG COLOI DRGANIC SOILS FIBE			OLOUR OR ODOUR, AND OFTEN FIBEROUS TEXTURE			
			SPECIAL S	SYMBOLS		M						PLASTICIT	Y CHART F	OR	
LIM	ESTONE			OILSAND		t			⁶⁰ (SO	ILS PASSI	NG 425 μm	SIEVE	
SAM	NDSTONE			SHALE		E									
SILTSTONE			FILL (UNDIFFE	RENTIATED	, K		X	50 (%)					сн		
k		5	SOIL COM	PONENTS											
FRACTION U.S. STANDARD SIEVE SIZE		ا PER ا	DEFINING RA CENTAGE B MINOR COM	NGES Y WEI PONEI	GOF GHT OF NTS		PLASTICIT 05			СІ	· A' UNE	OH & MH			
GRAVEL PASSING RETAINE		RETAINED	PERCEN	лт		DESCRIPTOR		20							
COARSE		76mm	19mm						10						
FINE		19mm	4.75mm	35-50			AND		7 4	, ci	- ML	ML & OL			
SAND				20-35			Y/EY		0 L	10	20	30 40	50 60	70 80 90 100	
COARSE		4.75mm	2.00mm	20-33								LIQI	UID LIMIT (%)		
	FINE	2.00mm 425μm	425μm 75μm	10-20			SOME	<u>N</u> 1.	IOTES: . ALL SI	EVE SIZES I	MENTIONE	D ON THIS CH	IART ARE U.S. S	STANDARD A.S.T.M. E.11	
FINES (S BASED C PLASTIC	ILT OR CLAY	75µm		1-10			TRACE	2.	E.G. G	E GRAIN S W-GC IS A V	OILS WITH VELL GRAD	5 TO 12% FIN DED GRAVEL S	ES GIVEN COM SAND MIXTURE	BINED GROUP SYMBOLS, WITH CLAY BINDER	
	A469.9	0				_									
ROUN	IDED OR SUBROUN	IDED:		NOT ROUNDED:											
COBB	LES 76mm TO 200n	nm		ROCK FRAGMEN	NTS > 76mm				AR	GE					
BOULDERS > 200mm			ROCKS > 0.76 C	OCKS > 0.76 CUBIC METRE IN VOLUME											

APPENDIX C

Representative of the Cross-Section of the Existing Slope





ARGEO



[GeoStructural Analysis - Slope Stability | version 5.16.13.0 | Copyright © 2013 Fine spol. s r.o. All Rights Reserved | www.finesoftware.eu]



ARGEO



[GeoStructural Analysis - Slope Stability | version 5.16.13.0 | Copyright © 2013 Fine spol. s r.o. All Rights Reserved | www.finesoftware.eu]



PLAN SHOWING AS CONSTRUCTED FORM WORK AND EDGE OF EXCAVATION LINE



93 ROYAL CREST VIEW NW, CALGARY,T3G 5W5, ALBERTA., Ph.: +1 403 478 3635

PROPERTY DESCRIPTION:

LEGAL DESCRIPTION: LOT 6, BLOCK 1, PLAN 151 1409 MUNICIPAL ADDRESS: 196 EDWARDS WAY S.W.

> Denotes Property Line Denotes Proposed Foundation Denotes As Outside of Constructed Form Work Denotes Excavation Line Denotes Waterline Denotes Found I. Denotes Distance Between Edge of Excavation & Waterline



Nitin Bansal, Alberta Land Surveyor

TG24-0498	Date: Ja	inuary 31, 2025	Dwn By: C.D.	
e No.: TG24-0498F		Scale: 1:500	Ck'd By: N.B.	

APPENDIX D

Calculation Summary Results

Input data

Project

Task :	Slope Stability for UK Construction
Part :	Slope Stability for UK Construction
Description :	Slope Stability for UK Construction
Date :	29/01/2025
Unit weight of water is considered :	9,81 kN/m ³

Settings

USA - Safety factor Stability analysis

Verification methodology : Safety factors (ASD)

Safety factors						
Accidental design situation						
Safety factor :	SF _s =	1.00	[-]			

Interface

No	Interface location	Coordinates of interface points [m]					
NO.		x	z	x	z	x	z
		-2.00	5.57	0.00	5.59	1.00	5.60
		2.61	5.61	3.55	5.62	4.08	5.63
1		4.30	5.41	5.33	4.39	5.35	3.57
1		5.39	2.13	5.40	1.90	5.40	1.89
		8.00	1.89				
		-2.00	4.21	0.00	4.71	0.04	4.72
		1.91	5.20	2.71	5.41	3.27	5.55
0		3.55	5.62				
2							
		2.61	5.61	2.71	5.41		
-							
3							
		2.71	5.41	2.78	5.27		
4							
4							
		1.91	5.20	2.50	5.25	2.78	5.27
		4.18	5.39	4.30	5.41		
F							
5							

1

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Coordinates of interface points [m] No. **Interface location** X z X z х z 2.78 5.27 3.03 4.77 3.52 3.98 3.80 3.61 6 3.70 0.00 3.70 0.03 3.70 -2.00 3.80 3.61 5.15 3.57 5.35 3.57 7 3.61 4.08 4.71 2.53 3.80 3.23 5.40 1.90 8 2.48 2.20 2.09 -2.00 0.00 0.80 1.52 4.85 1.52 5.27 5.39 1.52 1.52 8.00 9 -2.00 1.57 0.00 1.57 0.10 1.57 1.49 4.85 1.52 7.66 10 4.85 1.52 5.52 1.43 7.66 1.49 8.00 1.50 11 -2.00 0.00 0.00 0.00 8.00 0.00 12

Soil parameters - effective stress state

No.	Name	Pattern	Φef [°]	c _{ef} [kPa]	γ [kN/m³]
1	Gravel Fill		36.00	10.00	22.00
2	Clay Fill		27.00	15.00	18.00
3	Silty Sand		33.00	17.00	20.00
4	Sand		37.00	4.00	18.00
5	Bed Rock		37.00	10.00	24.00

Soil parameters - uplift

No.	Name	Pattern	γsat [kN/m³]	γs [kN/m³]	n [-]
1	Gravel Fill		23.00		
2	Clay Fill		19.00		
3	Silty Sand		20.00		
4	Sand		19.00		
5	Bed Rock		24.00		

Soil parameters

00.00 hN/m 2
$\gamma = 22.00 \text{ kN/m}^3$
effective
$\varphi_{ef} = 36.00$ °
c _{ef} = 10.00 kPa
γ_{sat} = 23.00 kN/m ³
$\gamma = 18.00 \text{ kN/m}^3$
effective
$\varphi_{ef} = 27.00^{\circ}$

•		\sim	-	\sim
А	к	G	E	υ

Cohesion of soil :	c _{ef} =	15.00 kPa
Saturated unit weight :	γ _{sat} =	19.00 kN/m ³
Silty Sand		
Unit weight :	γ =	20.00 kN/m ³
Stress-state :	effectiv	e
Angle of internal friction :	$\varphi_{ef} =$	33.00 °
Cohesion of soil :	c _{ef} =	17.00 kPa
Saturated unit weight :	γ _{sat} =	20.00 kN/m ³
Sand		
Unit weight :	γ =	18.00 kN/m ³
Stress-state :	effectiv	е
Angle of internal friction :	$\varphi_{ef} =$	37.00 °
Cohesion of soil :	c _{ef} =	4.00 kPa
Saturated unit weight :	γ _{sat} =	19.00 kN/m ³
Bed Rock		
Unit weight :	γ =	24.00 kN/m ³
Stress-state :	effectiv	e
Angle of internal friction :	φ_{ef} =	37.00 °
Cohesion of soil :	c _{ef} =	10.00 kPa
Saturated unit weight :	γ _{sat} =	24.00 kN/m ³

Assigning and surfaces

No	Surface position	Coordinates of surface points [m]			Assigned	
NO.	Surface position	x	z	x	z	soil
		2.71	5.41	3.27	5.55	Clay Fill
		3.55	5.62	2.61	5.61	
1						، <u>، ، ، ، ، ، ، ، ، ، ، ، ، ، ، ، ، ، </u>
		4.18	5.39	4.30	5.41	Clay Fill
		4.08	5.63	3.55	5.62	
		3.27	5.55	2.71	5.41	
		2.78	5.27			
2						

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NU. Survey position x z x z x z soil 3 Image position x z x z soil Gravel Fill 3 Image position z 5 2.71 5.41 1.91 5.20 Gravel Fill 4 Image position z 5 1.00 5.60 Gravel Fill 4 Image position z 5 1.00 5.60 Gravel Fill 5 Image position	No	Surface position	Coordin	ates of su	urface points	5 [m]	Assigned
3 2.50 5.25 2.78 5.27 Gravel Fill 2.71 5.41 1.91 5.20 Gravel Fill 2.61 5.61 1.00 5.60 Gravel Fill 2.61 5.61 1.00 5.60 Gravel Fill 2.00 4.21 0.00 4.71 0.04 4.72 2.71 5.41 3.80 3.61 3.52 3.98 3.80 3.61 3.52 3.98 3.17 2.78 5.27 2.50 5.25 1.91 5.20 5.27 5.27 5.27 2.00 4.21 -2.00 4.71 -	NO.	Surface position	X	z	x	z	soil
3 2.71 5.41 1.91 5.20 4 2.61 5.61 1.00 5.60 Gravel Fill -2.00 4.21 -0.00 4.71 0.04 4.72 1.91 5.20 5 0.00 3.70 0.03 3.70 Sity Sand 5 5.15 3.57 5.35 3.67 6 5.15 3.57 5.35 3.67 8 5.15 3.57 5.35 3.57 8 5.15 3.57 5.35 3.57 9 0.04 4.72 0.00 4.71 -2.00 4.21 -2.00 3.70 5.27 2.50 5.25 1.91 5.20 0.04 4.72 0.00 4.71 -2.00 4.21 -2.00 3.70 3.03 4.77 2.78 5.27 3.03 4.77 3.52 3.98 3.80 3.61 3.93 5.17 3.80 3.61 3.93 4.30 5.27 3.80 <t< td=""><td></td><td></td><td>2.50</td><td>5.25</td><td>2.78</td><td>5.27</td><td>Gravel Fill</td></t<>			2.50	5.25	2.78	5.27	Gravel Fill
3 2.61 5.61 1.00 5.60 Gravel Fill 4 2.61 5.61 1.00 5.60 Gravel Fill -2.00 4.21 0.00 4.71 0.04 4.72 1.91 5.20 2.71 5.41 5.41 5.41 5.41 5.41 5.41 5.41 5 0.00 3.70 0.03 3.70 5.27 5.27 5.26 3.80 3.61 3.52 3.83 5.19 5.27 5.25 5.25 1.91 5.20 0.04 4.72 -2.00 3.70 5.35 5.37 5.35 5.47 5 5.15 3.57 5.35 3.57 5.35 3.57 5.33 4.39 4.38 5.39 5.35 3.57 5.35 3.57 5.35 3.57 3.38 3.80 3.81 3.80 3.81 3.80 3.81 3.80 3.81 3.80 3.81 3.80 3.81 3.80 3.81 3.81 3.80 3.81 3.81 3.81 3.81 3.81 3.81 <t< td=""><td></td><td></td><td>2.71</td><td>5.41</td><td>1.91</td><td>5.20</td><td></td></t<>			2.71	5.41	1.91	5.20	
3 261 5.61 1.00 5.60 Gravel Fill 4 2.61 5.61 1.00 5.60 Gravel Fill 2.00 4.21 0.00 4.72 1.91 5.20 2.71 5.41 5.41 5.41 5.41 5 0.00 3.70 0.03 3.70 3.80 3.61 3.52 3.98 3.03 3.03 4.77 2.78 5.27 0.00 4 5 5.15 3.57 5.35 3.57 5 5.15 3.57 5.35 3.57 6 3.80 3.61 3.52 3.98 3.80 3.61 3.52 3.98 3.80 3.61 3.52 3.98 3.80 3.61 3.52 3.98 3.80 3.61 3.52 3.98 3.80 3.61 5.27 3.53 3.80 3.61 5.27 3.53 3.80 3.61 5.27 3.98 3.80 3.61 5.27							
3 2.61 5.61 1.00 5.60 Gravel Fill 4 2.61 5.61 1.00 5.60 Gravel Fill 2.00 4.21 0.00 4.71 0.00 4.71 2.71 5.41 5.00 5.07 5.07 2.00 4.72 1.91 5.20 5.07 2.71 5.41 5.00 5.07 5.07 5 0.00 3.70 0.03 3.70 5.07 2.00 4.77 2.78 5.27 2.50 5.25 1.91 5.20 5 5.15 3.57 5.35 3.57 5.35 3.57 5.35 5.35 3.57 6 5.35 3.57 5.35 3.57 5.36 3.57 5.36 3.57 6 3.80 3.61 3.52 3.98 3.80 3.61 3.52 3.98 3.80 3.61 3.52 3.98 3.80 3.61 3.52 3.98 3.80 3.61 3.52 3.98 3.80 3.61 3.52 3.98 3.80							
4 2.61 5.61 1.00 5.60 Gravel Fill 2.00 4.21 0.00 4.71 Gravel Fill 2.00 4.21 0.00 4.71 Gravel Fill 2.71 5.41 5.00 5.67 Gravel Fill 0.00 3.70 0.03 3.70 Sity Sand 1 2.00 4.21 -2.00 4.71 -2.00 4.21 -2.00 3.71 Sity Sand 1 5.33 4.39 4.30 5.41 1 5.33 4.39 4.30 5.41 1 3.80 3.61 3.52 3.98 3.80 3.8	3						
4 2.61 5.61 1.00 5.60 Gravel Fill 2.00 4.21 0.00 4.71 0.04 4.72 1.91 5.20 2.71 5.41 5.01 1.00 4.71 0.00 6 0.00 3.70 0.03 3.70 0.03 3.70 0.00 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
4 2.61 5.61 1.00 5.60 Gravel Fill 2.00 5.57 -2.00 5.57 Gravel Fill 2.00 4.21 0.00 4.71 -9.15 5.20 2.71 5.41 5.41 5.61 5.60 0.00 6 5 0.00 3.70 0.03 3.70 0.03 3.70 0.03 3.70 3.80 3.61 3.52 3.88 3.61 3.52 3.88 3.10 5.15 3.67 5.27 2.50 5.25 1.91 5.20 5.26 1.91 5.20 0.04 4.77 2.78 5.27 2.50 5.25 1.91 5.20 0.04 4.77 0.00 4.71 -							
4 2.61 5.61 1.00 5.60 Gravel Fill 2.00 4.21 0.00 4.71 0.04 4.72 1.91 5.20 2.71 5.41							
4 2.61 5.61 1.00 5.60 0.00 5.59 -2.00 4.71 0.04 4.72 0.04 4.72 1.91 5.20 2.71 5.41 5.61 0.00 5.70 0.00 3.70 0.03 3.70 0.03 3.70 0.03 3.70 0.03 3.70 5 0.00 3.70 0.03 3.70 0.03 3.70 0.03 3.70 0.03 3.70 0.03 3.70 0.04 4.72 0.00 4.71 0.00 4.71 0.00 3.70 0.03 3.70 0.03 3.70 0.03 3.70 0.03 3.70 0.03 3.70 0.04 4.72 0.00 4.71 0.00 4.71 0.00 4.71 0.00 4.71 0.00 4.71 0.00 4.71 0.00 4.71 0.00 4.71 0.00 4.71 0.00 4.71 0.00 4.71 0.00 4.71 0.00 4.71 0.00 4.71 0.00 4.71 0.00 4.71 0.00 4.71 0.00 4.71 0.00							
4 2.01 5.03 5.00 5.05 Cravel Fill 4 -2.00 4.21 0.00 4.71 0.04 4.72 1.91 5.20 2.71 5.41			2.61	5 61	1.00	5 60	
4 5 6 6 6 6 6 6 6 6 6 6			0.00	5.01	-2.00	5.00	Gravel Fill
$ \begin{array}{c} $			-2.00	4.21	0.00	4.71	
4 2.71 5.41 5 0.00 3.70 0.03 3.70 3.80 3.61 3.52 3.98 3.03 4.77 2.78 5.27 2.50 5.25 1.91 5.20 0.04 4.72 0.00 4.71 -2.00 4.21 -2.00 3.70 5 5.15 3.57 5.35 3.57 5.33 4.39 4.30 5.41 4.18 5.39 2.78 5.27 3.80 3.61 3.52 3.98 3.80 3.61 5.15 5.15			0.04	4.72	1.91	5.20	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$			2.71	5.41			
0.00 3.70 0.03 3.70 Sity Sand 3.80 3.61 3.52 3.98 Sity Sand 3.03 4.77 2.78 5.27 2.50 5.25 1.91 5.20 0.04 4.72 0.00 4.71 -2.00 4.21 -2.00 3.70 5 5.15 3.57 5.35 3.57 5.33 4.39 4.30 5.41 4.18 5.39 2.78 5.27 3.03 4.77 3.52 3.98 3.80 3.61 3.05 5.15	4						
5							
5							
5							
5							
5 6 3.80 3.61 3.52 3.98 3.03 4.77 2.78 5.27 2.50 5.25 1.91 5.20 0.04 4.72 0.00 4.21 -2.00 3.70 5.15 3.57 5.35 3.57 5.33 4.39 4.30 5.41 4.18 5.39 2.78 5.27 3.03 4.77 3.52 3.98 3.80 3.61 5.15 5.33 4.30 5.41 5.15 5.33 4.30 5.41 5.15 5.33 4.30 5.41 5.15 5.33 4.30 5.41 5.15 5.35 3.57 5.35 3.57 5.35 3.57 5.35 3.57 5.35 3.57 5.35 3.57 5.33 4.30 5.41 5.15 5.33 4.30 5.41 5.15 5.33 4.30 5.41 5.15 5.33 5.27 3.03 4.77 3.52 3.98 5.15 5.35			0.00	3.70	0.03	3.70	Silty Sand
5 6 3.03			3.80	3.61	3.52	3.98	
5 6 2.50			3.03	4.77	2.78	5.27	
5 6 $0.04 4.72 0.00 4.71 -2.00 3.70 -2.00 -2.0$			2.50	5.25	1.91	5.20	
6 -2.00 4.21 -2.00 3.70 5.15 3.57 5.35 3.57 5.33 4.39 4.30 5.41 4.18 5.39 2.78 5.27 3.03 4.77 3.52 3.98 3.80 3.61 5.15 5.35 5.27 5.30 5.27 5.35 5.27 3.00 5.41 5.15 5.35 5.27 5.30 5.27 5.35 5.27 5.27 5.27 5.27 5.27 5.27 5.27 5.2	5		0.04	4.72	0.00	4.71	
6 6			-2.00	4.21	-2.00	3.70	· _ ° ° ° ° ° ° ° ° ° · °
6 6							° ° ° °
6 6							
6 5.15 3.57 5.35 3.57 5.33 4.39 4.30 5.41 4.18 5.39 2.78 5.27 3.03 4.77 3.52 3.98 3.80 3.61 5.15 3.57 5.35 3.57 5.35 5.27 5.33 5.27 5.35 5.27 5.35 5.27 5.27 5.36 5.27							
6 5.33 4.39 4.30 5.41 Silty Sand 4.18 5.39 2.78 5.27 3.03 4.77 3.52 3.98 3.80 3.61			5.15	3.57	5.35	3.57	
6 4.18 5.39 2.78 5.27 3.03 4.77 3.52 3.98 3.80 3.61			5.33	4.39	4.30	5.41	Silty Sand
6 3.03 4.77 3.52 3.98 3.80 3.61			4.18	5.39	2.78	5.27	
6 3.80 3.61			3.03	4.77	3.52	3.98	
	6		3.80	3.61			· · · · · · · · · · · · · · · · · · ·
	0						
							<u>^</u>
			1 00	2.02	1 71	2 5 2	
4.00 5.25 4.71 2.55 5.40 1.90 5.39 2.13 Sand		T T	4.00 5.40	3.∠3 1.90	5.30	∠.53 2.13	Sand
5.35 3.57 5.15 3.57			5.35	3.57	5.15	3.57	
3.80 3.61			3.80	3.61			
	_						
	7						
							0 0 0
							5

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	Í	Coordin	atos of si	urfaco pointe Im	1	Assigned
No.	Surface position	x	z	X	z	soil
		0.00	2.20	0.80	2.09	
		4.85	1.52	5.27	1.52	Sand
		5.39	1.52	8.00	1.52	
		8.00	1.89	5.40	1.80	
		5.00	1.00	4 71	2.53	
8		4.08	3 23	3.80	2.00	· · · · · · · · · · · · · · · · · · ·
	-	4.00	3.20	0.00	3 70	
	-	2.00	2 70	2.00	2.10	· · · · · · · · · · · · · · · · · · ·
	-	-2.00	3.70	-2.00	2.40	
		0.00	1.57	0.10	1.57	Sand
		4.85	1.52	0.80	2.09	
		0.00	2.20	-2.00	2.48	
		-2.00	1.57			
q						0 0 0 0 0
5						
						- ° ° · · ·
		8.00	1.50	8.00	1.52	Red Beek
		5.39	1.52	5.27	1.52	Deu Rock
		4.85	1.52	7.66	1.49	
10						
		5.52	1.43	7.66	1.49	
		4.85	1.52			Bed Rock
11						
		0.00	0.00	8.00	0.00	
		8.00	1.50	7.66	1.49	Bed Rock
		5.52	1.43	4.85	1.52	
		0.10	1.57	0.00	1.57	
		-2.00	1.57	-2.00	0.00	
12			-	-		
	· · · · · · · · · · · · · · · · · · ·					
	1					

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	-

Coordinates of surface points [m] Assigned No. **Surface position** x z z soil Х 0.00 0.00 -2.00 0.00 Bed Rock 8.00 -3.00 -2.00 -3.00 8.00 0.00 13

Anchors

Surcharge

No	Turno	Type of action	Location	Origin	Length	Width	Slope		Magnitude	
NO.	туре	Type of action	z [m]	x [m]	l [m]	b [m]	α [°]	q,q_1,f,F	q 2	unit
1	line	accidental	on terrain	x = 0.40			0.00	125.00		kN/m

Surcharges

No.	Name
1	Truck

Water

Water type : GWT

No	GWT location		Соо	rdinates of G	NT points	; [m]	
NO.	Gwillocation	x	z	x	z	x	z
		-2.00	2.60	0.00	2.34	1.25	2.18
		5.97	1.56	8.00	1.77		
1							

Results (Stage of construction 1)

Analysis 1 (stage 1)

Circular slip surface

Slip surface parameters									
Contor	x =	8.18	[m]		α ₁ =	-55.69	[°]		
Center.	z =	10.91	[m]	Angles .	α ₂ =	-17.15	[°]		
Radius :	R =	9.43	[m]						
Analysis of the slip surface without optimization.									

Slope stability verification (Bishop)

Sum of active forces : $F_a = 208.50 \text{ kN/m}$ Sum of passive forces : $F_p = 252.19 \text{ kN/m}$ ARGEO

Slope Stability for UK Construction Slope Stability for UK Construction



Input data (Stage of construction 2)

Assigning and surfaces

No	Curfees nesition	Coordin	ates of sur	face points	[m]	Assigned
NO.	Surface position	x	z	x	z	soil
		2.71	5.41	3.27	5.55	
		3.55	5.62	2.61	5.61	
	-					
1						
						° ° °
		4.40	E 20	4.00	E 44	
		4.18	5.39	4.30	5.41	Clay Fill
		4.08	5.63	3.55	5.62	
		3.27	5.55	2.71	5.41	-
		2.78	5.27			
2						· · · · · · · · ·
						°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°°
						^
		2.50	5.25	2.78	5.27	Gravel Fill
		2.71	5.41	1.91	5.20	
2						
3						
		2.61	5.61	1.00	5.60	a
		0.00	5.59	-2.00	5.57	Gravel Fill
		-2.00	4.21	0.00	4.71	
		0.04	4.72	1.91	5.20	
		2.71	5.41			
4						

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No	Surface position	Coordin	ates of su	Irface points	[m]	Assigned
		X	z	X	z	soil
		0.00	3.70	0.03	3.70	Silty Sond
		3.80	3.61	3.52	3.98	Sitty Sand
		3.03	4.77	2.78	5.27	
		2.50	5.25	1.91	5.20	
		0.04	4 72	0.00	4 71	
5		-2.00	1 21	-2.00	3 70	
		-2.00	4.21	-2.00	5.70	
						° — ° ° — °
		5.15	3.57	5.35	3.57	
		5.33	4.39	4.30	5.41	Silty Sand
		4.18	5.39	2.78	5.27	
	$\langle 1 \rangle$	3.03	4.77	3.52	3.98	
		3.80	3.61	0.02	0.00	
6		0.00	0.01			
						- ° ° <u>-</u> ° ° ° ~
						• <u> </u>
		4.08	3.23	4.71	2.53	Sand
		5.40	1.90	5.39	2.13	Sanu
		5.35	3.57	5.15	3.57	
		3.80	3.61			
7						• • • • • • • •
						· · · · · · · · · · · · · · · · · · ·
		0.00	2.20	0.80	2.09	Sand
		4.85	1.52	5.27	1.52	Sand
	• • •	5.39	1.52	8.00	1.52	
		8.00	1.89	5.40	1.89	
		5.40	1.90	4.71	2.53	
8		4.08	3.23	3.80	3.61	
		0.03	3.70	0.00	3.70	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
		-2.00	3.70	-2.00	2.48	· · · · · · · · · · · · · · · · · · ·
			·'	A 1 -		
		0.00	1.57	0.10	1.57	Sand
		4.85	1.52	0.80	2.09	
		0.00	2.20	-2.00	2.48	
		-2.00	1.57			
•						
9	,					

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Coordinates of surface points [m] Assigned No. **Surface position** x z z soil X 8.00 1.50 8.00 1.52 Bed Rock 1.52 5.27 5.39 1.52 4.85 1.52 7.66 1.49 10 5.52 1.43 7.66 1.49 Bed Rock 4.85 1.52 11 0.00 0.00 8.00 0.00 Bed Rock 1.50 7.66 1.49 8.00 5.52 1.43 4.85 1.52 0.10 1.57 0.00 1.57 -2.00 1.57 -2.00 0.00 12 0.00 0.00 -2.00 0.00 Bed Rock -3.00 -2.00 -3.00 8.00 8.00 0.00 13

Surcharge

	Surcl	narge		Type of	Location	Origin	Length	Width	Slope	Γ	/lagnitud	e
No.	new	change	Туре	action	z [m]	x [m]	l [m]	b [m]	α [°]	q, q ₁ , f, F	q ₂	unit
1	No	No	line	accidental	on terrain	x = 0.40			0.00	125.00		kN/m

Surcharges

No.	Name
1	Truck

Water

Water type : GWT

No	GWT location		Соо	rdinates of G	WT points	[m]	
110.	GWT location	x	z	x	z	x	z
		-2.00	2.60	0.00	2.34	1.25	2.18
		5.97	1.56	8.00	1.77		
1							

Results (Stage of construction 2)

Analysis 1 (stage 2)

Circular slip surface

Slip surface parameters								
Contor :	x =	7.17	[m]		α ₁ =	-59.86	[°]	
Center.	z =	9.53	[m]	Angles .	α ₂ =	-13.05	[°]	
Radius :	R =	7.84	[m]					
Analysis of the slip surface without optimization.								

Slope stability verification (Bishop)

Sum of active forces : $F_a = 213.71 \text{ kN/m}$ Sum of passive forces : $F_p = 261.94 \text{ kN/m}$ Sliding moment : $M_a = 1675.47 \text{ kNm/m}$ Resisting moment : $M_p = 2053.64 \text{ kNm/m}$ Factor of safety = 1.23 > 1.00 Slope stability ACCEPTABLE



Municipal Enforcement, 2 Highland Park Way NE, Airdrie AB T4A 0R1 Ph: 403-948-8892 Fax: 403-948-0619

ENFORCEMENT ORDER

Hand Delivered
 Registered Mail

To: Umber Khan, UK One Construction Ltd. [CONTRACTOR] 353 Santana Bay NW, Calgary, AB, T3K 3N6

> **Braden Kidd, Strategic Group [LANDOWNER]** Suite 400, 630 – 8 Avenue SW Calgary, AB, T2P 1G6

RE: Violation of Streets Bylaw, B-09/2024

WHEREAS In my capacity as a designated officer of the City of Airdrie, I am issuing a Enforcement Order pursuant to section 545 of the *Municipal Government Act*, RSA 2000, c M-26, as amended, with respect to unauthorized interference and damage to City streets as a consequence of unauthorized development on the property legally described as Lot 6; Block 1; Plan 1511409 (the "Lands"), and the off-site impacts of that unauthorized development to Edwards Way.

Section 545 of the *Municipal Government Act* authorizes a designated officer to issue an Enforcement Order when the designated officer finds that a person is contravening the *Municipal Government Act*, a City of Airdrie bylaw, or any other enactment that the City is authorized to enforce.

CONTRAVENTIONS:

Streets Bylaw

Section 7 of the Streets Bylaw states:

A person must not damage, deface, paint, chalk, stencil, or make any advertisement, legend, or sign of any kind on a pathway, sidewalk, street, or fence enclosing an obstruction on a street or public place.

Section 12 of the Streets Bylaw states:

A person must not damage, cut away, break, or remove portions from a gutter, curb, or sidewalk.

Waterworks Bylaw

Section 55 of the Waterworks Bylaw states:

A person must not damage, destroy, remove, or interfere in any way, with any pipe, pipe connection, valve, bypass valve, water meter, metering installation, seal or other appurtenance forming part of or attached to the potable water distribution system.

An inspection of the Lands on April 24, 2025 and surrounding roads revealed that Edwards Way and the adjacent sidewalk have been damaged by the excavation work and development on the Lands.

At the time of inspection, it was observed that a 10-meter-long section of the sidewalk had collapsed due to inadequate slope stability of the developments excavation which had encroached into the sidewalk of Edwards Way SW.

The collapsed section of sidewalk occurred at the location of a watermain isolation valve for a 350mm watermain within the west sidewalk of Edwards Way SW, leaving the valve casing exposed and protruding from the collapsed soil.

Due to a collapse of the sidewalk, it was identified on site that the roadway structure has been impacted and time of inspection a 100mm deep void between the asphalt and granular base course has formed. The void appears to extend the length of the failure area and extend into the roadway by approximately 1.5 meters, however the full extent of the damage into the roadway way was unable to be determined to this point.

ORDER:

YOU ARE HEREBY ORDERED TO IMMEDIATELY STOP the development and use of the Lands causing damage to Edwards Way and sidewalk and are ordered to comply with the *Streets Bylaw, Waterworks Bylaw,* and directions of the City of Airdrie.

Specifically, you must:

- 1. **Immediately** discontinue all excavation and development activities on the Lands within 5 meters of east boundary of the Lands, with the exception of activities required to maintain site security, compliance, with OH&S regulations, and to comply with the directives of this Order or any other Order that the City may issue.
- 2. **Take immediate action** to implement interim shoring and stabilization measures to secure and protect the excavated slope along Edwards Way to prevent further deterioration of the roadway, sidewalk, and slope; and
- 3. Within 7 days of the date of this Order:
 - a. direct your Geotechnical and Civil Engineer to prepare an engineered design for a sheet pile wall or equivalent alternative shoring system, designed to support loading of the adjacent roadway, and for the stabilization and reestablishment of the wrongfully excavated and undermined portion of the road right of way; and

- b. Submit the required design to the City's Engineering Department for review and approval.
- 4. Within 14 days of the date of this Order, you shall provide to the City's Engineering Department the name of the proposed contractor intended to undertake the work (which shall not be any party named in this Order), which contractor shall have a minimum of 10 years experience related to shoring, slope stabilization and road construction and repair, carry a minimum of \$5 Million in general liability insurance, either hold or be willing to obtain a valid business licence for the City of Airdrie, and hold a Certificate of Recognition (COR) and current WCB account.
- 5. Within 30 days of the date the design and proposed contractor have been approved by the City, you shall complete the installation of the shoring system and all required repairs necessary for the restoration of the road right of way. Confirmation of completion shall be provided to the City in writing by the contractor retained to undertake the work, confirming that all work has been completed in accordance with the approved design.

Note that the 350mm water line, including the isolation valve, valve stem, casing and rod are to be secured, protected, and remain operational during the restoration work, to the satisfaction of the City's Water Services. Once the work has been completed, the City of Airdrie Water Services are to be contacted to permit an inspection to be completed to ensure the isolation valve and valve stem are fully operational.

CONSEQUENCES OF FAILURE TO COMPLY:

Should any requirement of this Enforcement Order not be complied within the time limits provided, the City of Airdrie shall be authorized to undertake the work itself, at your expense. This may include entry onto r the Lands to accommodate inspection and repair work, in addition to whatever other actions or measures the City determines to be necessary to remedy the above-noted contraventions, including seeking an injunction or other relief from the Court of King's Bench or imposing fines. The expenses and costs of actions or measures taken by the City of Airdrie under this section are an amount owing to the City of Airdrie by you. Further, the City may add the costs and expenses for carrying out this Enforcement Order to the tax roll for your Lands pursuant to Section 553(1)(c) of the *Municipal Government Act*.

YOU ARE HEREBY NOTIFIED THAT As per *Municipal Government Act* section 547, Enforcement Order, you may seek a Review of this Order from the City of Airdrie Council. To do so, the request must be made, in writing, to Council within 14 days after this order is received. After reviewing the order, Council may confirm, vary, substitute, or cancel the order. The request may be sent to Council at <u>legislative.services@airdrie.ca</u> or 400 Main Street SE, Airdrie, AB, T4B 3C3. <u>legislative.services@airdrie.ca</u> or 400 Main Street SE, Airdrie, AB, T4B 3C3. Enforcement Order. A Review does not act as a stay of the requirements of this Order, including the time limits imposed herein.

ORDERED by the City of Airdrie this 25th day of April 2025.

PER: Community Peace Officer AIRDRIÉ MUNICIPAL ENFORCEMENT

1403-1437-0070, v. 1



ORDER

under Section 551 Municipal Government Act

May 3, 2025

HAND DELIVERY/REGISTERED MAIL

Attention: Umber Khan	Attention: Braden Kidd	Attention: Management
UK One Construction Ltd. 353 Santana Bay NW Calgary, AB, T3K 3N6	Strategic Group Suite 400, 630 – 8 Avenue SW Calgary, AB T2P 1G6	Casola Koppe Architects 300, 1410 1 Street SW Calgary, AB T2R 0V8

Dear Sir/ Madam:

Re: Illegal Development on and adjacent to Lot 6; Block 1; Plan 1511409 (the "Lands")

Further to the verbal notice issued to you April 30, 2025 under section 551 of the *Municipal Government Act* (the "Notice"), it has come to the attention of the City that the actions of persons present on the Lands under your authority or control (the "Workers") are preventing the City's contractor (EllisDon) from conducting the preparatory work outlined in the Notice.

Specifically, the Workers are failing to comply with both general occupational health and safety requirements, and those specifically promulgated by EllisDon within the areas on site where EllisDon is undertaking the preparatory work set out in the Notice issued to you May 1, 2025 (the "Notice").

This includes refusal to wear appropriate protective footwear and head gear. EllisDon cannot proceed with its operations on site where there are persons present that will not comply with the necessary occupational health and safety requirements as it will not put the Workers or its own personnel at unnecessary risk.

Aside from interfering with the ability of the City to address the emergency outlined in the Notice, the Workers failure to comply with safety standards and directions create an unreasonable risk.



As such, you are ordered to:

- i. Remove the site any personnel not actively engaged in performing work directed to be done under the Notice;
- ii. Provide all personnel on site and engaged in performing work authorized or directed by the Notice the necessary personal protective equipment to ensure that they are strictly following the occupational health and safety directives promulgated by EllisDon and, otherwise, compliant with appropriate safety measures; and
- iii. Ensure that all Workers present on the Lands comply with any directions issued by EllisDon necessary to facilitate the work described in the Notice.

This is for the safety not only of your Workers but also those of EllisDon and the City.

Please note that sections 557(c) and 566 of the MGA states that a person who contravenes or does not comply with an order under section 551 is guilty of an offence and is liable on conviction to a fine not exceeding \$10,000 or to imprisonment for not more than one year, or both.

We trust the purpose, intention and requirements of this Order are clear.

Yours truly,

CITY OF AIRDRIE PER:

Peace a Frigan COMMY

[Name, title]

cc. Tracey Tester, Senior Planner, City of Airdrie, <u>Tracey.Tester@airdrie.ca</u> Shannon McCarron, Development Compliance Officer, City of Airdrie, Shannon.McCarron@airdrie.ca Stephanie Martin, Team Lead, Building Inspections, City of Airdrie, Stephanie.Martin@airdrie.ca



Appendix "A"

Area where materials shall be removed



AR Geotechnical Engineeering Ltd. TECHNICAL MEMORANDUM Calgary, Alberta FILE NO: BNG25-1001 PROJECT: Creekside DATE: 2025-05-02 ADDRESS: 196 Edwards Way NW Airdrie, AB Endwards Way NW Airdrie, AB

Purpose: Review of North Shoring Wall & Backfilling on the East Side

Site Visit Overview:

• On April 29, 2025, ARGEO conducted an on-site review of the north shoring wall and backfilling against the structural wall on the east side of the site (along Edwards Way) at the project site in Airdrie, AB.

Backfilling Along Edwards Way (East Side):

- The structural wall along Edwards Way is approximately 4 metres in height.
- From a geotechnical perspective, backfilling may commence on the east side, provided that NO machinery is placed within 4 metres of the excavation edge along Edwards Way.
- All structural backfill must be tested. The contractor is required to notify ARGEO prior to commencing backfilling operations.
- Structural engineer should be consulted prior to backfilling work to review the foundation from structural perspective.

North Shoring Wall (1st Avenue NW):

ARGEO conducted a visual assessment of the north shoring wall on the same day, as requested by the client, and
issued a corresponding memo. A detailed slope stability assessment will be performed within the next two days
upon request from UK One Construction, followed by a report containing recommendations

Conclusion and Recommendations:

- Backfilling on the east side (Edwards Way) may proceed as outlined above.
- A slope stability assessment will be conducted, and a report with recommendations will be provided within the next 2–3 days.

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DISTRIBUTION:	Prepared by: Reza Lotfalikhani, Pigeo	Reviewed by: Ayoub Ramadan, P.Eng	
PAGE 1 OF 2	SIGNED:	SIGNED:	

AR Geotechnical Engineeering Ltd. Calgary, Alberta

TECHNICAL MEMORANDUM

CLIENT:	UK One Construction	FILE NO:	BNG25-1001
PROJECT:	Creekside	DATE:	2025-04-30
ADDRESS:	196 Edwards Way NW Airdrie, AB		



DISTRIBUTION:

Prepared by: Reza Lotfalikhani, P.Geo

Reviewed by: Ayoub Ramadan, P.Eng

SIGNED:

PAGE 2 OF 2

SIGNED:

STRATEGIC

Suite 400, Strategic Centre 630 – 8 Avenue SW Calgary AB T2P 1G6 strategicgroup.ca

May 9, 2025

City of Airdrie City Hall, 400 Main Street SE, Airdrie Attention Council/Legislative Services VIA EMAIL: legislativeservices@airdrie.ca

Dear Sir/Madam,

Re: Request for review of Enforcement Order dated April 25, 2025, in respect of sidewalk, road, and watermain adjacent Lot 6; Block 1; Plan 1511409 (196 Edwards Way SW)(the "Lands")

I am writing to request a council review of the attached Enforcement Order dated April 25, 2025.

Strategic Group does not dispute the appropriateness of issuing the Enforcement Order to UK One Construction Ltd. However, Strategic Group does take issue with the Enforcement Order being issued to the owner of the Lands and certain terms of the Enforcement Order. Therefore, as set out in more detail below, Strategic Group requests that council vary the Enforcement Order by removing Strategic Group from the Enforcement Order and amending its terms to permit Strategic Group's contractors a reasonable period of time to complete the appropriate work required to remedy the issues identified in the Enforcement Order.

On or about April 25, 2025, the City identified a section of excavated land adjacent Edwards Way that had subsided. The City also observed that the subsidence of the soil had caused the valve casing for a watermain below Edwards Way to be partially exposed and created a 10cm void below a 1.5m section of Edwards Way. As a result, the City properly ordered the general contractor overseeing construction on the Lands to take steps to prevent any damage to the watermain or road. However, the only party responsible for the potential damage to the sidewalk, Edwards Way, and the watermain beneath it is the general contractor responsible for the Lands.

In addition, while Strategic Group acknowledges the subsidence of soil around the valve casing and undermining of the roadway merit the issuance of an enforcement order directing that the causes of the subsidence be remedied, Strategic Group disagrees with both the requirement to install "a sheet pile wall or equivalent alternative shoring system" and certain deadlines in the Enforcement Order. As noted in a May 2, 2025, submission to

the City, the east foundation wall of the building being constructed on the Lands is complete. As a result, the most efficient and comprehensive way of protecting the watermain and preventing further subsidence below Edwards way is to properly backfill the excavation on the east side of the Lands with soil currently stored on the Lands. For that reason, Strategic Group asks council to amend section 3 of the Enforcement Order to read:

- a. <u>Prepare a schedule and procedure for properly backfilling and compacting the</u> excavation adjacent Edwards Way; or
- b. direct your Geotechnical and Civil Engineer to prepare an engineered design for a sheet pile wall or equivalent alternative shoring system, designed to support loading of the adjacent roadway, and for the stabilization and reestablishment of the wrongfully excavated and undermined portion of the road right of way; and
- c. submit the required <u>schedule and process for backfilling the excavation adjacent</u> <u>Edwards Way or</u> shoring system design to the City's Engineering Department for review and approval.

Once the above terms of the Enforcement Order are varied, the deadlines in the Enforcement Order will also have to be amended to give Strategic Group's contractors a reasonable time satisfy them.

With the above changes made to the Enforcement Order, Strategic Group's contractors would be able to remedy the issues along Edwards Way without delay.

Yours truly,

Strategic Group

Branden Kidd Development Manager



Municipal Enforcement, 2 Highland Park Way NE, Airdrie AB T4A 0R1 Ph: 403-948-8892 Fax: 403-948-0619

ENFORCEMENT ORDER

Hand DeliveredRegistered Mail

To: Umber Khan, UK One Construction Ltd. [CONTRACTOR] 353 Santana Bay NW, Calgary, AB, T3K 3N6

> **Braden Kidd, Strategic Group [LANDOWNER]** Suite 400, 630 – 8 Avenue SW Calgary, AB, T2P 1G6

RE: Violation of Streets Bylaw, B-09/2024

WHEREAS In my capacity as a designated officer of the City of Airdrie, I am issuing a Enforcement Order pursuant to section 545 of the *Municipal Government Act*, RSA 2000, c M-26, as amended, with respect to unauthorized interference and damage to City streets as a consequence of unauthorized development on the property legally described as Lot 6; Block 1; Plan 1511409 (the "Lands"), and the off-site impacts of that unauthorized development to Edwards Way.

Section 545 of the *Municipal Government Act* authorizes a designated officer to issue an Enforcement Order when the designated officer finds that a person is contravening the *Municipal Government Act*, a City of Airdrie bylaw, or any other enactment that the City is authorized to enforce.

CONTRAVENTIONS:

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Section 7 of the Streets Bylaw states:

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Section 55 of the Waterworks Bylaw states:

A person must not damage, destroy, remove, or interfere in any way, with any pipe, pipe connection, valve, bypass valve, water meter, metering installation, seal or other appurtenance forming part of or attached to the potable water distribution system.

An inspection of the Lands on April 24, 2025 and surrounding roads revealed that Edwards Way and the adjacent sidewalk have been damaged by the excavation work and development on the Lands.

At the time of inspection, it was observed that a 10-meter-long section of the sidewalk had collapsed due to inadequate slope stability of the developments excavation which had encroached into the sidewalk of Edwards Way SW.

The collapsed section of sidewalk occurred at the location of a watermain isolation valve for a 350mm watermain within the west sidewalk of Edwards Way SW, leaving the valve casing exposed and protruding from the collapsed soil.

Due to a collapse of the sidewalk, it was identified on site that the roadway structure has been impacted and time of inspection a 100mm deep void between the asphalt and granular base course has formed. The void appears to extend the length of the failure area and extend into the roadway by approximately 1.5 meters, however the full extent of the damage into the roadway way was unable to be determined to this point.

ORDER:

YOU ARE HEREBY ORDERED TO IMMEDIATELY STOP the development and use of the Lands causing damage to Edwards Way and sidewalk and are ordered to comply with the *Streets Bylaw, Waterworks Bylaw,* and directions of the City of Airdrie.

Specifically, you must:

- 1. **Immediately** discontinue all excavation and development activities on the Lands within 5 meters of east boundary of the Lands, with the exception of activities required to maintain site security, compliance, with OH&S regulations, and to comply with the directives of this Order or any other Order that the City may issue.
- Take immediate action to implement interim shoring and stabilization measures to secure and protect the excavated slope along Edwards Way to prevent further deterioration of the roadway, sidewalk, and slope; and
- 3. Within 7 days of the date of this Order:
 - a. direct your Geotechnical and Civil Engineer to prepare an engineered design for a sheet pile wall or equivalent alternative shoring system, designed to support loading of the adjacent roadway, and for the stabilization and reestablishment of the wrongfully excavated and undermined portion of the road right of way; and

- b. Submit the required design to the City's Engineering Department for review and approval.
- 4. Within 14 days of the date of this Order, you shall provide to the City's Engineering Department the name of the proposed contractor intended to undertake the work (which shall not be any party named in this Order), which contractor shall have a minimum of 10 years experience related to shoring, slope stabilization and road construction and repair, carry a minimum of \$5 Million in general liability insurance, either hold or be willing to obtain a valid business licence for the City of Airdrie, and hold a Certificate of Recognition (COR) and current WCB account.
- 5. Within 30 days of the date the design and proposed contractor have been approved by the City, you shall complete the installation of the shoring system and all required repairs necessary for the restoration of the road right of way. Confirmation of completion shall be provided to the City in writing by the contractor retained to undertake the work, confirming that all work has been completed in accordance with the approved design.

Note that the 350mm water line, including the isolation valve, valve stem, casing and rod are to be secured, protected, and remain operational during the restoration work, to the satisfaction of the City's Water Services. Once the work has been completed, the City of Airdrie Water Services are to be contacted to permit an inspection to be completed to ensure the isolation valve and valve stem are fully operational.

CONSEQUENCES OF FAILURE TO COMPLY:

Should any requirement of this Enforcement Order not be complied within the time limits provided, the City of Airdrie shall be authorized to undertake the work itself, at your expense. This may include entry onto r the Lands to accommodate inspection and repair work, in addition to whatever other actions or measures the City determines to be necessary to remedy the above-noted contraventions, including seeking an injunction or other relief from the Court of King's Bench or imposing fines. The expenses and costs of actions or measures taken by the City of Airdrie under this section are an amount owing to the City of Airdrie by you. Further, the City may add the costs and expenses for carrying out this Enforcement Order to the tax roll for your Lands pursuant to Section 553(1)(c) of the *Municipal Government Act*.

YOU ARE HEREBY NOTIFIED THAT As per *Municipal Government Act* section 547, Enforcement Order, you may seek a Review of this Order from the City of Airdrie Council. To do so, the request must be made, in writing, to Council within 14 days after this order is received. After reviewing the order, Council may confirm, vary, substitute, or cancel the order. The request may be sent to Council at <u>legislative.services@airdrie.ca</u> or 400 Main Street SE, Airdrie, AB, T4B 3C3. <u>legislative.services@airdrie.ca</u> or 400 Main Street SE, Airdrie, AB, T4B 3C3. Enforcement Order. A Review does not act as a stay of the requirements of this Order, including the time limits imposed herein.

ORDERED by the City of Airdrie this **25th** day of **April 2025**.

PER: Community Peace Officer AIRDRIÉ MUNICIPAL EN ORCEMENT



Watermark Tower #1500, 530 - 8 Ave. SW Calgary, AB Canada | T2P 3S8

tel. 403.232.8300 fax 403.232.8408

Refer to:D.J. King, K.C.Direct Line:403-260-1472E-mail:dking@brownleelaw.comYour File No.:25-01-006Our File No.:71282.0175/DJK

June 3, 2025

VIA EMAIL "bkidd@strategicgroup.ca"

Strategic Group Suite 400, Strategic Centre 630 - 8Avenue SW Calgary, AB T2P 1G6

Attention: Branden Kidd, Development Manager

Dear Sir:

Re: City Enforcement – Lot 6; Block 1; Plan 1511409 (the "Lands").

We are legal counsel for the City of Airdrie with respect to enforcement actions the City has taken on the Lands. We are writing to address various issues respecting the Lands, namely the:

- a) Emergency work on the Lands; and
- b) Stop Order and Enforcement Order and the associated reviews and appeals.

I. Emergency Work

The City disagrees with the position in your May 27, 2025 letter that work done by the City under the 551 Notice did not constitute an emergency: unauthorized excavations on City-owned property and the failure of your contractors to provide adequate lateral support resulted in the partial collapse of a City street and required the City to take emergency measures to prevent the failure of a City watermain and stop further damage to critical municipal infrastructure.

Further, the City disagrees with the language in the letter requesting that the City return "control" of the Lands, or that the City prohibited Strategic and its contractors from accessing the Lands. The May 2 order issued under section 551 provided directions to the recipients that were necessary to ensure the City's access and use of the Lands to remedy the emergency was properly accommodated. While we appreciate there was some uncertainty related to the wording of the order, the City has consistently communicated to Strategic and its contractors that they are welcome on the Lands to conduct required work under the 551 Notice, the Stop Order and the Enforcement Order.

However, the City agrees with Strategic Group that the emergency has now largely been contained. The only work the City anticipates completing under the 551 Notice is completing grading of the earth berm along 1st Avenue that is necessary for the installation of a shoring wall. The City's contractor, EllisDon, anticipates completing the berm this week and will remove its workers and equipment from the Lands once this work is complete and at that time, the City will withdraw the 551 Notice.

At this time, the City is rescinding the May 2 order with the understanding that contractors of Strategic Group will continue to abide by standard health and safety provisions when accessing the Lands.

While the immediate emergency has largely been contained, as you appreciate, further work is required to provide long-term stability to the slope and comply with the Enforcement Order; we address this below.

II. Enforcement Orders and Associated Appeals

a) Enforcement Order Review

The May 9 letter from Strategic Group sought a review of the Enforcement Order largely to enable proceeding with backfilling as a method of preventing further subsistence of the slope. Below we address this request with respect to 1st Avenue NW and Edwards Way.

1st Avenue NW

Backfilling is not permissible along 1st Avenue NW because a slope stability assessment recommended by UK One Construction's geotechnical engineer, ARGEO, was not undertaken. Contrary to its position in the May 9 letter seeking a review of the Enforcement Order, based on Strategic Group's letter of May 27, it is the City's understanding that Strategic Group is now committed to installing the necessary shoring pile wall along 1st Avenue NW.

The City agrees it would be more appropriate for Strategic Group's contractors to undertake this work and it is prepared to adjust the timelines in the Enforcement Order to accommodate this. The City will provide Strategic Group with copies of investigative and remedial undertaken by the City's contractors and consultants with respect to 1st Avenue NW by June 20[. The City emphasizes that any information being provided to Strategic Group shall not be used as the basis of any design for work proposed by Strategic Group unless and until it has been independently validated by Strategic Group's own consultants. The City in turn expects to receive an engineered design for a sheet pile wall for 1st Avenue NW by June 27 and for the shoring system to be installed within 30 days of the date the design and proposed contractor have been approved by the City.

If Strategic Group is amenable to these changes, the City will revise the Enforcement Order issued on April 25, 2025 to reflect these changes.

Edwards Way

Backfilling is not acceptable at this time along Edwards Way because:

- mechanical equipment cannot be within 4 metres of the excavation edge along Edwards Way until a qualified engineer has approved the activity and confirmed the City's watermain is adequately protected and the slope is stable enough to support the equipment; and
- required actions for safe backfilling per ARGEO, have not been undertaken, namely testing of structural backfill and an inspection of the foundation of the building.

The City would be prepared to amend the Enforcement Order to provide that backfilling may be used to stabilize the excavation along Edwards Way, provided the following conditions are met by June 30, 2025 and the City has reviewed and approved all related submissions:

- a qualified engineer, retained by Strategic, has assessed and approved the use of mechanical equipment near the excavation edge and confirmed the City's watermain is adequately protected and the slope is stable enough to support such equipment;
- the qualified engineer has completed a shoring design to support the removal of the material temporarily placed at the toe of the Edwards Way excavation to allow for the completion of the adjacent foundation;
- the qualified engineer has conducted structural assessment of foundations constructed to date and confirmed they are capable of supporting the backfill;
- required foundation inspections for the structure are completed in accordance with the building permit associated with the Lands; and
- a comprehensive excavation and backfill plan, including a detailed timeline, has been prepared and submitted by the qualified engineer.

If Strategic Group is amenable to these changes, the City will revise the Enforcement Order issued on April 25, 2025 to reflect the same. The City agrees it would be more appropriate for Strategic Group's contractors to undertake this work.

1st Avenue NW and Edwards Way

Because of the need to increase the cutback of the excavated slope, the City also requires Strategic Group to submit an erosion and sediment control plan from a qualified engineer for 1st Avenue NW and Edwards Way. The City requires this plan by June 20 and for Strategic Group and its contractors comply with the approved ESC plan. The City further requires weekly reports for ongoing stabilization work required by the Enforcement Order.

Please confirm whether Strategic Group is amenable to these changes and that once these changes are made to the Enforcement Order, that Strategic Group will withdraw its request for a review of the same to Council.

Please note that Strategic Group will be required to reinstate construction fencing around the Lands and provide any necessary physical barriers to prevent vehicles from driving off the excavated slopes. Strategic Group is also expected to comply with all other requirements of its development permit, including, but not limited to, the restoration of the Edwards Way boulevard and compliance with occupational health and safety requirements for the Lands.

b) Stop Order Appeal

Given the limited grounds of appeal, namely disagreement over timelines and the use of mechanized equipment, it appears that a joint solution to the SDAB may provide an efficient and satisfactory way of resolving disagreement on the Stop Order.

As previously communicated to you, the City is willing to extend the deadlines and revise directives 6 through 9 of the Stop Order as follows:

- **Directive #6 (Removal of Material)**: three weeks from the date of ESC Plan approval and, remove all equipment, materials, debris, deposited soil, supplies, and other encumbrances (together, the "Materials") from Lands, described as Lot 1, Block 1, Plan 0922740, and within the road right-of-ways.
 - Mechanized equipment may only be used within the existing construction fence. Use of mechanized equipment outside the fence is only permitted as outlined in an approved restoration plan (per Directive #8).
 - As stated in previous Stop Order, consent from private landowners is required to access neighbouring properties.
- **Directive #7** (**Implementation of ESC Plan**): Two weeks to implement from the date of ESC Plan approval, the Erosion and Sediment Control (ESC) Plan needs to be implemented and inspected by Engineering Services.
- **Directive #8 (Environmental Assessment & Restoration Plan)**: Three weeks from when material is removed as per Directive #6, provide the City with an environmental damage assessment and restoration plan prepared by a qualified environmental professional that:
 - Details all impacts to the Nose Creek riparian area resulting from the Development and encroachment into this area; and
 - Provides a plan to restore the Nose Creek riparian area to its pre-disturbed state (the "Restoration Plan").

- **Directive #9 (Implementation of Restoration Plan)**: The Stop Order is lifted when Directive #8 is complied with. The implementation of the Restoration Plan is ongoing with active compliance efforts, including the timely provision of weekly submissions and required information.
 - Undertake all work required within the Restoration Plan to restore the Nose Creek riparian area to its pre-disturbed state.

To provide some certainty over access to the Neighbouring Lands and in light of Strategic Group's comments in its written submissions to the SDAB that it anticipates obtaining the necessary licence by June 6, 2025, the City is also proposing to add the following term to the Stop Order:

- **Directive #10 (Licence to Access Neighbouring Lands)**: Strategic to obtain permission to access neighbouring Lands to conduct the required work under this Stop Order by June 13, 2025.

Finally, the written submissions to the SDAB make the request that Directive #1 be amended to permit construction work that does not impact the environmental remediation of the Neighbouring Lands and Floodway to begin concurrently with the remediation work. The City is amenable to amending this as follows:

- **Directive #1 (Construction on Lands)**: IMMEDIATELY cease construction activity on the Lands until contraventions 2, 6, and 7 of this Order are completed to the City's satisfaction. Construction activity on the Lands may resume alongside restoration work required under Directive #9.

If you agree with the above terms, the City will draft a revised Stop Order to provide to the SDAB on Thursday. The City will provide a copy of the same to you for approval prior to submitting the proposed Order to the SDAB.

Alternatively, should the parties be unable to agree on revised terms of the Stop Order before the scheduled SDAB appeal date of June 5, we propose the parties attend the appeal with the purpose of adjourning the same until June 19 to provide the time to reach a mutually-agreeable resolution to present to the SDAB.

III. Conclusion

Please confirm your acceptance of the above proposed changes to the Stop Order and the Enforcement Order **on or before June 4**. The City expects full cooperation and strict compliance with any revised timelines and actions in these revised orders. Strategic Group's compliance with the orders will be closely monitored, and further non-compliance may result in additional enforcement orders and delay of development on the Lands.

Yours truly,

BROWNLEE LLP PER: 06/03/2025 05:52:04 pm

DEREK J. KING, KC DJK/WLM/sr

cc- Sonya Hope, Municipal Legal Counsel (via email Sonya.Hope@airdrie.ca) Kyle Wilkin, Manager of Roads and Parks Operations (via email Kyle.Wilkin@airdrie.ca)