



# APEGA Recommended Discipline Order

APEGA members and permit holders are required to practise engineering and geoscience skillfully, ethically, and professionally. They must meet all prescribed requirements and follow all applicable legislation and regulations, such as the [Engineering and Geoscience Professions Act, General Regulation, Code of Ethics, and APEGA bylaws](#). Investigation and enforcement—followed by, when necessary, judgment based on a fair hearing of the facts—are requirements of ours in service to the public interest. For more information, please visit [www.apega.ca/enforcement/discipline-decisions](http://www.apega.ca/enforcement/discipline-decisions).

**Date:** September 23, 2021

**Discipline Case Number:** 21-013

**IN THE MATTER OF A RECOMMENDED DISCIPLINE ORDER OF THE ASSOCIATION OF  
PROFESSIONAL ENGINEERS AND GEOSCIENTISTS  
OF ALBERTA**

Pursuant to the Engineering and Geoscience Professions Act,  
being Chapter E-11 of the Revised Statutes of Alberta 2000  
Regarding the Conduct of MR. ALVIN WOO, P.Eng.

The Investigative Committee of the Association of Professional Engineers and Geoscientists of Alberta (APEGA) has investigated the conduct of Mr. Alvin Woo, P.Eng. (“the Registrant”) with respect to a complaint initiated by the Complainant, dated November 13, 2019 (the “Complaint”), pursuant to section 44(1) of the *Engineering and Geoscience Professions Act*.

## **A. THE COMPLAINT**

The Complainant alleged that the Registrant engaged in unprofessional conduct and/or unskilled practice with respect to deficiencies found in a foundation and approach design drawing that the Registrant authenticated.

The Investigative Committee conducted an investigation with respect to the following allegations outlined in the Complaint:

1. Whether the Registrant displayed a lack of knowledge in undertaking work he was not competent to perform. It is understood that the Registrant is a mechanical engineer while he was engaged in the structural design of weigh scale foundation with Company A (“the Company”).
2. Whether the Registrant displayed a lack of compliance and did not follow the requirements of the APEGA Standard for Authenticating of Professional Work Products. Specifically, the stamped drawing did not reference applicable standards such as the Alberta Building Code or Canadian Standards Association (CSA) yet the project was to be implemented in Alberta.



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### B. AGREED STATEMENT OF FACTS

As a result of the investigation, it is agreed by and between the Investigative Committee and the Registrant that:

#### a) Background:

1. The Registrant holds a Bachelor of Science degree in mechanical engineering (University of Ontario Institute of Technology, 2008).
2. At all relevant times the Registrant was employed as a mechanical engineer with Employer A ("the Employer").
3. In 2019 the Registrant was retained by Company A ("the Company") to validate the rebar for a foundation and approach (weigh scale) design being constructed for Management Authority A ("the Authority").
4. The foundation design that the Company presented the Registrant with was a foundation plan drawing (# 0331 - 2999-0A), that was created by Manufacturer A ("the Manufacturer").
5. The Registrant subsequently authenticated "Rev B only" of this drawing, on March 29, 2019.

#### (i) Facts Relating to Allegation #1:

**Whether the Registrant displayed a lack of knowledge in undertaking work he was not competent to perform. It is understood that the Registrant is a mechanical engineer while he was engaged in the structural design of weigh scale foundation with the Company.**

6. In the spring of 2019 the Complainant was retained by the Authority to compete a tendering package for the provision of two 80' scales at a public recycling depot project.
7. The Company was awarded the contract to supply the scales, design and construct foundations and approach ramps and commission the scales as per the contract. The Company was also tasked to provide a foundation design drawing that was to be included in subsequent contracts for general contractors, sub-contractors, etc. and authenticated by an Alberta Professional Engineer. The resulting foundation drawing submitted by the Company originated through their American partner, ("Company U.S."), and was authenticated by the Registrant on March 29, 2019.



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8. Concerns were soon raised by the Complainant and other contractors about the lack of details in the foundation drawing which for one, did not appear to be site specific for the geographical area. The Company was initially reluctant in allowing the Complainant's request to discuss the concerns with the Registrant, but he was ultimately contacted, and the concerns were brought to his attention.
9. The Registrant stated that his scope of work was limited to validating the rebars and utilized Solidworks design software and referenced CSA 23.1 codes to ensure the weigh scales could support the loads. The Registrant further stated that after he was contacted about the issues with the foundation drawing, he then contacted the Company who reassured him that the issues were related to pilings and were not his concern.
10. The Panel reviewed the authenticated foundation design and identified deficiencies regarding the Registrant's responsibilities for carrying out structural design of foundation elements as outlined in Part 4 of 2014 *Alberta Building Code (ABC)*.
11. The specific design standards to be used in structural design are referenced in Section 1.3 of Part B of the ABC (2014). Table 1.3.1.2 requires that CSA A23.3 must be used for completing structural design of reinforced concrete elements.
12. The Panel found that the Registrant failed to demonstrate adequate skill and knowledge of structural design. Specifically:
  - a. Design calculations did not conform to the design drawing (material parameters determined in design calculations did not match what had been included on the design drawing).
  - b. Boundary conditions used in calculations did not correspond to drawing plans and details. Namely, pile supports were assumed in calculations while the stamped drawing illustrates a footing bearing on soil below.
  - c. The Registrant admitted that he did not inquire about soil properties while completing the foundation design. This is contrary to fundamentals in carrying out the design of foundation elements. The design drawing clearly states that the footings shall be founded below frost depth while the details illustrate shallow depth. Frost depth was not verified by the Registrant.
  - d. Reinforcing bars material specification was included in two notes and are contradictory (CSA G30.18 500W and ASTM A185), leading to ambiguity. In addition, ASTM A185 has been withdrawn and is not a valid standard while CSA G30.18 500W (high-strength reinforcing bars) is not required as



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per the Registrant's calculations. CSA G30.18 400R is adequate for the calculated stresses.

- e. CSA A23.1 Standard was erroneously used for determining adequacy of the foundation design.
  - f. Factored loads and load combinations were not used in determining stresses within foundation piers. This contravened requirements of Part 4 of the *Alberta Building Code*.
13. The Registrant displayed a lack of understanding and working knowledge of *Alberta Building Code* and Reinforced Concrete Design standards. Furthermore, the Registrant failed to identify relevant standards for foundation design in design calculations and on design drawing.
14. The Registrant admitted that he has not taken any structural design training courses over the course of his career and has completed a limited number of structural design assignments.

**(ii) Facts relating to Allegation #2:**

**Whether the Registrant displayed a lack of compliance and did not follow the requirements of the *APEGA Standard for Authenticating of Professional Work Products*. Specifically, the stamped drawing did not reference applicable standards such as the *Alberta Building Code* or *Canadian Standards Association (CSA)* yet the project was to be implemented in Alberta.**

15. The Panel found that the Registrant did not comply with the following structural requirements of the ABC s. 2.2.4.2-2.2.4.6:
- a. The design drawing did not include references to relevant Codes and Standards (Article 2.2.4.3 b).
  - b. While the drawing was sealed and signed by Registrant, the address of the person or a firm responsible for design was not included on the drawing which is required as per (Article 2.2.4.3 a).
  - c. The type and condition of the soil or rock, as well as the groundwater conditions, as determined by the subsurface investigation is missing (Article 2.2.4.6 a).
  - d. The factored loads and the design loads applied to foundation units (Article 2.2.4.6 b) are missing.



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16. The Panel also found that the Registrant did not comply with the requirements of *APEGA's Practice Standard for Authenticating Professional Documents* (v.3.1, 2013). Specifically:
  - a. On the Foundation Plan drawing, the "Rev B only" note was added below the stamp which indicates that the Registrant took responsibility for updates related to Rev B (described in title block). However, the Registrant added notes that were not referenced in the title block as Rev B. It is not clear who is taking responsibility for the entire professional document as only Rev B has been stamped. This contravenes section 3.4 of the Standard.

### C. CONDUCT

17. The Registrant freely and voluntarily admits that at all relevant times the Registrant was an APEGA Professional Member and was thus bound by the *Engineering and Geoscience Professions Act* and the *APEGA Code of Ethics*.
18. The Registrant acknowledges that the conduct described above constitutes unprofessional conduct and unskilled practice as defined in Section 44(1) of the *Act*:
19. Section 44(1) of the *Act* states:

*Any conduct of a professional member, licensee, permit holder, certificate holder or member-in-training that in the opinion of the Discipline Committee or the Appeal Board,*

- a) *Is detrimental to the best interests of the public,*
- b) *contravenes a code of ethics of the profession as established under the regulations,*
- c) *harms or tends to harm the standing of the profession generally,*
- d) *displays a lack of knowledge of or lack of skill or judgement in the practice of the profession, or*
- e) *displays a lack of knowledge of or lack of skill or judgement in the carrying out of any duty or obligation undertaken in the practice of the profession*

*Whether or not that conduct is disgraceful or dishonorable, constitutes either unskilled practice of the profession or unprofessional conduct, whichever the Discipline Committee or the Appeal Board finds.*

20. The Registrant also acknowledges the conduct described above breaches Rule(s) of Conduct #2 and #4 as described below.



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2. *Professional engineers and geoscientists shall undertake only work that they are competent to perform by virtue of their training and experience.*
4. *Professional engineers and geoscientists shall comply with applicable statutes, regulations and bylaws in their professional practices.*

### D. RECOMMENDED ORDERS

21. On the recommendation of the Investigative Committee, and by agreement of the Registrant with that recommendation, and following a discussion and review with the Discipline Committee Case Manager, the Discipline Committee hereby orders that:
  - a) The Registrant shall receive a Letter of Reprimand, a copy of which will be maintained permanently in the Member's APEGA registration file and may be considered at any future date by APEGA
  - b) The Registrant shall not engage in the practice of structural engineering (as defined by the Chief Regulatory Officer of APEGA) in the Province of Alberta and shall provide a signed Voluntary Undertaking confirming that restriction (attached to this Order as Appendix A). This will be noted as an area of restricted practice in APEGA's Member Directory. The terms include that should the Registrant breach the terms of the Voluntary Undertaking, a separate Complaint of unprofessional conduct by APEGA will be initiated, and that the APEGA Investigative Committee may consider imposing an interim suspension of the Registrant's APEGA registration pursuant to Section 55(1) of the *EGPA*. This practice restriction will be indefinite, subject to the Registrant's ability to seek reconsideration from the Deputy Registrar of APEGA not less than five (5) years from the date of the Voluntary Undertaking. At the end of five years, the Registrant may practice structural engineering only under the direct supervision of a professional member of APEGA suitable to the Director, Enforcement. The supervisor must provide progress reports not less than twice a year to the Director, Enforcement. After completing two years of practice under supervision, reconsideration from the Deputy Registrar would require the recommendation of the Director, Enforcement. The restriction would remain indefinite if the Registrant does not undertake or complete in full the option for reconsideration.
  - c) The Registrant shall provide written confirmation to the Director of Enforcement within thirty (30) days of being notified that this Order has been approved, that the Registrant has reviewed the following APEGA publications, and that the Registrant will comply with the requirements therein:



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- i. *Guideline for Ethical Practice, 4.2 Rule 2 - Competence and Knowledge (APEGA Practice Guideline v2.2, 2013)*
  - ii. *Practice Standard Authenticating Professional Work Products (current version - May 2021)*
- d) The Registrant shall disclose that he is the subject of APEGA disciplinary procedures to all other engineering regulatory bodies to which the Registrant holds membership and provide each regulator with a copy of this Order. APEGA's Director, Enforcement shall be copied on all disclosures made by the Registrant within 60 days of being notified that this Order has been approved.
- e) If there are extenuating circumstances, the Registrant may apply to the Director, Enforcement for an extension on the orders noted above in par.21(c) and 21(d) prior to the deadline. Any extension will be granted within the sole discretion of the Director, Enforcement. If the noted orders are not completed within one year, or the agreed upon extension, the Registrant shall be suspended from the practice of engineering until the noted orders have been successfully completed.
- f) This matter and its outcome will be published by APEGA as deemed appropriate and such publication will name the Registrant.

IN WITNESS WHEREOF the undersigned agrees with the Agreed Statement of Facts and Acknowledgement of Unprofessional Conduct in its entirety.

Signed,

**MR. ALVIN WOO**, P. Eng.

**MR. PETER BOZIC**, P.Eng.  
Panel Chair, APEGA Investigative Committee

**MR. CHRISTOPHER GOULARD**, P.Eng.  
Case Manager, APEGA Discipline Committee

Date: September 23, 2021