

# APPENDIX A: ENGINEER OF RECORD – RETAINING WALL ASSURANCE STATEMENT



# ENGINEER OF RECORD – RETAINING WALL ASSURANCE STATEMENT

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In preparing the Retaining Wall design, I confirm that the following tasks have been completed:

## RETAINING WALL CHECKLIST

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### General (all Retaining Walls):

*Check that the following items have been addressed:*

- 1. Reviewed requirements of the governing jurisdiction, and documented all other codes, specifications, and guidelines used.
- 2. Established design criteria based on applicable codes and confirmed criteria with owner.
- 3. Completed a site assessment to determine site factors to be incorporated into the Retaining Wall design and construction.
- 4. Conducted geotechnical investigation to determine site conditions and appropriate geotechnical parameters for analysis and design.
- 5. Determined external loading conditions (for example, traffic and construction surcharge loads, potential scour, or flooding).
- 6. Provided lateral earth pressures recommendations for static and seismic loading (these will vary based on the type of wall used).
- 7. Analyzed static global stability of slope – minimum factor of safety  $>1.5$  for N! cases where N is the number of terraces
- 8. Analyzed seismic global stability of slope, if applicable – minimum factor of safety 1.1 or acceptable wall displacement
- 9. Assessed liquefaction potential (provided mitigation measures, if applicable).
- 10. Provided recommendations for general site and wall drainage.
- 11. Provided recommendations for erosion protection, Slope Protection/Wall Facing.
- 12. Assessed the potential impact of wall construction on the slopes above and below the wall.
- 13. Assessed the potential impact of the wall on adjacent structures.

### Gravity Walls:

*Check that the following items have been addressed:*

- 1. Analyzed for overturning, sliding, and bearing capacity under static conditions.
- 2. Analyzed for overturning, sliding, and bearing capacity under seismic conditions, if applicable.
- 3. Completed internal design of the wall (structural design).
- 4. Detailed an adequate drainage system.
- 5. Provided appropriate information and guidance for wall construction, including placement specifications, temporary slopes, drainage works, quality control requirements.

## Stacked Rock Walls:

*Check that the following items have been addressed:*

- 1. Analyzed for overturning, sliding, and bearing capacity under static conditions.
- 2. Analyzed internal stability, including sliding between rocks at different heights within the wall.
- 3. Analyzed for overturning, sliding, and bearing capacity under seismic conditions, if applicable.
- 4. Detailed an adequate drainage system.
- 5. Demonstrated by previous performance or laboratory testing that the rock proposed for use in the wall will be durable.
- 6. Provided appropriate information and guidance for wall construction, including placement specifications, rock sizes/weights and stacking requirements, temporary slopes, drainage works, quality control requirements.

## Mechanically Stabilized Earth Walls:

*Check that the following items have been addressed:*

- 1. Analyzed for overturning, sliding, and bearing capacity and internal stability under static conditions.
- 2. Analyzed for overturning, sliding, and bearing capacity and internal stability under seismic conditions, if applicable.
- 3. Analyzed the adequacy of the wall facing to withstand applicable loads, including the loads from connections to soil reinforcement.
- 4. Provided specifications for soil reinforcement.
- 5. Confirmed that minimum soil reinforcement length is 70% of the wall height, or provided justification for alternate length.
- 6. Detailed an adequate drainage system.
- 7. Provided appropriate information and guidance for wall construction, including placement specifications, temporary slopes, drainage works, quality control requirements.

## Reinforced Concrete Cantilever Retaining Walls:

*Check that the following items have been addressed:*

- 1. Analyzed for overturning, sliding, and bearing capacity under static conditions.
- 2. Analyzed for overturning, sliding, and bearing capacity under seismic conditions, if applicable.
- 3. Completed internal design of the wall (structural design).
- 4. Detailed an adequate drainage system.
- 5. Provided appropriate information and guidance for wall construction, including placement specifications, temporary slopes, drainage works, quality control requirements.

# ENGINEER OF RECORD – RETAINING WALL ASSURANCE STATEMENT

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## Submittals:

*Check that the following items have been addressed:*

- 1. Site plan showing wall location; wall footprint; existing and proposed ground slopes behind and in front of wall; locations of roads, structures, utilities, and all other facilities in the vicinity of the wall; and locations of the wall foundation drainage and other appurtenant drains, including associated discharge locations.
- 2. Profile along the length of the wall showing variations in wall height, fill height behind the wall, invert elevations of wall foundation drains, and all other features that are included in the design or in close proximity to the wall.
- 3. Cross-section showing typical wall details, including wall batter, foundation preparation, leveling pad details, drainage provisions, erosion protection of exposed slopes above the wall, guardrail details (if required), and other features that are included in the wall design.
- 4. Specifications for backfill and retained soil gradation and all other materials to be incorporated into the Retaining Wall (i.e., geosynthetics, concrete, anchors, drainage media), placement and compaction requirements, field review and compaction testing to meet stability and performance design requirements, drains, erosion control during construction, and concrete, reinforcement, and other structural components.
- 5. Monitoring and maintenance plan, if applicable.

## Field Reviews:

*Check that the following item has been addressed:*

- 1. The obligation for field reviews as per Bylaw 14(b)(3) has been fulfilled to ascertain whether the implementation or construction of the work substantially complies in all material respects with the design.

# ENGINEER OF RECORD – RETAINING WALL ASSURANCE STATEMENT

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I certify that I am a professional engineer or licensee registered or licensed by the Association, that I am qualified to serve as Engineer of Record as defined in the Guidelines, and that I have undertaken responsibility for this project in the capacity of Engineer of Record.

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Name (print)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Address

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_  
Phone

\_\_\_\_\_  
Email

(Affix Professional seal here)

If the Engineer of Record is a member of a firm, complete the following:

I am a member of the firm \_\_\_\_\_

and I sign this letter on behalf of the firm.

(Print name of firm)