

## ***HOGGAN ENGINEERING & TESTING (1980) LTD.***

Member of the Paine Group of Companies  
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January 22, 2019  
File No. 6049-92

ISL Engineering & Land Services.  
#100, 7909-51 Avenue  
Edmonton, Alberta  
T6E 5L9

**ATTENTION: Mr. Jesse Skipworth, E.I.T.**

Dear Sir:

**Re:   Engineered Fill Construction  
      Laurel Phase 2 (Stage 22)  
      Edmonton, Alberta**

Hoggan Engineering & Testing (1980) LTD., has undertaken the construction quality control testing and monitoring of engineered fill constructed in the above noted subdivision. The objective of the engineered fill was to accommodate residential housing construction utilizing footing foundations. Authorization to proceed was granted by ISL Engineering & Land Services with initial grading work undertaken in September to November, 2016 and subsequent site grading work undertaken in May to August, 2017.

Prior to the placement of engineered fill, our firm checked stripping on a part-time, as-required basis. The engineered fill requirements applied to all lot fill placed more than 0.3 metres below finished front of lot elevation. The placement of the engineered fill was monitored to verify material suitability and to ensure compliance with the specified compaction requirements. The recommended compaction of the engineered fill was specified as a minimum of 98 percent of the corresponding Standard Proctor Density. Lift thickness was specified as 150 millimetres or less. A description of the lots in the subject subdivision containing engineered fill is as follows:

**Block 10: Lots 1-63 inclusive**

**Block 11: Lots 1-14 inclusive**

**Block 12: Lots 1-7 and 15-19 inclusive**

**Block 13: Lots 1-60 and 65-69 inclusive**

**Block 14: Lots 1-34 and 39-109 inclusive**

**Block 15: Lots 1-28 inclusive**

On the basis of the test results obtained and the monitoring conducted for lot fill placed below 0.3 metres of design finished front of lot elevation, engineered fill compliance has been achieved for the lots described previously. Footing foundations bearing directly on the engineered fill are deemed adequate. An allowable bearing value of 100 kilopascals for continuous footings and 120 kilopascals for spread footings may be applied to the design of footing foundations. In addition, the recommended foundation design for the subject engineered fill lots is as follows.

Strip Footings	-	minimum 450 millimetres wide by 150 millimetres deep
Basement Walls	-	minimum 200 millimetres thick, reinforced with 2-10M horizontal rebar placed top and bottom
Spread Footings	-	designed by others utilizing above bearing capacity

This design applies to wood-framed single family houses of maximum 2 storey. It is reiterated that these values and designs apply only to footings bearing directly on engineered fill at least 0.3 metres below the design finished front of lot elevation, and only in the lots described previously.

As a reminder, the lot purchasers should be made aware of the engineered fill and foundation design recommendations prior to house construction. Normally, provided the footing elevation is as stated, no further site inspection is envisioned to be required by our firm during house construction on these subject lots. However, if soft or organic soil is observed at footing elevation after the basement excavation is complete, our firm should be contacted to inspect the site and provide foundation recommendations. Please endeavour to note the engineered fill situation during all future communications with our firm with respect to the subject lots.

In addition, Block 14, Lot 110 within Laurel Phase 2 (Stage 22) is currently part of an ongoing minimum 24 month survey/settlement monitoring program undertaken by our firm. The survey/settlement monitoring and assessment program included the installation of a monitoring

plate within Block 14, Lot 110. The minimum 24 month survey/settlement monitoring program for Block 14, Lot 110 commenced on December 6, 2018. Ongoing assessment by our firm using survey elevation data obtained by ISL Engineering and Land Services is currently being done with further comments to follow after the noted dates. Please note, the assessment of the survey data may result in a need to extend the waiting period and survey monitoring program. Following the successful completion of the survey/settlement monitoring program and minimum waiting period, Block 14, Lot 110 would also be considered engineered fill suitable to accommodate residential house construction utilizing a standard footing foundation as detailed above. Also, it is noted that Block 14, Lot 111 is being utilized as the location for a temporary sanitary lift station for the noted development and is not considered part of the engineered fill program monitored and tested by our firm.

We trust this information is satisfactory. If you should have any questions, please contact our office.

Yours truly,

HOGGAN ENGINEERING & TESTING (1980) LTD.

Reviewed by,



Patrick Winski, P.Eng.

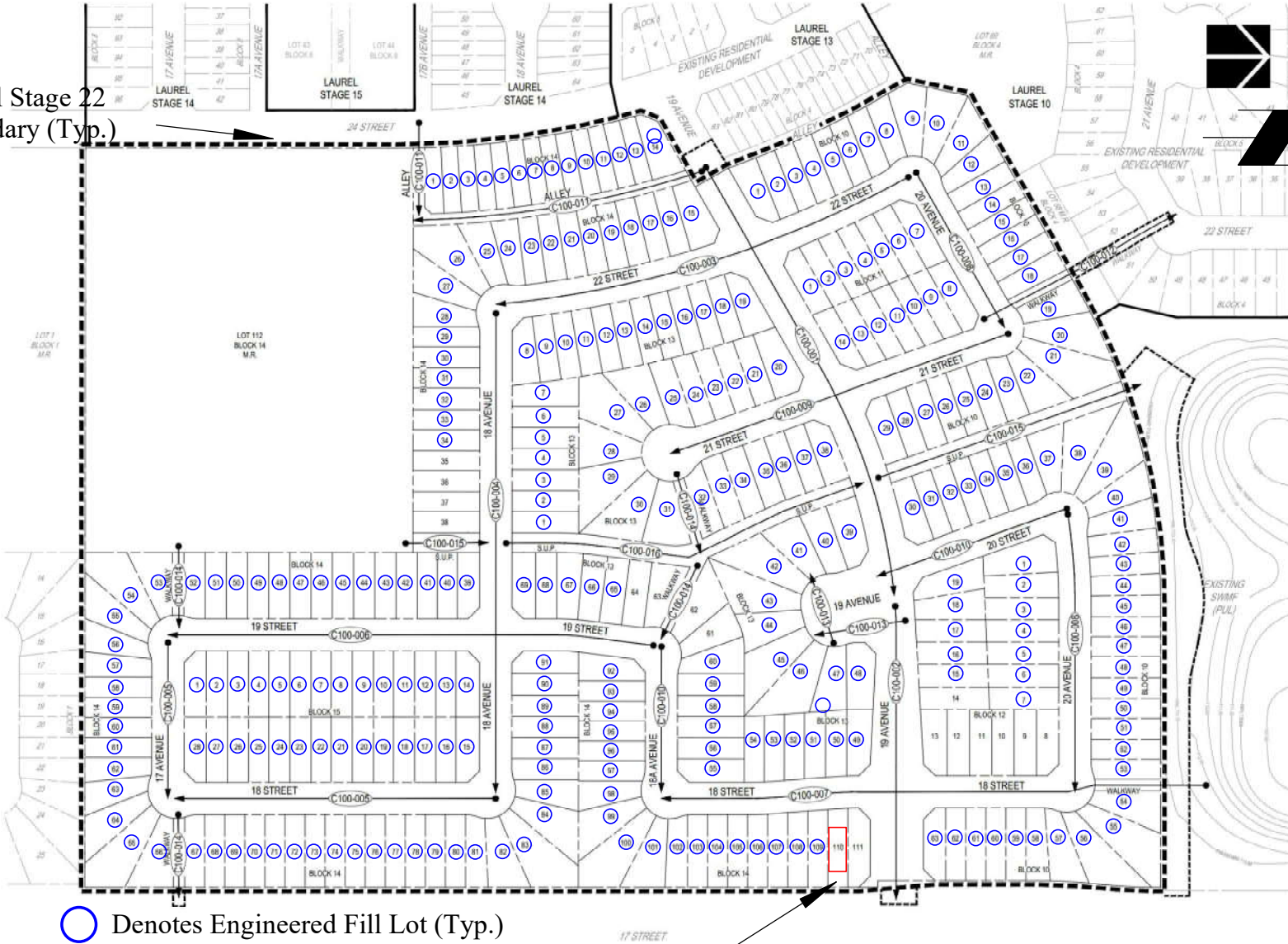
APEGA Permit to Practice #P3691

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A handwritten signature in blue ink, likely belonging to Cory Watson, is shown next to the professional seal.

Cory Watson, C.E.T., Senior Technologist

Laurel Stage 22  
Boundary (Typ.)



○ Denotes Engineered Fill Lot (Typ.)

Block 14, Lot 110 is part of an ongoing  
minimum 24 month settlement/monitoring  
program. See letter for more details



**J.R. Paine & Associates Ltd.**  
CONSULTING AND TESTING ENGINEERS

**Engineered Fill Lots  
Laurel Phase 2 (Stage 22)  
Laurel Subdivision  
Edmonton, Alberta**

SCALE: NTS

DATE: January 23, 2019

FILE #: 6049-92

FIGURE #: 1 of 1