MEMO

TO:	Gene Williams Public Works Department 220 SE Green Street Lee's Summit, MO 64063
FROM:	Eric Shelton, PE Emma Schneider, EI
RE:	The Retreat at Hook Farms 2nd Plat – Conditional Letter of Map Revision based on Fill Lee's Summit, MO – 2021
DATE:	June 17, 2021
PROJECT #:	A19-4059

Description of Project:

The Retreat at Hook Farms 2nd Plat is a residential development located in Lee's Summit, Missouri north of SW Hook Road. Mouse Creek Tributary M5 flows northwest on the north side of SW Hook Farms and the Special Flood Hazard Area (SFHA) for Tributary M5 extends onto the east side of the proposed development. There are four (4) lots on the west side of Tributary M5 that will be located partially within the Zone AE floodplain from Tributary M5. The development is located within Section 23, Township 47N, Range 32W. The developer, Hunt Midwest Real Estate Development, Inc., has requested Olsson to assist in obtaining a Conditional Letter of Map Revision based on Fill (CLOMR-F) from FEMA which would show that the lots are going to be removed from the floodplain as a result of the proposed fill. Removing the lots from the floodplain will require the placement of compacted fill to elevate the lowest lot elevation above the highest base flood elevation touching the lot.

Olsson requested all hydrologic and hydraulic data from FEMA and SEMA for Mouse Creek Tributary M5 and Mouse Creek in the project area before starting this CLOMR-F. No data was provided by FEMA for this project. SEMA provided a HEC-RAS model originally obtained by Black & Veatch and updated to run in HEC-RAS 4.1.0. This model is the best available information for Mouse Creek Tributary M5. The cross sections and model extent match the FIS profile, however the base flood elevations do not directly match the FIS profile. This difference is most likely due to modeling differences between HEC-1 and HEC-RAS 4.1.0. For the purpose of completing the CLOMR-F, the FIS profile was used to identify base flood elevations for each lot. The HEC-RAS model was used to evaluate the impact of the proposed fill and identify impacts

to the 100-year flood elevation. Olsson updated the model to run in HEC-RAS 5.0.7 and updated the geometry to reflect existing conditions before evaluating the proposed fill.

The updated model for Mouse Creek Tributary M5 consists of five (5) plans:

- **HookFarmsNorth.p01 "Mouse Creek1"**: Base model
- **HookFarmsNorth.p02 "Mouse Creek1_Improvements"**: Additional tributary added to the model downstream of the Hook Farms development area.
- **HookFarmsNorth.p03 "Mouse Creek1_FullyDeveloped"**: A copy of Mouse Creek1 with a fully developed conditions upstream of the Hook Farms development. Steady flow file for 100-year event has been updated to reflect new flows.
- **HookFarmsNorth.p04 "Mouse Creek1_ExistingConditions"**: A copy of Mouse Creek1_FullyDeveloped with cross sections 7000 through 7015 updated to reflect existing conditions from survey.
- **HookFarmsNorth.p05 "Mouse Creek1_ProposedConditions"**: A copy of Mouse Creek1_ExistingConditions with cross sections 7000 through 7015 updated to reflect proposed grading.

Comparing the existing condition and the proposed condition, results show no rise occurs in a 100-year storm event. We have included a copy of the hydraulic model for your review.

Please advise if you have any questions.

Sincerely,

Eric Shelton, PE