



## MEMORANDUM

**To:** Town of Fraser  
**Attn:** Catherine Trotter, Town Planner  
**From:** Tim Gagnon, P.E.  
**Date:** August 16, 2018  
**RE:** Elk Creek Condos – Final Plat Submittal – Review Comments

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Per your request, Bowman Consulting has reviewed portions of the Final Plat submittal received from Grand Park for the above referenced project, including:

1. Final Plat, dated 7/6/2018, from Core Consultants
2. Final Planned Development Plan, dated 7/5/18, from Terracina Design
3. Preliminary Construction Plans, dated 7/2/18, from TKE Engineering
4. Response Letter, dated 7/2/18, from TKE Engineering
5. Engineer's Opinion Of Probable Cost, dated 6/22/18, from TKE Engineering
6. Percolation Test Results, dated 6/29/18, from Ground Engineering
7. Trip Generation Review Letter, dated 6/8/18, from Felsburg, Holt and Ullevig

Based on our review of this information the following review comments shall be addressed prior to Final Plat acceptance:

### **Previous Comments (From Memo dated May 4, 2018)**

The following are previous comments that still need to be addressed:

1. A geotechnical investigation specific to this property needs to be completed, as required in Section 14-2-20 of the Town Design Standards.
2. Additional investigation into the impacts this development will have on the Town's existing sanitary system will need to be explored prior to final plat approval.
3. There is a 10cfs increase between historic and developed stormwater runoff during a 100-year storm event from this site without detention proposed, which does not meet Town Standards. A formal variance request shall be submitted, per Town Code Section 14-6-20.

### **Final Planned Development Plan**

4. Sideway access should be added from the parking lot garages to Building C.
5. The Landscape Plan does not appear to be complete.
6. There is a public transit stop proposed at the intersection of Elk Ranch Road and Old Victory Road but there's a lack of pedestrian connectivity to this area, particularly from Buildings A and B.

### **Final Plat**

7. A drainage easement shall be included for the outlet pipe for Pond #3.

### **Cost Estimate**

8. The following line items should be added to the cost estimate: landscaping, lighting, concrete sidewalks, parking striping, road cuts in Old Victory Road.

9. In general, the unit prices seem very low compared to actual local construction costs.

#### **Drainage Report (Sheets 3-5)**

10. If a full infiltration system is still proposed it should address the recommendations in the UDFCD of using “two times the (percolation) rate needed to drain the WQCV...”
11. A defined overflow weir should be sized and designed to convey the 100-year flow for all proposed sand filter basins and EDBs.
12. The conveyance of the 100-year stormwater flows through the site shall be indicated on the plans, designed to protect residences and be safely conveyed to a downstream outfall location.
13. The EDB pond detail needs to depict the top of riser pipe elevation, and how it relates to the top of berm and overflow weirs (should be below each).
14. It is unclear which drainage basins are conveyed to each pond. Please clarify.
15. A large portion of Basin DA 12 appears to be conveyed to Old Victory Road and does not drain to any water quality ponds, please revise.
16. Off-site drainage from basins DA03, DA04 and DA13 appear to be routed through the sand filter basins but are not accounted for in the basin sizing.
17. Basin detail should indicate 4:1 vegetated sideslopes, and ensure ponds are at least 10’ from structures, as recommended by UDFCD.
18. Sheet 5 includes recommendations for inspection, maintenance and filter replacement schedule for the sand filter basins, which is important for the long-term integrity and effectiveness of sand filter systems. These inspections and maintenance recommendations should be required of the HOA (or entity responsible for pond maintenance) by either a plat note, or language added to the Declarations and Covenants.

#### **Construction Plans**

19. Sheet 8 of 17: Relocate ditch that is cutting above the existing electric line north of building D.
20. Sheet 8 of 17: Permanent erosion control should be added at the end of the concrete pan west of Building B, where it discharges the parking lot drainage into the grass area, and plans should indicate how this drainage is conveyed under the sidewalk.
21. Sheet 8 of 17: Grades away from the edge of the buildings are very flat along with the drainage swales around the buildings, which do not appear to meet the 2% minimum grade for earthen slopes in the Town Code and will likely also not meet the recommendations of the geotechnical recommendations. Plans should include slope and grade labels adjacent to the buildings and in the drainage swales and grading adjustments made to meet the Code and recommendations.
22. Sheet 9 of 17: Plans should indicate locations for the water valves and sewer cleanouts.
23. Sheet 14 of 17: Ramps at south entrance off Elk Ranch Road (to Bldgs A and B) should be moved to the east to better align with the ramp on the opposite side of Elk Ranch Road.
24. Pedestrian crossing signage, striping and ADA ramps should be included at the intersection of Elk Ranch Road and Old Victory Road, to accommodate pedestrian movements within and around the site.

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