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San Mateo County
Planning Division

TECHNICAL MEMORANDUM

Date: March 7, 2019

BKF Job Number: C19950168-20

Deliver To: Steve Monowitz,
Director of Building and Planning
San Mateo County

cc: Jack Chamberlain
Scott Fitinghoff
Jonathon Tang
Camille Leong, SMCo. Planning

From: Roland Haga, PE, PLS
Vice President BKF Engineers

Subject: Grading Associated with Highland Estates Lots 5 through 11

Steve and Camille,

BKF has completed a review of Spreadsheet Camille she provided on Monday, February 25, 2019. I have attached an updated Spread Sheet incorporating our comments. The further explain our comments, we offer the following:

1. Per Section 8600 is the County of San Mateo, Environmental Services Agency, Planning and Building Division, Regulations for Excavating, Grading, Filling and clearing on lands in Unincorporated San Mateo County. "The earthwork associated with the project should be based the county's Definition Section 8601.16: "Depth of Cut and Fill – Shall be the vertical distance between the existing natural ground and the finished elevation at any location." Therefore it is not appropriate to included earthwork for over excavated areas on the project.
2. We have renamed the Tables in the spread sheet to Table 1 through Table 6 for reference purposes. Refer to revise spreadsheet attached to this memorandum.
3. Table 1; though the EIR claimed a total of 75 Truck trips, which were net truck trips, not truck associated with earthwork for each area. Based on the truck trips associated with lots 5 - 11 there would be a total of 567 Truck trips taking in account all excess cut and fill.
4. Table 2; has been revised to included earthwork for lots 5 through 8 based on the method described in items 1 above. The net earthwork is Cut-5,230 CY and Fill-320 CY, with related truck trips of 409 truck trips. Taking into account the Slope Mitigation of Lots 5 through 8 the related off haul is an additional 2,880 CY and additional 240 truck trips. Therefore the resulting export truck trips form lots 5 thru 8 is 649 truck trips (409 +240). Note the export truck trips from lots 5 thru 8 previously spreadsheets implied there were 1241 trucks trips (658+583). There appears to have been numerous cases of double counting in the previous spreadsheet

which we have corrected this in the new spreadsheet.

5. Table 3; has been revised to included earthwork for lots 9 through 11 based on the method described in items 1 above. The net earthwork is Cut - 1380 CY and Fill - 2,180 CY, with the required fill of 800 CY or 67 truck trips. Please note that these trucks are between lots 5-8 slope mitigation area and site grading and trucked over to Lots 9-11 for fill requirements. We have ignored the information in the grayed out area of the Table 3 spreadsheet, due to the fact the earthwork for this area is associated with over-excavation of Lots 9 -10, over-excavation is not included earthwork calculations as defined in the Earthwork Cut and Fill per Section 8601.16, see item 1 above.
6. Table 4; provides the new Truck trips for all three areas Lots 5-8 slope mitigation area, Lots 5 through 8, and lots 9 -11, the net resulting trucks for the project, for lots 5 -11, is 716 total truck trips (240 + 409 +67=716). When compared to the Table 6 modified actual truck trips of 716, this varies comparable to the 583 trucks being purposed by project especially taking into account that Lots 5 -8 Slope Mitigation Grading that is not included, note, slope mitigation grading accounts for 240 trucks trips of the 716 trips.
7. Based on the EIR traffic generate rates on a lot basis, each new household would have 9.81 trips per day. This equates to 108 trips per day for the all 11 lots and 68.7 trips for lots 5-11 only. It will take approximately 10-12 weeks to accomplish the off-haul of excess material during grading operations associated with the Slope Mitigation on Lots 5-8 and the fine grading on lots 5-11. The average truck trip per day will be approximately 10 to 12 trucks per day vs the trips associated each future household of 68.7 trips per day. As you can see this is only 1 % of the average daily traffic with the future development of lots 5-11.
8. Truck route will be for lots 9, 10 and 11; Cowpens to Cobblehill to Ticonderoga Drive (Lots 5 thru 8) and Lots 5, 6, 7, 8 and Slope Mitigation (Lots 5-8); Ticonderoga Drive to Polhemus Road to Highway 92 and then either west or east on Highway 92 depending on location were fill is being hauled to. The largest road impact will be Ticonderoga Drive between the project site lots 5-8, to Polhemus Road to Highway 92, and not through the neighborhood.

Incl: Excel Spread Sheet: Grading for Highland Estates Lot5-11 Chamberlain Project in cubic yards CY

Grading for Highland Estates Lots 5-11 - Chamberlain Project, in cubic yards (CY)

TABLE 1

PLN APPROVAL (Source: BOS Staff Report, Final EIR)			on 12cy = 1 truck load (Source: Final EIR)	Truck Trips (12 cy per Truck)
TOTAL	Cut	Fill		
Lots 1-4	500	2,300	0	150
Lots 5-8	4,700	700	0	333
Lots 9, 10	300	2,900	0	217
Lot 11	1,200	1,000	0	17
Overall - Import Only	0	900	75	
Total	6,700	7,800	75	717

Note: Final EIR assumes balanced Grading for Lots and only calculates truck trip for imported materials (Rock, etc) does not assume phased project

TABLE 2

BLD PROPOSAL	LOT GRADING				SLOPE MITIGATION ---Revised on BLD Plans				
Lots 5-8	Cut	Fill	Net Cut	Offhaul Truck Trips (12 cy per Truck)	Cut - Unsuitable Material from Stripings (Source: Geo letter 7/8/17)	Cut - Unsuitable Material (Source: Geo letter 7/8/17)	Net Unsuitable Material Cut (Source: Geo letter 7/8/17)	Offhaul Truck Trips (12 cy per Truck)	Total Offhaul Truck Trips (Lot Grading + Slope Mitigation)
5	1,220	0	1,220	102	395	125	520	43	145
6	1,450	0	1,450	121	455	125	580	48	169
7	1,560	90	1,470	123	535	125	660	55	178
8	1,000	230	770	64	995	125	1,120	93	158
Total Lots 5-8	5,230	320	4,910	409	2,380	500	2,880	240	649

Notes: 1) Cut for Slope Mitigation: Geotech letter dated 7/8/17 estimates total earthwork for slope mitigation as up to 25,000 cy (including unsuitable material and stripings of 2,880 cy estimated by Project Civil Eng.);
2) Fill for Slope Mitigation: Slope mitigation will involve offhaul of organic/unsuitable material.

TABLE 3

BLD PROPOSAL	LOT GRADING				OVEREXCAVATION					
Lots 9-11	Cut	Fill	Net Fill	Offhaul Truck Trips (12 cy per Truck)	Cut - Overexcavation	Backfill - Overexcavation	Net Cut - Overexcavation Offhaul	Net Imported Backfill (+10% Shrinkage)	Truck Trips for Overexcavation Offhaul + Backfill	Total Truck Trips (Lot Grading + Overexcavation)
9	140	1,800	1,660	138	200	0	200	220	35	173
10	770	310	-460	-38	81	0	81	89	14	-24
11	470	70	-400	-33	519	382	137	151	24	-9
Total Lots 9-11	1,380	2,180	800	67	800	382	418	460	73	140

Notes for Overexcavation: Overexcavation volumes for Lots 11 provided in Geotech letter dated 9/21/18. No formal estimates provided for Lots 9-10, but volume based on total estimated overexcavation of 800 cy from BKF letter of 8/7/18. Overexcavation volumes are not included in earthwork grading quantities.

TABLE 4

TRUCK TRIPS	
Total Truck Trips for Lots 5-8 Slope Mitigation	240
Total Truck Trips for Lots 5-8	409
Total Truck Trips for Lots 9-11	67
Total	716

TABLE 5

Grading Quantities	Approved	Proposed	Difference
Cut (5-8)	4,700	8,110	3,410
Fill (5-8)	700	320	-380
Cut (9-11)	1,500	2,180	680
Fill (9-11)	3,900	3,022	-878

Notes: Proposed Grading Quantities include Slope Mitigation and Overexcavation, not previously included in approved grading.

TABLE 6

TRUCK TRIPS		
On & Off Haul Trips	Approved Trips	Proposed Trips
Lots 5-8	37.5	333
Lots 9-11	37.5	234
Lots 1-4		
Totals	75	567

Note approved Trucks of 75 based on over project 1-11 per EIR

Actual truck trips for Lots 5-11 on VTM not, including Lots 1-4 is approximately,567 truck trips. See table 1 above

Notes: Proposed Trips include Lot Grading for Lots 5-11 and Lots 5-8 Slope Mitigation only.