



# H4 M Corporation

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Geotechnical-Geophysical-Engineering Services

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**SUBMITTA L**

21 October 2005

DEC 20 2005

Mr. Del Isabelle  
PO Box 220021  
Anchorage  
Alaska 99522-0021

Subject: Lot 7B Block 2 Seaview Heights Subdivision, Anchorage Alaska

Gentlemen:

1. Our initial impression of this project based on a walk over inspection on 13 October 2005, is that a significant amount of work is needed to preserve the present construction from erosion and weathering damage before the 2006 construction season. The hazards are late and early season heavy rains and frost heave of the materials. We understand that there is a considerable amount of material to add to reach the approved design grades. This letter is concerned with the physical aspects of the earthwork construction, its present condition, and physical considerations for its completion. We understand that for other reasons it is desired that the construction will be north of a point 30-feet from the south boundary.
2. Our examination of the existing earthwork shows no significant problems for the present grades. Except for the high ground area along the west boundary. Even so, there are erosion problems with the rough grades that should be addressed if for no other reason than long-term esthetics.
3. The final grades as shown on the approved drawing appear stable considering the quality of material as stockpiled and observed on the surface. The 2:1 final slopes are generally safe with non-cohesive and

most compacted cohesive soils. *(Steeper slopes require more attention to materials and compaction as in the driveway's fill over the swale and more attention to the establishment of erosion control. Even for 2:1 slopes should have at least organic erosion control.)*

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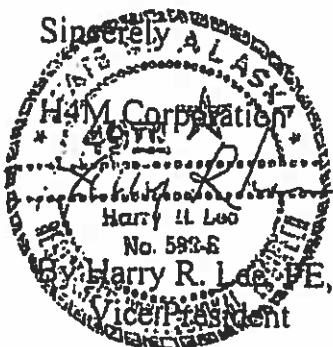
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4. The construction cut in the high ground along the west boundary has raveled back into the adjacent property. The area can be restored with fill placed at 2:1 or flatter slopes. There appears to be sufficient room to allow this work to blend into the general grading.
5. Our onsite estimate of earthwork includes about 20,000 cubic yards of material moved onsite from the knob to prepare the building site. It appears this material was spread about the site. If we assume the 40,000 cu yards estimated by Steve Shrader is reasonable that would leave 20,000 cubic yards for imported material. Mr. Isabelle lists 33,773 cubic yards by truck count of which 16,784 cubic yards are brush and silt. Of that amount we expect 50% shrinkage and 15% for the inorganic material, 13,500 cubic yards. This lowers the in place quantity of the imported fill to about 20,000 cubic yards. While the numbers are reconciled and are about as accurate as walk over estimates tend to be; we see little possibility of reaching a precise value. However, it may be possible to increase the precision by aerial photogrammetry means. Even then, it will be expensive and not particularly precise. We see no technical need for the information, but understand that it is germane to the grading permit.
6. Drainage before earthwork appears to be more-or-less northwest to southeast for this parcel. It is similar after the designed work is completed. Even so, in the present state of the work the low areas on each side of the drive have not been filled. This poses an erosion problem and might under extreme runoff conditions cause piping of the road fill to the east. When the land to the west is filled this potential will be mitigated. The same is true for the land to the east. An alternative is to place a culvert at the bottom of the driveway fill. The east side of the driveway where it passes over the swale has steep slopes probably closer to 1:1 than 2:1. Fortunately, the earth structure has weathered several years with only a taste of erosion. The materials by inspection are satisfactory in a slope stability sense provided a deep pond does not develop on the west side as a result of torrential rain or rapid thaw. Toe protection such as the gabions that are started

at its toe coupled with coarse rock facing should mitigate this possibility. The need for filling in the west or east and the use of a culvert then become nil.

7. We understand there is some concern along the southern boundary of the property. We suggest allowing work to continue from 30-feet north of the southern boundary on the east side of the drive. Hopefully, filling can continue on the west side of the drive over the low area to within at least 5-feet of the drive's final grade, preferably to final grade or more. This will also allow onsite sewerage to be completed and natural gas service once final grade is reached.
8. The attached photographs show the conditions in 1996 and 2002 courtesy of the USGS.
9. The period for successful structural filling is growing very short this season. We recommend the work be done now!

If we can be of additional service please do not hesitate to call our office.



Harry R. Lee, P.E., AK reg. 582E

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