5049652
Page: 1 of 3
03/29/2004 08:34
Spokane Co, WA
SPOK CNTY ENGINEER'S ADD $0.00

Return to: Spokane County Engineer's Office
Attn: Division of Engineering and Roads, Development Services Department
1026 W. Broadway, Spokane, WA. 99260-0170

Document Title: *Plat Addendum*

Grantor: *P-1794-96*

Grantee: *The Public*

Plat or Short Plat Name: *Northview Estates*

Legal Description: *A portion of the SE quarter of Sect. 13, Township 26 North, Range 42 East, W.M., Spokane County, WA.*

Assessor's Tax Parcel ID Number: *A portion of parcels 26134.0166,26134.0157, 26134.0140, 26134.0408,26134.0305, 26134.0304, 26134.0132, 26134.0114,26134.0113, 26134.0122, 26134.0134*

Reference or Remarks: *Document references geotechnical recommendations.*

Budinger & Associates

3820 E. Broadway Ave.
Spokane, WA 99202
Tel: 509.535.8841
Fax: 509.535.9589

Ron Howes
Howes Development Company
5121 West Ridgecrest
Spokane, WA 99208

February 24, 2004

Project Number H03120
Addendum #1

PROJECT: Northview Estates Variance Request
Spokane, WA

SUBJECT: Response to County Review Comments
Submittal #3 January 8, 2004

Dear Mr. Howes,

As requested, we've prepared a response to Spokane County review comments of Submittal #3 dated January 8, 2004 that pertain to our scope. The comments are provided in italics below followed by our response.

4. *Provide information that indicates that the pond liner material proposed can tolerate a gravel layer over it, and that the depth of cover is appropriate. The concern is that the liner may be punctured or stressed due to weight of the gravel and/or stormwater in the facility.*

The Detention Pond Section illustrated in Detail 8 of Sheet 9 of the Engineers Plan dated 12/2/03 was developed in accordance with verbal recommendations that we provided to Dave Wall. Specifically, we recommended a permeable drainage layer over the proposed pvc liner to prevent the build up of pore water pressure and resulting reduced shear strength that commonly results in sliding failure of pond liner systems. To provide the necessary drainage, a coarse grained soil with very few fines is required; therefore, protection of the plastic liner is required. To protect from puncture, we recommended a relatively strong non-woven geotextile fabric equal or stronger than the AMOCO 4553.

6. *Although there is no longer a requirement for a variance (to infiltrate stormwater onsite), the knowledge still exists that this a high-risk drainage area. In review of the geotechnical data, it appears that most of the studies were related to infiltration towards the north of the site. Since, the current plan is for a lined-evaporative pond, it seems appropriate for the geotech to address this new design (with respect to mounding and lawn watering, etc.). It also would be appropriate for the geotech to specifically address whether or not infiltrating post-developed stormwater at the south basin location will have the potential for adverse onsite or downstream impacts.*

In our opinion, the June 10, 2003 report we prepared in the form of a variance request which was needed for the ordinance in place at that time is applicable to the currently conceived project. Specifically, the report considers the effects of normal lawn watering without the use of stormwater infiltration structures for most of the site that drains to the north and will be serviced by a storm sewer, but does anticipate infiltration below grassy swales in approximately the southwestern 1/3 of the project. Up to 2' of groundwater level increase is calculated from this analysis. Since the Phase I portion will include only a portion of those swales, the height of groundwater mounding will be proportionately less.

Basements should not be built within 3' of elevation from observed groundwater levels or the subsurface contact with decomposed basalt. In addition, basements should be no deeper than 12" above the adjacent storm sewer. For planning purposes, the water levels and decomposed basalt contact surfaces described above may be determined from reference to the June 3, 2003 report by Geo Engineers, "Supplemental Report – Geotechnical Evaluation During Preliminary Design Proposed Northview Estates." However, final design of basements should be completed by a qualified engineer based on site specific data such as a boring or pit on the individual lot. Specific provisions to protect structures from basement moisture damage should be developed at that time. Obviously, the least risk can be obtained by not building basements.

As described in our report of June 10, 2003, criteria are provided in this report to minimize the risk of inundation by groundwater to below grade structures. The criteria do not constitute an endorsement of the use of basement or certification of dry conditions. In our opinion, construction of basements inherently involves risk of moisture related problems. This report describes suggested mitigation for the risk of inundation by groundwater; however, damages can be sustained from sources of moisture other than inundation such as leaking pipes and migrating surface water. Even without architectural or structural damage, these various sources of water can cause damage from biological pollutants such as mold and viruses. Biological pollutants are environmental hazards whose characterization are beyond the scope of these geotechnical and hydrogeologic services.

This addendum should be bound with the original June 10, 2003 and it subject to the limitations described in that report.

We appreciate the opportunity to provide this service. Please call if you have any questions.

Respectfully Submitted
BUDINGER & ASSOCIATES, INC.

John E. Finnegan, PE
Geotechnical Engineer

JEF/gc
Addressee – 1
Thomas, Dean, & Hoskins, Dave Wall, PE – 2
Geo Engineers, Jim Harakas, PE – 1

JOHN EDWARD FINNEGAN
STATE OF WASHINGTON
0033842
REGISTERED
PROFESSIONAL ENGINEER
2-24-04
EXPIRES: 7-6-05