April 1, 1997

Mr. Jack Farley  
RWS Building Company  
4678 Larwell Drive  
Columbus, Ohio 43220

Reference:  Site & Building Recommendations  
O.U. Center for Multi-Phase technology  
Athens, Ohio  
GCI #6519-B

Dear Mr. Farley:

As you requested and authorized, GCI reported to the referenced project on March 25, 1997 to observe proposed subbase materials for the slab-on-grade and to observe subgrade on the east side of the building in the area of the heavy-duty drive.

**Floor Slab Subbase**

The slab has been cut to approximate finished subgrade elevation. Plumbing trenches within the building footprint were open at the time of the site visit and will be backfilled with a clean gravel (pea gravel) fill upon completion. Off-site pea gravel for trench backfill was stockpiled along the east side of the building pad. The gravel stockpile appeared to be typical washed gravel, generally free of fines.

We understand No. 57 limestone will be difficult to obtain due to state highway work within the project area. Clean, washed pea gravel is proposed as an alternative for underslab base aggregate. These materials should be suitable for use as underslab aggregate with several precautions.

The pea gravel should be properly graded and compacted with a vibratory drum roller or plate compactor prior to concrete placement. The gravel is a "round" aggregate and will continue to move and displace under construction traffic including concrete trucks. Precautions should be taken to prevent excessive rutting and variations in the subbase prior to concrete placement. Placement of concrete from the perimeter of the building or areas that have not yet received underslab aggregate will aid in reducing additional grading and compaction work associated with the pea gravel.

**Heavy-Duty Pavement Subgrade**

As you are aware, the recently installed sanitary line along the east side of the building is located below the proposed heavy-duty pavement area. Additional borings performed for the pad footings near the northeast building corner indicated the lower trench backfill for the sanitary line was soft and will most likely realize some settlement and consolidation over time. The soil subgrade in this area appeared to relatively firm and stable beneath continued construction traffic at the time of the site visit.
The flexible asphalt pavement placed over the trench alignment will also settle as the fill consolidates. Several measures can be taken to reduce pavement cracking and deterioration associated with the settlement. Some future pavement problems associated with the trench backfill settlement are inevitable.

Increasing the base aggregate thickness approximately 4 inches may aid in reducing future cracking of the pavement. Placement of a light-duty geogrid such as a Tensar SS-2 (or equivalent) over the trench and extending at least 3 feet onto firm, stable subgrade outside of the trench alignment will assist with the pavement section and compacted soil subgrade "bridging" the trench backfill.

These methods will aid in reducing pavement deterioration as the lower, uncontrolled trench backfill consolidates, but will not eliminate anticipated settlement and cracking. Generally, these remedial efforts will only prolong the period of time before an overlay or other repairs are required.

GCI appreciates being of service on this project. Please call with any questions regarding these recommendations or if we can be of further assistance.

Sincerely,

[Signature]
David A. Kalkbrenner, E.I.T.

[Signature]
Daniel G. Longo, P.E.

cc: Gil Toomey - RWS Building Co.
David Callahan - RVC Architects