

February 22, 1996

Mr. Mike Temps
Castle Construction Company, Inc.
2291 Via De Mercados, Suite E
Concord, California 94520

RE: Geotechnical Engineering Services (Phases 2 and 3)
Rowland Property - Subdivision 7916
Walnut Creek, California

Dear Mr. Temps:

At your request, Rogers/Pacific is pleased to provide this proposal for continuing geotechnical engineering services on the subject project. Our firm was initially retained by the previous owner and issued a soils report for this project on September 22, 1995. We have also been providing some preliminary design consultations since the issuance of our report. It is our understanding that Castle Construction Company will be proceeding with the design and construction of the subdivision and that grading may begin this year.

This proposal presents our anticipated scope of work and estimated costs for both Phase 2 services (final design consultations, supplemental recommendations and plan review) as well as Phase 3 (construction observations and testing services), as outlined in the following section. As requested, a typical progress billing invoice for this type of work is also enclosed.

SCOPE OF WORK

Phase 2: Design Consultations, Supplemental Recommendations and Plan Review

Following the issuance of our report, we recommend that our office remain involved in the design process so that the geotechnical recommendations are incorporated into the design in the most efficient and cost-effective manner. In addition, it is our understanding that supplemental recommendations for post-tensioned slab foundations are needed at this time. We also recommend that we are provided the opportunity to review the geotechnical aspects of the final grading, drainage, foundation, and retaining wall plans and to provide a statement of compliance to the

recommendations provided in our report(s).

Specifically, we recommend that the scope of our Phase 2 services include the following tasks:

CA review of the proposed foundation system for the homes.

C Evaluation of the proposed grading at each building site.

CPreparation of supplemental recommendations for post-tensioned slab foundations and any other geotechnical aspects of the work not directly covered by our earlier report.

CA detailed review of the final building, grading and improvement plans for conformance with our firm's recommendations regarding earthwork, drainage, foundations, retaining walls and slabs-on-grade.

CDocumentation of our supplemental recommendations and the results of our plan review in a summary letter.

If required, our supplemental recommendations can be submitted verbally to your foundation design engineer prior to the final plan review and letter preparation. Finally, we should note that our work can be completed most efficiently if the grading and building plans are reviewed simultaneously and documented in a single letter.

Phase 3: Construction Observations and Testing Services

As outlined in our report, construction observations of site grading (including fill compaction testing) and all foundation construction and drainage installations is recommended by our firm and will be required by the City or County in most instances. This is to observe and verify the soil and geologic conditions exposed at the time of construction and to provide any modified or supplemental recommendations that may be appropriate should conditions vary from what is originally anticipated.

We recommend that the scope of our construction observation and testing services include the following tasks:

CA pre-construction meeting at the site to evaluate grading conditions and establish scheduling protocol.

CDaily site visits during grading operations, including sub-excavation for keyways and benches, subdrain installations, subgrade preparation and fill compaction operations;

CPeriodic site visits to observe retaining wall and house foundation excavations (or pier drilling) and pad preparation prior to placement of reinforcing steel;

CSite visits as required to test subgrade preparation, utility trench backfill, and baserock compaction in sidewalk, roadway and driveway areas.

CAt least one site visit near the end of the project to observe the final surface drainage conditions around the homes.

C Office coordination of the field visits.

CPreparation of project documentation, including progress grading reports, foundation letters, and a final report to the City or County Building Department.

During our site visits, we may also recommend temporary erosion control and drainage measures, depending on site and weather conditions during the grading and construction operations. However, it should be noted that the primary inspection responsibility for both permanent and temporary drainage measures, as well as erosion control is under the jurisdiction of the project civil engineer, Mr. Izzat Nashashibi of Humann Company.

ESTIMATED COSTS

Phase 2 Services

Our charges for this phase of work will be made on an hourly, time and materials basis in accordance with the attached Schedule of Charges and Terms. The total of our fees are dependent on the amount of consultation required during the final design process and whether we receive the grading, building, and improvement plans all at once or review each set individually. Since we have already reviewed the preliminary grading plans, we anticipate that our fees for the design consultations, supplemental recommendations and plan review work should be in the range of about **\$1,000 to \$1,500**.

Our fees for this phase should be within this range if only one letter is required and assuming that no project meetings will be needed during this phase of work. Any additional design consultation time or attendance at project meetings would be billed hourly and may result in our exceeding the figures quoted above. However, we agree not to exceed this amount without your prior authorization.

Phase 3 Services

Our firm's construction observation and testing services will be charged on a time and materials basis at our standard hourly rates in effect at the time of the work. A copy of our 1996 schedule of

charges is attached for your reference. Our costs will be directly related to the efficiency of the grading and foundation construction and additional site visits may be required if the work proceeds during inclement weather or if other unforeseen problems and special conditions arise.

As a rough guide, our costs for the grading portion of the work should be in the range of about \$400 to \$600 per day we visit the site during the grading operations (including laboratory testing and office costs) or approximately 10 to 15 percent of the total site grading costs. Since we have no control over the methods and equipment employed by the various contractors and we not been provided with a detailed construction schedule, we cannot estimate the overall number of site visits that may be required.

At this time, we would guess that the mass grading work could be accomplished in a 3 to 4 week time frame. For this schedule, our construction observation and testing services during all of the site grading operations (including subgrade, utility trench backfill, and baserock testing for paved areas) would likely be in the range of about \$7,000 to \$9,000, assuming no more than 18 site visits are required for the grading and related work. Our costs for foundation construction and drainage installation observations should be approximately \$500 to \$1,000 per home, including site retaining walls. Therefore, as a ballpark estimate, the total of our field and office costs for Phase 3 services should be in the range of **\$12,000 to \$16,000**.

As noted above, additional site visits, consultations, and meetings outside our scope of work would also be billed hourly and could result in our exceeding the figures quoted. However, we agree to contact you and discuss any additional fees should conditions appear to warrant a greater involvement of our firm's services.

We should note that the cost estimates quoted above are intended to represent the upper range of fees for this scope of work. Our costs may be lower if the project is accomplished in an efficient manner and if no additional site visits or consultations are needed. However, we recommend that a 15 to 20 percent contingency be established to handle any additional costs that could arise because of difficult or inefficient construction or unforeseen conditions.

All services rendered by our firm consist of professional opinions and recommendations made in accordance with generally accepted soil and foundation engineering principles and practices. This warranty is in lieu of all other warranties, either expressed or implied.

Any construction review of the contractor's performance conducted by us is not intended to include and does not include review of the adequacy of the contractor's safety measures in, on, or near the job site.

We look forward to being of continuing service to you in the development of the subject property. In order to complete our files, please sign one copy of this confirming proposal and return it to our office. We hope this letter provides you with the information which you require at this time.

Mr. Temps
February 22, 1996

If you have any questions regarding this proposal, please feel free to give us a call at your earliest convenience.

Very truly yours,

ROGERS/PACIFIC, INC.

William K. Langbehn, G.E.
Senior Geotechnical Engineer

I have read and agree to the provisions of the proposal (including the attached Schedule of Charges and Terms):

Approved by _____ Title _____ Date _____

WKL/rlk
s:\landdev\humann\sub7916.pro, RK0296

Copies: Addressee (2)

Enclosures: Schedule of Charges and Terms
Typical Billing Invoice (Sample)