PREPARED FOR

PRESCOTT HOMES

March 8, 2007

Scott S. Riegel, L.G.
Project Geologist

Kyle R. Campbell, P.E.
Principal

GEOTECHNICAL ENGINEERING STUDY
CAMPFIRE SITE
MULTI-FAMILY
RESIDENTIAL DEVELOPMENT
SEATTLE, WASHINGTON

ES-0758

Earth Solutions NW, LLC
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March 8, 2007
ES-0758

Prescott Homes
10613 Northeast 38th Place, #17
Kirkland, Washington 98033

Attention: Mr. Greg Kappers

Dear Mr. Kappers:

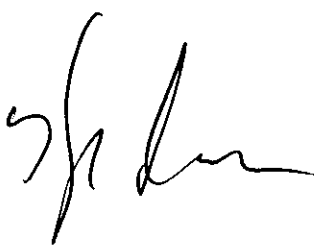
Earth Solutions NW, LLC (ESNW) is pleased to present this report titled "Geotechnical Engineering Study, Campfire Site, Multi-Family Residential Development, Seattle, Washington". Based on the conditions encountered during our fieldwork, the site is underlain primarily by competent, glacially consolidated silty sand with gravel and silty sand deposits.

Based on the results of our study, the new residential structure(s) can be supported on conventional foundations bearing on competent native soil or suitable granular structural fill. Where loose or unsuitable soil conditions are exposed at foundation subgrade elevations, compaction of the soils to the specifications of structural fill, or overexcavation and replacement with a suitable granular structural fill may be necessary.

The opportunity to be of service to you is appreciated. If you have any questions regarding the content of this geotechnical engineering study, please call.

Sincerely,

EARTH SOLUTIONS NW, LLC



Kyle R. Campbell, P.E.
Principal

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GEOTECHNICAL ENGINEERING STUDY
CAMPFIRE SITE
MULTI-FAMILY RESIDENTIAL DEVELOPMENT
SEATTLE, WASHINGTON

ES-0758

INTRODUCTION

General

This geotechnical engineering study was prepared for the multi-family residential development to be constructed at 8511 - 15th Avenue Northeast in Seattle, Washington. The purpose of this study was to drill two soil borings at the site, perform appropriate geotechnical analyses, and develop geotechnical recommendations for the proposed development. Our scope of services for completing this geotechnical engineering study included the following:

- Prepare a site geologic description including soil and groundwater conditions that may impact site development;
- Provide site excavation guidelines including allowable temporary slope inclinations, foundation subgrade preparation, and structural fill and compaction recommendations;
- Prepare foundation design recommendations;
- Provide seismic site coefficients in accordance with the International Building Code (IBC);
- Prepare recommendations for retaining wall design and temporary shoring;
- Provide recommendations for surface and subsurface site drainage, and;
- Additional geotechnical recommendations, as appropriate.

As part of our report preparation, we reviewed the following documents or resources:

- The City of Seattle DPD municipal code for ECA geotechnical report requirements;
- Geologic Map of Seattle-2005, Troost, Booth, et al, and;
- The City of Seattle online GIS property research.

Project Description

The site consists of a single parcel that is currently developed with an office/administration building and associated outbuilding which will be demolished and replaced with new multi-family residential buildings and associated improvements. Site layout and grading plans were being developed at the time of this report. However, we anticipate the new residential structure(s) will occupy the majority of the property and will likely include a below-grade garage level and two to three residential stories above. We anticipate the majority of temporary excavations for the new foundation will be accomplished using open cuts. However, depending on final building layout and elevations, temporary shoring may be required for excavations near existing right-of-ways.

At the time this report was prepared, specific building load values were not available. However, based on our experience with similar developments, we anticipate perimeter footing loads on the order of three to five kips per lineal foot and slab-on-grade loading on the order of 150 psf.

If the above design estimates are incorrect or change, ESNW should be contacted to review the recommendations in this report. ESNW should review the final design to verify that our geotechnical recommendations have been incorporated.

Surface

The site is located at 8511 - 15th Avenue Northeast in the Maple Leaf neighborhood of Seattle, Washington (see Plate 1, Vicinity Map). The subject property is rectangular in shape, and is bordered to the north, south and east by public right-of-ways and to the west by the Maple Leaf Reservoir. The approximate limits of the property are illustrated on the Boring Location Plan (Plate 2).

The subject site is currently developed with a Campfire scout administration building, an associated outbuilding and asphalt paved parking and drives lanes. The topography of the site is relatively level to slightly descending to the east and south with approximately five to seven feet of total elevation change. Slight site modifications have occurred likely associated with the original grading for the existing site development.

Vegetation consists of general ground cover and landscaping surrounding the existing structures and a small stand of mature fir trees in the eastern margins of the site.

Subsurface

Two borings were drilled on site for the purposes of assessing soil conditions and classifying the site soils. Please refer to the borings logs provided in Appendix A for a more detailed description of the subsurface conditions.

The soil conditions were observed to consist of medium dense silty sand and silty sand with gravel (Unified Soil Classification SM) in both boring locations. The borings were advanced to a maximum depth of 20.5 feet below existing grades.

The geologic map of the area identifies glacial till (Qvt) deposits across the site and surrounding areas. The King County Soil Survey does not provide soil mapping for the City of Seattle. However, based on our experience with similar soil types, the soils observed at our test locations, we would characterize the site soils to be consistent with Alderwood series glacial till soils. These soils typically exhibit medium runoff and present a moderate erosion hazard in settings similar to those at the subject site.

Groundwater

No groundwater seepage was encountered at the time of our field exploration (February 14, 2007). However, perched seepage may be encountered during site excavations, depending on the time of year they are completed. Due to the generally dense to very dense condition of the native soils, we do not anticipate groundwater seepage will adversely impact excavation stability, provided the excavations are appropriately sloped.

It should be noted that groundwater seepage rates and elevations fluctuate depending on many factors, including precipitation duration and intensity, the time of year, and soil conditions. In general, groundwater seepage rates and levels are generally higher during the wetter, winter months.

ENVIRONMENTALLY CRITICAL AREA ASSESSMENT

As part of our report preparation, we assessed the site for potential instability. We reviewed the City of Seattle Department of Planning and Development (DPD) GIS online resource which provides critical area designation and mapping for specific properties. This resource did not identify critical areas such as abandoned landfills, steep slopes or liquefaction at the site or within several blocks.

DISCUSSION AND RECOMMENDATIONS

General

Based on the results of our study, in our opinion construction of a multi-family residential development at the subject site is feasible from a geotechnical standpoint. The primary geotechnical considerations associated with the proposed development include temporary support for the foundation excavations, structural fill placement, and the suitability of the on-site soils for use as structural fill.

Based on the results of our study, the new residential building(s) can be supported on competent native soil or structural fill. Where loose or unsuitable soil conditions are exposed at foundation subgrade elevations, compaction of the soils to the specifications of structural fill, or overexcavation and replacement with a suitable granular structural fill may be necessary.

In our opinion, the soils generated from cuts throughout the site should generally be suitable for use as structural fill. The native soils encountered at the exploration sites, and likely to be exposed during site excavations, are moderately to highly moisture sensitive, and placement and compaction of these soils during wet weather conditions may become difficult. Depending on the moisture content of the soils at the time of construction, moisture conditioning of the on-site soils may be necessary prior to use as structural fill.

This study has been prepared for the exclusive use of Prescott Homes and their representatives. No warranty, expressed or implied, is made. This study has been prepared in a manner consistent with the level of care and skill ordinarily exercised by other members of the profession currently practicing under similar conditions in this area.

Site Preparation and Earthwork

With respect to earthwork, the primary considerations at this site are related to temporary cut slopes, fill placement and compaction, suitability of the native soils for use as structural fill, and appropriate erosion control measures. From a geotechnical standpoint, the soils encountered at the test sites are generally suitable for use as structural fill. However, because of the moisture sensitivity, successful use of the on-site soils will largely be dictated by the moisture content of the soils at the time of placement and compaction. The soils encountered at the test sites were generally in a moist condition at the time of the exploration (February 2007). Soils encountered during site excavations that are excessively over the optimum moisture content may require moisture conditioning prior to placement and compaction.

During periods of dry weather, the on-site soils should generally be suitable for use as structural fill, provided the moisture content is at or near the optimum level at the time of placement. Successful placement and compaction of the on-site soils during periods of extended precipitation will likely be difficult. If the on-site soils cannot be successfully compacted, the use of an imported soil may be necessary. Imported soil intended for use as structural fill should consist of a well graded granular soil with a maximum aggregate grain size of six inches, and a moisture content that is at or near the optimum level. During wet weather conditions, imported soil intended for use as structural fill should consist of a well graded granular soil with a fines content of five percent or less defined as the percent passing the #200 sieve, based on the minus three-quarter inch fraction.

Structural fill is defined as compacted soil placed in foundation, slab-on-grade, and roadway areas. Fills placed to construct permanent slopes and throughout retaining wall and utility trench backfill areas are also considered structural fill. Soils placed in structural areas should be compacted to a relative compaction of 90 percent, based on the maximum dry density as determined by the Modified Proctor Method (ASTM D-1557) and placed in maximum twelve inch lifts. In pavement areas, the upper twelve inches of the structural fill should be compacted to a relative compaction of at least 95 percent.

Temporary erosion control measures should include, at a minimum, silt fencing placed along the downslope perimeter of the construction envelope. As appropriate, temporary construction entrances should consist of at least six inches of quarry spalls to help minimize off-site soil tracking and to help provide a stable temporary road base. The quarry spall blanket should be underlain by a non-woven geotextile.

Excavations and Slopes

The Federal and state Occupation Safety and Health Administration (OSHA/WISHA) classifies soils in terms of minimum safe slope inclinations. Based on the soil conditions encountered during our fieldwork, the loose native soils encountered in the upper approximately two to four feet during our fieldwork would be classified by OSHA/WISHA as Type C. Temporary slopes over four feet in height in Type C soils should be sloped no steeper than 1.5H:1V (Horizontal:Vertical). The site soils encountered below about two to four feet of the site would be classified by OSHA/WISHA as Type A. Temporary slopes over four feet in height in Type A soil should be sloped no steeper than 0.75H:1V. If appropriate slopes cannot be achieved, temporary shoring may be necessary to support the excavations.

Water should not be allowed to flow over temporary slopes. During rain events, exposed temporary slopes should be covered with plastic sheeting, and runoff should be directed to an approved storm system.

Permanent slopes should maintain a gradient of 2H:1V, or flatter, and should be planted with an appropriate species of vegetation to enhance stability and to minimize erosion.

The project geotechnical engineer should observe temporary and permanent slopes to verify that the inclination is appropriate, and to provide additional grading recommendations, as necessary.

Preliminary Temporary Shoring Recommendations

We anticipate temporary shoring may be required at the site to accommodate the new residential structures. At the time of this report, finish floor elevations and site layout were not available. We have provided the following shoring recommendations for preliminary design purposes and ESNW should be provided the opportunity to review the final site layout to see that appropriate temporary shoring parameters have been incorporated into designs, and to provide supplemental recommendations, as necessary. In our opinion a soil nail wall can also be considered support of temporary excavations. ESNW can provide a soil nail shoring design upon request.

Cantilever and Single Tieback Soldier Piles

The temporary shoring should be designed to resist lateral soil pressure based on an active or at-rest earth pressure condition, as appropriate. Surcharge loading from adjacent roadways or buildings should be included in the shoring design, as appropriate. For design, the following Earth pressure and surcharge values should be used:

- Active Earth Pressure (level backfill) — 35 pcf (equivalent fluid)
- At-Rest Earth Pressure (level backfill) — 50 pcf
- Active Earth Pressure (sloped backfill, 1:1 max) — 50 pcf
- At-Rest Earth Pressure (sloped backfill, 1:1 max) — 75 pcf
- Traffic Surcharge (where appropriate) — 70 psf (rectangular distribution)
- Passive Resistance (Apply over 2 pile diameters) — 450 pcf
- Skin Friction (Minimum Pile Embedment 10 feet) — 1,000 psf

A typical active earth pressure distribution is provided on Plate 3 of this study. However, where temporary shoring will support adjacent right-of-ways, at-rest earth pressures as specified above should be used. The assumed relaxation of the shored excavation associated with active earth pressure design could result in movement of the adjacent building foundations. As mentioned above, the proximity and depth of adjacent foundations should be further assessed to better evaluate appropriate surcharge loading and pile deflection criteria.

Soldier pile installation should be observed by the geotechnical engineer to verify pile depths and soils conditions. Sloughing of the soldier pile excavations is not anticipated. However, the contractor should be prepared to case soldier pile excavations, if necessary. Where groundwater seepage is encountered in excavations, localized sloughing should be expected.

Timber Lagging

Lagging should be installed in maximum four foot lifts as the excavation is advanced. Lifts of up to six feet maximum may be acceptable for short periods, provided the lagging is installed immediately. The geotechnical engineer should observe the shoring excavation to assess the stability of the cut. The lagging should be backfilled as the excavation is advanced to minimize voids between the lagging and cut face, and to reduce the potential for ground subsidence behind the shoring wall. Where sloughing of the excavation results in the development of a void, the void should be filled to reestablish confinement between the cut and shoring wall.

Timber lagging can be designed with a reduced pressure equal to 50 percent of the design lateral earth pressure due to soil arching.

Tieback Anchors

As previously discussed, we have provided design parameters for cantilever and single tieback shoring walls. We have provided a schematic representation of a typical single tieback wall for reference on Plate 4 of this report. If single-row tieback walls will be utilized at this site, the tiebacks should be located as high on the wall as possible and should be designed based on the following parameters:

- Allowable Anchor Friction — 1,500 psf (approx 2.5 kips per foot for 6-inch anchor)
- Declination Angle — 15 to 20 degrees (from horizontal)
- Soldier Pile End Bearing — 10,000 psf

Tieback anchors should be verification tested and proof tested in general accordance with Section 8.3 of the Recommendations For Prestressed Rock and Soil Anchors (Post-Tensioning Institute, 1996). A minimum of two verification tests (200 percent design load) should be performed. Verification test anchors can be used as production anchors provided the anchor is acceptable. A minimum of 5 percent of the production anchors should be proof tested to 130 percent of the design load. The geotechnical engineer should observe the anchor testing and provide documentation of the test results. Tieback anchors should be locked-off at 90 percent to 100 percent of the design load.

Shoring Wall Drainage

Temporary shoring walls should be provided with adequate drainage to reduce the potential for excess hydrostatic pressure build-up. During construction, drainage occurring between the timber lagging is usually sufficient to prevent the development of hydrostatic pressures. Where permanent building walls will be constructed along the temporary shoring walls, a sheet drain material should be installed along the face of the shoring wall. A typical detail illustrating a sheet drain and permanent wall drainage system is provided on Plate 5 of this study.

Shoring Monitoring

Due to the close proximity of adjacent public right-of-ways, an optical monitoring program should be implemented for this site. The monitoring program should consist of a video survey prior to beginning the shoring installation to document the current conditions of the surrounding features. Initial survey points should be placed at strategic locations along the right-of-way alignments that will allow for periodic measurement during and after the shoring installation. This will allow for efficient monitoring of the site to identify and remediate excessive deflections or excavation related movements, if they occur.

Prior to the start of construction, the geotechnical engineer, owner, and contractor should review the project and develop a monitoring program for the site. Monitoring points are typically established along adjacent right-of-ways. Following installation of the soldier piles, monitoring points are typically established on the top of the piles prior to proceeding with the excavation. An initial baseline reading should be acquired prior to proceeding with construction. Readings should be acquired relatively frequently during the excavation phase of the construction. The geotechnical engineer should review the data as it becomes available during the course of construction. The monitoring program should be supplemented with periodic observations by the geotechnical engineer during the excavation phase of construction.

Wet Season Grading Considerations

The subject site has not been identified as a critical area by the City of Seattle DPD. In our opinion, grading during the wet season is acceptable from a geotechnical standpoint, provided the recommendations in this report and grading requirements detailed by the City of Seattle DPD are incorporated into final site designs. An appropriate construction entrance and Temporary Erosion and Sediment Control (TESC) measures should be developed prior to beginning grading. ESNW can develop a TESC, or provide review services for a proposed TESC, upon request.

Rockeries and Modular Block Walls

In our opinion, the use of rockeries or modular block walls at this site is feasible from a geotechnical standpoint. Rockeries or modular block walls over four feet in height will require an engineered design. ESNW can provide engineered rockery and modular block wall designs, upon request. The geotechnical engineer should review the final wall alignments and wall heights with respect to the proposed site grading.

Utility Trench Backfill

In our opinion, the soils observed at the test sites are generally suitable for support of utilities. Organic or highly compressible soils encountered in the trench excavations should not be used for supporting utilities. In general, the on-site soils observed at the test sites should be suitable for use as structural backfill in the utility trench excavations, provided the soil is at or near the optimum moisture content at the time of placement and compaction. Moisture conditioning of the soils may be necessary at some locations prior to use as structural fill. Utility trench backfill should be placed and compacted to the specifications of structural fill provided in this report, or to the applicable specifications of the city or county jurisdictions, as appropriate.

Foundations

In our opinion, the proposed building(s) can be supported on conventional spread and continuous footings bearing on competent, undisturbed native soils or structural fill. Assuming the building will be supported as described above, the following parameters can be considered for design of the new foundations:

- Allowable Soil Bearing Capacity — 8,000 psf (dense glacial till)
2,500 psf (structural fill)
- Passive Resistance — 450 pcf (equivalent fluid)
- Friction — 0.40
- IBC Site Class — Site Class C (Table 1615.1.1, 2003 IBC)
- Liquefaction Susceptibility — Low

A one-third increase in the allowable soil bearing capacity can be assumed for short-term wind and seismic loading conditions.

Competent soils suitable for support of foundations are anticipated to be encountered at footing elevations for the below-grade garage and depths of approximately two to four feet below existing grades elsewhere. Where loose or unsuitable soils are encountered at the foundation subgrade elevation, the soil should be recompacted or replaced with a suitable structural fill soil, as appropriate.

Slab-On-Grade Floors

Slab-on-grade floors for the proposed building should be supported on a firm and unyielding subgrade consisting of competent native soil or structural fill. Unstable or yielding areas of the subgrade should be recompacted or overexcavated and replaced with suitable structural fill prior to construction of the slab. A capillary break consisting of a minimum of four inches of free draining crushed rock or gravel should be placed below the slab. The free draining material should have a fines content of five percent or less (percent passing the #200 sieve, based on the minus three-quarter inch fraction). In areas where slab moisture is undesirable, installation of a vapor barrier below the slab should be considered.

Retaining Walls

Retaining walls should be designed to resist earth pressures and any applicable surcharge loads. For design, the following parameters can be assumed for retaining wall design:

- Active Earth Pressure (Yielding Wall) — 35 pcf (equivalent fluid)
- At-Rest Earth Pressure (Restrained Wall) — 50 pcf
- Traffic Surcharge (Passenger Vehicles) — 70 psf (rectangular distribution)
- Passive Resistance — 450 pcf (equivalent fluid)
- Coefficient of Friction — 0.40

Additional surcharge loading from foundations, sloped backfill, or other loading should be included in the retaining wall design, as appropriate. Drainage should be provided behind retaining walls such that hydrostatic pressures do not develop. If drainage is not provided, hydrostatic pressures should be included in the wall design, as appropriate. ESNW should review retaining wall designs to verify that appropriate earth pressure values have been incorporated into design, and to provide additional recommendations, as necessary.

Retaining walls should be backfilled with free draining material that extends along the height of the wall, and a distance of at least 18 inches behind the wall. The upper one foot of the wall backfill can consist of a less permeable (surface seal) soil, if desired. A rigid, perforated drain pipe should be placed along the base of the wall, and connected to an appropriate discharge location. A typical retaining wall drainage detail is provided on Plate 6 of this report.

Drainage

No groundwater seepage was encountered at our boring locations, at the time of our fieldwork (February 14, 2007). However, the presence of isolated zones of perched seepage may be exposed during deeper utility excavations. Temporary measures to control groundwater seepage and surface water runoff during construction will likely involve interceptor trenches and sumps, as necessary.

In our opinion, perimeter drains should be installed along the base of the building footings.

Seismic Considerations

The 2003 International Building Code specifies several soil profiles that are used as a basis for seismic design of structures. Based on the soil conditions observed at the test sites, Site Class C, from table 1615.1.1, should be used for design.

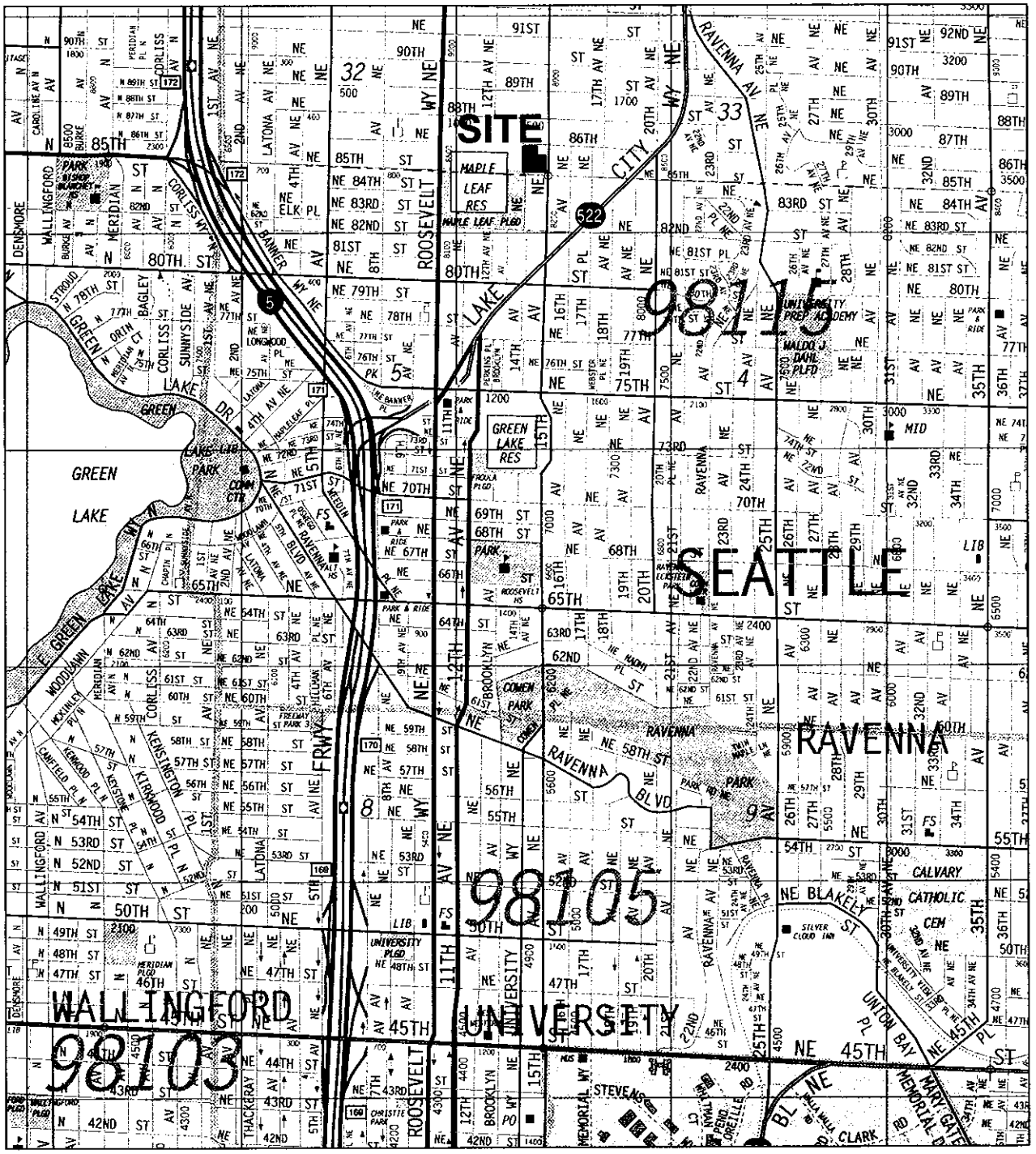
In our opinion, liquefaction susceptibility at this site is low. The relative density of the site soils is the primary basis for this conclusion.

LIMITATIONS

The recommendations and conclusions provided in this geotechnical engineering study are professional opinions consistent with the level of care and skill that is typical of other members in the profession currently practicing under similar conditions in this area. A warranty is not expressed or implied. Variations in the soil and groundwater conditions observed at the test sites may exist, and may not become evident until construction. ESNW should reevaluate the conclusions in this geotechnical engineering study if variations are encountered.

Additional Services

ESNW should have an opportunity to review the final design with respect to the geotechnical recommendations provided in this report. ESNW should also be retained to provide testing and consultation services during construction.



Reference:
King County
Map 535
By Thomas Brothers Maps
Dated 2007

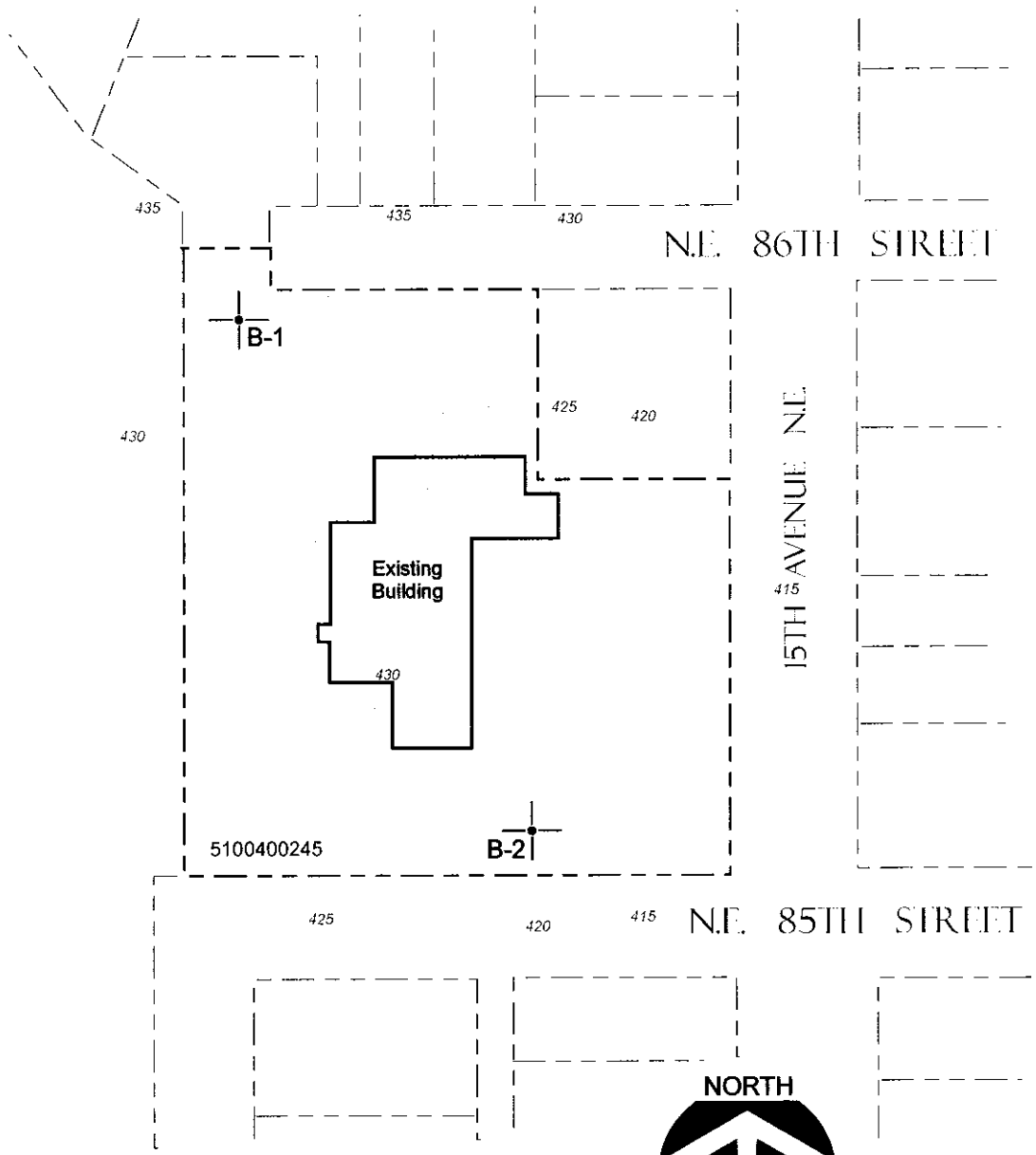
NOTE: This plate may contain areas of color. ESNW cannot be responsible for any subsequent misinterpretation of the information resulting from black & white reproductions of this plate.

Earth Solutions NW LLC

Geotechnical Engineering, Construction Monitoring and Environmental Sciences

Vicinity Map
Camp Fire Site: 8511 - 15th Avenue N.E.
Seattle, Washington

Drwn. GLS	Date 03/13/2007	Proj. No. 0758
Checked SSR	Date Mar. 2007	Plate 1



LEGEND

B-1 — Approximate Location of ESNW Boring, Proj. No. ES-0758, Feb. 2007

Subject Site

Not - To - Scale

NOTE: The graphics shown on this plate are not intended for design purposes or precise scale measurements, but only to illustrate the approximate test locations relative to the approximate locations of existing and / or proposed site features. The information illustrated is largely based on data provided by the client at the time of our study. ESNW cannot be responsible for subsequent design changes or interpretation of the data by others.

NOTE: This plate may contain areas of color. ESNW cannot be responsible for any subsequent misinterpretation of the information resulting from black & white reproductions of this plate.

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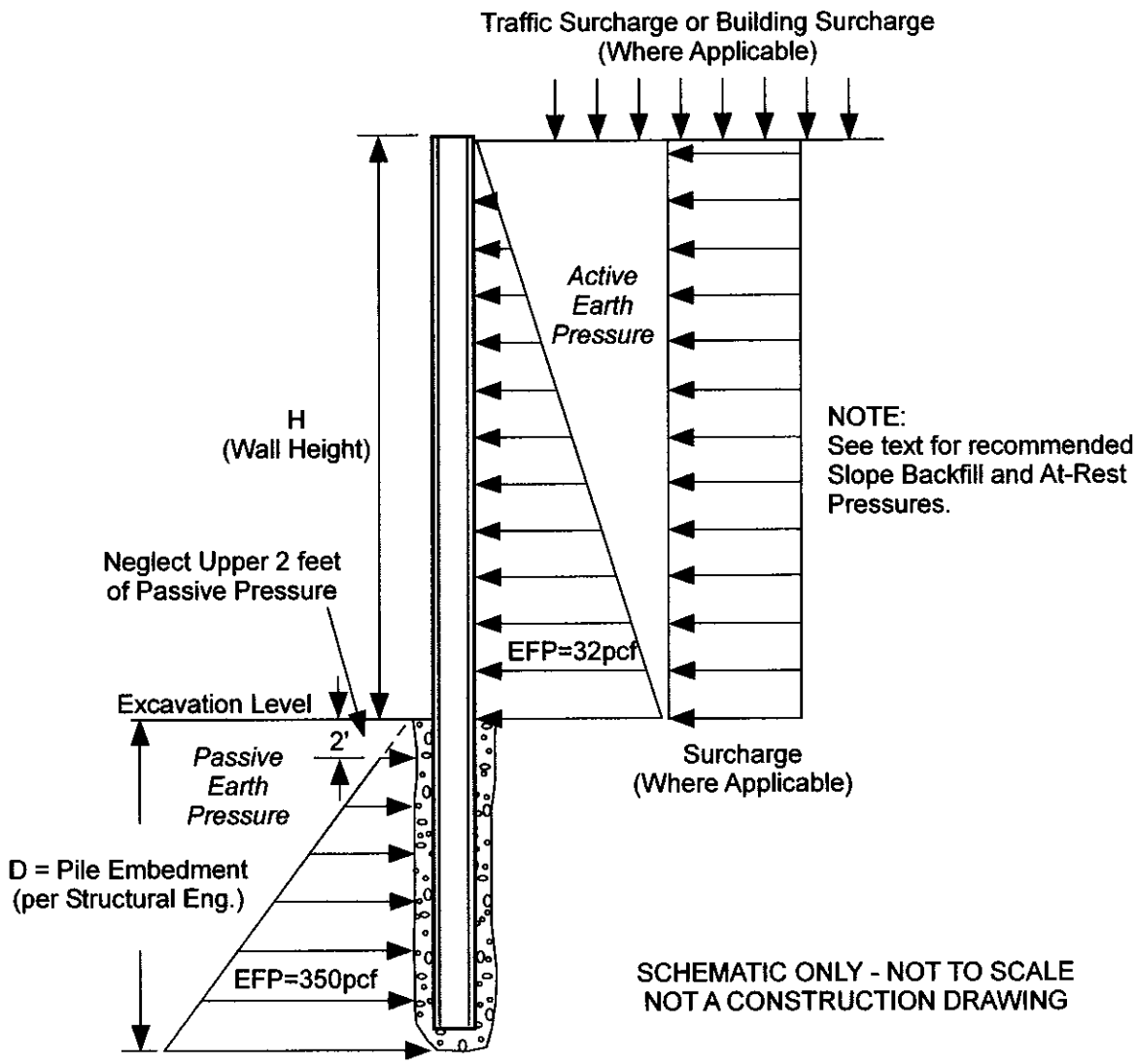
Geotechnical Engineering, Construction Monitoring and Environmental Sciences

Boring Location Plan
Camp Fire Site: 8511 - 15th Avenue N.E.
Seattle, Washington

Drwn. GLS	Date 03/14/2007	Proj. No. 0758
Checked SSR	Date Mar. 2007	Plate 2



NOTES:

Diagram for pressure distribution illustration only, not a design drawing.

Passive Pressure includes a factor of safety of 1.5.

For adjacent building or traffic surcharge see text.

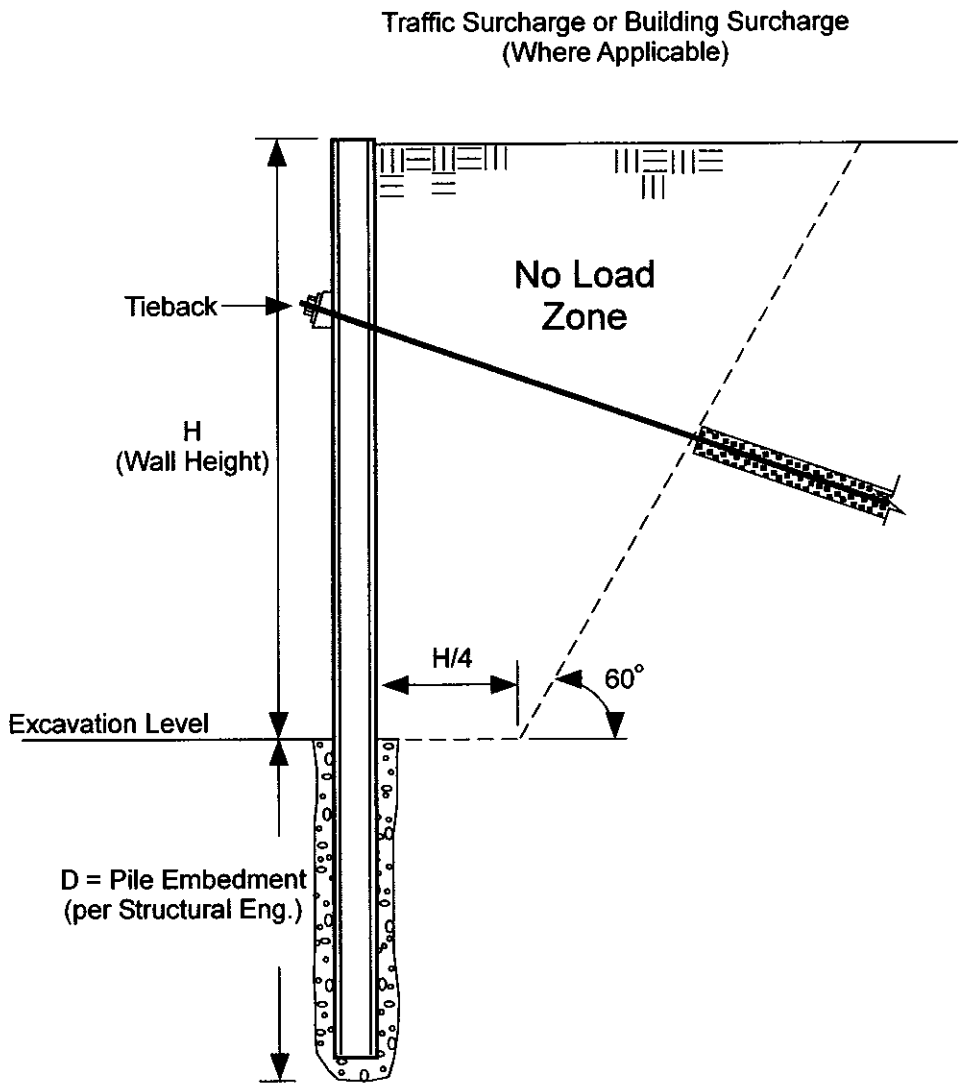
Earth Solutions NW LLC

Geotechnical Engineering, Construction Monitoring and Environmental Sciences

CANTILEVER & SINGLE TIEBACK WALL

Camp Fire: 8511 - 15th Avenue N.E.
Seattle, Washington

Drwn. GLS	Date 03/13/2007	Proj. No. 0758
Checked SSR	Date Mar. 2007	Plate 3



SCHEMATIC ONLY - NOT TO SCALE
NOT A CONSTRUCTION DRAWING

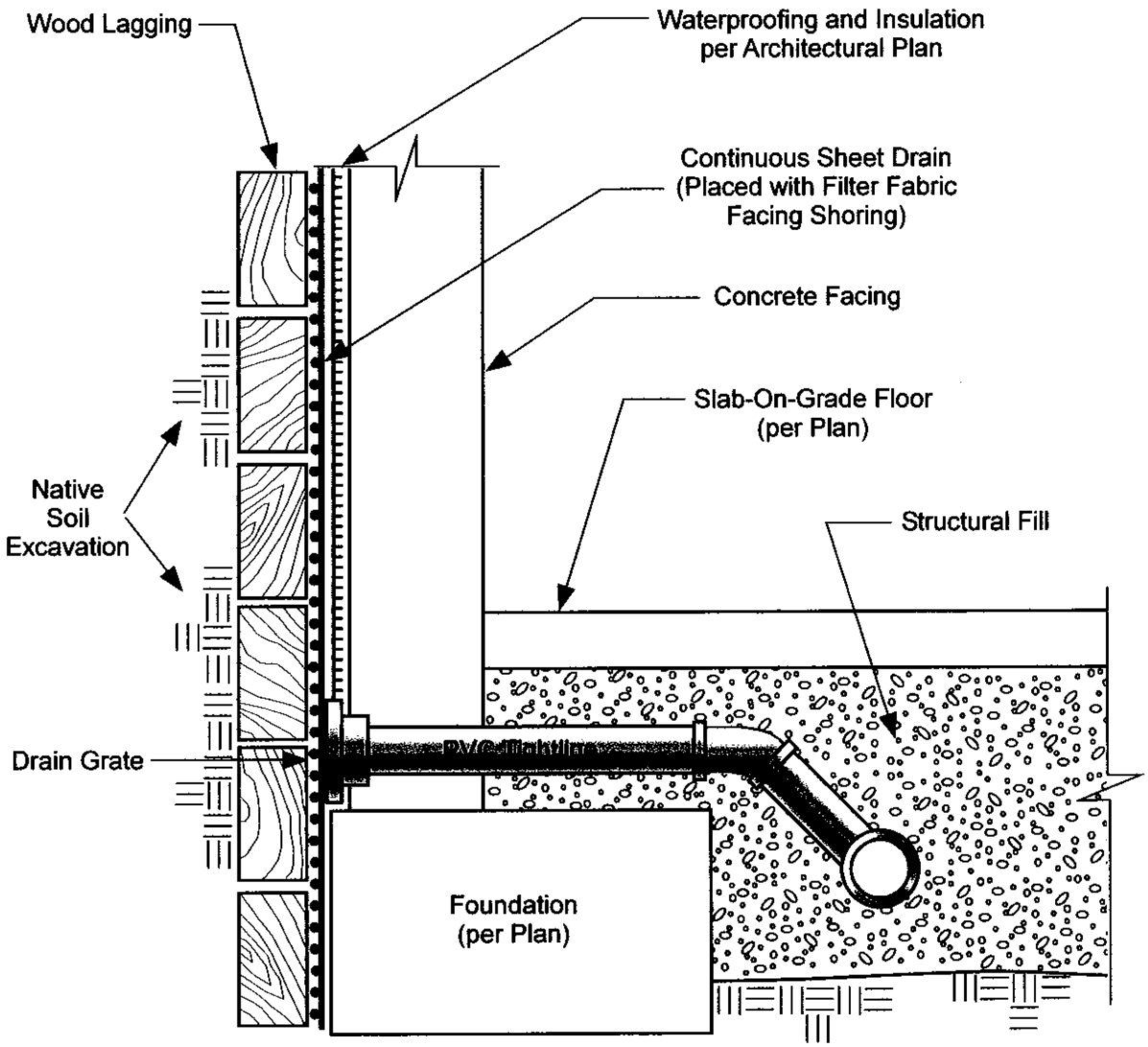
Earth Solutions NW LLC

Geotechnical Engineering, Construction Monitoring and Environmental Sciences

SINGLE TIEBACK WALL

Camp Fire Site: 8511 - 15th Avenue N.E.
Seattle, Washington

Drwn. GLS	Date 03/13/2007	Proj. No. 0758
Checked SSR	Date Mar. 2007	Plate 4



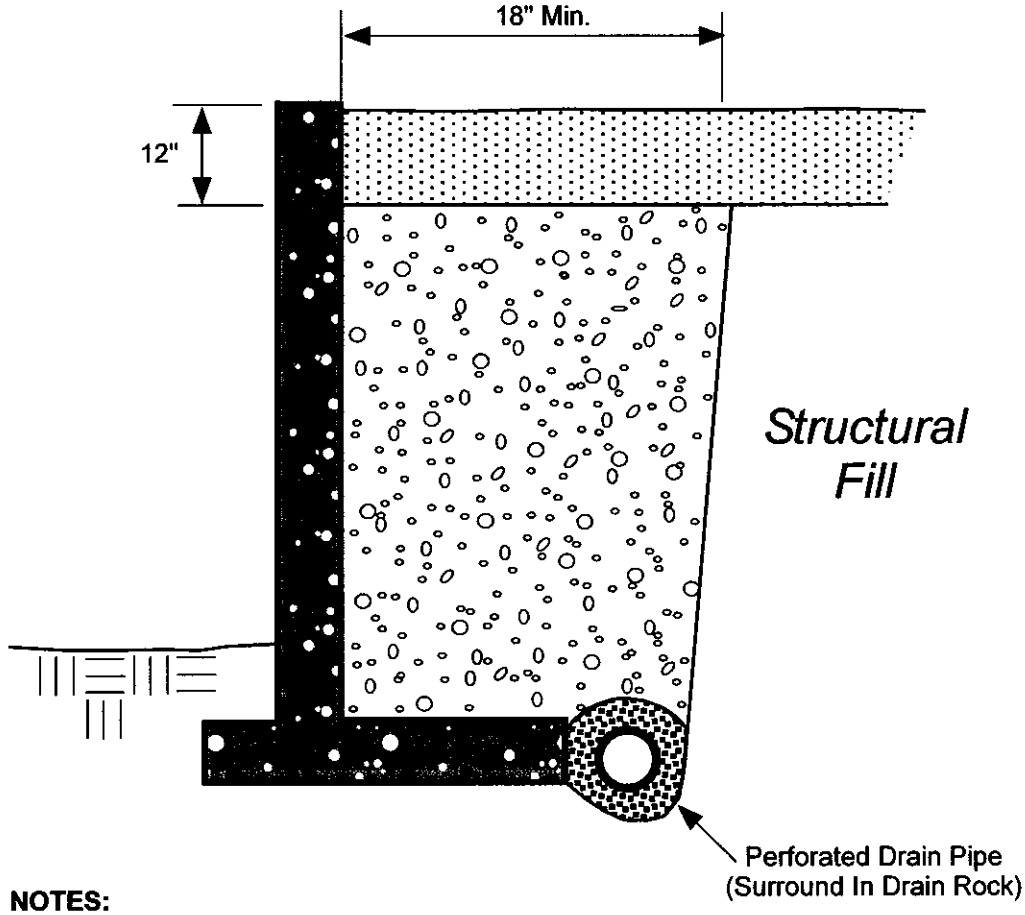
NOTE: Drain through wall should be installed at middle of lagging.

SCHEMATIC ONLY - NOT TO SCALE
NOT A CONSTRUCTION DRAWING

Earth Solutions NW LLC
Geotechnical Engineering, Construction Monitoring and Environmental Sciences

SHORING WALL DRAINAGE
Camp Fire Site: 8511 - 15th Avenue N.E.
Seattle, Washington

Drwn. GLS	Date 03/13/2007	Proj. No. 0758
Checked SSR	Date Mar. 2007	Plate 5



NOTES:

- Free Draining Backfill should consist of soil having less than 5 percent fines. Percent passing #4 should be 25 to 75 percent.
- Sheet Drain may be feasible in lieu of Free Draining Backfill, per ESNW recommendations.
- Drain Pipe should consist of perforated, rigid PVC Pipe surrounded with 1" Drain Rock.

SCHEMATIC ONLY - NOT TO SCALE
NOT A CONSTRUCTION DRAWING

LEGEND:

Surface Seal; Native Soil or other Low Permeability Material

Free Draining Structural Backfill

1 inch Drain Rock

Earth Solutions NW LLC
Geotechnical Engineering, Construction Monitoring and Environmental Sciences

RETAINING WALL DRAINAGE DETAIL
Camp Fire Site: 8511 - 15th Avenue N.E.
Seattle, Washington

Drwn. GLS	Date 03/13/2007	Proj. No. 0758
Checked SSR	Date Mar. 2007	Plate 6

APPENDIX A

SUBSURFACE EXPLORATION

ES-0758

The subsurface conditions at the site were explored by drilling two soil borings at the approximate locations illustrated on Plate 2 of this report. The exploration logs are provided in this Appendix. The subsurface exploration was completed in February 2007 and our borings were advanced to a maximum depth of 20.5 feet below existing grades.

Logs of the borings observed by ESNW are presented in Appendix A. The final logs represent the interpretations of the field logs. The stratification lines on the logs represent the approximate boundaries between soil types. In actuality, the transitions may be more gradual.

Earth Solutions NW LLC

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	SAND AND SANDY SOILS	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

DUAL SYMBOLS are used to indicate borderline soil classifications.

The discussion in the text of this report is necessary for a proper understanding of the nature of the material presented in the attached logs.

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BORING NUMBER B-1

CLIENT Precott Homes
PROJECT NAME Camp Fire Site: 8511 - 15th Avenue N.E.
PROJECT NUMBER 0758
PROJECT LOCATION Seattle, Washington
DATE STARTED 2/14/07 **COMPLETED** 2/14/07
GROUND ELEVATION 435 ft **HOLE SIZE** —
DRILLING CONTRACTOR Boretec
GROUND WATER LEVELS:
DRILLING METHOD HSA
AT TIME OF DRILLING —
LOGGED BY MWM **CHECKED BY** SSR
AT END OF DRILLING —
NOTES 4" Asphalt - Parking Area
AFTER DRILLING —

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0					SM		Brown silty SAND, loose to medium dense, moist
							-trace gravel
	SS	100	14-39-43 (82)	MC = 8.90% Fines = 34.00%			-becomes gray -becomes very dense
5	SS	100	50/1"				-no sample recovery -increase in gravel content
	SS	100	25-38-44 (82)	MC = 9.30%			
10							-increase in silt content
	SS	100	32-50/5"	MC = 14.40% Fines = 36.20%			
15							15.0 420.0
	SS	100	50/3"	MC = 6.00%	SM		Gray silty SAND with gravel, very dense, moist
20							

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BORING NUMBER B-1

CLIENT Precott Homes **PROJECT NAME** Camp Fire Site: 8511 - 15th Avenue N.E.

PROJECT NUMBER 0758 **PROJECT LOCATION** Seattle, Washington

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	TESTS	U.S.C.S.	GRAPHIC LOG		MATERIAL DESCRIPTION	
20									
	SS	100	50/3"	MC = 7.80%	SM		20.5	Gray silty SAND with gravel, very dense, moist *(continued)*	414.5
								Boring terminated at 20.5 feet below existing grade. No groundwater encountered during drilling. Boring backfilled with bentonite and cuttings.	
								Bottom of hole at 20.5 feet.	

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BORING NUMBER B-2

CLIENT Precott Homes
PROJECT NAME Camp Fire Site: 8511 - 15th Avenue N.E.
PROJECT NUMBER 0758
PROJECT LOCATION Seattle, Washington
DATE STARTED 2/14/07 **COMPLETED** 2/14/07
GROUND ELEVATION 425 ft **HOLE SIZE**
DRILLING CONTRACTOR Boretec
GROUND WATER LEVELS:
DRILLING METHOD HSA
AT TIME OF DRILLING —
LOGGED BY MWM **CHECKED BY** SSR
AT END OF DRILLING —
NOTES Grass - Landscaped Area
AFTER DRILLING —

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	TESTS	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0					SM		Brown silty SAND, loose, moist (Fill)
							2.5 422.5
	SS	100	3-3-4 (7)	MC = 12.20% Fines = 21.20%			Brown silty SAND with gravel, loose, moist
5							
	SS	100	25-31-48 (79)	MC = 7.60%			-very dense
	SS	100	50/5"	MC = 8.80%			
10							
	SS	100	50/5"	MC = 7.20% Fines = 30.10%	SM		-becomes gray -increase in silt
							-increase in gravel
15							
	SS	100	31-34-32 (66)	MC = 7.60%			
20							

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BORING NUMBER B-2

CLIENT Precott Homes **PROJECT NAME** Camp Fire Site: 8511 - 15th Avenue N.E.

PROJECT NUMBER 0758 **PROJECT LOCATION** Seattle, Washington

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	BLOW COUNTS (N VALUE)	TESTS	U.S.C.S.	GRAPHIC LOG		MATERIAL DESCRIPTION	
20									
	☒ SS	100	50/4"	MC = 6.80%	SM		20.5	Brown silty SAND with gravel, loose, moist *(continued)*	404.5
								Boring terminated at 20.5 feet below existing grade. No groundwater encountered during drilling. Boring backfilled with bentonite and cuttings.	
								Bottom of hole at 20.5 feet.	

APPENDIX B

LABORATORY TEST RESULTS

ES-0758

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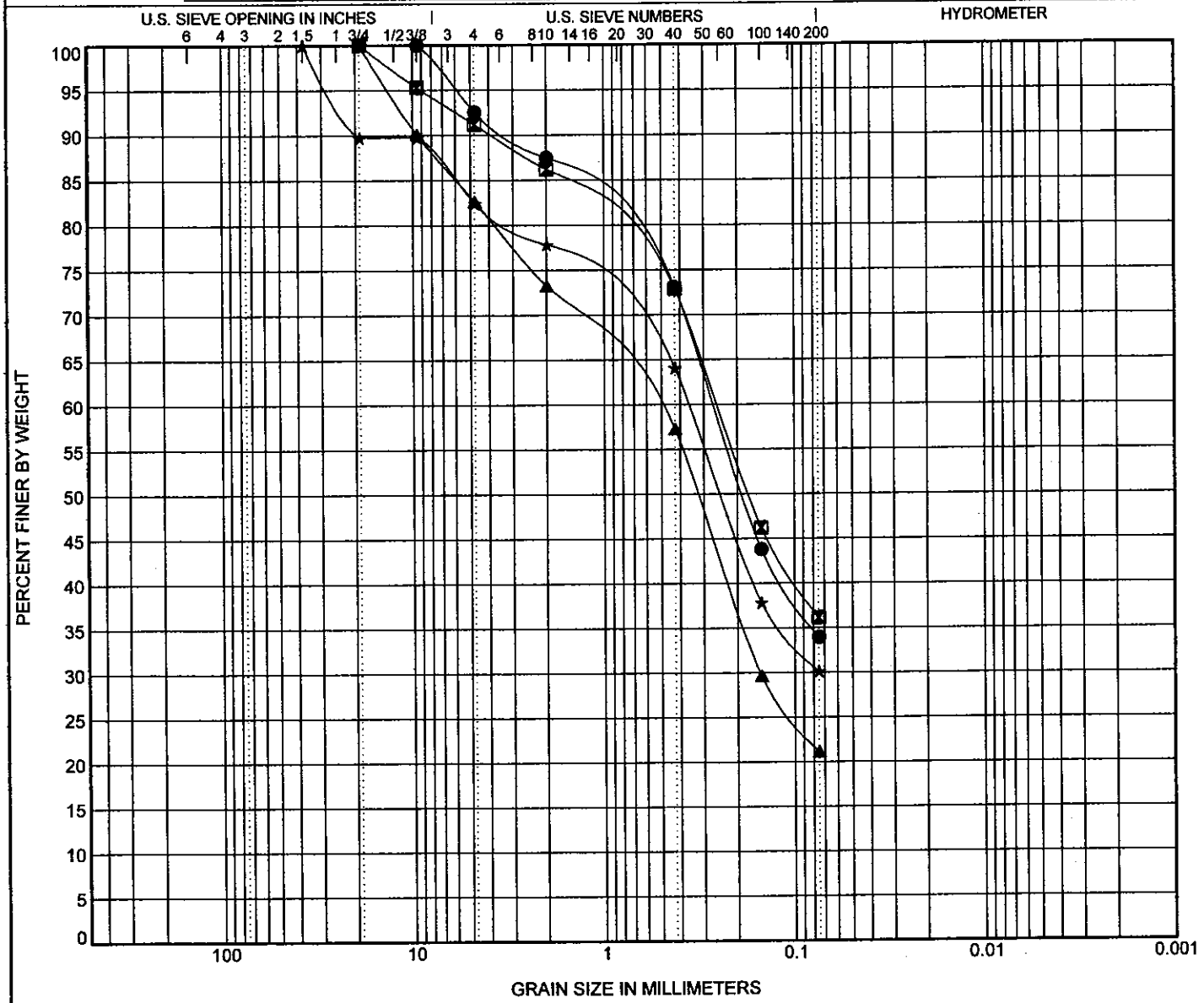
GRAIN SIZE DISTRIBUTION

CLIENT Prescott Homes **PROJECT NAME** Camp Fire

PROJECT NUMBER ES-758 **PROJECT LOCATION** Seattle



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification			Classification	LL	PL	PI	Cc	Cu
●	B-01	2.5ft.	Gray silty SAND, SM					
⊠	B-01	10.0ft.	Gray silty SAND, SM					
▲	B-02	2.5ft.	Brown silty SAND with gravel, SM					
★	B-02	10.0ft.	Gray silty SAND with gravel, SM					

Specimen Identification			D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	B-01	2.5ft.	19	0.267			7.5	58.6	34.0	
⊠	B-01	10.0ft.	19	0.257			8.8	55.0	36.2	
▲	B-02	2.5ft.	19	0.554	0.152		17.4	61.5	21.2	
★	B-02	10.0ft.	37.5	0.362			17.6	52.3	30.1	

GRAIN SIZE ES-758.GPJ GINT US LAB.GDT 2/19/07

REPORT DISTRIBUTION

ES-0758

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Prescott Homes
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Attention: Mr. Greg Kappers