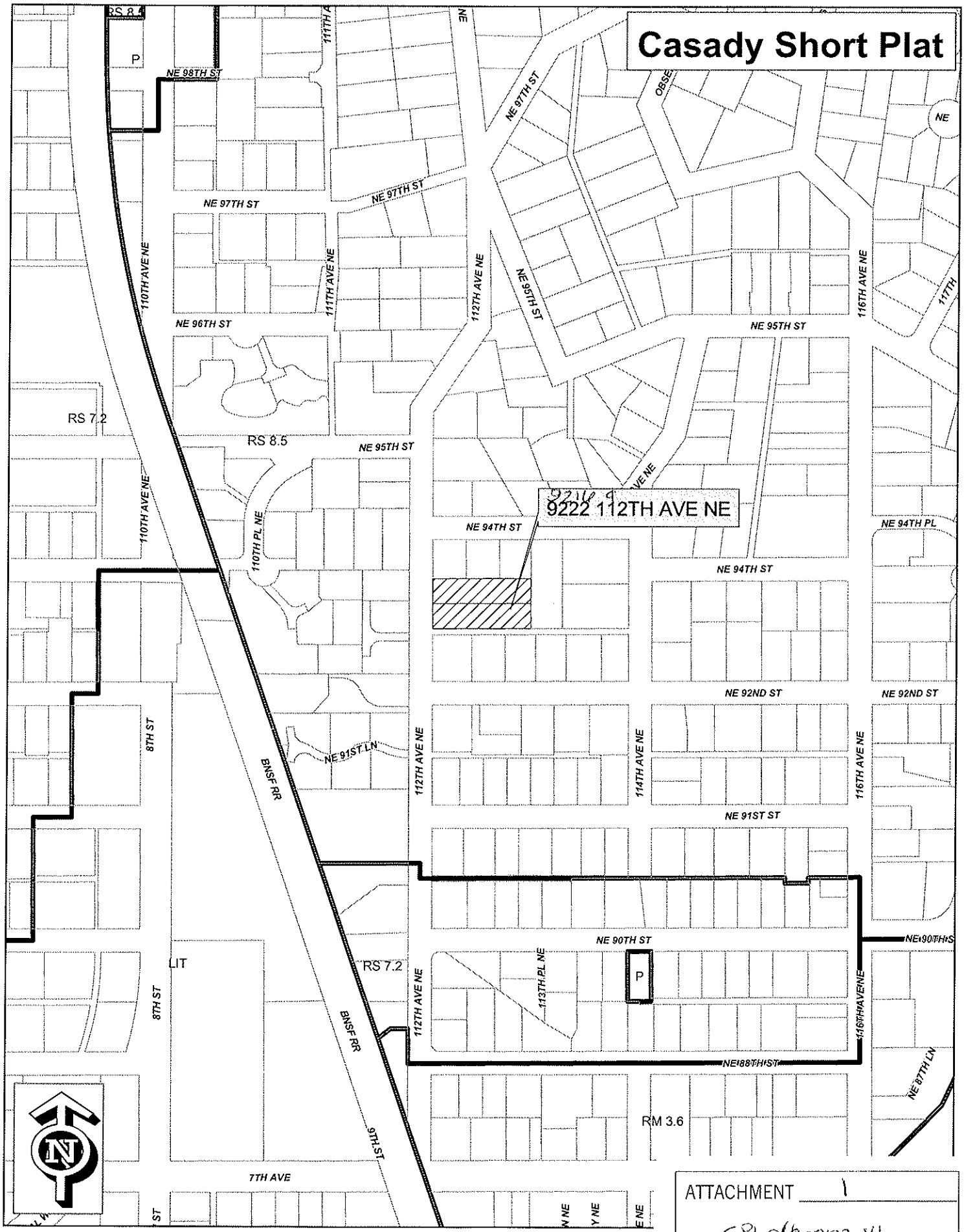
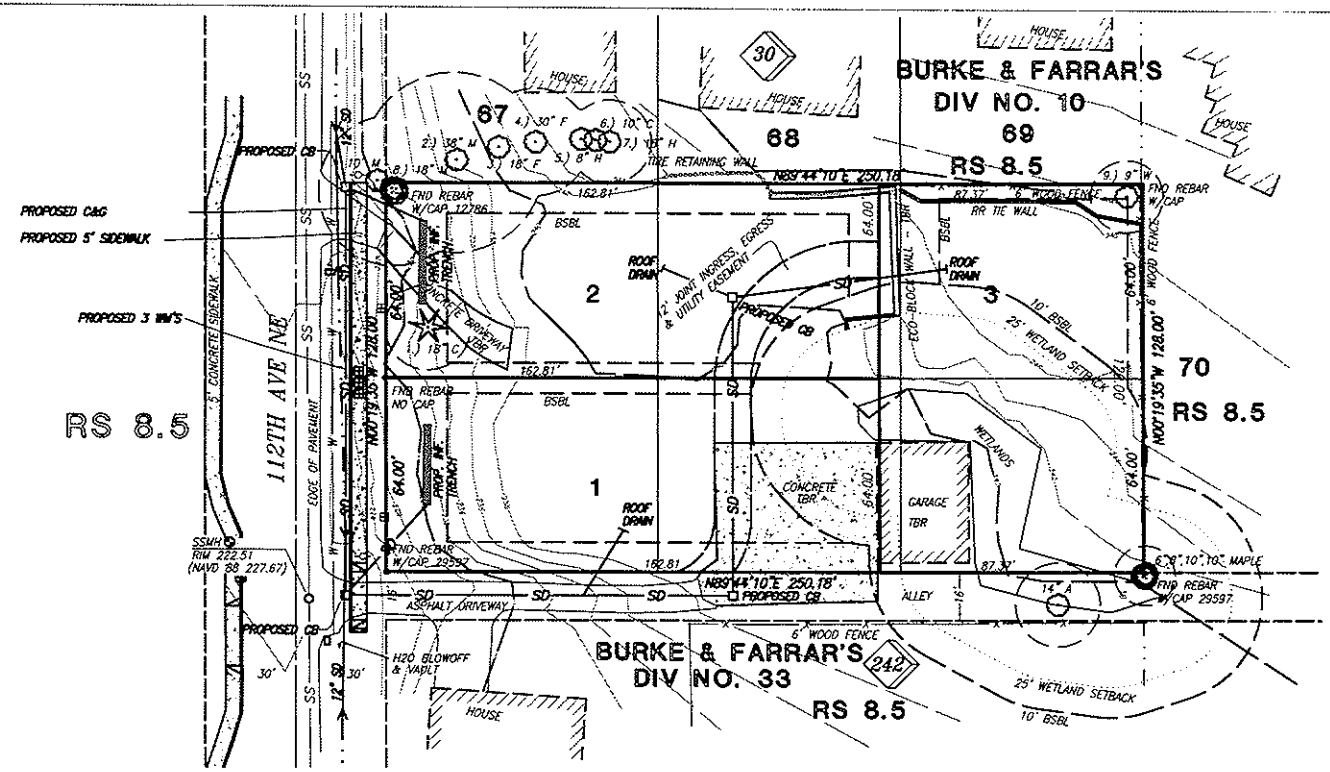
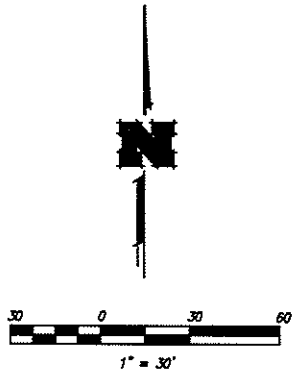
Casady Short Plat



ATTACHMENT 1

SPL06-0020 14





BASIS OF BEARING: BASED ON FOUND CITY OF KIRKLAND MONUMENTS No. 27 & 32, CITY OF KIRKLAND DATUM (NAD 83-91)

METHOD OF SURVEY: DIRECT OBSERVATION – NO ADJUSTMENT NECESSARY

INSTRUMENTATION: 3" GEODIMETER TOTAL STATION – SURVEY ACCURACY MEETS OR EXCEEDS W.A.C. 332-130-090

VERTICAL DATUM: CITY OF KIRKLAND

BENCHMARK: WEST RIM OF SEWER MANHOLE LOCATED 25' WEST OF AND 9' SOUTH OF THE SW PROPERTY CORNER ELEVATION = 222.51'

LEGAL DESCRIPTION:

LOTS 67, 68 AND 69 IN BLOCK 30 OF BURKE & FARRAR'S KIRKLAND ADDITION TO THE CITY OF SEATTLE, DIVISION NO. 10, AS PER PLAT RECORDED IN VOLUME 19 OF PLATS, PAGE 85, RECORDS OF KING COUNTY AUDITOR;
EXCEPT THE SOUTH 64 FEET THEREOF AND EXCEPT THE NORTH 100 FEET THEREOF;

SITUATE IN THE CITY OF KIRKLAND, COUNTY OF KING, STATE OF WASHINGTON.

THE SOUTHERLY 64 FEET OF LOTS 67, 68 AND 69 IN BLOCK 30 OF BURKE & FARRAR'S KIRKLAND ADDITION #10, AS PER PLAT RECORDED IN VOLUME 19 OF PLATS, PAGE 85, RECORDS OF KING COUNTY AUDITOR;
SITUATE IN THE CITY OF KIRKLAND, COUNTY OF KING, STATE OF WASHINGTON.

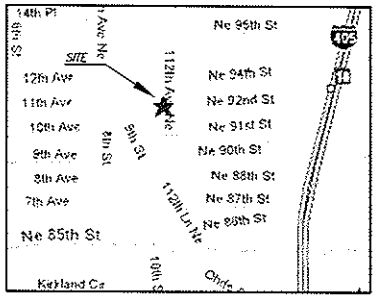
TREE INVENTORY:
PREPARED BY GREENFOREST IN MARCH 2006.

The following table lists the nine subject trees. They are identified by:

- **Tree number**
- **Species** (common name)
- **DBH** (stem diameter in inches measured 4.5 feet from the ground)
- **Dripline** radius measured in feet (as defined by City code)
- **Structure and health rating** ('1' indicates no visible problems or defects, '2' indicates minor visible problems or defects that may require attention if the tree is retained, and '3' indicates significant visible problems or defects and tree maintenance or removal is recommended)
- **Viability** (as defined by City code)
- **Visible defects** obvious structural defects or diseases at time of inspection.
- **Notes** other observations, including TPZ (Tree Protection Zone, or limits of disturbance.)

Tree No.	Species	DBH	Dripline	Structure	Health	Viable	Visible Defects	Notes
1	Western red-cedar	18	14	1	1	Yes; can stand alone.	None visible	TPZ = dripline.
2	Bigleaf maple	38	30	3	1	No	Decay visible at base of crown, and at top of trunk at branch attachment.	This tree is previously topped. Significant decay visible in open wounds. TPZ=property line
3	Douglas-fir	18	12	1	1	Yes; can stand alone	None visible	TPZ=property line
4	Douglas-fir	20	13	1	1	Yes; as a grove tree.	None visible	TPZ=property line
5	Hemlock	8	10	1	1	Yes; as a grove tree.	None visible	TPZ=property line
6	Western red-cedar	10	8	1	1	Yes; as a grove tree	None visible	TPZ=property line
7	Hemlock	18	14	1	1	Yes; can stand alone.	None visible	TPZ=property line
8	Bigleaf maple	18	25	3	1	No	Deadwood in canopy	This tree is previously topped, and a stump sprout. It has four trunks, all ivy covered. Canopy is very asymmetric. TPZ= existing driveway on south, street shoulder on west, dripline on east and north.
9	Corkscrew willow	9	12	1	1	Yes; can stand alone	None visible	TPZ= dripline

VICINITY MAP



LEGEND

BENCHMARK	PROPERTY LINE
FOUND REBAR/CAP	ADJACENT PROPERTY LINE
WETLAND FLAG	EXISTING R.O.W.
FIRE HYDRANT	R.O.W. CENTERLINE
WATER METER	FENCE
SANITARY MANHOLE	UNDERGROUND POWER
POWER POLE	WATER LINE
CULVERT	STORM DRAIN
MAILBOX	SANITARY SEWER
DECIDUOUS TREE	DITCH
EVERGREEN TREE	CONCRETE
(A) ALDER	
(C) CEDAR	
(F) FIR	
(H) HEMLOCK	
(M) MAPLE	
(W) WILLOW	
TBR TO BE REMOVED	
BSBL BUILDING SETBACK LINE	

PROJECT NOTES:

1. WETLAND DELINIATION BY WATERSHED COMPANY AS SHOWN ON TOPOGRAPHY DONE BY RRS, INC. IN JULY 2005.
2. WETLAND SETBACKS, BSBL'S & PROPOSED IMPROVEMENTS PROVIDED BY BEN CASADY.
3. SITE TOPOGRAPHIC SURVEY BY RRS, INC. IN JULY 2005.

TREE INVENTORY:
PREPARED BY GREENFOREST IN MARCH 2006.

PROJECT DATA:

OWNER / APPLICANT / AGENT:
BEN CASADY, CASADY ENTERPRISES, INC.
PO BOX 3475
KIRKLAND, WA 98083
425-822-1840

PROJECT LOCATION: 9216 & 9222 112TH AVE NE
PROPOSED LOTS: 3
AREA: TOTAL AREA = 32,023 SQ FT ±
LOT 1 AREA = 10,420 SQ FT ±
LOT 2 AREA = 10,420 SQ FT ±
LOT 3 AREA = 11,183 SQ FT ±

TAX PARCEL NO.: 1236300326 & 1236300327
ZONING: RS 8.5
WATER: CITY OF KIRKLAND
SEWER: CITY OF KIRKLAND
PHONE: VERIZON
SCHOOLS: LAKE WASHINGTON SCHOOL DISTRICT #414
GAS: PUGET SOUND ENERGY CO.
ELECTRICITY: PUGET SOUND ENERGY CO.

RECEIVED
JUN 16 2006
PLANNING DEPARTMENT

ATTACHMENT 2
SP06-00014

JAMES A. HART
STATE OF WASHINGTON
PROFESSIONAL LAND SURVEYOR
EXPIRES APRIL 22, 2007

JIM HART
AND ASSOCIATES
PROFESSIONAL LAND SURVEYORS
220 - 6th St. KIRKLAND, WASHINGTON 98033
PHONE (425) 822-4171

FOR: PRELIMINARY SHORT PLAT
CASADY ENTERPRISES, INC
PO BOX 3475
KIRKLAND, WA. 98083

SE 1/4 NE 1/4 Section 5, Twp. 25 N.R. 5 E.W.M.

06-03.DWG

SCALE: 1"=30'	DATE: 5/15/06
FIELD BOOK: 492	
DRAWN BY: BJM	
CHECKED BY: EKH	
APPV'D BY: JAH	
PROJECT NO. 06-21	SHEET 1/1

CITY OF KIRKLAND
123 FIFTH AVENUE, KIRKLAND, WASHINGTON 98033-6189 (425) 587-3225

Date:
10/26/2006

DEVELOPMENT STANDARDS
CASE NO.: SPL06-00014
PCD FILE NO.:SPL06-00014

*** FIRE DEPARTMENT CONDITIONS ***

Due to access, a 13D fire sprinkler system is required to be installed in any residence constructed on Lot 3 (only). Prior to installation a separate permit must be obtained from the Fire Department with three sets of sprinkler plans submitted for approval. All systems shall be designed and stamped by a registered professional fire protection engineer licensed in the State of Washington; or by a person possessing a State of Washington Certificate of Competency Level I certification, or greater. The system, including the underground water supply from the source to the sprinkler valve, shall be installed by a licensed sprinkler contractor. REF RCW 18.60 State of Washington.

BUILDING DEPARTMENT COMMENTS

Exterior walls with a fire separation distance of less than 3 feet from the property line shall have not less than 1-hour fire-resistive rating with exposure from both sides. Projections shall not extend to a point closer than 2 feet from the line used to determine the fire separation distance.

--The location of the single family homes shown appear to be in compliance with the IRC requirement.

Prior to issuance of Building, Demolition or Landsurface Modification permit applicant must submit a proposed rat baiting program for review and approval. Kirkland Municipal Ordinance 9.04.050

Building permits submitted on July 1, 2004 or after must comply with the 2003 International Building, Residential and Mechanical Codes and the 2003 Uniform Plumbing Code as adopted and amended by the State of Washington and the City of Kirkland.

Structure must comply with Washington State Energy Code ; and the Washington State Ventilation and Indoor Air Quality Code.

Plumbing meter and service line shall be sized in accordance with the 2003 UPC

Demolition permit required for removal of existing structures, if applicable. (If desired, the applicant has the option of combining demolition activity with a building permit .)

Property is in a landslide hazard area. A geotechnical report required to address development activity. Report must be prepared by a Washington State licensed Professional Engineer. Recommendations contained within the report shall be incorporated into the design of the Short Plat and subsequent structures.

You can review your permit status and conditions at www.kirklandpermits.net

PUBLIC WORKS CONDITIONS

Permit #: SPL06-00014

ATTACHMENT 3
SPL06-00014

Project Name: Casady Short Plat
Project Address: 9216 and 9222 112th Ave. NE
Date: July 12, 2006

Public Works Staff Contacts
Land Use and Pre-Submittal Process:
Rob Jammerman, Development Engineering Manager
Phone: 425-587-3845 Fax: 425-587-3807
E-mail: rjammer@ci.kirkland.wa.us

Building and Land Surface Modification (Grading) Permit Process:
Philip Vartanian, Development Engineer
Phone: 425-587-3800 Fax: 425-587-3807
E-mail: pvartanian@ci.kirkland.wa.us

General Conditions:

1. All public improvements associated with this project including street and utility improvements, must meet the City of Kirkland Public Works Pre-Approved Plans and Policies Manual. A Public Works Pre-Approved Plans and Policies manual can be purchased from the Public Works Department, or it may be retrieved from the Public Works Department's page at the City of Kirkland's web site at www.ci.kirkland.wa.us.

2. This project will be subject to Public Works Permit and Connection Fees. At the pre-application stage, the fees can only be estimated. It is the applicant's responsibility to contact the Public Works Department by phone or in person to determine the fees. The fees can also be review the City of Kirkland web site at www.ci.kirkland.wa.us. The applicant should anticipate the following fees:
- o Water and Sewer connection Fees (paid with the issuance of a Building Permit)
- o Side Sewer Inspection Fee (paid with the issuance of a Building Permit)
- o Water Meter Fee (paid with the issuance of a Building Permit)
- o Right-of-way Fee
- o Review and Inspection Fee (for utilities and street improvements).
- o Traffic Impact Fee (paid with the issuance of Building Permit). For additional information, see notes below.

3. This project is exempt from concurrency review.

4. Building Permits associated with this proposed project will be subject to the traffic impact fees per Chapter 27.04 of the Kirkland Municipal Code. The impact fees shall be paid prior to issuance of the Building Permit(s).

5. Any existing single family homes within this project which are demolished will receive a Traffic Impact Fee credit. This credit will be applied to the first Building Permit that is applied for within the subdivision (and subsequent Building Permits if multiple houses are demolished). The credit amount for each demolished single family home will be equal to the most currently adopted Traffic Impact Fee schedule.

6. All civil engineering plans which are submitted in conjunction with a building, grading, or right-of-way permit must conform to the Public Works Policy titled ENGINEERING PLAN REQUIREMENTS. This policy is contained in the Public Works Pre-Approved Plans and Policies manual.

7. All street improvements and underground utility improvements (storm, sewer, and water) must be designed by a Washington State Licensed Engineer; all drawings shall bear the engineers stamp.

8. All plans submitted in conjunction with a building, grading or right-of-way permit must have elevations which are based on the King County datum only (NAVD 88).

9. A completeness check meeting is required prior to submittal of any Building Permit applications.

10. All subdivision recording mylar's shall include the following note:

Utility Maintenance: Each property owner shall be responsible for maintenance of the sanitary sewer or storm water stub from the point of use on their own property to the point of connection in the City sanitary sewer main or storm water main. Any portion of a sanitary sewer or surface water stub, which jointly serves more than one property, shall be jointly maintained and repaired by the property owners sharing such stub. The joint use and maintenance shall "run with the land" and will be binding on all property owners within this subdivision, including their heirs, successors and assigns.

Public Right-of-way Sidewalk and Vegetation Maintenance: Each property owner shall be responsible for keeping the sidewalk abutting the subject property clean and litter free. The property owner shall also be responsible for the maintenance of the vegetation within the abutting landscape strip. The maintenance shall "run with the land" and will be binding on all property owners within this subdivision, including their heirs, successors and assigns.

Sanitary Sewer Conditions:

1. The existing sanitary sewer main within the 112th Ave. NE public right-of-way along the front of the property is adequate.

2. Provide a 6-inch side sewer to serve each lot. A joint line can serve the two north lots. The existing side sewer stubs can be used provided that they are in the right location, are 6-inch minimum in size, and are video inspected and determined to be in good condition.

Water System Conditions:

1. The existing water main in the public right-of-way along the front of the subject property is adequate to serve this proposed development.

2. Provide a separate 1" minimum water service from the water main to the meter for each lot; City of Kirkland will set the water meter. The existing water service may be used provided that it is in the right location, is not galvanized, and is sized adequately to serve the building (per the Plumbing Code).

3. Provide fire hydrants per the Fire Departments requirements.

4. The existing water flows are inadequate for minimum fire flow for this project; contact the Public Works Department for necessary water system improvements

Surface Water Conditions:

1. Provide temporary and permanent storm water control per the 1998 King County Surface Water Design Manual.

Small Site Drainage Review for Short Plats
Short plats that create between 500-10,000 square feet of new impervious surface and clears less than 2 acres or 35% of the site, whichever is greater, drainage design review should follow Policy D-3 of the Department of Public Works Pre-Approved Plans.

2. As part of the roof and driveway drainage conveyance system for each new house, each lot shall contain a 10 ft. long (min.) infiltration trench with an overflow to the public storm drain system. These infiltration trenches shall be installed with the individual new houses.

3. Construction drainage control shall be maintained by the developer and will be subject to periodic inspections. During the period from April 1 to October 31, all denuded soils must be covered within 15 days; between November 1 and March 31, all denuded soils must be covered within 12 hours. If an erosion problem already exists on the site, other cover protection and erosion control will be required.

4. Provide a separate storm drainage connection for each lot; all roof and driveway drainage must be tight-lined to the storm drainage system.

Street and Pedestrian Improvement Conditions:

1. The subject property abuts 112th Ave. NE (a Collector type street) and an alley. Zoning Code sections 110.10 and 110.25 require the applicant to make half-street improvements in rights-of-way abutting the subject property. Section 110.30-110.50 establishes that this street must be improved with the following:

112th Ave. NE
A. Widen the street to 18 ft. from centerline to face of curb.
B. Install storm drainage, curb and gutter, a 4.5 ft. planter strip with street trees 30 ft. on-center, and a 5 ft. wide sidewalk. Note: the landscape strip may be eliminated if it is found that the frontage is too steep to warrant it.

Alley
A. The alley right-of-way is currently not open for public use.
B. Lots 1 & 2 front on 112th Ave. NE, but will use the alley for primary access. Lot 3 does not front on a typical public right-of-way and will use the alley as primary access. Typically, an alley does not provide sole access to a lot, but in this case it is recommended because of the unusual site topography and the alley access provides a superior site design. An alternate site plan had been provided by the developer that showed how the property could be subdivided with a steep access easement for lot 3 from 112th Ave. NE. This access would have required a substantial cuts and retaining walls and would have added an additional driveway access onto 112th Ave. NE, which is undesirable to the Public Works Department.
C. The alley shall be paved a minimum of 12 ft wide and drainage collection and conveyance shall be provided.
D. Each lot site plan shall show how a car can turn-around on the site and not have to back down the access easement or alley.

2. A 2-inch asphalt street overlay will be required where more than three utility trench crossings occur with 150 lineal ft. of street length or where utility trenches parallel the street centerline. Grinding of the existing asphalt to blend in the overlay will be required along all match lines.

3. It shall be the responsibility of the applicant to relocate any above-ground or below-ground utilities which conflict with the project associated street or utility improvements.

4. Underground all new and existing on-site utility lines and overhead transmission lines.

5. Zoning Code Section 110.60.9 establishes the requirement that existing utility and transmission (power, telephone, etc.) lines on-site and in rights-of-way adjacent to the site must be underground. The Public Works Director may determine if undergrounding transmission lines in the adjacent right-of-way is not feasible and defer the undergrounding by signing an agreement to participate in an undergrounding project, if one is ever proposed. In this case, the Public Works Director has determined that undergrounding of existing overhead utility on 112th Ave. NE is not feasible at this time and the undergrounding of off-site/frontage transmission lines should be deferred with a concomitant agreement or LID No Protest Agreement.

CITY OF KIRKLAND
Planning and Community Development Department
123 Fifth Avenue, Kirkland, WA 98033 425.587-3225
www.ci.kirkland.wa.us

DEVELOPMENT STANDARDS LIST

File: Casady Short Plat, File No. SPL06-00014

Subdivision Standards

22.28.030 Lot Size. Unless otherwise approved in the preliminary subdivision or short subdivision approval, all lots within a subdivision must meet the minimum size requirements established for the property in the Kirkland zoning code or other land use regulatory document.

22.28.130 Vehicular Access Easements. The applicant shall comply with the requirements found in the Zoning Code for vehicular access easements or tracts.

22.28.210 Significant Trees The applicant shall design the plat so as to comply with the tree management requirements set forth in Chapter 95 of the Kirkland Zoning Code. Kirkland Zoning Code Section 95.35 states that it is the City's objective to retain as many viable trees as possible while still allowing the development proposal to move forward in a timely manner. The Planning Official is authorized to require site plan alterations to retain Type 1 trees provided the alterations do not reduce the applicant's development potential allowed by the Kirkland Zoning Code. The applicant shall retain all viable trees at the short plat approval stage and all viable trees with the required Land Surface Modification Permit, except for those trees needed to be removed for installation of the plat infrastructure improvements. The applicant shall also retain all viable trees during the development of each single family lot except for those trees required to be removed for the construction of the house and other associated site improvements. A Tree Plan III was submitted with the short plat. There is one significant trees on the site, which is a viable tree. A minimum of 22 tree credits are required for the subject site. If at any stage of development, tree retention on the site falls below the minimum required tree density, replanting shall be required per KZC Section 95.35.

22.32.010 Utility System Improvements. All utility system improvements must be designed and installed in accordance with all standards of the applicable serving utility.

22.32.030 Stormwater Control System. The applicant shall comply with the construction phase and permanent stormwater control requirements of the Municipal Code.

22.32.050 Transmission Line Undergrounding. The applicant shall comply with the utility lines and appurtenances requirements of the Zoning Code.

22.32.060 Utility Easements. Except in unusual circumstances, easements for utilities should be at least ten feet in width.

27.06.030 Park Impact Fees. New residential units are required to pay park impact fees prior to issuance of a building permit. The impact fee for new single-family dwelling units is $612. The impact fee for new multifamily dwelling units is $430. Exemptions and/or credits may apply pursuant to KMC 27.06.050 and KMC 27.06.060. If a property contains an existing unit to be removed, a "credit" for that unit shall apply to the first building permit of the subdivision in the amount of $612 for a single family unit and $430 for a multi-family unit.

Prior to Recording:

22.20.362 Short Plat - Title Report. The applicant shall submit a title company certification which is not more than 30 calendar days old verifying ownership of the subject property on the date that the property owner(s) (as indicated in the report) sign(s) the short plat documents; containing a legal description of the entire parcel to be subdivided; describing any easements or restrictions affecting the property with a description, purpose and reference by auditor's file number and/or recording number; any encumbrances on the property; and any delinquent taxes or assessments on the property.

22.20.366 Short Plat - Lot Corners. The exterior short plat boundary and all interior lot corners shall be set by a registered land surveyor. If the applicant submits a bond for construction of short plat improvements and installation of permanent interior lot corners, the City may allow installation of temporary interior lot corners until the short plat improvements are completed.

22.20.390 Short Plat - Improvements. The owner shall complete or bond all required right-of-way, easement, utility and other similar improvements.

22.32.020 Water System. The applicant shall install a system to provide potable water, adequate fire flow and all required fire-fighting infrastructure and appurtenances to each lot created.

22.32.040 Sanitary Sewer System. The developer shall install a sanitary sewer system to serve each lot created.

22.32.080 Performance Bonds. In lieu of installing all required improvements and components as part of a plat or short plat, the applicant may propose to post a bond, or submit evidence that an adequate security device has been submitted and accepted by the service provider (City of Kirkland and/or Northshore Utility District), for a period of one year to ensure completion of these requirements within one year of plat/short plat approval.

Prior to occupancy:

22.32.020 Water System. The applicant shall install a system to provide potable water, adequate fire flow and all required fire-fighting infrastructure and appurtenances to each lot created.

22.32.040 Sanitary Sewer System. The developer shall install a sanitary sewer system to serve each lot created.

22.32.090 Maintenance Bonds. A two-year maintenance bond may be required for any of the improvements or landscaping installed or maintained under this title.

Zoning Code Standards

85.25.1 Geotechnical Report Recommendations. The geotechnical recommendations contained in the report by **J. Keith Cross, PE** dated **April 13, 2006** shall be implemented.

85.25.3 Geotechnical Professional On-Site. A qualified geotechnical professional shall be present on site during land surface modification and foundation installation activities.

90.45 Wetlands and Wetland Buffers. No land surface modification may take place and no improvement may be located in a wetland or within the environmentally sensitive area buffers for a wetland, except as specifically provided in this Section.

90.50 Wetland Buffer Fence. Prior to development, the applicant shall install a six-foot high construction phase fence along the upland boundary of the wetland buffer with silt screen fabric installed per City standard. The fence shall remain upright in the approved location for the

duration of development activities. Upon project completion, the applicant shall install between the upland boundary of all wetland buffers and the developed portion of the site, either 1) a permanent 3 to 4 foot tall split rail fence, or 2) permanent planting of equal barrier value.

95.35 Plant Replacement. The applicant shall replace any plants required by this Code that are unhealthy or dead for a period of two years after initial planting.

95.45 Tree Installation Standards. All supplemental trees to be planted shall conform to the Kirkland Plant List. All installation standards shall conform to Kirkland Zoning Code Section 95.45.

100.25 Sign Permits. Separate sign permit(s) are required.

105.20 Required Parking. Two parking spaces are required for each detached dwelling unit.

110.60.5 Street Trees. All trees planted in the right-of-way must be approved as to species by the City. All trees must be two inches in diameter at the time of planting as measured using the standards of the American Association of Nurserymen with a canopy that starts at least six feet above finished grade and does not obstruct any adjoining sidewalks or driving lanes.

115.25 Work Hours. It is a violation of this Code to engage in any development activity or to operate any heavy equipment before 7:00 am. or after 8:00 pm Monday through Friday, or before 9:00 am or after 6:00 pm Saturday. No development activity or use of heavy equipment may occur on Sundays or on the following holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving, and Christmas Day. The applicant will be required to comply with these regulations and any violation of this section will result in enforcement action, unless written permission is obtained from the Planning official.

115.40 Fence Location. Fences over 6 feet in height may not be located in a required setback yard. A detached dwelling unit abutting a neighborhood access or collector street may not have a fence over 3.5 feet in height within the required front yard. No fence may be placed within a high waterline setback yard or within any portion of a north or south property line yard, which is coincident with the high waterline setback yard.

115.42 Floor Area Ratio (F.A.R.) limits. Floor area for detached dwelling units is limited to a maximum floor area ratio in low density residential zones. See Use Zone charts for the maximum percentages allowed. This regulation does not apply within the disapproval jurisdiction of the Houghton Community Council.

115.43 Garage Setback Requirements for Detached Dwelling Units in Low Density Zones. The garage must be set back five feet from the remaining portion of the front façade of a dwelling unit if: the garage door is located on the front façade of the dwelling unit; and the lot is at least 50 feet wide at the front setback line; and the garage width exceeds 50 percent of the combined dimensions of the front facades of the dwelling unit and the garage. This regulation does not apply within the disapproval jurisdiction of the Houghton Community Council.

115.75.2 Fill Material. All materials used as fill must be non-dissolving and non-decomposing. Fill material must not contain organic or inorganic material that would be detrimental to the water quality, or existing habitat, or create any other significant adverse impacts to the environment.

115.90 Calculating Lot Coverage. The total area of all structures and pavement and any other impervious surface on the subject property is limited to a maximum percentage of total lot area. See the Use Zone charts for maximum lot coverage percentages allowed. Section 115.90 lists exceptions to total lot coverage calculations including: wood decks; access easements or tracts serving more than one lot that does not abut a right-of-way; detached dwelling unit driveways that are outside the required front yard; grass grid pavers; outdoor swimming pools; and pedestrian walkways. See Section 115.90 for a more detailed explanation of these exceptions.

115.95 Noise Standards. The City of Kirkland adopts by reference the Maximum Environmental Noise Levels established pursuant to the Noise Control Act of 1974, RCW 70.107. See Chapter 173-60 WAC. Any noise, which injures, endangers the comfort, repose, health or safety of persons, or in any way renders persons insecure in life, or in the use of property is a violation of this Code.

115.115.3.g Rockeries and Retaining Walls. Rockeries and retaining walls are limited to a maximum height of four feet in a required yard unless certain modification criteria in this section are met. The combined height of fences and retaining walls within five feet of each other in a required yard is limited to a maximum height of 6 feet, unless certain modification criteria in this section are met.

115.115.3.n Covered Entry Porches. In low density residential zones, covered entry porches on detached dwelling units may be located within 13 feet of the front property line if certain criteria in this section are met. This incentive is not effective within the disapproval jurisdiction of the Houghton Community Council.

115.115.3.o Garage Setbacks. In low density residential zones, garages meeting certain criteria in this section can be placed closer to the rear property line than is normally allowed in those zones.

115.115.5.a Driveway Width and Setbacks. For a detached dwelling unit, a driveway and/or parking area shall not exceed 20 feet in width in any required front yard, and shall not be closer than 5 feet to any side property line unless certain standards are met.

115.135 Sight Distance at Intersection. Areas around all intersections, including the entrance of driveways onto streets, must be kept clear of sight obstruction as described in this section.

145.22.2 Public Notice Signs. Within seven (7) calendar days after the end of the 21-day period following the City's final decision on the permit, the applicant shall remove all public notice signs.

Prior to recording:

110.60.5 Landscape Maintenance Agreement. The owner of the subject property shall sign a landscape maintenance agreement, in a form acceptable to the City Attorney, to run with the subject property to maintain landscaping within the landscape strip and landscape island portions of the right-of-way (see Attachment 18). It is a violation to pave or cover the landscape strip with impervious material or to park motor vehicles on this strip.

110.60.6 Mailboxes. Mailboxes shall be installed in the development in a location approved by the Postal Service and the Planning Official. The applicant shall, to the maximum extent possible, group mailboxes for units or uses in the development.

Prior to issuance of a grading or building permit:

85.25.1 Geotechnical Report Recommendations. A written acknowledgment must be added to the face of the plans signed by the architect, engineer, and/or designer that he/she has reviewed the geotechnical recommendations and incorporated these recommendations into the plans.

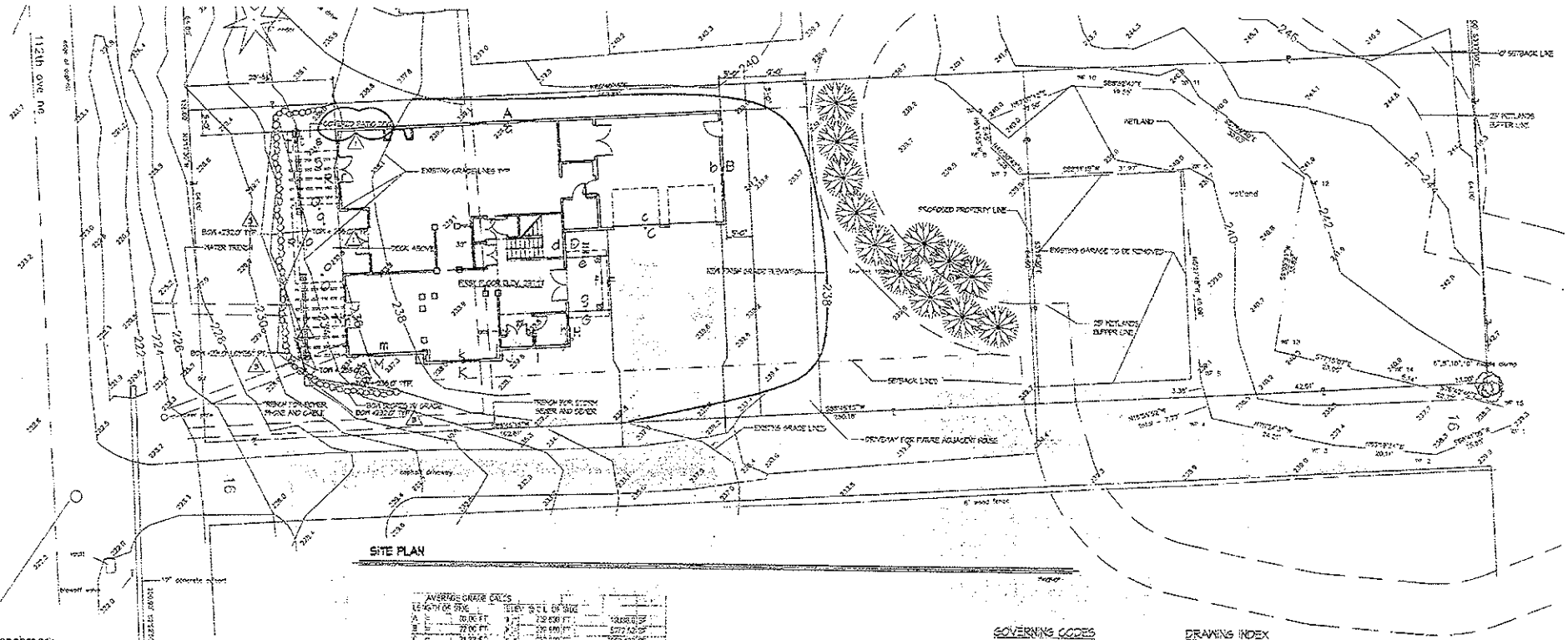
85.40 Natural Greenbelt Protective Easement. The applicant shall submit for recording a natural greenbelt protective easement, in a form acceptable to the City Attorney, for recording with King County (see Attachment 13).

85.45 Liability. The applicant shall enter into an agreement with the City, which runs with the property, in a form acceptable to the City Attorney, indemnifying the City for any damage resulting from development activity on the subject property which is related to the physical condition of the property (see Attachment *19*).

90.50 Wetland Buffer Fence. Prior to development, the applicant shall install a six-foot high construction phase fence along the upland boundary of the wetland buffer with silt screen fabric installed per City standard. The fence shall remain upright in the approved location for the duration of development activities. Upon project completion, the applicant shall install between the upland boundary of all wetland buffers and the developed portion of the site, either 1) a permanent 3 to 4 foot tall split rail fence, or 2) permanent planting of equal barrier value.
95.35.2. b. (3) (b) i Tree Protection Techniques. A description and location of tree protection measures during construction for trees to be retained must be shown on demolition and grading plans.
95.35.6 Tree Protection. Prior to development activity or initiating tree removal on the site, vegetated areas and individual trees to be preserved shall be protected from potentially damaging activities. Protection measures for trees to be retained shall include (1) placing no construction material or equipment within the protected area of any tree to be retained; (2) providing a visible temporary protective chain link fence at least 4 feet in height around the protected area of retained trees or groups of trees until the Planning Official authorizes their removal; (3) installing visible signs spaced no further apart than 15 feet along the protective fence stating "Tree Protection Area, Entrance Prohibited" with the City code enforcement phone number; (4) prohibiting excavation or compaction of earth or other damaging activities within the barriers unless approved by the Planning Official and supervised by a qualified professional; and (5) ensuring that approved landscaping in a protected zone shall be done with light machinery or by hand.
27.06.030 Park Impact Fees. If a property contains an existing unit to be removed, a "credit" for that unit shall apply to the first building permit of the subdivision in the amount of $612 for a single family unit and $430 for a multi-family unit.

Prior to occupancy:

85.25.3 Geotechnical Professional On-Site. The geotechnical engineer shall submit a final report certifying substantial compliance with the geotechnical recommendations and geotechnical related permit requirements.
95.50 Tree Maintenance The applicant shall submit a 5-year tree maintenance agreement to the Planning Department to maintain all pre-existing trees designated for preservation and any supplemental trees required to be planted.
107.90 Maintenance Bonds. The applicant shall establish a two-year maintenance bond to ensure maintenance of the storm water system.
110.60.5 Landscape Maintenance Agreement. The owner of the subject property shall sign a landscape maintenance agreement, in a form acceptable to the City Attorney, to run with the subject property to maintain landscaping within the landscape strip and landscape island portions of the right-of-way (see Attachment 18). It is a violation to pave or cover the landscape strip with impervious material or to park motor vehicles on this strip.
110.60.6 Mailboxes. Mailboxes shall be installed in the development in a location approved by the Postal Service and the Planning Official. The applicant shall, to the maximum extent possible, group mailboxes for units or uses in the development.
110.75 Bonds. The City may require or permit a bond to ensure compliance with any of the requirements of the Required Public Improvements chapter.



Site benchmark – west rim sewer manhole elevation = 222.51'

legal description

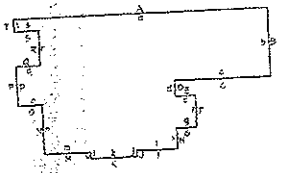
tax lot 1236300397
Lots 67,68 and 69, Block 30Burke & Farrar's Kirkland addition to the city of seattle, division no. 10, according to the plat recorded in volume 19 of plats, page 85, in king county, washington, except the south 64 feet thereof and except the north 100 feet thereof.

tax lot 1236300326
the southerly 64 feet of lots 67,68 and 69, block 30, burke & farrar's kirkland addition division no. 10,according to the plat thereof, recorded in volume 19, of plats, page 85, in king county, washington

© THIS DRAWING IS THE PROPERTY OF THE DESIGNER. NO REPRODUCTION OR USE WITHOUT WRITTEN PERMISSION.

AVERAGE GRADE CALCS			
LENGTH OF SIDE			
A	30.00 FT	229.500 FT	6885.00 SF
B	22.00 FT	230.500 FT	5072.00 SF
C	31.33 FT	233.500 FT	7316.49 SF
D	5.00 FT	232.500 FT	1162.50 SF
E	6.50 FT	232.500 FT	1511.25 SF
F	10.33 FT	232.500 FT	2401.06 SF
G	6.58 FT	232.500 FT	1529.70 SF
H	5.16 FT	232.500 FT	1199.40 SF
I	15.33 FT	232.500 FT	3563.29 SF
J	2.00 FT	232.500 FT	465.00 SF
K	15.83 FT	232.500 FT	3679.23 SF
L	2.00 FT	232.500 FT	465.00 SF
M	15.00 FT	232.500 FT	3487.50 SF
N	15.41 FT	232.500 FT	3583.33 SF
O	8.00 FT	232.500 FT	1860.00 SF
P	13.00 FT	232.500 FT	3022.50 SF
Q	8.00 FT	232.500 FT	1860.00 SF
R	11.25 FT	232.500 FT	2616.56 SF
S	8.00 FT	232.500 FT	1860.00 SF
T	6.58 FT	232.500 FT	1529.70 SF
SUB TOTAL	238.00 FT	SUB TOTAL	55317.23 SF
		GROSS F.A.R.	232.50 AVERAGE GRADE
		238.0 FT	

MAXIMUM BUILDING ELEVATION ALLOWED: 243.25'



GOVERNING CODES

2003 IBC,2003 IFC, 2003 UMC, 2003 IPC, 2003 IEC AND 2006 A.R.S. FIRE MARSHALS STATE AMENDMENTS

LOT COVERAGE CALCULATIONS

SQUARE AREA NOTE

LOT	55,317.23 SF
GARAGE -	576 SF
FIRST FLOOR -	1760 SF
SECOND FLOOR -	2,330 SF
SECOND FLR DECK -	164 SF
TOTAL	2,330 SF
ALLOWABLE @ 30% OF SITE	16,594.5 SF
MAX	44.0%

VOLUMEGRAMS

LOT	55,317.23 SF
DRIVE AND WALKS -	1,176 SF
DRIVE FOR FUTURE -	768 SF
GARAGE -	576 SF
FIRST FLOOR -	1,760 SF
PATIO AND PORCH -	1,004 SF
TOTAL	4,936 SF
ALLOWABLE @ 50% OF SITE	27,658.6 SF
% OF LOT COVERED	8.9%

DRAWING INDEX

A-1	SITE PLAN
A-2	FOUNDATION PLAN
A-3	FIRST FLOOR FRAMING PLAN
A-4	FIRST FLOOR PLAN
A-5	SECOND FLOOR FRAMING PLAN
A-6	SECOND FLOOR PLAN
A-7	ROOF FRAMING PLAN
A-8	ELEVATIONS
A-9	ELEVATIONS
S-19	SECTION

WSEC

PRESCRIPTIVE METHOD
WSEC CHAPTER 5 OPTION IV
WSEC CHAPTER 4
HEATED FLOOR AREA 5284 SF
FURNACE RATING 90% EFF.
65,000 BTU MAX SIZE

VALUES

DOORS	30
WINDOWS	
SINGLE HUNG	40
PICTURE	31

INSULATE PIPING IN CRAWL SPACE W/ 1/2-IN WRAP.

NORTH

REVISIONS
SYM DATE DESCRIPTI

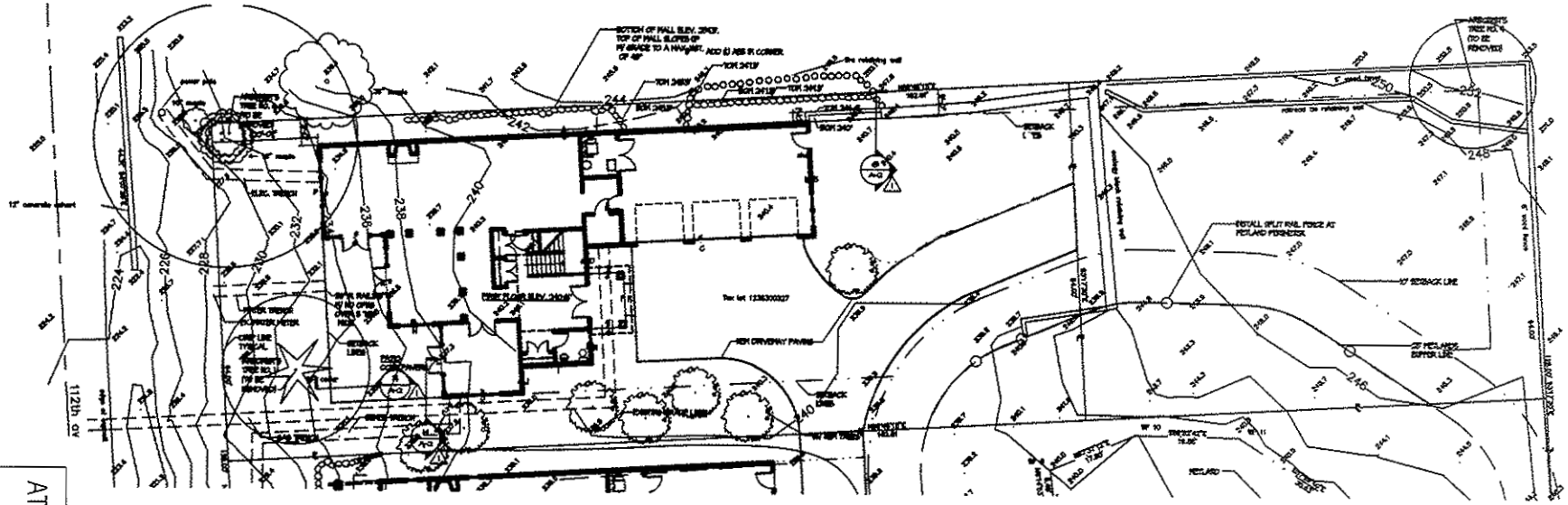
THE RIGHL ARCHITECTS
25420 S.E. 28TH STREET
SAMMAMISH WA 98075

A RESIDENCE FOR
CASADY ENTERPRISES
9216 112TH AVENUE N.E.

SITE PLAN

A-1

ATTACHMENT 4
SPR06-00014



SITE PLAN

ATTACHMENT 5
SP06-00014

tax lot 1238300327
Lots 67,68 and 69, Block 30,Burke & Farrar's Kirkland addition to the city of seattle.
Division no. 10, according to the plat recorded in volume 19 of plats, page 85, in
king county, washington, except the south 64 feet thereof and except the north 100 feet thereof.

tax lot 1238300326
the southerly 64 feet of lots 67,68 and 69, block 30, burke & farrar's kirkland addition
division no. 10,according to the plat thereof, recorded in volume 19, of plats, page 85, in king county, washington

TREE PLAN:

LOT SIZE MORE SPACIOUS(CREDIT) TREE BANKING(A) VISE IS REQUIRED.
(3) NEW TREES 8' TALL W 2" CALIPER TO BE PLANTED AS SHOWN

AVERAGE GRADE CALCS

LENGTH OF SIDE			ELEV. @ C.L. OF SIDE		
A	=	93.33 FT	a =	241.830 FT	22551.33 SF
B	=	22.00 FT	b =	240.600 FT	5293.2 SF
C	=	43.40 FT	c =	240.450 FT	10439.53 SF
D	=	5.00 FT	d =	240.270 FT	1201.35 SF
E	=	6.66 FT	e =	240.050 FT	1599.733 SF
F	=	10.33 FT	f =	240.040 FT	2479.613 SF
G	=	6.66 FT	g =	240.050 FT	1599.733 SF
H	=	6.66 FT	h =	240.150 FT	1599.399 SF
I	=	13.33 FT	i =	240.019 FT	3199.353 SF
J	=	5.00 FT	j =	239.390 FT	1195.95 SF
K	=	15.33 FT	k =	238.570 FT	3657.278 SF
L	=	13.66 FT	l =	237.300 FT	3241.518 SF
M	=	9.66 FT	m =	237.110 FT	2290.483 SF
N	=	17.33 FT	n =	236.650 FT	4101.145 SF
O	=	11.66 FT	o =	235.150 FT	2741.949 SF
P	=	19.00 FT	p =	233.740 FT	4267.32 SF
SUB TOTAL		299.01 FT		SUB TOTAL	71393.76 SF

71393.76 S.F. = 239.56' AVERAGE GR.
299.01 FT

MAX BUILDING ELEVATION (25' HEIGHT) = 264.56

GOVERNING CODES

[illegible]

LOT COVERAGE CALCULATIONS

[illegible]

DRAWING INDEX

A-1 SITE PLAN
A-2 FOUNDATION PLAN
A-3 FIRST FLOOR FRAMING PLAN
A-4 FIRST FLOOR PLAN
A-5 SECOND FLOOR FRAMING PLAN
A-6 SECOND FLOOR PLAN
A-7 ROOF FRAMING PLAN
A-8 ELEVATIONS
A-9 ELEVATIONS
A-10 SECTION
A-11 SECTIONS

MISC.

PRESCRIPTIVE METHOD
REF: CHAPTER 6 OPTION IV
REF: CHAPTER 4
HEATED FLOOR AREA 4,640 SF
FURNACE RATING 92% EFF.
85,000 BTU MAX SIZE.

DAMPERS:
DOORS .20
WINDOWS
CASEMENT .40
FIXEDRE .31

INSULATE PIPING IN CRAWL SPACE W R-5 WRAP.

RECEIVED
OCT 12 2006
PLANNING DEPARTMENT

A.M.
BY

REVISIONS
BY DATE DESCRIPTION
1 6/22/06 CITY CORRECTIONS

THE HUBER ARCHITECTS
20200 S.E. 28TH STREET
BANNAMAH, WA 98075
P.O. BOX 70, ISSAQUAH, WA 98027
425-557-9660

A RESIDENCE FOR
CASADY ENTERPRISES
12223 112TH AVENUE N.E.
KIRKLAND, WA

NORTH

SITE PLAN

A-1

J. KEITH CROSS, P.E.
Geotechnical Engineering Consultant
(425) 487-1860
7216 NE 165th Court, Kenmore, Washington 98028-4267

April 13, 2006

RECEIVED
AUG - 4 2006
_____ AM _____ PM
PLANNING DEPARTMENT
BY_____

Ben Casady
Casady Enterprises Inc.
P.O. Box 3475
Kirkland, Washington 98033-3475

Preliminary Subsurface Explorations and Geotechnical Engineering Evaluations, Proposed Three Lot Short Plat, 9216 and 9222 112th Avenue NE, Kirkland, Washington Project No. 3055-011

This report is prepared to summarize the results of a preliminary subsurface exploration and geotechnical engineering study conducted for a proposed short plat of two existing lots with new residences. At the time of this study, I have not been provided with details of the proposed development, but understand that it is likely to consist of three (3) residences likely to be two-story wood framed houses, possibly with daylight basements. The main floors of the houses are likely to be at or near the existing grade. Access into the properties is from the west up the moderate slope which borders the east side of 112th Avenue NE.

The discussions presented in this report address preliminarily identified geotechnical aspects of this project, and include information requested by the City of Kirkland Planning Department as part of the Zoning Code. Our scope of work has been conducted to address slope stability issues outlined in Chapter 85 of the City of Kirkland Zoning Code. We have discussed general development concepts with you at the time of our explorations in early October, 2005.

The purpose of this study is to assist in project planning, design and permitting by characterizing slope and subsurface conditions within the lot. Geotechnical engineering recommendations for subgrade preparation, identification of bearing soils, soil bearing capacities for shallow foundations, and drainage systems will be offered. Comments on development related to erosion, slope stability and seismic design input are also presented, where applicable, to comply with Chapter 85 of the Zoning Code.

ATTACHMENT 6
SPL06-00014

The scope of work performed for this study included a review of geologic literature in my files, subsurface explorations using a rubber tire mounted backhoe, geotechnical engineering evaluations, and the preparation of this report.

Site Conditions

The subject two lot property currently contains two single story residences with detached garages. The site vegetation is primarily grass with scattered shrubbery and a few significant trees which are primarily in the western portion of the site. There is approximately a 17 foot elevation difference between the road and the general site grade. Five (5) feet if this difference is located in the right-of-way east of the paved portion of 112th Avenue NE. Retaining walls of varying types are located along the northern property line of the north lot. The area east of the garage on the northern lot is terraced and has previously been used as a garden.

The eastern portion of the southern lot has been identified by others as having wet ground conditions that may meet wetland criteria. An existing drain system appears to collect and remove water from this area.

Field Explorations

Our field explorations were performed on October 7, 2005. A series of five (5) backhoe exploration pits were placed around the proposed building areas. Pit depths ranged from about 6 to 9 feet. Pit locations are shown on the accompanying site plan, Figure 1. Elevation control used in our study was established by interpolation of the site boundary and topographic map provided by the owner.

Exploration locations were estimated from available reference points using the provided site plan, and should be considered accurate only to the degree of the method employed. Records of encountered soil types and conditions were maintained in the field and are summarized in the accompanying exploration pit logs. Soils observed in the explorations were visually described in the field.

Geologic Setting and Stratigraphy

Subsurface conditions at this site have been interpreted through our exploration data and observations. Subgrade conditions within this property may have been locally modified slightly from the native state. The exact nature and detail of the variation between explorations may not become apparent until site preparation activities.

Geologic and soils mapping literature reviewed for this study includes;

1) Geologic Map Of The Kirkland Quadrangle, Washington, by James P. Minard, 1983, U.S. Geological Survey Miscellaneous Field Studies Map MF-1543.

2) Soil Survey Of The King County Area, Washington, 1973, U.S. Soil Conservation Service, Map Sheet 1.

The USGS mapping indicates that the land in the immediate vicinity has been formed over deposits of Vashon age Glacial Till sediments which overly the "Advance Outwash" and "Transitional Beds" mapped to the west. The USGS mapping shows the advance outwash to occur along the base of the slope near the railroad grade to the west. The underlying transitional beds are exposed further north in the valley to the west which contains the railroad alignment. The weight of the glacial ice contributed to the densification of these deposits which were deposited prior to the glacial ice advance.

The SCS mapping agriculturally classifies soils within the vicinity as Indianola loamy fine sand, 4% to 15% slopes, (InC) and Alderwood gravelly sandy loam, 6% to 15% slopes, (AgC). Indianola series soils form on sandy recessional stratified glacial drift materials. Alderwood series soils form on glacial till materials.

The subsurface explorations conducted for this evaluation indicate that a variation of the geologic and agricultural mapping exists at the subject site. In summary, our explorations encountered a variety of soils that are commonly associated with glacial ice marginal deposition. These soils varied from somewhat uniform fine to medium sands to stratified glacial drift. There were very dense sand and gravel deposits in the western portion of the site which may have been deposited near a sub-ice water flow.

The upper soils in exploration pit 2 suggest that there may be small pockets of fill on the site. This fill does not appear to be generally arealy extensive, based on surface

observations, and probably occurs as sporadic small pockets that are unlikely to have a significant impact on site development considerations.

Hydrology

Ground water seepage, was observed primarily in the eastern sandy soils. The western portion of the site appeared to be substantially dryer than the eastern part. This is likely due to the glacial drift and silty soils acting as a dam to contain ground water into the sandy soil deposits in the eastern portion of the properties.

Landsliding and Slope Stability

Processes which formed the site topography on this property likely involved a combination of glacial ice scouring, surface water erosion and deposition, and, to a minor extent, various backwasting processes. It is expected that these processes were active to some extent during Holocene times (the last 10,000 years, approximately). However, the actual history and time over which these processes acted are not immediately apparent. It is likely that ground/surface water migration patterns which were instrumental in this process are no longer active, or have been altered significantly (by development of the Kirkland area) from the time of formation.

Evidence of modern landsliding within the study area is not observed. The west facing sloping portion of the lot appears to be stable in terms of failures which would involve the dense slope core soils. The vegetative cover is not suggestive of ground conditions susceptible to landsliding. There are two large fir trees which are generally straight indicating a low propensity for slope creep.

CONCLUDING OPINIONS

General

Based on our explorations and evaluations, it is our opinion that the subject property should be compatible with the proposed development. When properly prepared and worked, the dense native glacial soils at this site should provide a sound base of support for foundations, fill and pavements. However, from a geotechnical standpoint, site conditions present certain limitations. Primary constraints are related to 1)

earthwork of the upper loose slightly silty to silty sands when they have high water contents and 2) retaining wall systems for the grade transitions along the north property line. At the time of this report, details of site grading associated with development along the northern property boundary have not been provided for specific evaluation. Erosion and storm water controls are expected to be relatively straight forward with nominal effort.

Environmentally Sensitive Areas (ESA) Applicability

I understand that City of Kirkland staff has requested that a site evaluation responding to Chapter 85 of the Kirkland Zoning Code (Sensitive Areas) be made for this project. The geotechnical aspects of the code pertain to properties impacted by a combination of geologic, topographic and hydrologic factors. These criteria define the various hazard categories, and determine the applicability of the code to the prospective development. The geotechnical factors include;

1. Landslide Hazards (severe):

   1) areas of slopes greater than 40%, 2) areas subject to previous landslide activity, 3) areas sloping between 15% and 40% with zones of emergent ground water, or 4) areas underlain by or embedded with impermeable silts or clays.

2. Landslide Hazards (moderate):

   Areas sloping between 15% and 40% and underlain by relatively permeable soils consisting largely of sand and gravel or highly competent glacial till.

3. Seismic Hazards:

   Areas subject to severe risk of earthquake damage stemming from seismically induced settlement or soil liquefaction. Ground conditions in such areas are defined as low density cohesionless soils usually associated with a shallow ground water table.

4. Erosion Hazards:

   Areas containing soils characterized in the King County Soil Survey as being prone to severe to very severe erosion hazard. Areas of 15% or greater slopes formed over (but not limited to); Alderwood gravelly sand loam (AgD), Kitsap silt loam (KpD), Ragnar Indianola Association (RdE), and portions of the Everett gravelly sand loams (EvD) and Indianola loamy fine sands (InD) fall within this category.

Our findings indicate that geologic and topographic conditions along the western sloped portion of the site border on the definition of the Landslide Hazards (moderate) category. That is, the slope declivity is in excess of 15% and is underlain by glacial till soils. Although this is a criteria for the City of Kirkland, it is not a concern for general site development considerations, in my opinion.

Slope Stability Considerations

An assessment of the slope stability within the property was accomplished using information obtained in our explorations and observations of slope conditions. Considering the slope inclination and the competence of the slope core soils, we anticipate a minimal risk of ground failure in these materials due to landsliding. However, the loosened surficial soils may be susceptible to shallow landsliding in extreme events, which would likely require saturated soil conditions in conjunction with a large seismic event. This behavior could occur with or without development of this property. Development of the property is likely to improve conditions to reduce even this remote landslide potential. The following section discusses development concepts oriented at mitigation of slide related impacts on this property.

Control of water currently being discharged onto the site from adjacent sites, control of collected waters on the site and attention to grading considerations will be helpful in maintaining a stable slope and/or reducing the potential for slope instability. Collecting storm waters such that they may be discharged below the slope on into the municipal system will be helpful in reducing the landslide risk. Grading should generally conform to the guidelines in the Uniform Building Code (UBC). Foundations will have a reduced risk if they are placed on the low susceptibility dense glacial soils.

Erosion Potential

Grades are less than 10 percent within the gently sloping portion of the development area. Erosion potential is considered low to moderate for exposed subgrade in this area during construction. The steeper slopes on the western portion of the site contain soils that could be susceptible to erosion from concentrated water flows. With the implementation of limitations of soil stockpiles, limitation of earthwork to dryer weather periods and drainage/erosion control measures during construction, erosion potential for the slope area is expected to be reducible to normally acceptable levels.

I anticipate that the use of conventional erosion control measures during construction should prove effective on this property. Such measures could include geotextile silt fences, hay bales and straw mulching used in conjunction with controlled grading. Temporary soil stockpiles should be covered with plastic sheeting, except during dry weather. Earthwork during wet ground conditions should be minimized and excavation would be preferably conducted using a track-hoe to minimize wet ground disturbance. Potential for post construction erosion is expected to be unchanged from the current state with the establishment of landscaping and lawn areas, and control of downspouts and runoff from impervious surfaces as discussed in the section on drainage control.

Site Grading Considerations

I understand that the finished main floor elevation for the dwelling is to be near current surface grades. Based on the provided topography and understood building siting, grading for the building location on the southern parcel is expected to be limited to minor cuts and fills for building pad construction and excavation for foundations. It is likely that excavation for foundations and utilities within most of the development area will encounter the dense glacial soils at depth. Excavation requirements for development near the northern property line has not been finalized at the time of this report, but may require temporary support.

This site is best suited for dry weather construction. The slightly silty to silty sand site soils are considered somewhat moisture sensitive, and will deteriorate if worked during rainy weather (the predominant rainy season is generally November through April) or in a saturated condition. Occasional light rainfalls during the dry season are expected to have an affect on trafficability and workability of these soils, depending on the initial moisture content. Delays in construction should be anticipated for periods during which wet and deteriorated soil conditions persist. Increases in costs and duration for earthwork should be anticipated for such conditions as well.

During periods of wet weather or in saturated soil conditions, special measures will likely be required to facilitate construction. Interim excavation grading should be sloped to promote drainage, and to prevent ponding. Depending on application, the use of a covering of coarse crushed rock, or a clean pit-run material used in conjunction with a geotextile, could be placed over the moisture sensitive subgrade soils to aid in minimizing disturbance and softening of the bearing soils related to trafficking during construction.

Construction of temporary haul routes may be required when exporting on-site soils to minimize site disturbance and associated additional excavation. These temporary haul route subgrades should be capable of supporting loaded trucks, with a minimum of disturbance to the sensitive native subgrade soils. The method of construction and materials used would vary, depending on: 1) the observed character of the subgrade during construction, 2) the time of year, and 3) the type equipment being used.

Equipment used for excavation should be of a type which would minimize site disturbance and spoilage. A track mounded backhoe with a smooth blade bucket, or equivalent should prove effective for this purpose.

It is anticipated that some grading of the yard area, to the west of the proposed house locations, for development of "improved" outdoor living space, is likely. Grading of this area should generally follow UBC guidelines. The topsoil should be stripped from the areas to be filled. Then the looser near surface sandy soils should be densified in-place or removed and densified in layers. For fills less than 3 feet in depth in-place densification may provide a suitable base for well compacted fill. For fills greater than 3 feet in depth, removal of the looser near surface sands to the very dense sands, benching of the subgrade and compaction of the replaced and additional fill is recommended. Fill slopes for fill compacted to a minimum of 90% of ASTM D1557 should be no steeper than 2 horizontal to 1 vertical (2H to 1V). Retaining walls should be utilized if the above fill slopes cannot be obtained.

Foundations

The use of spread footings founded on the undisturbed native glacially densified soils should provide a commonly acceptable level of support of the proposed dwellings. A net allowable design soil bearing pressure of 2,000 psf should be available for footings founded on structural fill or similarly prepared upper sandy soils. An increased soil bearing capacity of up to 6,000 psf could be used for footings founded on the very dense glacially densified sandy soils.

Ground settlement due to structural loads should be less than one (1) inch total and one-half (1/2) inch differential over the building areas. For short term dynamic loads, such as seismic or wind loading, a reduction of the factor of safety would be appropriate for the ground conditions at this site, and a resultant increase of one-third

for the above recommended bearing pressure may be used. The suggested static soil bearing pressures use a factor of safety of 2.5 and are based on the following conditions:

1. All footings should be founded into the dense native site soils or structural fill as described herein.

2. All footing excavations should be prepared such that a dense, nonyielding, uniform soil condition has been established prior to placement of footing concrete.

3. All footings should extend through any existing artificial fills or modified zones and be placed to bear a minimum of 18 inches below finished adjacent grade.

4. All footings should be sized according to the anticipated wall or column loadings, and the above soil bearing values. Minimum footing widths of 16 and 24 inches are recommended for all continuous and isolated footings, respectively.

5. All footing areas should be free of ponded water and sloughed or water loosened soils prior to placement of footing concrete.

We recommend that footing areas be inspected by this office prior to placement of concrete to verify that the type and condition of the bearing soils are consistent with these recommendations.

Pressures on Subgrade Walls

Possible basement walls and miscellaneous retaining walls may be developed to retain cuts or fills around the site. For non-fixed (cantilever) walls, an active soil condition may be assumed, and an equivalent fluid pressure of 35 pounds per cubic foot (pcf) should be used in design. Fixed walls should assume an at-rest soil condition, and an equivalent fluid pressure of 45 pounds per cubic foot (pcf) should be used in design. These values assume the presence of the soils encountered in our explorations or a structural fill as described above, and a freely drained condition behind the wall.

The above values do not take into account hydrostatic pressures, sloping ground behind the wall or surcharges due to equipment loads. For a uniformly distributed load behind the wall, a

corresponding uniformly distributed pressure equal to 30 or 50 percent of the surcharge should be added to the lateral soil pressure for a yielding or fixed wall conditions respectively.

Earthquake loadings are expected to increase the lateral pressures indicated above. The increases for the dwelling basement walls are expected to be within limits that are generally compensated for with a reduced safety factor (Seed, H. B. & Whitman, R. V., Design of Earth Retaining Structures for Dynamic Loads, 1970 Specialty Conference on Lateral Stresses in the Ground and Design of Earth Retaining Structures, American Society of Civil Engineers, 1970). However, the increases in lateral loadings, from earthquake forces, are expected to provide a slightly increased component of the lateral pressures to be taken into consideration in the structural design of buried walls. Seed and Whitman discuss a procedure for determination of lateral loading following an approach suggested by Mononobe and Okabe. As input to the Mononobe-Okabe evaluation, I used a friction angle of 33 degrees for the backfill soils, a horizontal and vertical earthquake acceleration of 0.15g, and a slope inclination of up to 3H to 1V. Based on this input and some assumptions on wall friction, an earthquake loading surcharge of 35 pcf (equivalent fluid pressure), for level ground surface, and 55 pcf, for a 3H to 1V ground surface, was determined. This loading replaces the static "active" pressures indicated above, for the dynamic condition. The application of this loading depends on the wall type chosen. If a cantilever wall is selected, the earthquake loading should be applied as an inverted triangular loading. If a braced wall is selected, the earthquake loading should be rectangularized.

Resistance to sliding could be developed by combinations of passive earth pressures and base friction. A base friction coefficient of 0.4 is considered appropriate for the expected foundation support soils. Passive pressures of up to 450 pcf could be available, depending on the specific soils encountered, the ground water conditions and the ground slope below the wall. When specific geometries are developed, an evaluation of the applicable design pressures could be made. Appropriate safety factors should be applied to the recommended base friction value.

Compaction within one-half of the wall embedment height behind the wall should be performed with light equipment such that the wall is not adversely stressed.

Rockeries

Rockeries do not function as significant retaining structures. They are primarily erosion protection facings for stable cut slopes. The use of rockeries on this site is expected to be limited to heights of a few feet in areas that could be readily repaired if subjected to distress. For these situations the rockery is likely to be facing the upper looser sands. Rocks should be of the 2 to 3 man size, and should have good drainage behind the facing rocks. I recommend that ARC (Association of Rockery Contractors) guidelines be used in constructing rockeries.

Drainage

Surface and ground water control systems need to be maintained separately to function properly. The attached Subdrain and Backfill Schemes illustrate our recommendations for foundation drain systems. Additional roof and pavement surfaces will reduce the area available for natural infiltration within the property. This will in turn increase surface runoff. Provisions for collection and disposal of increased site runoff should be addressed in the permanent drain system.

Water from subsurface drains, including foundation drain systems, should be discharged into the roadside ditch along 112th Avenue NE or appropriately connected to the surface water system. The quantity of this water is not expected to modify the amount of water in the slope as it is water that is removed from one area to another.

USE OF THIS REPORT AND WARRANTY

We have prepared this report for use by Casady Enterprises Inc. and their agents for use in planning and design of the development at this lot. The data and report should be provided to prospective contractors for their bidding and estimating purposes, but our report conclusions and interpretations should not be construed as a warranty of subgrade conditions. There are possible variations in subsurface conditions.

The scope of our work does not include services related to construction safety precautions, and our recommendations are not intended to direct the contractor's methods, techniques, sequences or procedures, except as specifically described in our report for consideration in design.

Within the limitations of scope, schedule and budget for our work, we warrant that our work has been done in accordance with generally accepted practices followed in this area at the time the report was prepared. No other warranty, expressed or implied, is made. If there are any questions concerning this report or if we can provide additional services, please call.

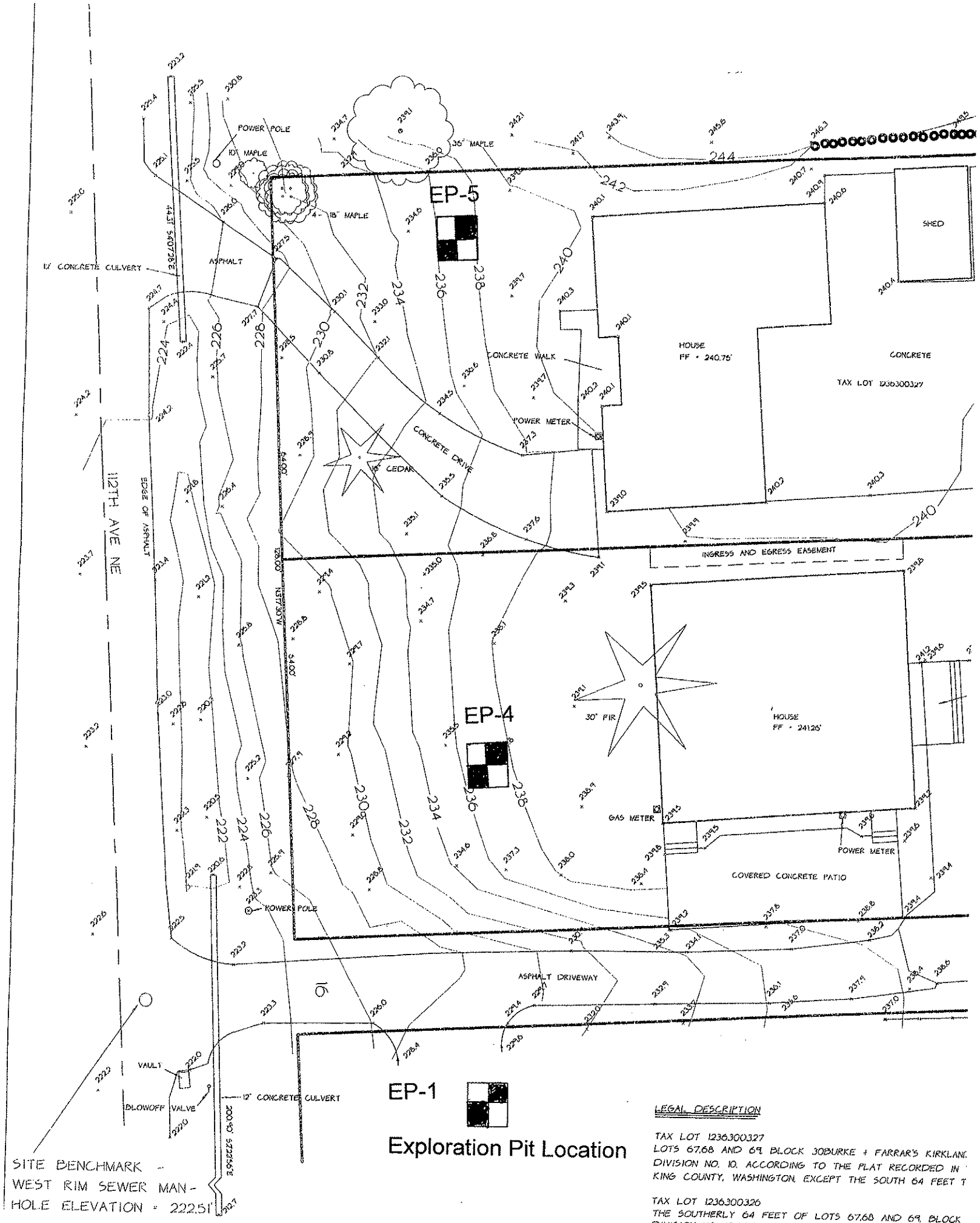
Yours very truly,

J. Keith Cross

J. Keith Cross, P.E.

JOHN KEITH CROSS
STATE OF WASHINGTON
18444
REGISTERED
PROFESSIONAL ENGINEER
4/13/06
EXPIRES 10/9/07

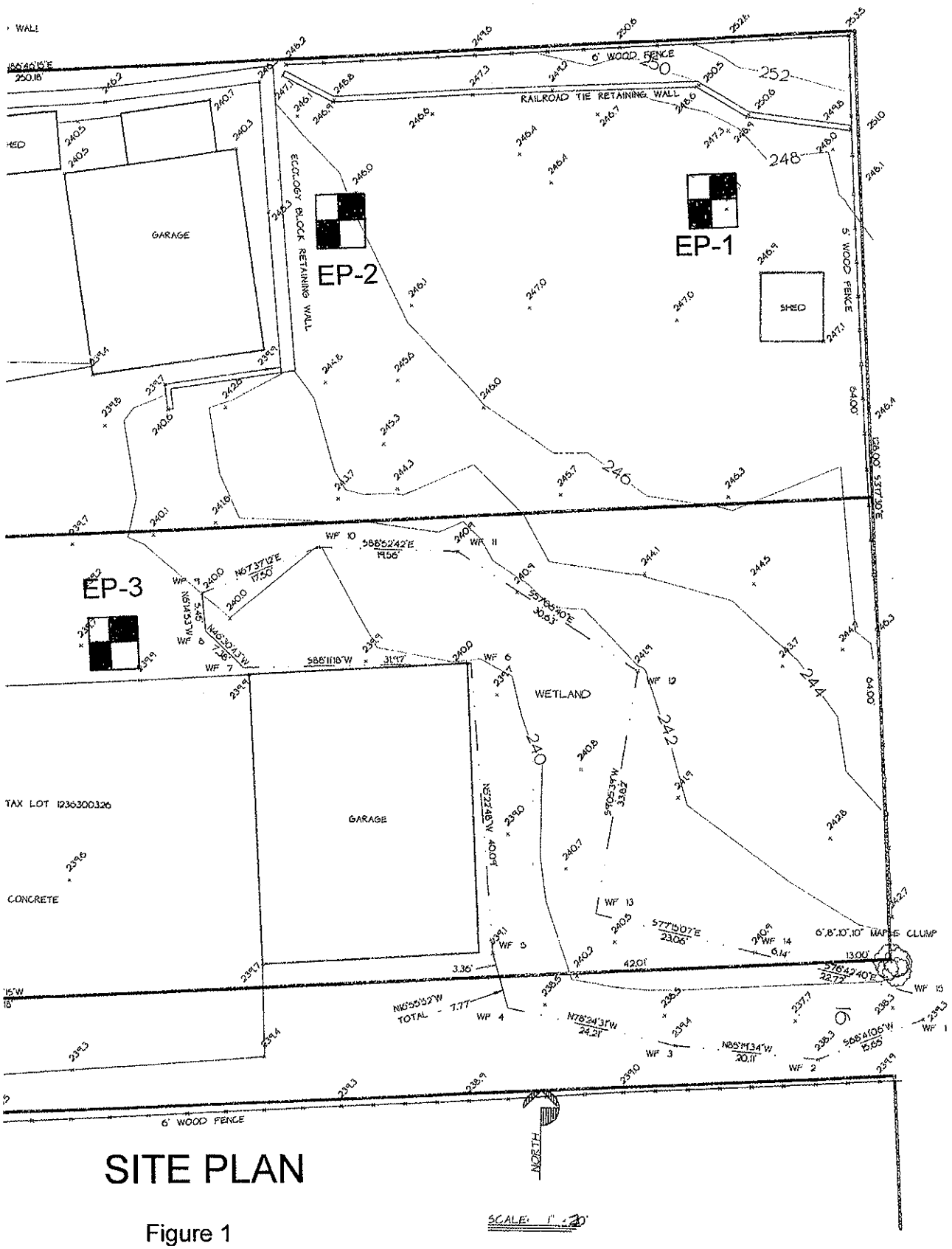
attachments: Site Plan
Exploration Pit Logs (2 pages)
Subdrain and Backfill Schemes (3 pages)



LEGAL DESCRIPTION

TAX LOT 1236300327
LOTS 67,68 AND 69 BLOCK 30BURKE + FARRAR'S KIRKLAN
DIVISION NO. 10, ACCORDING TO THE PLAT RECORDED IN
KING COUNTY, WASHINGTON, EXCEPT THE SOUTH 64 FEET T

TAX LOT 1236300326
THE SOUTHERLY 64 FEET OF LOTS 67,68 AND 69, BLOCK
DIVISION NO. 10,ACCORDING TO THE PLAT THEREOF, RECORI



SITE PLAN

Figure 1

SCALE: 1" = 20'

NOTES:

1. DATUM - CITY OF KIRKLAND

' TO THE CITY OF SEATTLE,
OF PLATS, PAGE 85, IN
) EXCEPT THE NORTH 100 FEET THEREOF.

+ FARRAR'S KIRKLAND ADDITION
UME 19, OF PLATS, PAGE 85, IN KING COUNTY, WASHINGTON

J. Keith Cross, P.E.
Project No. 3055-011

RRS INC.
LAND SURVEYING
PO BOX 641
REDMOND, WA 98073
425-864-0944

CLIENT:
CASADY ENTERPRISES

TOPOGRAPHIC SURVEY
9216 AND 9222 112TH AVE NE

JOB NO. 05040
SCALE: 1" = 20'
DATE: 7/26/05

EXPLORATION PIT LOGS

EP-1

depth (feet)	
0 to 1	Loose, dark brown, silty fine to coarse sand with gravel, damp, (topsoil type soil)
1 to 2	Medium dense, light brown, silty sand with gravel, dry
2 to 3	Medium dense, red brown, silty sand with gravel, dry to damp
3 to 4	Medium dense to dense, red brown, fine to medium sand, little coarse sand, moist
4 to 9	Medium dense to dense, gray brown, fine to medium sand, little coarse sand, moist to wet, seepage at 7 feet.

T.D. @ 9 feet, 10-7-05

EP-2

depth (feet)	
0 to 1	Loose, dark brown, silty fine to coarse sand with gravel, damp, (topsoil type soil)
1 to 3	Loose, gray brown, silty sand with gravel, dry to damp (fill)
3 to 6	Medium dense, brown to red-brown, silty sand with gravel, damp to moist
6 to 8	Very dense (hard), gray, silty sand with silty partings, moist (stratified drift)

No seepage noted.
T.D. @ 8feet, 10-7-05

EP-3

depth (feet)	
0 to 9"	Loose, dark brown silty sand, wet, (topsoil)
9" to 3	Medium dense, red brown grading to gray, slightly silty fine to medium sand, moist
3 to 4	Dense, gray, slightly silty medium to coarse sand, wet (seepage at 4 feet)
4 to 6	Dense/very stiff, gray brown, silty very fine sand to very fine sandy silt, dry (stratified drift, variably sugar sand till to varved silt grading to hard/very dense with depth)

T.D. @ 6 feet, 10-7-05

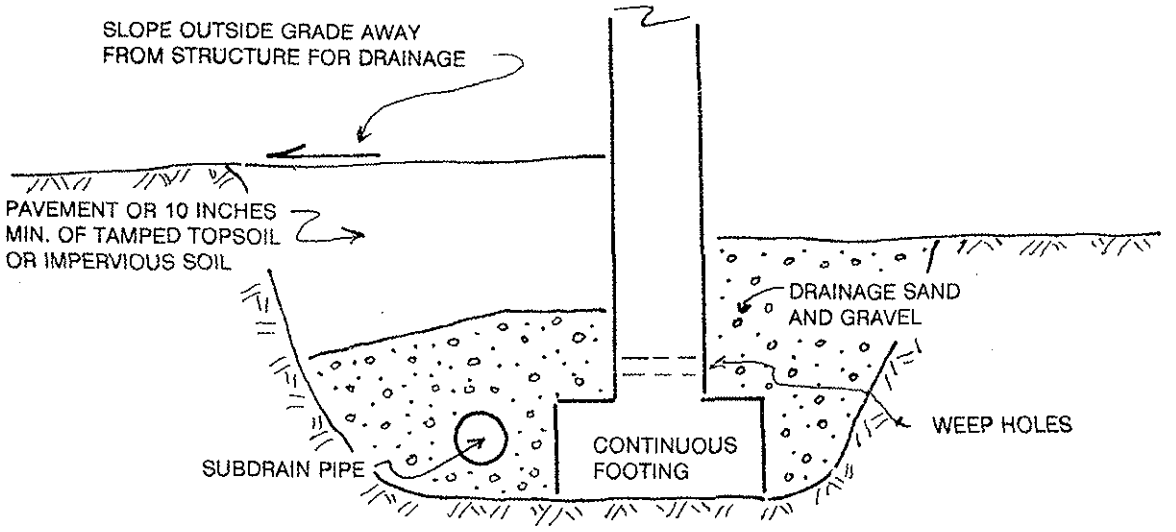
EXPLORATION PIT LOGS (CONT.)

EP-4

depth (feet)	
0 to 1/4	Loose, medium brown silty sand, dry (topsoil/sod)
1/4 to 8	Dense to very dense, light brown, gravelly silty fine to medium sand, dry
8 to 9	Dense to very dense, yellow brown, slightly gravelly silty fine to medium sand, dry
	No seepage noted. T.D. @ 9 feet, 10-7-05

EP-5

depth (feet)	
0 to 4	Loose, light brown to yellow brown, silty fine to medium sand with scattered gravel, dry, heavily root laden
4 to 5	Medium dense to dense, grey brown, slightly silty to silty sand with gravel, dry (weathered drift)
5 to 8	Very dense (hard), grey brown, slightly silty medium sand with gravel, dry to damp (glacial drift)
	No seepage noted. T.D. @ 8 feet, 10-7-05



not to scale

MATERIALS

SUBDRAIN PIPE
4" Minimum Diameter Perforated Or Slotted, Rigid, Smooth Wall, Tight Jointed Pipe Sloped To Drain (4" / 100' min. slope) With Clean-Outs.
Pipe May Be Either Plastic (PVC or ABS), Metal, or Concrete.
ADS FLEXIBLE CORRUGATED PIPE IS SPECIFICALLY NOT RECOMMENDED FOR USE, EXCEPT FOR TEMPORARY INSTALLATIONS.

Slotted Pipe---1/8" max. Slot Width
Perforated Pipe---3/16" to 3/8" Holes
Slots or Perforations In Lower Half Of Pipe With Lower Quarter Segment Solid For Water Flow.

DRAINAGE SAND & GRAVEL
To Meet Washington State Specifications Or The Following Gradation.

Sieve Size	% Passing By Weight
1 1/2"	100
3/4"	70-90
1/4"	30-60
No. 8	20-50
No. 30	8-30
No. 50	3-12
No. 200	0-1.2
(by wet sieving)	(non-plastic)

NOTES

1) Drainage Sand & Gravel Inside Stemwalls Should Be Connected Hydraulically To Subdrain Pipe. Use Of 1" to 2" Diameter Weep Holes Is One Applicable Method.

2) Subdrain Pipe Should Be Bedded With A Minimum Of 2" Of Drainage Sand & Gravel Beneath The Pipe And 6" Around The Sides And Above The Pipe.

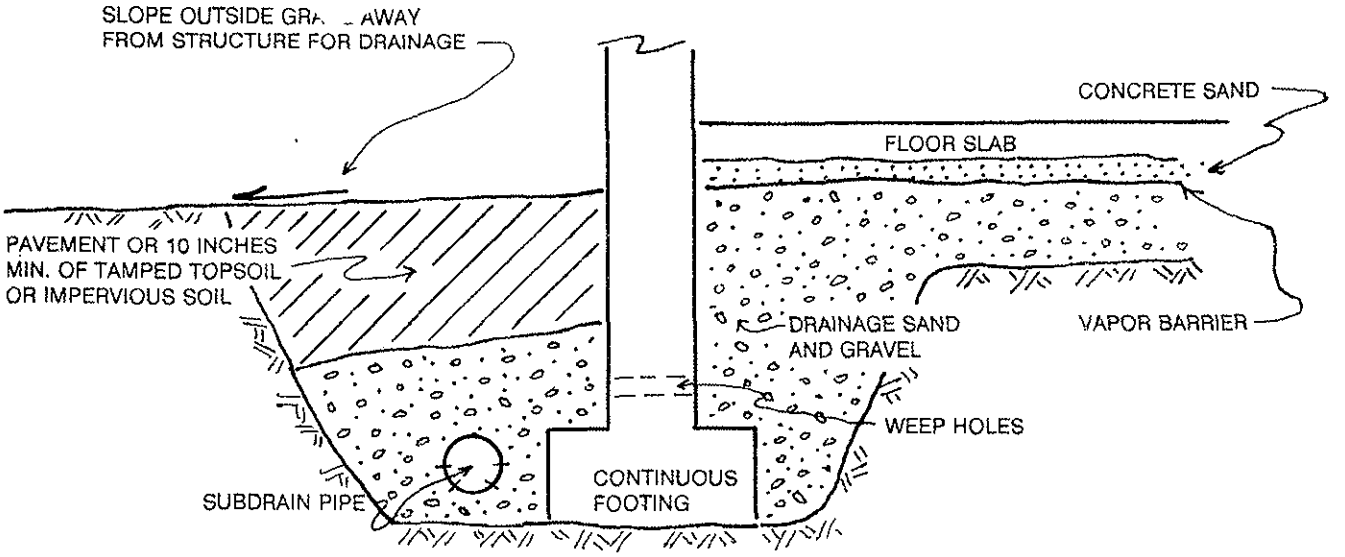
3) Backfill Within 18" Of Wall Should Be Compacted With Hand-Operated Equipment. Heavy Equipment Should Not Be Used For Backfill, As Such Operation Could Increase Lateral Earth Pressures And Possibly Damage The Wall.

4) All Backfill Should Be Placed In Layers Not Exceeding 6" Loose Thickness And Be Nominally Compacted. Beneath Paved Or Sidewalk Areas, Compact To At Least 95% Modified Proctor Maximum Density (ASTM D1557).

SUBDRAIN & BACKFILL SCHEME

SHALLOW FOOTINGS & STEMWALLS

J. KEITH CROSS, P.E.



not to scale

MATERIALS

SUBDRAIN PIPE
4" Minimum Diameter Perforated Or Slotted, Rigid, Smooth Wall, Tight Jointed Pipe Sloped To Drain (4" / 100' min. slope) With Clean-Outs.
Pipe May Be Either Plastic (PVC or ABS), Metal, or Concrete.
ADS FLEXIBLE CORRUGATED PIPE IS SPECIFICALLY NOT RECOMMENDED FOR USE, EXCEPT FOR TEMPORARY INSTALLATIONS.

Slotted Pipe---1/8" max. Slot Width
Perforated Pipe---3/16" to 3/8" Holes
Slots or Perforations In Lower Half Of Pipe With Lower Quarter Segment Solid For Water Flow.

DRAINAGE SAND & GRAVEL
To Meet Washington State Specifications Or The Following Gradation.

Sieve Size	% Passing By Weight
1 1/2"	100
3/4"	70-90
1/4"	30-60
No. 8	20-50
No. 30	8-30
No. 50	3-12
No. 200	0-1.2
(by wet sieving)	(non-plastic)

NOTES

1) Drainage Sand & Gravel Beneath Floor Slab Should Be Connected Hydraulically To Subdrain Pipe. Use Of 1" to 2" Diameter Weep Holes Is One Applicable Method.

2) Subdrain Pipe Should Be Bedded With A Minimum Of 2" Of Drainage Sand & Gravel Beneath The Pipe And 6" Around The Sides And Above The Pipe.

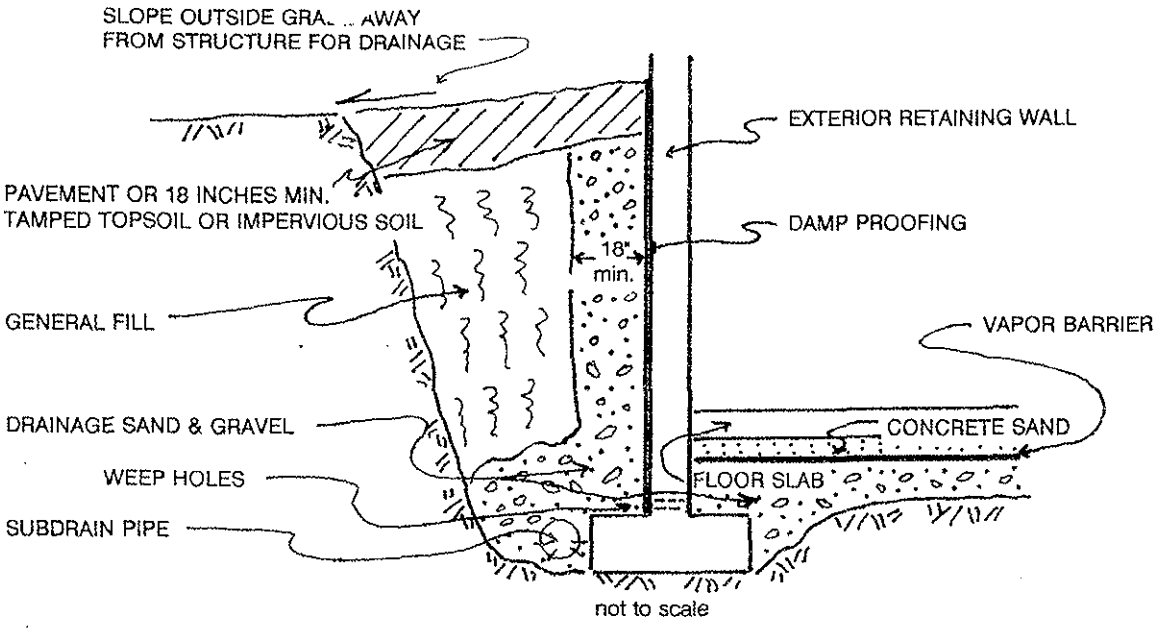
3) Backfill Within 18" Of Wall Should Be Compacted With Hand-Operated Equipment. Heavy Equipment Should Not Be Used For Backfill, As Such Operation Could Increase Lateral Earth Pressures And Possibly Damage The Wall.

4) All Backfill Should Be Placed In Layers Not Exceeding 6" Loose Thickness And Be Nominally Compacted. Beneath Paved Or Sidewalk Areas, Compact To At Least 95% Modified Proctor Maximum Density (ASTM D1557).

SUBDRAIN & BACKFILL SCHEME

SHALLOW FOOTINGS WITH INTERIOR SLAB ON GRADE

J. KEITH CROSS, P.E.



MATERIALS

SUBDRAIN PIPE
4" Minimum Diameter Perforated Or Slotted, Rigid, Smooth Wall, Tight Jointed Pipe Sloped To Drain (4" / 100' min. slope) With Clean-Outs.
Pipe May Be Either Plastic (PVC or ABS), Metal, or Concrete.
ADS FLEXIBLE CORRUGATED PIPE IS SPECIFICALLY NOT RECOMMENDED FOR USE, EXCEPT FOR TEMPORARY INSTALLATIONS.

Slotted Pipe---1/8" max. Slot Width
Perforated Pipe---3/16" to 3/8" Holes
Slots or Perforations In Lower Half Of Pipe With Lower Quarter Segment Solid For Water Flow.

DRAINAGE SAND & GRAVEL
To Meet Washington State Specifications Or The Following Gradation.

Sieve Size	% Passing By Weight
1 1/2"	100
3/4"	70-90
1/4"	30-60
No. 8	20-50
No. 30	8-30
No. 50	3-12
No. 200	0-1.2
(by wet sieving)	(non-plastic)

NOTES

1) Drainage Sand & Gravel Beneath Floor Slab Should Be Connected Hydraulically To Subdrain Pipe. Use Of 1" to 2" Diameter Weep Holes Is One Applicable Method.

2) Subdrain Pipe Should Be Bedded With A Minimum Of 2" Of Drainage Sand & Gravel Beneath The Pipe And 6" Around The Sides And Above The Pipe.

3) Backfill Within 18" Of Wall Should Be Compacted With Hand-Operated Equipment. Heavy Equipment Should Not Be Used For Backfill, As Such Operation Could Increase Lateral Earth Pressures And Possibly Damage The Wall.

4) All Backfill Should Be Placed In Layers Not Exceeding 6" Loose Thickness And Be Nominally Compacted. Beneath Paved Or Sidewalk Areas, Compact To At Least 95% Modified Proctor Maximum Density (ASTM D1557).

SUBDRAIN & BACKFILL SCHEME

BASEMENT WALLS WITH INTERIOR SLAB-ON-GRADE

J. KEITH CROSS, P.E.