

**HILLSIDE DEVELOPMENT
APPLICATION CHECKLIST – C**
(Proposal to create lots as of 9/12/2007)

Applicability for lands to be partitioned and/or divided, without ultimate building construction proposed.

Submittal Requirements. In addition to submittal requirements for a land division or Planned Unit Development applications on lands having slopes of greater than 12%, the following information is required for a complete application.

All plans below shall be fully dimensioned, drawn to scale, and display a north arrow. **Five (5) sets of full sized plans** (24" x 36") and **one (1) set of reduced plans** (11" x 17") are required for all applications. All **plans shall be folded** to 8-1/2" x 11" (approximately) and submitted **in collated sets**.

- **APPLICATION FORM.** Available from the City of Roseburg Community Development Department. Includes contact information and signature(s) of legal property owner(s) and applicant, property location, tax lot number, legal description, project type, zoning classification, parcel size, and need for additional permits.
- **FEES.** Contact City of Roseburg Community Development Department for applicable Fees and Charges (fee information is on the City's web-page www.cityofroseburg.com)
- **TITLE REPORT.** Prepared within the past six months (two copies).
- **WRITTEN STATEMENT.** A general description of the existing and post-project appearance of the site as seen from adjoining parcels located level with or above the lowest elevation of the site, public open spaces, parks, rights-of-way, and other public places.
- **VICINITY MAP.** Vicinity map showing major cross streets, north arrow, and graphic scale.
- **SLOPE MAP.** Plans showing existing slopes (separate contrasting colors shall be used to show slope categories) based on the following slope categories: 0% to 12%, greater than 12% to 25%, greater than 25% to 35%, and greater than 35%.
- **SLOPE CALCULATION.** Average slope calculation data including a completed worksheet form (worksheet available from Community Development).
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- **SLOPE DENSITY CALCULATION.** If increase density credit is to be required, slope density calculations are only required for density transfer. Average slope density calculation data shall include a completed worksheet form (work sheet available from Community Development).

- **SITE PLAN.** Plan shall be drawn at 1 in. = 20 ft. or larger scale and shall include the following:
 - a. Exterior boundaries of property indicating dimensions of property lines, easements, and lot area in square feet.
 - b. Location and dimension of proposed easements (i.e., water, sewer, access, etc.).
 - c. Indicate existing and proposed contours of the site at two-foot maximum intervals.
 - d. Adjacent streets indicating street name and street width, centerline and edge of right-of-way along with any proposed right-of-way dedication, and existing improvements such as curb, gutter, sidewalk, driveway, median, and landscape strips.
 - e. Preliminary drainage information showing spot elevations, pad elevations, existing catch basins, and direction of proposed drainage.

- **DEVELOPMENT PLAN.** Location and dimensions of all proposed street light fixtures, utility boxes and meters, transformers, freestanding signs, mailboxes, directories, and other accessory structures. Location and dimensions of existing driveways, public parking areas, roadways, backup loading facilities, circulation patterns and utility lines shall also be shown.

- **DEMOLITION PLAN.** Plan identifying all structures to be demolished.

- **STORM WATER PLAN.** Plan shall be consistent with requirements in the City of Roseburg's Storm Water Management Design Standards.

- **VEGETATION REMOVAL PLAN.** On areas having a slope of greater than 12% and prior to removal of any vegetation, plans shall show the location, species, and size of vegetation to be removed, along with data that identifies slope stability with and without such planting.

- **PLANTING/RE-VEGETATION PLAN.** Plan showing location, species, size, and proposed maintenance of proposed re-vegetation.

- **GRADING PLAN.** Preliminary grading plan shall be consistent with requirements in the latest version of the International Building Code, as amended by State of Oregon, and at a minimum such plans shall:
 - a. Estimate quantities of excavation and fill.
 - b. Show the existing grade and finished grade in contour intervals of sufficient clarity.
 - c. Show existing grade on adjoining properties in sufficient detail.
 - d. Show areas of excavation, fill, and scarification.
 - e. Provide for compaction testing program.
 - f. Provide for special inspection if required.

- **EROSION AND SEDIMENT CONTROL PLAN.** Plan shall be consistent with requirements in the DEQ Construction Storm Water Permit Guidance 1200-C NPDES General Permit and as specified for Hillside/Geologic Review Areas.
- **PROPERTY SLOPE PROFILE.** Plans shall show elevations at each parcel including data relative to the drive access for each proposed lot.
- **CROSS SECTIONS.** A minimum of two cross sections through critical portions of the project extending beyond the property line to the curb line of adjacent street or to a minimum of 150 ft. onto adjacent properties, indicating existing topography and grades. Sections shall be drawn to scale, with the same scale used for both vertical and horizontal axis.
- **PHOTOGRAPHS OR PHOTOMONTAGES.** Several photographs of the project site and adjacent development. Photographs of the project site as viewed from public open spaces, parks, rights-of-way, and other public places. It is helpful to produce a panorama or streetscape of the site and surrounding properties by joining several photos. Staff may request photomontages if determined necessary. A key map shall be provided showing where each photo is taken from.
- **SIGNIFICANT FEATURES.** Location of significant historic, cultural, archaeological, and natural features of the site including: geologic hazard areas, ridgelines, bluffs, rock formations, vegetation, and natural streams/drainage ways. Location, size, and species of all heritage trees (trees over 72 in. in circumference measured 4-1/2 feet above natural grade, multi-stemmed trees with one stem of at least 24 inches in circumference), and any group of trees which has a relationship to an event of historical significance or is of public interest, and other natural attributes such as creeks, wetlands, ponds, etc., extending 50 ft. or more beyond the property to show relationship of proposed development with adjacent properties. If heritage trees are present an arborist report may be determined necessary. For development of one single-family unit on an existing lot of record, location of significant features not required.
- **REQUIRED REPORTS.** A Geotechnical Report is required for any development that includes lands with slopes greater than 12%. Geotechnical Report requirements are listed in Appendix A of this ordinance.

GEOTECHNICAL REPORT REQUIREMENTS-A

Applicability for lands to be partitioned and/or divided, without ultimate building construction proposed.

A Geotechnical Report, consistent with the information listed below, shall be submitted with the initial application for a land division or Planned Unit Development to develop residential lands having slopes of greater than 12% and as defined by the Ordinance as Hillside Development. The Geotechnical Report is intended to define the subsurface conditions and provide geotechnical conclusions and recommendations for design and construction of the project. A geological assessment or engineering geology report should be incorporated into or included as an appendix to the geotechnical report for the purpose of providing geologic information for the geotechnical engineer, and explaining the implications of the subsurface conditions for appropriate project design and construction. The investigation should include the following:

General

- Name, address, and phone number.
- Client for whom the report was prepared.
- A description of the proposed project and its location.
- A site map of the area at a scale of 1":400' or larger. Geologic conditions, topography, and location of proposed structures are to be shown. A copy of published geologic maps shall also be provided.
- A review of the geologic history and history of prior excavation and fills.
- A field reconnaissance of the site and vicinity.
- Discussion of geologic hazards.
- A discussion of the engineering aspects of the site and proposed project. The discussion should address foundation types for proposed structures, retaining systems, grading considerations, stability of cut-slopes and constructed embankments, settlement of the site and adjacent sites due to existing conditions, proposed construction, and proposed surface and subsurface drainage facilities.
- A bibliography of all references used.

Field Investigations

- Planned construction (type of structure and use, and other information such as type of construction and foundation/floor system, number of stories, estimated structural loads as it may be known).
- Scope (date of work done, investigative methods, sampling methods, logs of borings/test pits, elevations of borings/test pits for reference of materials and samples to finished grade or footing elevations; identify real or assume elevations).
- Location of all samples taken, surface and subsurface.
- Groundwater conditions and potential (future natural and artificial seepage effects).
- Cross-sections (one or more appropriately positioned and referenced on map; especially through critical areas, slopes, and slides) of suitable size and

engineering scale, with labeled units, features, and structures; and a legend. These cross-sections should correlate with surface and subsurface data showing representative dip components, projections, and stratigraphic/structural relationships.

Engineering/Material Characteristics and Testing

- Test methods used, type or condition of samples, applicable engineering graphics and calculations, results of all tests, and sample locations of all test samples.
- Unified soil classifications of materials.
- Material competency and strength of existing soils/profile:
 - Pertinent engineering geologic attributes (clayey, weak, loose; alignments, fissility, planar boundaries; pervious or water-bearing parts; susceptibility to mass wasting, erosion, piping, or compressibility).
 - Effects and extent of weathering (existing and relationship to project design and future site stability, material strength).
 - Field densities of unconsolidated field areas and moisture content.
 - Bearing capacity and/or shear strength of areas affected by future foundation placement (drained or undrained conditions, effective stress or total stress analysis; in-situ or remolded samples must be identified).
 - Consolidation or settlement potential.
 - Expansion potential.
- Maximum density-optimum moisture parameters of proposed fill material.

Stability Features and Conditions

- Adequate mapping, section and description dimensions, and type of existing downslope movement (soil/rock creep, flows, falls, slumps, slides, if any).
- Activity, cause, or contributing factors of downslope movement features.
- Recent erosion, deposition, or flooding features.
- Subsidence/settlement, piping, solution, or other void features or conditions.
- Groundwater and surface drainage characteristics or features:
 - Surface expression (past and present); permeability/porosity of near surface materials.
 - Actual or potential aquifers or conduits, perching situations, barriers, or other controls to percolation and groundwater movement and fluctuations of groundwater levels at the site.

References

In supplemental or grading plan review reports referencing earlier reports, supply copies of those referenced reports or applicable portions as required by the Director.

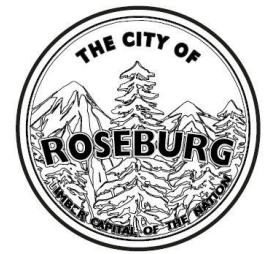
Conclusions and Recommendations

- Ground preparation (clearing, unsuitable material removal, scarification, and moisturization).
- Fill support:
 - Suitability and precompaction of in-situ materials (describe test results and other pertinent data to be used to determine suitability).
 - Densification and moisturization or dewatering measures (equipment, surcharge, settlement monitoring, if applicable).

- Placement of fill:
 - Material approval (on site, imported).
 - Methods and standards (ASTM standards or approved equivalent).
 - Testing standards and frequency of field density testing by vertical intervals and/or volume of fill.
- Elimination of cut/fill or other different transitions beneath improvements.
- Opinion as to adequacy of site for the proposed development (this opinion should also be summarized in the first part of the report).
- Other pertinent geotechnical information for the safe development of the site.

Certification

- A signature, certificate number, and stamp of a Geotechnical Engineer, registered in the State of Oregon as provided by ORS 672.002 to 672.325, who by training, education, and experience is qualified in the practice of geotechnical or soils engineering practices.
- If a geological assessment or engineering geology report is incorporated into or included as an appendix to the geotechnical report, provide a signature, certification number, and stamp of a Certified Engineering Geologist under the provisions of ORS 672.505 to 672.705.
- Prior to acceptance of the construction a written certification shall be submitted from the register Geotechnical Engineering verifying the recommendations of the Report were carried out during the construction, or that needed changes in design were made based on the recommendation of and in conformance with the required Report.



**HILLSIDE DEVELOPMENT BUILDING
APPLICATION CHECKLIST – C1**
(Construction on lots platted after 9/12/2007)

Submittal Requirements. The following information is required for a complete application for residential construction in the Hillside/Geologic Review Area. Please review this checklist with Community Development Department staff to confirm specific requirements and determine if other applications are required.

All plans below shall be fully dimensioned, drawn to scale, and display a north arrow. **Six (6) sets of full sized plans (24" x 36")** are required for all applications. All plans shall be folded to 8-1/2" x 11" (approximately) and submitted **in collated sets**. **One full-sized rendered copy of the site plan, building elevations and preliminary landscape plan shall also be submitted.**

- **APPLICATION FORM.** Available from the City of Roseburg Community Development Department. Include contact information and signature(s) of legal property owner(s) and applicant, property location, parcel number, legal description, project type, zoning classification, parcel size, lot coverage/floor area calculations, and additional permits.
- **FEES.** Contact City of Roseburg Community Development Department for applicable Fees and Charges.
- **WRITTEN STATEMENT.** A general describe of the existing and post-project appearance of the site as seen from adjoining parcels, public open spaces, parks, rights-of-way, and other public places.
- **VICINITY MAP.** Vicinity map showing major cross streets, north arrow, and graphic scale.
- **SLOPE MAP.** Plans showing existing and final slope (separated by contrasting colors), based on the following slope categories: 0% to 12%, greater than 12% to 25%, greater than 25% to 35%, and greater than 35%.
- **SITE PLAN.** Plan shall be drawn at 1 in. = 20 ft. or larger scale and shall include the following:
 - a. Exterior boundaries of property indicating dimensions of property lines, easements, and lot area in square feet.
 - b. Indication of building envelope approved with the initial development plans, including elevations, length, width, and height dimensions.
 - c. Plans shall indicate the existing and proposed contours of the site at two-foot maximum intervals.
 - d. Location and dimensions of all existing structures including roof overhangs, pop-outs, projections and other architectural features, decks, porches, fences, walls, trash enclosures, light fixtures, utility boxes and meters, transformers, freestanding signs, mailboxes, directories, and other accessory structures.

- e. Location and dimensions of existing driveways, parking areas, roadways, and utility lines.
 - f. Location, dimension of all easements existing and proposed (i.e., water, sewer, access, etc.).
 - g. Adjacent streets indicating street name and street width, centerline and edge of right-of-way.
 - h. Location and dimensions of parking spaces and backup loading facilities, and circulation patterns.
 - i. Provide tabulation of building floor area, parking ratios with number of parking spaces proposed and required.
 - (1) Floor area in square feet for all buildings. For residential developments, include the floor area for each unit and the number of units by type.
 - (2) Preliminary drainage information showing spot elevations, pad elevations, existing catch basins, and direction of proposed drainage.
- **ESTABLISHED BUILDING ELEVATIONS.** Plans shall be drawn at 1/8 in. = 1 ft. or larger scale and shall include the following for all four sides of buildings a it relates to the approved building envelope, along with elevations of all existing structures to remain.
 - a. Dimensions of all buildings and components (height, width, roof height, overhang, etc).
 - b. Details including materials and dimensions of door and window treatments, railings, stairways, handicap ramps, trim, fascia, soffits, columns, fences, and other elements, which affect the building. Provide sections to clarify detailing as appropriate.
 - c. Details of vents, gutters, downspouts, scuppers, external air conditioning equipment, etc.
 - d. Location and type of fixed exterior lighting.
 - e. Location and height of rooftop mechanical equipment, with hidden line for equipment and top of roof on elevations or section detail of screen structure.
 - f. Details and dimensions of transformers, utility boxes and meters, utility poles, and mailboxes (show location and approximate size).
 - **DEMOLITION PLAN.** Plan identifying all structures to be demolished.
 - **STORM WATER PLAN.** Plan shall be consistent with requirements in the City of Roseburg's Storm Water Management Design Standards.
 - **GRADING PLAN.** Grading plan shall be consistent with requirements in the latest version of the International Building Code, as amended by State of Oregon, and at a minimum such plans shall:
 - a. Estimate quantities of excavation and fill.
 - b. Show the existing grade and finished grade in contour intervals of

sufficient clarity.

- c. Show existing grade on adjoining properties in sufficient detail.
 - d. Show areas of excavation, fill, and scarification.
 - e. Provide for compaction testing program.
 - f. Provide for special inspection if required.
- **EROSION AND SEDIMENT CONTROL PLAN.** Plan shall be consistent with requirements in the DEQ Construction Storm Water Permit Guidance 1200-C NPDES General Permit.
 - **PROPERTY SLOPE PROFILE.** Plans shall show elevations at each property providing including data relative to the drive access for each proposed lot.
 - **SIGNIFICANT FEATURES.** Location of significant historic, cultural, archaeological, and natural features of the site including: geologic hazard areas, ridgelines, bluffs, rock formations, vegetation, and natural streams/drainage ways. Location, size, and species of all heritage trees (trees over 72 in. in circumference measured 4-1/2 feet above natural grade, multi-stemmed trees with one stem of at least 24 inches in circumference), and any group of trees which has a relationship to an event of historical significance or is of public interest, and other natural attributes such as creeks, wetlands, ponds, etc., extending 50 ft. or more beyond the property to show relationship of proposed development with adjacent properties. If heritage trees are present an arborist report may be determined necessary. For development of one single-family unit on an existing lot of record, location of significant features not required.

REQUIRED REPORTS. A Geotechnical Report is required for any construction on slopes greater than 12%. Geotechnical Report requirements are listed in Appendix A1 of this ordinance.

GEOTECHNICAL REPORT REQUIREMENTS – A1

Applicability for building construction on existing lots of record

For existing lots of record, in conjunction with obtaining a building permit for lands having slopes of greater than 12% and defined as Hillside Development, a Geotechnical Report shall be submitted as provided below. In the case where a Geotechnical Report was prepared and accepted in conjunction with the initial development, applicable data provided therein may provide the basis for preparation of this report. The Geotechnical Report is intended to define the subsurface conditions and provide geotechnical conclusions and recommendations for design and construction of the project. A geological assessment or engineering geology report may be incorporated into or included as an appendix to the geotechnical report for the purpose of providing geologic information for the geotechnical engineer, and explaining the implications of the subsurface conditions for appropriate project design and construction. The investigation should include the following:

General

- Name, address, and phone number.
- Client for whom the report was prepared.
- A description of the proposed project and its location.
- A site map of the area at a scale of 1":400' or larger. Geologic conditions, topography, and location of proposed structures are to be shown. A copy of published geologic maps shall also be provided.
- A review of the geologic history and history of prior excavation and fills.
- A field reconnaissance of the site and vicinity.
- Discussion of geologic hazards.
- A discussion of the engineering aspects of the site and proposed project. The discussion should address foundation types for proposed structures, retaining systems, grading considerations, stability of cut-slopes and constructed embankments, settlement of the site and adjacent sites due to existing conditions, proposed construction, and proposed surface and subsurface drainage facilities.
- A bibliography of all references used.

Field Investigations

- Planned construction (type of structure and use, type of construction and foundation/floor system, number of stories, estimated structural loads).
- Scope (date of work done, investigative methods, sampling methods, logs of borings/test pits, elevations of borings/test pits for reference of materials and samples to finished grade or footing elevations; identify real or assume elevations).
- Location of all samples taken, surface and subsurface.
- Groundwater conditions and potential (future natural and artificial seepage effects).
- Structural cross-sections (one or more appropriately positioned and referenced on map; especially through critical areas, slopes, and slides) of suitable size and engineering scale, with labeled units, features, and structures; and a legend.

These cross-sections should correlate with surface and subsurface data showing representative dip components, projections, and stratigraphic/structural relationships.

Engineering/Material Characteristics and Testing

- Test methods used, type or condition of samples, applicable engineering graphics and calculations, results of all tests, and sample locations of all test samples.
- Unified soil classifications of materials.
- Material competency and strength of existing soils/profile:
 - Pertinent engineering geologic attributes (clayey, weak, loose; alignments, fissility, planar boundaries; pervious or water-bearing parts; susceptibility to mass wasting, erosion, piping, or compressibility).
 - Effects and extent of weathering (existing and relationship to project design and future site stability, material strength).
 - Field densities of unconsolidated field areas and moisture content.
 - Bearing capacity and/or shear strength of areas affected by future foundation placement (drained or undrained conditions, effective stress or total stress analysis; in-situ or remolded samples must be identified).
 - Consolidation or settlement potential.
 - Expansion potential.
- Maximum density-optimum moisture parameters of proposed fill material.

Stability Features and Conditions

- Adequate mapping, section and description dimensions, and type of existing downslope movement (soil/rock creep, flows, falls, slumps, slides, if any).
- Activity, cause, or contributing factors of downslope movement features.
- Recent erosion, deposition, or flooding features.
- Subsidence/settlement, piping, solution, or other void features or conditions.
- Groundwater and surface drainage characteristics or features:
 - Surface expression (past and present); permeability/porosity of near surface materials.
 - Actual or potential aquifers or conduits, perching situations, barriers, or other controls to percolation and groundwater movement and fluctuations of groundwater levels at the site.

Foundation Design Criteria

- *Footing depth and width.*
- *Criteria for foundation material preparation.*
- *Allowable bearing values based on testing.*
- *Lateral pressures (active, passive, or at-rest conditions) and coefficient of friction.*
- *Settlement - total, differential, and rate of settlement.*

References

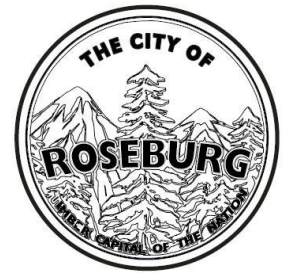
In supplemental or grading plan review reports referencing earlier reports, supply copies of those referenced reports or applicable portions as required by the Director.

Conclusions and Recommendations

- Ground preparation (clearing, unsuitable material removal, scarification, and moisturization).
- Fill support:
 - Suitability and precompaction of in-situ materials (describe test results and other pertinent data to be used to determine suitability).
 - Densification and moisturization or dewatering measures (equipment, surcharge, settlement monitoring, if applicable).
- Placement of fill:
 - Material approval (on site, imported).
 - Methods and standards (ASTM standards or approved equivalent).
 - Testing standards and frequency of field density testing by vertical intervals and/or volume of fill.
- Elimination of cut/fill or other different transitions beneath improvements.
- Opinion as to adequacy of site for the proposed development (this opinion should also be summarized in the first part of the report).
- Other pertinent geotechnical information for the safe development of the site.

Certification

- A signature, certificate number, and stamp of a Geotechnical Engineer, registered in the State of Oregon as provided by ORS 672.002 to 672.325, who by training, education, and experience is qualified in the practice of geotechnical or soils engineering practices.
- If a geological assessment or engineering geology report is incorporated into or included as an appendix to the geotechnical report, provide a signature, certification number, and stamp of a Certified Engineering Geologist under the provisions of ORS 672.505 to 672.705.
- Prior to acceptance of the construction a written certification shall be submitted from the register Geotechnical Engineering verifying the recommendations of the Report were carried out during the construction, or that needed changes in design were made based on the recommendation of and in conformance with the required Report.



**HILLSIDE DEVELOPMENT BUILDING
SUBMITTAL CHECKLIST – C2**
(Construction on lot platted prior to 9/12/2007)

Applicability for building construction on lands partitioned and/or divided prior to the adoption of the Hillside Development Ordinance.

Submittal Requirements. In the case where a single family dwelling is proposed to be developed on a lot established prior to the adoption of the Hillside Development Ordinance, or for which a Geotechnical Report has not been prepared, and construction will include areas of greater than 12% slope, the following information is required for a complete application for residential construction in the Hillside/Geologic Review Area. Please review this checklist with Community Development Department staff to confirm specific requirements and determine if other applications are required.

All plans below shall be fully dimensioned, drawn to scale, and display a north arrow. **Five (5) sets of full sized plans (24" x 36")** are required for all applications. All **plans shall be folded** to 8-1/2" x 11" (approximately) and submitted **in collated sets**.

- **APPLICATION.** Plans shall be in conformance with the requirements for Site Plan Review proposed in Section 2.3.075.12 and shall include contact information and signature(s) of legal property owner(s) and applicant, property location, parcel number, legal description, project type, zoning classification, parcel size.
- **FEES.** Contact City of Roseburg Community Development Department for applicable Fees and Charges.
- **VICINITY MAP.** Vicinity map showing major cross streets, north arrow, and graphic scale.
- **DEVELOPMENT PLAN.** Location and dimensions of all proposed structures, including roof overhangs, pop-outs, projections and other architectural features, decks, porches, fences, walls, trash enclosures, light fixtures, utility boxes and meters, transformers, freestanding signs, mailboxes, directories and other accessory structures. Location and dimensions of proposed driveways, parking areas, roadways, and utility lines shall also be shown.
- **DEMOLITION PLAN.** Plan identifying all structures to be demolished.
- **STORM WATER PLAN.** Plan shall be consistent with requirements in the City of Roseburg's Storm Water Management Design Standards. Preliminary drainage information showing spot elevations, pad elevations, existing catch basins, and direction of proposed drainage shall be provided.
- **GRADING PLAN.** Preliminary grading plan shall be consistent with requirements in the latest version of the International Building Code, as amended by State of Oregon, and at a minimum such plans shall:

- a. Estimate quantities of excavation and fill.
 - b. Show the existing grade and finished grade in contour intervals of sufficient clarity.
 - c. Show existing grade on adjoining properties in sufficient detail.
 - d. Show areas of excavation, fill, and scarification.
 - e. Provide for compaction testing program.
 - f. Provide for special inspection if required.
- **EROSION AND SEDIMENT CONTROL PLAN.** Plan shall be consistent with requirements in the DEQ Construction Storm Water Permit Guidance 1200-C NPDES General Permit as specified for properties located in the Hillside/Geologic Review Area.
 - **PROPERTY SLOPE PROFILE.** Plans shall show elevations at each property providing including data relative to the drive access for each proposed lot.
 - **SIGNIFICANT FEATURES.** Location of significant historic, cultural, archaeological, and natural features of the site including: geologic hazard areas, ridgelines, bluffs, rock formations, vegetation, and natural streams/drainage ways. Location, size, and species of all heritage trees (trees over 72 in. in circumference measured 4-1/2 feet above natural grade, multi-stemmed trees with one stem of at least 24 inches in circumference), and any group of trees which has a relationship to an event of historical significance or is of public interest, and other natural attributes such as creeks, wetlands, ponds, etc., extending 50 ft. or more beyond the property to show relationship of proposed development with adjacent properties. If heritage trees are present an arborist report may be determined necessary. For development of one single-family unit on an existing lot of record, location of significant features not required.
 - **REQUIRED REPORTS.** A Geotechnical Report is required for any construction on slopes greater than 12%. Geotechnical Report requirements are listed in Appendix A1 of this ordinance.

GEOTECHNICAL REPORT REQUIREMENTS – A1

Applicability for building construction on existing lots of record

For existing lots of record, in conjunction with obtaining a building permit for lands having slopes of greater than 12% and defined as Hillside Development, a Geotechnical Report shall be submitted as provided below. In the case where a Geotechnical Report was prepared and accepted in conjunction with the initial development, applicable data provided therein may provide the basis for preparation of this report. The Geotechnical Report is intended to define the subsurface conditions and provide geotechnical conclusions and recommendations for design and construction of the project. A geological assessment or engineering geology report may be incorporated into or included as an appendix to the geotechnical report for the purpose of providing geologic information for the geotechnical engineer, and explaining the implications of the subsurface conditions for appropriate project design and construction. The investigation should include the following:

General

- Name, address, and phone number.
- Client for whom the report was prepared.
- A description of the proposed project and its location.
- A site map of the area at a scale of 1":400' or larger. Geologic conditions, topography, and location of proposed structures are to be shown. A copy of published geologic maps shall also be provided.
- A review of the geologic history and history of prior excavation and fills.
- A field reconnaissance of the site and vicinity.
- Discussion of geologic hazards.
- A discussion of the engineering aspects of the site and proposed project. The discussion should address foundation types for proposed structures, retaining systems, grading considerations, stability of cut-slopes and constructed embankments, settlement of the site and adjacent sites due to existing conditions, proposed construction, and proposed surface and subsurface drainage facilities.
- A bibliography of all references used.

Field Investigations

- Planned construction (type of structure and use, type of construction and foundation/floor system, number of stories, estimated structural loads).
- Scope (date of work done, investigative methods, sampling methods, logs of borings/test pits, elevations of borings/test pits for reference of materials and samples to finished grade or footing elevations; identify real or assume elevations).
- Location of all samples taken, surface and subsurface.
- Groundwater conditions and potential (future natural and artificial seepage effects).
- Structural cross-sections (one or more appropriately positioned and referenced on map; especially through critical areas, slopes, and slides) of suitable size and

engineering scale, with labeled units, features, and structures; and a legend. These cross-sections should correlate with surface and subsurface data showing representative dip components, projections, and stratigraphic/structural relationships.

Engineering/Material Characteristics and Testing

- Test methods used, type or condition of samples, applicable engineering graphics and calculations, results of all tests, and sample locations of all test samples.
- Unified soil classifications of materials.
- Material competency and strength of existing soils/profile:
 - Pertinent engineering geologic attributes (clayey, weak, loose; alignments, fissility, planar boundaries; pervious or water-bearing parts; susceptibility to mass wasting, erosion, piping, or compressibility).
 - Effects and extent of weathering (existing and relationship to project design and future site stability, material strength).
 - Field densities of unconsolidated field areas and moisture content.
 - Bearing capacity and/or shear strength of areas affected by future foundation placement (drained or undrained conditions, effective stress or total stress analysis; in-situ or remolded samples must be identified).
 - Consolidation or settlement potential.
 - Expansion potential.
- Maximum density-optimum moisture parameters of proposed fill material.

Stability Features and Conditions

- Adequate mapping, section and description dimensions, and type of existing downslope movement (soil/rock creep, flows, falls, slumps, slides, if any).
- Activity, cause, or contributing factors of downslope movement features.
- Recent erosion, deposition, or flooding features.
- Subsidence/settlement, piping, solution, or other void features or conditions.
- Groundwater and surface drainage characteristics or features:
 - Surface expression (past and present); permeability/porosity of near surface materials.
 - Actual or potential aquifers or conduits, perching situations, barriers, or other controls to percolation and groundwater movement and fluctuations of groundwater levels at the site.

Foundation Design Criteria

- *Footing depth and width.*
- *Criteria for foundation material preparation.*
- *Allowable bearing values based on testing.*
- *Lateral pressures (active, passive, or at-rest conditions) and coefficient of friction.*
- *Settlement - total, differential, and rate of settlement.*

References

In supplemental or grading plan review reports referencing earlier reports, supply copies of those referenced reports or applicable portions as required by the Director.

Conclusions and Recommendations

- Ground preparation (clearing, unsuitable material removal, scarification, and moisturization).
- Fill support:
 - Suitability and precompaction of in-situ materials (describe test results and other pertinent data to be used to determine suitability).
 - Densification and moisturization or dewatering measures (equipment, surcharge, settlement monitoring, if applicable).
- Placement of fill:
 - Material approval (on site, imported).
 - Methods and standards (ASTM standards or approved equivalent).
 - Testing standards and frequency of field density testing by vertical intervals and/or volume of fill.
- Elimination of cut/fill or other different transitions beneath improvements.
- Opinion as to adequacy of site for the proposed development (this opinion should also be summarized in the first part of the report).
- Other pertinent geotechnical information for the safe development of the site.

Certification

- A signature, certificate number, and stamp of a Geotechnical Engineer, registered in the State of Oregon as provided by ORS 672.002 to 672.325, who by training, education, and experience is qualified in the practice of geotechnical or soils engineering practices.
- If a geological assessment or engineering geology report is incorporated into or included as an appendix to the geotechnical report, provide a signature, certification number, and stamp of a Certified Engineering Geologist under the provisions of ORS 672.505 to 672.705.
- Prior to acceptance of the construction a written certification shall be submitted from the register Geotechnical Engineering verifying the recommendations of the Report were carried out during the construction, or that needed changes in design were made based on the recommendation of and in conformance with the required Report.