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GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

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RETAINING WALL DESIGN MODIFICATIONS

The design of the proposed soldier pile and tieback retaining wall will be modified slightly from what was submitted as part of the original planning application. The wall will still consist of vertical steel beams called soldier piles, steel bar anchors called tiebacks that are inserted through the face of the wall to pin the wall to the slope, and horizontal wood planks called lagging inserted between the vertical steel beams. However, the size and type of vertical steel beam will be slightly different than what is shown in the plan set submitted with the application package and a horizontal beam referred to as a waler, will be added to the face of the wall. Viewed from the face of the wall, the change in size and type of vertical steel beam will not be noticeably different that what was shown in the plan set submitted with the planning application. The horizontal steel beam called the waler, attached to the face of the wall, will change the appearance of the wall slightly and is not shown in the existing plans. We are in the process of revising the plans and the revised plans will be submitted as part of the planning application as soon as they are completed. The revised plans will also be submitted as part of the building permit application.

The reason for the design modification is the vertical steel beams (soldier piles) that were specified in our plans submitted with the planning application will not be available in time to construct the wall prior to this winter. It is very important that the retaining wall be constructed prior to this winter to prevent expansion of the landslide to upslope buildings and properties once rains begin. To meet this timeline we are revising the plans to use a soldier pile that is currently available on the market, but will require the addition of a steel horizontal beam (waler) to allow the steel bar anchors (tiebacks) to be installed through the face of the wall. The tiebacks cannot be installed through the soldier pile that is available on the market without substantial modification to the pile. Therefore the waler must be added to allow the tiebacks to be installed through the face of the wall. A photo of a sample soldier pile tieback retaining wall with wood lagging and a horizontal bar waler system is shown below. Although the appearance of the face of the wall is slightly different than what was originally submitted with the planning application, the face of the wall will not be clearly visible from downslope properties. Existing tree vegetation screening between the face of the retaining wall and downslope property will remain.

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Photos of the existing vegetation screening to remain and the location of the proposed retaining wall are shown below.

Our modification to the city code narrative for section 17.62.050 standards including landscaping, building structures, and building materials is as follows:

17.62.050 - Standards.

A. All development shall comply with the following standards:
1. Landscaping, A minimum of fifteen percent of the lot shall be landscaped. Existing native vegetation shall be retained to the maximum extent practicable. All plants listed on the Oregon City Nuisance Plant List shall be removed from the site prior to issuance of a final occupancy permit for the building.
a. Except as allowed elsewhere in the zoning and land division chapters of this Code, all areas to be credited towards landscaping must be installed with growing plant materials. A reduction of up to twenty-five percent of the overall required landscaping may be approved by the community development director if the same or greater amount of pervious material is incorporated in the non-parking lot portion of the site plan (pervious material within parking lots are regulated in OCMC *17.52.070*).
b. Pursuant to Chapter 17.49, landscaping requirements within the Natural Resource Overlay District, other than landscaping required for parking lots, may be met by preserving, restoring and permanently protecting native vegetation and habitat on development sites.
c. The landscaping plan shall be prepared by a registered landscape architect and include a mix of vertical (trees and shrubs) and horizontal elements (grass, groundcover, etc.) that within three years will cover one hundred percent of the Landscape area. No mulch, bark chips, or similar materials shall be allowed at the time of landscape installation except under the canopy of shrubs and within two feet of the base of trees. The community development department shall maintain a list of trees, shrubs and vegetation acceptable for landscaping.
d. For properties within the Downtown Design District, or for major remodeling in all zones subject to this chapter, landscaping shall be required to the extent practicable up to the ten percent requirement.
e. Landscaping shall be visible from public thoroughfares to the extent practicable.
f. Interior parking lot landscaping shall not be counted toward the fifteen percent minimum, unless otherwise permitted by the dimensional standards of the underlying zone district.

Landscaping Applicant's Response: The location of the proposed retaining wall is not currently landscaped. It consists of bare, steeply sloping, unstable soil that is temporarily covered in plastic sheeting to prevent erosion, infiltration, and further degradation of the slope. After construction of the retaining wall is complete, adjacent areas of exposed ground will be planted with grass seed and covered with an erosion control blanket as shown in the attached erosion control plan. The slope below the retaining wall will remain an active landslide and will be subject to ground movement. Native grass will be planted as ground cover to avoid the need for irrigation of an active landslide mass during summer months. There are existing large trees

between the face of the retaining wall and downslope property. The trees will remain and will provide vegetation screening of the wall face. Planting of new trees as screening below the face of the wall will not be done because the trees would be subject to ground movement and may topple and would require irrigation of an active landslide which is typically not advisable.

3. Building structures shall be complimentary to the surrounding area. All exterior surfaces shall present a finished appearance. All sides of the building shall include materials and design characteristics consistent with those on the front. Use of inferior or lesser quality materials for side or rear facades or decking shall be prohibited.
a. Alterations, additions and new construction located within the McLoughlin Conservation District, Canemah National Register District, and the Downtown Design District and when abutting a designated Historic Landmark shall utilize materials and a design that incorporates the architecture of the subject building as well as the surrounding district or abutting Historic Landmark. Historic materials such as doors, windows and siding shall be retained or replaced with in kind materials unless the community development director determines that the materials cannot be retained and the new design and materials are compatible with the subject building, and District or Landmark. The community development director may utilize the Historic Review Board's Guidelines for New Constriction (2006) to develop findings to show compliance with this section.
b. In historic areas and where development could have a significant visual impact, the review authority may request the advisory opinions of appropriate experts designated by the community development director from the design fields of architecture, landscaping and urban planning. The applicant shall pay the costs associated with obtaining such independent professional advice; provided, however, that the review authority shall seek to minimize those costs to the extent practicable.

Building Structures Applicant's Response: Exposed portions of the retaining wall will consist of vertical steel piles, a horizontal steel bar at the base of the wall called a waler, and horizontal wood lagging between piles. The wood lagging, which makes up the majority of the exposed wall surface area, will blend into the surrounding forest environment. The proposed wall location is in a relatively low-visibility area, screened by existing trees at the base of the slope between the retaining wall and downslope properties. These trees will remain during and after construction.

21. Building Materials.
a. Preferred building materials. Building exteriors shall be constructed from high quality, durable materials. Preferred exterior building materials that reflect the city's desired traditional character are as follows:
i. Brick.
Ii. Basalt stone or basalt veneer.
iii. Narrow horizontal wood or composite siding (generally five inches wide or less); wider siding will be considered where there is a historic precedent.
iv. Board and baton siding.

v. Other materials subject to approval by the community development director.
vi. Plywood with battens or fiber/composite panels with concealed fasteners and contagious aluminum sections at each joint that are either horizontally or vertically aligned.
vii. Stucco shall be trimmed in wood, masonry, or other approved materials and shall be sheltered from extreme weather by roof overhangs or other methods.
b. Prohibited materials. The following materials shall be prohibited in visible locations unless an exception is granted by the community development director based on the integration of the material into the overall design of the structure.
i. Vinyl or plywood siding (including T-111 or similar plywood).
Ii. Glass block or highly tinted, reflected, translucent or mirrored glass (except stained glass) as more than ten percent of the building facade.
iii. Corrugated fiberglass.
iv. Chain link fencing (except for temporary purposes such as a construction site or as a gate for a refuse enclosure).
[v.] Crushed colored rock/crushed tumbled glass.
[vi.] Non-corrugated and highly reflective sheet metal.
c. Special material standards: The following materials are allowed if they comply with the requirements found below:
1. Concrete block. When used for the front facade of any building, concrete blocks shall be split, rock- or ground-faced and shall not be the prominent material of the elevation. Plain concrete block or plain concrete may be used as foundation material if the foundation material is not revealed more than three feet above the finished grade level adjacent to the foundation wall.
2. Metal siding. Metal siding shall have visible corner moldings and trim and incorporate masonry or other similar durable/permanent material near the ground level (first two feet above ground level).
3. Exterior Insulation and Finish System (EIFS) and similar toweled finishes shall be trimmed in wood, masonry, or other approved materials and shall be sheltered from extreme weather by roof overhangs or other methods.
4. Building surfaces shall be maintained in a clean condition and painted surfaces shall be maintained to prevent or repair peeling, blistered or cracking paint.

Building Materials Applicant's Response: Exposed portions of the retaining wall will consist of vertical steel piles, a horizontal steel bar at the base of the wall called a waler, and horizontal wood lagging between piles. The wood lagging, which makes up the majority of the exposed wall surface area, will blend into the surrounding forest environment. The proposed wall location is in a relatively low-visibility area, screened by existing trees at the base of the slope between the retaining wall and downslope properties. These trees will remain during and after construction.

Sample Soldier Pile and Tieback Wall with Wood Lagging and Waler System

View of downslope existing vegetation screening to remain between retaining wall and downslope property

View of location of proposed retaining wall upslope of garage buildings and vegetation screening to remain between retaining wall and downslope property

View of location of proposed retaining wall upslope of garage buildings and vegetation screening to remain between retaining wall and downslope property