



# Oregon

Theodore R. Kulongoski, Governor

## Department of Land Conservation and Development

635 Capitol Street NE, Suite 150

Salem, Oregon 97301-2524

Phone: (503) 373-0050

First Floor/Coastal Fax: (503) 378-6033

Second Floor/Director's Office: (503) 378-5518

Web Address: <http://www.oregon.gov/LCD>

### NOTICE OF ADOPTED AMENDMENT



April 19, 2006

TO: Subscribers to Notice of Adopted Plan  
or Land Use Regulation Amendments

FROM: Mara Ulloa, Plan Amendment Program Specialist

SUBJECT: City of Veneta Plan Amendment  
DLCD File Number 003-05

The Department of Land Conservation and Development (DLCD) received the attached notice of adoption. Due to the size of amended material submitted, a complete copy has not been attached. A copy of the adopted plan amendment is available for review at the DLCD office in Salem and the local government office.

Appeal Procedures\*

#### **DLCD ACKNOWLEDGMENT or DEADLINE TO APPEAL: May 4, 2006**

This amendment was submitted to DLCD for review 45 days prior to adoption. Pursuant to ORS 197.830 (2)(b) only persons who participated in the local government proceedings leading to adoption of the amendment are eligible to appeal this decision to the Land Use Board of Appeals (LUBA).

If you wish to appeal, you must file a notice of intent to appeal with the Land Use Board of Appeals (LUBA) no later than 21 days from the date the decision was mailed to you by the local government. If you have questions, check with the local government to determine the appeal deadline. Copies of the notice of intent to appeal must be served upon the local government and others who received written notice of the final decision from the local government. The notice of intent to appeal must be served and filed in the form and manner prescribed by LUBA, (OAR Chapter 661, Division 10). Please call LUBA at 503-373-1265, if you have questions about appeal procedures.

**\*NOTE: THE APPEAL DEADLINE IS BASED UPON THE DATE THE DECISION WAS MAILED BY LOCAL GOVERNMENT. A DECISION MAY HAVE BEEN MAILED TO YOU ON A DIFFERENT DATE THAN IT WAS MAILED TO DLCD. AS A RESULT YOUR APPEAL DEADLINE MAY BE EARLIER THAN THE ABOVE DATE SPECIFIED.**

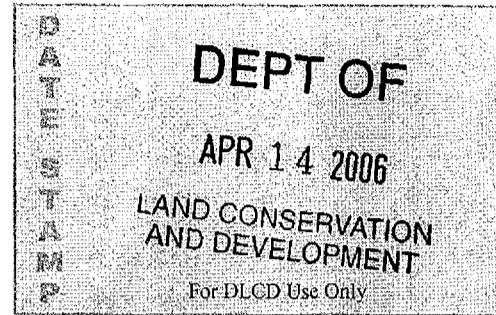
Cc: Gloria Gardiner, DLCD Urban Planning Specialist  
Mark Darienzo, DLCD Flood Map Modernization Program Coordinator  
Bob Cortright, DLCD Transportation & Growth Management Coordinator  
Brian Issa, City of Veneta

<paa> ya/



**FORM 2 Notice of Adoption**

THIS FORM MUST BE MAILED TO DLCD  
WITHIN 5 WORKING DAYS AFTER THE FINAL DECISION  
PER ORS 197.610, OAR CHAPTER 660 - DIVISION 18



Jurisdiction: City of Veneta Local file number: SDP-1-05  
Date of Adoption: 4/24/2006 *Signed 4/10/06* Date Mailed: 4/13/2006  
Date original Notice of Proposed Amendment was mailed to DLCD: 11/16/2005

- Comprehensive Plan Text Amendment
- Land Use Regulation Amendment
- New Land Use Regulation
- Comprehensive Plan Map Amendment
- Zoning Map Amendment
- Other: \_\_\_\_\_

Summarize the adopted amendment. Do not use technical terms. Do not write "See Attached".

**Changes to Veneta Land Development Ordinance adopting amendments to the Southwest Area Specific Development Plan and amending the code text to adopt the amended plan and plan map by reference.**

Describe how the adopted amendment differs from the proposed amendment. If it is the same, write "SAME". If you did not give Notice for the Proposed Amendment, write "N/A".

**Same with minor changes. Plan and wetland variance were approved on 4/10/06, ordinance changes had first reading 4/10/06 and will have second reading 4/24/06.**

Plan Map Changed from: \_\_\_\_\_ to: \_\_\_\_\_

Zone Map Changed from: \_\_\_\_\_ to: \_\_\_\_\_

Location: Southwest Veneta Acres Involved: 128

Specify Density: Previous: Same overall New: Same overall

Applicable Statewide Planning Goals: \_\_\_\_\_

Was an Exception Adopted?  YES  NO

DLCD File No.: 003-05 Part 1  
(14754)

Did the Department of Land Conservation and Development receive a Notice of Proposed Amendment.....

- Forty-five (45) days prior to first evidentiary hearing?  Yes  No  
If no, do the statewide planning goals apply?  Yes  No  
If no, did Emergency Circumstances require immediate adoption?  Yes  No

Affected State or Federal Agencies, Local Governments or Special Districts:

**Wetlands on site require Corp and DSL approval prior to work.**

Local Contact: **Brian Issa** Phone: **(541) 935-2191** Extension: \_\_\_\_\_  
Address: **PO BOX 458** City: **Veneta**  
Zip Code + 4: **97487-** Email Address: **bissa@ci.veneta.or.us**

### ADOPTION SUBMITTAL REQUIREMENTS

This form **must be mailed** to DLCD **within 5 working days after the final decision**  
per ORS 197.610, OAR Chapter 660 - Division 18.

1. Send this Form and TWO (2) Copies of the Adopted Amendment to:  
**ATTENTION: PLAN AMENDMENT SPECIALIST  
DEPARTMENT OF LAND CONSERVATION AND DEVELOPMENT  
635 CAPITOL STREET NE, SUITE 150  
SALEM, OREGON 97301-2540**
2. Submit **TWO (2) copies** the adopted material, if copies are bounded please submit **TWO (2) complete copies** of documents and maps.
3. Please Note: Adopted materials must be sent to DLCD not later than **FIVE (5) working days** following the date of the final decision on the amendment.
4. Submittal of this Notice of Adoption must include the text of the amendment plus adopted findings and supplementary information.
5. The deadline to appeal will not be extended if you submit this notice of adoption within five working days of the final decision. Appeals to LUBA may be filed within **TWENTY-ONE (21) days** of the date, the Notice of Adoption is sent to DLCD.
6. In addition to sending the Notice of Adoption to DLCD, you must notify persons who participated in the local hearing and requested notice of the final decision.
7. **Need More Copies?** You can copy this form on to **8-1/2x11 green paper only**; or call the DLCD Office at (503) 373-0050; or Fax your request to:(503) 378-5518; or Email your request to **mara.ulloa@state.or.us** - ATTENTION: PLAN AMENDMENT SPECIALIST.

**FINAL ORDER OF THE  
VENETA CITY COUNCIL  
(SDP-1-05)**

**Amendments to the Southwest Area Specific Plan  
and Veneta Land Development Ordinance 417 Section 4.14(7)(b)**

**A. The City Council finds the following:**

1. The applicant has submitted information for a plan amendment required by Section 4.14 of the Veneta Land Development Ordinance No. 417.
2. The Veneta Planning Commission met on December 5, and December 20 2005 to review and discuss the proposed amendments after providing proper notice of public hearing according to Section 2.11 of the Veneta Land Development Ordinance No. 417.
3. The Veneta Planning Commission Recommended approval of the proposed amendments on January 3, 2006.
4. The Veneta City Council held a public hearing on February 27, 2006 after providing proper notice of public hearing according to Section 2.11 of the Veneta Land Development Ordinance No. 417. The Council voted to tentatively approve the proposed amendments.
5. The Veneta City Council held a meeting on April 10, 2006 to make a final decision on the proposed amendments.
6. The City Council followed the required procedure and standards for taking action on a tentative plan as set forth in Section 4.02 of Veneta's Land Division Ordinance No. 418.

**B. The Veneta City Council approves the proposed amendments to the Southwest Area Specific Plan (SDP-1-05) and Veneta Land Development Ordinance with the following conditions of approval:**

1. Prior to construction of each phase of development, the boundaries of all wetlands that might be impacted by that phase shall be clearly marked and the wetlands protected according to City standards. The applicant shall obtain all necessary permits for wetland impacts prior to construction.
2. Prior to approval of each subdivision, all proposed pathways within the subdivision shall be named for efficient emergency response.

3. Prior to submission for subdivision in the north west corner of the site,
  - a. The applicant shall provide a feasibility report on the connection of 12<sup>th</sup> street to Bolton Hill at the Northwest corner of the property. If this street connection is not feasible, the applicant shall provide an emergency connection between the cul-de-sacs on either side of the large wetland as discussed in condition 2 above.
  - b. The applicant shall provide an analysis of the potential for dewatering of the wetlands in the northwest corner of the site by construction of the long cul-de-sac extending north from D street. Road alignment and construction shall not permanently impact the wetlands.
4. Prior to approval of the first subdivision, the applicant shall submit a detailed analysis of the stormwater mitigation systems proposed for the entire plan area. The analysis shall show that post development peak flows shall not exceed predevelopment peak flows for a 10yr storm event.
5. Prior to approval of the first subdivision, the applicant shall provide an analysis of sewer collection system capacity which takes into account the potential need for oversizing of infrastructure to accommodate future development to the West and South, and the overall impact of the proposed development on the City's sewer collection and treatment systems. The analysis shall show the estimated finished elevations across the entire Plan Area given the gravity flow requirements of the sewer system.
6. Prior to approval of the first subdivision, the applicant shall provide a detailed analysis of the water distribution system for the plan area to include water storage and distribution capacities, as well as pressure control requirements and the impacts of the proposed development on the City's water production system.
7. Prior to approval of the first subdivision, the applicant shall create a detailed maintenance plan for the proposed stormwater facilities clearly stating who will be responsible for maintenance, what the level of maintenance shall be established, and providing a development agreement if private parties are to take responsibility for maintenance.
8. Prior to approval of the first subdivision, the applicant shall enter into an agreement with the City and ODOT to construct a

dedicated right-turn-lane on south-bound Territorial at the intersection with Cheney Drive. The need for this improvement shall be considered during the review of each subdivision and may be required as a condition of approval if warranted at that time.

9. The developer shall enter into an agreement with the City and, if necessary, ODOT to address performance standard deficiencies on affected intersections. The agreement shall be in place prior to the approval of the first tentative subdivision and shall identify a funding plan for mitigation of intersection impacts. The agreement may include a condition that, if the City's Transportation SDCs are updated to include sufficient funding for a project or projects to address the deficiencies prior to issuance of the plan's first building permit, no further contribution may be required.
10. For each phase of the Southwest Area Plan, the developer shall provide a detailed analysis of impacted intersections identified in the traffic analysis work previously performed. The detailed analysis will identify how those intersections will be incrementally affected.
11. If the City has not enacted multi-family or town-home development standards by the time of application, the applicant shall work with the City to develop said standards prior to Site Plan Approval for Multi Family development.
12. If the City has not enacted standards for landscaping of detention ponds prior to the time of subdivision application, the applicant shall work with the City to develop said standards prior to subdivision approval.
13. If the City has not enacted grading and design standards for hillside development prior to the time of subdivision application, the applicant shall work with the City to develop said standards prior to approval of any subdivision with slopes likely to require cut/fill of more than 1 ft.

**C. IT IS HEREBY ORDERED THAT the Veneta City Council approves with conditions the amendments to the Southwest Area Plan (aka The Southwest Neighborhood Center) and Land Development Ordinance based on the information in the staff reports and the following findings of fact:**

**CITY APPROVAL CRITERIA AND FINDINGS FOR AMENDMENT OF  
A SPECIFIC DEVELOPMENT PLAN**

Specific Development Plans area initially adopted using the following criteria from Veneta Land Development Ordinance 4.14(3).

- (a) The specific development plan is consistent with the general land uses and potential gross density allowed by the Comprehensive Plan designation, or a plan amendment is approved in conjunction with the specific development plan.*
- (b) The specific development plan will increase the efficiency of land use and provide for compact development.*
- (c) The specific development plan will provide a mix of compatible land uses offering a variety of activities and destinations within the project area that respond to existing and future market conditions.*
- (d) The specific development plan will create a pedestrian friendly environment that provides direct, safe, and convenient access to public spaces and transit while maintaining access for automobiles and bikes. The circulation plan includes connections to surrounding properties.*
- (e) The specific development plan provides adequate public spaces such as small parks, greenways, or plazas where people can meet or relax.*
- (f) The specific development plan incorporates natural features such as creeks, wetlands, and large trees into the plans for the site.*
- (g) The specific development plan promotes building and site design that contributes positively to a sense of community and to the overall street scape.*

**The amended plan will continue to meet these criteria as discussed in the findings below, and the purpose, objectives, and function of the plan will not be adversely affected.**

Section 4.14(5)(b)3 requires “a change in the land use plan that results in the elimination of a proposed land use or a shift in land uses (including park sites) by more than 100 feet in any direction” to be considered a major amendment to the Specific Development Plan. Major amendments must be approved by the Planning Commission following a public hearing. Approval criteria are listed in 4.14(5)(d) which states:

- (d) A major amendment to a specific development plan shall be approved by the Planning Commission following a public hearing. The Planning Commission findings must demonstrate that the change will not adversely*

*affect the purpose, objectives, or function of the specific development plan.*

Within this criterion there are three separate sets of findings that must be made: not adversely affecting the purpose of the plan; not adversely affecting the objectives of the plan; and not adversely affecting the function of the plan. Each of these sub-criteria are discussed separately below.

1. *Not Adversely Affecting the Purpose of the Specific Development Plan.*  
**There is no stated purpose for the Southwest Neighborhood Center Specific Development Plan in either the Development Ordinance Section 4.14.(7)(b), Southwest Neighborhood Center, or the adopted report, the Veneta Southwest Area Specific Plan. However, Section 4.14(1) provides a purpose statement for Specific Development Plan subzones and states:**

- (1) *Purpose. The purpose of the "/SDP" subzone is to allow the development and approval of specific development plans in the City of Veneta. A specific development plan is a master plan applied to one or more parcels to coordinate and direct development in terms of transportation, utilities, open space, and land use. The purpose is also to streamline the land use review process and encourage development that is consistent with the specific development plan. Specific development plans are intended to promote coordinated planning and pedestrian-oriented mixed-use development.*

**The proposal does not adversely affect this purpose with the changes shown in the Revised Proposed Plan. The amended Plan is for a 128-acre largely undeveloped area (122 acres of which are directly affected by the proposed amendments) composed of 5 separate parcels. The proposed plan will coordinate and direct development across these parcels as follows.**

#### **Coordination of Transportation**

**The proposal does not adversely affect this purpose. The site extends from Territorial Highway west to almost Bolton Hill Road, allowing future street extensions in both an east-west and north-south direction that will increase connectivity throughout southwest Veneta and relieve traffic pressure from Territorial Highway. The specific development plan provides coordinated development of a street plan and bicycle/pedestrian plan that will serve both the neighborhood and southwest Veneta and ensure its**



completion and connection in a manner that will reduce impacts to existing facilities.

#### **Coordination of Utilities**

The proposal does not adversely affect this purpose with the condition of approval that the applicant remove dead-end lines in the water system, and provide a detailed analysis of the proposed water and sewer systems in relation to future surrounding developments and the City's existing water and sewer systems. Utilities will connect to and through the site. Both sewer and water lines will be connected to the east (Territorial Highway) and north (6<sup>th</sup> Street), and will have the ability to extend to the west and south as needed. Stormwater disposal is planned to serve only the site, although it could be modified to serve upland properties. A "green streets" approach is being proposed, subject to detailed design, with open drainageways and, on steeper slopes, cascading water features, incorporating a piped collection system and detention ponds, and eventually allowing groundwater recharge of flow into onsite wetlands and drainageways.

#### **Coordination of Open Space**

The proposal does not adversely affect this purpose with the condition of approval requiring coordination of the boundaries of the existing City park, and the proposed open space in the northwest corner of the site. A comprehensive open space network will connect all neighborhood districts, following a general pattern created by wetlands and drainageways. Across the development area, the proposed plan will result in a total of approximately 18.8 acres of parkland, 7.4 acres of wetland preservation area, and 3.7 acres of detention ponds, as well as additional space associated with the "green-streets" design for stormwater management.

#### **Coordination of Land Use**

The proposal does not adversely affect this purpose. One commercial and four residential land use districts are proposed for the site, in addition to the common open space and parks. These districts are connected by both a grid street pattern and an extensive pedestrian network of sidewalks and separated pedestrian paths within linear common open spaces. Commercial development will be limited in size to allow uses that are supportive of the neighborhood and nearby areas but

does not attract customers from distant areas to the detriment of downtown Veneta and other established commercial centers. Its location near Territorial Highway and along the Cheney Drive extension, a designated minor collector, will allow safe and convenient access by neighborhood residents and increase assimilation of the neighborhood into the Veneta community. Residential areas within the Plan area will step down in intensity from the level areas with good access along Territorial Highway and the commercial areas to the steeper slopes near the west site boundary. This pattern respects natural topographic constraints, adjacent land uses, and access opportunities. The proposed plan has provided for an integrated design that incorporates high density housing into the interior of the development to a high degree and provides adequate open space for residents in areas where private open space may be limited.

**Streamlining the Land Use Review Process and Encouraging Appropriate Development that is Consistent with the Specific Development Plan.**

The proposal does not adversely affect this purpose. Location and type of allowed housing is identified in the amended Plan. Within limitations imposed by the base zones, the Plan allows flexibility of housing types and density in order to respond to market force, and to offer potential homeowners the greatest range of housing opportunities. The street pattern provides certainty as to the location of streets on the site and extensions to adjacent land, allowing nearby property owners certainty as to location of street connections.

Present wetland regulations for Veneta virtually prevent any wetland fill except under unique circumstances. There are several small highly disturbed drainageways identified as wetlands and one small isolated wetland that provide a major impediment to logical street and lot development. Street extensions as identified in the City's transportation plan and the 1999 Plan must cross these wetlands. This Plan includes review and approval of fill of these wetland areas, totaling about 0.3 acres, in accordance with the exceptions process outlined in City Code Section 18.10.040(3)(f). Specific Development Plan regulations under the amended Plan provide specific instances where fill can occur and requirements for mitigation.

**Promoting Coordinated Planning and Pedestrian-Oriented Mixed-Use Development.**

The proposal does not adversely affect this purpose with conditions requiring additional bicycle/pedestrian connections necessary to optimize the proposed path system. Mixed use development in the form of a full variety of housing types and neighborhood commercial is provided through the Specific Development Plan. Homes and commercial buildings will be oriented toward the street, and parking lots will be to the side or rear of structures, promoting easy access and a pedestrian-friendly atmosphere. The pedestrian circulation throughout the neighborhood consists of sidewalks alongside roadways and a separated pedestrian path system within common open spaces.

2. *Not Adversely Affecting the Objectives of the Specific Development Plan.*

As part of the 1999 Plan, the Planning Commission adopted a series of objectives. With the amended Plan, they have been modified slightly to be more specific and provide greater detail. Intent, however, remains the same. The following is a discussion of how the amended Plan does not adversely affect the objectives of the 1999 Plan.

**1999 Plan Objective**

*Mix of Uses.* Provide a mix of compatible land uses offering a variety of activities and destinations within the project area that respond to existing and future market conditions.

**Amended Plan Objective**

*Neighborhoods.* Develop a neighborhood that includes a wide range of housing types and locations, commercial and employment opportunities, and passive and active recreational opportunities on a scale that is compatible with one another and adjacent development. Provide a full transportation network of streets and separated pedestrian paths. Allow development of commercial and employment areas that support the neighborhood and surrounding residential areas. Create a unique neighborhood character and identifiable boundaries.

The proposal does not adversely affect this objective. The proposed objective expands on the 1999 plan. Small-scale commercial development located adjacent to Territorial Highway provides local employment opportunities, and serves neighborhood residents and nearby residential areas. A full transportation system, consisting of both roadways and separated pedestrian paths in common open areas, extends through the site and to adjacent lands to provide

connectivity and an efficient transportation system. Of great importance is the provision of a comprehensive open space network that connects all portions of the neighborhood, provides active and passive recreational opportunities, protects wetlands, provides stormwater detention, and includes a pedestrian path to augment and enhance the standard street network. The land use pattern proposed by the Plan respects natural constraints (topography and wetlands/drainageways), adjacent lands and future land use designations, and both existing and planned traffic circulation patterns.

**1999 Plan Objective**

*Increased Efficiency of Land Use. Provide for compact development optimizing infrastructure investments, open space amenities and access to the neighborhood center.*

**Amended Plan Objective**

*Increase Efficiency of Land Use. Provide for compact development, optimizing infrastructure investments, open space amenities and access to the multifamily and neighborhood commercial districts. Allow a variety of development densities and intensities within limits set by the Comprehensive Plan and are compatible with topography, sensitive natural resources, transportation and utility infrastructure, and proximity to other uses.*

The proposal does not adversely affect this objective. The proposed street plan requires less than 20 percent of the site to be devoted to rights-of-way, as opposed to 25 percent normally required with standard subdivision development and 26 percent required with the 1999 Plan. Minimum lot sizes for individual homes are smaller than that allowed by the base zone (but within density limitations imposed by the Comprehensive Plan), and are clustered along roadways, causing less intrusion into sensitive natural resources and allowing greater common open space. More intense development, such as the multifamily and commercial areas, are located along Cheney Drive, a minor collector and future transit street, allowing safe and convenient access to adjacent neighborhoods and beyond. The linear pattern of common open spaces allows an efficient separated pedestrian connection throughout the neighborhood. The amended Plan offers an efficient transportation and development pattern while creating more open space than either the 1999 Plan or development that could occur under base zone standards.

**1999 Plan Objective.**

*Multi-Modal/Pedestrian Friendly. Create a pedestrian friendly environment that provides direct, safe, and convenient access from homes*

*to commercial services, public spaces, and transit connections while maintaining access for automobiles and bikes. The transportation network should include connectivity to surrounding existing and planned development.*

**Amended Plan Objective.**

*Multi-Modal/Pedestrian Friendly. Create a pedestrian friendly environment that provides direct, safe, and convenient access from homes to commercial services, public spaces, and transit connections while also creating an efficient street pattern for automobiles and bicycles. Provide transportation connectivity to adjacent land to the greatest extent practicable, given natural and physical constraints.*

**The proposal does not adversely affect this objective. A full public street system is proposed as part of this Plan. Major connections will be made to Territorial Highway at the south end of the site as a westerly extension of Perkins Road, and at the north end as a westerly extension of Cheney Drive. Roads will be extended through the site to adjacent properties, providing connectivity in a safe and efficient manner and neighborhood access for motorists, bicyclists, and pedestrians. Cheney Drive, along the north site boundary, will be able to accommodate future bus service to the neighborhood, as envisioned in the adopted *Transportation System Plan* for the City of Veneta. Both the Cheney Drive and 8<sup>th</sup> Street extensions through the site will be improved as minor collectors, connecting Territorial Highway to existing 8<sup>th</sup> Street to the north, and eventually to adjacent property to the south. The Perkins Road extension, along the south site boundary, will be improved as a major collector street, and will eventually extend over property to the west of the site to connect Territorial Highway to Bolton Hill Road, further west. Other streets within the site will form a pattern of local service loops and cul-de-sacs, designed to provide access to neighborhood properties but discourage through traffic. To augment the street system and provide a variety in alternative transportation routes, a separated pedestrian path will be placed in the common open areas and extend throughout the site, connecting to surrounding streets, sidewalks, and future off-street paths adjacent to the development area.**

**1999 Plan Objective**

*Provide Alternative Parallel Routes. Provide collector roadway connections that lessen reliance on Territorial Highway as the sole accessway through town.*

**Amended Plan Objective**

*Provide Alternative Parallel Routes. Provide collector roadway connections that lessen reliance on Territorial Highway as the sole*

*accessway through Veneta, while retaining neighborhood character and values.*

**The proposal does not adversely affect this objective. Cheney Drive, a minor collector, and Perkins Road, a major collector, both extend through the site in an east-west direction to provide eventual connection further west with Bolton Hill Road, a north-south major collector, and 8<sup>th</sup> Street, a north-south minor collector. These street improvements provide alternative parallel routes that should lessen reliance on Territorial Highway, particularly for local vehicle trips. Neighborhood character and values will be retained along these through streets by providing planting strips, vegetated stormwater swales and street trees, and having common open spaces along the routes.**

**1999 Plan Objective.**

*Public Spaces. Provide adequate public spaces such as greenways, or plazas where residents and employees can meet or relax and that will provide a counterbalance to the high activity levels in the mixed-use area. Identify a minimum 10-acre school site and a 5-acre park within or near the neighborhood center.*

**Amended Plan Objective.**

*Public and Open Spaces. Provide public spaces such as neighborhood parks, common open areas, greenways, and plazas where residents and employees can meet or relax and that will counterbalance activity levels in more intense commercial and residential areas.*

**The proposal does not adversely affect this objective. An open space network of over 20 acres in a linear east-west pattern along the north portion of the site and along the south central boundary incorporates a separated pedestrian path that connects all neighborhood districts, providing a unifying design element, alternative transportation route, and recreational opportunities. To enhance water quality from stormwater runoff, detention ponds and swales will be located in these areas as well as along roadways, providing habitat and vegetation diversity. The open space element is the key design feature for the neighborhood, taking advantage of natural amenities such as wetlands, streams, and established tree groves. Open areas border the main entries from Territorial Highway, reinforcing the theme of natural areas to visitors and providing the linear visual, recreation, and pedestrian connection between the various neighborhood districts.**

**In addition to the common open space network, each residential and commercial lot will have required landscaped areas ranging from 35**

to 60 percent. Total public open space for the neighborhood will be about double that provided by the 1999 plan.

**1999 Plan Objective**

*Natural Features.* Incorporate natural features such as creeks, wetlands, and large trees into the plans for the site (including grading, landscaping and lighting). Provide for onsite stormwater retention and maximize this opportunity to create a neighborhood amenity of the drainage and wetland areas. Identify appropriate development for the forested areas and steep slopes.

**Amended Plan Objective**

*Natural Features.* Incorporate natural features such as creeks, wetlands, and tree groves into neighborhood development. Provide for onsite stormwater detention, and maximize the opportunity to create a neighborhood amenity of drainage and wetland areas. Identify appropriate development for forested areas and steeper slopes.

The proposal does not adversely affect this objective. The site contains 7.5 acres of delineated wetlands. They are located in two major areas, and form the headwaters of drainageways that flow east through Veneta. The first major wetland system begins on the hillside at the west end of the site as a major seep and wet meadow. Water from this source flows east along a narrow drainageway to about mid-site, where the site becomes more level and another broad wetland area is formed. Again water is channeled to the east, where it exits the site at Cheney Drive. The second wetland system is found along the south site boundary at about midpoint. It also flows into a drainageway that drains diagonally in a northeast direction to about the center of the east site boundary, and then north to the drainageway that exits at Cheney Drive. Except for two small isolated wetlands and several points needed for roadway crossings (Appendix C Map 3), wetlands will be retained and incorporated into common open areas as an amenity. Additionally, a dense tree grove located along the south site boundary near the south wetland will be retained in a common open area, reinforcing the unique open space character and unique design theme that identifies the neighborhood.

Separate stormwater detention areas are located adjacent to wetlands in the common open spaces, intercepting stormwater runoff and reducing runoff rates to the wetlands and drainageways, thereby controlling erosion and water quality.

Major forested areas along the south site boundary are incorporated into the common open space, providing visual relief, buffering and separating the residential area into smaller units, retaining wildlife habitat diversity, and increasing passive recreational opportunities.

**1999 Plan Objective.**

*Building and Site Design.* Promote building and site design that contributes positively to a sense of neighborhood and to the overall streetscape by carefully relating building mass, frontages, entries, and yards to public streets and adjacent properties. The architecture and scale of commercial buildings should provide attractive street frontages and minimize the placement of parking lots and loading docks along public streets.

**Amended Plan Objective.**

*Building and Site Design.* Promote building and site design that creates a sense of neighborhood. Carefully relate building mass, frontages, entries, and yards to streets and adjacent properties in order to orient public activities toward public spaces and provide privacy between neighboring properties. The architecture and scale of commercial buildings should provide attractive street frontages and encourage placement of parking lots and loading docks away from public street frontages.

**The proposal does not adversely affect this objective. The Southwest Area Plan promotes development that will be at small-to-medium size, blending commercial and residential uses together through limiting maximum lot coverage and, in commercial areas, maximum building size to create continuity in visual impact throughout the site.**

**Allowing smaller lot sizes in single-family residential areas, as well as slightly lower density limits in the more intense residential districts, blends building types and densities. Common open spaces, private area landscaping requirements similar to the base zone, and streets with full planter strips, landscaped stormwater swales, and street trees throughout the neighborhood provide a softening of boundaries between land uses and housing types, as well as drawing them together with the common theme of green spaces and open areas.**

**The Plan incorporates design requirements for porches or main entries that must face the street, minimum window or door areas on front facades, de-emphasis of garages facing the street, and prohibition of parking lots between a building and street in commercial and multifamily development. These design requirements promote an attractive and inviting streetscape and orients public activities toward the street and, in some instances, common open space beyond.**

**1999 Plan Objective.**

*Safe Environment.* Promote a safe environment for residents and visitors during all hours of the day and night. Provide for residential design that put eyes on the street. Design streets for the safety of all residents.



**Amended Plan Objective.**

*Safe Environment.* Promote a safe environment for residents and visitors during all hours of the day and night. Encourage residential design that puts eyes on the street and other public or common open spaces. Design streets and public areas for the safety of all residents.

**The proposal does not adversely affect this objective. The Plan incorporates design requirements for porches or main entries that must face the street, minimum window or door areas on front facades, and de emphasis of garages facing the street. All of these design elements encourage use of the streets as a public open space for socializing and play as well as transportation. Multiple use such as this extends activity times by residents and gives a sense of ownership and control through surveillance.**

**1999 Plan Objective.**

*Transition Between Uses*

*Provide sensitive transitions between commercial, lower density residential and higher density residential development and minimize impacts of development on wetlands and waterways.*

**Amended Plan Objective**

*Transition Between Uses.* Provide sensitive transitions between commercial, lower density residential and higher density residential development and minimize the impacts of development on wetlands and waterways.

**The proposal does not adversely affect this objective. The Southwest Area Plan promotes development that will be at small-to-medium size, blending commercial and residential uses together through limiting maximum lot coverage and, in commercial areas, maximum building size to create continuity in visual impact throughout the site. Compatibility of uses through restricting maximum building size and promoting a pedestrian-friendly streetscape in commercial areas reduces potential impacts and the need for mitigation between land use districts. Allowing smaller lot sizes in single-family residential areas, as well as slightly lower density limits in the more intense residential districts, allow blending of building types and densities to promote housing types and designs. Common open spaces, private area landscaping requirements similar to the base zone, and streets with full planter strips, landscaped stormwater swales, and street trees throughout the neighborhood provide a softening of boundaries between land uses and housing types, as well as drawing them together with the common theme of green spaces and open areas.**

**The Plan incorporates design requirements for porches or main entries that must face the street, minimum window or door areas on**

front facades, de-emphasis of garages facing the street, and prohibition of parking lots between a building and street in commercial and multifamily development. These design requirements promote an attractive and inviting streetscape and orients public activities toward the street and, in some instances, common open space beyond.

**1999 Plan Objective.**

Housing Types. Encourage a range of housing types (e.g. standard single family, small lot single family, townhomes, row houses, and apartments) to provide housing choice and promote home ownership.

**Amended Plan Objective.**

Housing Types. Provide for a range of housing types (e.g. standard single-family, small lot single-family, attached townhomes, and multifamily dwellings). Create land use regulations that provide for flexibility of housing type within general areas given overall density limits, services, transportation networks, proximity to commercial and employment areas, and physical constraints of the land. Maximize home ownership opportunities by allowing individual homes on separate lots of sizes in keeping with density ranges allowed by the Comprehensive Plan.

**The proposal does not adversely affect this objective. Although different land use districts are proposed, only the Single-Family Residential area, comprising the western third of the site, requires detached single-family residential housing. Even within the Single-Family Residential district the minimum lot size of 6,000 square feet will allow a variety of lot sizes that could approach 8,000 square feet or more in order to meet the Comprehensive Plan maximum density limit of seven units per net acre (an average lot size of at least 6,223 square feet). This performance-oriented approach allows a variety of lot sizes and homes that respond to physical constraints such as steeper hillsides, while keeping overall densities within the district as low as Comprehensive Plan requirements.**

**The General Residential area allows detached single-family, townhome, and multifamily homes under a variety of density limitations that, overall, are the same or less than Comprehensive Plan limitations. Again, detached residential lot sizes are performance-oriented with a minimum lot size of 3,600 square feet for detached single-family dwellings and 5,000 square feet for duplexes on corner lots, allowing a range of home sizes and transition from the lower density Single-Family Residential district to the west to the higher density Multifamily and Townhome districts to the north and east.**

**A 1.8-acre attached single-family residential district is proposed along a linear parkway connection between two large open spaces containing wetlands and recreation areas. The attached single-family dwelling district is dedicated to one housing type-townhomes on separate lots-thereby ensuring a diversity of housing type for the neighborhood in a form that promotes home ownership.**

**A 5.2-acre district north of Cheney Drive is designated multifamily residential, allowing either multifamily residential or townhome construction at a density of 15 to 20 units per acre. Although multifamily development is often viewed as rental housing, individual private ownership through condominium development is also possible.**

*3. Not Adversely Affecting the Function of the Specific Development Plan.*

**The proposed amendments will not adversely affect the function of the 1999 Plan. The proposed plan will provide a coordinated development plan for a 128-acre site that will create a dynamic neighborhood of diverse housing types, commercial development to serve it and the surrounding community, and natural resource protection, while extending the transportation system and utilities in a logical fashion that will provide connectivity with adjacent properties and the City network as a whole. This will be done within the carrying capacity of the land, support facilities such as streets and utilities, and general land use designations and density limitations within the Comprehensive Plan.**

**Dynamic Neighborhood of Diverse Housing Types.**

**The amended Plan allows for a full range of housing types, including detached single-family residences, townhomes, and multifamily homes, at varying densities depending upon Comprehensive Plan limitations, physical constraints, proximity to transportation routes, and services. Overall housing numbers will be fewer than that allowed by base zoning, although slightly above the number allowed under the 1999 Plan.**

**Supportive Commercial Development.**

**A three-acre commercial district is located at the eastern entry to the site, along Territorial Highway and Cheney Drive. This provides easy access for neighborhood residents by foot along either sidewalks or separated pedestrian paths within the linear common open spaces that connect the districts to one another. Because of proximity to Territorial Highway, the commercial area is also accessible to nearby residents, increasing assimilation of the neighborhood into the Veneta community.**

**Natural Resource Protection.**

The site has a number of large wetlands and drainageways that were not identified in the 2000 Plan. The amended plan identifies these sensitive natural resources and places them, to the greatest extent practicable, within common open spaces, where they can function as water sources for downstream creeks, groundwater recharge areas, water quality filters, wildlife habitat areas, and visual amenities to the neighborhood. This comprehensive approach to resource protection will maximize benefits while minimizing the potential for conflicting actions by competing landowners that may be detrimental to citywide resource conservation. A major tree grove along the south site boundary has also been identified and protected through incorporation into the common open space, providing habitat diversity and a visual landmark for the neighborhood.

**Transportation System Extension.**

The site extends from Territorial Highway west to almost Bolton Hill Road, allowing future street extensions in both an east-west and north-south direction that will increase connectivity throughout southwest Veneta and relieve traffic pressure from Territorial Highway. The Plan provides coordinated development of a street network that will serve both the neighborhood and southeast Veneta and ensure its completion and connection in a manner that will reduce impacts to existing facilities.

**Carrying Capacity of the Land.**

Although designated for moderate and intense development with the Comprehensive Plan and zoning, the site has physical constraints in the form of wetlands that allow development under the present land use requirements problematic. The Plan provides a performance-oriented approach to neighborhood development, retaining and protecting the major wetlands area and allowing varying lot sizes that respond to topography limitations.

**Carrying Capacity of Streets and Utilities.**

The amended Plan provides alternative transportation routes to Territorial Highway, and east-west connections between them, offering new north-south connections into the Veneta downtown area. Sewer and water connections can be made to and through the site in a manner that will not only serve the site but provide potential for extensions to adjacent lands. Taking into account staffs recommended changes to the proposal, the total number of units will not appreciably increased over the approved plan and therefore, the carrying capacity of the surrounding street network will not be adversely affected by the proposed amendment. As a condition of approval, the applicant is

required to assess the potential need for oversizing of sewer and water infrastructure to accommodate surrounding development.

**Comprehensive Plan and Zoning Designations.**

The west portion of the site has a base zone of Single-Family Residential with a maximum net density of 7 units/acre. The eastern portion of the site is designated as Medium Density Residential which is further broken down by the plan into subareas for small single-family, townhomes, and multifamily developments, all of which have a maximum density of 15 units-acre in compliance with the Comprehensive Plan. Approximately 2.8 acres is designated Commercial.

**APPROVAL CRITERIA FOR LAND DEVELOPMENT ORDINANCE TEXT AMENDMENT.**

State statutes set substantive standards for amending the text of land use implementing regulations, such as the Land Development Ordinance. ORS 197.175(2)(b) requires that these amendments must implement the acknowledged Comprehensive Plan. Therefore, relevant policies in the *Veneta Comprehensive Plan Ordinance No 416* are standards for this decision.

Following are the relevant policies of the Comprehensive Plan, each followed by a discussion of how they are met with the amended Plan.

*C. Residential Land and Housing Element*

*Policy 2: Provide a variety of residential neighborhoods including rural residential with large lots, traditional single-family subdivisions with standard lots, areas with a mix of housing types, and mixed-use neighborhoods where commercial and residential are blended such as in the downtown area.*

**The proposal is consistent with this policy because the new neighborhoods will increase the diversity of the character of the residential development in the Plan area.**

*Policy 7: Allow various housing types such as multi-family housing, townhouses and co-housing so the market provides housing choices to Veneta residents.*

**As with the policy above, the changes are consistent with this policy because they will maintain and increase the housing choices for residents.**

*Policy 1: Increase residential densities where water and sewer facilities are available so that services and utilities can be provided economically.*

*Policy 12: Allow increased densities in the priority development areas (areas with city sewer service) through professionally prepared planned developments. Allow flexibility in lot size using the variance process.*

**The changes are consistent with both of these policies. The overall density of the development will not increase across the plan area. The above reference to the use of the variance process is inconsistent with other City Codes and Comprehensive plan elements which allow smaller lots when areas are dedicated to protect natural resources and serve as open space. Clustering of development promotes efficiency in land use and in provision of facilities.**

*Policy 14: If public open space is provided, allow smaller lot sizes than zoning districts otherwise allow. In this way, the overall gross density of development does not increase, but the open spaces may be used to protect natural resources or provide more viable recreation areas.*

**The changes proposed are consistent with and directly implement this policy. Gross density remains roughly the same, but smaller lot sizes allows for more common open space and protection of natural resources.**

**G. Transportation Element**

*Policy (1)(a): The City shall protect the function of existing and planned transportation systems as identified in the Street Plan, the bicycle Plan, and Pedestrian Plan and Transit Plan through application of appropriate land use and access management regulations.*

**The proposal is consistent with this policy. Taking into account the General Residential areas along Territorial Highway, both the approved plan and the proposed amended plan result in approximately 620 units. The amended Plan does not change the demand on transportation facilities or what facilities are proposed. According to the Transportation Impact Analysis submitted by the applicant, development within the plan area will place an increased burden on the intersection of 126 and Territorial, an intersection which, according to the TIA presently operates below standard. As a**

**condition of approval prior to subdivision, the applicant shall enter into an agreement with both the City and ODOT agreeing to mitigation measures for this intersection.**

*Policy (2)(b): Collector Streets: Access shall be managed to minimize degradation of capacity and traffic safety.*

**The proposal is consistent with this policy. The TIA for the plan area indicates that according to a worst-case scenario for build out under the proposed plan, all intersections within and surrounding the development (with the exception of 126 and Territorial) will operate acceptably. Policy 2 establishes street classifications. Policy (2)(b) identifies the Perkins Road extension in the Plan area as a Major Collector. Policy (2)(b) also identifies Cheney Drive and 8<sup>th</sup> Street extensions as Minor Collectors. These planned streets are shown on the current Plan. The changes to the Plan being made here are consistent with this policy of the *Veneta Comprehensive Plan Ordinance No 416*. Perkins Road, Cheney Drive, and 8<sup>th</sup> Street are shown in the proposed revision as being consistent with their current classification. As a condition of approval, the applicant shall enter into an agreement with The City and ODOT to construct a right-turn lane at Territorial and Cheney. The need for a right-turn lane at Territorial and Cheney shall be reviewed during the approval process for each subdivision and may be required as a condition at that time.**

*Policy (2)(c): Local Streets: A local street shall provide direct property access and access to collectors and minor arterials. Service to through-traffic movement shall be discouraged.*

**The proposal is consistent with this policy. All streets shown on the proposed revisions to the Plan other than Perkins Road, Cheney Drive, and 8<sup>th</sup> Street are local streets. The TAI for the plan area indicates that according to a worst-case scenario for build-out under the proposed plan, all intersections within and surrounding the development (with the exception of 126 and Territorial) will operate acceptably. As a condition of approval, a dedicated right turn land will be required on southbound Territorial at Cheney Drive when it is determined by the Planning Commission that it is necessary to serve a proposed subdivision.**

*I. Natural Resources Element*

*Policy 3: Protect significant wetlands through restrictions on grading, excavation, placement of fill, and most forms of vegetation removal.*

*Policy 4: Minimize hardship on private property owners due to protection of significant wetland resources by adopting procedures to consider hardship variances and claims of map error verified by the Division of State Lands, and reducing or removing restrictions for lots or parcels that have been rendered unbuildable from the adoption of development requirements.*

**The proposal is consistent with this policy with the condition of approval that the applicant obtains a variance for all proposed wetland impacts prior to final approval. Wetland identification and management is discussed more thoroughly in the response to the request for wetland fill for street crossing, and elsewhere in this document. In general, the applicants have conducted a wetlands delineation of the *Veneta Southwest Area Specific Plan* and have mapped wetlands in addition to those already mapped on the *Veneta Comprehensive Plan Wetlands Map* (1999). The total area of wetlands on the subject property meeting the DSL's definition is 7.5 acres. The proposal will permanently impact 0.18 acres of wetlands in three locations and temporarily impact 0.17 acres of wetlands in six locations in order to accommodate roads, utility crossings, and related improvements. The rationale for these impacts is addressed in connection with the variance review under the regulations of *City Code Chapter 18.10, Wetland Protection*. Comprehensive Plan policies above call for protecting significant wetlands subject to the need to balance private hardships. These policies are implemented through existing City Code provisions of Chapter 18.10.**

#### **COMPLIANCE WITH STATEWIDE PLANNING GOALS**

Statewide Planning Goals potentially apply as standards for any changes to regulations implementing Comprehensive Plans, which would include changes to the *Veneta Land Development Ordinance No. 417*. This section lists each goal, states its relevance, and addresses it if it is an applicable standard.

*Goal 1: Citizen Involvement:*

**The Goal 1 requirements for citizen involvement are satisfied if the local government has made its changes following the procedures for citizen involvement in its acknowledged plan and code. Full public hearing, including notification, and opportunity for public input as required by the**



**Veneta Land Development Ordinance No. 417, will be part of the review process for this application. Goal 1 is satisfied.**

*Goal 2: Land Use Planning:*

**Goal 2 requires the City to have and apply a land use planning and policy framework for making decisions based on standards and an adequate supporting factual basis. The City will make this decision in compliance with the standards in its Comprehensive Plan and implementing code. Goal 2 is satisfied.**

*Goal 3: (Agricultural Lands) and Goal 4 (Forest Land):*

**The site is not Agriculture or Forest Land. Goals 3 and 4 do not apply.**

*Goal 5: Open Spaces, Scenic and Historic Areas, and Natural Resources:*

**Goal 5 requires the City to inventory the locations, quality and quantity of certain natural resources. Where no conflicting uses are identified, the inventoried resources shall be preserved. Where conflicting uses are identified, the economic, social, environmental and energy consequences of the conflicting uses shall be determined and programs developed to achieve the goal.**

**Goal 5 is implemented through the Goal 5 Rule adopted by the LCDC in 1996. The Rule appears in OAR Chapter 660, Division 23: Procedures and Requirements for Complying with Goal 5. The Rule applies to “post-acknowledgment plan amendments” or “PAPAs,” such as this application.<sup>1</sup> The Division 23 Rule replaces the Division 16 Rule.<sup>2</sup>**

**When a local government undertakes a PAPA, as the City is doing here, it is not required to do an entire Goal 5 analysis from scratch. The local government’s obligation to do a Goal 5 analysis, and the scope of the Goal 5 analysis that is required, has been the subject of considerable case law development, which has been distilled into the applicability provisions of the Goal 5 Rule. Particularly relevant are subsection (3) and (4) of OAR 660-023-0250, which state:**

*(3) Local governments are not required to apply Goal 5 in consideration of a PAPA unless the PAPA affects a Goal 5 resource. For purposes of this section, a PAPA would affect a Goal 5 resource only if:*

*(a) The PAPA creates or amends a resource list or a portion of an acknowledged plan or land use regulation adopted in order to protect*

---

<sup>1</sup> OAR 660-023-0250(2) states, in part: “The requirements of this division are applicable to PAPAs initiated on or after September 1, 1996.”

<sup>2</sup> See OAR 660-023-0250(1).

*a significant Goal 5 resource or to address specific requirements of Goal 5;*

*(b) The PAPA allows new uses that could be conflicting uses with a particular significant Goal 5 resource site on an acknowledged resource list; or*

*(c) The PAPA amends an acknowledged UGB and factual information is submitted demonstrating that a resource site, or the impact areas of such a site, is included in the amended UGB area.*

*(4) Consideration of a PAPA regarding a specific resource site, or regarding a specific provision of a Goal 5 implementing measure, does not require a local government to revise acknowledged inventories or other implementing measures, for the resource site or for other Goal 5 sites, that are not affected by the PAPA, regardless of whether such inventories or provisions were acknowledged under this rule or under OAR 660, Division 16.”*

**The initial Goal 5 question, therefore, is whether the subject property includes any Goal 5 resources inventoried in the acknowledged comprehensive plan. There are such resources. The subject property contains locally significant wetlands on the acknowledged city wetlands inventory. These wetlands are subject to the protections of the Veneta Wetlands Ordinance No 419.**

**Although a Goal 5 resource is present on the site, the City must go through the Goal 5 process only if one of the three conditions in subparts (a), (b) or (c) is present. This proposal meets none of the triggers for the Goal 5 process. (a) The proposal does not create or amend a list of Goal 5 resources. Neither does it amend any portion of the zoning code that was adopted to protect a Goal 5 resource. (b) The proposal does not allow any new uses that conflict a Goal 5 resource. This proposal rearranges somewhat the land uses already allowed on the site under the current zoning. (c) The proposal does not involve a UGB amendment.**

**Wetlands located on the site are identified in the City’s Comprehensive Plan, although without precise boundaries. This application includes full identification and delineation of all wetlands on site that meet State wetlands definition. The Veneta Municipal Code allows delineation and determination of more precise wetland boundaries without the need to amend the Comprehensive Plan:**

*18.10.030 Procedure for Identifying Significant Wetlands.*

*...The more precise boundaries obtained through a wetland delineation can be identified, mapped, and used for review and development without a change in the comprehensive plan wetlands exhibit...*

Because wetlands on the site are identified in the Comprehensive Plan, and delineation resulted in only determination of more precise boundaries as allowed by the Veneta Municipal Code, the Goal 5 process is not triggered by this proposal. The proposal is therefore consistent with Goal 5.

*Goal 6: Air, Water and Land Resources Quality:*

Goal 6 protects the quality of land, air and water resources. The focus is on discharges from future development in combination with discharges from existing development. State and Federal environmental standards are the benchmark for protection. Where there are State or Federal standards for quality in air sheds or river basins, then the carrying capacity, nondegradation, and continued availability of the resources are standards. Here the changes being made to the code relate to how the site is developed for residential uses, not what uses are developed on the site. The *Veneta Land Development Ordinance No 417* existing and acknowledged provisions for protecting air, water and land resource quality remain intact. This complies with Goal 6.

*Goal 7: Areas Subject to Natural Disasters and Hazards:*

The phrase "areas of natural disasters and hazards" means "areas that are subject to natural events that are known to result in death or endanger the works of man, such as stream flooding, ocean flooding, ground water, erosion and deposition, landslides, earthquakes, weak foundation soils and other hazards unique to local or regional areas." OAR 660-15-000. There are no such areas known on the subject property. As is the case with Goal 6, the site is already subject the provisions in the Comprehensive Plan and implementing code relating to Goal 6 issues. The uses proposed and the protections that apply are not being changed.

The applicant submitted a *Geotechnical Investigation/Report* for the Specific Development Plan area, prepared by Northwest Geotech, Inc. (March 3, 2005). The report concluded that, from a geotechnical engineering standpoint, the subject property is suitable for the proposed development provided the recommendations presented in the report are incorporated into the design and construction of the project. This demonstrates that the amendments comply with Goal 7.

*Goal 8: Recreational Needs:*

The overriding purpose of Goal 8 is to address all recreational needs, but has a major focus on siting and developing destination resorts, defined in Goal 8 as "self-contained development[s] providing visitor-oriented accommodations and developed recreational facilities in a setting with high natural amenities." No destination resort is proposed. Requirements for neighborhood parks and other recreation facilities are contained in the Comprehensive Plan, Veneta parks master plan, Transportation system Plan, and *Veneta Land Development Ordinance No 417*. No changes to

recreation requirements are proposed, and requirements will be met with any development. The amendments comply with Goal 8.

*Goal 9: Economic Development:*

**Goal 9 is focused on commercial and industrial development. The Goal 9 Rule, OAR 660-09, is explicitly limited to areas within urban growth boundaries, which includes this site. There are about three acres of commercially-zoned land within the Specific Development Plan area. The area, location, and allowed uses in the commercial area will not change. Goal 9 does not apply.**

*Goal 10: Housing:*

**Goal 10 establishes general standards for cities to maintain an inventory of land available for development of housing during the planning period, to ensure that a mix of housing types can be constructed, and to ensure that housing developments are reviewed and approved under clear and objective standards. All but about three acres of the Specific Development Plan area are currently planned and zoned for a mix of housing types. The current residential plan designations and zoning districts for the site are acknowledged. The amendments do not change residential zone boundaries or land use designations, and retain the opportunity to provide a broad range of housing types and densities. The amendments simply rearrange land uses slightly to reflect recent wetland delineations. Therefore, the changes are consistent with Goal 10.**

*Goal 11: Public Facilities:*

**Goal 11 addresses facilities and services in urban and rural areas. The goal states the City will “plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban and rural development. “Public facilities and services” is defined in the Statewide Planning Goals to include: “[p]rojects, activities and facilities which the planning agency determines to be necessary for the public health, safety and welfare.” The Goal 11 Rule defines a “public facility.” “A public facility includes water, sewer, and transportation facilities, but does not include buildings, structures or equipment incidental to the direct operation of those facilities.” OAR 660-11-005(5).**

**The changes approved here ensure that the intensity of residential development in the Specific Development Plan area will remain substantially the same as allowed under the previous designations, and in conformance. Hence, these amendments will not increase the demand for public facilities on the City of Veneta as a whole. In addition, the amendments being made here reflect much more detailed planning for the site. Sanitary sewers, storm water systems, water supplies and roads have been designed to fit with the topography and the natural features more closely. Hence, the on-site provision of public facilities will be more efficient as a result of these amendments. This complies with Goal 11.**

*Goal 12: Transportation:*

**Goal 12 is implemented through the Goal 12 Rule (OAR 660-12) adopted in 1991. The Rule has a section that specifically addresses proposals such this – amendments to acknowledged implementing regulations. OAR 660-12-060(1) provides that any such amendments that “significantly affect a transportation facility shall assure that allowed land uses are consistent with the identified function, capacity, and level of service of the facility.”**

**The threshold question, therefore, is whether the proposed development allowed by these changes would significantly affect a transportation facility. The rule spells out clearly what constitutes a “significant affect.” OAR 660-12-060(2) states:**

*A plan or land use regulation amendment significantly affects a transportation facility if it:*

- (a) Changes the functional classification of an existing or planned transportation facility;*
- (b) Changes standards implementing a functional classification system;*
- (c) Allows types or levels of land uses which would result in levels of travel or access which are inconsistent with the functional classification of a transportation facility; or*
- (d) Would reduce the level of service of the facility below the minimum acceptable level identified in the TSP.*

**Although, it does not appear that the proposed amendments will trigger any section of the rule, development of the site under the proposed plan will place additional pressures on the intersection of Highway 126 and Territorial, and intersection which, according to the TIA, already operates at below standard and will require a dedicated southbound turn lane at Territorial and Cheney. The acknowledged Veneta Transportation System Plan (1998) identifies the proposed extension of three streets to link the subject property with the surrounding street system:**

- 1. Westerly extension of Perkins Road to connect with Bolton Hill Road;**
- 2. Westerly extension of Cheney Drive to connect with 8<sup>th</sup> Street; and**
- 3. Southerly extension of 8<sup>th</sup> Street to connect with the Perkins Road extension**

**All of these proposed streets are integrated into the specific plan, and connect the plan area to existing streets at six locations. See proposed Circulation Plan. The loop created by Perkins Road and 8th Street provides a primary alternative parallel route to Territorial Road. These roads are proposed in**

substantially the same alignments as they appear in the Transportation Plan. The Transportation Plan is explicit that the alignment shown for roads in the Plan is not the required final alignment, and that the final alignment may be determined through further development planning, such as this effort. Perkins Road is likely to see increased traffic from residents utilizing this as a route to and from the Eugene area. Although no signals were warranted according to the TIA, the City may wish to look at reducing speed limits, street upgrades, or other mitigation measures for this road.

The Department of Land Conservation and Development (Department) has reviewed the proposed Amendments to the Veneta Southwest Area Specific Plan, October 19, 2005. Comments by the Department dated November 19, 2005 were received by the City of Veneta and are entered into the record as Exhibit B-3 of the City Staff Report dated November 28, 2005. The Department noted that TPR 0045(7) requires that:

Local governments shall establish standards for local streets and accessways that minimize pavement width and total right-of-way consistent with the operational needs of the facility. The intent of this requirement is that local governments consider and reduce excessive standards for local streets and accessways in order to reduce the cost of construction, provide for more efficient use of urban land, provide for emergency vehicle access while discouraging inappropriate traffic volumes and speeds, and which accommodate convenient pedestrian and bicycle circulation.

The Department commented that the TPR does not enact a specific street width that local governments must adopt, and that local governments can undertake an analysis of the jurisdiction's operational needs to determine minimum acceptable street widths. In an effort to assist cities, the Department has developed an informal "safe-harbor" document, Neighborhood Street Design Guidelines, which encourages the incorporation of narrower streets into new development. These guidelines include local streets that are 20 feet wide with no parking, 24 feet wide with parking on one side, and 28 feet wide with parking on both sides.

The City of Veneta requires 36-foot wide local streets under subsection 6.02(2) of the Veneta Land Division Ordinance No 418, but allows for narrower alternatives to street width..

Subsection 4.14(4)(c) of the Veneta Land Development Ordinance No 417 allows standards and procedures of the Specific Development Plan Subzone to supercede the standards and procedures of the Land Development Ordinance and the Land Division Ordinance.

The proposed Amendments to the Veneta Southwest Area Specific Plan, October 19, 2005 allows local two-way streets that are 32 feet wide with parking on both sides and local one-way streets that are 20 feet wide with no

parking.

Lane County Fire District No.1 has reviewed the proposed Amendments to the Veneta Southwest Area Specific Plan and has commented both in writing, entered into the record as Exhibit B-3 of the City Staff Report dated November 28, 2005, and verbally at the Planning Commission hearing of December 5, 2005. Testimony of the fire district stated that there must be at least 20 feet in clear width for fire apparatus to operate. Further testimony stated that the 32-foot wide street will provide sufficient clear width, and that the 20-foot wide street can also provide the required width if rolled curbs are incorporated into the design so fire apparatus can drive on the adjacent sidewalk. It was also stated that smaller streets would be inadequate for the operational needs of the fire district.

Therefore, based on the findings above, the City of Veneta Planning Commission concludes that:

A 32-foot wide two-way street and a 20-foot wide one-way street are adequate for the operational needs of Lane County Fire District No. 1 provided rolled curbs are incorporated into the design of the 20-foot wide one-way street. Narrower streets would not meet the operational needs of the fire district.

The requirements of Oregon Transportation Rule section TPR 0045(7) concerning street widths are met through the analysis and conclusions made by the Planning Commission on local street widths proposed under the *Proposed Amendments to the Veneta Southwest Area Specific Plan*.

The requirements of TPR 660-012-0060 are met with the condition of approval that the applicant enter into an agreement with the City and, if necessary, ODOT to address performance standard deficiencies on affected intersections. The agreement shall be in place prior to the approval of the first tentative subdivision and shall identify a funding plan for mitigation of intersection impacts.

*Goal 13: Energy Conservation:*

Goal 13 intends that land uses and development shall be managed to maximize the conservation of all forms of energy. The amendments made here comply with this goal for the reasons that the broad allocation of land uses in the SWAP area will remain the same. To the extent that the amendments allow and encourage the clustering of residential development, it can be expected that energy will be conserved in some small increment. The amendments comply with Goal 13.

*Goal 14: Urbanization:*

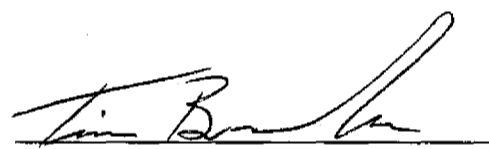
**Goal 14 intends to provide for an orderly transition from urban to rural use. The subject property is inside the city and is, therefore, urban. Goal 14 does not apply.**

*Goal 15: Willamette River Greenway:*  
**Goal 15 does not apply.**

*Goals 16 through 19: Ocean and Coastal Goals:*  
**These goals do not apply.**

- D. This approval shall become final on the date this decision and supporting findings of fact are signed by representative(s) of the Veneta City Council. An appeal of this decision must be submitted to the Land Use Board of Appeals within 21 days of the decision becoming final.**

**Failure of the applicant to raise constitutional or other issues relating to proposed conditions of approval with sufficient specificity to allow the City to respond to the issue precludes an action for damages in circuit court.**



**Tim Brooker**  
**Mayor, City of Veneta**

4-10-04  
**Date**





# Veneta Southwest Area Specific Plan

Veneta, Oregon

April 10, 2006

# Veneta Southwest Area Specific Plan

Prepared by:



for



April 10, 2006

**Table of Contents**  
**Veneta Southwest Area Specific Plan**

**I. Introduction**

Executive Summary..... 1

Background..... 3

Plan Objectives..... 3

Vicinity Description and Analysis..... 5

Plan Area Description and Analysis..... 6

Comprehensive Plan Designations..... 7

**II. Land Use**

Land Use Plan..... 8

Major Plan Elements..... 8

Existing City Plan and Ordinance Framework..... 15

**III. Transportation**

Circulation Summary..... 16

Street Cross Sections..... 17

**IV. Development Standards**

Permitted and Conditional Uses..... 20

Street Standards..... 22

Phased Development..... 23

Tree Removal..... 23

Geo-Technical Review Compliance..... 23

Wetlands..... 24

Utilities..... 24

Neighborhood Commercial Standards..... 25

**IV. Implementation Strategy**

Implementation..... 26

**Table of Contents (continued)**  
**Veneta Southwest Area Specific Plan**

**Figures**

1. General Site Location.....	1
2. Concept Plan.....	2
3. Site Location and Surrounding Area.....	5
4. Vicinity Analysis.....	6
5. Physical Features of the Site.....	7
6. Concept Plan.....	8
7. Conceptual Bioretention System.....	9
8. Stormwater Collection and Detention System Concept Plan.....	10
9. Open Space Network.....	11
10. Identified Wetlands and Significant Trees.....	12
11. Street and Circulation Plan.....	13
12. Provision of Sewer and Water Utilities.....	13
12. Street and Circulation Plan.....	16
13. Street Cross Sections.....	17
14. Wetland Impacts.....	24

**Tables**

1. Summary of Plan Map Elements.....	15
2. Development Standards.....	20
3. Street Standards.....	22

**Appendices**

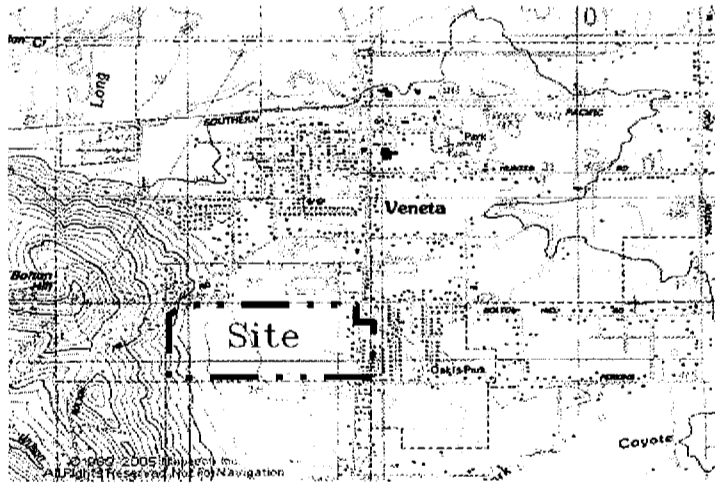
- A. Southwest Area Specific Plan Land Use Map
- B. City Council Order of Adoption and Conditions of Approval
- C. Geotechnical Investigation/Report Southwest Area Plan

## I. Introduction

### Executive Summary

This *Veneta Southwest Area Specific Plan* is a refinement of the Specific Plan that was presented to the City of Veneta in 1999 and adopted in 2000. It includes a number of changes to address conflicts between housing density and lot size limitations, recognize additional wetlands and allow limited filling and alteration, encourage use of a surface stormwater drainage and detention system that is separate from existing wetlands and drainageways, and provide flexibility of housing type and density to respond to shifts in the housing market. The Plan provides a performance-oriented approach for developing the 128-acre Southwest Neighborhood Center into a new neighborhood of mixed residential and supporting commercial uses. Detached single-family, townhome, and multifamily apartments or condominiums can be built in a wide variety of densities and configurations based on natural constraints. Residents will have convenient access to existing and planned transportation systems (including future public transit service), and there will be nearby commercial development for goods and services. A major objective of the Plan is to provide maximum opportunities for home ownership by creating Plan regulations that allow a wide variety of dwellings at varying densities on individual lots wherever possible. Key to the Plan is the use of open spaces as a unifying element for the different areas of the neighborhood, linked together with an innovative system of stormwater collection and disposal incorporating surface water features, cascading swales, and multi-purpose ponds. The open space network protects sensitive natural resources such as wetlands and tree groves,

**Figure 1. General Site Location**

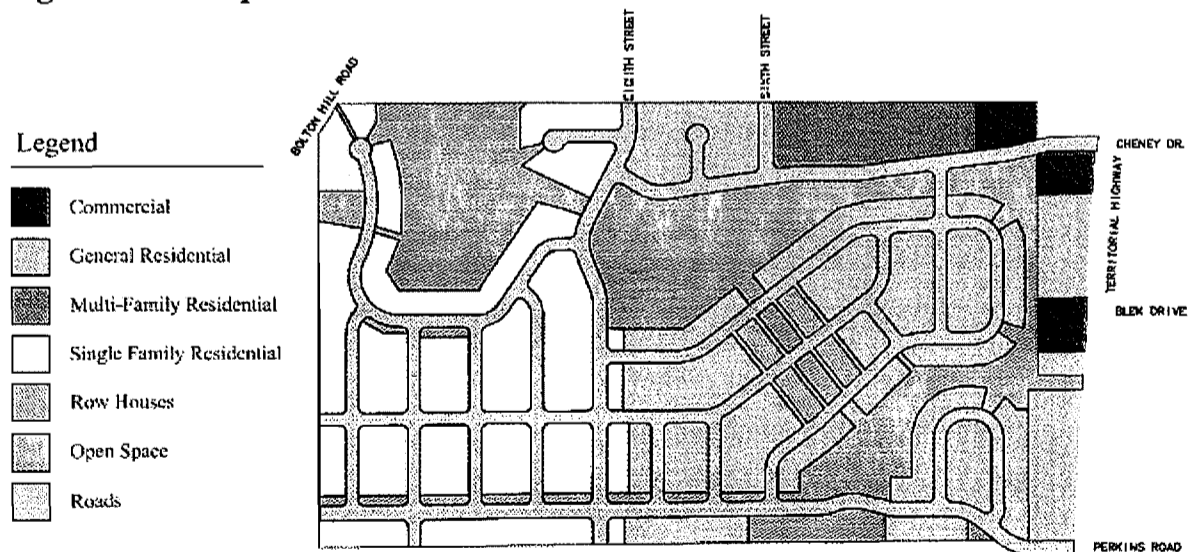


decreases stormwater runoff rates, maintains water quality, and provides recreational opportunities for residents and visitors. A full transportation system, including streets with sidewalks, separated pedestrian paths through the open space network, and transit-supportive development along a future bus route ensures pleasant, safe, and efficient travel between different areas in the neighborhood, and from the neighborhood to adjacent properties and other parts of the City. Major plan elements are:

- **A general neighborhood development plan** that includes a wide range of land uses, including a full spectrum of housing types and neighborhood commercial uses, connected throughout by an open space network that offers passive and active recreational opportunities and protects significant natural resources.

- **Where feasible, an innovative stormwater collection and disposal system** that uses surface water features such as landscaped and cascading swales, and multi-purpose detention ponds is proposed as an option to conventional conveyance systems where topography and other physical constraints allow. A system of stormwater swales adjacent to streets will guide rainwater runoff to a series of detention ponds located in public or common open areas. Swales will be landscaped to maintain water quality and provide a design element extending throughout the neighborhood, functionally and visually tying larger common open areas and neighborhood parks together.
- **An open space network** that takes full advantage of natural amenities such as wetlands, streams, and established tree groves. A linear pattern of open spaces along existing drainageways that incorporates a separated pedestrian path will connect all neighborhood districts and provide a unifying design element, alternative transportation route, and variety of recreational opportunities
- **Protection of valuable natural resources** that include wetlands and tree groves. These resources have determined the location and configuration of open spaces, street alignment, and lot pattern, and provide a unique design theme that identifies the neighborhood.
- **A general street and circulation plan** that provides connections to abutting land in a manner that will provide safe and efficient neighborhood access for motorists, bicyclists, and pedestrians while discouraging unwanted through traffic. The Plan includes a transportation network of both conventional streets with abutting sidewalks and a separated pedestrian pathway through designated open spaces.
- **Flexibility for a wide variety of housing types** that allow a mix of attached, detached, and multifamily housing, that meets the density limitations of the Comprehensive Plan. This will allow maximum choice of housing type for potential homeowners, and for the ability of home builders to quickly adapt to changing market conditions, to provide desired housing to the public quickly and efficiently.

**Figure 2. Concept Plan**



### **Background**

The 1999 *Veneta Southwest Area Specific Plan* was completed as a joint effort between Crandall Arambula PC and Dorman and Company, and coordinated by Lane Council of Governments (LCOG). The Plan was approved by the Veneta City Council in 1999, but not adopted by ordinance. It serves as a basis for amendments to Section 4.14(7)(b) of the *Veneta Land Development Ordinance No. 417*, in which the Specific Plan was adopted by reference. In 2000, changes were made to the land use map by LCOG and the *Revised Veneta Southwest Area Specific Plan Map* was adopted by ordinance.

The 1999 *Veneta Southwest Area Specific Plan* provides a development framework including a street plan, open space network including ponds and waterways, and a land use pattern of detached, attached, and multifamily housing. Since initial approval and/or adoption, a number of issues were identified that create the need for a plan update:

- **Conflict between density and lot size requirements.** Adopted plan lot sizes and densities conflict at various places within the Plan itself and conflict with the implementing provisions of the *Veneta Land Development Ordinance No. 417*.
- **Inclusion of additional wetlands.** An onsite detailed wetland delineation revealed several wetlands that were not taken into consideration in the original plan. Locations are such that the adopted street and development patterns are affected, making connectivity and achieving housing densities problematic.
- **Use of in-stream detention systems.** State regulations make the use of in-stream stormwater detention systems problematic.

This 2005 *Amended Veneta Southwest Area Specific Plan* resolves these conflicts, as well as achieving other objectives of the City's Comprehensive Plan as discussed further in this document.

### **Plan Objectives**

During the review and adoption of the 1999 *Veneta Southwest Area Specific Plan*, objectives were adopted by the Planning Commission. These objectives have been modified slightly with this amended Plan in order to provide greater specificity or detail. Basic intent of the objectives, however, remains the same. Adopted objectives are included in their entirety in the Approval Criteria section of this document. Following are the amended objectives of this Plan:

- **Neighborhoods.** Develop a neighborhood that includes a wide range of housing types and locations, commercial and employment opportunities, and passive and active recreational opportunities and a scale that is compatible with one another and adjacent development. Provide a full transportation network of streets and separated pedestrian paths. Allow development of commercial and employment areas that support the neighborhood and surrounding residential areas. Create a unique neighborhood character and identifiable boundaries.

- **Increase Efficiency of Land Use.** Provide for compact development, optimizing infrastructure investments, open space amenities and access to the multifamily and neighborhood commercial districts. Allow a variety of development densities and intensities within limits set by the Comprehensive Plan and that are compatible with topography, sensitive natural resources, transportation and utility infrastructure, and proximity to other uses.
- **Multi-Modal/Pedestrian Friendly.** Create a pedestrian friendly environment that provides direct, safe, and convenient access from homes to commercial services, public spaces, and transit connections while also creating an efficient street pattern for automobiles and bicycles. Provide transportation connectivity to adjacent land to the greatest extent practicable, given natural and physical constraints.
- **Provide Alternative Parallel Routes.** Provide collector roadway connections that lessen reliance on Territorial Highway as the sole accessway through Veneta, while retaining neighborhood character and values.
- **Public and Open Spaces.** Provide public spaces such as neighborhood parks, common open areas, greenways, or plazas where residents and employees can meet or relax and that will counterbalance activity levels in more intense commercial and residential areas.
- **Natural Features.** Incorporate natural features such as creeks, wetlands, and tree groves into neighborhood development. Provide for onsite stormwater detention, and maximize the opportunity to create a neighborhood amenity of drainage and wetland areas. Identify appropriate development for forested areas and steeper slopes.
- **Building and Site Design.** Promote building and site design that creates a sense of neighborhood. Carefully relate building mass, frontages, entries, and yards to streets and adjacent properties in order to orient public activities toward public spaces and provide privacy between neighboring properties. The architecture and scale of commercial buildings should provide attractive street frontages and encourage placement of parking lots and loading docks away from public street frontages.
- **Safe Environment.** Promote a safe environment for residents and visitors during all hours of the day and night. Encourage residential design that puts eyes on the street and other public or common open spaces. Design streets and public areas for the safety of all residents.
- **Transition Between Uses.** Provide sensitive transitions between commercial, lower density residential and higher density residential development and minimize the impacts of development on wetlands and waterways.
- **Housing Types.** Provide for a range of housing types (e.g. standard single-family, small lot single-family, attached townhomes, and multifamily dwellings). Create land use regulations that provide for flexibility of housing type within general areas, given overall density limits, services, transportation networks, proximity to commercial and employment areas, and physical constraints of the land. Maximize home ownership opportunities by allowing

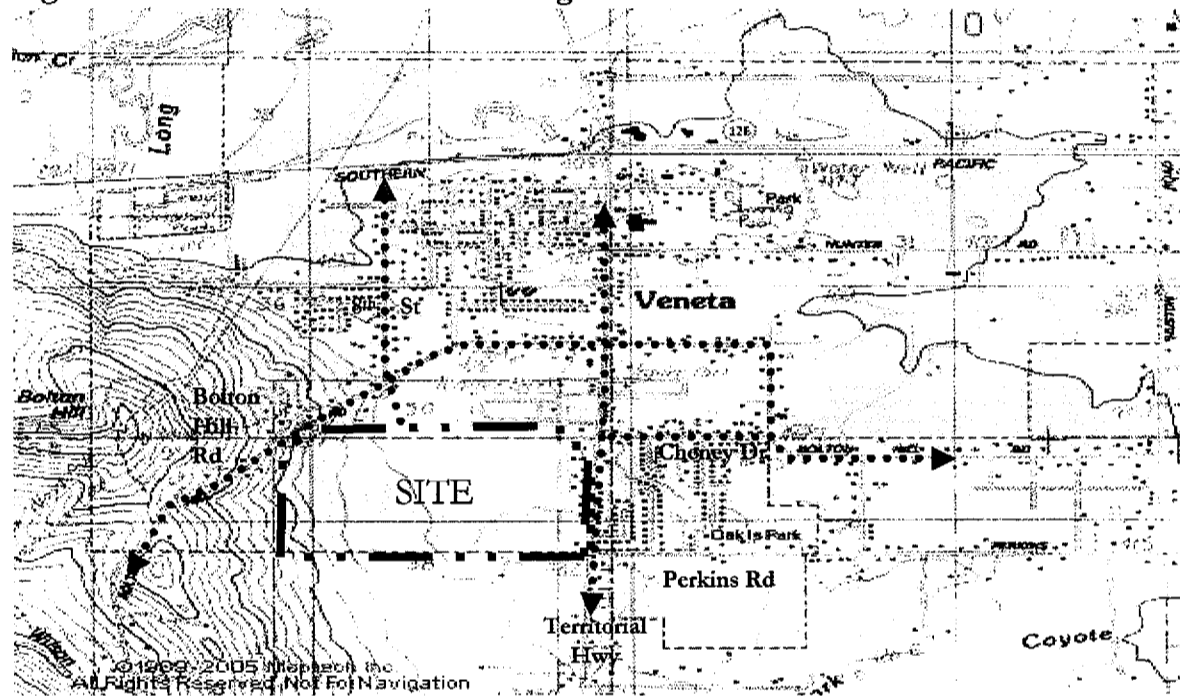


individual homes on separate lots of sizes in keeping with density ranges allowed by the Comprehensive Plan.

### Vicinity Description and Analysis

The site is located in the southwest area of the City of Veneta, abutting the south city limits and Urban Growth Boundary. Land to the north, east, and south is fairly level, but rises to the west at an increasing angle toward Bolton Hill. The main business district of Veneta is about one-half mile to the north.

Figure 3. Site Location and Surrounding Area



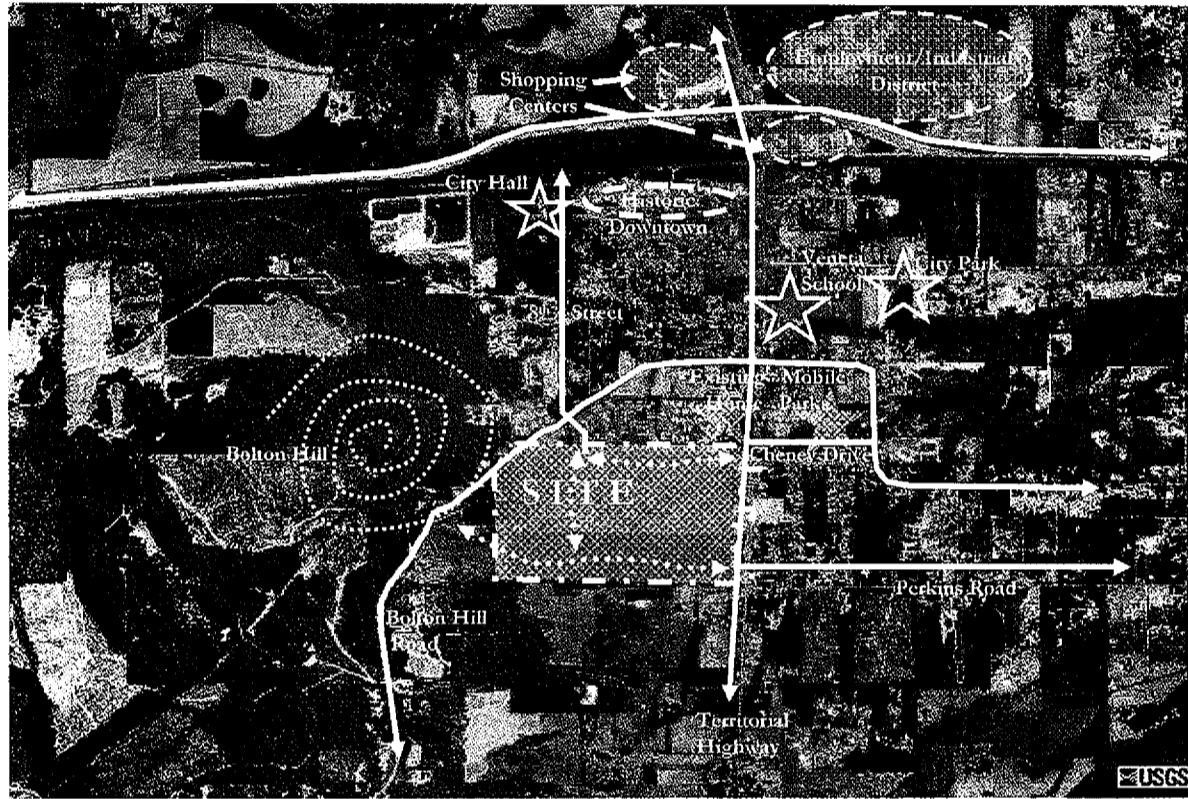
Land use to the south and west is primarily rural or rural residential with acreage tracts. Bolton Hill Road, a Major Collector street, abuts the northwest corner of the site for about 150 feet, but because of steep slopes it is available only for pedestrians or emergency access. There are no other streets or access points along the south and west boundary lines.

To the north is residential development, including a mobile home park. Two streets dead-end at the north site boundary. The eastern street, 6th Street, is a designated Local street while 8<sup>th</sup> Street, to the west, is a Minor Collector.

West of the residential development, toward the northwest corner of the site and along the west site boundary, are several undeveloped and low density residential lots. One is owned by the City and is considered a potential park site, although poor access and steep slopes limit recreational opportunities.

Generally east, across Territorial Highway, is a single-family residential neighborhood on medium size lots. Territorial Highway is a minor arterial and the major north-south route through Veneta. It also provides the primary access to the site at both the northeast and southeast corners (western extensions of Cheney Drive and Perkins Road, respectively).

**Figure 4. Vicinity Analysis**



**Plan Area Description and Analysis**

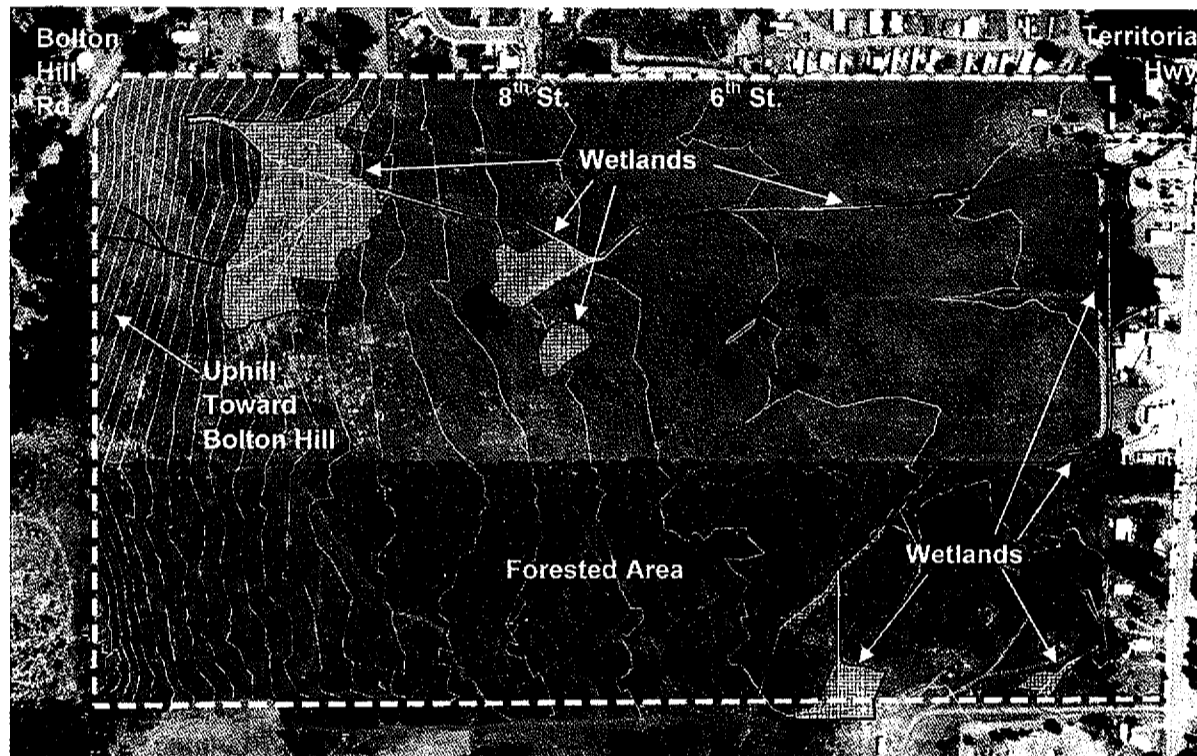
The *Veneta Southwest Area Specific Plan* area is 128 acres in size. The Plan area is roughly rectangular in shape, about 2,872 feet in an east-west direction and 1,850 feet in a north-south direction. Primary access to the site is along Territorial Highway: Two dead-end residential streets, 6<sup>th</sup> and 8<sup>th</sup> Streets, provide access from the north. The northwestern corner of the site abuts Bolton Hill Road for a distance of about 125 feet, but the road is at the top of a steep slope and access is problematic.

The site is almost level for the eastern two-thirds, sloping upward from Territorial Highway at less than three percent. The slope increases steadily to about 15 percent at the northwest corner where it abuts Bolton Hill Road. The center of the site has been used for agriculture, but is now vacant. The northern half of this undeveloped area is a large open field with a few mature Garry oak trees (*Quercus garryana*) and some conifers. Vegetation on the southern half of the site is a mix of deciduous and evergreen trees, more numerous on the level area than the slope. There are several wetlands on the site, the largest being in the northwest slope with others in the southeastern corner. Drainageways, also delineated as wetlands, extend from the wetlands to the

northeast corner. In total there are 7.5 acres of the site that meet the Department of State Lands definition of wetland.

Several smaller lots in the Plan District front on Territorial Highway. Land uses here are a mix of residential and commercial development, largely reflected by both the Comprehensive Plan and Specific Area Plan designations.

**Figure 5. Physical Features of the Site.**



### **Comprehensive Plan Designations**

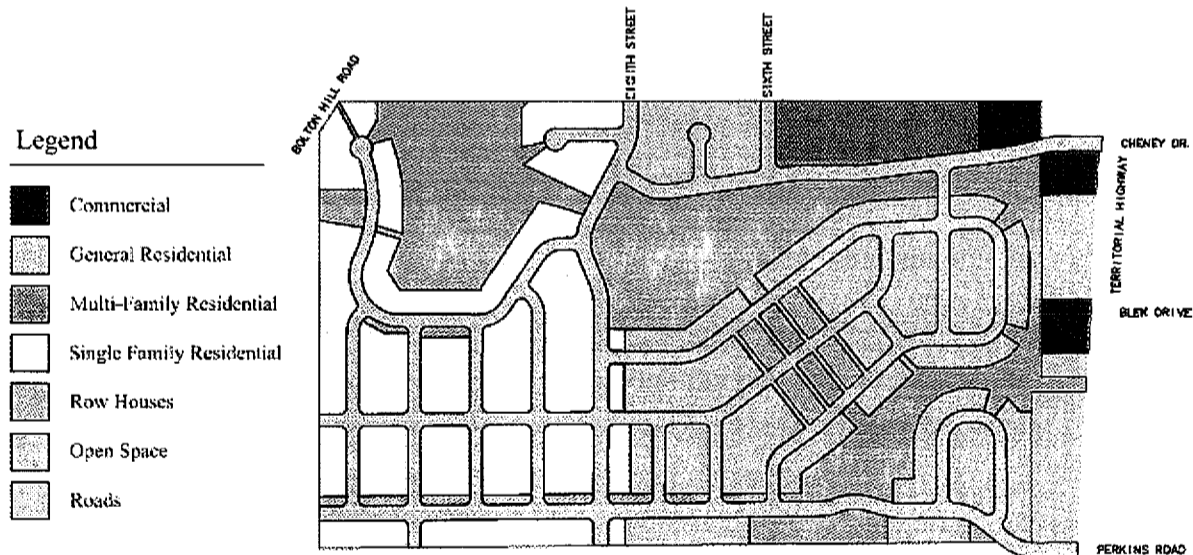
The site has three Comprehensive Plan designations in addition to the Specific Development Plan Subzone. The western third, west of an extension of 8<sup>th</sup> Street, is designated and zoned Single-Family Residential (SFR). The Comprehensive Plan allows residential development at a maximum net density of seven units per acre. Two small areas in the northeast corner of the site are designated and zoned Commercial (C). The remainder of the site is designated and zoned General Residential (GR), which allows residential development at a maximum net density of 15 units per acre.

## II. Land Use

### Land Use Plan

The *Veneta Southwest Area Specific Plan* provides a performance-oriented approach for development of a 128-acre site into a new neighborhood of mixed residential and supporting commercial uses in conformance with Comprehensive Plan designations. Detached single-family, townhome, and multifamily apartments or condominiums can be built in a wide variety of densities and configurations based on natural constraints, access to existing and planned transportation systems (including future bus service), and access to commercial development. The Plan district provides maximum opportunities for home ownership by creating Plan regulations that allow a wide variety of dwellings at varying densities on individual lots wherever possible. The key to the Plan is the use of parks and open areas as a unifying element for the different areas of the neighborhood, to protect sensitive natural resources such as wetlands and dense tree groves, and to provide recreational opportunities for residents and visitors. A series of surface stormwater swales and ponds are placed along streets and in parks and common open spaces, visually and functionally connecting all parts of the neighborhood. A full transportation system, including streets with sidewalks, separated pedestrian paths through the open space network, and transit-supportive development along a future bus route will ensure pleasant, safe, and efficient travel between different areas in the neighborhood, and from the neighborhood to adjacent properties and other parts of the City.

**Figure 6. Concept Plan**



### Major Plan Elements

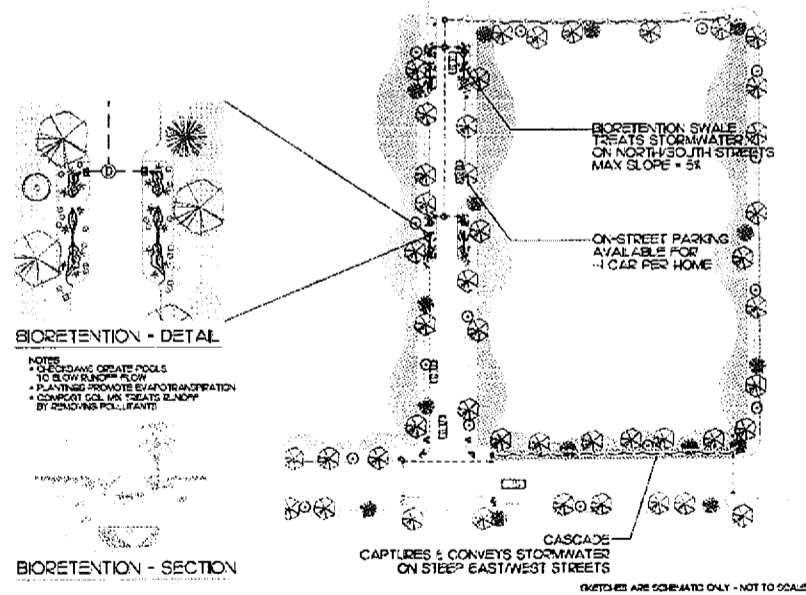
- **A general neighborhood development plan.** The *Veneta Southwest Area Specific Plan* provides a development pattern balanced to allow a range of housing types at varying densities based on proximity to physical site constraints, access to existing and planned collector and arterial streets, and proximity to supporting land uses. Small scale commercial

development is located adjacent to Territorial Highway to provide local employment opportunities, and to serve neighborhood residents and nearby residential areas. A full transportation system, consisting of both roadways and separated pedestrian paths in common open areas, will extend through the site and to adjacent lands to provide connectivity and an efficient transportation system. Of great importance is provision of a comprehensive open space network to connect all portions of the neighborhood, provide active and passive recreational opportunities, protect wetlands, provide stormwater detention, and include a pedestrian path to augment and enhance the standard street network. The land use pattern of the Plan respects natural constraints (topography and wetlands/drainageways), adjacent lands and future land use designations, and both existing and planned traffic circulation patterns.

The Plan is performance oriented, compared with the prescriptive approach normally used with zoning code regulations. It allows for a range of housing densities, lot sizes, and types within designated Plan areas. This gives the flexibility to respond to changes in market forces while retaining overall housing densities and design elements that reflect the desired character of the City of Veneta as expressed in the Comprehensive Plan, and provides significantly more total open space than what is required under either conventional development under the base zone or the 1999 Plan.

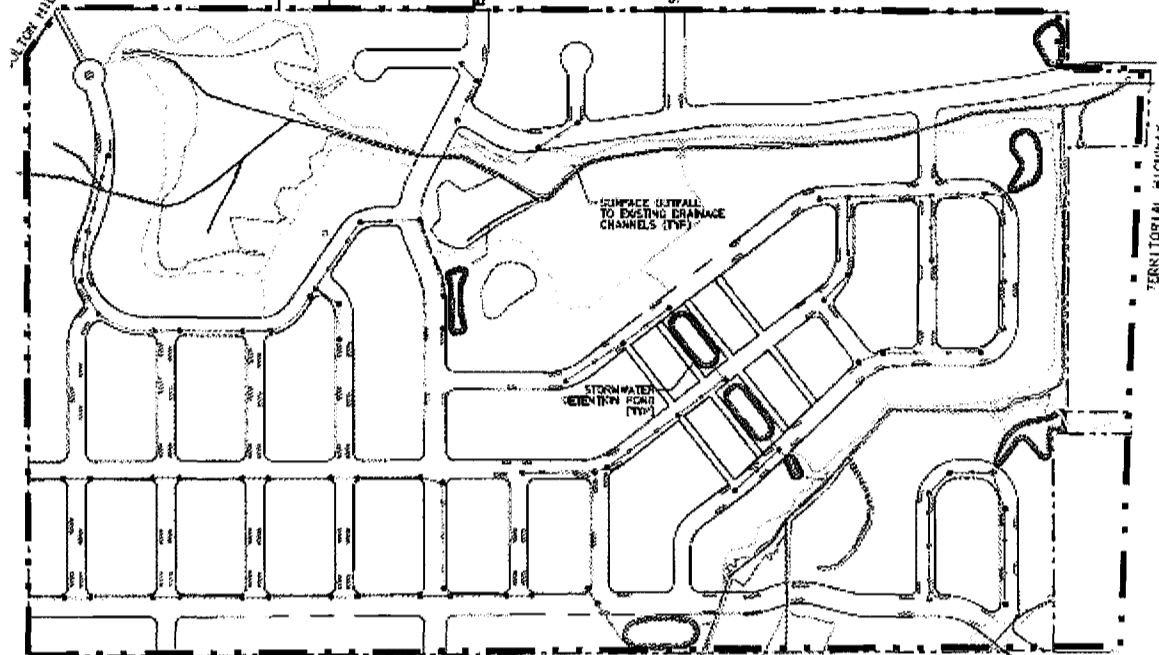
- **An innovative stormwater collection and disposal system** that uses surface water features such as landscaped and cascading swales, and multi-purpose detention ponds will be used where topography and other physical constraints allow. A system of stormwater swales adjacent to streets will guide rainwater runoff to a series of detention ponds located in public or common open areas. Swales will be landscaped to maintain water quality and provide a design element extending throughout the neighborhood, functionally and visually tying larger common open areas and neighborhood parks together. In steeper areas swales will have rocks or other hard features to provide a series of ponds connected by cascading water

**Figure 7. Conceptual Bioretention System**



features, giving visual interest. Detention ponds will be located in parks and common open areas, separated from naturally occurring wetlands and drainageways except for overflow. Although proposed for extensive use throughout the site, detailed design may identify physical constraints that limit location and use of this system, and a more conventional means of stormwater collection and disposal may have to be used.

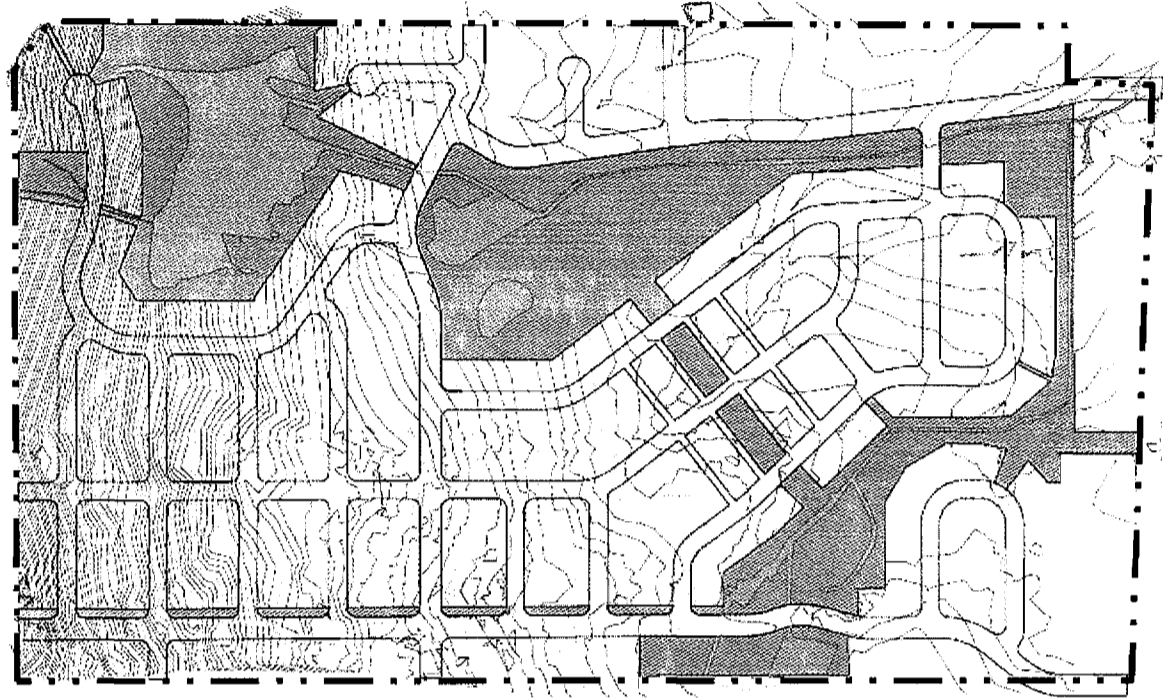
Figure 8. Stormwater Collection and Detention System Concept Plan



- **An open space network.** An open space network of over 20 acres in a linear east-west pattern along the northern portion of the site and along the south central boundary incorporates a separated pedestrian path connecting all neighborhood districts, providing a unifying design element, alternative transportation route, and recreational opportunities. To enhance water quality from stormwater runoff, detention ponds and swales will be located in these areas, providing habitat and vegetation diversity. Larger detention ponds are shallow with flat bottoms to provide recreation opportunities during dry periods. The open space element is the key design feature for the neighborhood, taking full advantage of natural amenities such as wetlands, streams, and established tree groves. It borders the main entries from Territorial Highway, reinforcing the theme of natural areas to visitors and providing the linear visual, recreation, and pedestrian connection between the various neighborhood districts.

In addition to the common open space network, each residential and commercial lot has required landscaped areas. Combined with common open space, the total minimum open space for the neighborhood is more than what is required by the base zone, and almost ten acres more than the 1999 Plan.

**Figure 9. Open Space Network**



- **Protection of valuable natural resources.** The site contains about 7.5 acres of delineated wetlands. They are located in two major areas and form the headwaters of drainageways that flow east through Veneta. The first major wetland system begins on the hillside at the west end of the site as a major seep and wet meadow. Water from this source flows easterly along a narrow drainageway to about mid-site, where the site becomes more level and another broad wetland area is formed. Again water is channeled to the east, where it exits the site at Cheney Drive. The second wetland system is found along the south site boundary toward the east site boundary. It also flows into a drainageway that drains diagonally in a northeast direction to about the center of the east site boundary, and then north to the drainageway that exits at Cheney Drive. Except for a small isolated wetland and several points needed for roadway crossings, wetlands are fully retained and incorporated into common open areas as an amenity.

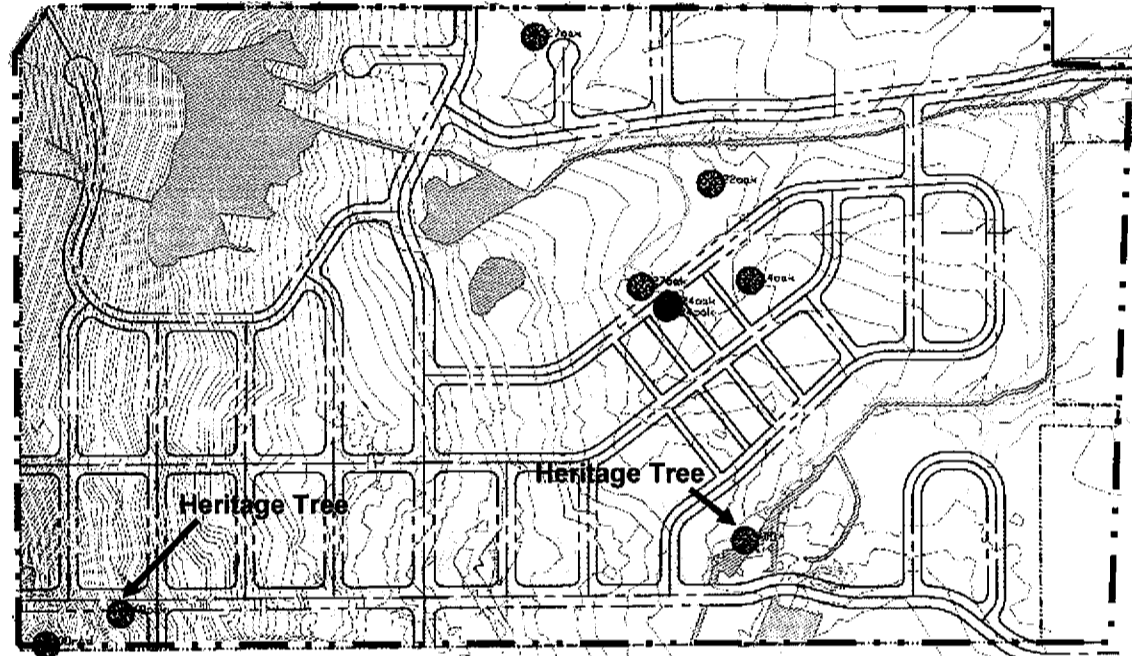
There are two Heritage Trees located in the Plan area: a 48-inch Garry Oak in the southwest section of the site, and a 40-inch Garry Oak in the southeast section, adjacent to a wetland. Neither is within the proposed road rights-of-way. The 48-inch oak is near the road but on proposed homesites, and a property line can be located next to it to ensure its protection. The 40-inch oak is in an identified open space, and will remain clear of any proposed development. Specific protection measures will be proposed with the related subdivision phase.

There are also a number of specimen trees onsite that are not of Heritage Tree size. A 38-inch madrone is located in the southwest sector, a number of Garry Oaks with full canopies are in the open field, and others are located in the wooded south half of the site. Isolated oaks that are in identified open spaces and the madrone are shown on Figure 10 below, and are identified to be retained to the extend practicable. As tentative subdivision plans are

presented to the City, a detailed tree preservation plan including these and other significant vegetation will be included in the application.

Additionally, a dense tree grove consisting of Garry oak and evergreens located along the south site boundary near the south central wetland is retained in a common open area, reinforcing the open space character and unique design theme that identifies the neighborhood.

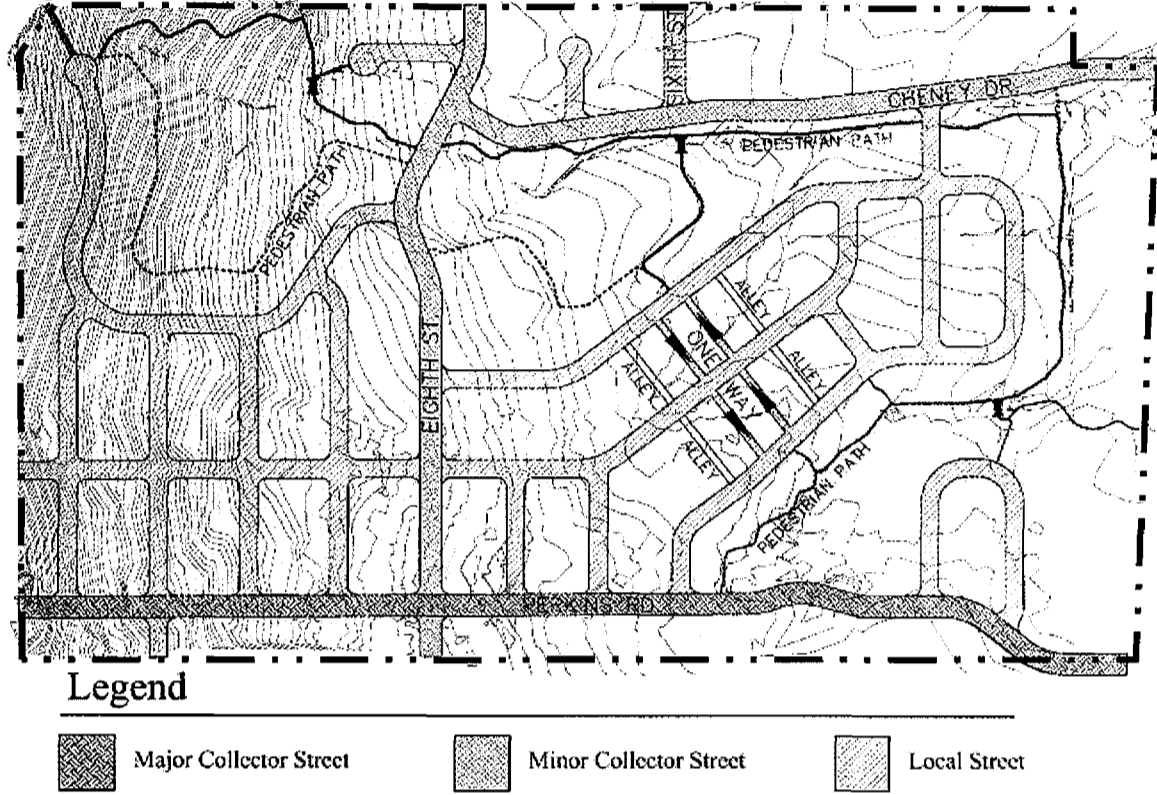
**Figure 10. Identified Wetlands and Significant Trees**



- **A general street and circulation plan.** A full public street system is part of this Plan. Major connections are made to Territorial Highway at the south end of the site as a westerly extension of Perkins Road, and at the north end as a westerly extension of Cheney Drive. Roads extend through the site to adjacent properties, providing connectivity in a safe and efficient manner and neighborhood access for motorists, bicyclists, and pedestrians. Cheney Drive, along the north site boundary, is able to accommodate bus service to serve the neighborhood, as envisioned in the adopted *Transportation System Plan* for the City of Veneta. Both the Cheney Drive and Eighth Street extensions through the site are identified as minor arterials, and connect Territorial Highway to existing Eighth Street to the north, and will eventually extend to adjacent property to the south. The Perkins Road extension, along the south site boundary, is a major collector street, and will eventually extend west beyond the site to connect Territorial Highway to Bolton Hill Road. Other streets within the site form a pattern of local service loops and cul-de-sacs, designed to provide access to neighborhood properties but discourage through traffic. To augment the street system and provide a variety in alternative transportation routes, a separated pedestrian path is placed within the common open areas.

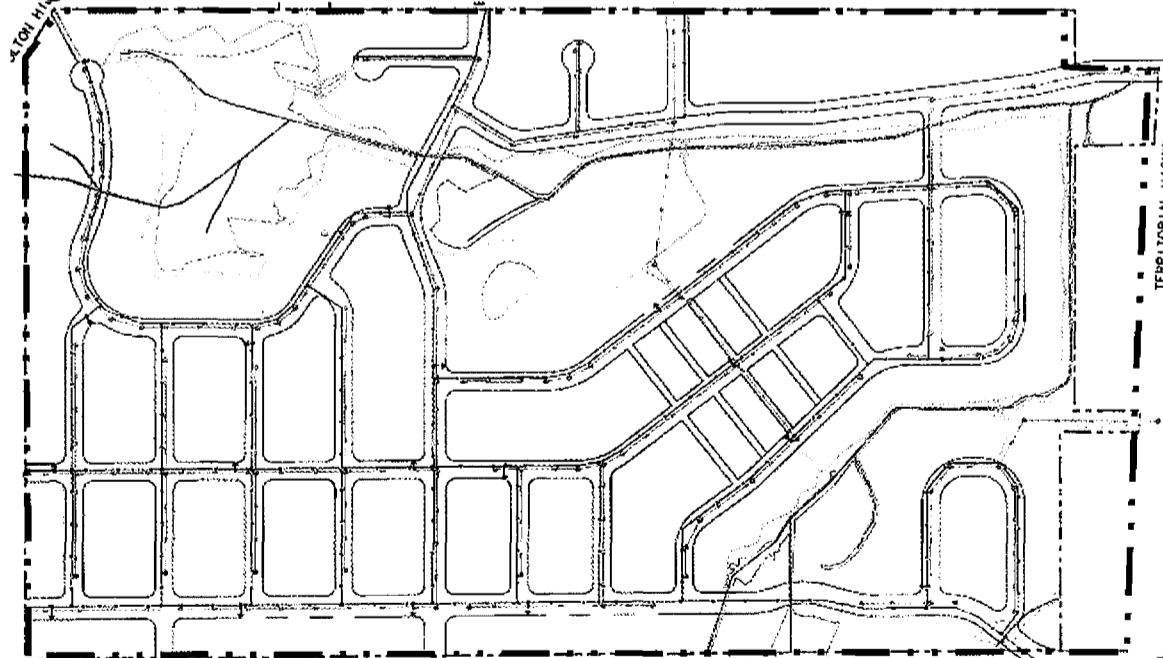


**Figure 11. Street and Circulation Plan**



- **Orderly utility extension to the site and adjacent land.** Sewer and water utilities will connect to and through the site, as shown on Figure 12 below. Both sewer and water lines will be connected to the east at Territorial Highway, and to the north at 6<sup>th</sup> and 8<sup>th</sup> Streets. They will have the ability to extend to the west and south as needed.

**Figure 12. Provision of Sewer and Water Utilities**



- **Flexibility for a wide variety of housing type.** As noted above, the Plan is a performance-oriented approach to land development, particularly with regard to homes. Because of development constraints and the Comprehensive Plan designation of Single-Family Residential, homes on the west third of the site are limited to detached single-family dwellings at a maximum net density of seven units per acre. In order to achieve densities near those allowed by the Comprehensive Plan, smaller lot sizes (minimum lot size of 6,000 square feet with an average of at least 6,223 square feet) combined with common open space are proposed. The maximum lot coverage of 40 percent is retained, so total buildable area for the Single-Family Residential area does not increase over the base zone standard even though the lot sizes are smaller. In fact, with the common open space, the result is a significant increase in landscaped area.

Medium density development in the General Residential zone is designated for most of the eastern two-thirds of the site. A full spectrum of housing types (detached single-family, townhome, and multifamily dwellings) is allowed, similar to the General Residential base zone. Three areas are identified for specific housing types: a 5.2-acre area north of the Cheney Drive extension for multifamily or attached single-family residences; an area in the center of the site facing a linear parkway for up to 40 attached single-family residences; and the remainder of the site for detached single-family residences or, on corner lots, duplexes. Single-family detached homes are allowed on lots of at least 3,200 square feet in size, duplexes are allowed on corner lots of at least 5,000 square feet, attached single-family residences have a minimum lot size of 1,600 square feet, and development in the multifamily area is planned at between 15 and 20 units per net acre. Overall, however, maximum density will not exceed the maximum limit of 15 units per net acre (average of one dwelling per 2,904 square feet of net site area) imposed by the Comprehensive Plan.

Overall, the Plan will provide for an estimated 577-629 homes, depending on the dwelling mix. At least 433 will be detached single-family dwellings, up to 40 will be townhomes, and 78 will be either townhomes or multifamily dwellings, providing a full mix of housing types and densities. The remaining 26-78 homes can be detached single-family dwellings or duplexes on corner lots in the General Residential area, or attached single-family or multifamily dwellings in the multifamily area, depending on market influences. Wherever practicable, individual lots will be provided for each home, allowing greater opportunity for home ownership. Although lot sizes for individual homes are reduced somewhat from base zone requirements, the total number of housing units allowed under the Plan is lower than the maximum allowed under base zone standards (estimated at 626-1332 dwellings, depending on housing mix), and will result in significantly more open space.

**Table 1. Summary of Plan Map Elements**

<b>General Land Use Category</b>	<b>Land Area*</b>	<b>Dwelling Units*</b>
Single-Family Residential Development in the Single-Family Residential Zone.	28.9 acres	185
Standard Single Family Residential Development in the General Residential Zone.	32.6	340**
Townhome Development in the General Residential Zone.	1.7	40
Multi-Family Development in the General Residential Zone.	4.8	78
Commercial Development in the Commercial Zone.	2.9	n.a.
Open Spaces and Parks Throughout the Site.	30.5	n.a.
Streets Throughout the Site.*	26.6	n.a.
<b>Total Plan Area.</b>	<b>128.0 acres</b>	<b>643**</b>

\* Land area within each land use category may vary slightly during final development due to minor street realignment and/or use of alleys, final lot line location during subdivision, and possible street extensions into parcels fronting Territorial Highway. As a result, number of dwelling units in each district may also change.

\*\* Includes an estimated 66 dwellings at 1 dwelling per 3200 square feet for General Residential parcels fronting on Territorial Highway.

**Existing City Plan and Ordinance Framework**

The Specific Plan Area lies within the Veneta Urban Growth Boundary and City Limits, and is largely vacant. The Plan Area includes about 128 acres, 122 acres being controlled by one owner. A number of existing land use regulations control development on the site. Following is a brief summary of each.

- **Comprehensive Plan Designations and Base Zones.** The site has three Comprehensive Plan designations in addition to the Specific Development Plan Subzone. The western third, west of an extension of 8<sup>th</sup> Street, is designated and zoned Single Family Residential (SFR). The Comprehensive Plan allows residential development at a maximum net density of seven units per acre. Two small areas in the northeast corner of the site are designated and zoned Commercial (C). The remainder of the site is designated and zoned General Residential (GR), which allows residential development at a maximum net density of 15 units per acre. Each Comprehensive Plan designation has a corresponding base zone. However, minimum lot size requirements do not allow full residential densities to be achieved. Assuming 25 percent of the site is devoted to roadways under conventional subdivision development, between 626 and 1332 dwellings could be allowed on the site under existing zoning, depending on housing mix in the General Residential zoned area.
- **Parks, Recreation, and Open Space Master Plan.** The Veneta *Parks, Recreation, and Open Space Master Plan* identifies two drainage channels and a proposed 3-5 acre park within the Plan boundaries. Planning for these features will reduce the potential number of dwelling units allowed under any development scenario.

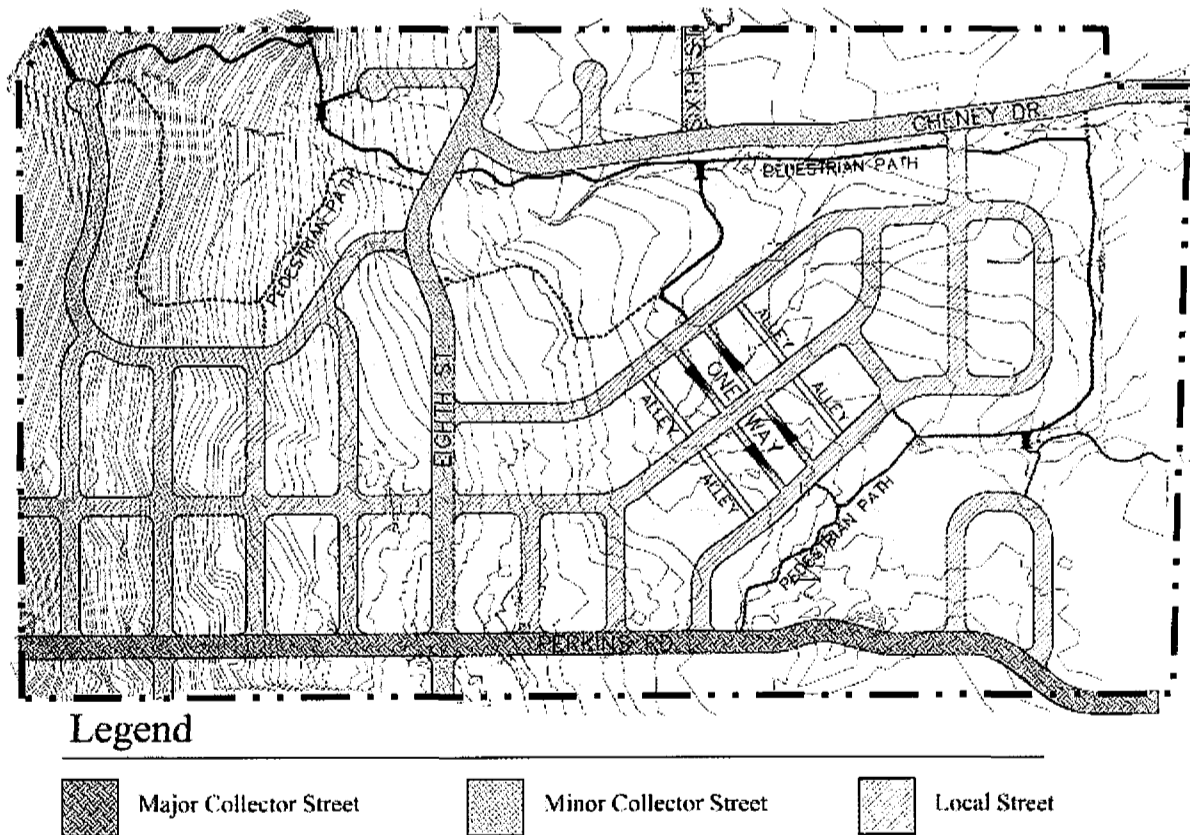
### III. Transportation

#### Circulation Summary

The Circulation Plan, Figure 11, , identifies the proposed extension of three designated Collector streets and three Local streets to link the Specific Plan area with the adjacent street system:

1. Westerly extension of Perkins Road (Major Collector) from Territorial Highway to the west site boundary.
2. Southerly extension of 8<sup>th</sup> Street (Minor Collector) from the north site boundary through the site to the south site boundary.
3. Westerly extension of Cheney Drive (Minor Collector) from Territorial Highway to 8<sup>th</sup> Street.
4. Southerly extension of 6<sup>th</sup> Street (Local street) from the north site boundary.
5. Westerly extension of an unnamed Local street to the west site boundary, north of the Perkins Road extension.

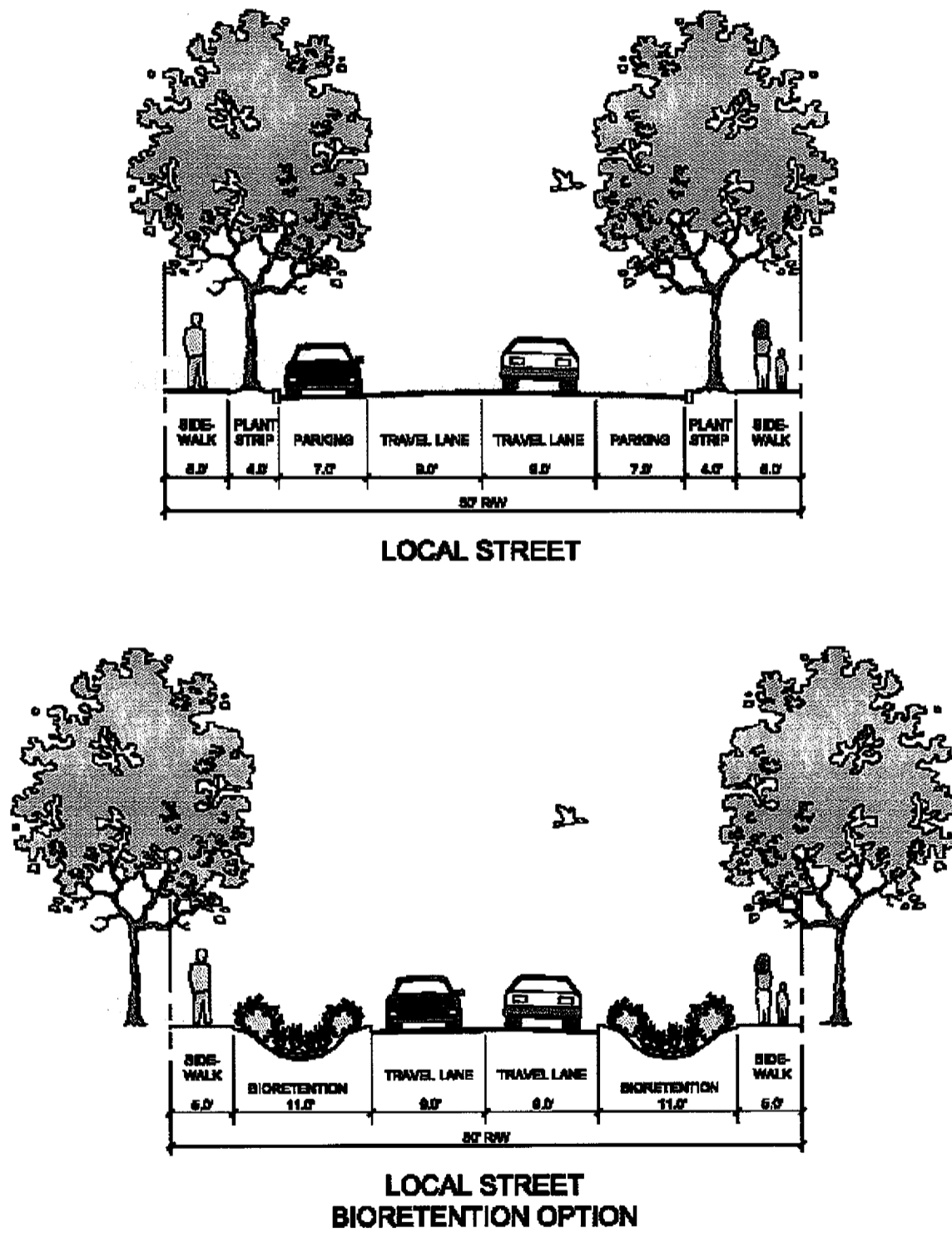
Figure 13. Street and Circulation Plan

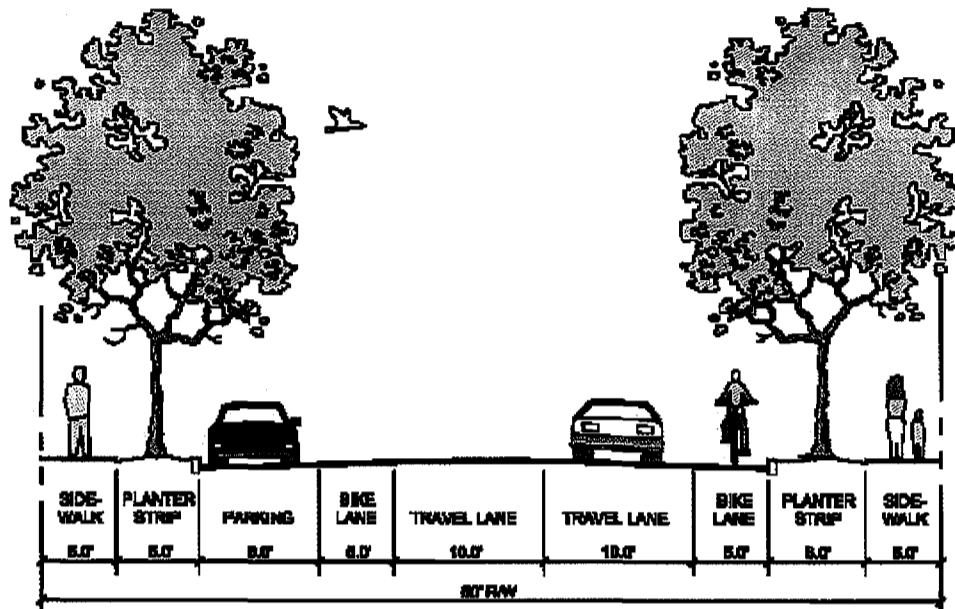


**Street Cross Sections**

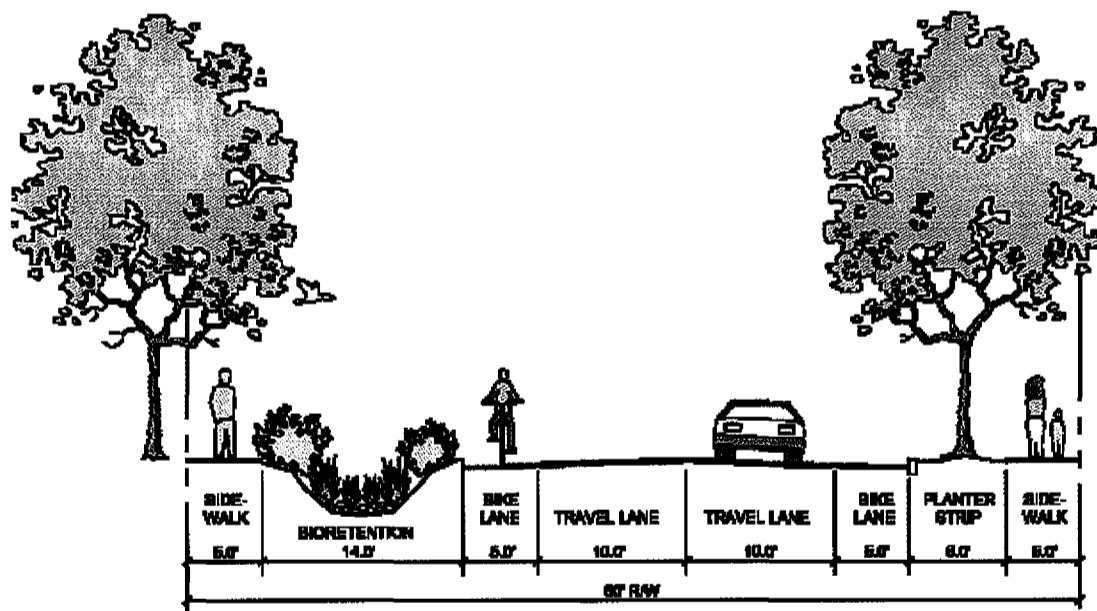
The following figure illustrates typical street cross sections that will be used in the Plan area.

**Figure 14. Street Cross Sections**

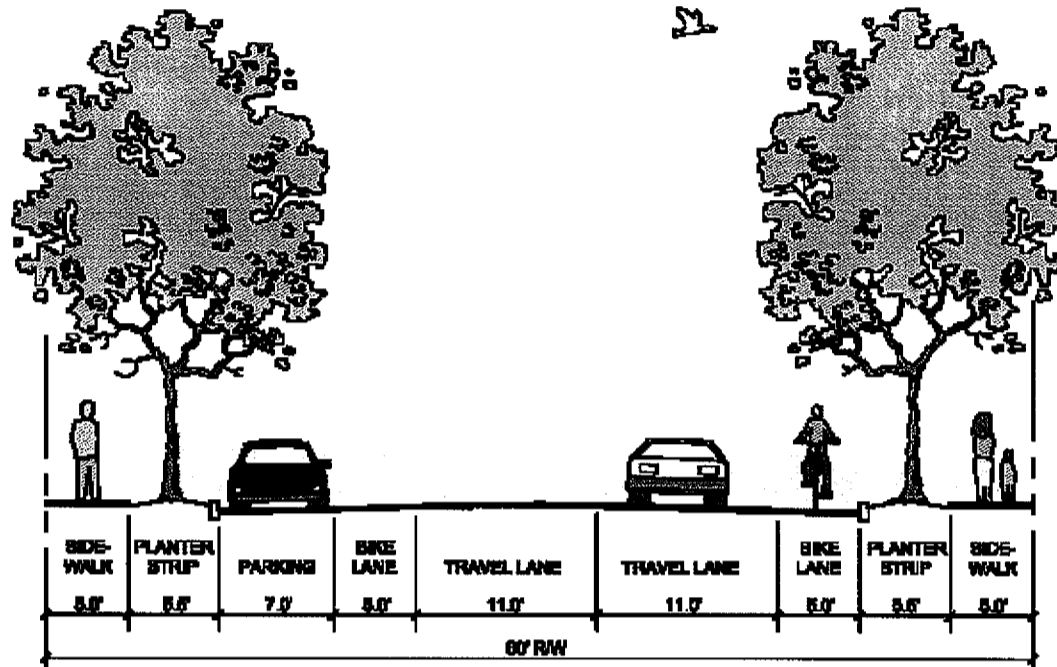




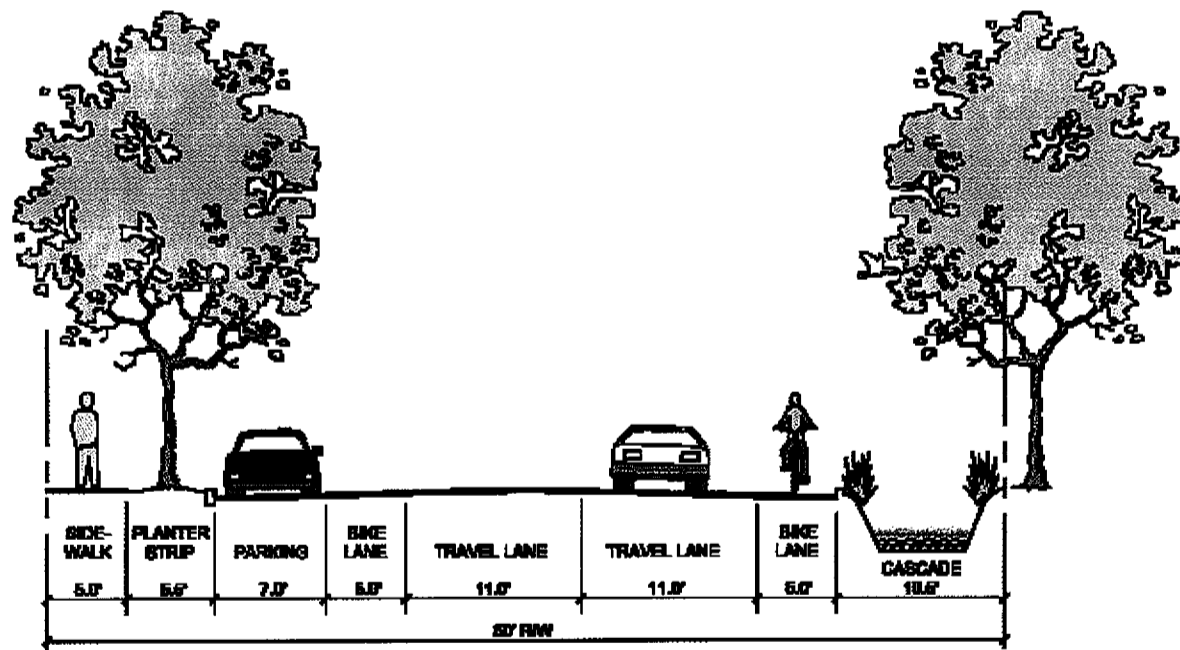
**MINOR COLLECTOR**



**MINOR COLLECTOR  
BIORETENTION OPTION**



**MAJOR COLLECTOR**



**MAJOR COLLECTOR  
CASCADE OPTION**

## IV. Development Standards

### Permitted Uses and Conditional Uses.

All uses permitted under the base zoning districts are also permitted in the Southwest Area Specific Plan subzone.

### Development Standards

Land Use shall be in compliance with the Conceptual Land Use Plan contained in Appendix A of this Plan and development shall meet the standards contained in Table 2 below:

**Table 2. Development Standards**

	Base Zone					Open Space Subzone in all Base Zones
	SFD	GR			CC	
		Standard Residential	Townhome	Multifamily		
<b>Uses</b>						
<b>Allowed Uses</b>	Detached single-family dwellings	Detached single-family dwellings  Duplexes on corner lots	Attached single-family dwellings (townhomes)	Attached single-family dwellings (townhomes)  Multifamily dwellings including condominiums	All uses allowed in the CC base zone	Parks and common open spaces for: (1) Active and passive recreation (2) Natural resource protection and conservation (3) Stormwater passage and detention
<b>Conditional Uses</b>	All Other Uses Allowed Outright or as Conditional Uses in the Base Zone					
<b>Development Standards</b>						
<b>Setbacks**</b>						
• <b>Front</b>	10 ft. min.	10 ft. min.	5 ft. min.	0 ft. min.	10 ft. max.*	
• <b>Side</b>	5 ft. min.	5 ft. min.	0 ft. on attached side, 5 ft. min. on detached side	10 ft. min.	0 ft.	
• <b>Rear</b>	5 ft. min.	5 ft. min.	5 ft. min.	10 ft. min.	0 ft.	
• <b>Garage</b>	20 ft. min. from street r.o.w.  5 ft. min. from alley r.o.w.  Flush or recessed from the front facade. If detached from a dwelling(s), it must be of the same architectural style as the dwelling(s) it serves. Must have windows if facing a street.				5 ft. min. from alley r.o.w. Must be to the side or rear of the building	
<b>Unenclosed Off-Street Parking</b>				Only to the side or rear of all buildings.		



	Base Zone					Open Space Subzone in all Base Zones
	SFD	GR			CC	
		Standard Residential	Townhome	Multifamily		
<b>Building Orientation</b>	Main entry or porch must be oriented toward a street.		Main entry or porch must be oriented toward a street or abutting open space.		Main entry must be oriented toward a street.  Ground floor windows or doors are required along 60% of a building facade facing a street	
<b>Maximum Lot Surface Covered by Buildings</b>	40%	50%	80%	80%	80%	
<b>Maximum Building Footprint Area</b>	Governed by setbacks and maximum lot coverage.				20,000 sq. ft. each building	20,000 sq. ft. each building
<b>Lot and Density Standards</b>						
<b>Maximum Net Density</b>	7 units/acre	15 units/acre				
<b>Maximum Gross Density</b>	5.45 units/acre	10 units/acre	20 units/acre	20 units/acre		
<b>Minimum Lot Size</b>	6,000 sq. ft.	3,600 sq. ft. for detached single-family dwelling lots  5,000 sq. ft. for duplex lots on corners	1,600 sq. ft.	1,600 sq. ft. for attached single-family dwelling lots. 5,000 sq. ft. for duplex and multifamily dwelling lots.	0 sq. ft.	0 sq. ft.
<b>Minimum Average Lot Size</b>	Detached single-family lots within the Single-Family Residential Zone shall be a minimum of 6,000 square feet in size. Phased subdivision is allowed, but all lots within the Single-Family Residential Zone at any given time shall not exceed seven dwelling units per net acre (average lot size of at least 6,223 square feet).  Detached single-family lots within the General Residential Zone shall be a minimum of 3,600 square feet in size. Phased subdivision is allowed, but all detached single-family dwelling lots within the General Residential Zone at any given time shall not exceed 10.89 dwelling units per net acre.					
<b>Minimum Lot Width</b>	50 ft.	40 ft.	16 ft.	16 ft.	0 ft.	0 ft.

	Base Zone					Open Space Subzone in all Base Zones
	SFD	GR			CC	
		Standard Residential	Townhome	Multifamily		
<b>Minimum Street Frontage</b>	15 ft. for panhandle lots.		0 ft. for attached single-family dwelling lots that front on a park or common open area and have alley access. 16 ft. for all other attached single-family dwelling lots.			
	35 ft. for all other lots.	20 ft. for all other lots.		30 ft. for duplexes and multifamily dwelling lots.	30 ft.	0 ft.
<b>Clear Vision Areas</b>	Lots abutting an alley, entrance to a bicycle/pedestrian path, or access drive for rear panhandle lots shall maintain a 15 ft. triangular clear vision area adjacent to the ally, path entrance, or access drive. Two (2) sides of the triangular area shall be exterior property lines, with fifteen (15) foot leg lengths. When the angle of the portion of the intersection between streets and the access point is less than 30 degrees, the visual distance shall be 15 feet along the property line from the point of intersection. The third side of the triangle shall be an interior line connecting the two (2) exterior sides.					

\* Setback may be increased to a maximum of 20 ft. if the space between the building and sidewalk is developed with pedestrian amenities such as plazas, access paths, cafes, etc.

\*\* Required setbacks may be reduced at the City's discretion to allow for preservation and protection of trees, wetlands, or other natural features.

### Street Standards

Streets and paths shall be constructed in compliance with the Circulation Plan and street sections illustrated in Figure 12 in this Plan and to the standards of Table 3 below:

**Table 3. Street Standards**

Standard	Street Classification				
	Local One-Way	Local Two-Way	Minor Collector	Major Collector	Alley
<b>Right-of-Way Width</b>	20 ft.	50 ft.	60 ft.	60 ft.	16 ft.
<b>Roadway Paving Width*</b>	16 ft. (9 ft. travel lane, 7 ft. parking stalls)	32 ft. (9 ft. travel lanes, 7 ft. parking stalls)	39 ft. (11 ft. travel lanes, 5 ft. bike lanes, 7 ft. parking stalls)	39 ft. (11 ft. travel lanes, 5 ft. bike lanes, 7 ft. parking stalls)	12 ft.
<b>Motor Vehicle Parking Allowed</b>	one side	both sides	one side	one side	no
<b>Bicycle Lanes Required</b>	no	no	yes	yes	no
<b>Sidewalks Required</b>	One side (can be integrated with roadway if delineated with contrasting surface material or texture)	One side if a stormwater swale is located in the right-of-way or if there is a park or common open space with a parallel pedestrian path. Both sides in all other situations.			no

Standard	Street Classification				Alley
	Local One-Way	Local Two-Way	Minor Collector	Major Collector	
<b>Sidewalk Width</b>	4 ft. min.	5 ft. min.			n.a.
<b>Landscaping</b>	The remainder of the right-of-way, including the stormwater swale, shall be landscaped. Street trees shall be planted at an average spacing of no greater than 40 feet.				no
<b>Maximum Block Length</b>	600 ft. Greater length is allowed in order to minimize wetland crossings.				n.a.
<b>Maximum Cul-de-Sac Length</b>	No maximum length. Maximum of 20 lots facing the cul-de-sac.				n.a.
<b>Off-Street Bicycle/Pedestrian Paths</b>					
<b>Lighting</b>	All parks, bicycle/pedestrian paths, and open spaces intended for public use shall be lighted as required by the City.				
<b>Off-Street Bicycle/Pedestrian Paths</b>	Paved bicycle/pedestrian paths shall be a minimum of 10 ft. wide or as otherwise approved by the City. Pathways required to serve as emergency access routes shall be a minimum of 14 ft. wide and engineered to support a load of 55,000 pounds. All paved paths shall be constructed of 5 in. of Portland Cement over approved base or as otherwise approved by the City. Soft surfaced paths shall be constructed with materials as required by the City.				

\* Roadway paving width can be reduced by an amount equal to the parking stall standard for portions of the roadway that have a stormwater detention facility replacing the on-street parking. Curbs on the "no-parking" side of a 20ft -wide one-way street shall be rolled to allow use of the abutting area by emergency vehicles.

#### **Phased Development.**

Development in the Specific Development Plan Area may be constructed in phases. Approval of tentative subdivision plans that include phased development shall provide an estimated timeline for construction. Bonding for public improvements may occur for each phase provided that each phase will be substantially complete within itself. Any phase resulting in the construction of 30 or more units shall have at least two (2) points of access for emergency vehicles.

#### **Tree Removal.**

Tree removal within the plan area shall be permitted concurrent with subdivision approval in accordance with *Veneta Municipal Code* Chapter 8.10. If subdivision plans include phased development, tree removal shall occur on a phase-by-phase basis.

#### **Geo-Technical Review Compliance.**

A geotechnical study was conducted for 121 acres of the Plan area to determine whether residential development consistent with the Land Use Plan is within the carrying capacity of the land. That study is entitled *Geotechnical Investigation/ Report, Southwest Area Plan* and is contained in this Plan as Appendix C. It concludes that, from a geotechnical standpoint, the Plan area is suitable for the proposed development provided the recommendations contained in the report are incorporated into the design and construction. The geotechnical analysis required by Section 5.25 of the *Veneta Land Development Ordinance No. 417* does not need to be repeated during any land division or development review if the recommendations contained in the report are incorporated into the design and construction of residential development. Notwithstanding the provisions of Section 5.25 of the *Veneta Land Development Ordinance No. 417*, the following

development is authorized in connection with implementing the Southwest Neighborhood Specific Plan:

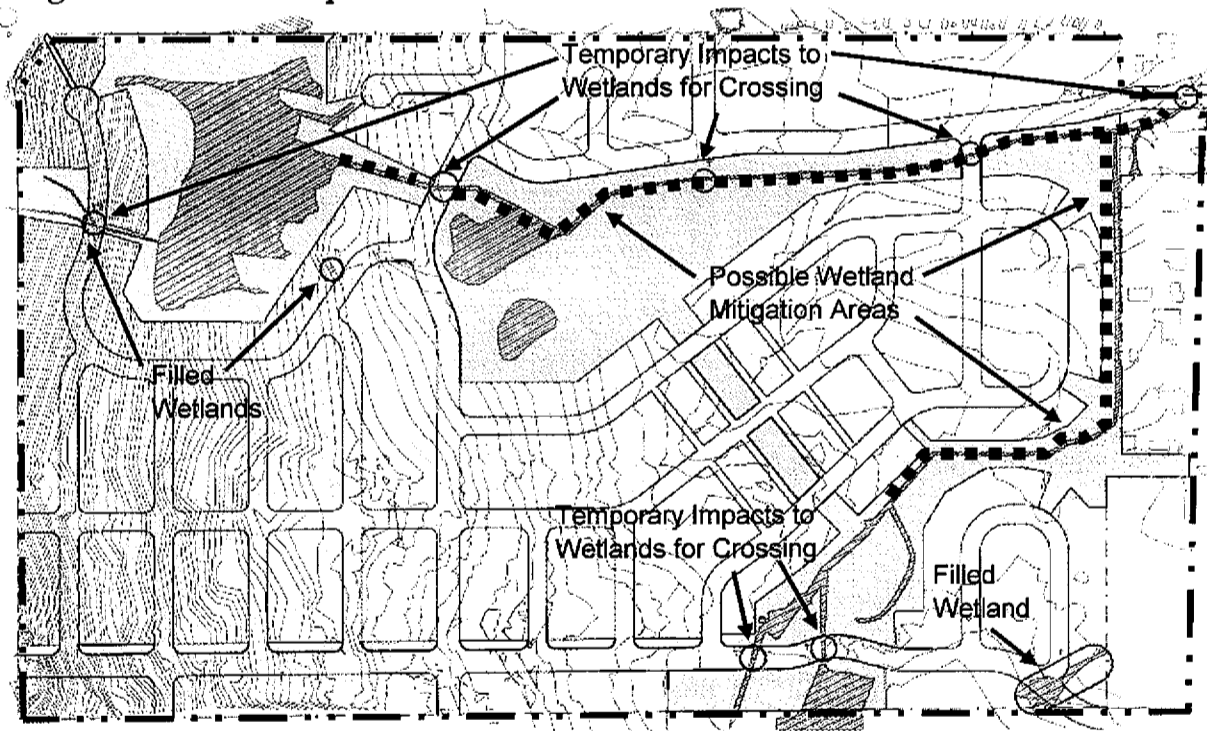
(i) Development undertaken in compliance with the recommendations of the *Geotechnical Investigation/Report, Southwest Area Plan* by Northwest Geotech Inc., dated March 3, 2005, contained in Appendix B of this Plan.

(ii) Development authorized through the provisions of Section 5.25 of the *Veneta Land Development Ordinance No. 417*.

**Wetlands.**

Delineated wetlands in the Plan area, as concurred by the Oregon Division of State Lands, are identified in Figure 13 of this Plan below. Wetland fill of three areas totaling 0.178 acres and temporary impacts for the purpose of roadway or utility crossing and mitigation on abutting open space as shown in Figure 13 is authorized in connection with implementing the *Southwest Area Specific Plan* by virtue of an approved wetland variance V-12-05 by the Veneta Planning Commission and Veneta City Council. Approval by the Oregon Division of State Lands is required prior to any fill or alteration of any wetland under the jurisdiction of the State.

**Figure 15. Wetland Impacts**



**Utilities**

All utilities shall be placed underground except those that, by their very nature and function, must be placed above ground.

**Neighborhood Commercial Standards.**

Neighborhood commercial developments shall comply with Section 8.20 (6), in addition to the standards in this section. Neighborhood commercial development is allowed in all areas zoned commercial on the City Zoning Map. Second floor office and residential uses are allowed and encouraged. The following design standards apply to the neighborhood commercial parcels:

- (i) Commercial buildings shall be oriented toward the street. If the site fronts on more than one street, the building shall have its primary orientation toward the street with the highest TSP classification. A zero (0) front yard setback is permitted. A maximum setback of twenty (20) feet is allowed if the space between the building and the sidewalk is enhanced with pedestrian amenities such as a plaza, sidewalk café, etc. If no pedestrian amenities are provided, the maximum setback shall be ten (10) feet.
- (ii) Commercial buildings shall have main entrances oriented to the abutting street. If the site fronts on more than one street, the building shall have its main entrance oriented toward the street with the highest TSP classification. Ground floor windows or doors are required along at least 60 percent of the facade length facing a street.
- (iii) Off-street parking shall be located to the side and/or rear of the buildings. On-street parking abutting the commercial parcel street frontages may count toward off-street parking requirements.

## V. Implementation Strategy

### Implementation








Implementation of the Plan will be through the following actions:

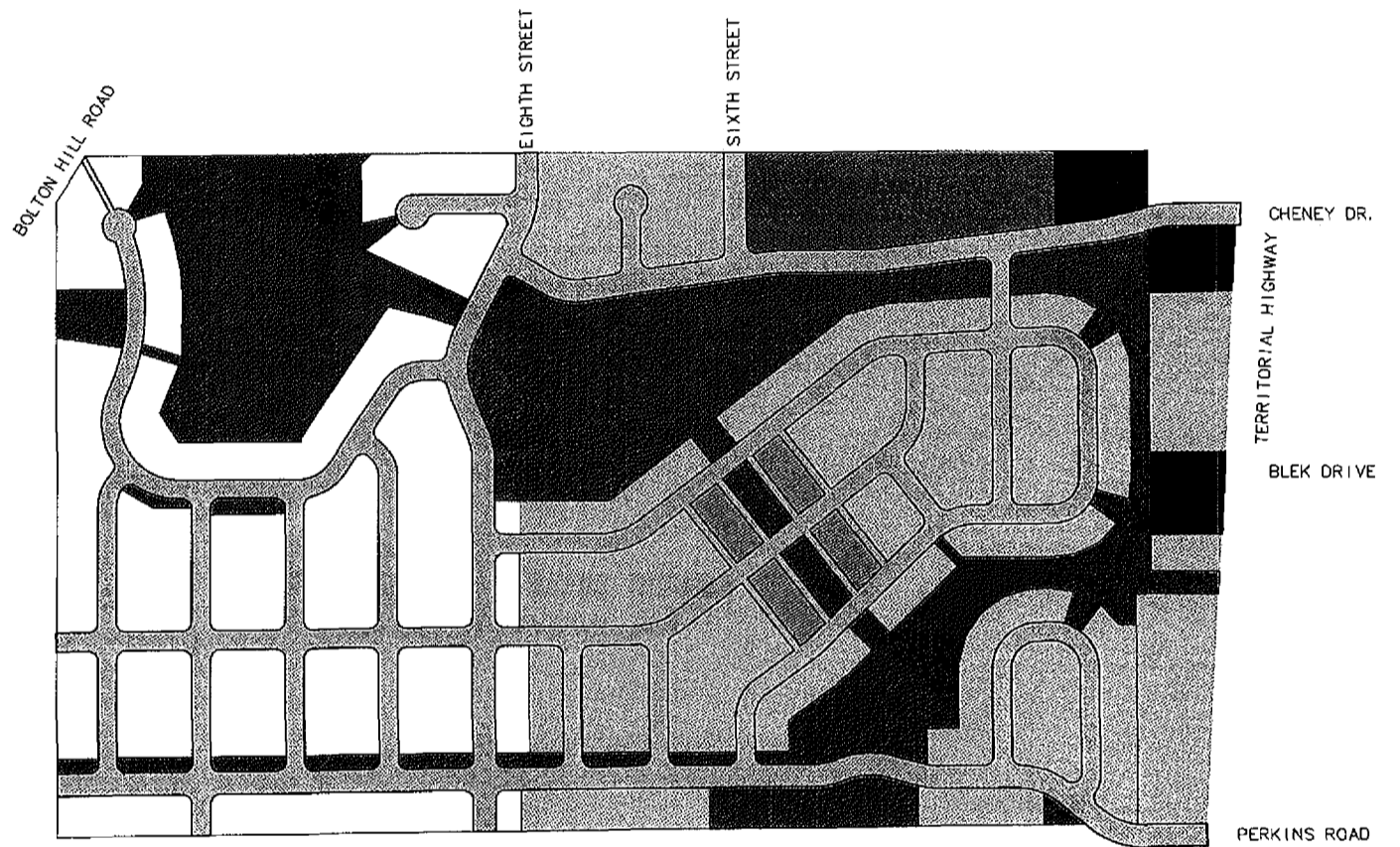
- Adoption of this Plan document.
- Adoption of a Specific Plan Map for the Southwest Area, attached to this Plan.
- Review and approval for limited wetland fill and alteration under Section 18.10, Wetland Protection, of the *Veneta Municipal Code*. This review was completed and approval granted under V-12-05.
- Adoption of amendments to Section 4.14(7)(b) of the *Veneta Land Development Ordinance No.417*.
- Land use reviews and approvals, such as subdivision, tree removal, and site plan reviews, necessary to develop the Plan area in accordance with the Veneta Municipal Code subsequent to adoption or approval of the previous implementation actions.

# Appendix A.

## Southwest Area Specific Plan Land Use Map

**Legend**

-  Commercial
-  General Residential
-  Multi-Family Residential
-  Single Family Residential
-  Row Houses
-  Open Space
-  Roads



**Veneta Southwest Area Specific Plan  
Conceptual Land Use Diagram**



4/10/06



# **Appendix B.**

## **Conditions of Approval**

## CONDITIONS OF APPROVAL

**The Veneta City Council approved amendments to the Southwest Area Specific Plan and Veneta Land Development Ordinance on April 10 2006 with the following conditions of approval:**

1. Prior to construction of each phase of development, the boundaries of all wetlands that might be impacted by that phase shall be clearly marked and the wetlands protected according to City standards. The applicant shall obtain all necessary permits for wetland impacts prior to construction.
2. Prior to approval of each subdivision, all proposed pathways within the subdivision shall be named for efficient emergency response.
3. Prior to submission for subdivision in the north west corner of the site,
  - a. The applicant shall provide a feasibility report on the connection of 12<sup>th</sup> street to Bolton Hill at the Northwest corner of the property. If this street connection is not feasible, the applicant shall provide an emergency connection between the cul-de-sacs on either side of the large wetland as discussed in condition 2 above.
  - b. The applicant shall provide an analysis of the potential for dewatering of the wetlands in the northwest corner of the site by construction of the long cul-de-sac extending north from D street. Road alignment and construction shall not permanently impact the wetlands.
4. Prior to approval of the first subdivision, the applicant shall submit a detailed analysis of the stormwater mitigation systems proposed for the entire plan area. The analysis shall show that post development peak flows shall not exceed predevelopment peak flows for a 10yr storm event.
5. Prior to approval of the first subdivision, the applicant shall provide an analysis of sewer collection system capacity which takes into account the potential need for oversizing of infrastructure to accommodate future development to the West and South, and the overall impact of the proposed development on the City's sewer collection and treatment systems. The analysis shall show the estimated finished elevations across the entire Plan Area given the gravity flow requirements of the sewer system.
6. Prior to approval of the first subdivision, the applicant shall provide a detailed analysis of the water distribution system for the plan area to include water storage and distribution capacities, as well as pressure control requirements and the impacts of the proposed development on the City's water production system.

7. Prior to approval of the first subdivision, the applicant shall create a detailed maintenance plan for the proposed stormwater facilities clearly stating who will be responsible for maintenance, what the level of maintenance shall be established, and providing a development agreement if private parties are to take responsibility for maintenance.
8. Prior to approval of the first subdivision, the applicant shall enter into an agreement with the City and ODOT to construct a dedicated right-turn-lane on south-bound Territorial at the intersection with Cheney Drive. The need for this improvement shall be considered during the review of each subdivision and may be required as a condition of approval if warranted at that time.
9. The developer shall enter into an agreement with the City and, if necessary, ODOT to address performance standard deficiencies on affected intersections. The agreement shall be in place prior to the approval of the first tentative subdivision and shall identify a funding plan for mitigation of intersection impacts. The agreement may include a condition that, if the City's Transportation SDCs are updated to include sufficient funding for a project or projects to address the deficiencies prior to issuance of the plan's first building permit, no further contribution may be required.
10. For each phase of the Southwest Area Plan, the developer shall provide a detailed analysis of impacted intersections identified in the traffic analysis work previously performed. The detailed analysis will identify how those intersections will be incrementally affected.
11. If the City has not enacted multi-family or town-home development standards by the time of application, the applicant shall work with the City to develop said standards prior to Site Plan Approval for Multi Family development.
12. If the City has not enacted standards for landscaping of detention ponds prior to the time of subdivision application, the applicant shall work with the City to develop said standards prior to subdivision approval.
13. If the City has not enacted grading and design standards for hillside development prior to the time of subdivision application, the applicant shall work with the City to develop said standards prior to approval of any subdivision with slopes likely to require cut/fill of more than 1ft.

# **Appendix C.**

**Geotechnical Investigation/Report  
Southwest Area Plan**

**Geotechnical Investigation/Report  
Southwest Area Plan  
Territorial Highway and Perkins Road  
Veneta, Oregon**

**Prepared For**

**Hayden Homes  
2464 SW Glacier Place, Suite 110  
Redmond, Oregon 97756**

**March 3, 2005**

**Project No. 1516.2.1**

 **Northwest Geotech, Inc.**  
**Northwest Testing, Inc.**



9120 SW Pioneer Court, Suite B • Wilsonville, Oregon 97070 503/682-1880 FAX: 503 / 682-2753

March 3, 2005  
Project No. 1516.2.1

Hayden Homes  
2464 SW Glacier Place, Suite 110  
Redmond, Oregon 97756

Attention: Mr. Dave S. Cady  
Director of Land Development

Subject: Geotechnical Investigation/Report  
Southwest Area Plan  
Territorial Highway and Perkins Road  
Veneta, Oregon

Dear Mr. Cady:

In accordance with your request, Northwest Geotech, Inc., (NGI) has completed a geotechnical investigation for the Southwest Area Plan property in Veneta, Oregon. Our geotechnical investigation consisted of a subsurface exploration, engineering geologic reconnaissance, laboratory testing, engineering analysis, and preparation of this report. This report summarizes our findings and provides recommendations for the design and construction of the project.

#### **BACKGROUND INFORMATION**

##### **Site Description**

The subject site is approximately 120 acres in size and is located to the northwest of the intersection of Territorial Highway and Perkins Road in Veneta, Oregon as shown on the location map, Figure 1. The site slopes moderately to gently down to the northeast with overall topographic relief of approximately 130 feet. Slopes at the site range from about 25 percent to 1 percent with the steeper slopes present in the westerly portion of the site. A number of shallow drainage ditches traverse the site. The northerly approximate two-thirds of the site is vegetated with grass, weeds, and low-lying brush as well as isolated or small to medium sized clusters of trees. The southerly approximate one-third of the site is heavily wooded.

##### **Project Description**

The proposed development is planned to consist of 456 single-family residential lots, approximately 4 acres of medium density residential development, and approximately 2.2 acres of row houses. The development will also include approximately 21,000 lineal feet of new roadway improvements and several stormwater detention facilities. Associated improvements are anticipated to include underground utilities, sidewalks, and landscaping. It is anticipated that the development will be completed in a series of phases; however, the phasing of the project is presently undetermined.

## **GEOLOGY**

The site lies in an area mapped as Quaternary high terrace gravels overlying gently west- to northwest-dipping Tyee Formation Sandstone (Yeats, et al., 1996; Yeats, et al., 1996a). The Quaternary high terrace gravels are described as deeply weathered, stratified gravel, sand, silt, and clay deposits which are early to middle Pleistocene in age (Yeats, et al., 1996; O'Connor, et al., 2001). The Tyee Formation is described as rhythmically interbedded, medium- to fine-grained, micaceous, feldspathic, lithic or arkosic marine sandstone and micaceous, carbonaceous siltstone of turbidite origin (Yeats, et al., 1996). Tyee Formation underlies the site at a depth of approximately 350 to 400 feet (Yeats, et al., 1996a).

The Quaternary high terrace gravels are the oldest widespread surficial Quaternary deposits in the valley and were probably deposited between approximately 500,000 and 2.5 million years ago (O'Connor, et al., 2001). These fluvial sands and gravels underlie terraces along the lowland margins and tributary valleys of the Willamette River. Their present position above the flanks of the lowland valley areas are likely due to post-depositional tectonic uplift or by regional tectonic related changes in local stream base levels (O'Connor, et al., 2001). Terrace surfaces are generally planar to undulating, with thick, well-developed soils and highly weathered clasts. These highly weathered sand and gravel deposits are up to 300 feet thick, or more (O'Connor, et al., 2001).

There are few faults mapped in this area of the southern Willamette Valley, and no faults with Quaternary movement have been mapped in the area of the site (Personius, et al., 2003; Geomatrix, 1995).

## **FIELD EXPLORATION**

NGI completed a subsurface exploration of the subject site on December 29 through December 31, 2004. The exploration consisted of excavating thirty geotechnical test pits to depths of between 9 feet and 12 feet. Approximate test pit locations are shown on Figure 2. Each geotechnical test pit was logged by an engineer from our office who visually classified the materials encountered in accordance with the Unified Soil Classification System (USCS). Bulk and relatively undisturbed samples of the subsurface soils were collected and returned to our laboratory for further examination and testing. Detailed test pit logs are presented in Appendix A.

## **LABORATORY TESTING**

Representative soil samples obtained during our subsurface exploration were tested in the laboratory for moisture content, dry density, gradation, maximum density (modified Proctor), Atterberg Limits, California Bearing Ratio (CBR), and expansion index. The moisture content, dry density, and expansion index test results are shown on the test pit logs in Appendix A. The gradation, maximum density, Atterberg Limits, and CBR test results are presented in Appendix B.

## **SUBSURFACE CONDITIONS**

### **Soil Conditions**

The subsurface soils at the site generally consists of 8 to 18 inches of organic, sandy, silty clay topsoil overlying native sandy, silty clay deposits. Medium dense deposits of clayey, silty sand were encountered below the sandy, silty, clay deposits in test pits TP-17, TP-18, and TP-19 located in the northwesterly portion of the site. Additional information pertaining to each of the major soil types is described as follows:

Sandy, Silty CLAY TOPSOIL: Topsoil at the site generally ranged from about 8 to 18 inches in depth with localized increases due to vegetation and root zones.

Brown, Sandy, Silty CLAY: In the majority of the test pits the topsoil was underlain by brown, wet to very wet, sandy, silty clay extending to depths of 1.5 to 2.5 feet below the ground surface. These lean clay deposits are generally firm to stiff and are considered to possess relatively low plasticity characteristics and low expansion potential.

Orange Brown, Mottled Sandy, Silty CLAY: An orange brown, wet to saturated, sandy, silty clay was encountered in most areas of the site. These deposits typically became grey mottled with depth indicating the presence of a seasonally high groundwater table. These fat clay deposits are typically stiff to very stiff in consistency and are considered to possess moderate plasticity characteristics and low expansion potential.

Grey, Orange Mottled, Sandy, Silty CLAY: Grey, orange to red mottled, very wet to saturated, sandy, silty clay was encountered in a number of the test pits underlying the orange brown and mottled sandy, silty clay deposits. These fat clay deposits are typically stiff to very stiff in consistency and are considered to possess moderate to high plasticity characteristics and moderate expansion potential.

Orange Brown, Clayey, Silty SAND: The orange brown, clayey, silty sand deposits were encountered at depths of 3.5 to 9 feet on the flanks of the slope in the northwest portion of the site. The deposits were generally considered to be medium dense.

### **Groundwater**

Groundwater seepage was encountered in 23 of the 30 test pits at depths ranging from 1 to 8 feet below existing site grades. Seepage flows ranged from light to very heavy. Groundwater conditions are expected to fluctuate seasonally.

## **SLOPE STABILITY AND EROSION**

The site occupies a generally planar and very gently sloping terrace surface underlain by highly weathered sands and gravels with a thin surficial cover of fine-grained (silt and clay) soils derived from these sediments. Slopes in the western part of the site slope gently up to the west at angles of approximately 3 to 12 degrees. At the time of our site visit, we observed that there were numerous springs emanating from the base of the hillsides in the western parts of the site, and soils in that area were generally saturated. We did not observe any landslide areas on the



site. However, slopes above the site to the west show indications that there have been episodes of shallow slope instability in the past, and there is a low risk that there could be landslides originating from that area which could impact the site during periods of extreme precipitation.

#### **FINDINGS AND CONCLUSIONS**

1. From a geotechnical engineering standpoint, the subject property is considered suitable for the proposed development provided the recommendations presented in the following sections of this report are incorporated into the design and construction of the project.
2. The near surface soils are generally considered to be of low to moderate plasticity and have in-place moisture contents significantly above the optimum moisture content. Accordingly, substantial processing and drying of the materials will be required to achieve compaction. Although the near surface soils generally possess low to moderate plasticity, the swell (expansion) potential is considered to be relatively low.
3. Groundwater seepage was encountered in 23 of the 30 test pits at depths range from 1 to 8 feet below existing site grades. Seepage flows ranged from light to very heavy and could become a significant factor during installation of underground utilities or below grade structures.

#### **Site Preparation**

Prior to grading, the site should be cleared of vegetation and surface or buried obstructions. Water wells, if encountered, should be capped below finish site grades and abandoned in accordance with local and state guidelines. Removal of organic topsoil, fill, or any soft, organic, or otherwise unsuitable soils will be required beneath proposed pavements, building, and retaining wall components. Stripping depths are expected to range from 8 to 18 inches with localized increases due to vegetation and root zones. The stripping depths will need to be confirmed by the soils engineer prior to placement of building components, pavement sections, or structural fill.

Where the backfilled test pits occur within foundation or pavement areas, the loose soils should be removed and replaced with a clean crushed aggregate compacted to a minimum of 90 percent of ASTM D1557 (Modified Proctor).

#### **Materials for Fill**

The on-site near surface brown and orange-brown silty clay soils are considered suitable for use as structural fill provided they are free of organic materials and other debris. However, due to their moderate plasticity characteristics the near surface soils are not recommended to be utilized during wet weather construction. Due to its expansion potential and moderate to high plasticity the underlying grey, silty clay soils are generally not recommended for use as structural fill. It is likely that the near surface soils will have a moisture content well in excess of optimum conditions, except perhaps during the driest portion of the year, and accordingly, will require significant drying to achieve compaction. Based on the laboratory maximum density

tests, the near surface soils have optimum moisture contents in the range of 15.0 to 19.5 percent. The near surface soils had in-place moisture contents ranging from 20.4 to 41.0 percent during the December 2004 field exploration. The average moisture content of the near surface soils was 27.5 percent. In addition to the high moisture content, as indicated above the near surface soils possess moderate plasticity characteristics which increase the difficulty of processing and drying of the materials.

Should grading activities proceed during the wet weather months, the use of imported granular fill consisting of clean sand, pit run gravel, or crushed aggregate (containing less than 5 percent material passing the No. 200 sieve) is recommended.

Representative samples of the materials to be used for fill will need to be tested in the laboratory by the soils engineer to determine the maximum density and optimum moisture content.

#### **Structural Fill**

All materials placed within structural areas should be compacted while at a moisture content near optimum and to a density that is not less than 90 percent of the maximum dry density as determined in accordance with ASTM D1557 (Modified Proctor). Where fill is required on ground sloping in excess of 5 horizontal to 1 vertical, the fill should be constructed by benching the slope prior to fill placement. The number and location of benches should be evaluated by the soils engineer during construction. For non-structural areas, the compacted dry density should not be less than 85 percent of the Modified Proctor. Unless otherwise specified, the fill materials should be placed in layers that, when compacted, do not exceed 8 inches in thickness. For compaction requirements within trenches see the Trench Backfill section of this report.

#### **Protection of Exposed Ground**

Excavation and construction operations will expose the near-surface silty clay material to inclement weather conditions. The exposed soils can rapidly deteriorate due to precipitation and/or the action of repetitive heavy construction equipment. Accordingly, walls and floors of excavations should be protected from the elements and from the action of repetitive construction traffic.

There is the likely potential that tire mounted earthwork equipment could induce excess pore water pressures in the near surface soils that could result in severe pumping (and disturbance) of the grade. This condition may be present irrespective of whether the project is completed in dry or wet weather months. In addition, rubber tired equipment could cause upward movement of water through capillary action where near-surface seepage conditions are present. NGI has provided wet weather geotextile and aggregate thickness recommendations for construction access and staging areas and these sections should be considered minimum sections to be used in conjunction with track-mounted equipment.

### **Wet Weather Grading/Erosion Control**

Wet weather grading of the near surface, moisture-sensitive soils is not generally recommended. If wet weather grading is unavoidable due to construction schedules, stabilization of the subgrade soils with a geotextile and aggregate (or by other means) will likely become necessary. Also, construction traffic should be directed over access roads and staging areas constructed of a minimum of 12 inches of crushed aggregate placed over a geotextile such as Mirafi 500X (or equivalent). In addition, the use of lightweight track-mounted equipment is recommended to minimize disturbance of the subgrade. Erosion control measures will need to be undertaken to meet Lane County and project requirements.

### **Excavations**

Based on the subsurface exploration, it is anticipated that excavations can be accomplished with conventional heavy earthmoving equipment. Excavations in excess of 5 feet in depth will require appropriate shoring or sloping to provide for worker safety. Temporary unsupported slopes above the water table should be sloped no steeper than  $\frac{3}{4}$  horizontal to 1 vertical. For excavations below a depth of 10 feet or below the water table or seepage zones, this office should be consulted. At the time of our subsurface exploration in December 2004, groundwater seepage was encountered in 23 of the 30 test pits at depths ranging from 1 to 8 feet below existing site grades. Seepage flows ranged from light to very heavy. Accordingly, excavations below the water table or where significant groundwater seepage is encountered will need to be dewatered during construction.

### **Trench Backfill**

All granular trench backfill above the pipe zone and within structural areas should be compacted by mechanical means to at least 90 percent of the maximum dry density determined in accordance with ASTM D1557 (Modified Proctor). The trench backfill will need to be tested by the soils engineer. The on-site fine-grained soils are not recommended to be used as trench backfill. The use of shoring for vertical excavations over 5 feet in depth is required by OSHA regulations.

We recommend the trench backfill consist of a clean crushed aggregate (or other suitable granular material) containing less than 5 percent fine materials passing the No. 200 sieve. Appropriate bedding materials should be placed beneath pipes to ensure no point or concentrated loading.

### **Building Foundations**

Building loads may be supported on individual and/or continuous spread footings bearing on undisturbed native soils or compacted structural fill. Foundations may be designed for an allowable dead plus live load bearing capacity of 2,000 pounds per square foot with an increase of one-third allowed for short term wind or seismic loads.

Exterior footings or other footings subject to frost exposure should be embedded a minimum of 18 inches below the lowest adjacent finished grade. Interior footings should be embedded at least 6 inches or as otherwise recommended by the soils engineer where sloping or benched conditions exist within the building footprint. Generally, interior footings placed on sloping or benched ground should be embedded or set back in such a manner as to provide a minimum horizontal distance between the foundation component and face of slope or bench of one foot per every foot of elevation change. Exterior footings placed on sloping ground should be stepped as required by the applicable building code. Continuous and/or individual spread footings should be a minimum of 15 inches in the least dimension. If footing excavations are left open during wet weather periods or if seepage occurs, a 2 to 3 inch thick layer of clean crushed aggregate should be placed and seated by mechanical means to help avoid deterioration of the bearing soils.

Lateral loads can be resisted by passive pressures acting against footings and by frictional resistance between foundation elements and supporting soils. A passive resistance of 250 pounds per square foot per foot of embedment depth and a friction factor of 0.25 may be used for design. The friction factor can be increased to 0.35 if crushed aggregate is used to support footings.

Settlement is anticipated to be within typical construction tolerances. Where unusual loading patterns result in large differential loads, combined footings, eccentrically loaded footings, or other special foundation requirements, this office should be consulted. Foundations should be reinforced in accordance with structural considerations.

### **Retaining Walls**

#### **Conventional Walls**

Retaining walls should be designed to withstand lateral earth pressures and any adjacent surcharge loads. Walls free to deflect and retaining level backfill composed of free-draining sand or gravel (containing less than 5 percent passing the No. 200 sieve) may be designed for an equivalent fluid active pressure of 35 pounds per cubic foot. The on-site silty clay soils are not recommended for use as wall backfill. Restrained walls retaining level backfill should be designed for an equivalent fluid at-rest pressure of 55 pounds per cubic foot. For walls retaining sloping backfill of up to 2 horizontal to 1 vertical, an equivalent fluid active pressure of 45 pcf and an equivalent fluid at-rest pressure of 65 pcf may be used for design. Additional surcharge pressures from adjacent loadings should be added to these values.

The above design considerations assume that walls will be appropriately drained to prevent buildup of hydrostatic pressures. A schematic of a typical retaining wall drain system is presented in Figure 3. Walls should be fully waterproofed where necessary. Wall foundations should be designed in accordance with the recommendations presented in the building foundation section of this report.

#### Rockery/MSE Walls

Back slopes for rockery or MSE walls should be constructed at gradients no steeper than  $\frac{3}{4}$  horizontal to 1 vertical to a maximum height of 15 feet. Fill slopes should be overbuilt and cut back to a gradient no steeper than  $\frac{3}{4}$  horizontal to 1 vertical prior to wall construction.

It is anticipated that the boulders for rockery walls will generally be 18 to 36 inches in diameter. The boulders should consist of sound angular rock with the longest dimension not exceeding 3 times the width. Rockery walls should be battered at a minimum inclination of 1 foot in 6 feet and should be backfilled with clean crushed drain rock. Rocks should be placed in a stable configuration and voids in the wall face should be chinked with smaller rocks to provide good rock to rock contact. Drain rock should be sized in the 2 to 4 inch range and the thickness or width of the drain rock backfill should be a minimum of 12 inches. A non-woven filter fabric such as Mirafi 140N should be placed on the backslope between the native/fill soil and drain rock backfill utilizing a minimum overlap of 2 feet. A drainpipe should also be provided at the bottom heel of the wall to provide positive drainage to a suitable gravity outlet.

Sliding resistance can be provided by friction acting on the base of the wall and by passive earth pressure acting on the toe of the wall. The walls should be embedded a minimum of 24 inches or one basal rock width whichever is greater. Passive resistance should be neglected in the upper 18 inches where walls will bear on sloping ground in excess of 4 horizontal to 1 vertical.

Lateral earth pressures of 35 pcf equivalent fluid active pressure and 250 pcf equivalent fluid passive pressure may be utilized for the wall design, assuming that the wall is backfilled with level backfill consisting of free draining sand or gravel. For walls retaining sloping backfill of up to 2 horizontal to 1 vertical an equivalent fluid active pressure of 45 pounds per cubic foot is recommended. Where the ground surface slopes away from the toe of the wall, passive resistance in the upper 3 feet should be neglected. A friction factor of 0.35 may be utilized for design provided the bottom of the wall is bedded in clean crushed aggregate or drain rock.

As rockery and precast block walls are not "classical" retaining walls, we recommend that foundations for structures on the uphill side of rockery walls be set back a minimum distance equal to the height of the wall. Should foundations be required closer than this, a conventional retaining wall or deepened foundations should be considered. Structures located on the downhill side of rockery walls should also be set back a distance equal to the height of the wall.

Should stacked wall configurations be required this office should be consulted.

#### Seismic Wall Loads

For seismic loading, a unit pseudostatic force equal to  $(15 \text{ pcf})(H^2)$ ; where H is the height of the wall in feet, should be added to the static active or at-rest lateral earth pressures for walls retaining level backfill. The location of the pseudostatic force can be assumed to act a distance of  $0.6H$  above the base of the wall. Where walls are retaining sloping backfill of up to 2 horizontal to 1 vertical a unit pseudostatic force of  $(20 \text{ pcf})(H^2)$  is recommended.

#### Floor Slabs/Driveways

Floor slabs/driveways should be at least 4 inches in thickness and underlain by a minimum of 6 inches of free-draining, crushed rock. Interior floor slabs should also be underlain by a suitable moisture barrier covered with a protective layer of clean sand. Slab thickness and reinforcing should be determined in accordance with structural considerations.

As indicated previously the grey silty clay encountered at depths ranging from 4.5 to 9.5 feet in a number of the test pits is considered to have moderate to high plasticity and moderate expansion characteristics. Where less than two feet of separation will exist between the bottom of slabs and the grey silty clay, it is recommended that the slabs be underlain with an additional 12 inches of free draining crushed aggregate compacted to a minimum of 95 percent of the Modified Proctor. We can identify areas of the site where the potentially expansive soils will be present near finished grades at such time as a grading plan is available and confirm our recommendation for additional base aggregate based on site observations during construction. Generally, the grey silty clay was encountered in the flatter portions of the site where relatively shallow cuts and fills are anticipated. Accordingly, the presence of these potentially expansive soils may not be a significant factor during construction.

#### Site Drainage/Temporary Site Drainage Section

##### Temporary Construction Drainage

Surface water should be diverted from excavations by means of temporary drainage facilities. Excavations should be de-watered as necessary by pumping or other suitable methods. Ponding of surface water in structural areas should also be prevented to the extent practical utilizing temporary drainage facilities.

##### Permanent Site Drainage

Surface water should be diverted from foundations by grading the ground surface a minimum of 2 percent away from walls and carrying the runoff from roofs to a suitable gravity outlet.

Permanent subsurface drainage of each building perimeter is recommended to prevent subjecting foundations and slabs to hydrostatic pressures and to help keep the moisture content of subgrade materials from extreme seasonal variations. This is especially important where there is the potential for expansion of soils such as was encountered in portions of the subject site. Construction of a continuous subdrain system that surrounds the building perimeter and is sloped (minimum 0.5 percent) to a suitable gravity outlet is recommended.

A suitable subdrain system would consist of a 4-inch diameter, perforated PVC pipe (typical) alongside and below the bottom of footings and backfilled with approved drain rock. The type of PVC pipe to be utilized may depend on building agency requirements and should be verified prior to construction. In addition, to prolong the life of the subdrain system, NGI recommends lining the trench excavation with a filter fabric such as Mirafi 140N or equivalent. The subdrain excavation should be constructed in a manner to prevent undermining of any foundation or slab component or disturbance to supporting soils. A schematic of the recommended foundation drain system is presented in Figure 4.

In addition to the perimeter subdrain system, drainage of crawlspace areas is recommended. Each crawlspace should be graded to a low point for installation of a crawlspace drain that is tied into the perimeter subdrain and tight-lined to a suitable gravity outlet.

Permanent underslab drainage should be provided where floor slabs are utilized in basement construction. The underslab drains may be a parallel pipe system constructed in a similar manner to the foundation subdrain system as outlined above. The drain pipes should be spaced a maximum of 10 feet center to center.

In the event that the subdrains are tied into the rain (roof) drain system, an approved backflow device will be required. If backflow devices are not allowed, these systems should be run independently.

## **PAVEMENT DESIGN**

### **Public Roadway Improvements**

Although no traffic information is available for the project, we have completed the following pavement section design based on the CBR test results, assumed traffic, and our experience with similar projects. For the purpose of design, we have assumed design traffic for a local residential street of 100,000, 18-Kip single axle loads over a design life of 20 years.

New pavements should be constructed of 3 inches of asphaltic concrete over a minimum of 12 inches of crushed aggregate base. If wintertime construction is planned, the base section should be increased to 16 inches and placement of a geotextile such as Mirafi 500X (or equivalent) between the subgrade and baserock is recommended to accommodate construction traffic.

Prior to placement of the base course, the ground surface should be stripped of topsoil, existing fill, or otherwise unsuitable soils as described above for general grading operations. The upper 6 inches of exposed subgrade should then be scarified and compacted to at least 90 percent of ASTM D1557 (Modified Proctor). The scarification procedure may be waived at the discretion of the soils engineer if proof rolling of the subgrade with a fully loaded dump truck (or probing) reveals suitable conditions. Embankment fills and aggregate base for public roadway improvements should be compacted to a minimum of 90 and 95 percent of ASTM D1557,

respectively. Asphaltic concrete pavements should be compacted to a minimum of 91 percent of the theoretical maximum density per ASTM D2041 (Rice Gravity). Trench backfill within the public right-of-way or utility easements should also be compacted to a minimum of 90 percent of ASTM D1557. Aggregate base, trench backfill, and asphaltic concrete materials should meet the requirements as outlined in the current Oregon Department of Transportation Standard Specifications.

Aggregate base should be compacted to at least 95 percent of AASHTO T-180 and asphaltic concrete should be compacted to a minimum of 92 percent of the theoretical maximum density per ASTM D 2041 (Rice Gravity). For compaction requirements within utility trenches see the Trench Backfill section of this report.

#### **ADDITIONAL SERVICES**

##### **Design Review**

This geotechnical report pertains to a specific site and development. It is not applicable to adjacent sites nor is it valid for types of developments other than that to which it refers. Any variation from the site or development necessitates a geotechnical review in order to determine the validity of the design concepts evolved herein.

Additionally, a geotechnical review of final plans and specifications is recommended to determine whether our recommendations have been properly interpreted and incorporated in the design and construction documents.

##### **Construction Monitoring**

Because of the judgmental character of the art of soil and foundation engineering, as well as the potential for adverse circumstances arising from construction activity, observations during site preparation, excavation, and construction will need to be carried out by the soils engineer or his representative. These observations then may serve as a basis for confirmation and/or alteration of geotechnical recommendations or design guidelines presented herein to the benefit of the project. Moreover, field engineering observations become increasingly important should earthwork proceed during adverse weather conditions.

#### **LIMITATIONS**

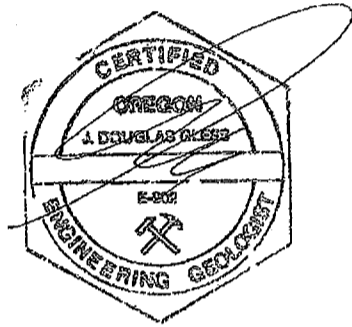
The soils engineer warrants that the findings, recommendations, specifications, or professional advice contained herein have been promulgated after being prepared in accordance with generally accepted professional engineering practices in the fields of foundation engineering, soil mechanics, and engineering geology at the time the report was prepared. No other warranties are implied or expressed. Unless explicitly addressed in this report, NGI's analysis has not included seismic or slope stability analysis. It should be noted that the stratification of the soils, as shown on the test pit logs, represents the soil conditions in the actual test pit location, and other variations may occur between the test pits. Lines of demarcation represent the approximate boundary between soil types, but the transition may be gradual. This report was prepared for the exclusive use of NGI's client for the specific project and NGI does not authorize the segmented use of the advice herein nor the reliance upon the report by third parties without written authorization of NGI.



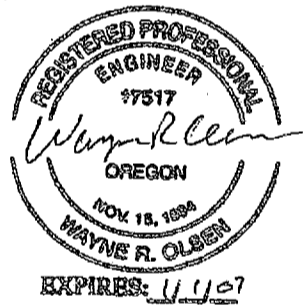
This opportunity to be of service is sincerely appreciated. If you should have any questions, please contact our office.

Respectfully submitted,

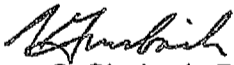
NORTHWEST GEOTECH, INC.



J. Douglas Gless, MSc, RG, CEG, LHG  
Principal Engineering Geologist



Wayne R. Olsen, P.E.  
Project Engineer

  
Thomas S. Ginsbach, P.E., G.E.  
President

Copies: (4) Addressee

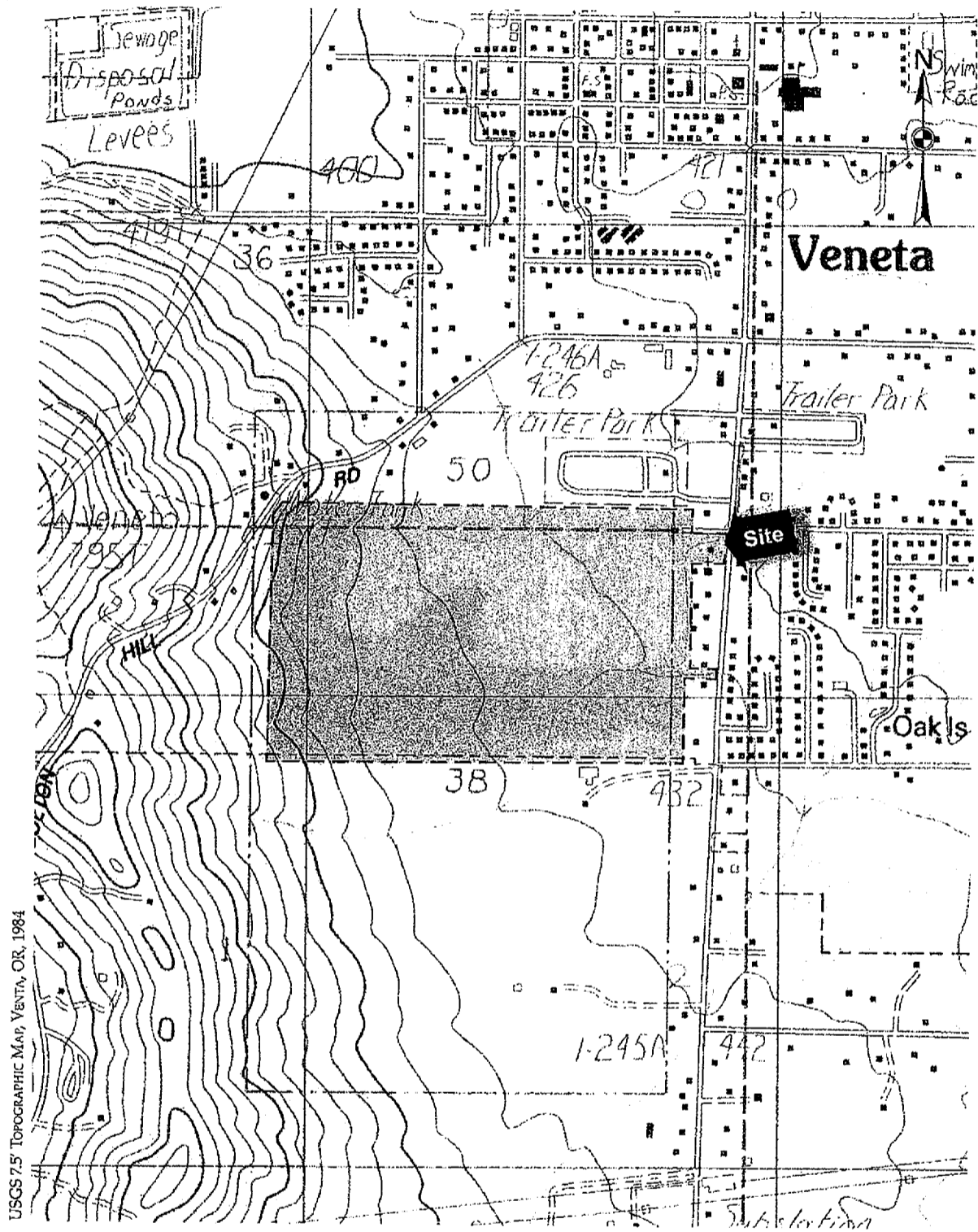
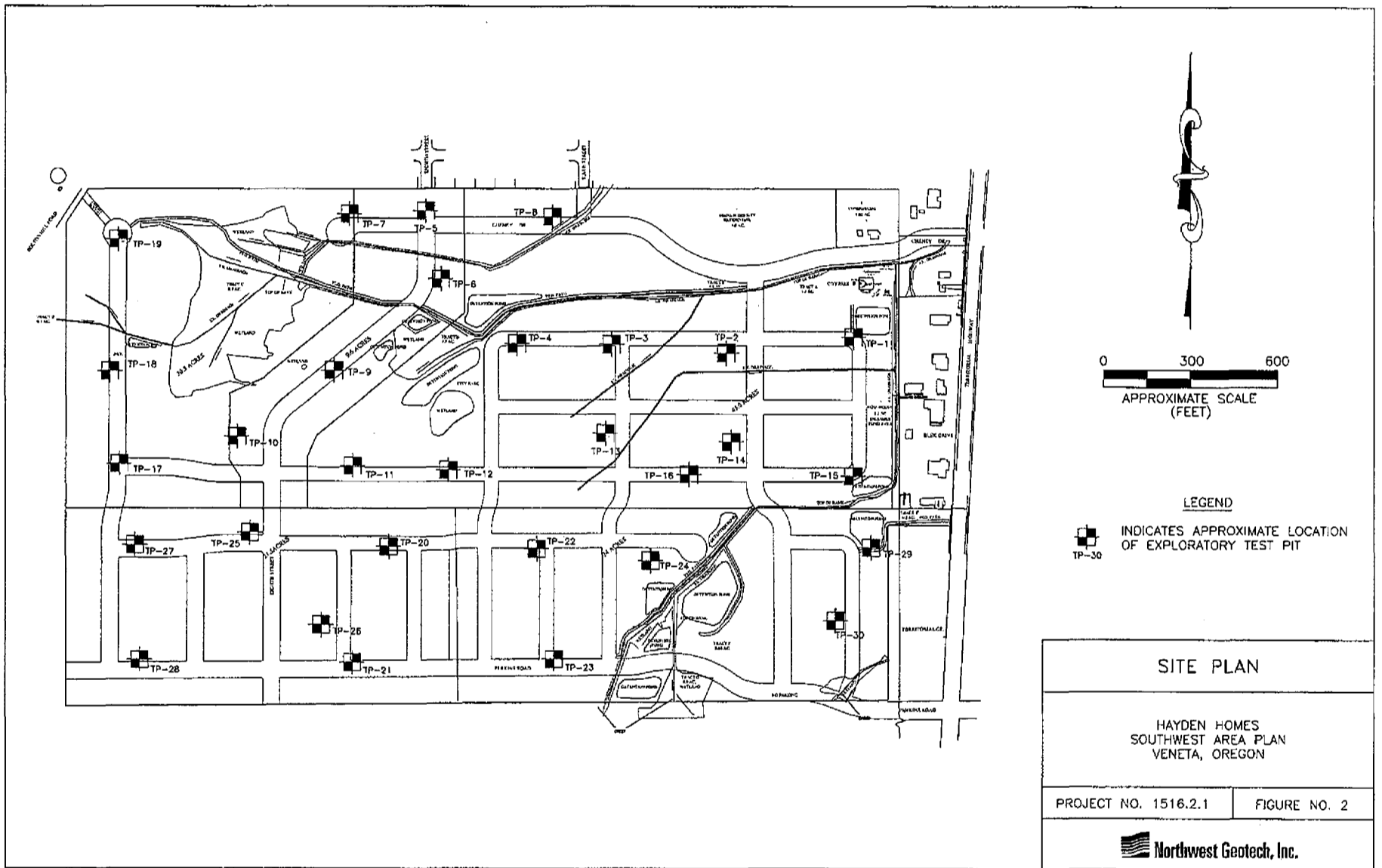


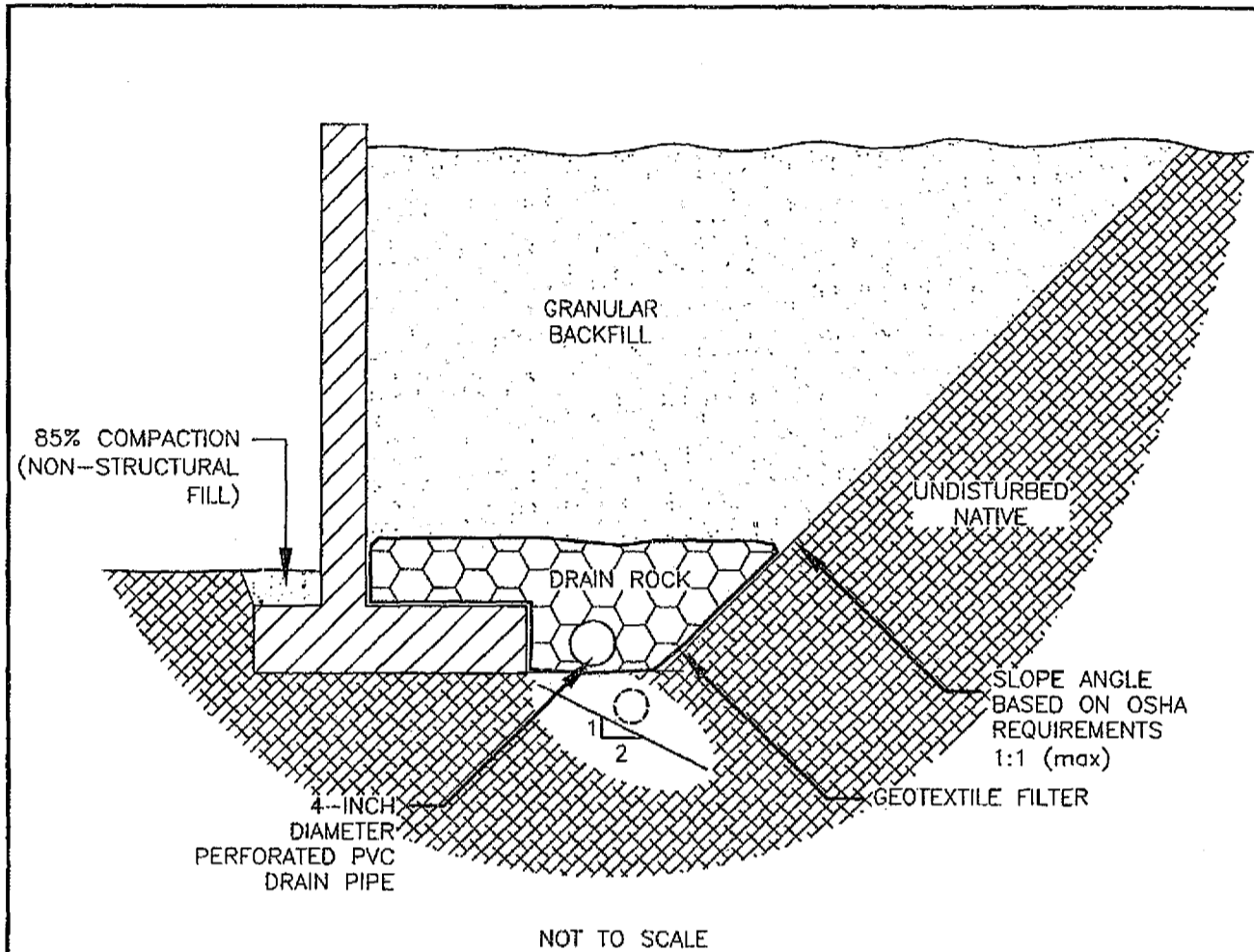
Figure No. 1

Project No: 1516.21

**SITE LOCATION AND TOPOGRAPHIC MAP**  
 Southwest Area Plan, Territorial Hwy. & Perkins Rd., Veneta, Oregon



<b>SITE PLAN</b>	
HAYDEN HOMES SOUTHWEST AREA PLAN VENETA, OREGON	
PROJECT NO. 1516.2.1	FIGURE NO. 2
<b>Northwest Geotech, Inc.</b>	

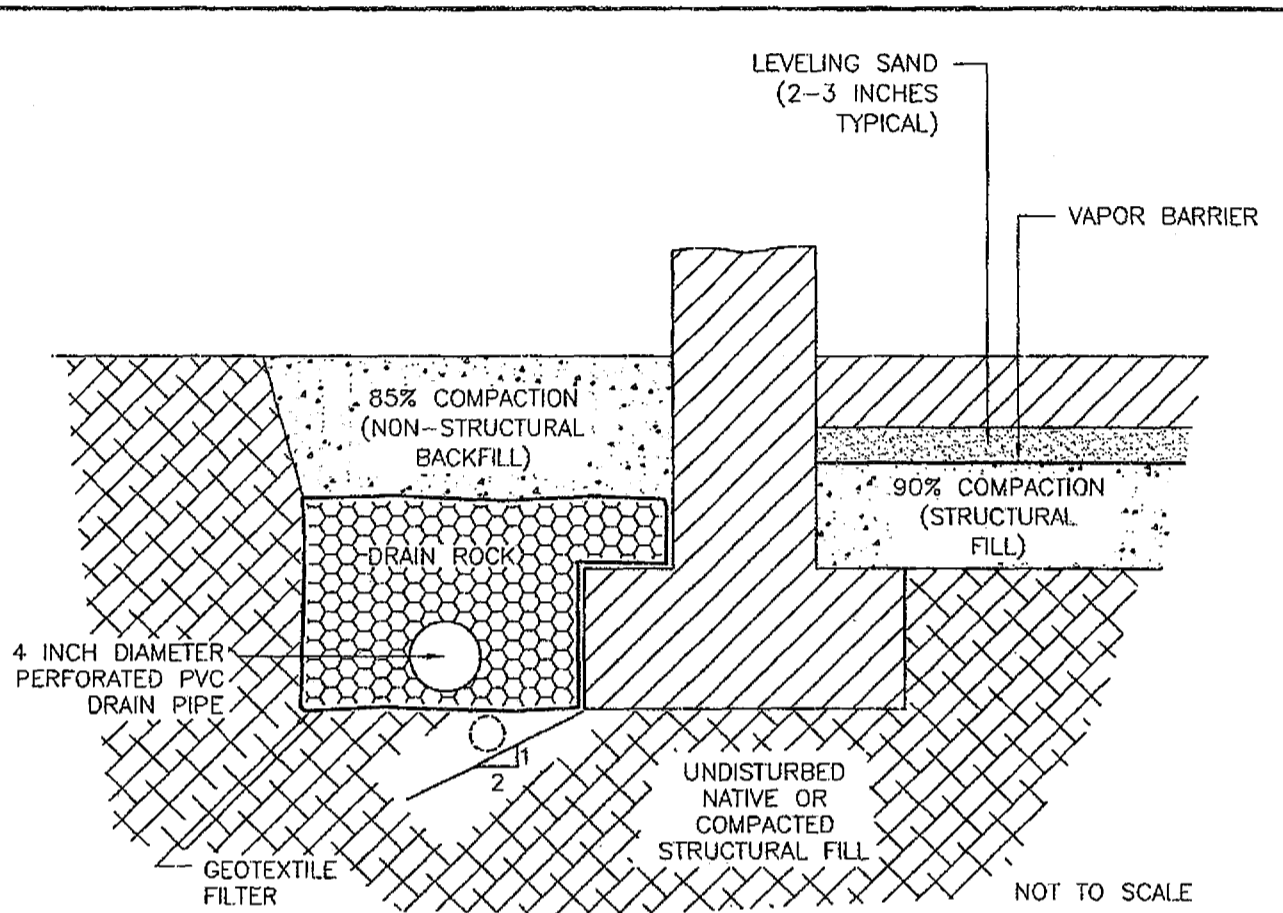


**NOTES:**

- 1) GEOTEXTILE FILTER TO BE MIRAFI 140N OR EQUIVALENT.
- 2) LAY PERFORATED DRAIN PIPE ON MINIMUM 0.5 % GRADIENT, WIDENING EXCAVATION AS REQUIRED TO MAINTAIN THE PIPE ABOVE A 2:1 SLOPE FROM THE BOTTOM OUTSIDE EDGE OF FOOTING.
- 3) GRANULAR BACKFILL TO BE COMPACTED IN CONFORMANCE WITH STRUCTURAL FILL REQUIREMENTS. USE GRANULAR FILL, CLEAN SAND, PIT RUN GRAVEL, OR CRUSHED AGGREGATE CONTAINING LESS THAN 5 PERCENT PASSING THE NO. 200 SIEVE. IF NATIVE SOIL BACKFILL IS USED (WHERE APPLICABLE) PLEASE CONTACT OUR OFFICE.
- 4) DRAIN ROCK TO BE CLEAN, WASHED, ROUND GRAVEL 3/4 TO 1-1/2 INCHES IN SIZE.

**RETAINING WALL SCHEMATIC**

PROJECT NO. 1516.2.1	HAYDEN HOMES SOUTHWEST AREA PLAN VENETA, OREGON	FIGURE NO. 3
----------------------	-------------------------------------------------------	--------------



- 1) FILTER FILTER TO BE MIRAFI 140N OR EQUIVALENT.
- 2) LAY PERFORATED DRAIN PIPE ON MINIMUM 0.5 % GRADIENT, EXCAVATE AS REQUIRED TO MAINTAIN THE PIPE ABOVE A 2:1 SLOPE FROM THE BOTTOM OUTSIDE EDGE OF FOOTING.
- 3) COMPACT STRUCTURAL FILL AT A MOISTURE CONTENT NEAR OPTIMUM AND TO A DENSITY NOT LESS THAN 90% OF MAXIMUM DRY DENSITY AS DETERMINED BY AASHTO T-180 (MODIFIED PROCTOR).
- 4) GRANULAR BACKFILL TO BE COMPACTED IN CONFORMANCE WITH STRUCTURAL FILL REQUIREMENTS. USE GRANULAR FILL, CLEAN SAND, PIT RUN GRAVEL, OR CRUSHED AGGREGATE CONTAINING LESS THAN 5 PERCENT PASSING THE NO. 200 SIEVE. IF NATIVE SOIL BACKFILL IS USED (WHERE APPLICABLE) PLEASE CONTACT OUR OFFICE.
- 5) DRAIN ROCK TO BE CLEAN, WASHED, ROUNDED TO SUBROUNDED GRAVEL 3/4 TO 1-1/2 INCHES IN SIZE.
- 6) WHERE FLOOR COVERINGS ARE PLANNED, PLACE VAPOR BARRIER AND PROTECTIVE SAND LAYER PRIOR TO SLAB PLACEMENT

## FLOOR SLAB AND FOUNDATION SCHEMATIC

PROJECT NO. 1516.2.1

HAYDEN HOMES  
SOUTHWEST AREA PLAN  
VENETA, OREGON

FIGURE NO. 4

**APPENDIX A**

DEPTH (FEET)		BAG SAMPLE	DRIVE SAMPLE	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS (U.S.C.S.)	SOIL DESCRIPTION
0						CL	TEST PIT NO.: TP-1 ELEVATION: TOPSOIL: DARK BROWN, VERY WET TO SATURATED, FIRM, ORGANIC, SANDY, SILTY CLAY
	X				32.3	CH	ORANGE BROWN, SATURATED, STIFF, SANDY, SILTY CLAY
	X					CH	ORANGE BROWN, GREY MOTTLED, SATURATED, STIFF, SANDY, SILTY CLAY
	X			78.5	41.7	CH	TAN TO GREY, SATURATED, STIFF, SANDY, SILTY CLAY (EXPANSION INDEX = 79)
10							TOTAL DEPTH: 10.0 FEET MODERATE GROUNDWATER SEEPAGE OBSERVED AT ±1 FOOT, BECOMES VERY HEAVY BELOW 4 FEET
15							
<b>TEST PIT LOG</b>							
PROJECT NO. 1516.2.1			HAYDEN HOMES SOUTHWEST AREA PLAN VENETA, OREGON			FIGURE NO. A-1	

BACKHOE COMPANY: GEM BUILDERS, INC.			BUCKET SIZE: 24 IN.		DATE: 12--29--04	
DEPTH (FEET)	BAG SAMPLE	DRIVE SAMPLE	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS (U.S.C.S.)	SOIL DESCRIPTION
						TEST PIT NO.: TP-2
0					CL	TOPSOIL: DARK BROWN, VERY WET TO SATURATED, FIRM, ORGANIC, SANDY, SILTY CLAY
					CH	ORANGE BROWN, VERY WET, STIFF, SANDY, SILTY CLAY
	X	X	98.4	27.4	CH	ORANGE BROWN, GREY MOTTLED, VERY WET, STIFF, SANDY, SILTY CLAY
	X					BECOMES SATURATED
5						
	X			33.9	CH	GREY, ORANGE AND PINK MOTTLED, SATURATED, STIFF, SANDY, SILTY CLAY
10						
						TOTAL DEPTH: 10.5 FEET LIGHT TO MODERATE GROUNDWATER SEEPAGE OBSERVED BELOW ±4 FEET
15						
<b>TEST PIT LOG</b>						
PROJECT NO. 1516.2.1		HAYDEN HOMES SOUTHWEST AREA PLAN VENETA, OREGON			FIGURE NO. A-2	





DEPTH (FEET)			BACKHOE COMPANY: GEM BUILDERS, INC.		BUCKET SIZE: 24 IN.		DATE: 12-29-04	
DEPTH (FEET)	BAG SAMPLE	DRIVE SAMPLE	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS (U.S.C.S.)	SOIL DESCRIPTION		
0						TEST PIT NO.: TP-4	ELEVATION:	
					CL	TOPSOIL: DARK BROWN, WET, FIRM, ORGANIC, SANDY, SILTY CLAY		
	X				CL	BROWN, WET, FIRM TO STIFF, SANDY, SILTY CLAY		
		X	97.0	23.9	CH	ORANGE BROWN, VERY WET, STIFF, SANDY, SILTY CLAY		
	X			25.7	CH	ORANGE BROWN, GREY MOTTLED, SATURATED, STIFF, SANDY, SILTY CLAY		
5								
	X		91.1	24.8				
10						TOTAL DEPTH: 10.0 FEET LIGHT GROUNDWATER SEEPAGE OBSERVED BELOW ±4 FEET		
15								
<b>TEST PIT LOG</b>								
PROJECT NO. 1516.2.1			HAYDEN HOMES SOUTHWEST AREA PLAN VENETA, OREGON			FIGURE NO. A-4		

BACKHOE COMPANY: GEM BUILDERS, INC.			BUCKET SIZE: 24 IN.		DATE: 12-29-04	
DEPTH (FEET)	BAG SAMPLE	DRIVE SAMPLE	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS (U.S.C.S.)	SOIL DESCRIPTION
						TEST PIT NO.: TP-5
0					CL	TOPSOIL: DARK BROWN, WET, FIRM, ORGANIC, SANDY, SILTY CLAY
					CL	GREY, SATURATED, SOFT, SANDY, SILTY CLAY
	X			33.9	CH	ORANGE BROWN, GREY MOTTLED, SATURATED, FIRM, SANDY, SILTY CLAY BECOMES STIFF (EXPANSION INDEX = 18)
5	X		89.7	31.6		
10						TOTAL DEPTH: 10.0 FEET MODERATE GROUNDWATER SEEPAGE OBSERVED AT ±1 FOOT, BECOMES HEAVY BELOW ±4 FEET
15						
<b>TEST PIT LOG</b>						
PROJECT NO. 1516.2.1			HAYDEN HOMES SOUTHWEST AREA PLAN VENETA, OREGON		FIGURE NO. A-5	



BACKHOE COMPANY: GEM BUILDERS, INC.			BUCKET SIZE: 24 IN.		DATE: 12-29-04	
DEPTH (FEET)	BAG SAMPLE	DRIVE SAMPLE	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS (U.S.C.S.)	SOIL DESCRIPTION
						TEST PIT NO.: TP-7
0					CL	TOPSOIL: DARK BROWN, WET, FIRM, ORGANIC, SANDY, SILTY CLAY
					CL	BROWN, VERY WET, STIFF, SANDY, SILTY CLAY
					CH	ORANGE BROWN, VERY WET, STIFF, SANDY, SILTY CLAY
	X		94.8	26.9	CH	ORANGE BROWN, GREY MOTTLED, VERY WET, VERY STIFF, SANDY, SILTY CLAY
5						
	X			29.6		
	X					
10						TOTAL DEPTH: 9.5 FEET NO GROUNDWATER SEEPAGE OBSERVED
15						
<b>TEST PIT LOG</b>						
PROJECT NO. 1516.2.1			HAYDEN HOMES SOUTHWEST AREA PLAN VENETA, OREGON			FIGURE NO. A-7

BACKHOE COMPANY: GEM BUILDERS, INC.			BUCKET SIZE: 24 IN.		DATE: 12-29-04	
DEPTH (FEET)	BAG SAMPLE	DRIVE SAMPLE	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS (U.S.C.S.)	SOIL DESCRIPTION
						TEST PIT NO.: TP-8
0					CL	TOPSOIL: DARK BROWN, WET, FIRM, ORGANIC, SANDY, SILTY CLAY
					CL	BROWN, VERY WET, STIFF, SANDY, SILTY CLAY
					CH	ORANGE BROWN, VERY WET, VERY STIFF, SANDY, SILTY CLAY
		X	94.6	26.1	CH	ORANGE BROWN, GREY MOTTLED, VERY WET, VERY STIFF, SANDY, SILTY CLAY
5	X			36.2	CH	GREY, ORANGE AND RED MOTTLED, VERY WET TO SATURATED, VERY STIFF, SANDY, SILTY CLAY
10	X					
15						TOTAL DEPTH: 10.0 FEET LIGHT TO MODERATE GROUNDWATER SEEPAGE OBSERVED BELOW ±6 FEET
<b>TEST PIT LOG</b>						
PROJECT NO. 1516.2.1			HAYDEN HOMES SOUTHWEST AREA PLAN VENETA, OREGON			FIGURE NO. A-8

DEPTH (FEET)			BACKHOE COMPANY: GEM BUILDERS, INC.		BUCKET SIZE: 24 IN.		DATE: 12-30-04	
BAG SAMPLE	DRIVE SAMPLE	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS (U.S.C.S.)	SOIL DESCRIPTION			
					TEST PIT NO.: TP-12	ELEVATION:		
				CL	TOPSOIL: BROWN, VERY WET, FIRM, ORGANIC, SANDY, SILTY CLAY			
X			24.2	CL	BROWN, VERY WET, FIRM, SANDY, SILTY CLAY			
	X	89.2	28.7	CH	ORANGE BROWN, VERY WET, STIFF, SANDY, SILTY CLAY			
				CH	ORANGE BROWN, GREY AND RED MOTTLED, VERY WET TO SATURATED, STIFF, SANDY, SILTY CLAY			
X				CH	ORANGE BROWN, GREY AND RED MOTTLED, VERY WET TO SATURATED, STIFF, SANDY, SILTY CLAY			
X		93.3	24.1	CH	GREY, ORANGE MOTTLED, VERY WET TO SATURATED, STIFF, SANDY, SILTY CLAY			
					TOTAL DEPTH: 10.5 FEET LIGHT GROUNDWATER SEEPAGE OBSERVED BELOW ±4 FEET			
<b>TEST PIT LOG</b>								
PROJECT NO. 1516.2.1			HAYDEN HOMES SOUTHWEST AREA PLAN VENETA, OREGON			FIGURE NO. A-12		

BACKHOE COMPANY: GEM BUILDERS, INC.			BUCKET SIZE: 24 IN.		DATE: 12-30-04	
DEPTH (FEET)	BAG SAMPLE	DRIVE SAMPLE	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS (U.S.C.S.)	SOIL DESCRIPTION
						TEST PIT NO.: TP-13
0					CL	TOPSOIL: BROWN, VERY WET, FIRM, ORGANIC, SANDY, SILTY CLAY
					CH	ORANGE BROWN, VERY WET, STIFF, SANDY, SILTY CLAY
		X	98.1	24.1	CH	ORANGE BROWN, GREY MOTTLED, VERY WET, VERY STIFF, SANDY, SILTY CLAY BECOMES VERY WET TO SATURATED
5	X			43.2	CH	GREY, ORANGE MOTTLED, VERY WET TO SATURATED, STIFF, SANDY, SILTY CLAY
	X					
10						
						TOTAL DEPTH: 12.0 FEET LIGHT GROUNDWATER SEEPAGE OBSERVED AT ±4 FEET
15						
<b>TEST PIT LOG</b>						
PROJECT NO. 1516.2.1			HAYDEN HOMES SOUTHWEST AREA PLAN VENETA, OREGON		FIGURE NO. A-13	



BACKHOE COMPANY: GEM BUILDERS, INC.			BUCKET SIZE: 24 IN.		DATE: 12-30-04	
DEPTH (FEET)	BAG SAMPLE	DRIVE SAMPLE	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS (U.S.C.S.)	SOIL DESCRIPTION
						TEST PIT NO.: TP-14
0					CL	TOPSOIL: BROWN, VERY WET, FIRM, ORGANIC, SANDY, SILTY CLAY
					CL	BROWN, VERY WET, FIRM TO STIFF, SANDY, SILTY CLAY
		X	97.0	25.3	CH	ORANGE BROWN, VERY WET, STIFF, SANDY, SILTY CLAY
					CH	ORANGE BROWN, GREY MOTTLED, VERY WET TO SATURATED, STIFF, SANDY, SILTY CLAY
5	X			38.5	CH	GREY, ORANGE MOTTLED, SATURATED, STIFF, SANDY, SILTY CLAY
					CH	GREY, ORANGE MOTTLED, SATURATED, STIFF, SANDY, SILTY CLAY
	X		81.0	38.1		
10						
						TOTAL DEPTH: 11.0 FEET MODERATE GROUNDWATER SEEPAGE OBSERVED BELOW ±6 FEET
15						
<b>TEST PIT LOG</b>						
PROJECT NO. 1516.2.1			HAYDEN HOMES SOUTHWEST AREA PLAN VENETA, OREGON		FIGURE NO. A-14	

DEPTH (FEET)		BAG SAMPLE	DRIVE SAMPLE	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS (U.S.C.S.)	SOIL DESCRIPTION
0							TEST PIT NO.: TP-9 ELEVATION:
						CL	TOPSOIL: DARK BROWN, WET, FIRM, ORGANIC, SANDY, SILTY CLAY
						CL	BROWN, VERY WET, STIFF, SANDY, SILTY CLAY
						CH	ORANGE BROWN, VERY WET, FIRM TO STIFF, SANDY, SILTY CLAY
			X	105.2	20.4	CH	ORANGE BROWN, GREY MOTTLED, WET, VERY STIFF, SANDY, SILTY CLAY
5		X					
10		X		101.2	21.1		
15							TOTAL DEPTH: 10.5 FEET NO GROUNDWATER SEEPAGE OBSERVED
<b>TEST PIT LOG</b>							
PROJECT NO. 1516.2.1			HAYDEN HOMES SOUTHWEST AREA PLAN VENETA, OREGON			FIGURE NO. A-9	

DEPTH (FEET)		BAG SAMPLE	DRIVE SAMPLE	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS (U.S.C.S.)	SOIL DESCRIPTION
0							TEST PIT NO.: TP-10      ELEVATION:
						CH	TOPSOIL: RED BROWN, WET, FIRM, ORGANIC, SANDY, SILTY CLAY
		X	X	91.3	21.5	CH	RED BROWN, WET, FIRM TO STIFF, SANDY, SILTY CLAY
		X			24.3	CH	ORANGE BROWN, GREY MOTTLED, VERY WET, STIFF, SANDY, SILTY CLAY
	5						
		X			24.1		
	10						BECOMES VERY STIFF
		X					
	15						TOTAL DEPTH: 11.0 FEET NO GROUNDWATER SEEPAGE OBSERVED
<b>TEST PIT LOG</b>							
PROJECT NO. 1516.2.1			HAYDEN HOMES SOUTHWEST AREA PLAN VENETA, OREGON			FIGURE NO. A-10	

BACKHOE COMPANY: GEM BUILDERS, INC.			BUCKET SIZE: 24 IN.		DATE: 12-30-04	
DEPTH (FEET)	BAG SAMPLE	DRIVE SAMPLE	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS (U.S.C.S.)	SOIL DESCRIPTION
						TEST PIT NO.: TP-11
0					CL	TOPSOIL: BROWN, WET, FIRM, ORGANIC, SANDY, SILTY CLAY
					CL	BROWN, VERY WET, FIRM, SANDY, SILTY CLAY
		X	96.7	23.4	CH	ORANGE BROWN, VERY WET, FIRM TO STIFF, SANDY, SILTY CLAY
5	X			29.1	CH	ORANGE BROWN, GREY AND RED MOTTLED, VERY WET TO SATURATED, STIFF, SANDY, SILTY CLAY
10	X					
						TOTAL DEPTH: 10.5 FEET LIGHT GROUNDWATER SEEPAGE OBSERVED AT ±6 FEET
15						
<b>TEST PIT LOG</b>						
PROJECT NO. 1516.2.1			HAYDEN HOMES SOUTHWEST AREA PLAN VENETA, OREGON			FIGURE NO. A-11

BACKHOE COMPANY: GEM BUILDERS, INC.			BUCKET SIZE: 24 IN.		DATE: 12-30-04	
DEPTH (FEET)	BAG SAMPLE	DRIVE SAMPLE	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS (U.S.C.S.)	SOIL DESCRIPTION
						TEST PIT NO.: TP-15
0					CL	TOPSOIL: BROWN, VERY WET, FIRM, ORGANIC, SANDY, SILTY CLAY
	X				CH	ORANGE BROWN, VERY WET, FIRM, SANDY, SILTY CLAY
					CH	ORANGE BROWN, GREY MOTTLED, SATURATED, STIFF, SANDY, SILTY CLAY
		X	69.9	43.4		
5					CH	GREY, ORANGE MOTTLED, SATURATED, STIFF, SANDY, SILTY CLAY
	X					
10						
						TOTAL DEPTH: 12.0 FEET LIGHT GROUNDWATER SEEPAGE OBSERVED AT ±2.5 FEET, BECOMES MODERATE TO HEAVY BELOW ±5 FEET
15						
<b>TEST PIT LOG</b>						
PROJECT NO. 1516.2.1			HAYDEN HOMES SOUTHWEST AREA PLAN VENETA, OREGON			FIGURE NO. A-15

BACKHOE COMPANY: GEM BUILDERS, INC.			BUCKET SIZE: 24 IN.		DATE: 12-30-04	
DEPTH (FEET)	BAG SAMPLE	DRIVE SAMPLE	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS (U.S.C.S.)	SOIL DESCRIPTION
						TEST PIT NO.: TP-16
0					CL	TOPSOIL: BROWN, VERY WET, FIRM, ORGANIC, SANDY, SILTY CLAY
	X			24.8	CL	BROWN, VERY WET, SOFT TO FIRM, SANDY, SILTY CLAY
	X				CH	ORANGE BROWN, VERY WET, STIFF, SANDY, SILTY CLAY
		X	93.2	25.1	CH	ORANGE BROWN, GREY MOTTLED, VERY WET, VERY STIFF, SANDY, SILTY CLAY
	X				CH	GREY, ORANGE MOTTLED, SATURATED, STIFF, SANDY, SILTY CLAY
5						
10						
15						TOTAL DEPTH: 12.0 FEET LIGHT GROUNDWATER SEEPAGE OBSERVED AT ±4 FEET, BECOMES HEAVY BELOW ±6 FEET
<b>TEST PIT LOG</b>						
PROJECT NO. 1516.2.1			HAYDEN HOMES SOUTHWEST AREA PLAN VENETA, OREGON			FIGURE NO. A-16

BACKHOE COMPANY: GEM BUILDERS, INC.			BUCKET SIZE: 24 IN.		DATE: 12-30-04	
DEPTH (FEET)	BAG SAMPLE	DRIVE SAMPLE	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS (U.S.C.S.)	SOIL DESCRIPTION
						TEST PIT NO.: TP-17
0					CL	TOPSOIL: BROWN, VERY WET, FIRM, ORGANIC, SANDY, SILTY CLAY
					CL	BROWN, VERY WET, SOFT TO FIRM, SANDY, SILTY CLAY
		X	96.7	27.0	CH	ORANGE BROWN, VERY WET, STIFF, SANDY, SILTY CLAY
5						
	X				CH	ORANGE BROWN, GREY MOTTLED, VERY WET, STIFF, SANDY, SILTY CLAY
	X			26.5	CH	GREY TO TAN, ORANGE MOTTLED, VERY WET TO SATURATED, STIFF, SANDY, SILTY CLAY
10	X				SM	ORANGE BROWN, VERY WET, MEDIUM DENSE, CLAYEY, SILTY SAND
						TOTAL DEPTH: 11.0 FEET LIGHT GROUNDWATER SEEPAGE OBSERVED AT ±8 FEET
15						
<b>TEST PIT LOG</b>						
PROJECT NO. 1516.2.1			HAYDEN HOMES SOUTHWEST AREA PLAN VENETA, OREGON			FIGURE NO. A-17

BACKHOE COMPANY: GEM BUILDERS, INC.			BUCKET SIZE: 24 IN.		DATE: 12-30-04	
DEPTH (FEET)	BAG SAMPLE	DRIVE SAMPLE	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS (U.S.C.S.)	SOIL DESCRIPTION
						TEST PIT NO.: TP-18
0					CL	TOPSOIL: BROWN, VERY WET, FIRM, ORGANIC, SANDY, SILTY CLAY
					CL	BROWN, VERY WET, FIRM, SANDY, SILTY CLAY
		X	78.8	39.4	CH	ORANGE BROWN, VERY WET, STIFF, SANDY, SILTY CLAY
5					SM	ORANGE BROWN, VERY WET TO SATURATED, MEDIUM DENSE, CLAYEY, SILTY SAND
	X			42.1		
10						TOTAL DEPTH: 10.0 FEET LIGHT GROUNDWATER SEEPAGE OBSERVED BELOW ±6 FEET
15						
<b>TEST PIT LOG</b>						
PROJECT NO. 1516.2.1			HAYDEN HOMES SOUTHWEST AREA PLAN VENETA, OREGON			FIGURE NO. A-18



BACKHOE COMPANY: GEM BUILDERS, INC.			BUCKET SIZE: 24 IN.		DATE: 12-30-04	
DEPTH (FEET)	BAG SAMPLE	DRIVE SAMPLE	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS (U.S.C.S.)	SOIL DESCRIPTION
						TEST PIT NO.: TP-19
0					CL	TOPSOIL: BROWN, VERY WET, FIRM, ORGANIC, SANDY, SILTY CLAY
	X			26.9	CL	BROWN, VERY WET, STIFF, SANDY, SILTY CLAY
	X		82.5	31.1	CH	ORANGE BROWN, VERY WET, STIFF, SANDY, SILTY CLAY
5	X			41.7	SM	ORANGE BROWN, VERY WET, MEDIUM DENSE, CLAYEY, SILTY SAND
10						TOTAL DEPTH: 9.0 FEET NO GROUNDWATER SEEPAGE OBSERVED
15						
<b>TEST PIT LOG</b>						
PROJECT NO. 1516.2.1			HAYDEN HOMES SOUTHWEST AREA PLAN VENETA, OREGON			FIGURE NO. A-19

DEPTH (FEET)			BACKHOE COMPANY: GEM BUILDERS, INC.			BUCKET SIZE: 24 IN.		DATE: 12-31-04	
BAG SAMPLE	DRIVE SAMPLE	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS (U.S.C.S.)	SOIL DESCRIPTION				
					TEST PIT NO.: TP-20		ELEVATION:		
				CL	TOPSOIL: BROWN, VERY WET, FIRM, ORGANIC, SANDY, SILTY CLAY				
				CL	BROWN, VERY WET, FIRM TO STIFF, SANDY, SILTY CLAY				
X			26.8	CH	ORANGE BROWN, VERY WET, STIFF, SANDY, SILTY CLAY				
X									
X				CH	ORANGE BROWN, GREY MOTTLED, VERY WET TO SATURATED, STIFF, SANDY, SILTY CLAY				
					TOTAL DEPTH: 11.0 FEET MODERATE TO HEAVY GROUNDWATER SEEPAGE OBSERVED AT ±7 FEET				
<b>TEST PIT LOG</b>									
PROJECT NO. 1516.2.1			HAYDEN HOMES SOUTHWEST AREA PLAN VENETA, OREGON				FIGURE NO. A-20		

BACKHOE COMPANY: GEM BUILDERS, INC.			BUCKET SIZE: 24 IN.		DATE: 12-31-04	
DEPTH (FEET)	BAG SAMPLE	DRIVE SAMPLE	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS (U.S.C.S.)	SOIL DESCRIPTION
						TEST PIT NO.: TP-21
0					CL	TOPSOIL: BROWN, VERY WET, FIRM, ORGANIC, SANDY, SILTY CLAY
	X	X	95.2	26.7	CL	BROWN, VERY WET, STIFF, SANDY, SILTY CLAY
	X				CH	ORANGE BROWN, VERY WET, STIFF, SANDY, SILTY CLAY
5	X			24.1	CH	ORANGE BROWN, GREY MOTTLED, VERY WET TO SATURATED, STIFF, SANDY, SILTY CLAY
	X					
	X			30.1		
10						TOTAL DEPTH: 10.0 FEET MODERATE TO HEAVY GROUNDWATER SEEPAGE OBSERVED AT ±4.5 FEET, BECOMES VERY HEAVY BELOW ±8 FEET
15						
<b>TEST PIT LOG</b>						
PROJECT NO. 1516.2.1		HAYDEN HOMES SOUTHWEST AREA PLAN VENETA, OREGON			FIGURE NO. A-21	

BACKHOE COMPANY: GEM BUILDERS, INC.			BUCKET SIZE: 24 IN.		DATE: 12-31-04	
DEPTH (FEET)	BAG SAMPLE	DRIVE SAMPLE	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS (U.S.C.S.)	SOIL DESCRIPTION
						TEST PIT NO.: TP-22
0					CL	TOPSOIL: BROWN, VERY WET, FIRM, ORGANIC, SANDY, SILTY CLAY
					CL	BROWN, VERY WET, FIRM TO STIFF, SANDY, SILTY CLAY
	X			32.4	CH	TAN TO ORANGE BROWN, GREY MOTTLED, VERY WET TO SATURATED, FIRM TO STIFF, SANDY, SILTY CLAY BECOMES STIFF
5	X		85.6	33.6		
					CH	ORANGE BROWN, GREY MOTTLED, SATURATED, STIFF, SANDY, SILTY CLAY
	X			33.5		
10						TOTAL DEPTH: 9.5 FEET MODERATE GROUNDWATER SEEPAGE OBSERVED AT ±2 FEET, BECOMES VERY HEAVY BELOW ±3 FEET
15						
<b>TEST PIT LOG</b>						
PROJECT NO. 1516.2.1			HAYDEN HOMES SOUTHWEST AREA PLAN VENETA, OREGON			FIGURE NO. A-22

BACKHOE COMPANY: GEM BUILDERS, INC.			BUCKET SIZE: 24 IN.		DATE: 12-31-04	
DEPTH (FEET)	BAG SAMPLE	DRIVE SAMPLE	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS (U.S.C.S.)	SOIL DESCRIPTION
						TEST PIT NO.: TP-23
0					CL	TOPSOIL: BROWN, VERY WET, FIRM, ORGANIC, SANDY, SILTY CLAY
					CL	BROWN, VERY WET, FIRM TO STIFF, SANDY, SILTY CLAY
		X	97.5	25.3	CH	ORANGE BROWN, GREY MOTTLED, VERY WET TO SATURATED, STIFF TO VERY STIFF, SANDY, SILTY CLAY
5	X			27.1		
10						TOTAL DEPTH: 10.0 FEET LIGHT GROUNDWATER SEEPAGE OBSERVED AT ±3 FEET, BECOMES MODERATE BELOW ±8 FEET
15						
<b>TEST PIT LOG</b>						
PROJECT NO. 1516.2.1			HAYDEN HOMES SOUTHWEST AREA PLAN VENETA, OREGON			FIGURE NO. A-23

DEPTH (FEET)			BACKHOE COMPANY: GEM BUILDERS, INC.			BUCKET SIZE: 24 IN.		DATE: 12-31-04	
DEPTH (FEET)	BAG SAMPLE	DRIVE SAMPLE	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS (U.S.C.S.)	SOIL DESCRIPTION			
0						TEST PIT NO.: TP-24		ELEVATION:	
					CL	TOPSOIL: BROWN, VERY WET, FIRM, ORGANIC, SANDY, SILTY CLAY			
	X			24.1	CL	BROWN, VERY WET, FIRM TO STIFF, SANDY, SILTY CLAY			
		X	89.9	32.2	CH	ORANGE BROWN, VERY WET, STIFF, SANDY, SILTY CLAY			
5	X				CH	GREY, ORANGE MOTTLED, VERY WET TO SATURATED, STIFF, SANDY, SILTY CLAY			
10						TOTAL DEPTH: 9.0 FEET LIGHT TO MODERATE GROUNDWATER SEEPAGE OBSERVED AT ±4.5 FEET			
15									
<b>TEST PIT LOG</b>									
PROJECT NO. 1516.2.1			HAYDEN HOMES SOUTHWEST AREA PLAN VENETA, OREGON				FIGURE NO. A-24		

DEPTH (FEET)			BACKHOE COMPANY: GEM BUILDERS, INC.			BUCKET SIZE: 24 IN.		DATE: 12-31-04	
BAG SAMPLE	DRIVE SAMPLE	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS (U.S.C.S.)	SOIL DESCRIPTION				
0					TEST PIT NO.: TP-25	ELEVATION:			
				CL	TOPSOIL: BROWN, VERY WET, FIRM, ORGANIC, SANDY, SILTY CLAY				
X			25.3	CL	BROWN, VERY WET, SOFT TO FIRM, SANDY, SILTY CLAY				
X				CH	ORANGE BROWN, VERY WET, STIFF, SANDY, SILTY CLAY				
5				CH	ORANGE BROWN, GREY MOTTLED, VERY WET, STIFF, SANDY, SILTY CLAY				
X		89.2	27.8		BECOMES SATURATED				
10				CH	GREY, ORANGE MOTTLED, SATURATED, STIFF, SANDY, SILTY CLAY				
					TOTAL DEPTH: 10.0 FEET LIGHT GROUNDWATER SEEPAGE OBSERVED AT ±8 FEET				
15									
<b>TEST PIT LOG</b>									
PROJECT NO. 1516.2.1			HAYDEN HOMES SOUTHWEST AREA PLAN VENETA, OREGON				FIGURE NO. A-25		





BACKHOE COMPANY: GEM BUILDERS, INC.

BUCKET SIZE: 24 IN.

DATE: 12-31-04

DEPTH (FEET)	BAG SAMPLE	DRIVE SAMPLE	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS (U.S.C.S.)	SOIL DESCRIPTION
						TEST PIT NO.: TP-27
0					CL	TOPSOIL: BROWN, VERY WET, FIRM, ORGANIC, SANDY, SILTY CLAY
					CL	BROWN, VERY WET, FIRM TO STIFF, SANDY, SILTY CLAY
	X			24.8	CH	ORANGE BROWN, VERY WET, STIFF, SANDY, SILTY CLAY
5					CH	ORANGE BROWN, GREY MOTTLED, VERY WET, VERY STIFF, SANDY, SILTY CLAY
10						TOTAL DEPTH: 9.5 FEET NO GROUNDWATER SEEPAGE OBSERVED
15						

### TEST PIT LOG

PROJECT NO. 1516.2.1

HAYDEN HOMES  
SOUTHWEST AREA PLAN  
VENETA, OREGON

FIGURE NO. A-27

BACKHOE COMPANY: GEM BUILDERS, INC.			BUCKET SIZE: 24 IN.		DATE: 12-31-04	
DEPTH (FEET)	BAG SAMPLE	DRIVE SAMPLE	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS (U.S.C.S.)	SOIL DESCRIPTION
						TEST PIT NO.: TP-28
0					CL	TOPSOIL: BROWN, VERY WET, FIRM, ORGANIC, SANDY, SILTY CLAY
					CL	BROWN, VERY WET, FIRM TO STIFF, SANDY, SILTY CLAY
					CH	ORANGE BROWN, VERY WET, VERY STIFF, SANDY, SILTY CLAY
5	X			41.0		
					CH	ORANGE BROWN, GREY MOTTLED, VERY WET, VERY STIFF, SANDY, SILTY CLAY
10						TOTAL DEPTH: 9.0 FEET NO GROUNDWATER SEEPAGE OBSERVED
15						
<b>TEST PIT LOG</b>						
PROJECT NO. 1516.2.1		HAYDEN HOMES SOUTHWEST AREA PLAN VENETA, OREGON			FIGURE NO. A-28	

DEPTH (FEET)			BACKHOE COMPANY: GEM BUILDERS, INC.			BUCKET SIZE: 24 IN.			DATE: 12-31-04		
BAG SAMPLE	DRIVE SAMPLE	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS (U.S.C.S.)	SOIL DESCRIPTION						
					TEST PIT NO.: TP-29			ELEVATION:			
				CL	TOPSOIL: BROWN, VERY WET, FIRM, ORGANIC, SANDY, SILTY CLAY						
				CL	BROWN, VERY WET, FIRM, SANDY, SILTY CLAY						
				CH	GREY BROWN, VERY WET, STIFF, SANDY, SILTY CLAY						
				CH	ORANGE BROWN, GREY MOTTLED, VERY WET, STIFF, SANDY, SILTY CLAY						
				CH	GREY, ORANGE MOTTLED, SATURATED, VERY STIFF, SANDY, SILTY CLAY						
					TOTAL DEPTH: 10.0 FEET MODERATE GROUNDWATER SEEPAGE OBSERVED BELOW ±7.5 FEET						
<b>TEST PIT LOG</b>											
PROJECT NO. 1516.2.1				HAYDEN HOMES SOUTHWEST AREA PLAN VENETA, OREGON				FIGURE NO. A-29			

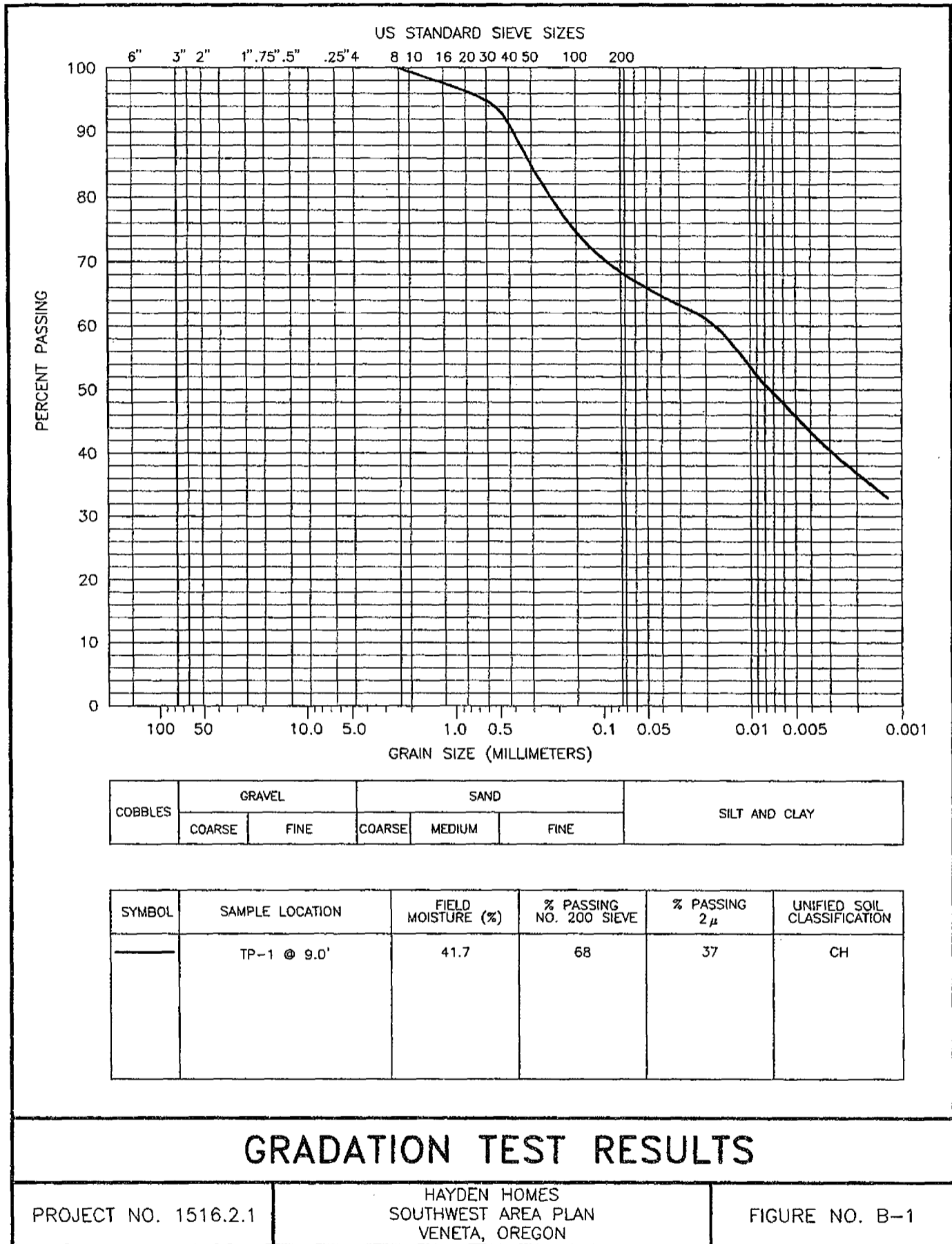
BACKHOE COMPANY: GEM BUILDERS, INC.

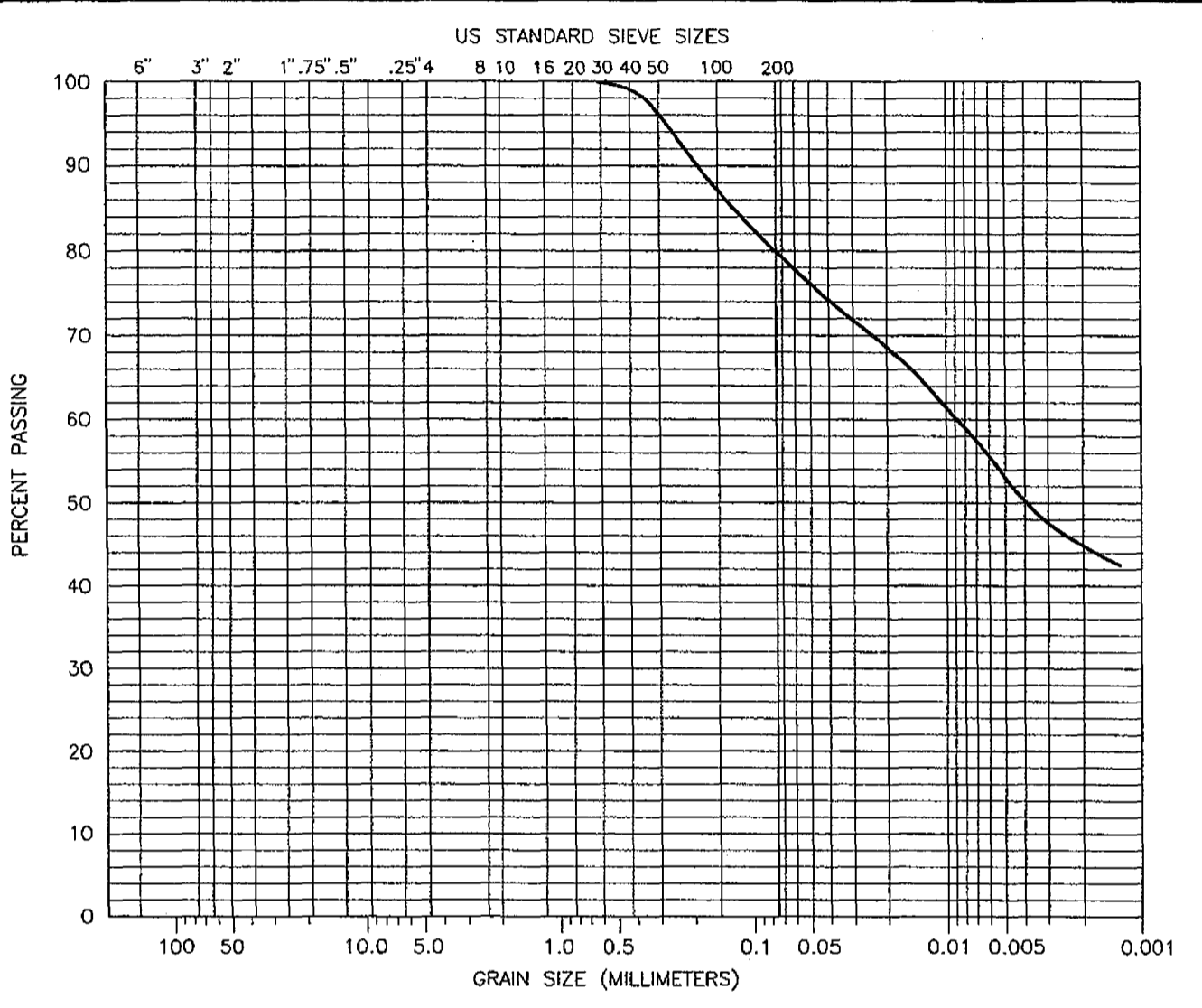
BUCKET SIZE: 24 IN.

DATE: 12-31-04

DEPTH (FEET)	BAG SAMPLE	DRIVE SAMPLE	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS (U.S.C.S.)	SOIL DESCRIPTION
						TEST PIT NO.: TP-30
0					CL	TOPSOIL: BROWN, VERY WET, FIRM, ORGANIC, SANDY, SILTY CLAY
					CL	BROWN, VERY WET, FIRM, SANDY, SILTY CLAY
					CH	ORANGE BROWN, VERY WET, STIFF, SANDY, SILTY CLAY
					CH	ORANGE BROWN, GREY MOTTLED, VERY WET, STIFF, SANDY, SILTY CLAY
5						
10						TOTAL DEPTH: 9.0 FEET NO GROUNDWATER SEEPAGE OBSERVED
15						
<b>TEST PIT LOG</b>						
PROJECT NO. 1516.2.1			HAYDEN HOMES SOUTHWEST AREA PLAN VENETA, OREGON			FIGURE NO. A-30

## **APPENDIX B**



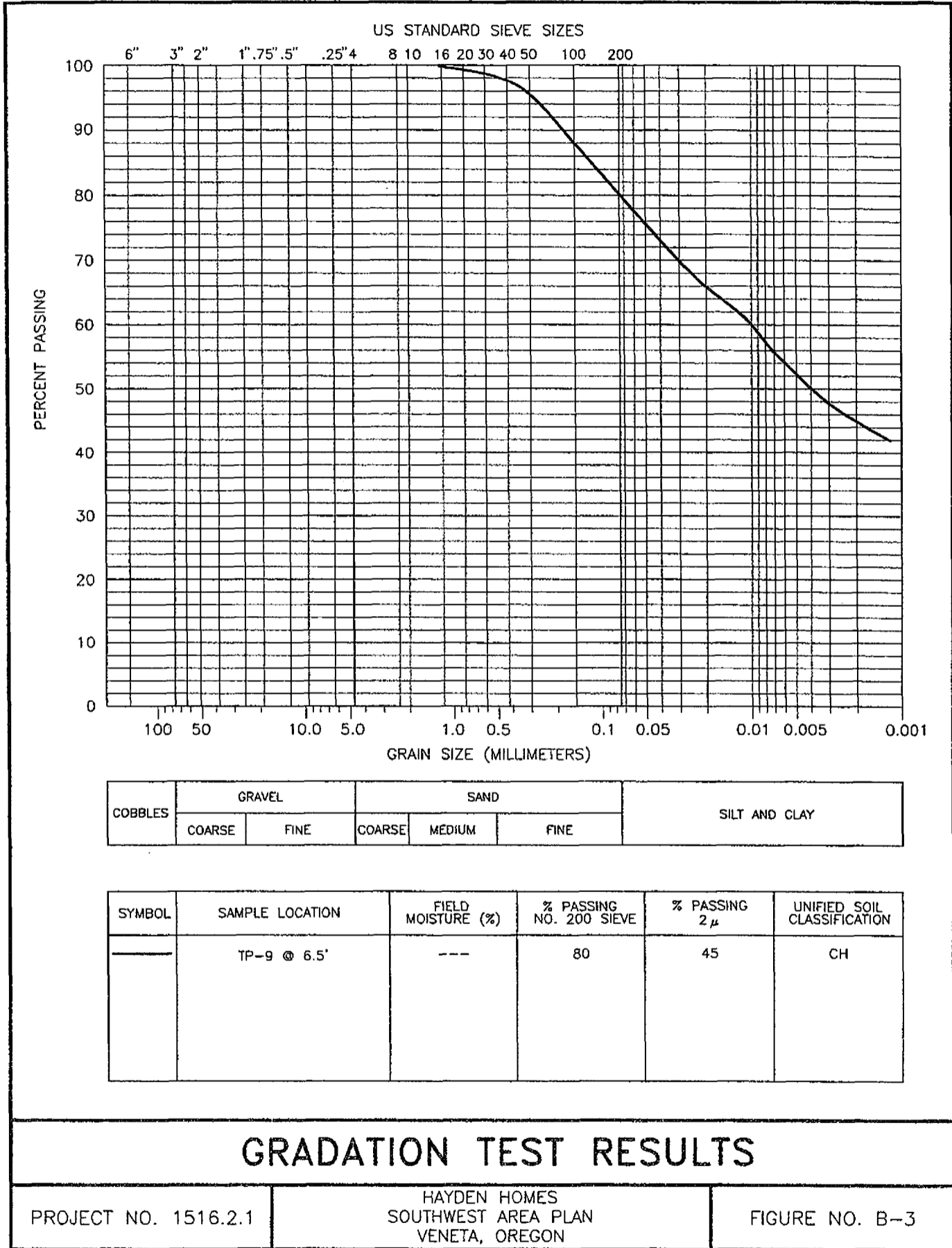


COBBLES	GRAVEL		SAND			SILT AND CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

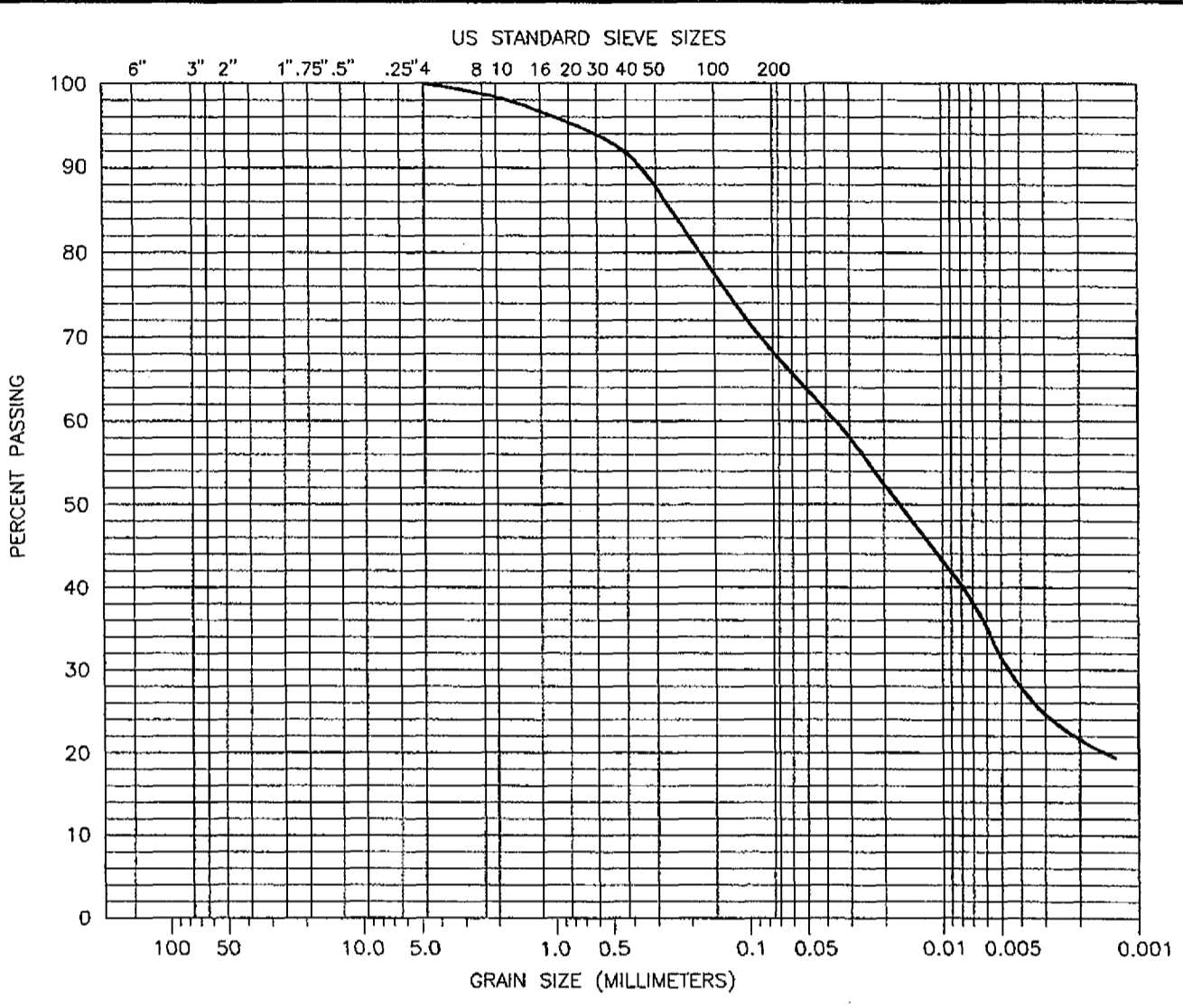
SYMBOL	SAMPLE LOCATION	FIELD MOISTURE (%)	% PASSING NO. 200 SIEVE	% PASSING 2 $\mu$	UNIFIED SOIL CLASSIFICATION
	TP-3 @ 4.5'	28.0	80	45	CH

## GRADATION TEST RESULTS

PROJECT NO. 1516.2.1	HAYDEN HOMES SOUTHWEST AREA PLAN VENETA, OREGON	FIGURE NO. B-2
----------------------	-------------------------------------------------------	----------------





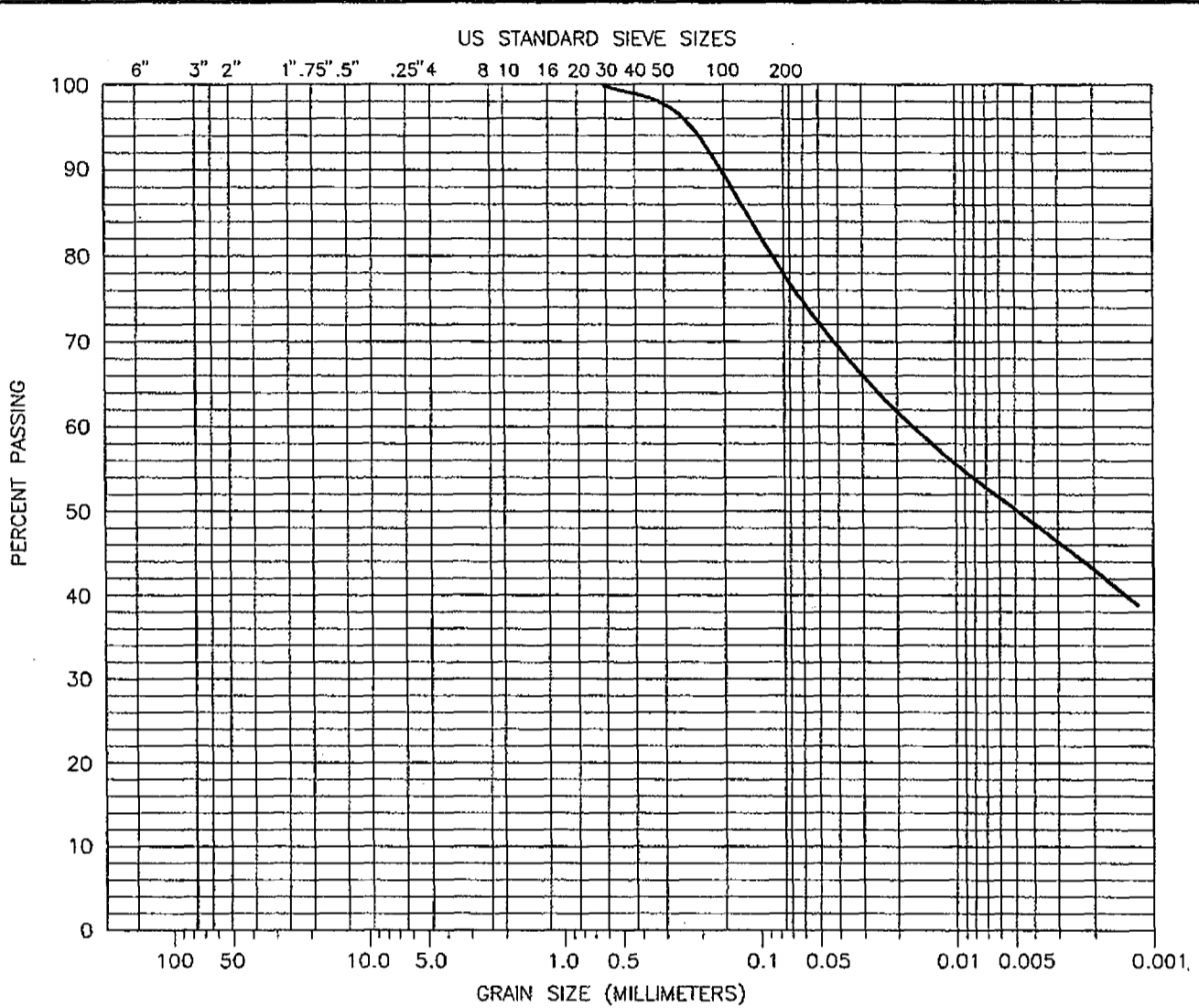


COBBLES	GRAVEL		SAND			SILT AND CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

SYMBOL	SAMPLE LOCATION	FIELD MOISTURE (%)	% PASSING NO. 200 SIEVE	% PASSING 2 μ	UNIFIED SOIL CLASSIFICATION
	TP-12 @ 1.5'	24.2	68	22	CL

## GRADATION TEST RESULTS

PROJECT NO. 1516.2.1	HAYDEN HOMES SOUTHWEST AREA PLAN VENETA, OREGON	FIGURE NO. B-4
----------------------	-------------------------------------------------------	----------------

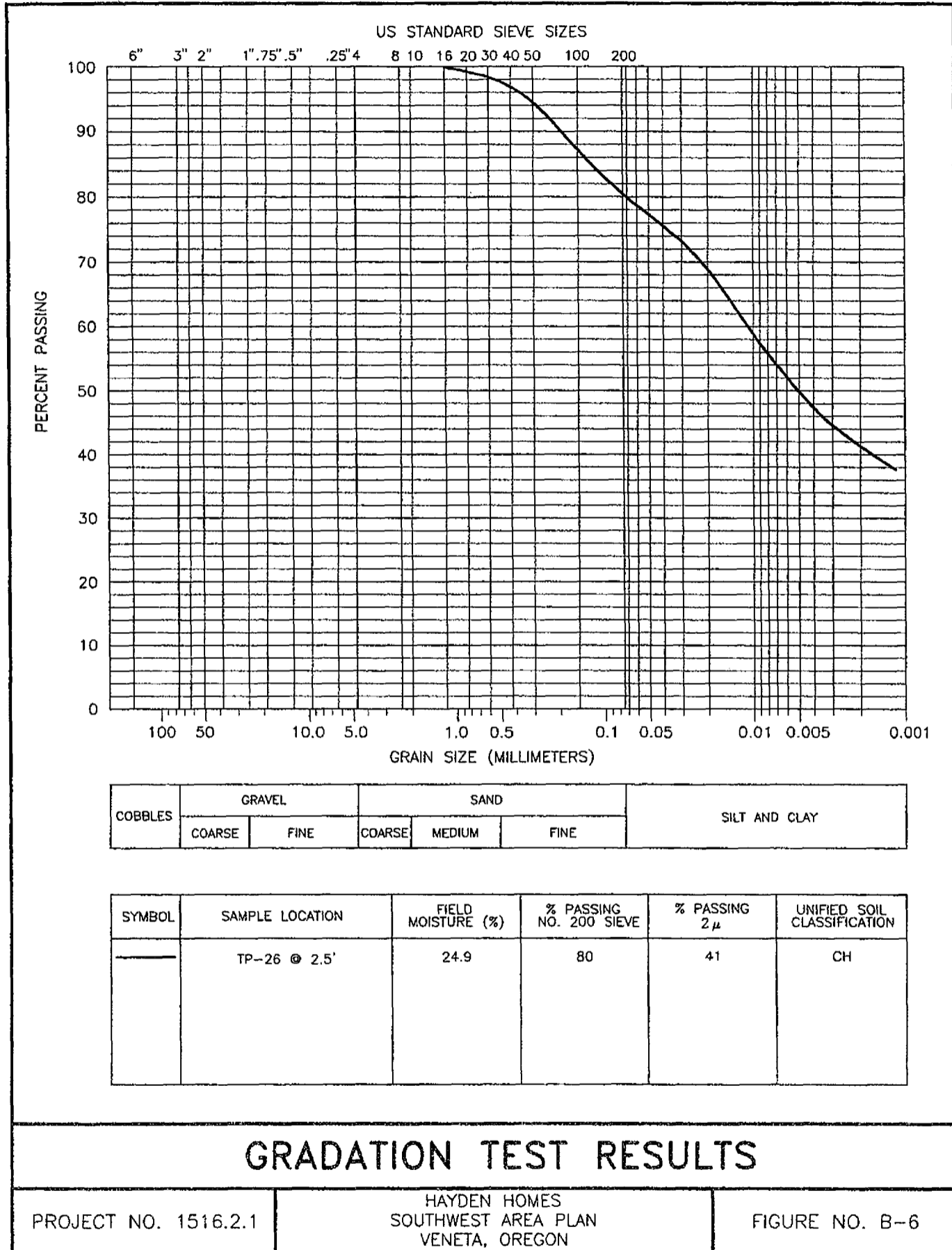


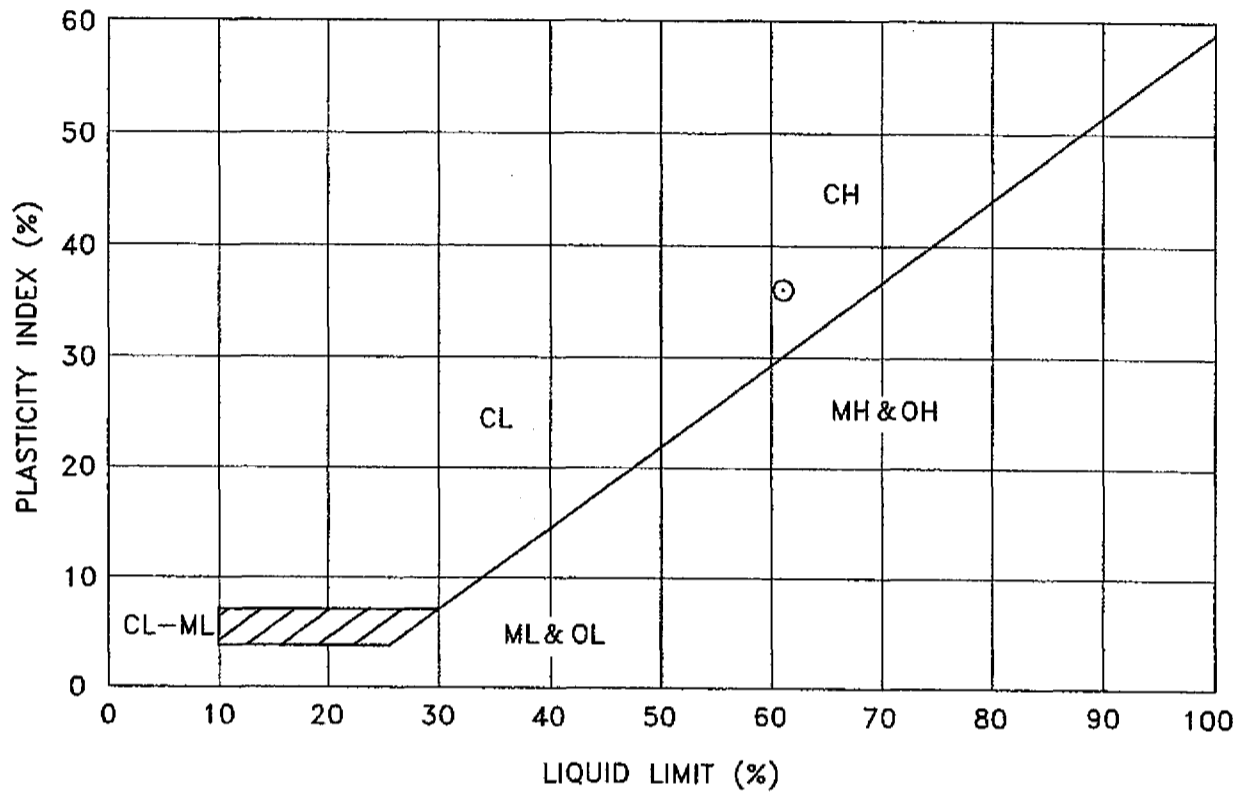
COBBLES	GRAVEL		SAND			SILT AND CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

SYMBOL	SAMPLE LOCATION	FIELD MOISTURE (%)	% PASSING NO. 200 SIEVE	% PASSING 2 $\mu$	UNIFIED SOIL CLASSIFICATION
	TP-14 @ 8.0'	38.1	77	43	CH

## GRADATION TEST RESULTS

PROJECT NO. 1516.2.1	HAYDEN HOMES SOUTHWEST AREA PLAN VENETA, OREGON	FIGURE NO. B-5
----------------------	-------------------------------------------------------	----------------





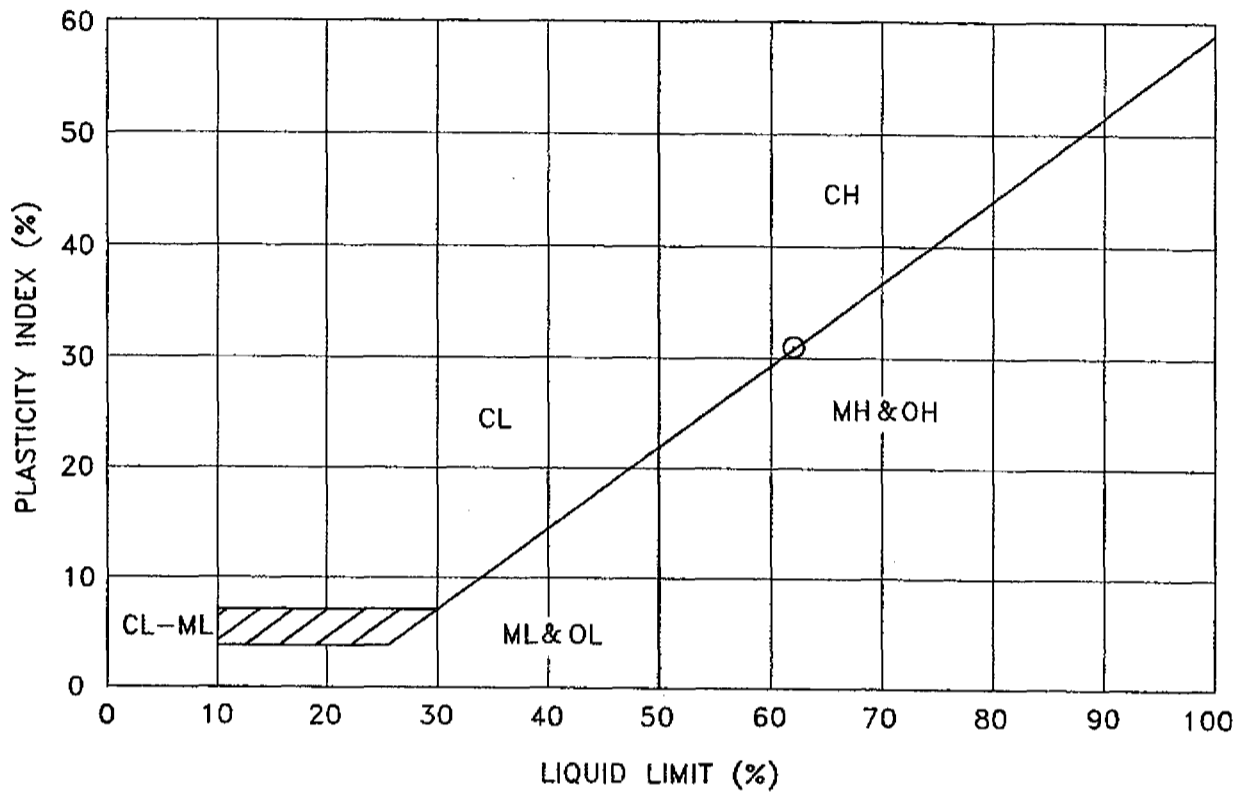
SYMBOL	SAMPLE LOCATION	FIELD (%) MOISTURE	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PLASTICITY INDEX (%)	UNIFIED SOIL CLASS.
⊙	TP-1 @ 9.0'	41.7	61	25	36	CH

## ATTERBERG LIMITS TEST RESULTS

PROJECT NO. 1516.2.1

HAYDEN HOMES  
SOUTHWEST AREA PLAN  
VENETA, OREGON

FIGURE NO. B-7



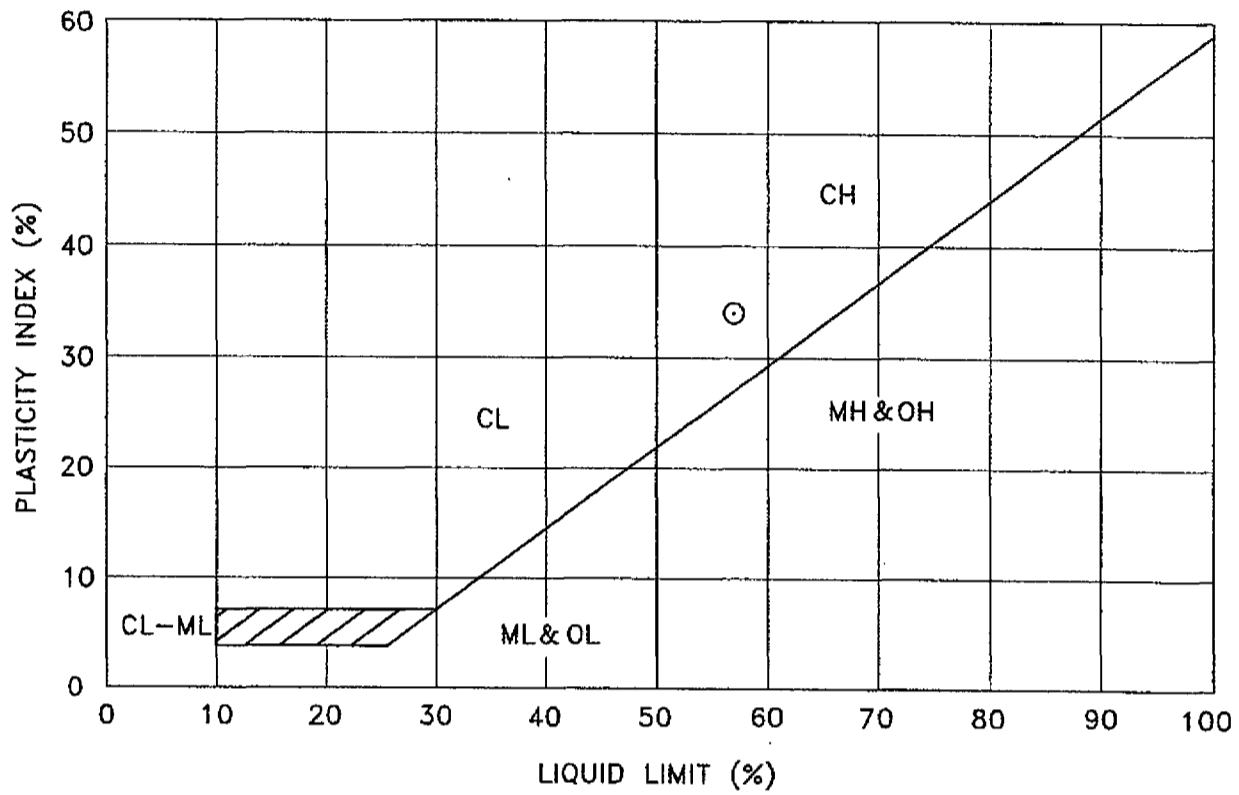
SYMBOL	SAMPLE LOCATION	FIELD (%) MOISTURE	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PLASTICITY INDEX (%)	UNIFIED SOIL CLASS.
⊙	TP-3 @ 4.5'	28.0	62	31	31	CH

## ATTERBERG LIMITS TEST RESULTS

PROJECT NO. 1516.2.1

HAYDEN HOMES  
SOUTHWEST AREA PLAN  
VENETA, OREGON

FIGURE NO. B-8



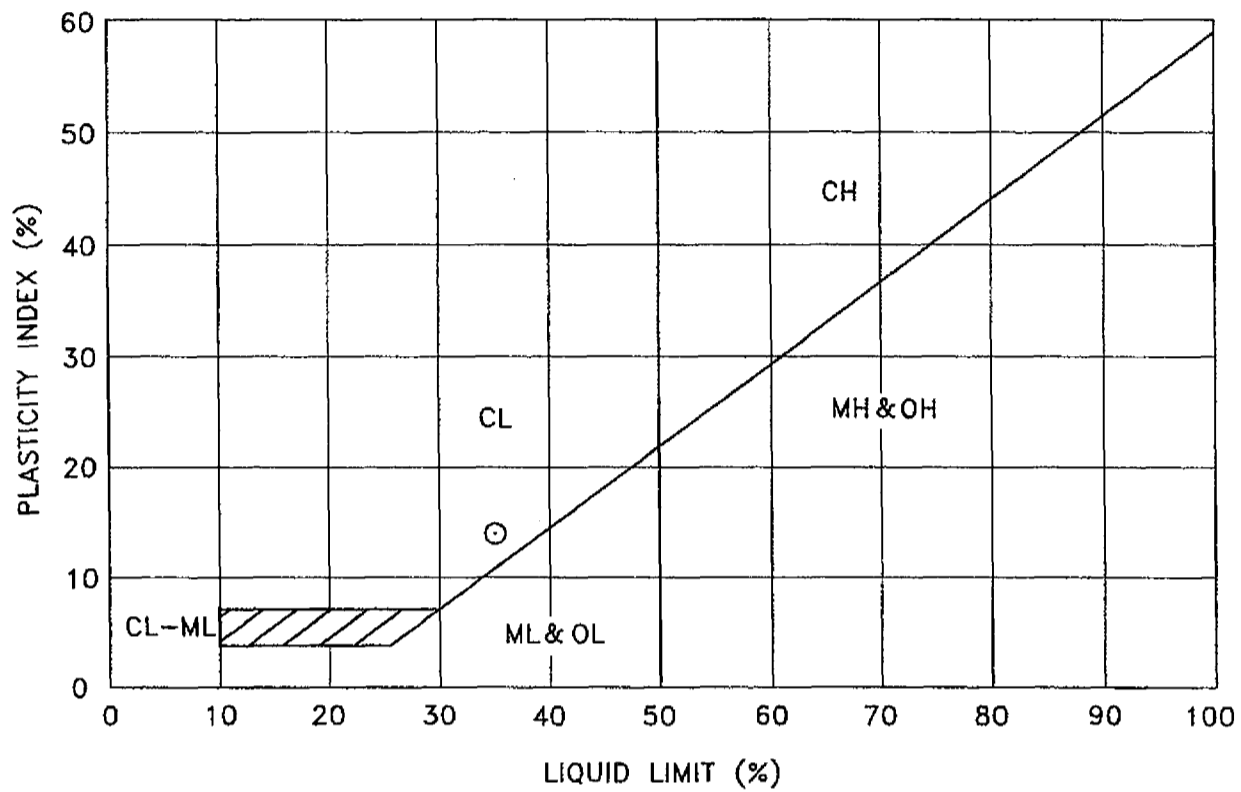
SYMBOL	SAMPLE LOCATION	FIELD (%) MOISTURE	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PLASTICITY INDEX (%)	UNIFIED SOIL CLASS.
⊙	TP-9 @ 6.5'	---	57	23	34	CH

## ATTERBERG LIMITS TEST RESULTS

PROJECT NO. 1516.2.1

HAYDEN HOMES  
SOUTHWEST AREA PLAN  
VENETA, OREGON

FIGURE NO. B-9



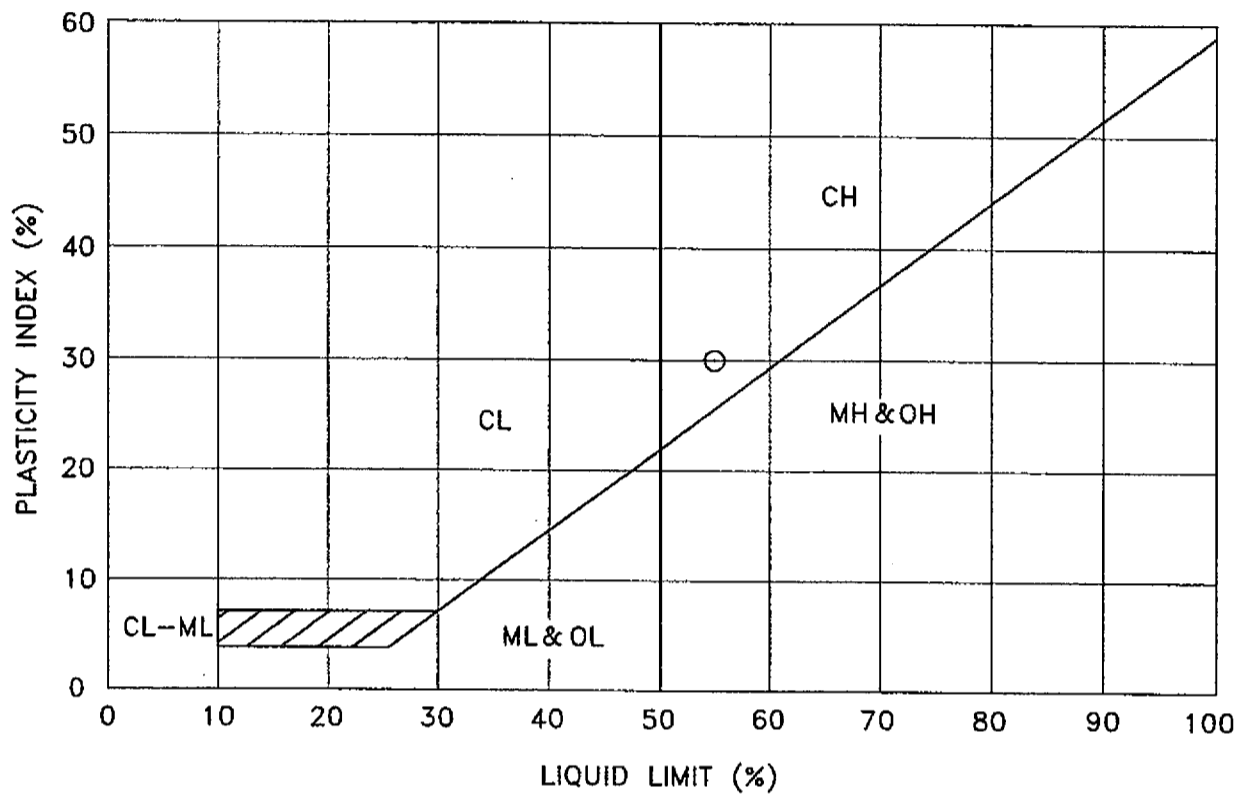
SYMBOL	SAMPLE LOCATION	FIELD (%) MOISTURE	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PLASTICITY INDEX (%)	UNIFIED SOIL CLASS.
⊙	TP-12 @ 1.5'	24.2	35	21	14	CL

## ATTERBERG LIMITS TEST RESULTS

PROJECT NO. 1516.2.1

HAYDEN HOMES  
SOUTHWEST AREA PLAN  
VENETA, OREGON

FIGURE NO. B-10



SYMBOL	SAMPLE LOCATION	FIELD (%) MOISTURE	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PLASTICITY INDEX (%)	UNIFIED SOIL CLASS.
⊙	TP-14 @ 8.0'	38.1	55	25	30	CH

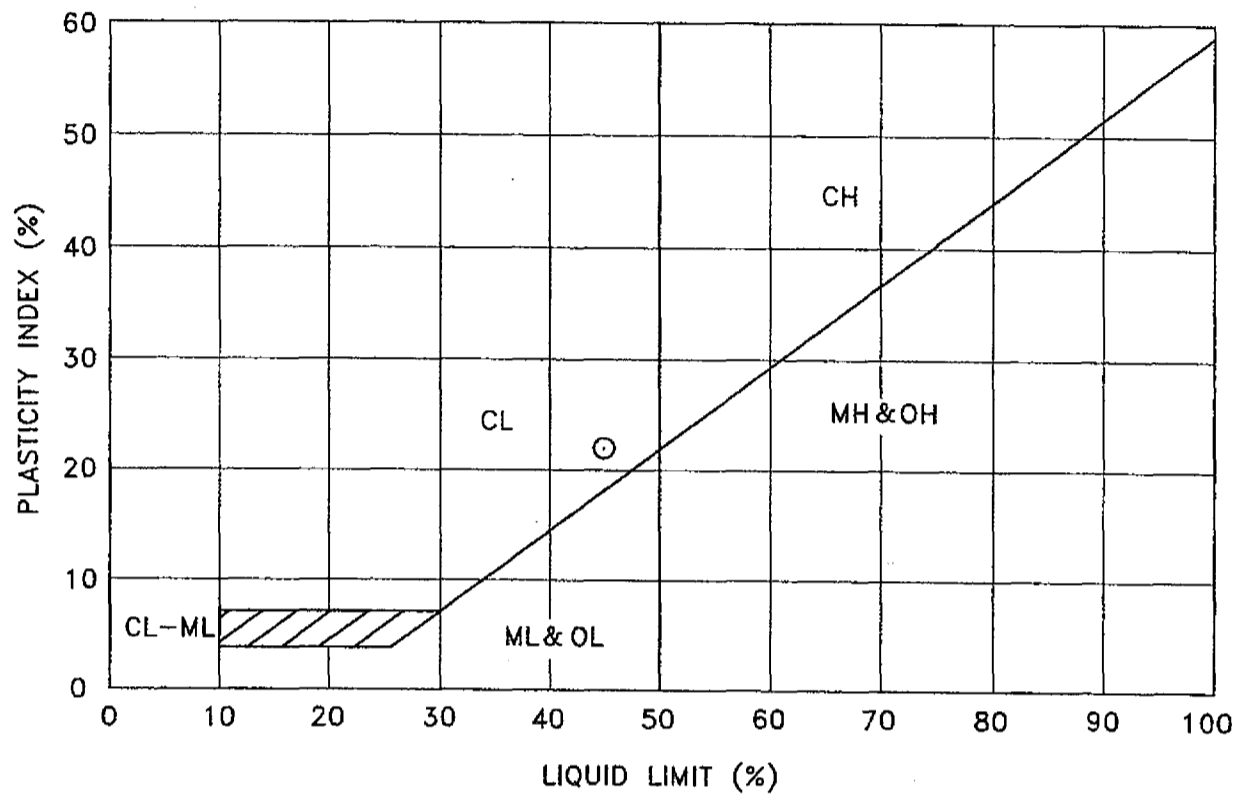
## ATTERBERG LIMITS TEST RESULTS

PROJECT NO. 1516.2.1

HAYDEN HOMES  
SOUTHWEST AREA PLAN  
VENETA, OREGON

FIGURE NO. B-11





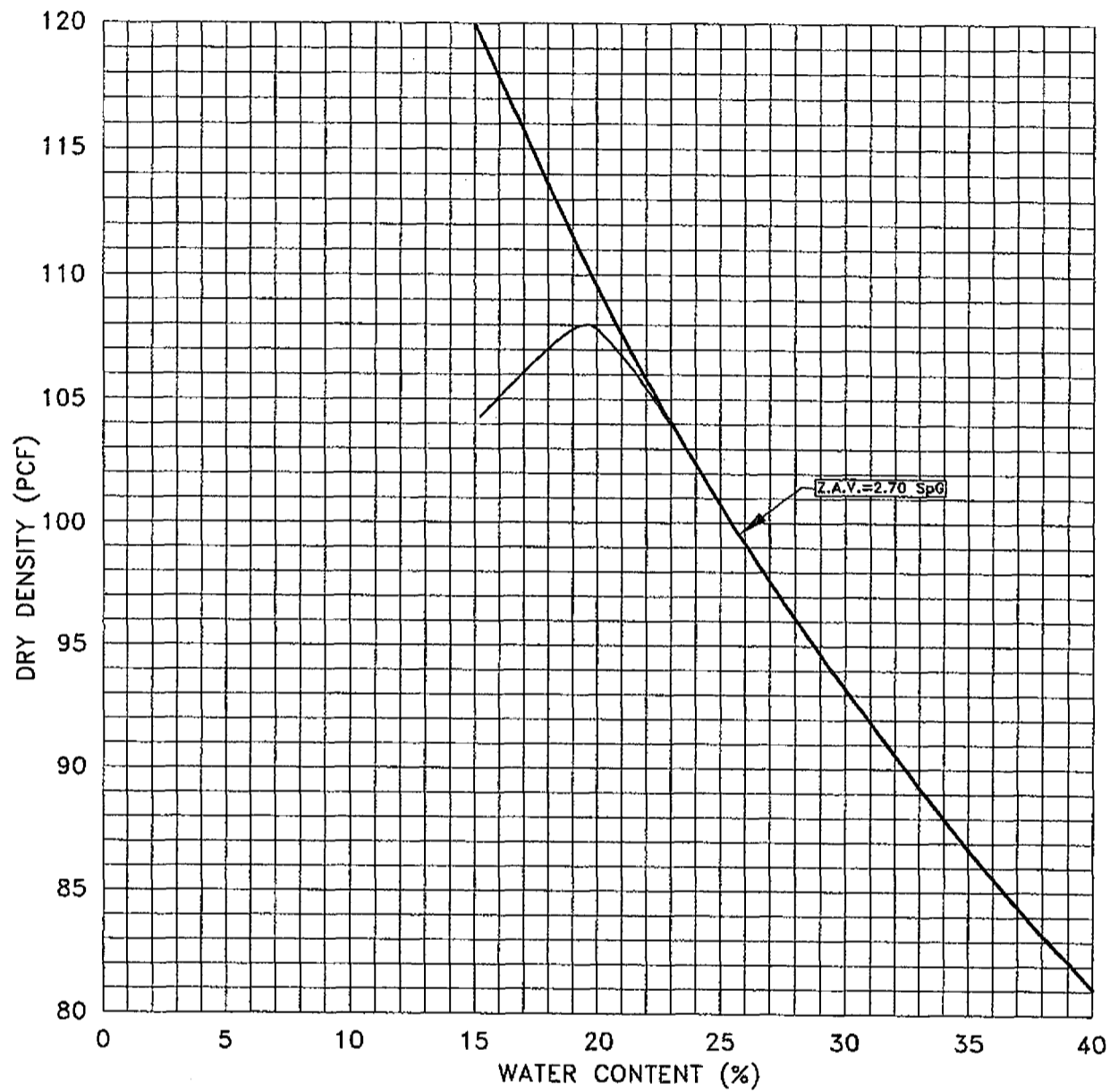
SYMBOL	SAMPLE LOCATION	FIELD (%) MOISTURE	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PLASTICITY INDEX (%)	UNIFIED SOIL CLASS.
⊙	TP-26 @ 2.5'	24.9	45	23	22	CL

### ATTERBERG LIMITS TEST RESULTS

PROJECT NO. 1516.2.1

HAYDEN HOMES  
SOUTHWEST AREA PLAN  
VENETA, OREGON

FIGURE NO. B-12



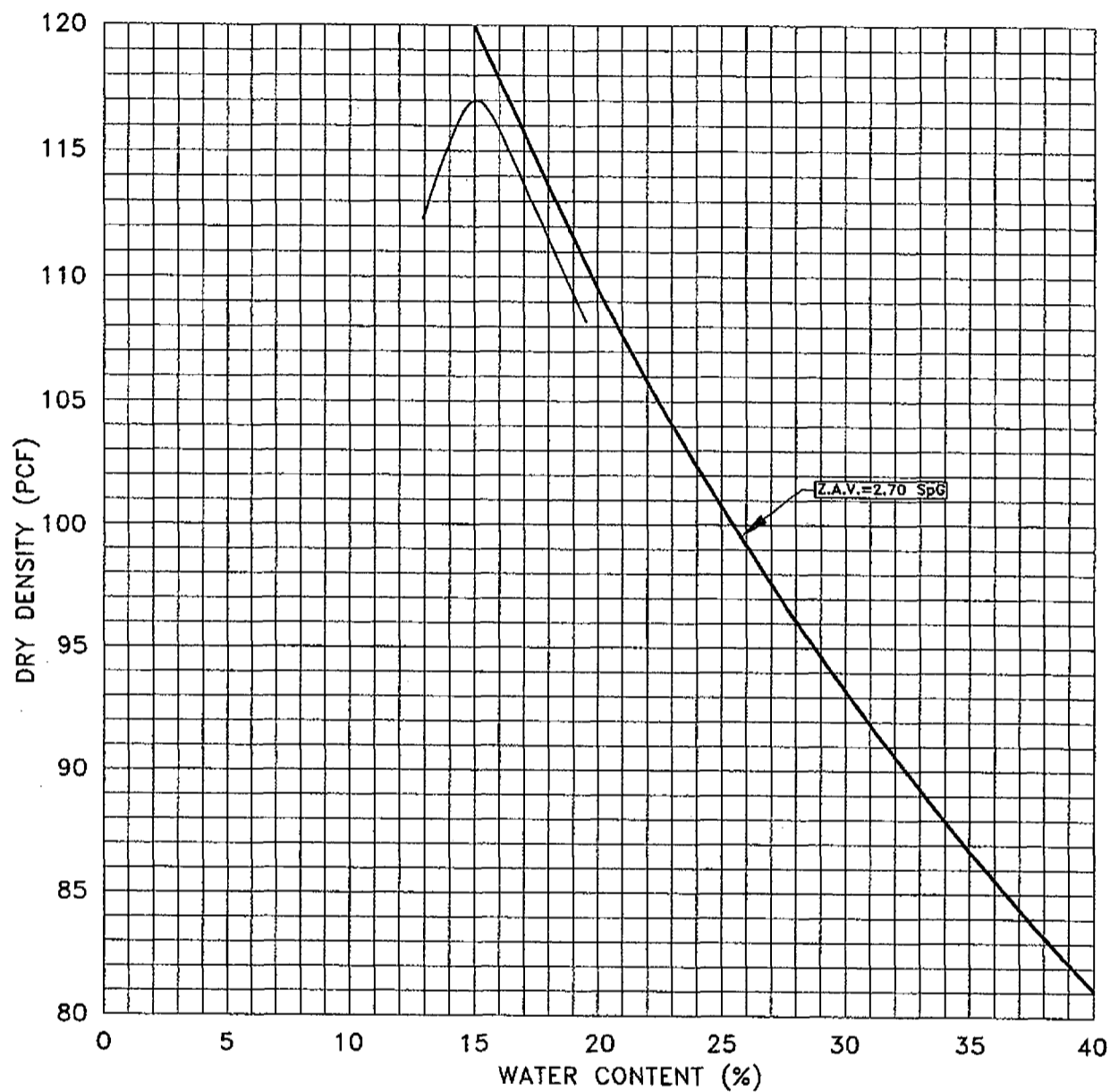
SAMPLE LOCATION	TEST METHOD	MAXIMUM DRY DENSITY (PCF)	OPTIMUM WATER CONTENT (%)	PERCENT OVERSIZE	CORRECTED MAXIMUM DRY DENSITY(PCF)	CORRECTED WATER CONTENT (%)
TP-2 @ 2.0'	AASHTO T-180 METHOD B	108.0	19.5	0	---	---

## MAXIMUM DENSITY TEST RESULTS

PROJECT NO. 1516.2.1

HAYDEN HOMES  
SOUTHWEST AREA PLAN  
VENETA, OREGON

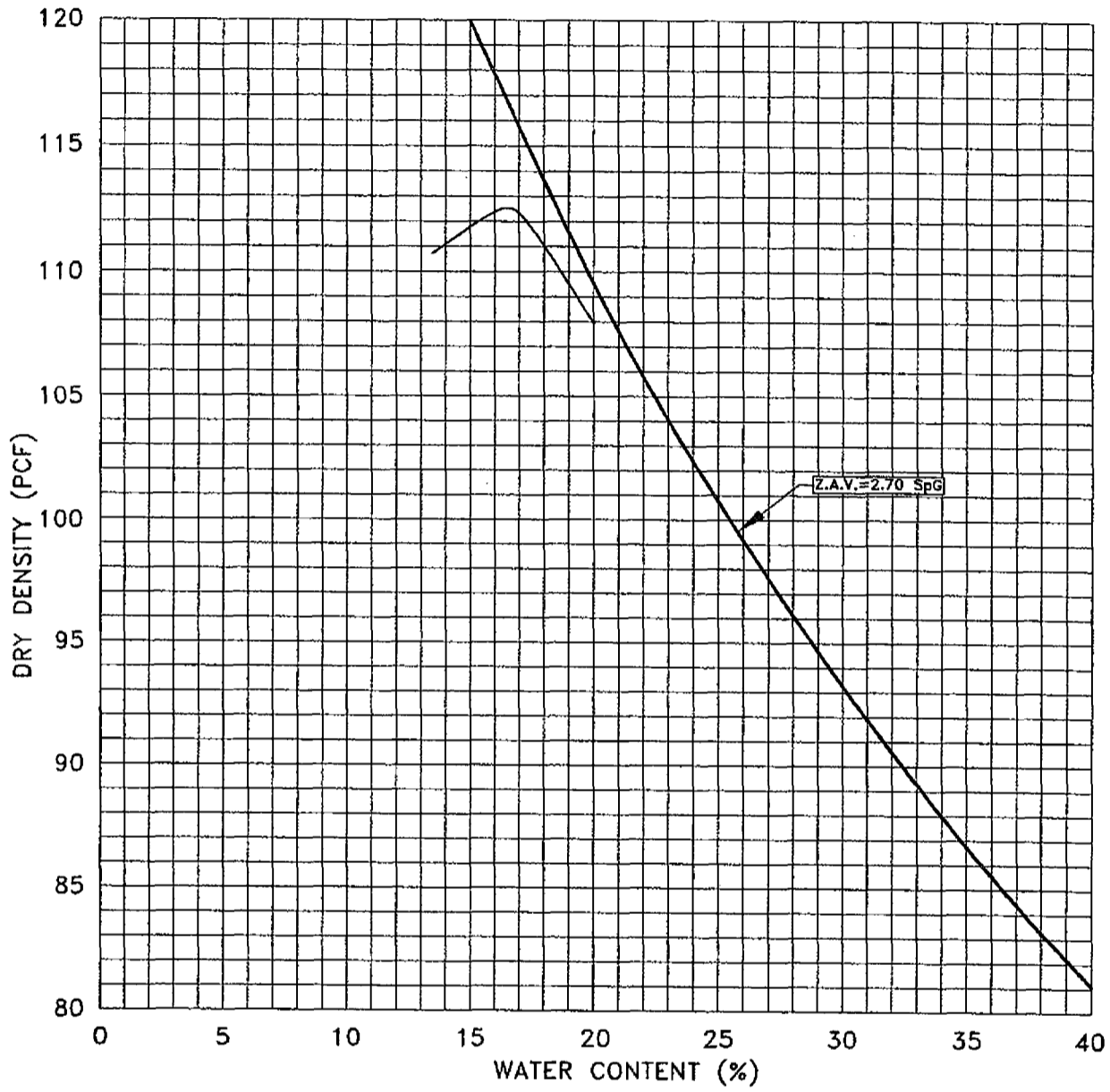
FIGURE NO. B-13



SAMPLE LOCATION	TEST METHOD	MAXIMUM DRY DENSITY (PCF)	OPTIMUM WATER CONTENT (%)	PERCENT OVERSIZE	CORRECTED MAXIMUM DRY DENSITY(PCF)	CORRECTED WATER CONTENT (%)
TP-10 @ 1.0'-2.0'	AASHTO T-180 METHOD A	117.0	15.0	0	---	---

### MAXIMUM DENSITY TEST RESULTS

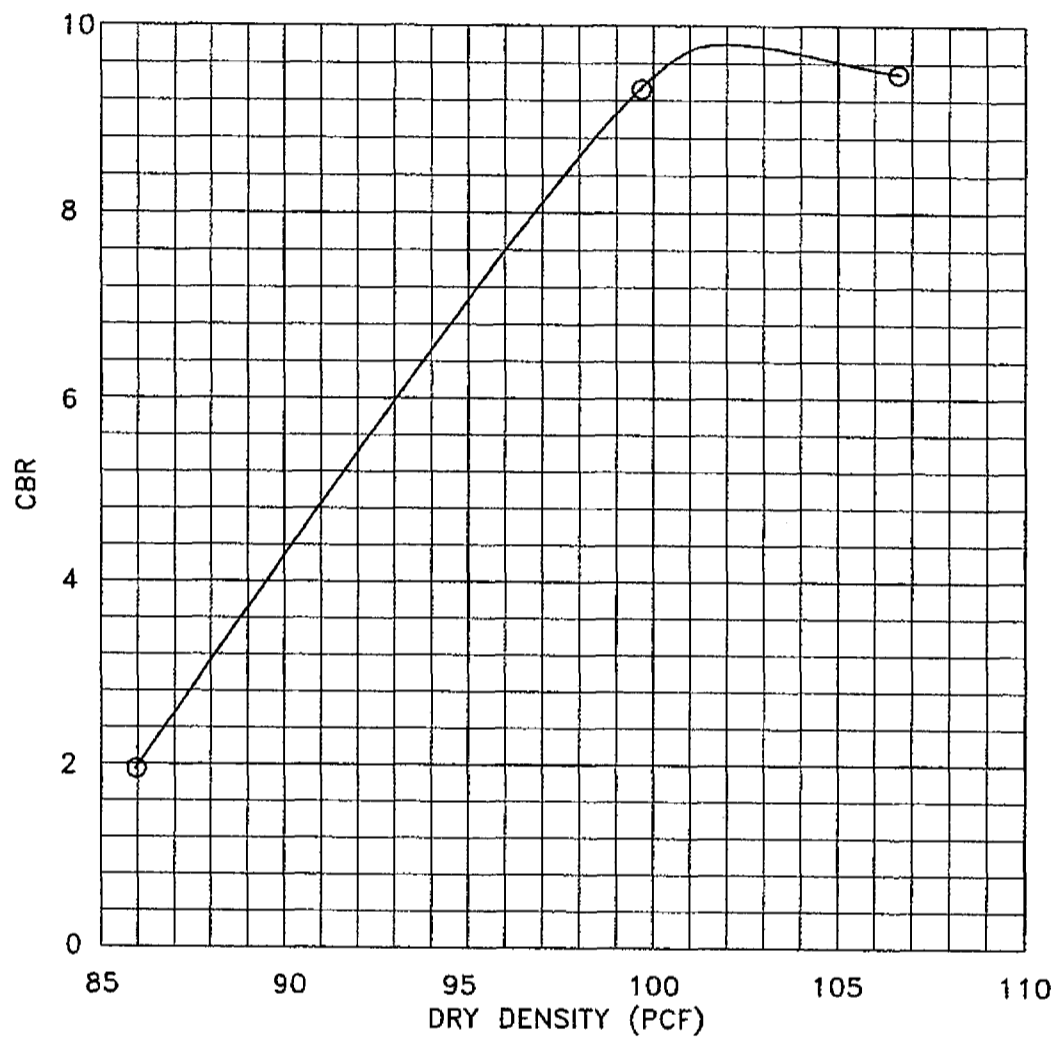
PROJECT NO. 1516.2.1	HAYDEN HOMES SOUTHWEST AREA PLAN VENETA, OREGON	FIGURE NO. B-14
----------------------	-------------------------------------------------------	-----------------



SAMPLE LOCATION	TEST METHOD	MAXIMUM DRY DENSITY (PCF)	OPTIMUM WATER CONTENT (%)	PERCENT OVERSIZE	CORRECTED MAXIMUM DRY DENSITY(PCF)	CORRECTED WATER CONTENT (%)
TP-15 @ 1.5'	AASHTO T-180 METHOD A	112.5	16.5	0	---	---

### MAXIMUM DENSITY TEST RESULTS

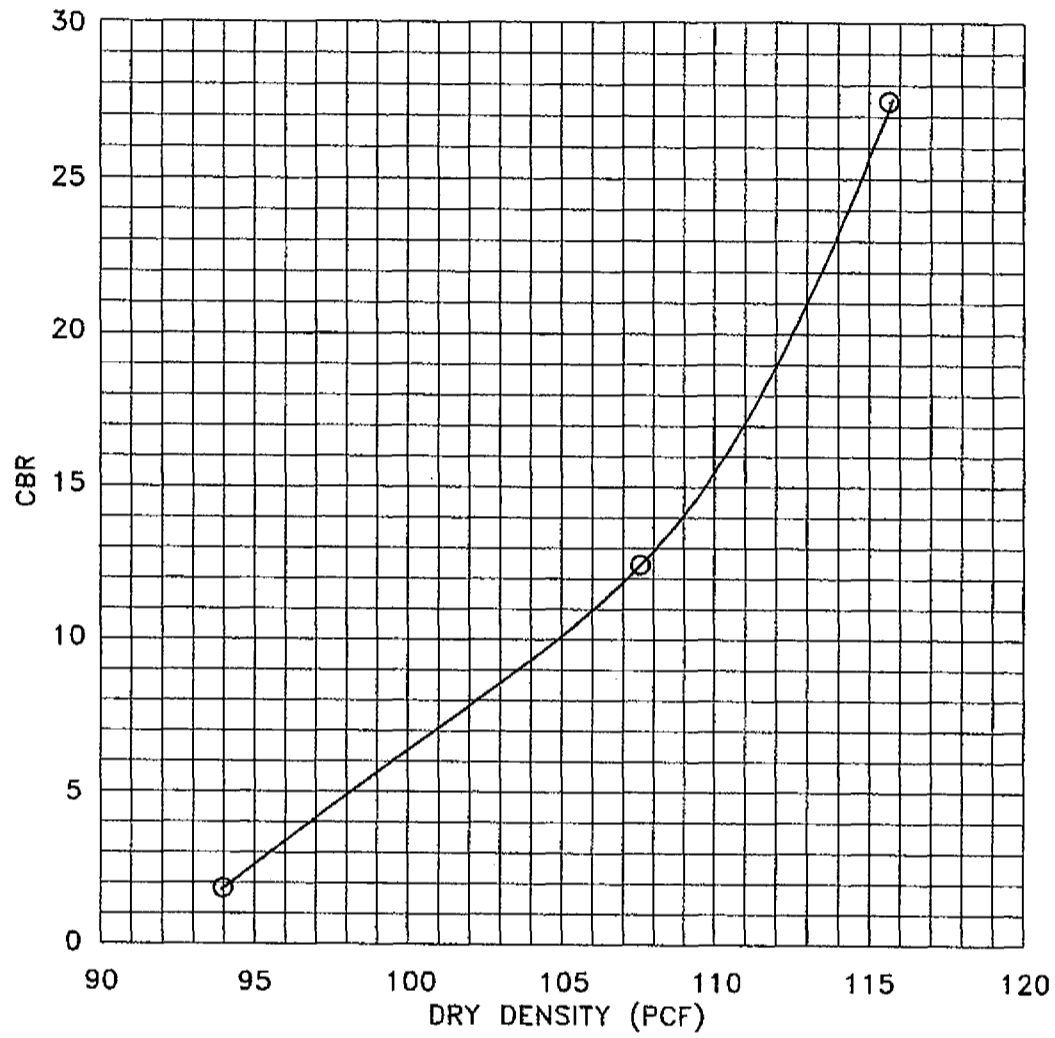
PROJECT NO. 1516.2.1	HAYDEN HOMES SOUTHWEST AREA PLAN VENETA, OREGON	FIGURE NO. B-15
----------------------	-------------------------------------------------------	-----------------



SAMPLE LOCATION	SAMPLE CONDITION	MAXIMUM DRY DENSITY (PCF)	OPTIMUM WATER CONTENT (%)
TP-2 @ 2.0'	SOAKED	108.0 AASHTO T-180 METHOD B	19.5

## CBR TEST RESULTS

PROJECT NO. 1516.2.1	HAYDEN HOMES SOUTHWEST AREA PLAN VENETA, OREGON	FIGURE NO. B-16
----------------------	-------------------------------------------------------	-----------------



SAMPLE LOCATION	SAMPLE CONDITION	MAXIMUM DRY DENSITY (PCF)	OPTIMUM WATER CONTENT (%)
TP-10 @ 1.0'-2.0'	SOAKED	117.0 AASHTO T-180 METHOD A	15.0

## CBR TEST RESULTS

PROJECT NO. 1516.2.1

HAYDEN HOMES  
SOUTHWEST AREA PLAN  
VENETA, OREGON

FIGURE NO. B-17