

# Habitat Management Plan and Critical Areas Study

**Clearwater Commons  
Low Impact Development  
Snohomish County, Washington**

*Prepared for:*

**Clearwater Commons LLC  
Attention: Chad Port  
11748 Lakeside Avenue NE  
Seattle, Washington 98125**

**24 December 2008**



# Habitat Management Plan and Critical Areas Study

---

**Clearwater Commons  
Low Impact Development  
Snohomish County, Washington**

---

---

*Prepared for:*

Clearwater Commons LLC  
Attn: Chad Port  
11748 Lakeside Ave NE  
Seattle, WA 98125

*Prepared by:*



750 Sixth Street South  
Kirkland, WA 98033

p 425.822.5242  
f 425.827.8136  
watershedco.com

10 June 2008  
Revised, 24 December 2008

## Table of Contents

<u>Section</u> .....	<u>Page No.</u>
<b>Introduction</b> .....	<b>1</b>
<b>Description of Project</b> .....	<b>1</b>
<b>Description of Project Area</b> .....	<b>3</b>
Sensitive Habitats .....	4
Streams and Buffers .....	4
Wetlands and Buffers .....	5
Sensitive Species - Salmonids.....	6
Chinook Salmon.....	6
Steelhead .....	6
Bull Trout.....	7
<b>Anticipated Impacts of the Proposed Action</b> .....	<b>7</b>
Stream and Wetland Impacts .....	7
Consistency with Salmonid Habitat Administrative Rule.....	9
<b>Proposed Mitigation</b> .....	<b>10</b>
<b>References</b> .....	<b>13</b>
Appendix A: Photographs	
Appendix B: Critical Area Mitigation and Enhancement Plan	
<b>List of Figures</b> .....	<u>Page No.</u>
Figure 1. Vicinity map of the project site (MapQuest).....	2
Figure 2. Aerial photograph of the immediate project area (Windows Live Local, 2006).	2

**Clearwater Commons LLC  
Habitat Management Plan and Critical Areas Study  
Snohomish County, Washington**

**INTRODUCTION**

The proposed project is located at 1415 196<sup>th</sup> Street SE, between 194<sup>th</sup> Street SE and 196<sup>th</sup> Street SE in the Bothell area of unincorporated Snohomish County (Figures 1 and 2). The site is approximately 7.4 acres in size and is comprised of one parcel with tax numbers 27051800401300 and 27051800404100. There are three delineated wetlands on the site as well as North Creek.

A group of families proposes to develop the site as an airspace condominium and co-housing project with a total of 16 housing units (15 new). The group's goals are to provide a pedestrian friendly community with shared on-site amenities, minimize the development impacts on the environment, and to restore the functions and values of wetlands and stream buffers on this site. The community is working with Snohomish County Surface Water Management to restore 1,400 linear feet of North Creek salmon habitat both on site and at the Clearwater School (southeast of the development).

The property previously had a nine-unit short plat submittal in with Snohomish County. It was submitted by the previous owner, Riverbend North LLC, and the project number is 05-12191ISP. A wetland delineation and ordinary high water mark (OHWM) study was completed by The Watershed Company in July 2005. North Creek and three wetland areas were identified on the site. This study was approved and accepted by Patrick McGraner, Senior Biologist, and Elizabeth Larsen, Biologist, both of Snohomish County Planning and Development Services. A pre-application report was completed by ESM Consulting Engineers, also in July 2005. In Spring 2006, the property was sold to Clearwater Commons LLC and the proposal was revised (project number 06-131051LU). On September 28, 2006, a pre-application meeting was held with Snohomish County Development Services Staff for the revised 16-unit housing project.

This project is regulated under the Snohomish County Code (SCC), Chapter 30.62, *Critical Areas Regulations* (CAR). North Creek is also subject to Snohomish County's *Salmonid Habitat Management Plan Administrative Rule* (SCC 30.62.100 & 30.62.110). The intent of this report is to show how the proposed project meets the Standard Requirements (Option A) of the Habitat Management Plan Requirements, as well as the Critical Area Study and Mitigation Plan requirements of the CAR.

**DESCRIPTION OF PROJECT**

The proposed development would retain an existing residence, garage, and related landscaping. A new site driveway would be developed off 194<sup>th</sup> Street SE and would serve 15 new detached and semi-detached smaller single-family homes and a 31-stall central parking area. The proposed clustered development will include the existing residence, five new single-family residences, and five new duplexes for a total of 16 residential units.

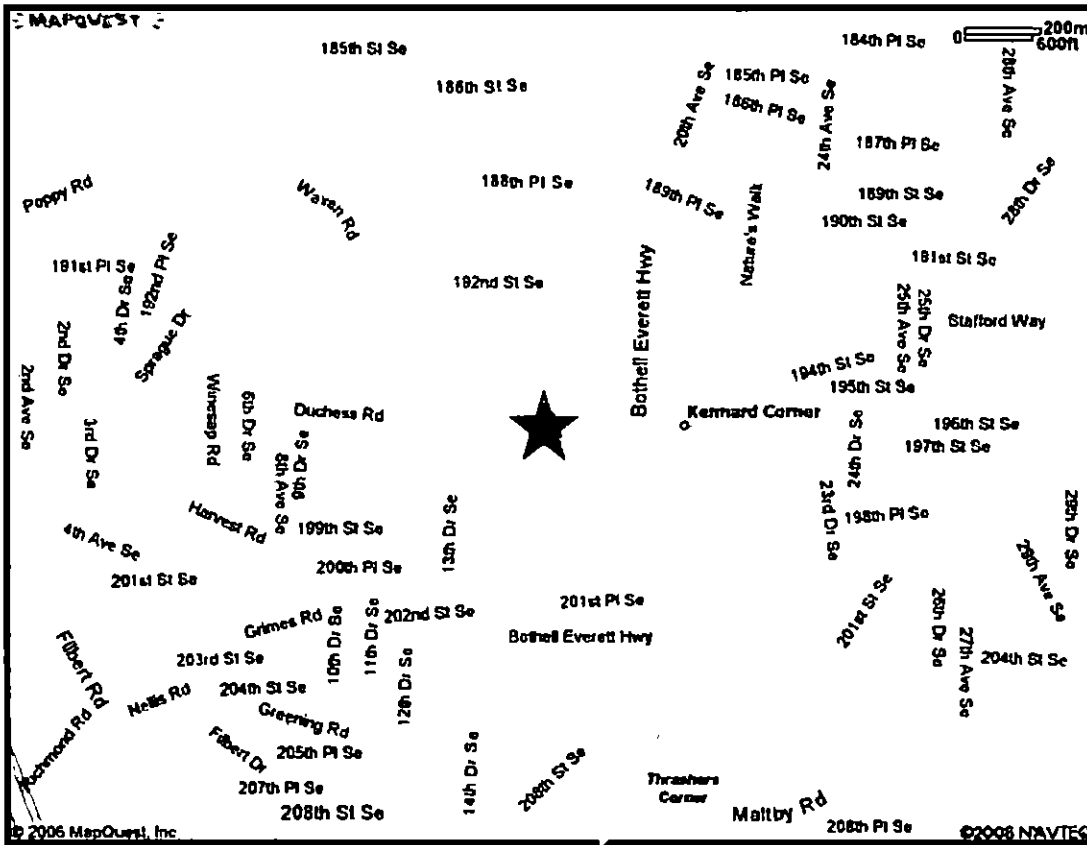


Figure 1. Vicinity map of the project site (MapQuest).

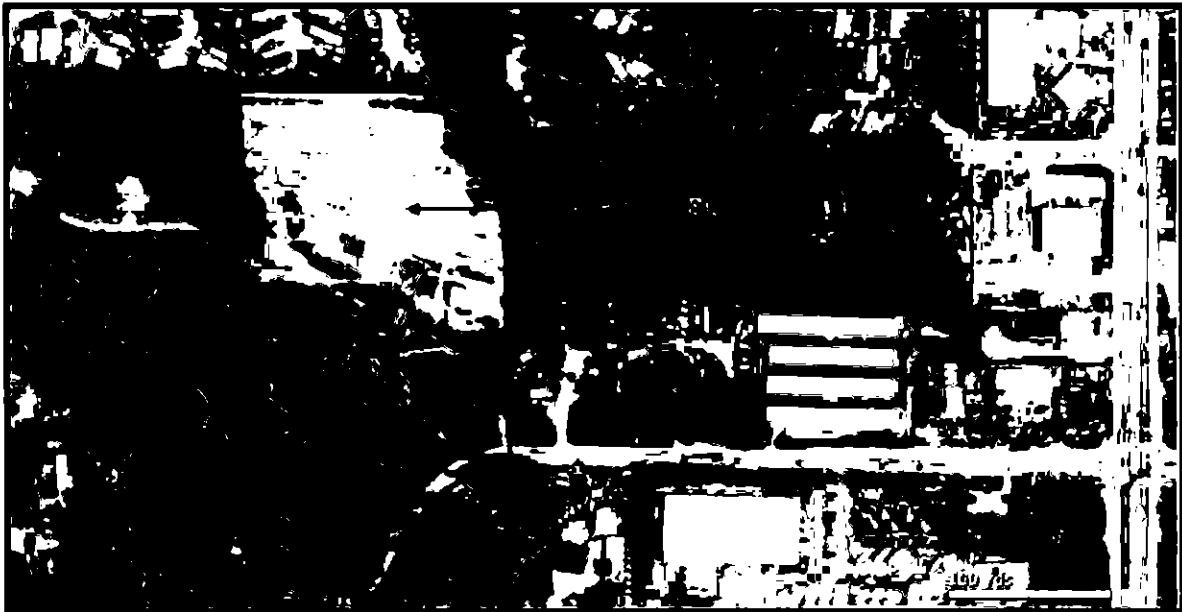


Figure 2. Aerial photograph of the immediate project area (Windows Live Local, 2005).

The project will also include a common house, accessory/storage buildings, community gardens, and play areas. A private alley will double as a fire access lane and pedestrian path. The alley will start at the parking area and only limited vehicular access to the site will be allowed.

The site development will make extensive use of Low-Impact Development techniques detailed in the *Low-Impact Development Technical Guidance Manual for Puget Sound* (Snohomish County Code SCC 30.63C.010, Amended Ordinance 06-044, effective July 16, 2006). Green roofs and/or pin-pile foundations are being designed for all new buildings and a small footprint of 800 square feet for new residences will minimize the impact on the site. The alley/firelane and major paths are being designed using pervious surfaces, and the parking area will use a combination of pervious and impervious surfaces. Compost-amended soil will be tilled into selected open space areas and distributed rain gardens along the road will provide additional infiltration of stormwater. The use of improved infiltration techniques eliminates the need for discharge to North Creek, and closely mimics the forested conditions of the pre-developed site. In order to minimize impacts to wetlands and to promote low impact development along 194<sup>th</sup> Street SE, while still meeting Snohomish County requirements, the project is designed with a 20-foot roadway, shoulder, curb, gutter, and 5-foot sidewalk at its narrowest section (28 feet).

Individual residences will be three-bedroom with a smaller than standard total square footage (1,580 to 1,630) to minimize material usage and the overall impact of the buildings on the site. The residences will be designed to minimize material waste and the project will promote recycling of construction debris. The project will also promote the use of local and/or Forest Stewardship Council (FSC) certified wood products as well as recycled and reclaimed materials. Energy efficiency will be implemented through such techniques as advanced framing, energy star appliances and lighting, and the use of both passive and active solar energy. The residences will also incorporate materials and finishes that are both renewable and improve indoor air quality.

The project requires 81 square feet of permanent wetland fill and 7,396 square feet of permanent wetland and stream buffer loss to accommodate widening of 194<sup>th</sup> Street SE, construction of new sidewalks, the eastern portion of the required parking area, construction of Unit 8-C, paths and parking area associated with the existing house, and asphalt apron associated with the utility line. Mitigation includes 4,091 square feet of wetland buffer gain (dedicated area) and 7,825 square feet of wetland and buffer enhancement area. A total of 202,297 square feet (4.64 acres) of critical areas and buffers would be permanently protected under the proposal in a Native Growth Protection Area (NGPA). The founders of Clearwater Commons hope to create an environmentally responsible project that fosters a strong sense of community and helps promote low-impact development.

## **DESCRIPTION OF PROJECT AREA**

As stated previously, this property is approximately 7.4 acres in size and slopes gradually to the southwest. There are businesses to the east, a private school and day care facility to the south, a mobile home park to the north, and residential areas to the west and south, including a fairly recent development called *Victoria Heights*. This property is located within the *Urban* section of Snohomish County.

There are three delineated wetlands on the site as well as North Creek. North Creek is a Type 2 stream that falls under the County's *Salmonid Habitat Management Plan Administrative Rule* that defines habitat preservation for threatened or endangered species. North Creek flows through the southern portion of the site. North Creek provides habitat for spawning fall-run Chinook salmon. Wetland A is a Category 2 riparian wetland located in the southern portion of the site. It lies north of the creek edge and extends toward the existing house and gravel driveway. Wetland A extends offsite to the west and south. Wetland B is a Category 3 wetland in an area of emergent vegetation north of Wetland A. The largest wetland, Wetland DEF, is a Category 3 wetland in the northeast section of the site near 194<sup>th</sup> Street SE. This wetland extends off-site to the east through several adjacent properties. The wetlands comprise 2.24 acres of the site, with their corresponding buffers comprising 1.65 acres. North Creek and its riparian setback comprise an additional 1.16 acres, leaving approximately 2.4 acres of buildable area outside of critical areas and buffers.

Currently, the site is vegetated with pasture grasses in the north half, developed and maintained landscaped areas in the central portion of the site and a variety of trees and native and invasive shrubs in the south half. There is also a small Category 3 wetland off-site to the north and a small unnamed Type 4 stream off-site to the east that flows under 194<sup>th</sup> Street SE and through a wetland area on the south side of the road. These features are adjacent to areas of required road improvements associated with the project.

Pictures of the project area are included in Appendix A.

### ***Sensitive Habitats***

As stated above, North Creek and three wetland areas have been identified on site. A small unnamed stream and two wetland areas also have been identified off-site, in the vicinity of proposed road improvements. These features are described in greater detail below.

### ***Streams and Buffers***

North Creek flows through the southern half of the subject property. North Creek is more than 12 miles long and enters the Sammamish River from the north on the right bank at River Mile 4.3 in the City of Bothell. North Creek drains a basin of approximately 23.3 square miles in area that includes portions of King County, Snohomish County, Bothell, Mill Creek, and Everett. The proposed development site is located approximately 5.25 miles upstream of the stream's mouth, between 194<sup>th</sup> Street SE and 196<sup>th</sup> Street SE north of the City of Bothell in unincorporated Snohomish County. The North Creek basin is extensively urbanized, with both developed residential and commercial areas.

North Creek is considered a Type 2 stream according to the Snohomish County CAR. North Creek is also subject to the County's *Salmonid Habitat Management Plan Administrative Rule*. This administrative rule provides for identification of Fish and Wildlife Habitat Conservation Areas (FWHCA) that have a primary association with any salmonid species listed as threatened or endangered under the Endangered Species Act. The rule prescribes additional environmental protection and mitigation steps that must be taken when development is proposed upon land containing habitat features that are considered essential for a federally threatened or endangered species.

The rule establishes a 150-foot buffer from the Ordinary High Water Mark (OHWM) of North Creek, as the creek is considered a FWICA. In addition to the 150-foot buffer, "effective impervious surface" is not to be placed within 300 feet of listed salmonid-bearing waters. The County also requires a 15-foot building setback from critical area buffers. However, based on specific direction provided by Patrick McGraner at the September 28, 2006 pre-application meeting, limited intrusions in the 15-foot BSBL are allowed if room is provided for maintenance of structures and no trees will be impacted by the proposed intrusions.

The small unnamed stream to the east flows north to south through a culvert from under a mobile home park on the north side of 194<sup>th</sup> Street SE through a short open section, into another culvert under the road, and into a muddy channel associated with a wetland area on the south side of the road. The small open section between existing culverts is approximately 2.5 feet wide and approximately 5 feet long. This stream is a Type 4 stream with a 25-foot buffer.

### *Wetlands and Buffers*

There are three wetland areas on the site of the proposed project. These wetlands were identified as Wetlands A, B, and DEF. According to the Snohomish County CAR, Wetland A is a Category 2 riparian wetland which extends off-site to the west and south. Wetland A is required to have a standard buffer width of 50 feet. Wetland B is a Category 3 wetland and is considered a riparian wetland due to its location within 150 feet of North Creek. It therefore has a 25-foot buffer. Wetland DEF extends off-site to the east through several adjacent properties. This wetland is rated Category 3 and requires a 25-foot buffer. Where stream and wetland buffers overlap, the wider buffer applies.

There is also a small wetland area on adjacent property north of the existing 194<sup>th</sup> Street SE, as shown on the site plans and attached mitigation plan. This wetland is also considered a Category 3 wetland with a 25-foot buffer. The wetland shown on the plans to the east of the site, south of the proposed culvert extension, has been identified and approximated on site plans. It has not been delineated or classified, but is likely a Category 3 wetland. There will be no impacts to this wetland area since the proposed work is limited to the north side of the road; see site plan.

### Wetland A

Wetland A is associated with the north side of North Creek and extends northward toward the existing house and gravel driveway. The wetland continues off-site to the west and to the south. The on-site portion of this wetland on the north side of North Creek measures 38,997 square feet (0.90 acre). It includes largely riparian, non-native, ornamental and emergent vegetation. Japanese knotweed, reed canarygrass, and creeping buttercup are dominant in this wetland. A small ditch supporting soft rush is located along the west side of the house. Surrounding upland areas are dominated by reed canarygrass, creeping buttercup, and Himalayan blackberry. Few vegetative differences exist between the wetland and upland to the north.

### Wetland B

Wetland B is an area of emergent vegetation north of Wetland A. This small (3,231 square feet/0.07 acre) wetland is a shallow depression dominated by reed canarygrass, with creeping buttercup and soft rush also present. Vegetation in the surrounding upland is similar to that



within Wetland B, but includes some upland species, such as evergreen blackberry and common plantain.

#### Wetland DEF

Wetland DEF is the largest (55,414 square feet/1.27 acre) of the wetlands on the site. The wetland is in the northeast section of the site and continues off-site to the east. It is primarily pasture wetland with a small amount of overhanging tree canopy at the east property boundary. Reed canarygrass, creeping buttercup, and soft rush are dominant plant species. Upland areas surrounding Wetland DEF support Himalayan blackberry, reed canarygrass, red clover, common dandelion, and various grasses.

#### **Sensitive Species - Salmonids**

As stated above, North Creek is subject to the County's *Salmonid Habitat Management Plan Administrative Rule*, which prescribes additional environmental protection and mitigation steps to be taken when development is proposed upon land containing habitat features that are considered essential for a federally threatened or endangered species. Listed fish species in the Lake Washington watershed, which includes North Creek, are Puget Sound Chinook salmon, Puget Sound steelhead, and Coastal-Puget Sound bull trout, all listed as "Threatened" under the Endangered Species Act (U.S. Federal Register, 24 March 1999; 11 May 2007; and 11 November 1999, respectively). These species may be present in North Creek for at least brief periods of time during their life cycle.

#### *Chinook Salmon*

Chinook use of North Creek may extend as far upstream as the vicinity of McCollum Park at 128<sup>th</sup> Street SE, approximately five miles upstream of the project area. The *Snohomish County Chinook Salmon Distribution Map* shows possible Chinook salmon use extending up to the Interstate 5 crossing. Fall-run Chinook salmon migrate through Lake Washington and the Sammamish River to reach spawning grounds associated with the Sammamish River (primarily North Creek and Bear Creek) and Lake Sammamish tributaries (primarily Issaquah Creek, including WDFW's Issaquah Creek hatchery). Chinook spawning escapement for North Creek is not known according to the *1992 Washington State Salmon and Steelhead Stock Inventory (SASSI)* (WDF et al. 1993). The stock status of North Lake Washington Tributaries Summer/Fall Chinook salmon is listed as unknown by the SASSI, possibly due to the difficulty of ascertaining the stock status given the large number of hatchery-reared chinook which migrate up the Sammamish River and eventually to the hatchery on Issaquah Creek.

#### *Steelhead*

Steelhead have one of the most complex life history patterns of any anadromous Pacific salmonid species. In Washington, there are two major run types, winter and summer steelhead. The Lake Washington Basin does not have a summer steelhead stock and winter steelhead adults begin river entry in a mature reproductive state in December and generally spawn from February through May (Kerwin 2001). Naturally produced juvenile winter steelhead can either migrate to sea (anadromy) or remain in fresh water as resident rainbow trout. The vast majority of juvenile steelhead in the Lake Washington Basin smolt and migrate to salt water. Lake Washington Basin steelhead usually spend one to three years in freshwater, with the greatest proportion

spending two years (Busby et al. 1996). Because of this, juvenile steelhead rely heavily on the freshwater habitat and are present in streams all year long (Kerwin 2001).

Fish from the Lake Washington Winter Steelhead stock are currently recognized as occurring in the Sammamish River and its tributaries, including North Creek. Similar to Chinook, steelhead use of North Creek may extend as far upstream as the vicinity of McCollum Park at 128<sup>th</sup> Street SE, approximately five miles upstream of the project area (<http://dnr.metrokc.gov/Wrias/8/fish-maps/steelhead/index.htm>). The Lake Washington Winter Steelhead are characterized as a native stock with wild production, and their stock status was adjusted downward from "depressed" to "critical" in 2002 due to chronically low escapements and severe short-term declines in escapement in 2000 and 2001. As of 2004, these escapement numbers had not increased (WDFW 2002), and total escapement estimates for the Lake Washington basin between 2000 and 2004 have ranged between 20 and 48 fish. Only a few of these fish are likely to return to North Creek for spawning. Total steelhead escapement estimates for the Lake Washington basin were estimated at 1,816 in 1986 (the earliest year on record), and have steadily declined since that time. The current escapement goal set by WDFW is 1,600 fish.

#### *Bull Trout*

The 1998 *Washington Salmonid Stock Inventory* (SASI), published in July 1998 by WDFW, states that reproducing populations of bull trout "have not been confirmed in the lower Cedar River, Lake Washington, Lake Sammamish, or their tributaries." Bull trout spawning in North Creek is highly unlikely because successful bull trout spawning in this region typically occurs only above the winter snow line, and no portion of the North Creek basin is high enough in elevation to have a winter snow line. Bull trout generally require colder water than can be provided by North Creek for successful spawning and egg incubation. Occasional rearing of stray or wandering bull trout in North Creek may be possible, but would not be common or usual, due to seasonally low stream flows and expected high temperatures. Temperatures in Issaquah Creek (and by extension, the Sammamish River and its tributaries, since they are farther downstream and likely even warmer) are probably too high to support bull trout (WDFW 1998).

## **ANTICIPATED IMPACTS OF THE PROPOSED ACTION**

### ***Stream and Wetland Impacts***

Impacts to streams and wetlands have been avoided and minimized in the revised project design. There will be limited temporary and permanent impacts to streams, stream buffers, wetlands, and wetland buffers as detailed below.

Snohomish County requires frontage improvements to 194<sup>th</sup> Street SE along the north side of the site. The new road width at the site entrance will be 20 feet with a rain garden between the sidewalk and road to handle stormwater runoff through on-site infiltration. The new road section will consist of 20 feet of asphalt with 2-foot shoulders, a 5-foot rain garden planting strip, and a 4-foot sidewalk on the south side, resulting in a total frontage improvement width of 33 feet. See civil site plans for details.

Impacts to wetlands have been avoided and minimized by including a DeltaLok retaining wall in the proposed design along the edge of the wetlands on the north and south sides of the road; see site plans. The access drive has been redesigned to minimize buffer impacts and all of the proposed new building envelopes are completely outside of the 150-foot riparian buffer (FWHCA) associated with North Creek. Existing landscaping, access driveway and structures within riparian and wetland buffers near the existing house will continue to be maintained as shown in the project plans. The proposed new development will be connected to an existing sewer line to the southwest, and gas, cable, and electric utilities to the southeast, as shown on site plans. The utility line will include a new asphalt apron which will replace the existing gravel driveway apron at the entrance from 196<sup>th</sup> Street, as per Snohomish County Public Works requirements.

- *Stream impacts.* There will be no impacts to North Creek. Required road widening along 194<sup>th</sup> Street SE will result in reduction of the short open section of the unnamed stream to the east from 5 feet to 2.33 feet in length.

- *Wetland impacts.*

Permanent impacts: There will be 76 square feet of permanent wetland fill of Wetland DEF for widening of the road along 194<sup>th</sup> Street SE. There will be 5 square feet of permanent wetland fill of Wetland A for installation of the sewer manhole. Total permanent wetland impacts equal 81 square feet.

Temporary impacts: There will be 1,234 square feet of temporary wetland disturbance of Wetland DEF and the unnamed wetland north of the site from road construction. There will also be 103 square feet of temporary wetland disturbance of Wetland A from installation of the sewer line. These impacts are detailed on the Critical Area Mitigation and Enhancement Plan. Total temporary wetland impacts equal 1,337 square feet.

- *Stream and wetland buffer impacts.*

Permanent impacts. There will be 120 square feet of permanent stream buffer loss associated with the culvert extension of the Type 4 stream east of the site required for road widening along 194<sup>th</sup> Street SE.

There will be 3,301 square feet of permanent wetland buffer loss associated with the widening of the road along 194<sup>th</sup> Street SE. In addition, approximately 979 square feet of wetland buffer along the northwest corner of Wetland DEF will be lost for the construction of the required parking area. Approximately 718 square feet of wetland buffer north of Wetland B will be impacted by the construction of Unit 8-C. There will also be 1,989 square feet of permanent buffer loss associated with a footpath to the existing residence, community paths, parking area near the garage, and from the asphalt apron associated with the new utility line. Additions to the existing residence are being permitted separately under permit number 06-133734RK. These areas equal 289 square feet. Total permanent wetland buffer loss equals 7,396 square feet.

Temporary impacts: There will be 929 square feet of temporary impact to the 150-foot riparian buffer associated with installation of the sewerline, 36 square feet of temporary impact associated with the abandoned/demolished septic tank, and 336 square feet of temporary impact associated with the community pathway, and gas, cable and electric utilities. There will also be 1,617 square feet of temporary wetland buffer disturbance associated with the widening the road along 194<sup>th</sup> Street SE and 112 square feet of temporary buffer disturbance associated with the parking area. Total temporary stream and wetland buffer impacts equal 3,030 square feet.

### ***Consistency with Salmonid Habitat Administrative Rule***

There will be no impacts to North Creek associated with this proposed project. The project has been designed to comply with Option A of the Habitat Management Plan Requirements prescribed in the *Salmonid Habitat Management Plan Administrative Rule*, as explained below.

*Fish and Wildlife Habitat Conservation Area (Stream buffer).* The first standard mitigation measure listed in Option A is the establishment of the 150-foot wide Fish and Wildlife Habitat Conservation Area (FWHCA) in a Native Growth Protection Area (NGPA) (see Appendix B). This measure further specifies “that existing legally established structures, and non-native or ornamental landscaping, including but not necessarily limited to; gardens, yards, pastures, orchards, are not required to be designated as native growth protection areas; and that where such conditions presently exist, no subsequent development of any greater intensity shall be allowed.”

The 150-foot setback has been established and is shown on site plans (see Appendix B). There is an existing residence to be retained within this zone on the north side of North Creek. Existing associated outbuildings, including the garage and barn, will be retained. The existing shed north of the garage will be demolished. With the exception of the utility lines, all of the new proposed structures and improvements will be located outside of the FWHCA. The boundary of the NGPA, NGPA sign locations, and NGPA sign specifications are included in Appendix B plans.

*Vegetation Replacement Ratios.* The second standard mitigation measure listed in Option A addresses vegetation replacement ratios. As outlined in the *Proposed Mitigation* section below, buffer loss within wetland and stream buffers is compensated by providing buffer replacement areas as shown. In addition, plantings of native trees, shrubs and groundcovers are provided at a greater than 1:1 replacement ratio, consistent with the requirement to compensate for herbaceous vegetation loss. It is important to note that the existing wetland buffer vegetation that will be impacted is dominated by non-native and invasive species.

*Temporal Losses.* Temporary impact areas associated with installation of the sewer line, utility line, and widening of 194<sup>th</sup> Street SE will be restored as detailed on the mitigation and enhancement plan.

*Hydrologic Impacts.* The *Salmonid Rule* also stipulates that, “effective impervious surface shall not be placed within 300 feet of listed salmonid-bearing waters”. The site development will make extensive use of Low Impact Development (LID) techniques as detailed in the *Low-Impact*

*Development Technical Guidance Manual for Puget Sound.* Green roofs and pin-pile foundations have been designed for all new buildings. The driveway, parking area (except actual stalls), alleyways and most pathways are designed using pervious surfaces (pervious concrete, pervious pavers). Compost-amended soil will be tilled into the on-site open space to a depth of 12 inches in areas outside wetland buffers and wetlands. Distributed rain gardens provide additional infiltration of stormwater. The use of improved infiltration techniques eliminates the need for discharge to North Creek and closely mimics the forested conditions of the pre-developed site.

Snohomish County Code water quality and quantity requirements will be met through the use of these same low-impact site development techniques. The site was modeled for stormwater runoff using Western Washington Hydrology Model, Version 2, a continuous simulation flow model that provides the most conservative design for stormwater facilities, and the approach recommended in the *Low Impact Development Technical Guidance Manual* adopted by Snohomish County. The modeling technique developed for this site is discussed in the LID Supplemental forms included as part of this submittal. Stormwater detention and water quality treatment will be achieved by improving the infiltration of the on-site soils by amending them with compost, and by constructing a modification of a porous sidewalk design that provides additional water storage capacity, allowing stormwater to slowly infiltrate into the surrounding soils.

The approach and assumptions used to model stormwater run-off are described in the Drainage Report and LID supporting documents. The results of the model demonstrate that 100% infiltration of stormwater generated on site will be achieved under the proposal. Therefore the project will not create any effective impervious surface within 300 feet of North Creek. On the rest of the on-site area, the total amount of new impervious surface is 11,020 square feet.

The off-site increase in impervious surface from the road-widening project is 5,019 square feet. Stormwater management (treatment and detention) of the road-widening component of the project is designed to meet Ecology's 2005 *Stormwater Management Manual for Western Washington*. Discharge limits are set at pre-settlement forested conditions. Infiltration is used where feasible, and the road runoff will still follow its current drainage patterns.

*Thermal Impacts.* The *Salmonid Rule* further specifies that, "the temperature of stormwater discharged from a project site to a body of water containing a listed salmonid shall not exceed Washington State Water Quality Standards for temperature". All stormwater runoff from the site will be infiltrated as previously described. Unlike typical developments, stormwater will not be collected by a system of pipes and catch basins. This will eliminate the need to construct detention ponds, vaults and point discharges that can impact the temperature of stormwater run-off and receiving bodies. Therefore, the proposed project design, which emphasizes infiltration and enhancement of the natural run-off characteristics of the site, meets this requirement.

## PROPOSED MITIGATION

Mitigation is proposed in the form of buffer area replacement and vegetation enhancement of wetland and buffer areas. See Critical Area Enhancement and Mitigation Plan in Appendix B.

A total of 4,091 square feet of new buffer gain area will be dedicated and protected within a total Native Growth Protection Area of 202,297 square feet (4.64 acres). This permanently protected area constitutes 63 percent of the total site area. Buffer and wetland plantings will result in a significant improvement over the present condition, as detailed below. This is consistent with both the *Salmonid Rule* and the *Snohomish County CAR Innovative development design* (SCC 30.62.370).

Specific mitigation measures are detailed below:

- *Wetland mitigation.*

Wetland filling impacts (81 square feet) will be mitigated by providing enhancement plantings within Wetland DEF at the Washington Department of Ecology prescribed ratio of 8:1 for Category III wetlands (648 square feet required). Presently Wetland DEF is primarily pasture that is dominated by non-native plants with little diversity in either species composition or community structure. Wetland enhancement plantings near the north edge of this wetland and east of the parking lot, totaling approximately 2,522 square feet, will increase wetland functions and values by providing a variety of food and cover plants to increase vegetative structure, increasing the richness of plant species and improving the interspersion of habitats. Enhancement plantings will be planted in clusters to mimic natural conditions and maximize edge habitat.

- *Stream and wetland buffer mitigation.*

Buffer reduction areas have been offset with buffer gain areas as much as is possible. There will be 7,396 square feet of buffer loss. Approximately 3,869 square feet of stream and wetland buffer area will be added to the 150-foot riparian corridor, and 222 square feet will be added to the Wetland DEF buffer at the northwest edge. This equals a total of 4,091 square feet of stream and wetland buffer gain; see Critical Area Mitigation and Enhancement Plan in Appendix B.

Remaining buffer loss areas are to be mitigated with buffer enhancement plantings equaling 5,303 square feet. Total enhancement area on site, including wetland, wetland buffer, and stream buffer equals 7,825 square feet. This includes 289 square feet of additional planting restoration area in the stream/wetland buffer southeast of the existing residence as compensation for additions to the house under permit number 06-133734RK.

Buffer areas temporarily disturbed as a result of road widening will be planted as shown on the mitigation plan. Buffer areas temporarily disturbed as a result of installation of the sewerline, gas and electric utilities will be restored to pre-construction condition as shown.

Since buffer averaging and buffer width reduction cannot be achieved as per the CAR on this site, the proposed mitigation has been designed to meet the *Innovative development design criteria* of SCC 30.62.370. Specifically, implementation of the Critical Area Mitigation and Enhancement Plan as shown in Appendix B will result in a net improvement of the functions and

values of the wetland and its buffer when compared to either the existing condition or what would be permitted under the strict application of the code. The innovative project design is consistent with the purpose and objectives of SCC Chapter 30.62 as articulated in SCC Section 30.62.010, including the protection of critical areas and the balancing of private property rights with the need to protect public health, safety, and welfare and the preservation of environmentally sensitive areas. The project will not be materially detrimental to the public welfare or injurious to property or improvements in the vicinity because it will result in a net improvement in wetland and buffer functions and values.

The existing wetland, wetland buffer and stream buffers are presently vegetated with a mixture of mostly non-native grasses, clover, dandelion, and other herbaceous species, which provide little diversity in either species composition or community structure. Enhancement plantings totaling approximately 9,378 square feet will increase wetland and stream buffer functions and values by providing a variety of native plants to increase vegetative structure, increasing the richness of plant species, and improving the interspersed habitats. Buffer enhancement plantings will also increase the screening and protection of the critical areas, while maximizing edge habitat and providing berries and other plant parts for wildlife food and structural diversity for wildlife cover. The mitigation plan will be implemented concurrent with or prior to completion of the proposed project. The completed mitigation project will be monitored for three years as outlined in Appendix B.

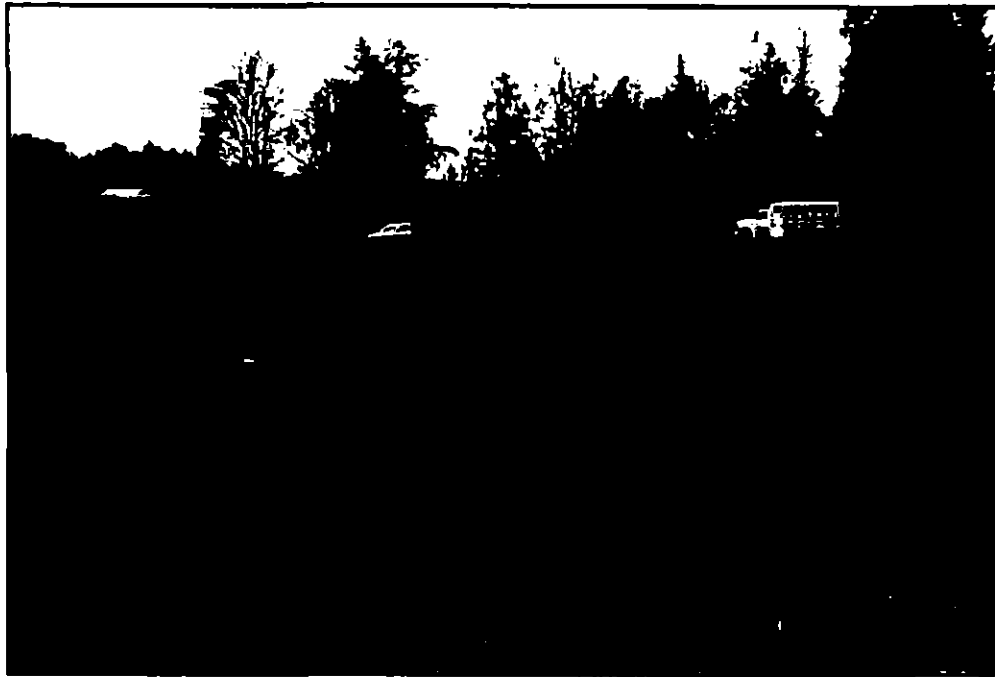
## REFERENCES

- Busby, P.J., T.C. Wainwright, G.J. Bryant, et al. 1996. Status review of west coast steelhead from Washington, Idaho, Oregon, and California. National Oceanographic and Atmospheric Administration Tech. Memo. NMFS-NWFSC-27.
- Kerwin, J. 2001. Salmon and steelhead habitat limiting factors report for the Cedar-Sammamish Basin (Water Resource Inventory Area 8). Washington Conservation Commission. Olympia, WA.
- Washington Department of Fish and Wildlife. 2002. Salmonid Stock Inventory. <http://wdfw.wa.gov/fish/sasi/>
- \_\_\_\_\_. 1998. 1998 Washington salmonid stock inventory appendix: bull trout and Dolly Varden. 437 p.
- Washington Department of Fisheries (WDF), Washington Department of Wildlife, and Western Washington Treaty Indian Tribes. 1993. 1992 Washington State salmon and steelhead stock inventory. March 1993. Olympia, WA. 212 p.

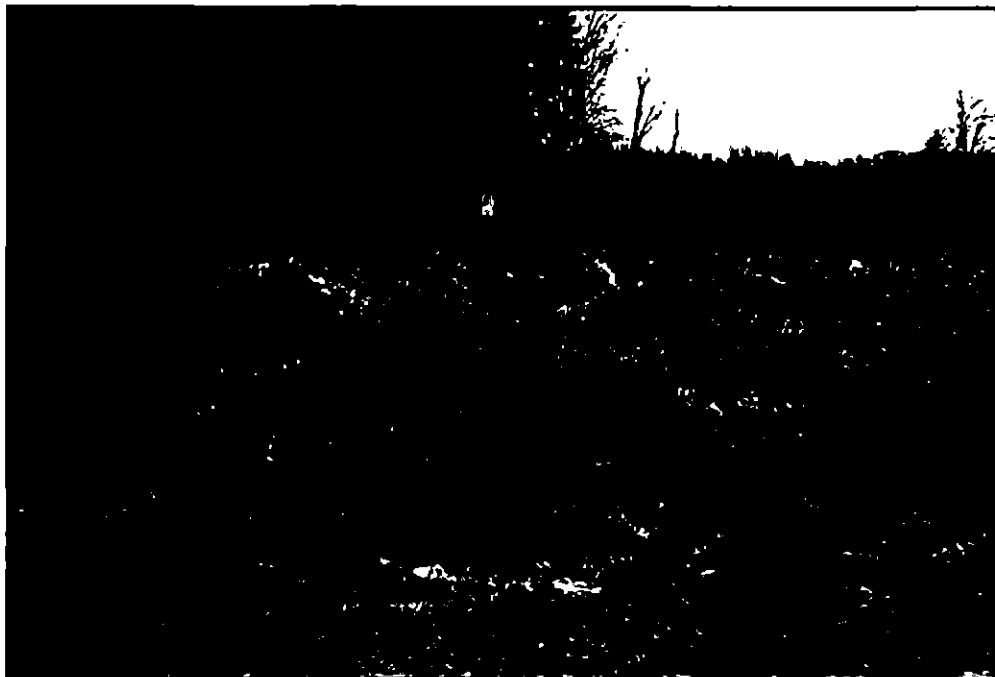


**APPENDIX A**

**Photographs**



View of project area facing southeast. Existing shop/garage is shown in the center of photo. Existing house to be retained is also shown just behind the white truck.



View of project area facing east. Shows wetland and wetland buffer impact area associated with the required improvements to 194<sup>th</sup> St. SE and the proposed parking area.



View of Wetland DEF from north. Shows wetland and wetland buffer enhancement areas.

**APPENDIX B**

**Critical Area Mitigation and Enhancement Plan**

**CLEARWATER COMMONS, LLC**  
LOW IMPACT DEVELOPMENT  
CLIENT CONTACT: CHAD PORT  
BANYON TREE DESIGN; 206.229.8709  
SITE ADDRESS: 1415 196TH STREET SE  
BOTHELL, WA 98012

PHASE:  
**PERMIT**

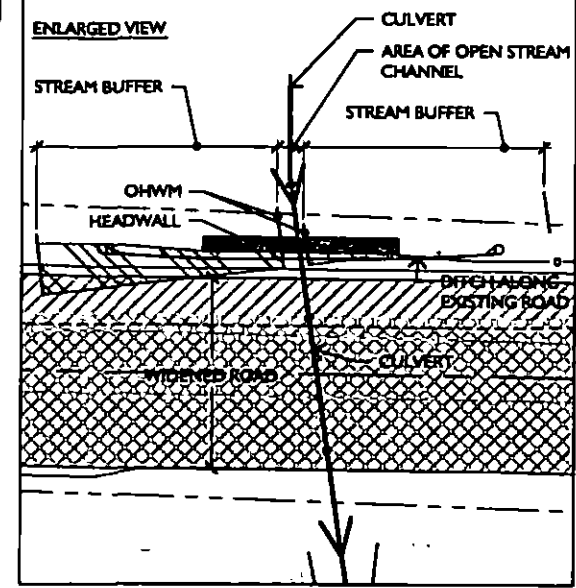
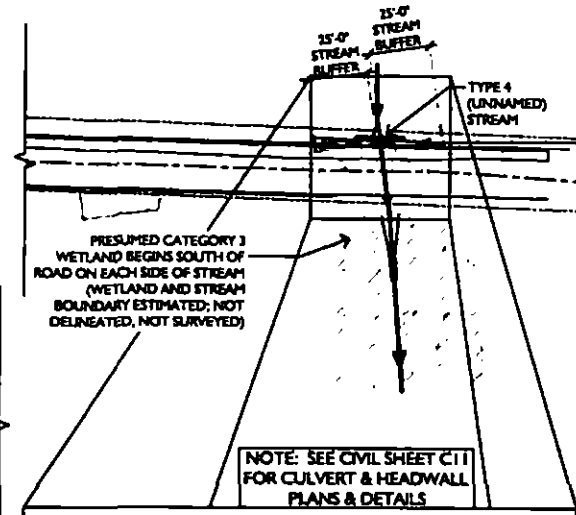
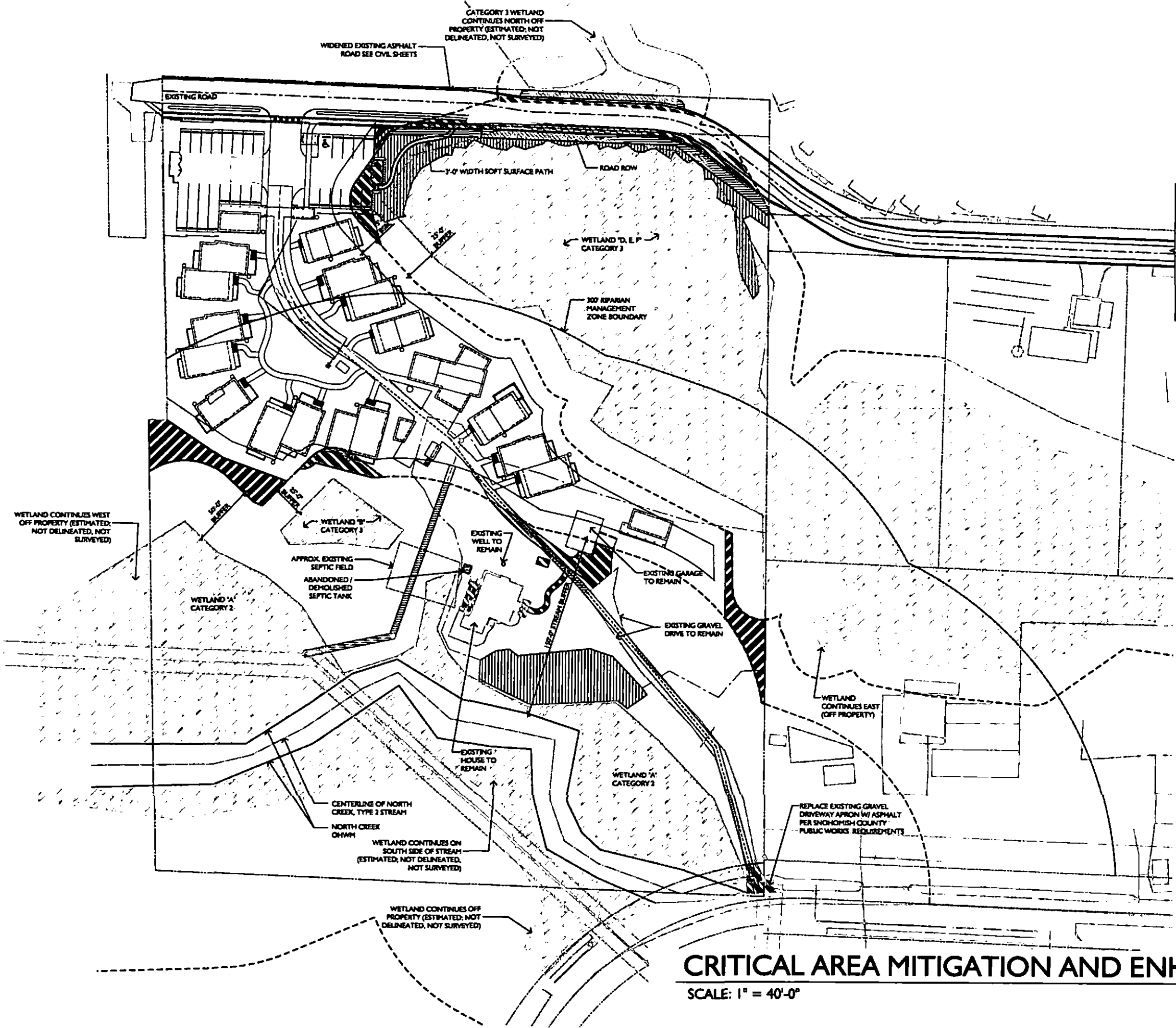
NO.	DATE	ISSUE
1	11-6-06	REVIEW SET
2	12-7-06	PERMIT SET
3	12-21-07	PERMIT REV.
4	1-30-08	PERMIT REV.
5	6-5-08	PERMIT REV.
6	12-23-08	PERMIT REV.

REMARKS/NOTES:  
ORIGINAL PLANS 22X34  
ADJUST SCALES ACCORDINGLY

Project Manager: GS  
Designed: MG  
Drafted: MG  
Checked: JC  
File name:  
MITPLAN9-2008.DWG

JOB NUMBER:  
**041020**

SHEET NUMBER:  
**WI OF 6**



ENLARGEMENT SCALE: 1" = 1'-0"

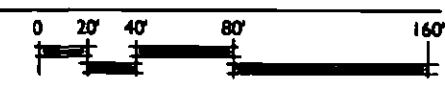
Category	Area	Value
PERMANENT WETLAND LOSS		81 SF
PERMANENT WETLAND AND STREAM BUFFER LOSS		7,396 SF
TEMPORARY WETLAND IMPACTS		1,337 SF
TEMPORARY WETLAND BUFFER IMPACTS		3,030 SF
WETLAND AND STREAM BUFFER GAIN		4,091 SF
ENHANCEMENT AREA (SEE PLANTING PLAN)		7,825 SF
	IN WETLAND	2,522 SF
	IN BUFFER	5,303 SF

**SENSITIVE AREA IMPACTS**

- SHEET INDEX:**
1. SENSITIVE AREAS PLAN
  2. IMPACT DETAIL
  3. NGPA BOUNDARY & DETAIL
  4. REVEGETATION PLAN
  5. PLANT SPECIFICATIONS AND DETAILS
  6. MITIGATION PLAN NOTES

**CRITICAL AREA MITIGATION AND ENHANCEMENT PLAN**

SCALE: 1" = 40'-0"



**CLEARWATER COMMONS, LLC**  
 LOW IMPACT DEVELOPMENT  
 CLIENT CONTACT: CHAD PORT  
 BANYON TREE DESIGN; 206.229.8709  
 SITE ADDRESS: 1415 196TH STREET SE  
 BOTHELL, WA 98012

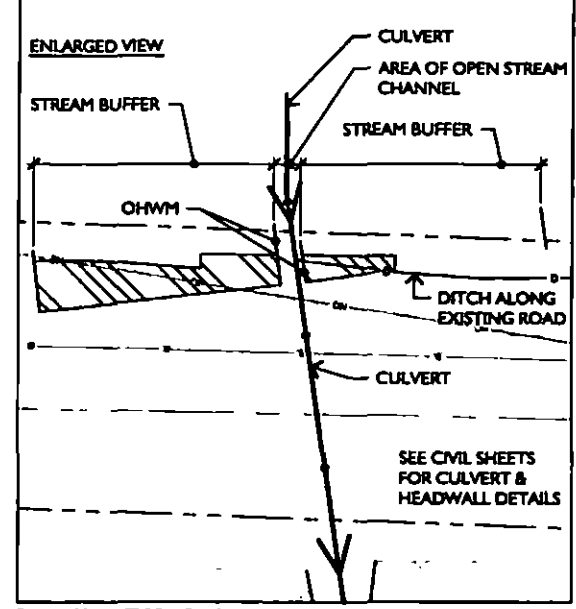
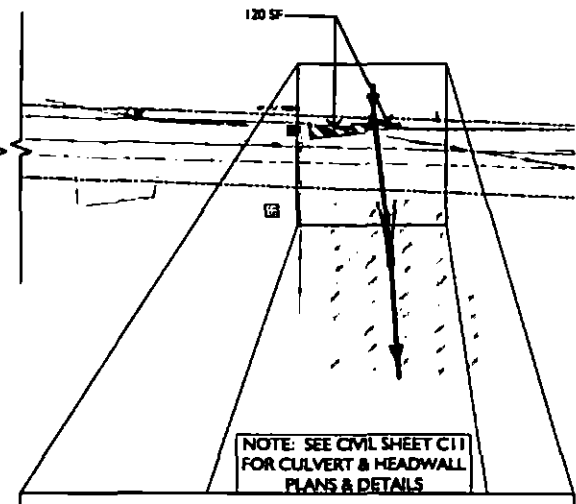
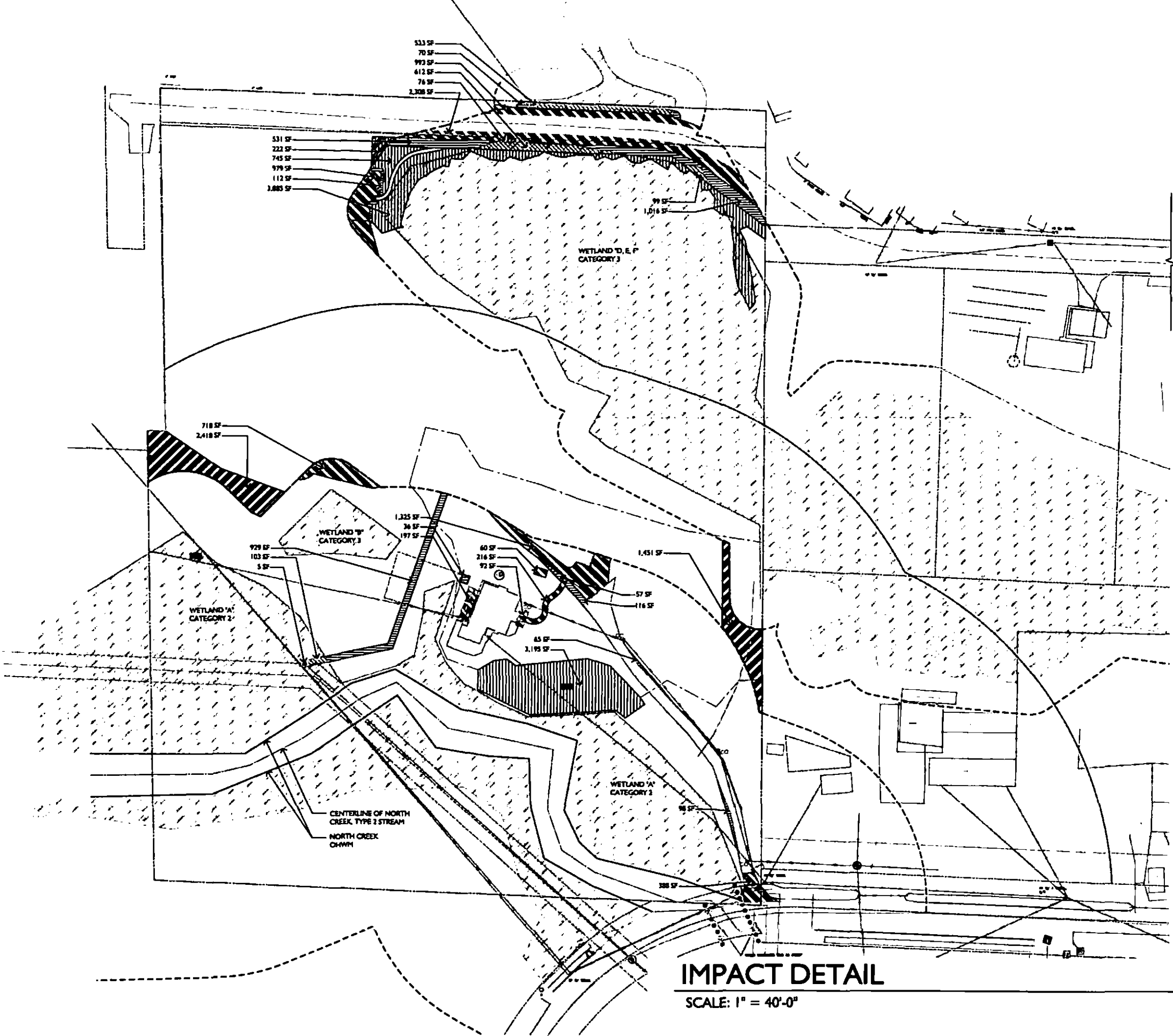
PHASE:  
**PERMIT**

NO.	DATE	ISSUE
1	11-6-06	REVIEW SET
2	12-7-06	PERMIT SET
3	12-21-07	PERMIT REV.
4	1-30-08	PERMIT REV.
5	6-5-08	PERMIT REV.
6	12-23-08	PERMIT REV.

REMARKS/NOTES:  
 ORIGINAL PLANS 22DC14  
 ADJUST SCALES ACCORDINGLY

Project Manager: GS  
 Designed: MG  
 Drafted: MG  
 Checked: JC  
 File name:  
 MITIPLAN9-2008.DWG

JOB NUMBER:  
**041020**  
 SHEET NUMBER:  
**W2 OF 6**



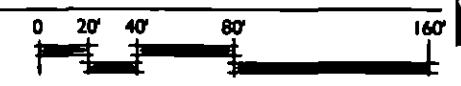
ENLARGEMENT SCALE: 1" = 1'-0"

	PERMANENT WETLAND LOSS	81 SF
	PERMANENT WETLAND AND STREAM BUFFER LOSS	7,398 SF
	TEMPORARY WETLAND IMPACTS	1,337 SF
	TEMPORARY WETLAND BUFFER IMPACTS	3,030 SF
	WETLAND AND STREAM BUFFER GAIN	4,081 SF
	ENHANCEMENT AREA (SEE PLANTING PLAN)	7,825 SF
	IN WETLAND	2,522 SF
	IN BUFFER	5,303 SF

**SENSITIVE AREA IMPACTS**

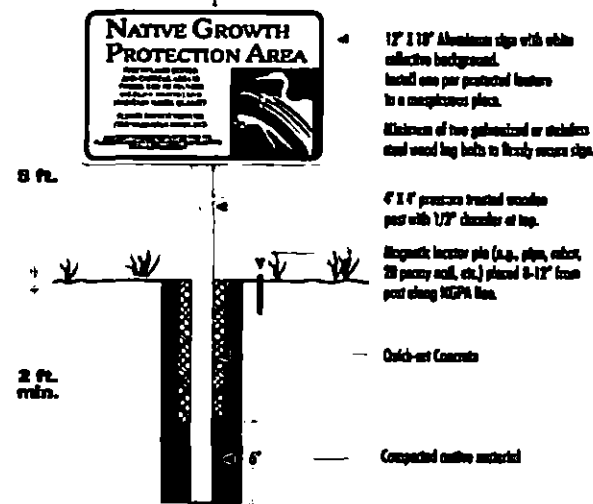
**IMPACT DETAIL**

SCALE: 1" = 40'-0"

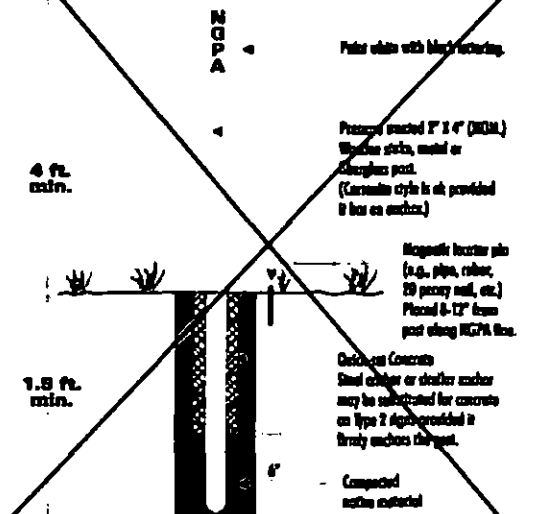


# Native Growth Protection Area Sign Installation Guidelines

## TYPE 1 SIGN



## NOT USED TYPE 2 SIGN



- NOTES:**
1. NGPA signs shall be placed no greater than 100 feet apart around the perimeter of the Native Growth Protection Area. Minimum placement shall include one Type 1 sign per wetland, and at least one Type 1 sign shall be placed in any lot that borders the Native Growth Protection Area, unless otherwise approved by the County biologist.
  2. Sign placement shall be subject to the approval of Snohomish County. Alternative sign designs may be submitted to Snohomish County for approval.
  3. All signs must be secure and permanent.

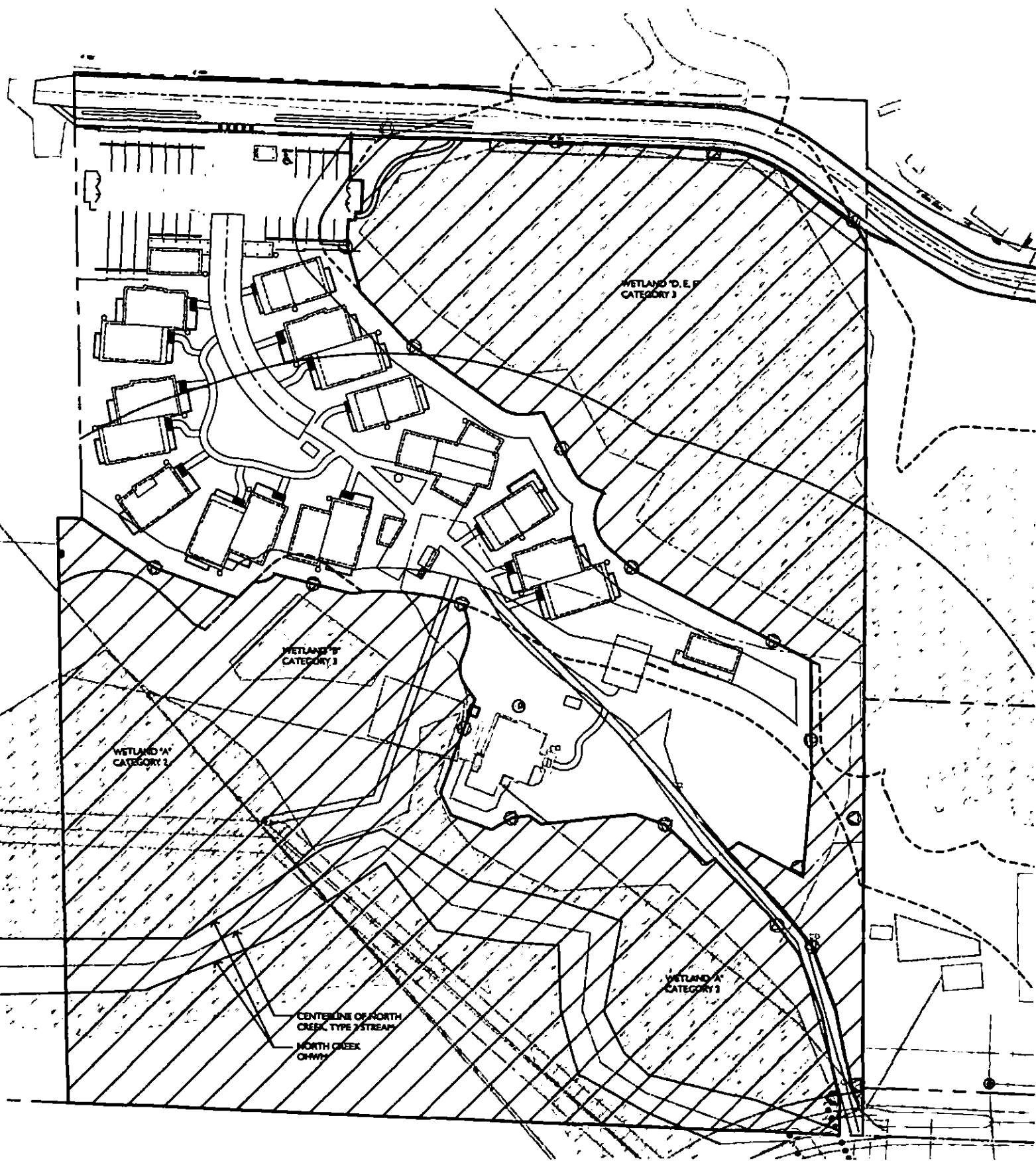
**NATIVE GROWTH PROTECTION AREA**

— BOUNDARY (202,297 S.F.; 4.64 AC.)

○ NGPA SIGNS @ 100-FOOT INTERVALS, TYP. (21)

# NATIVE GROWTH PROTECTION AREA

SCALE: 1" = 40'-0"



**THE WATERSHED COMPANY**  
 750 Sixth Street South  
 Kirkland WA 98033  
 p 425.822.5242 f 425.827.8136  
 www.watershedco.com  
 Science & Design

**CLEARWATER COMMONS, LLC**  
 LOW IMPACT DEVELOPMENT  
 CLIENT CONTACT: CHAD PORT  
 BANYON TREE DESIGN; 206.229.8709  
 SITE ADDRESS: 1415 196TH STREET SE  
 BOTHELL, WA 98012

PHASE:  
**PERMIT**

NO.	DATE	ISSUE
1	11-6-06	REVIEW SET
2	12-7-06	PERMIT SET
3	12-21-07	PERMIT REV.
4	1-30-08	PERMIT REV.
5	6-5-08	PERMIT REV.
6	12-23-08	PERMIT REV.

REMARKS/NOTES:  
 ORIGINAL PLANS 22X34  
 ADJUST SCALES ACCORDINGLY

Project Manager: GS  
 Designed: MG  
 Drafted: MG  
 Checked: JC  
 File name:  
 MITIPLAN9-2008.DWG

JOB NUMBER:  
**041020**  
 SHEET NUMBER:  
**W3 OF 6**

NO.	DATE	ISSUE
1	11-6-06	REVIEW SET
2	12-7-06	PERMIT SET
3	12-21-07	PERMIT REV.
4	1-30-08	PERMIT REV.
5	6-5-08	PERMIT REV.
6	12-23-08	PERMIT REV.

REMARKS/NOTES:  
 ORIGINAL PLANS 22X34  
 ADJUST SCALES ACCORDINGLY

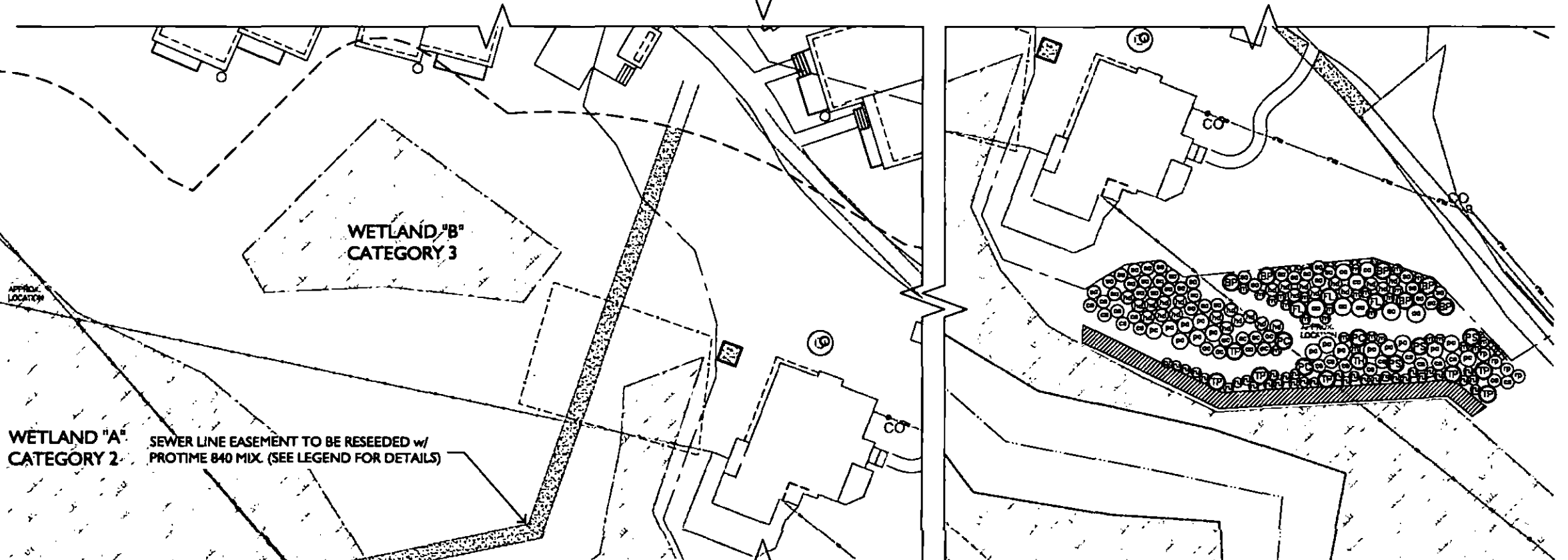
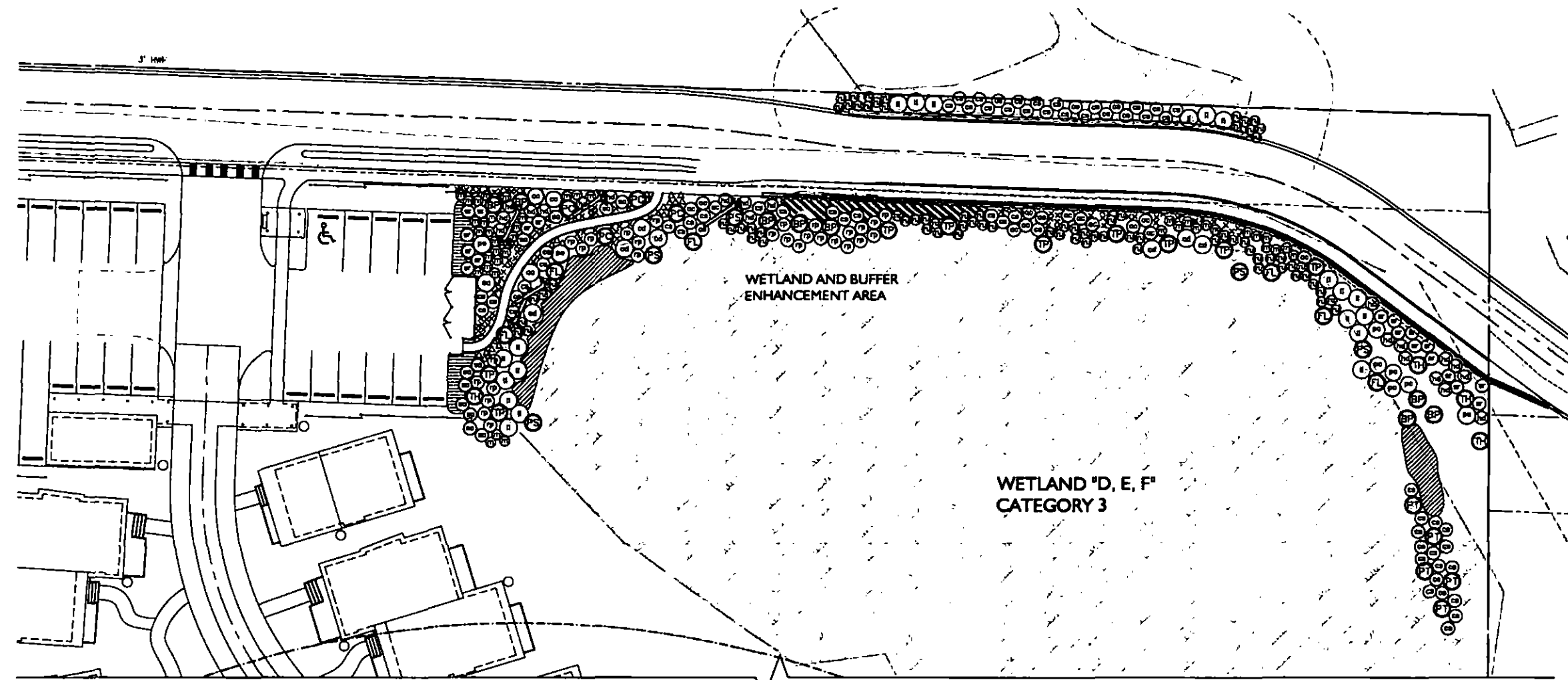
Project Manager: GS  
 Designed: MG  
 Drafted: MG  
 Checked: JC  
 File name:  
 MITIPLAN9-2008.DWG

JOB NUMBER:  
**041020**

SHEET NUMBER:  
**W4 OF 6**

**PLANT LEGEND:**

SYMBOL	BOTANICAL NAME / COMMON NAME	SIZE	QTY.
BP	BETULA Papyrifera / PAPER BIRCH	2 GAL	14
FL	FRAXINUS latifolia / OREGON ASH	2 GAL	9
PS	PRUNUS sitchensis / SITKA SPRUCE	2 GAL	8
PC	PINUS contorta / S-HORE PINE	2 GAL	7
PT	POPULUS trichocarpa / BLACK COTTONWOOD	2 GAL	5
TR	THUJA plicata / WESTERN RED CEDAR	2 GAL	18
TH	TELAGA heterophylla / WESTERN HEDLOCK	2 GAL	5
<b>SHRUBS</b>			
OC	ACER circinnatum / VINE MAPLE	1 GAL	22
AM	AMALANCHES alnifolia / SERVICEBERRY	1 GAL	7
CO	CORNUS stolonifera / RED OBER DOGWOOD	1 GAL	81
CO	CORNUS cornuta / BEARDED HAZELNUT	1 GAL	5
DO	QUERCUS douglasii / DOUGLAS HAWTHORN	1 GAL	7
HO	HOLODISCUS discolor / OCEAN SPRAY	1 GAL	46
LO	LONICERA sylvicola / BLACK TWIMBERRY	1 GAL	30
HA	HAMONIA aquifolium / TALL OREGON GRAPE	1 GAL	89
PH	PHYSCOCARPUS caryatus / PACIFIC NINEBARK	1 GAL	31
PR	PRUNUS emarginata / BITTER CHERRY	1 GAL	3
RO	ROSA prinosarpa / SWAMP ROSE	1 GAL	23
RU	RUBUS spectabilis / SALMONBERRY	1 GAL	110
SA	SAMBUCUS racemosa / RED ELDERBERRY	1 GAL	19
SY	SYMPHORICARPOS albus / SNOWBERRY	1 GAL	44
<b>WETLANDS (CUTTINGS)</b>			
<b>BOTANICAL NAME / COMMON NAME</b>			
SW	SALIX lasioandra / PACIFIC WILLOW	LIVE STAKES @ 18" O.C.	200
SW	SALIX sitchensis / SITKA WILLOW	LIVE STAKES @ 18" O.C.	200
<b>PERENNIALS / GRASS/COVERS / CUTTINGS</b>			
<b>BOTANICAL NAME / COMMON NAME</b>			
AT	ATYRIUM pedicularifolia / LADY FERN	1 GAL - 3 PER STYROL	30
FR	FRAGARIA chionensis / SAND STRAWBERRY	4" POTS @ 3" O.C.	72
PO	POLYPODIUM plumatum / SWORD FERN	1 GAL - 3 PER STYROL	220
<b>SEED MIX</b>			
PRO	PROTIME 840 NATIVE SCOTT'S SEED MIX (LATIN NAME / COMMON NAME)		
	ELYSIUM GLAUCUM / BLUE WILDMINT		47%
	RESTYCA ALBA ALBA / RED PISCUL		40%
	DESMODIUM CASBYTOSUM / TUFTED HARRICRASS		10%
	GLYCYRRHIZA OCCIDENTALS / WESTERN HARRICRASS		2%
	BIODIPANNA BYZANTINENSIS / AMERICAN SLOUGHGRASS		1%
SEED AT A RATE OF 1 LB PER 1000 SF.			
<b>WETLAND STRUCTURES</b>			
DOWNED WOODY DEBRIS: LARGE LOGS, PREFERABLY WITH BOOT WADS ATTACHED, SALVAGED FROM STORMS. PLACE THROUGHOUT ENHANCEMENT AREA AS DIRECTED IN THE FIELD BY A BIOLOGIST OR LANDSCAPE ARCHITECT FROM THE WATERSHED COMPANY, 425.822.5242.			



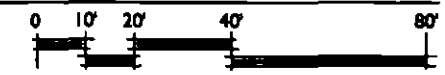
**GENERAL PLANTING NOTES:**

1. REMOVE ALL INVASIVE NON-NATIVE PLANT SPECIES (ENGLISH IVY, HIMALAYAN BLACKBERRY, SCOTT'S BROOM, NIGHT SHADE, ETC.) THROUGHOUT THE PLANTING AREAS FOR THIS PROJECT.
2. PRIOR TO PLANTING, LAYOUT PLANTS FOR INSPECTION BY LANDSCAPE ARCHITECT OR PROJECT BIOLOGIST FROM THE WATERSHED COMPANY.
3. PLANTS MAY BE FIELD ADJUSTED DEPENDING ON MICROSITE CONDITIONS.
4. MOW REED CANARY GRASS TO THE LOWEST POSSIBLE HEIGHT. REMOVE GRASS FROM A 24" DIA. CIRCLE IN THE LOCATION OF EACH NEW PLANT TO BE INSTALLED.
5. PROJECT IS SUBJECT TO INSPECTION AT ANY TIME. AN INITIAL LAYOUT INSPECTION AND A FINAL INSPECTION ARE REQUIRED.

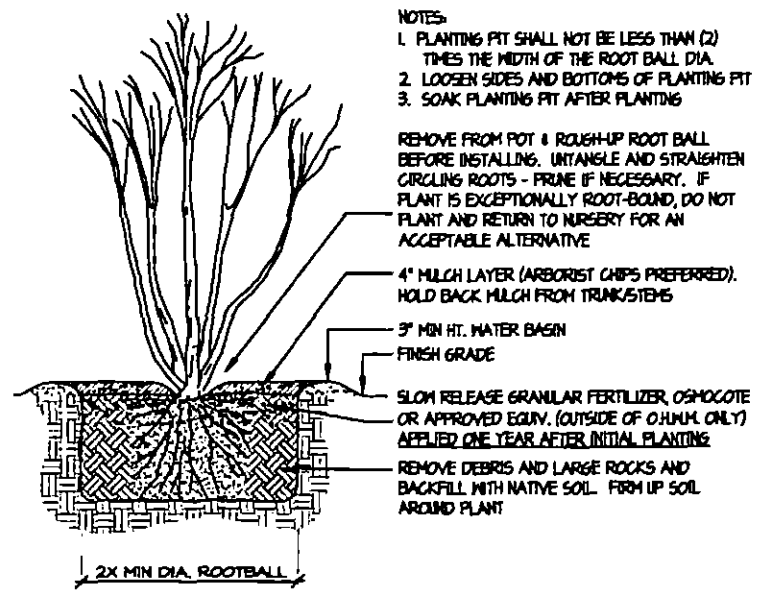
**WETLAND "A" CATEGORY 2** SEWER LINE EASEMENT TO BE RESEEDED w/ PROTIME 840 MIX. (SEE LEGEND FOR DETAILS)

**REVEGETATION PLAN**

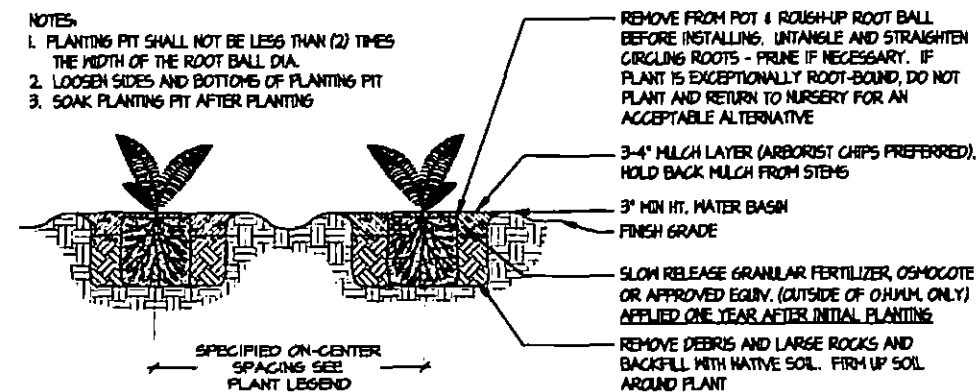
SCALE: 1" = 20'-0"



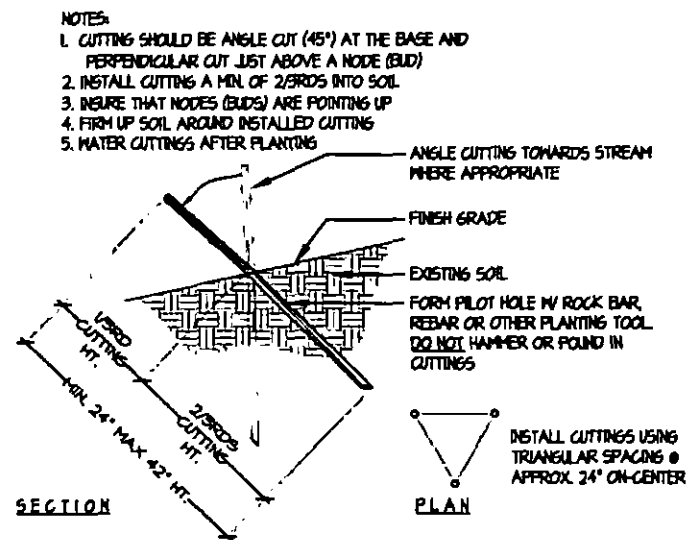




**A** TREE AND SHRUB PLANTING  
NTS



**B** PERENNIAL AND GROUNDCOVER PLANTING  
NTS



**C** CUTTING INSTALLATION  
NTS

**PLANT INSTALLATION SPECIFICATIONS**

Note: These specifications are a legally binding contract.

**GENERAL NOTES**

**Quality Assurance**

- Plants shall meet or exceed the specifications of Federal, State, and local laws requiring inspection for plant disease and insect control.
- Plants shall be healthy, vigorous, and well-formed, with well developed, fibrous root systems, free from dead branches or roots. Plants shall be free from damage caused by temperature extremes, lack or excess of moisture, insects, disease, and mechanical injury. Plants in leaf shall be well foliated and of good color. Plants shall be habituated to the outdoor environmental conditions into which they will be planted (hardened-off).
- Trees with damaged, crooked, multiple or broken leaders will be rejected. Woody plants with abrasions of the bark or sunscald will be rejected.
- Nomenclature: Plant names shall conform to Flora of the Pacific Northwest by Hitchcock and Cronquist, University of Washington Press, 1973 and/or to A Field Guide to the Common Wetland Plants of Western Washington & Northwestern Oregon, ed. Sarah Spear Cooke, Seattle Audubon Society, 1997.

**Definitions**

- Plants/plant materials. Plants and plant materials shall include any live plant material used on the project. This includes but is not limited to container grown, B&B or bare-root plants; live stakes and fascines (wattles); tubers, corms, bulbs, etc.; sprigs, plugs, and liners.
- Container grown. Container grown plants are those whose rootballs are enclosed in a pot or bag in which that plant grew.
- Live stakes. Live stakes are cut from dormant, healthy, living individuals of the specified plant species at the specified size and are to be planted before roots form. Live stakes shall have a straight top cut immediately above but not into a node. The lower, rooting end of the live stake shall be cut at a 45-degree angle. Live stakes are cut from one to two year old wood and have no branches.

**Substitutions**

- It is the contractor's responsibility to obtain specified materials in advance if special growing, marketing or other arrangements must be made in order to supply specified materials.
- Substitution of plant materials not on the project list will not be permitted unless authorized in writing by the Wetland Restoration Consultant.
- If proof is submitted that any plant material specified is not obtainable, a proposal will be considered for use of the nearest equivalent size or alternative species, with corresponding adjustment of contract price.
- Such proof will be substantiated and submitted in writing to the consultant at least 30 days prior to start of work under this section.

**Inspection**

- Plants shall be subject to inspection and approval by the Wetland Restoration Consultant for conformance to specifications, either at time of delivery on-site or at the grower's nursery. Approval of plant materials at any time shall not impair the subsequent right of inspection and rejection during progress of the work.
- Plants inspected on site and rejected for not meeting specifications must be removed immediately from site or red-tagged and removed as soon as possible.
- The wetland restoration consultant may elect to inspect plant materials at the place of growth. After inspection and acceptance, the restoration consultant may require the inspected plants be labeled and reserved for project. Substitution of these plants with other individuals, even of the same species and size, is unacceptable.

**Measurements of Plants**

- Plants shall conform to sizes specified unless substitutions are made as outlined in this contract.
- Height and spread dimensions specified refer to main body of plant and not branch or root tip to tip. Plant dimensions shall be measured when their branches or roots are in their normal position.
- Where a range of size is given, no plant shall be less than the minimum size and at least 50% of the plants shall be as large as the median of the size range. (Example: If the size range is 12" to 18", at least 50% of plants must be 15" tall.)

**SUBMITTALS**

**Proposed Plant Sources**

- Within 30 days after award of the contract, submit a complete list of plant materials proposed to be provided demonstrating conformance with the requirements specified. Include the names and addresses of all growers and nurseries.

**Product Certificates**

- Plant Materials List - Submit documentation to consultant at least 30 days prior to start of work under this section that plant materials have been ordered. Arrange procedure for inspection of plant material with consultant at time of submission.
- Have copies of vendor's or grower's invoices or packing slips for all plants on site during installation. Invoice or packing slip should list species by scientific name, quantity, and date delivered (and genetic origin if that information was previously requested).

**DELIVERY, HANDLING, & STORAGE**

Notification: Contractor must notify consultant 48 hours or more in advance of deliveries so that consultant may arrange for inspection.

**Plant Materials**

- Transportation - During shipping, plants shall be packed to provide protection against climate extremes, breakage and drying. Proper ventilation and prevention of damage to bark, branches, and root systems must be ensured.
- Scheduling and storage - Plants shall be delivered as close to planting as possible. Plants in storage must be protected against any condition that is detrimental to their continued health and vigor.
- Handling - Plant materials shall not be handled by the trunk, limbs, or foliage but only by the container, ball, box, or other protective structure, except bare-root plants shall be kept in bundles until planting and then handled carefully by the trunk or stem.
- Labels - Plants shall have durable, legible labels stating correct scientific name and size. Ten percent of container grown plants in individual pots shall be labeled. Plants supplied in flats, racks, boxes, bags, or bundles shall have one label per group.

**WARRANTY**

- Plants must be guaranteed to be true to scientific name and specified size, and to be healthy and capable of vigorous growth.
- Plants not found meeting all of the required conditions must be removed from site and replaced immediately at the consultant's discretion.

**PLANT MATERIAL**

**General**

- Plants shall be nursery grown in accordance with good horticultural practices under climatic conditions similar to or more severe than those of the project site.
- Plants shall be true to species and variety or subspecies. No cultivars or named varieties shall be used unless specified as such.

**Quantities**

See plant list on accompanying plans.

**Root treatment**

- Container grown plants (includes plugs): Plant root balls must hold together when the plant is removed from the pot, except that a small amount of loose soil may be on the top of the rootball.
- Plants must not be root-bound; there must be no circling roots present in any plant inspected.
- Rootballs that have cracked or broken when removed from the container shall be rejected.
- Live Stakes (includes fascines, willow wattles). Live stakes must be installed before rooting occurs. Plants that already have roots at the time of installation will be rejected.

**SEE NEXT SHEET FOR SEQUENCING AND MITIGATION NOTES**

**PLANT SPECIFICATIONS AND DETAILS**

**CLEARWATER COMMONS, LLC**  
LOW IMPACT DEVELOPMENT  
CLIENT CONTACT: CHAD PORT  
BANYON TREE DESIGN; 206.229.8709  
SITE ADDRESS: 1415 196TH STREET SE  
BOTHELL, WA 98012

**PHASE:**

**PERMIT**

NO.	DATE	ISSUE
1	11-6-06	REVIEW SET
2	12-7-06	PERMIT SET
3	12-21-07	PERMIT REV.
4	1-30-08	PERMIT REV.
5	6-5-08	PERMIT REV.
6	12-23-08	PERMIT REV.

**REMARKS/NOTES:**

ORIGINAL PLANS 22X34  
ADJUST SCALES ACCORDINGLY

Project Manager: GS  
Designed: MG  
Drafted: MG  
Checked: JC  
File name:  
MITIPLAN9-2008.DWG

JOB NUMBER:  
041020

SHEET NUMBER:

Mitigation Plan Notes

**Mitigation Summary:** A group of families proposes to develop this site as an airspace condominium and co-housing project with a total of 16 housing units (15 new). The group's goals are to provide a pedestrian friendly community with shared on-site amenities, minimize the development impacts on the environment, and restore the functions and values of wetlands and stream buffers. The community is working with the Snohomish County Public Works Department to restore the North Creek salmon habitat both on site and at the Clearwater School.

The proposed development would retain an existing residence, barn, garage and related landscaping. The proposed clustered development will include one (1) existing residence, five (5) new single family residences and five (5) new duplexes for a total of sixteen (16) residential units. The project will also include a common house, accessory/storage buildings, community gardens and play areas. A new site driveway will be developed off 194th Street SE with a 32-space central parking area. A private alley will double as a fire access lane and pedestrian path. The alley/path will start at the parking area and removable bollards will limit vehicular access to the site.

The site development will make extensive use of Low-Impact Development techniques detailed in the *Low-Impact Development Technical Guidance Manual for Puget Sound* (Snohomish County Code SCC 30.63C.010, Amended Ordinance 06-044, effective July 16, 2006). Green roofs and/or pin-pile foundations are being designed for all new buildings and a small footprint of 800 square feet for new residences will minimize the impact on the site. The alley/firelane and major paths are being designed using pervious surfaces, and the parking area will use a combination of pervious and impervious surfaces. Compost-amended soil will be tilled into selected open space areas and distributed rain gardens along the road will provide additional infiltration of stormwater. The use of improved infiltration techniques eliminates the need for discharge to North Creek, and closely mimics the forested conditions of the pre-developed site. In order to minimize impacts to wetlands and to promote low impact development along 194th Street SE, while still meeting Snohomish County requirements, the project is designed with a 20-foot roadway, shoulder, curb, gutter, and 5-foot sidewalk at its narrowest section (28 feet).

The project requires 81 square feet of permanent wetland fill and 7,396 square feet of permanent wetland and stream buffer loss to accommodate widening of 194th Street SE, construction of new sidewalks, the eastern portion of the required parking area, construction of Unit B-C, paths and parking area associated with the existing house, and asphalt apron associated with the driveway. Mitigation includes 4,091 square feet of wetland buffer gain (dedicated area) and 7,825 square feet of wetland and buffer enhancement area. A total of 202,297 square feet (4.64 acres) of critical areas and buffers would be permanently protected under the proposal in a Native Growth Protection Area (NGPA). The founders of Clearwater Commons hope to create an environmentally responsible project that fosters a strong sense of community and helps promote low-impact development.

**Approval:** Implementation of these plans requires review and approval by the Snohomish County Department of Planning and Development Services (PDS), US Army Corps of Engineers, and Washington Department of Fish and Wildlife.

**Supervision:** A biologist or the designing landscape architect (Restoration Consultant) that is familiar with this plan and its intent shall be on hand to inspect and approve all plant materials and to approve final placement of installed vegetation.

**Sequencing**

1. Any disturbed wetland and buffer areas should be seeded with Pro-Tyme 840 Native Bio-Filter Seed Mtx (can be obtained from Hobbs & Hopkins Ltd, 503.239.7518).
2. Establish planting area boundaries as shown on the plan.
3. Remove all existing non-native and/or invasive plant species from the planting area. Species specifically targeted for removal include any Himalayan blackberry, reed canarygrass, Scot's broom and thistle. Reed canarygrass shall be mowed to the lowest possible height and removed from a 24-inch diameter circle at the location of each new plant. Other non-native and/or invasive species listed by the Washington State Noxious Weed Board as Class A, Class B, or Class C weeds are to be removed by their roots, grubbing and/or hand digging as necessary. Incidental disturbance to surrounding native plant species should be minimized.
4. Loosen any compacted soils in the planting areas with a shovel, pick or rock bar.
5. Plant the areas indicated on the planting plan with the native tree and shrub species shown per plan during the first dormant season (October through March). Adjust plantings as needed to avoid existing native species.
6. Apply slow-release, granular fertilizer such as Osmocote™ or equal product to shrub plantings one year after initial planting. Follow manufacturer's instructions for all fertilizer applications. Keep fertilizer in weather-tight containers while on site.
7. Water individual plants with 2 inches of water immediately after planting to eliminate air pockets and to ensure root to soil contact. Provide temporary irrigation system or water truck to supply a minimum of 2 inches of water per week from June through September for the first two years following installation. Continue to irrigate installed plants as necessary until established and thriving.
8. After plants have been installed, place a 4-inch-deep mulch layer in a 12" radius around installed plants in order to control weeds and aid in soil moisture retention.
9. Survival in a healthy condition is to be guaranteed for all of the planted specimens through their entire first growing season. A post-construction acceptance inspection (coincident with Year One monitoring) is to be made within 6 to 10 months following the initial dormant season planting and any dead, missing, or unhealthy specimens are to be replaced. Replacement is to occur during the then-upcoming dormant season.

CONSTRUCTION SEQUENCE

**Objectives and Performance Standards**

The following objectives and performance standards have been established to measure the success of this plan. Success will be monitored according to methodology that is outlined in the following "Monitoring and Maintenance" section.

**Objective 1:** Native tree and shrub vegetation communities will be established in the planting areas within three years after planting.

**Performance Standard 1:** Within the planting areas, container-grown plants shall meet a 100 percent survival standard at the end of Year One (to be guaranteed by the contractor acquiring and installing the plants); and an 80 percent survival standard at the end of Year Two and Year Three, with additional planting if these standards are not met. At the end of Year Three, installed trees and shrubs in the planting area shall exhibit at least 50 percent cover. Weedy cover by species listed by the Washington State Noxious Weed Board as Class A, Class B, or Class C weeds may not exceed 15 percent coverage within the planting areas.

**Monitoring and Maintenance:**

To ensure the success of this plan, a three-year monitoring and maintenance plan will be implemented.

**Monitoring:** The installed vegetation community will be monitored for three years after initial installation. Within two months of plant installation, an As-Built Report will be prepared that documents the general implementation of the mitigation plan. Any minor changes to the approved revegetation plan that are required by field conditions or plant availability during plan implementation must be documented in the As-Built Report and submitted to Snohomish County for approval. The monitoring period begins once the As-Built Report has been approved by Snohomish County PDS. The approved As-Built Report then becomes the approved mitigation plan for future inspection purposes.

Monitoring visits shall occur between July 1 and September 15. During Year One, an additional weed inspection will occur in April. The additional weed inspection will not be necessary in the remaining years unless invasive/non-native species exceed 15 percent cover in the previous year.

During each monitoring visit, color photographs will be taken from points to be identified in the As-Built Report that provide complete coverage of the planting areas. In addition, the following items will be noted:

- 1) the percent survival of planted species (Years One and Two only);
- 2) the percent cover of planted species based on visual estimate (Year Three);
- 3) the species composition, noting whether a species is native or exotic and whether plants present were planted or are volunteers;
- 4) the percent cover of non-native or invasive species; and
- 5) the general health of vegetation, noting whether pests or disease are present.

Particular attention shall be paid to the encroachment or emergence of Himalayan blackberry, reed canarygrass, thistle, and Scot's Broom. The emergence of these or any species listed by the Washington State Noxious Weed Board as Class A, Class B, or Class C weeds within planting areas will be noted and recommendations for immediate manual removal will be made.

Following each year's monitoring visit, a short letter-style report shall be prepared detailing the findings of the visit. This report shall include information on the survival and condition of the installed plants; photographs of the site; a discussion of invasive weed cover in the planting area; and any recommendations for maintenance. This report shall be submitted to Snohomish County PDS within a month's time of each year's monitoring visit. All maintenance and repair recommendations shall be completed within four months of each monitoring report, with a memo to PDS detailing any actions that were taken.

**Maintenance:** This project will include at least one maintenance visit per year, for three years following implementation of the mitigation plan. During these maintenance visits, the installed planting areas will be weeded by hand to remove any new shoots of non-native and/or invasive vegetation that are emerging. Maintenance visits will occur in August. If invasive/non-native species exceed 15 percent cover in the previous year's monitoring report, two maintenance visits will be conducted: one in April and the second in August.

During the first and second summer following plant installation (Years One & Two), plantings in the buffer mitigation areas will be supplied with a minimum of 2 inches of water per week from June through September. Further, if plants appear to be stressed due to drought during the third summer after plant installation (Year Three), two inches of water per week should again be supplied from June through September.

Additional maintenance visits may also be required to respond to other monitoring recommendations. Mers are to be replaced. Replacement is to occur during the then-upcoming dormant season.

**BOND QUANTITY: \$41,876.03. SEE ATTACHED CRITICAL AREAS MITIGATION WORKSHEET.**



750 Sixth Street South  
Kirkland WA 98033  
p 425.822.5242 f 425.827.8136  
www.watershedco.com

Science & Design

CLEARWATER COMMONS, LLC  
LOW IMPACT DEVELOPMENT  
CLIENT CONTACT: CHAD PORT  
BANYON TREE DESIGN; 206.229.8709  
SITE ADDRESS: 1415 196TH STREET SE  
BOTHELL, WA 98012

PHASE:  
**PERMIT**

NO.	DATE	ISSUE
1	11-4-06	REVIEW SET
2	12-7-06	PERMIT SET
3	12-21-07	PERMIT REV.
4	1-30-08	PERMIT REV.
5	6-5-08	PERMIT REV.
6	12-23-08	PERMIT REV.

REMARKS/NOTES:  
ORIGINAL PLANS 22X34  
ADJUST SCALES ACCORDINGLY

Project Manager: GS  
Designed: MG  
Drafted: MG  
Checked: JC  
File name:  
MITPLAN9-2008.DWG

JOB NUMBER:  
**041020**

SHEET NUMBER:  
**W6 OF 6**