DEVELOPMENT SERVICES DEPARTMENT
ENVIRONMENTAL COORDINATOR
450 110th Ave NE
BELLEVUE, WA 98009-9012

DETERMINATION OF NON-SIGNIFICANCE

PROPONENT: The Church of Jesus Christ of Latter Day Saints

LOCATION OF PROPOSAL: 2808 148th Avenue SE, Bellevue, WA

DESCRIPTION OF PROPOSAL: Construction of a residence for the Temple President on the Temple site. Landscape improvements associated with the residence will be within a steep slope critical area buffer and within a habitat performance area for species of local importance.

FILE NUMBERS: 12-131861-LO **PLANNER:** Sally Nichols, Senior Planner

The Environmental Coordinator of the City of Bellevue has determined that this proposal does not have a probable significant adverse impact upon the environment. An Environmental Impact Statement (EIS) is not required under RCW 43.21C.030(2)(C). This decision was made after the Bellevue Environmental Coordinator reviewed the completed environmental checklist and information filed with the Land Use Division of the Development Services Department. This information is available to the public on request.

☐ There is no comment period for this DNS. There is a 14-day appeal period. Only persons who submitted written comments before the DNS was issued may appeal the decision. A written appeal must be filed in the City Clerk's office by 5:00 p.m. on _____.

☒ This DNS is issued after using the optional DNS process in WAC 197-11-355. There is no further comment period on the DNS. There is a 14-day appeal period. Only persons who submitted written comments before the DNS was issued may appeal the decision. A written appeal must be filed in the City Clerk's Office by 5 p.m. on **4/10/2014**

☐ This DNS is issued under WAC 197-11-340(2) and is subject to a 14-day comment period from the date below. Comments must be submitted by 5 p.m. on _____. This DNS is also subject to appeal. A written appeal must be filed in the City Clerk's Office by 5:00 p.m. on _____.

This DNS may be withdrawn at any time if the proposal is modified so as to have significant adverse environmental impacts; if there is significant new information indicating a proposals probable significant adverse environmental impacts (unless a non-exempt license has been issued if the proposal is a private project): or if the DNS was procured by misrepresentation or lack of material disclosure.

Carol V Heller **3/17/2014**
Environmental Coordinator Date

OTHERS TO RECEIVE THIS DOCUMENT:
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City of Bellevue
Development Services Department
Land Use Staff Report

Proposal Name:	**LDS Temple Residence**
Proposal Address:	2808 148th Avenue SE
Proposal Description:	Request for Critical Areas Land Use Permit approval and SEPA Threshold Determination for the construction of a residence for the Temple President on the Temple site. Landscape improvements associated with the residence will be within a steep slope critical area buffer and within a habitat performance area for species of local importance.
File Number:	**12-131861-LO**
Applicant:	**The Church of Jesus Christ of Latter-Day Saints**
Decisions Included:	Critical Areas Land Use Permit (Process II. LUC 20.30P)
Planner:	**Sally Nichols, Senior Planner**
State Environmental Policy Act Threshold Determination:	**Determination of Non-Significance** Carol V. Helland Carol V. Helland, Environmental Coordinator Development Services Department
Director's Decision:	**Approval with Conditions** Michael A. Brennan, Director Development Services Department Carol V. Helland Carol V. Helland, Land Use Director

Application Date:	December 3, 2012
Notice of Application Publication Date:	January 3, 2013
Decision Publication Date:	March 27, 2014
Project/SEPA Appeal Deadline:	April 10, 2014

For information on how to appeal a proposal, visit Development Services Center at City Hall or call (425) 452-6800. Comments on State Environmental Policy Act (SEPA) Determinations can be made with or without appealing the proposal within the noted comment period for a SEPA Determination. Appeal of the Decision must be received in the City's Clerk's Office by 5 PM on the date noted for appeal of the decision.

CONTENTS

I. Proposal Description 3

Site Description, Zoning, Land Use and Critical Areas 5

III. Consistency with Land Use Code Requirements: 9

IV. Public Notice and Comment 13

V. Summary of Technical Reviews 13

VI. State Environmental Policy Act (SEPA) 13

VII. Changes to proposal as a result of City review 15

VIII. Decision Criteria 16

IX. Conclusion and Decision 19

X. Conditions of Approval 19

Attachments

A. Habitat Assessment & Habitat Management Plan
B. Geological/Geotechnical Assessment
C. Civil and Landscape Drawings

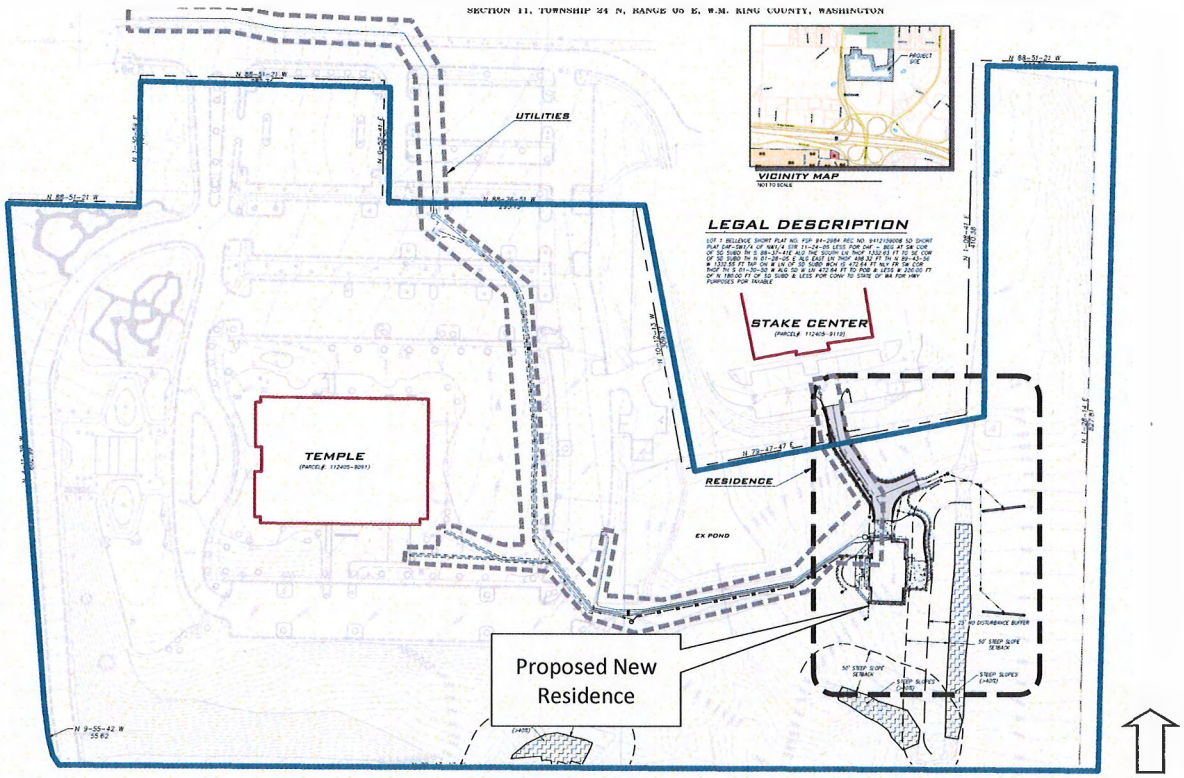
I. PROPOSAL DESCRIPTION

A. Proposal:

The applicant is requesting approval of a Critical Areas Land Use Permit (CALUP) to construct a residence for the Temple President on the Jesus Christ of Latter Day Saints (LDS) Temple campus. The LDS campus consists of two parcels – the 783,000 square foot parcel that is developed with the Temple building and surface parking (referred to in this report as the 'site'), and the 215,000 square foot parcel that is developed with the LDS Stake Center building and surface parking. The residence and the access driveway will be located entirely on the Temple site. However, access to the residence will be from the Stake Center parking lot to the north.

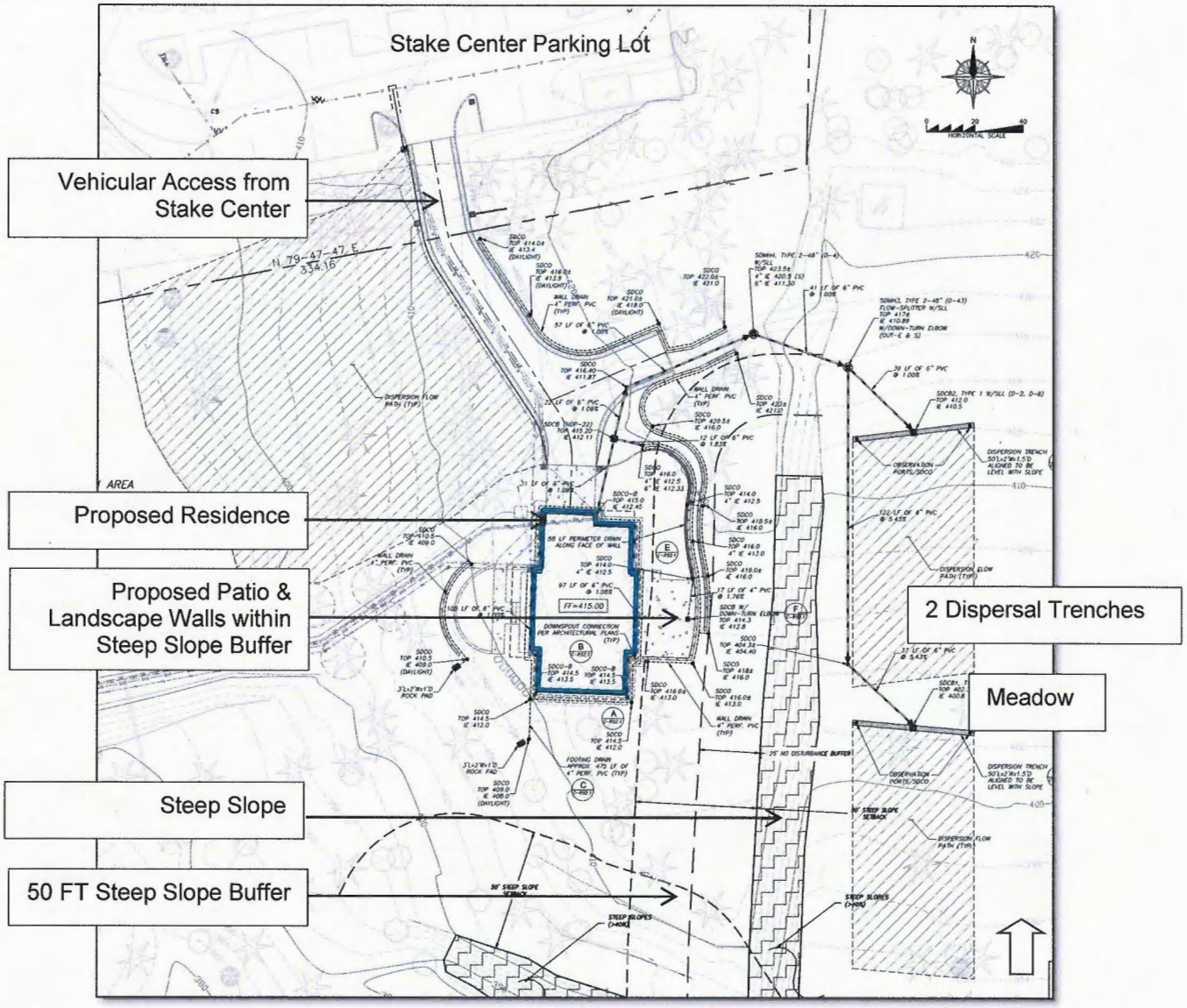
An open meadow exists along the eastern side of the site, and a steep slope runs along the western side of this meadow. While the new residence building will not be located in the 50-foot steep slope critical areas buffer, a patio and two, small landscape retaining walls in the rear of the house will intrude approximately 25 feet into the 50-foot wide buffer. The project will also require the removal of approximately 19 significant trees both in and out of the buffer in a currently undeveloped portion of the site (note - an additional 12 dead or dying trees will also be removed). The mature trees and undergrowth in this area provide habitat for species of local importance. Mitigation for the removal of trees and work within the buffer will consist of a robust planting of native vegetation in the buffer and in the wooded area along the southern façade of the house.

Proposal within the Temple Site



Storm detention for the residence and associated driveway will be provided via two dispersion trenches in the meadow and a dispersion flow area to the west of the new driveway. This system will not require any work within the steep slope critical area or the critical area buffer.

Project-Specific Site Plan



B. Process:

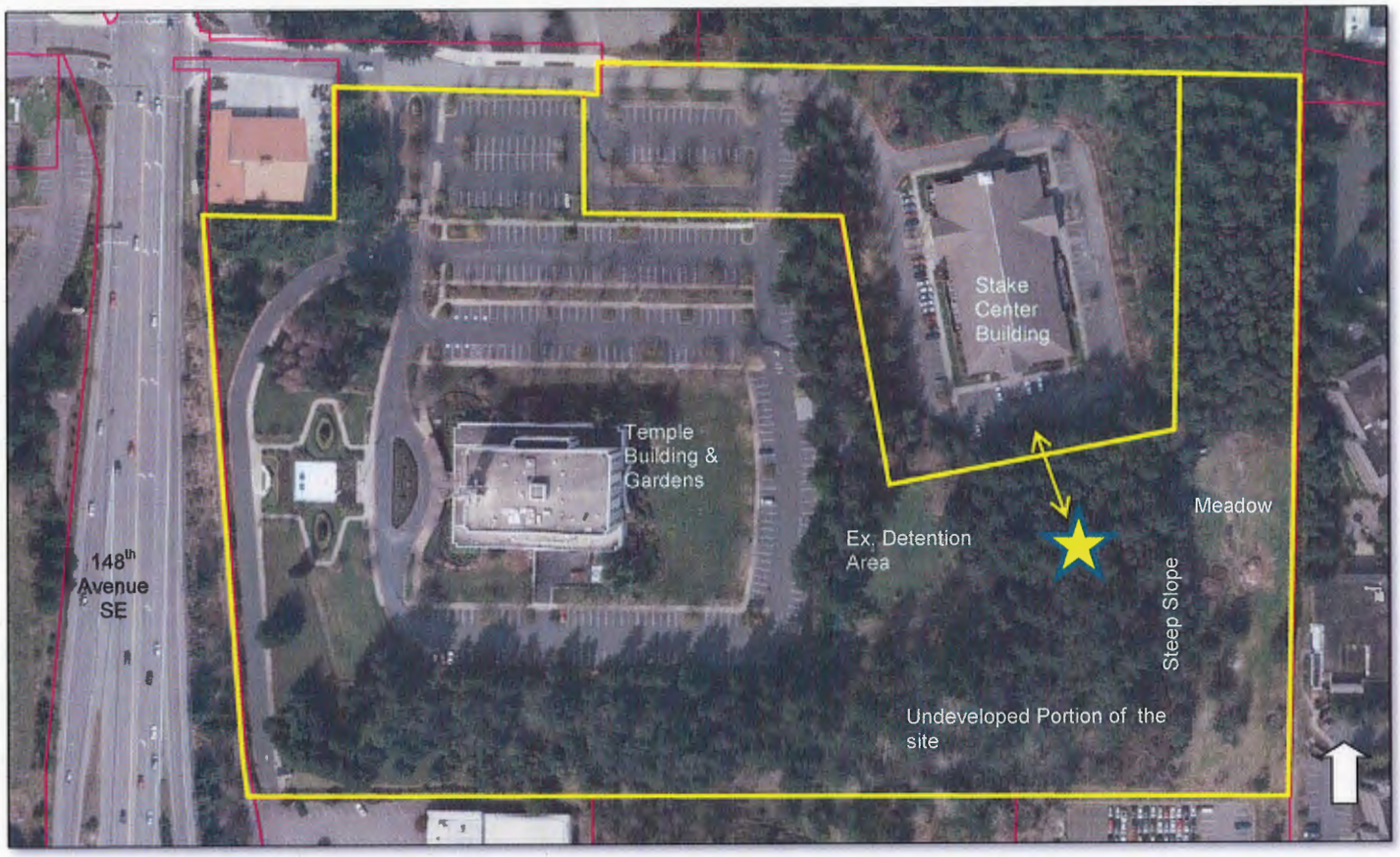
A Critical Area Land Use Permit (CALUP) and SEPA review are required to perform work within a steep slope buffer and habitat associated with species of local importance per Land Use Code (LUC) 20.30.P. The CALUP and SEPA Threshold Determination are both Process II decisions. Process II is an administrative process. The Environmental Coordinator issues the SEPA Threshold Determination and the Director of Development Services issues the Critical Areas Land Use decision. An appeal of any Process II decision is heard and decided upon by the City of Bellevue Hearing Examiner.

II. SITE DESCRIPTION, ZONING, LAND USE CONTEXT AND CRITICAL AREAS

A. Site Description

The location of the site lies within 19-acre LDS Seattle Temple campus, which is made up of the Temple site and the Stake Center parcel to the north. A large part of this irregularly-shaped site is developed with maintained lawns and gardens, parking lots, and the Temple building. Native habitat vegetation is located primarily along the southern and eastern portions of the property and a long open meadow runs in a north-south direction in the southeastern corner along the eastern property line.

Aerial Photograph of Site



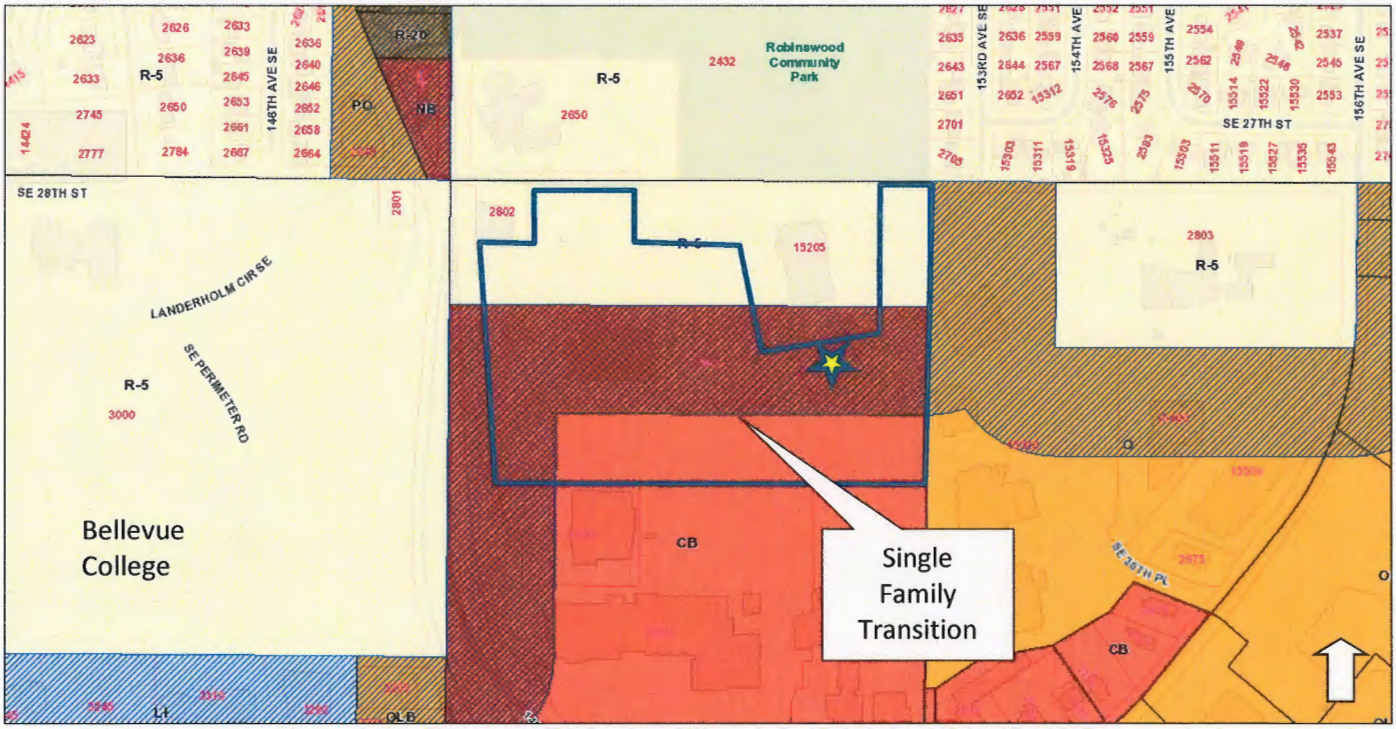
The proposed residence will be located on an undeveloped, wooded area near the northern property line with the Stake Center parcel. The critical area steep slope runs to the east of the proposed residence location along the meadow and the steep slope appears to be the result of past grading operations. The 50-foot top-of-slope buffer currently consists primarily of scattered Douglas fir (Pseudotsuga menziesii) and Madrone (Arbutus menziesii) trees. The understory consists primarily of dense salal with patches of blackberry and scattered hazelnut, huckleberry and sword fern. The steep slope is primarily vegetated with a scrubby understory of Himalayan blackberry and landscape debris.

Habitat features found in this portion of the Temple site consist primarily of scattered downed logs and a few snags. To the east of the slope is the open, mowed meadow with a few widely scattered trees. It is dominated by grasses and low weeds and is also used to store compost and landscape debris from the Temple gardens.

B. Zoning

The site is split-zoned. The majority of the site includes the existing Temple building and is within the CB (Community Business) land use district within the Eastgate Subarea. The Stake Center parcel and northern portions of the Temple site are primarily within the R-5 land use district. To the west, across 148th Avenue SE is Bellevue College; also in the R-5 single family land use district. To the east is the Office (O) land use district and to the south is a continuation of the CB district. The proposed residence and associated mitigation work all fall within the CB district. The Comprehensive Plan Designation is also CB.

Zoning Map



The residence building will also be located within a single-family Transition Area Design District. The purpose of the Transition Area is to provide a buffer between a single-family residential land use district and a land use district which permits development of a higher intensity. However, since the proposal is for a traditional, one-story single-family home and is not directly adjacent to any single-family neighborhoods, the requirements for development within a Transition Area per LUC 20.25B will not apply.

Adjacent Uses:

North: R-5 - LDS Stake Center Building and associated surface parking lots, St. Andrew's Lutheran Church, and Robinswood Park

South: CB - Michael's Toyota dealership, including showroom/service buildings, a parking garage and surface parking

East: O - Eastgate Office Park with mid-rise office buildings and surface parking lots

West: R-5 - Bellevue College's surface parking lot and undeveloped open space

C. Land Use Context

The Temple site lies in an area of Bellevue that has many disparate uses. To the east of the site are large office parks as well as the site of the future Airfield Park. To the northeast, there is an older single family neighborhood and Phantom Lake. To the north is Robinswood Park, which is characterized by a large stands of relatively undisturbed forest, sports fields and a pond. To the west is 148th Avenue SE – a major arterial with access on and off Interstate 90. Just to the west of 148th Avenue SE is Bellevue College, which is characterized in this location with large surface parking lots and areas of dense mature trees. To the south is another retail development which is dominated by a Toyota dealership and associated parking garage and surface parking.

Aerial View - Context

The proposal site, in conjunction with Robinswood Park to the north, Airfield Park and Phantom Lake to the northeast, and the wooded property at Bellevue College to the west form a semi-connected location for animal habitat and movement.

D. Critical Areas Functions and Values

1. Geologic Hazard Areas

Geologic hazards pose a threat to the health and safety of citizens when commercial, residential, or industrial development is inappropriately sited in areas of significant hazard. Some geologic hazards can be reduced or mitigated by engineering, design, or modified construction practices. When technology cannot reduce risks to acceptable levels, building in geologically hazardous areas is best avoided (WAC 365-190).

Steep slopes may serve several other functions and possess other values for the City and its residents. Several of Bellevue's remaining large blocks of forest are located in steep slope areas, providing habitat for a variety of wildlife species and important linkages between habitat areas in the City. These steep slope areas also act as conduits for groundwater, which drains from hillsides to provide a water source for the City's wetlands and stream systems. Vegetated steep slopes also provide a visual amenity in the City, providing a "green" backdrop for urbanized areas enhancing property values and buffering urban development.

LUC 20.25H.120 designates steep slopes of 40 percent or greater that have a rise of at least 10 feet and exceed 1,000 square feet in area as critical areas. Steep slopes also require a 50-foot wide critical area buffer, measured from the top-of-slope. Modifications to geologic hazard critical area buffers may be considered according to LUC 20.25H.120.B.3 as long as the modification meets the requirements of LUC 20.25H.125, which establishes criteria and performance standards for the modification of a critical area buffer associated with a geologic hazard area. The critical area buffer can only be modified with a critical areas report. Compliance with LUC 20.25.125 (Steep Slope Performance Standards) is discussed in Section III.B below and compliance with critical area report requirement is discussed in Section VIII below.

2. Habitat Associated with Species of Local Importance

Urbanization, the increase in human settlement density and associated intensification of land use, has a profound and lasting effect on the natural environment and wildlife habitat (McKinney 2002, Blair 2004, Marzluff 2005 Munns 2006), is a major cause of native species local extinctions (Czech et al 2000), and is likely to become the primary cause of extinctions in the coming century (Marzluff et al. 2001a). Cities are typically located along rivers, on coastlines, or near large bodies of water. The associated floodplains and riparian systems make up a relatively small percentage of land cover in the western United States, yet they provide habitat for rich wildlife communities (Knopf et al. 1988), which in turn provide a source for urban habitat patches or reserves. Consequently, urban areas can support rich wildlife communities. In fact, species richness peaks for some groups, including songbirds, at an intermediate level of development (Blair 1999, Marzluff 2005). Protected wild areas alone cannot be

depended on to conserve wildlife species. Impacts from catastrophic events, environmental changes, and evolutionary processes (genetic drift, inbreeding, colonization) can be magnified when a taxonomic group or unit is confined to a specific area, and no one area or group of areas is likely to support the biological processes necessary to maintain biodiversity over a range of geographic scales (Shaughnessy and O'Neil 2001). As well, typological approaches to taxonomy or the use of indicators present the risk that evolutionary potential will be lost when depending on reserves for preservation (Rojas 2007). Urban habitat is a vital link in the process of wildlife conservation in the U.S.

III. CONSISTENCY WITH LAND USE CODE REQUIREMENTS

A. Zoning District Dimensional Requirements:

The areas of disturbance on the site are located in the CB land use district zoning district. The new residence will be allowed as a subordinate use to the Temple. Per LUC 20.20.010, there are no structure setbacks within this district and the single story structure is well below the allowed 45-foot height limit. The proposal will be in compliance with all of the dimensional standards of LUC 20.20.010.

B. Critical Areas Requirements LUC 20.25H:

The City of Bellevue Land Use Code Critical Areas Overlay District (LUC 20.25H) establishes standards and procedures that apply to development on any site which contains in whole or in part any portion designated as critical area or critical area buffer. The performance standards below apply to this proposal:

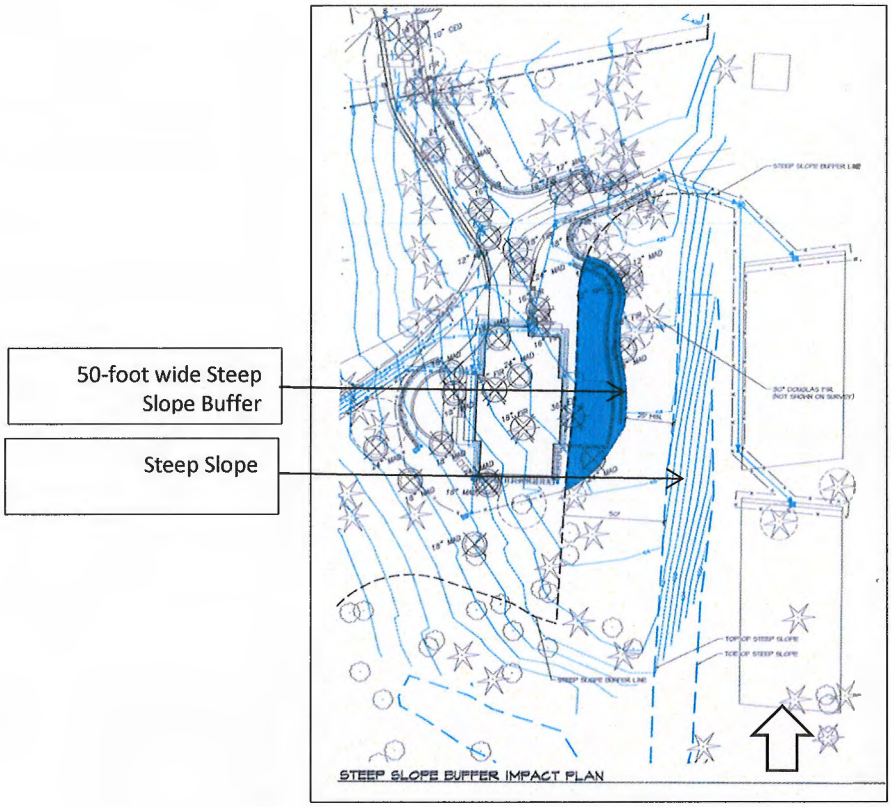
Geologic Hazard – Steep Slopes – 20.25H.125
Species of Local Importance – 20.25H.160

Consistency with Land Use Code Critical Areas Performance Standards

1. Consistency with Land Use Code Steep Slope Critical Areas Performance Standards – LUC 20.25H.125

Development within a steep slope critical area and/or the critical area buffers shall incorporate the following additional performance standards in design of the development, as applicable. The requirements for long-term slope stability shall exclude designs that require regular and periodic maintenance to maintain their level of function.

a. **Structures and improvements shall minimize alterations to the natural contour of the slope, and foundations shall be tiered where possible to conform to the existing topography;**
Response: As a result of City review, the residence building has been moved north from the originally proposed location to an area that is closer to existing development and has a more gentle, level grade; thereby requiring less clearing and grading for the one-story home. This also allowed the applicant to keep the building outside of the steep slope setback and buffer.



The landscaping along the west side (front) of the home has been reduced in size and two relatively short, tiered retaining walls with heights three feet or less will be used to reduce the amount of clearing and grading required for the home.

The backyard on the eastern (rear) side of the home has been reduced in size to consist primarily of a small patio and two small, tiered landscape walls. These walls will follow the natural contours and will not exceed 30 inches in height. The overall amount of disturbance within the steep slope buffer has been minimized to the greatest extent possible.

b. Structures and improvements shall be located to preserve the most critical portion of the site and its natural landforms and vegetation;
Response: The bulk of the proposal (driveway, residence building and retaining walls in the front of the residence) have all been relocated out of a more densely vegetated area of the site so that the residence building will not fall within the steep slope or steep slope buffer and fewer trees will need to be removed. Only the concrete patio and the two tiered landscape walls will be within the steep slope structure setback.

Although some trees will still need to be removed to accommodate the development, the residence is now located much closer to the parking lot for the Stake Center building and existing development, leaving a larger, contiguous area of undisturbed woodland habitat to the south.

c. The proposed development shall not result in a greater risk or a need for increased buffers on neighboring properties;
Response: The proposed location of the Temple residence will not result in a greater risk. Nor will it impact neighboring properties by requiring increased buffers. The Geological/Geotechnical Assessment (Attachment B), prepared by Gary A. Flowers, PLLC, indicates that the slopes are stable and that a 25-foot buffer from the top of the slope is conservative and appropriate for this project. The proposed maximum 25-foot intrusion into the 50-foot buffer will have no impact on the steep slope. The development will also not create any risk to neighboring properties.

d. **The use of retaining walls that allow maintenance of existing natural slope area is preferred over graded artificial slopes where graded slopes would result in increased disturbance as compared to use of retaining walls; and**
Response: Small tiered retaining walls that follow the natural topography have been proposed to reduce the overall amount of clearing and grading around the residence and to reduce the amount of disturbance within the steep slope structure setback.

e. **Development shall be designed to minimize impervious surfaces within the critical area and critical area buffer.**
Response: By relocating the residence from the originally proposed location, the applicant has significantly reduced the amount of driveway impervious surface by approximately 60% (110 feet in length versus the original 320 feet). The residence is now accessed from the north via a relatively short driveway segment. A front patio was also eliminated.

f. **Where change in grade outside the building footprint is necessary, the site retention system should be stepped and re-grading should be designed to minimize topographic modification. On slopes in excess of 40 percent, grading for yard area may be disallowed where inconsistent with the criteria;**
Response: Small tiered landscape/retaining walls that work with the natural topography have been proposed to reduce the overall amount of clearing and grading around the residence and to reduce the amount of disturbance within the steep slope buffer and overall topographic modification.

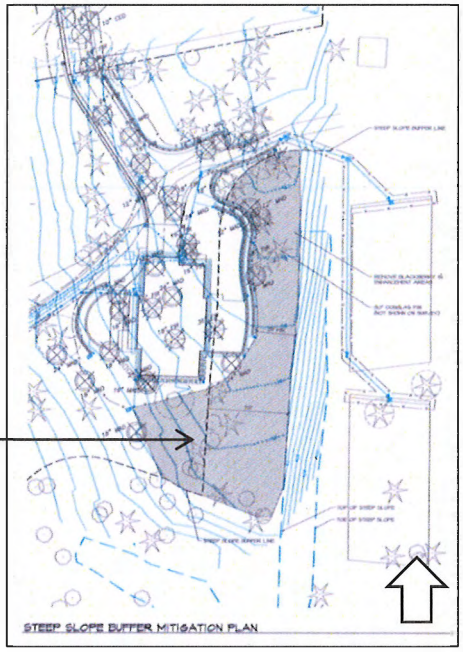
g. **Building foundation walls shall be utilized as retaining walls rather than rockeries or retaining structures built separately and away from the building wherever feasible. Freestanding retaining devices are only permitted when they cannot be designed as structural elements of the building foundation.**
Response: The Temple residence is being built specifically for an older, retired couple. The home must be one level and have area around the residence that is accessible without the need for stairs. In addition, some outdoor gathering space is necessary for Temple functions. Because of this, the area immediately around the foundation is relatively flat for about five feet with patio space in the rear of the house. Beyond that, the slopes are graded to meet the natural topography and in some cases, short tiered retaining or landscape wall are used to minimize overall topographic disturbance.

h. **On slopes in excess of 40 percent, use of pole type construction which conforms to existing topography is required where feasible. If pole-type construction is not technically feasible, the structure must be tiered to conform to the existing topography and minimize topographic modification;**
Response: No construction is proposed on the steep slopes.

i. **On slopes in excess of 40 percent, piled deck support structures are required where technically feasible for parking or garages over fill based**

construction types;
Response: Does not apply to this proposal.

j. Areas of new permanent disturbance and all areas of temporary disturbance shall be mitigated and/or restored pursuant to a mitigation and restoration plan meeting the requirements of LUC Section 25.25H.210.



Proposed area of Mitigation Planting – buffer and wooded area south of residence (shaded area)

Response: To mitigate for the disturbance within a steep slope critical area buffer associated with the construction of the patio and landscape walls and the removal of 19 healthy trees, the applicant has proposed mitigation planting with native species to enhance the native vegetation and habitat in the steep slope buffer. This Steep Slope Buffer Mitigation Landscape Plan will also extend to undeveloped areas south of the new residence. Mitigation work will also include the removal of noxious species (blackberries) within this designated enhancement/mitigation area.

Refer to the attached Steep Slope Buffer Mitigation Landscape Plan in the Habitat Assessment & Habitat Management Plan (Attachment A) and Conditions of Approval regarding rainy season restrictions, landscape maintenance surety device, and maintenance and monitoring plan in Section X of this report.

2. Consistency with Species of Local Importance Performance Standards – LUC 20.25H.160

The applicant has provided a Habitat Assessment and Habitat Management Plan, prepared by Altmann Oliver Associates (Attachment A to this report). This analysis is consistent with the standards in LUC 20.25H.160 and 165. The Steep Slope Impact and Mitigation Plan and the Vegetation Management Plan are included as Appendix C to the Habitat Assessment report. Consistency with Critical Areas Report LUC 20.25H.230

The applicant has supplied the applicable elements of a Critical Areas Report within the submitted Habitat Assessment & Habitat Management Plan, Attachment A and the Geological/Geotechnical Assessment, Attachment B. Both assessments were prepared by consultants who are qualified professionals. Work to be performed in the steep slope buffer under this critical areas land use permit was recommended in these both of these reports.

The project has been reviewed in accordance with the checklist for modification of buffers in geological hazard critical areas and critical area buffer. The proposal has been designed in accordance with the recommendations of the Geological/Geotechnical Assessment found in the Critical Areas Report to ensure that it will not compromise the slope stability. These improvements will most likely provide an increase in slope stability, improved stormwater infiltration, and more appropriate wildlife habitat within the critical area than is currently provided by the slopes, which are either barren or covered with noxious weeds.

3. LUC 20.25H.135 – Additional Provisions for Landslide Hazards and Steep Slopes

Under a separate Single Family Building Permit associated with this Critical Areas Land Use Permit, the applicant will submit a plan that delineates limits of clearing and grading as well as erosion and sedimentation control techniques to be used during construction of the residence. **Refer to Condition of Approval regarding the storm water pollution prevention plan and Single Family Building Permit in Section X of this report.**

IV. PUBLIC NOTICE AND COMMENT

Application Date:	December 3, 2012
Public Notice (500 feet):	January 3, 2013
Minimum Comment Period:	January 17, 2013

The Notice of Application for this project was published in the City of Bellevue weekly permit bulletin on January 3, 2013. It was mailed to property owners within 500 feet of the project site. No comments have been received from the public.

V. SUMMARY OF TECHNICAL REVIEWS

Clearing and Grading: The Clearing and Grading Division of the Development Services Department has reviewed the proposed site development for compliance with Clearing and Grading codes and standards. The Clearing and Grading staff found no issues with the proposed development and has approved the application. A construction stormwater pollution prevention plan (CSWPPP) will need to be submitted under the Single Family Building Permit (BS Permit). **Refer to Condition of Approval regarding the construction stormwater pollution prevention plan (CSWPPP) in Section X of this report.**

VI. STATE ENVIRONMENTAL POLICY ACT (SEPA)

The environmental review indicates no probability of significant adverse environmental impacts occurring as a result of the proposal. The Environmental Checklist submitted with the application adequately discloses expected environmental impacts associated with the project. The City codes and requirements, including the Clear and Grade Code, Utility Code, Land Use Code, Noise Ordinance, Building Code and other construction codes are expected to mitigate potential environmental impacts.

Therefore, issuance of a Determination of Non-Significance (DNS) is the appropriate threshold determination under the State Environmental Policy Act (SEPA) requirements.

A. Earth and Water

Earth moving will be confined to the limits of grading that will be shown on all submittal drawings for the Single Family Building Permit. No grading will occur on the steep slopes. Any grading closer than 25 feet to the top of bank must be done by hand.

A temporary erosion and sedimentation control plan is required as part of the single Family Building Permit submittal. It will need to address all requirements for restoring the site as well as erosion and sedimentation management practices. Erosion and sediment control best management practices include, but are not limited to, the installation of temporary silt fencing around the work area and covering exposed soils to prevent migration of soils.

B. Animals

A Habitat Assessment & Habitat Management Plan (Attachment A) found the site to have a habitat score of 38, based on the City of Bellevue's Draft Functional Assessment Tool for Upland Habitat. This score is due to the presence of a coniferous forest with large trees as well as the adjacent off-site Robinswood Park to the north. Sites with score of 26 to 40 provide both actual habitat and the opportunity for wildlife to use the habitat on the site.

The Assessment report also determined that of the 23 identified species of local importance within Bellevue, none appear to have a primary association with habitat on or immediately adjacent to the project site. However, since the forested portions of the site do provide potential habitat for species of local importance, these area needed to be addressed in a Habitat Management Plan. In addition, the applicant focused on the pileated woodpecker since it would be considered a keystone species for the forested portions of the property. The Habitat Management Plan for the Pileated woodpecker is found in Section 5.0 of the Habitat Assessment & Habitat Management Plan (Attachment A). Recommendations include retaining the largest patches of existing woodland outside of the clearing limits for the proposed project and implementing the Steep Slope Buffer Mitigation Planting Plans (Drawings L-2 and L-3 is the Assessment report) and the Vegetation Management Plan (Appendix C in the Assessment report). The implementation of these plans will be a Condition of this approval. **Refer to Attachment A and Conditions of Approval regarding the Steep Slope Buffer Mitigation Planting Plans and the Vegetation Management Plan in Section X of this report.**

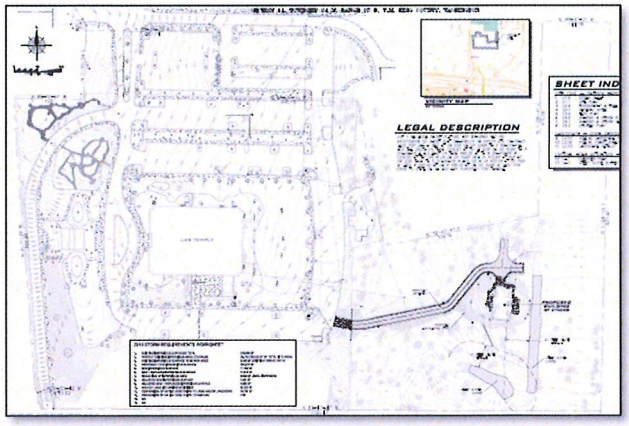
C. Plants

Mitigation for temporary and permanent disturbance of the steep slope buffer and removal of 19 healthy trees will include replanting of all areas of disturbance with native vegetation and will be approved pursuant to a submitted Vegetation Management Plan (Attachment A) and the landscape plans for the area directly around the residence (Drawings L1.01, 1.02, 2.01, 2.02 and 2.03), prepared by CORE design (Attachment C). Final review and approval of these plans will take place during the review of the Single Family Building Permit (BS Permit). **Refer to Attachment B and Conditions of Approval regarding the Single Family Building Permit,**

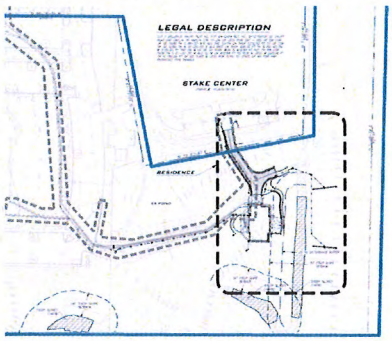
maintenance and monitoring plan, maintenance surety device, and irrigation and maintenance in Section X of this report.

Construction noise will be limited by the City's Noise Ordinance (Chapter 9.18 BCC) which regulates construction hours and noise levels. **Refer to Condition of Approval regarding noise control in Section X of this report.**

VII. CHANGES TO PROPOSAL AS A RESULT OF CITY REVIEW



Original Proposal with long driveway and building within the steep slope buffer.



Current Proposal – reduced driveway and overall impervious surface. Building outside of buffer.

After extensive review, the applicant decided to redesign their proposal to reduce the amount of overall disturbance and new impervious surfaces. Originally, the residence building and the eastern patio were both within the steep slope buffer and a long driveway was required for access from the Temple parking lot. A minimum of five stormwater trenches and dispersal areas were scattered across the woodland, creating large areas of vegetation disturbance.

Changes to the proposal include the following:

- The residence was moved to the north approximately 15 feet to an area with a more level topography. The residence building is now completely out of the 50-foot steep slope buffer. This reduced the overall amount of land disturbance, tree removal, and new impervious surfaces.
- The driveway access and driveway was relocated to the adjacent parcel (part of the LDS site), thus reducing the length of driveway from 320 feet to approximately 110 feet. This reduced the number of trees to be removed, the overall amount of new impervious surface, and overall surface disturbance.
- Five stormwater dispersal trenches have been removed from the wooded area south and west of the proposed residence. Stormwater will now be collected into one storm collection system outside of any critical area or critical area buffer. Stormwater will be diverted easterly via two surface dispersal discharge systems in the meadow. This new design avoids large areas of disturbance in the undeveloped, wooded areas around the residence.

VIII. DECISION CRITERIA

A. Critical Areas Report Decision Criteria- General Criteria LUC 20.25H.255.A

The Director may approve, or approve with modifications, the proposed modification where the applicant demonstrates:

1. The modifications and performance standards included in the proposal lead to levels of protection of critical area functions and values at least as protective as application of the regulations and standards of this code;

Response: Through native landscape plantings required as mitigation for disturbance to the steep slope buffer and shown on the Steep Slope Buffer Mitigation Plan, the steep slope critical area will not only be protected, but will be enhanced by the removal of noxious species and the replanting with native vegetation. In addition, these native plantings will also increase the habitat functions within the wooded area of the site south of the residence as well as within the steep slope buffer. Overall, the proposed modifications and mitigation measures will be as protective as the application of the regulations and standards of the code.

2. Adequate resources to ensure completion of any required mitigation and monitoring efforts;

Response: Adequate resources are available to complete the project. In addition, surety devices and a maintenance and monitoring plan will be in place to ensure completion and viability of the project. **Refer to Conditions of Approval regarding the Single Family Building Permit, maintenance surety devices, and maintenance and monitoring plan in Section X of this report.**

3. The modifications and performance standards included in the proposal are not detrimental to the functions and values of critical area and critical area buffers off-site; and

Response: The proposed development, which will include mitigation plantings to enhance the steep slope buffer, is not adjacent to and will not impact any critical areas off-site.

4. The resulting development is compatible with other uses and development in the same land use district.

***Response*:** The resulting development is compatible with the surrounding uses on the Temple campus and in surrounding CB and R-5 land use districts.

B. Critical Areas Report Decision Criteria - Proposals To Reduce Regulated Critical Area Buffer LUC 20.25H.255.B

The Director may approve, or approve with modifications, a proposal to reduce the regulated critical area buffer on a site where the applicant demonstrates:

1. The proposal includes plans for restoration of degraded critical area or critical area buffer functions which demonstrate a net gain in overall critical area or critical area buffer functions; and

2. The proposal includes plans for restoration of degraded critical area or critical area buffer functions which demonstrate a net gain in the most important critical area or critical area buffer functions to the ecosystem in which they exist;

Response: The proposed mitigation plan proposes to remove noxious plants from the existing steep slope buffer and replant with a robust mix of native trees, shrubs and groundcovers.

Replanting of the buffer as mitigation for buffer disturbance with native plants will result in a net gain in overall critical area buffer habitat functions as the buffer currently is in a somewhat degraded condition with an understory of blackberries.

Per the submitted Geological/Geotechnical Assessment (Attachment B), the steep slope is stable. The proposed additional plantings will help to improve the overall stability of the slope and the buffer and will provide improved habitat.

3. The proposal includes a net gain in stormwater quality function by the critical area buffer or by elements of the development proposal outside of the reduced regulated critical area buffer;

Response: The project has been significantly redesigned to remove five dispersal trenches from the wooded area of the site, consolidate them into two dispersal trenches, and place them outside of the critical area buffer in the open meadow to the east of the slope. In addition, the proposed impervious service area of the driveway has been reduced by approximately 60% by accessing the residence from the Stake Center parking lot. These changes, in combination with enhanced native plantings within the buffer and wooded areas of the site will result in a net gain in stormwater quality function.

4. Adequate resources to ensure completion of any required restoration, mitigation and monitoring efforts;

Response: Adequate resources are available to complete the project. In addition, assurance devices and a maintenance and monitoring plan will be in place to ensure completion and viability of the project. **Refer to Conditions of Approval regarding the Single Family Building Permit, maintenance surety devices, and maintenance and monitoring plan in Section X of this report.**

5. The modifications and performance standards included in the proposal are not detrimental to the functions and values of critical area and critical area buffers off-site; and

Response: The proposed development, which will include mitigation plantings to enhance the steep slope buffer, is not adjacent to and will not impact any critical areas off-site.

6. The resulting development is compatible with other uses and development in the same land use district.

Response: The proposed residence building and the enhanced native landscaping around the building are compatible with the other uses within the surrounding CB and R-5 land use districts.

C. Critical Areas Land Use Permit Decision Criteria 20.30P

The Director may approve or approve with modifications an application for a critical areas land use permit if:

1. The proposal obtains all other permits required by the Land Use Code;

Response: As conditioned, the applicant will be required to obtain a Single Family Building Permit (BS Permit) for any proposed site work as well as for the residential building itself. Final approval of the Steep Slope Buffer Mitigation Plan will take place under this permit. A separate building permit will be required for construction of the residence. **Refer to Condition of Approval regarding the Single Family Buildng Permit in Section X of this report.**

2. The proposal utilizes to the maximum extent possible the best available construction, design and development techniques which result in the least impact on the critical area and critical area buffer;

Response: The proposed Steep Slope Buffer Mitigation Plan and Vegetation Management Plan will provide vegetative cover on a steep slope, thereby preventing erosion, maintaining slope stability, and providing additional vegetated habitat.

3. The proposal incorporates the performance standards of Part 20.25H to the maximum extent applicable, and;

Response: Refer to Section III.B of this report for a discussion of how this proposal has met the required performance standards.

4. The proposal will be served by adequate public facilities including street, fire protection, and utilities; and;

Response: The proposal is currently served by adequate public facilities and this proposal would not require any additional services.

5. The proposal includes a mitigation or restoration plan consistent with the requirements of LUC Section 20.25H.210; and

Response: The proposed mitigation measures in the Steep Slope Buffer Mitigation Plan are consistent with LUC 20.25H.210. A maintenance surety device will be required to be submitted by the applicant prior to the Single Family Building Permit issuance. The surety will be held for a period of 5 years from the date of inspection to ensure plant survival. In addition, the applicant must comply with the approved Vegetation Management Plan and submit a maintenance and monitoring report to Land Use each year for 5 years to demonstrate compliance

with the Plan. **Refer to Condition of Approval regarding the clearing and grading permit, maintenance and monitoring plan, landscape maintenance surety device, and irrigation and maintenance in Section X of this report.**

6. The proposal complies with other applicable requirements of this code.

Response: As discussed in this report, the proposal complies with all other applicable requirements of the Land Use Code.

IX. CONCLUSION AND DECISION

After conducting the various administrative reviews associated with this proposal, including Land Use Code consistency, SEPA, City Code and Standard compliance reviews, the Director of Development Services does hereby **Approve the proposal with Conditions. Approval of this Critical Areas Land Use Permit does not constitute a permit for construction.**

Expiration of Approval: In accordance with LUC 20.30P.150, a Critical Areas Land Use Permit automatically expires and is void if the applicant fails to file for a Clearing and Grading Permit or other necessary development permits within one year of the effective date of the approval.

X. CONDITIONS OF APPROVAL

The applicant shall comply with all applicable Bellevue City Codes and Ordinances including but not limited to:

Applicable Ordinances	Contact Person
Clearing and Grading Code- BCC 23.76	Tom McFarlane, 425-452-5207
Land Use Code- BCC 20.25H/BCC Title 20	Sally Nichols, 425-452-2727
Noise Control- BCC 9.18	Sally Nichols, 425-452-2727

The following conditions are imposed under the Bellevue City Code or SEPA authority referenced:

1. Rainy Season Restrictions

Due to the proximity to steep slopes, no clearing and grading activity may occur during the rainy season, which is defined as November 1 through April 30, without written authorization of the Development Services Department. Should approval be granted for work during the rainy season, increased erosion and sedimentation measures, representing the best available technology must be implemented prior to beginning or resuming site work.

AUTHORITY: Bellevue City Code 23.76.093.A,
REVIEWER: Tom McFarlane, Clearing and Grading

2. **Noise Control**
Noise related to construction is exempt from the provisions of BCC 9.18 between the hours of 7 am to 6 pm Monday through Friday and 9 am to 6 pm on Saturdays, except for Federal holidays and as further defined by the Bellevue City Code. Noise emanating from construction is prohibited on Sundays or legal holidays unless expanded hours of operation are specifically authorized in advance. Requests for construction hour extension must be done in advance with submittal of a construction noise expanded exempt hours permit.

AUTHORITY: Bellevue City Code 9.18
REVIEWER: Sally Nichols, Land Use

3. **Storm Water Pollution Prevention Plan**
To ensure contaminated stormwater or construction-related runoff does not pollute adjacent surface water, a construction stormwater pollution prevention plan (CSWPPP) is required. The CSWPPP outline should be generally consistent with the SWPPP requirements of the National Pollutant Discharge Elimination System (NPDES) General Storm water Permit for Construction Activities.

AUTHORITY: Clearing and Grading Code BCC 23.76
REVIEWER: Tom McFarlane, Development Services Department

4. **Single Family Building Permit (BS Permit)**
Approval of this Critical Areas Land Use Permit does not constitute an approval of a construction permit. Application for a Single Family Building Permit (BS Permit) must be approved. The BS permits must include all site work associated with the new residence.

In addition, as part of the BS Permit, the applicant must submit a Final Landscape Plan, Steep Slope Buffer Mitigation Plan, Vegetation Management Plan, and Tree Retention Plan and ensure that these plans address any applicable Conditions of this approval.

AUTHORITY: LUC 20.30P.140
REVIEWER: Sally Nichols, Land Use

5. **Geotechnical Recommendations**
All site work within the critical area buffer shall comply with the recommendations and performance standards found in the project Geological/Geotechnical Assessment, prepared for the applicant by Gary A. Flowers, PPLC, dated November 30, 2012 (Attachment B).

AUTHORITY: BCC 23.76 and LUC 20.30P.140
REVIEWER: Tom McFarlane, Clearing and Grading
Sally Nichols, Land Use

6. **Maintenance and Monitoring Plan**
The applicant shall hire a qualified professional to design and implement a maintenance and monitoring plan. The contractor shall submit documentation

each year for five years to the Land Use Division under this Critical Areas Land Use Permit #12-131861-LO to demonstrate compliance with the conditions of this report and the procedures outlined in the approved Vegetation Management Plan dated June 26, 2013.

Performance standards shall include, but not be limited to, the following:

1) The vegetation enhancement area will contain at least six (6) native plant species.
2) There will be 100% survival of all planted species in the enhancement area at the end of the first year.
3) Following year 1, success will be based on an 80% survival rate for years 2 through 5.
4) Exotic/invasive species will be maintained at levels below 20% total cover in all planted areas.

In addition, a Land Use inspection will be required to inspect initial installation and maintenance of the irrigation and landscape and will be required once a year for each of the four remaining years to ensure establishment of the plant material and adherence to the Maintenance and Monitoring Plan.

The necessary documentation outlined in the Maintenance and Monitoring Plan shall be sent each year to the following:

City of Bellevue
Development Services Department/Land Use Division
c/o Sally Nichols, Planner
P.O. Box 90012
Bellevue, WA 98009-9012

AUTHORITY: LUC 20.25H.220
REVIEWER: Sally Nichols, Land Use

7. Landscape Maintenance Surety Device

Based on a cost estimate amounting to 20 percent of the cost of labor and materials for all landscape work that must be submitted to Land Use, a maintenance surety device or construction bond will be required prior to Single Family Building Permit issuance. The maintenance surety will be released at the end of the 5-year monitoring period. After 5 years, an final inspection by Land Use staff will be required to release the surety or bond. Staff will need to find that the plants are in a healthy and growing condition for the surety to be released. Release of the surety or bond is also contingent upon successful yearly submittal of the monitoring documentation outlined in the Monitoring section of the Habitat Management Plan.

AUTHORITY: Land Use Code 20.30P.140 and 160
REVIEWER: Sally Nichols, Land Use

8. Irrigation and Maintenance

It will be the responsibility of the applicant to properly maintain and *irrigate* all new plantings associated with the new residence for a ***minimum*** of two years, as outlined on Sheet L-3 of 3 – Steep Slope Buffer Mitigation Plan, prepared by

Altman Oliver Associates and dated June 19, 2013, to ensure plant establishment.

The applicant shall submit an Irrigation Plan, prepared by a qualified professional, as part of the Single Family building permit.

AUTHORITY: LUC 20.25H.220
REVIEWER: Sally Nichols, Land Use

Attachments:

A. Habitat Assessment & Habitat Management Plan, prepared by Altmann Oliver Associates, LLC and revised June 26, 2013.
B. Geological/Geotechnical Assessment prepared by Gary A. Flowers, PLLC and dated November 30, 2012.
C. Additional Project Drawings prepared by Patrick Harron and Associates and Core Design.

Attachment A

Habitat Assessment & Habitat Management Plan

Altmann Oliver Associates, LLC

PO Box 578 Carnation, WA 98014 Office (425) 333-4535 Fax (425) 333-4509

AOA

Environmental
Planning &
Landscape
Architecture

HABITAT ASSESSMENT & HABITAT MANAGEMENT PLAN

LDS TEMPLE RESIDENCE
(PARCEL 112405-9091)
BELLEVUE, WASHINGTON

Prepared For:

PATRICK HARRON & ASSOCIATES, LLC
14900 Interurban Ave. S., Suite 279
Seattle, WA 98168

Received
DEC 12 2013
Permit Processing
City of Bellevue

June 7, 2012
Revised November 30, 2012
Revised June 26, 2013

Table Of Contents

	Page
1.0 INTRODUCTION	1
2.0 GENERAL PROPERTY DESCRIPTION AND LAND USE	1
3.0 METHODOLOGY	1
4.0 WILDLIFE HABITAT ASSESSMENT	2
4.1 Description of Vegetation on and Adjacent to the Site	2
4.2 Wildlife Species of Local Importance	2
4.3 Impacts to Wildlife Species of Local Importance	5
5.0 HABITAT MANAGEMENT PLAN FOR PILEATED WOODPECKER	7
References	

List of Figures

- LDS Bellevue Zone C Habitat Types
- Aerial Overlay With Proposed Project

List of Drawings

- L-1 Overview Plan
- L-2 Steep Slope Buffer Impact Plan
- L-3 Steep Slope Buffer Mitigation Plan

List of Appendices

- Appendix A: Draft Functional Assessment Tool for Upland Habitat
- Appendix B: WDFW Management Recommendations for Washington's Priority Species Volume 4: Birds – Pileated Woodpecker
- Appendix C: Vegetation Management Plan for Steep Slope Buffer Mitigation

HABITAT ASSESSMENT &
HABITAT MANAGEMENT PLAN
For Proposed
LDS TEMPLE RESIDENCE (PARCEL 112405-9091)
BELLEVUE, WASHINGTON

June 7, 2012
Revised June 26, 2013

1.0 INTRODUCTION

This report is the result of wildlife habitat assessment on the approximately 18-acre LDS Temple campus located in the City of Bellevue, Washington. The site is the location of a proposed Temple President residence associated with the Temple property. In addition, although not currently designed, a proposed future maintenance building would also be constructed in the southeastern portion of the property (**Drawing L-1**).

The primary purpose of this report is to: 1) describe the wildlife habitat on the property and 2) identify any potential impacts to the 23 species of local importance as designated in LUC 20.25H.150.

2.0 GENERAL PROPERTY DESCRIPTION AND LAND USE

The LDS campus site is located at 2808 – 148th Avenue SE and consists of Tax Parcel 112405-9091 (Section 11, Township 24N, Range 5E W.M.). Existing development on the campus includes the LDS Temple structure, associated parking areas, and maintained gardens and lawn. Approximately 25% of the site currently consists of impervious surfaces.

Undeveloped forested areas are located in the southern and eastern portions of the property and the southeastern corner of the site includes a pasture and landscape debris storage area. No wetlands or streams were identified on the site.

Surrounding land use includes commercial and retail developments to the south and east, 148th Ave. SE to the west and Robinswood Park to the north.

3.0 METHODOLOGY

A habitat assessment was conducted on March 1, 2012 following the general methodology outlined in *Using the Bellevue Urban Wildlife Habitat Functional Assessment Model* (revised February 2010).

As part of the habitat assessment, a wetland reconnaissance was conducted using the methodology outlined in the *Washington State Wetlands Identification and Delineation Manual* (1997) and the 2010 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0).* No wetlands were identified on the site during the reconnaissance.

4.0 WILDLIFE HABITAT ASSESSMENT

The project site has a numerical score of 38 based on the City of Bellevue's *Draft Functional Assessment Tool for Upland Habitat* (**Appendix A**). In general, sites with scores of 26 to 40 "provide both actual habitat and likely the opportunity for wildlife to use the habitat on the site". The property received high scores for the presence of a coniferous forest with large trees on the site as well as the adjacent off-site Robinswood Park. Limiting factors included the large amount of maintained vegetation associated with the Temple and the site's separation from off-site habitat areas by a chain-link fence and pedestrian trail. Robinswood Park off-site to the north is identified as a priority habitat on the Washington Department of Fish and Wildlife Priority Habitat and Species database (PHS)

4.1 Description of Vegetation on and Adjacent to the Site

Vegetation on the majority of the site consists of maintained lawn and gardens associated with the Temple. Native habitats on the property are located in the eastern portion of the site and along the site's southern perimeter. Most of the native habitat on the property consists of unevenly aged upland forest dominated by a nearly closed canopy of Douglas fir (*Pseudotsuga menziesii*) and madrone (*Arbutus menziesii*). Additional canopy trees included widely scattered western hemlock (*Tsuga heterophylla*), western red cedar (*Thuja plicata*), red alder (*Alnus rubra*), big-leaf maple (*Acer macrophyllum*), and black cottonwood (*Populus trichocarpa*).

Understory vegetation within the forested portion of the site consisted primarily of dense salal (*Gaultheria shallon*) with patches of Himalayan blackberry (*Rubus armeniacus*) and scattered hazelnut (*Corylus cornuta*), Indian plum (*Oemleria cerasiformis*), tall Oregongrape (*Mahonia aquifolium*), ocean spray (*Holodiscus discolor*), red huckleberry (*Vaccinium parvifolium*), evergreen huckleberry (*Vaccinium ovatum*), and sword fern (*Polystichum munitum*).

Habitat features within the forested portions of the property were relatively sparse and consisted primarily of scattered down logs with few snags observed. No raptors or raptor nests were observed during the field investigations.

The southeastern portion of the property consists of a periodically mowed pasture with widely scattered trees that is used to store compost and landscape debris.

4.2 Wildlife Species of Local Importance

Twenty three (23) species have been designated by the City of Bellevue as species of local importance (LUC 20.25H.150). The potential of site utilization by each species is briefly described below:

- Bald eagle (*Haliaeetus leucocephalus*): site not located within Bald Eagle Buffer Management Zone per PHS data. Some potential occasional perching opportunity within larger on-site trees possible, but does not have a primary association with habitat on or immediately adjacent site. Primary Association: no.

- Peregrine falcon (*Falco peregrinus*): generally associated with coastal cliffs and shorelines, but also use large buildings in city center. Use of project site unlikely. Primary Association: no.

- Common Loon (*Gavia immer*): no presence - highly aquatic species associated with large water bodies. Primary Association: no.

- Pileated woodpecker (*Dryocopus pileatus*): Pileated woodpeckers generally inhabit mature and old-growth forests, and second-growth forests with large snags and fallen trees. The range of the species encompasses all of the forested areas of the state. Although typically found in larger forested tracts, they are known to occur in suburban habitats as well. Their key breeding habitat need is the presence of large snags or decaying live trees for nesting, as this species generally excavates a new nest cavity each year. The breeding and nesting periods of the pileated woodpecker extends from late March to early July. Although foraging potential is present, no pileated woodpecker nests were observed on the site during the field investigation and the lack of a significant concentration of large snags limits the nesting potential of this species. Primary Association: no.

- Vaux's swift (*Chaetura vauxi*): Vaux's swifts are strongly associated with old growth and mature forests throughout the state and are highly dependent on large hollow trees and snags for breeding and roosting. Although some potential for foraging, unlikely nesting or primary association on the site due to lack of large snag concentration. Primary Association: no.

- Merlin (*Falco columbarius*): unlikely presence – generally require coastal or high elevation forests. Primary Association: no.

- Purple martin (*Progne subis*): unlikely presence – generally require cavities near or over water for nesting. Primary Association: no.

- Western grebe (*Aechmophorus occidentalis*): no presence – highly aquatic species associated with large water bodies. Primary Association: no.

- Great blue heron (*Ardea herodias*): unlikely presence - some very limited potential foraging possible within pasture, but no roosts observed on or adjacent site. Primary Association: no.

- Osprey (*Pandion haliaetus*): unlikely presence - perch availability not near large water body. Primary Association: no.

- Green heron (*Butorides striatus*): unlikely presence – not near wetland or waterbody. Primary Association: no.

- Red-tailed hawk (*Buteo jamaicensis*): potential utilization of site for occasional perching, although no nests observed and not near significant open expanse. Primary Association: no.

- Western big-eared bat (*Plecotus townsendii*): potential presence, but no known nearby hibernacula or caves so not considered a habitat of primary association. Primary Association: no.

- Keen's myotis (*Myotis keenii*): potential presence, but generally associated with larger coniferous forests so not considered a habitat of primary association. Primary Association: no.

- Long-legged myotis (*Myotis volans*): potential presence, but generally associated with larger coniferous forests so not considered a habitat of primary association. Primary Association: no.

- Long-eared myotis (*Myotis evotis*): potential presence, but generally associated with larger coniferous forests so not considered a habitat of primary association. Primary Association: no.

- Oregon spotted frog (*Rana pretiosa*): no presence - believed to be extirpated from nearly all of western Washington and no ponding or wetlands on the site. Primary Association: no.

- Western toad (*Bufo boreas*): presence possible but no breeding potential and not considered habitat of primary association. Primary Association: no.

- Western pond turtle (*Clemmys marmorata*): no presence - no ponding or wetlands on site and no known nearby populations. Primary Association: no.

- Chinook (*Oncorhynchus tshawytscha*): no presence – no streams on the site. Primary Association: no.

- Bull trout (*Salvelinus confluentus*): no presence – no streams on the site. Primary Association: no.

- Coho salmon (*Oncorhynchus kisutch*): no presence – no streams on the site. Primary Association: no.

- River lamprey (*Lampetra ayresi*): no presence – no streams on the site. Primary Association: no.

None of the 23 species of local importance appear to have a primary association with habitat on or immediately adjacent the project site.

Species of local importance which were not considered to have a primary association with habitat on the site, but which may potentially utilize the property on at least an occasional basis include: pileated woodpecker, bald eagle, Vaux's swift, red-tailed hawk, western big-eared bat, Keen's myotis, long-legged myotis, long-eared myotis, and western toad.

4.3 Impacts to Wildlife Species of Local Importance from Proposed Project

The proposed project includes the construction of a Temple President residence in the southeastern portion of the site. Access to the residence would now occur from off-site to the north. The project requires the removal of significant trees for construction of the residence, access drive, and small yard area (see tree retention plan for trees proposed for removal). In addition, understory vegetation consisting primarily of salal and Himalayan blackberry would also be removed. Several additional trees would require removal as part of the future maintenance building.

Since none of the species of local importance appear to have a primary association with the project site, there are no anticipated significant impacts to these species from the proposed development. However, since the forested portions of the site do provide potential habitat for several species of local importance, it is our understanding that these forested areas would be considered a critical area and subject to the habitat performance standard outlined in LUC 20.25H.160.

Per discussions with Michael Paine, Environmental Planning Manager with the City of Bellevue, the Habitat Management Plan required under LUC 20.25H.160 should focus on the pileated woodpecker since it would be considered a keystone species for the forested portions of the property.

Photo 1: Typical understory vegetation within vicinity of proposed residence dominated by Himalayan blackberry and salal.

Photo 2: View looking east along existing access road toward proposed residence.

Photo 3: View of future maintenance building location.

5.0 HABITAT MANAGEMENT PLAN FOR PILEATED WOODPECKER

Pileated woodpeckers generally inhabit mature and old-growth forests, and second-growth forests with large snags and fallen trees. The range of the species encompasses all of the forested areas of the state. Although typically found in larger forested tracts, they are known to occur in suburban habitats as well. Their key breeding habitat need is the presence of large snags or decaying live trees for nesting, as this species generally excavates a new nest cavity each year. The breeding and nesting periods of the pileated woodpecker extends from late March to early July.

No pileated woodpecker nests were observed on the site during the field investigations and the lack of large snags currently limits the nesting potential of this species on the property. However, this species may potentially utilize the larger trees on the site for foraging and perching.

Management Recommendations

The Washington Department of Fish and Wildlife's *Management Recommendations for Washington's Priority Species Volume IV: Birds (2004)* provides management recommendations for pileated woodpeckers in suburban areas (**Appendix B**). These recommendations include:

- Conserving larger forest patches with large trees and snags
- Retaining forest in the largest patches available (>74 acres would be considered large). Where large patches are unavailable, smaller patches should be retained; where the average size of smaller patches should be no less than approximately 7 acres.
- Retaining or creating snags as well as retaining live trees in the largest size classes available in the stand.

To continue to allow for the potential use of the forested portions of the site by pileated woodpeckers, it is my recommendation that:

- All existing significant trees and habitat features located outside of the currently proposed clearing limits be retained to the extent feasible. Special care should be taken to avoid the largest trees on the property (i.e., > 30-inches in diameter at breast height - see tree survey).
- If possible, any future development on the site should be situated in existing cleared areas. If avoidance of forested areas as part of potential future development is not feasible, then retaining the largest patches of trees as possible should be the goal.
- Although I do not believe it necessary to create snags from any of the existing live healthy trees on the property, if any trees on the site are deemed hazardous and must be removed for safety concerns, then it is my recommendation that a snag be created from that tree at the tallest appropriate point. Furthermore, any trees within the forested portions of the site that naturally become snags should remain in place and not be removed unless they become a safety concern.

- Implement the steep slope buffer mitigation planting plan (**Drawings L-2 and L-3**) and the associated long-term Vegetation Management Plan (**Appendix C**). This plan provides for the planting of a variety of native tree and shrub species within and adjacent to the steep slope buffer to the east of the residence as mitigation for impacts to the steep slope buffer.

REFERENCES

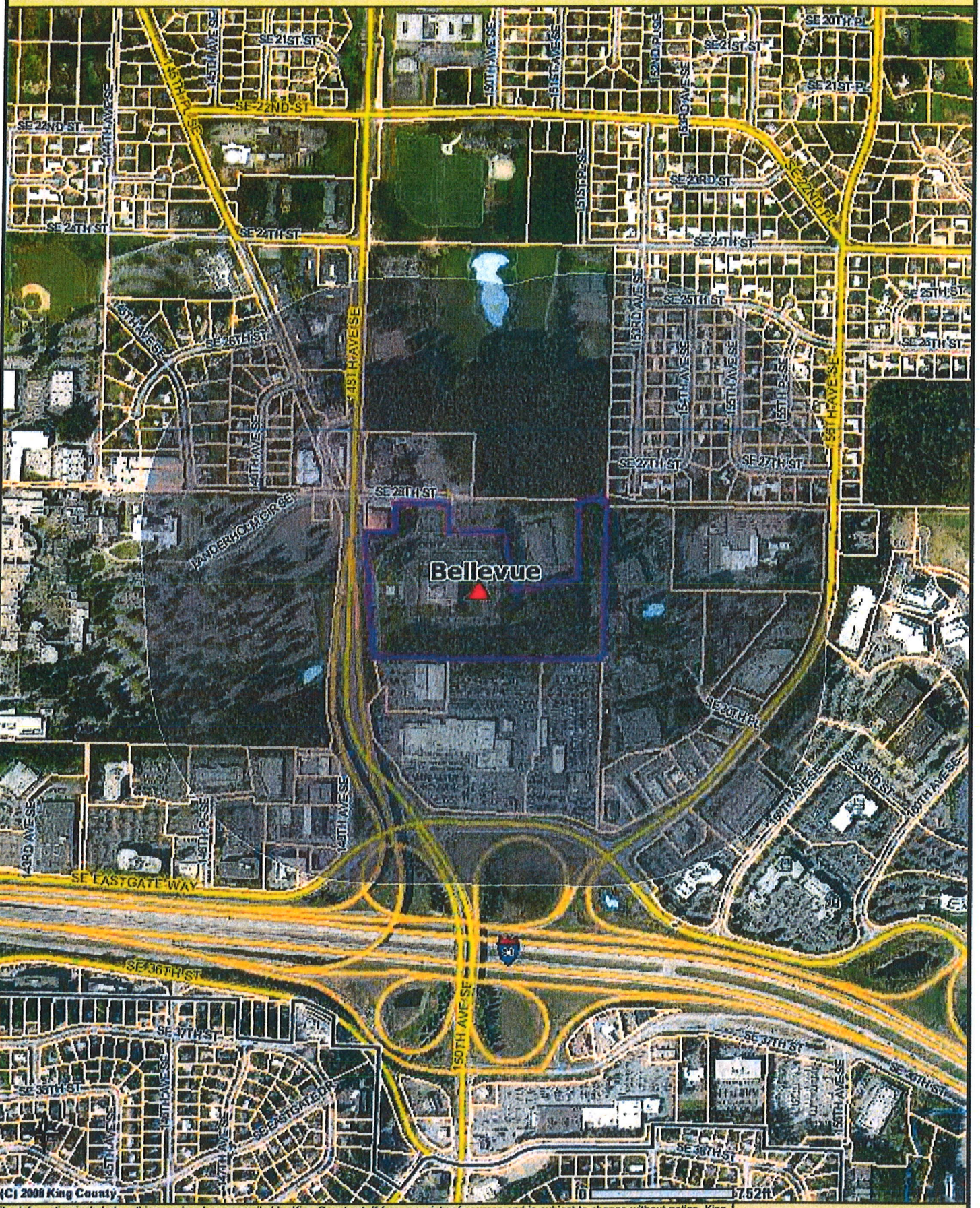
Hitchcock, C.L., and A. Cronquist. 1973. *Flora of the Pacific Northwest.* University of Washington Press. 730 pp.

Lewis, J. C. and J. M. Azerrad. 2003. Pileated Woodpecker. Pages 29-1 – 29-9 in E. Larsen, J. M. Azerrad, N. Nordstrom, editors. Management Recommendations for Washington's Priority Species, Volume IV: Birds. Washington Department of Fish and Wildlife, Olympia, Washington, USA.

The Watershed Company. 2010. Guidance: using the Bellevue Urban Wildlife Functional Assessment Model.

U.S. Army Corps of Engineers. 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0).*

LDS Bellevue Zone C Habitat Types



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Date: 4/17/2012 Source: King County iMAP - Sensitive Areas (http://www.metrokc.gov/GIS/iMAP)

King County

APPENDIX A

HABITAT ASSESSMENT FORM

City of Bellevue

DRAFT FUNCTIONAL ASSESSMENT TOOL

for Upland Habitat

Property address 2808 - 148th AVE SE

Location Range 5E Township 24N Section 11

Parcel number 112405-9091

Property owner LDS CHURCH

Telephone number ( ) - -

Project name LDS TEMPLE RESIDENCE

Project contact BRIAN HARRON

Telephone number (206) - 674 - 4659

Address 14900 INTERURBAN AVE S. #279
SEATTLE, WA 98168

Staff JOHN ALTMANN

Date(s) of site visit(s) 3/1/12 4/12/12

Washington Department of Fish and Wildlife Priority Habitat and Species (PHS) data obtained? Y/N Y

1.0	PROPERTY DESIGNATION	Zone A	Zone B	Zone C	Zone D		Zone
1.1	**Existing impervious surface**	>90%	50-90%	20-50%	0-20%	~25%	C
2.0	**LANDSCAPE PARAMETERS**	**No points**	**1 point**	**2 points**	**3 points**	**Additional points**	**Total**
2.1	**Land use/development density**	Zone A	Zone B	Zone C	Zone D		2
2.2	***Occurrence (number) of habitat types**	0	1	2	3+	mature conifer mixed forest pond	3
2.3	****Proximity of known critical areas (distance to edge)**	>2,500 ft	<2,500 ft	<1,200 ft	<100 ft	+1 point if contiguous with critical area	2
2.4	**Habitat connectivity and corridors**	No connection to other habitat areas	≥50-foot-wide connection to vegetated areas of at least 1 acre	≥50-foot-wide connection to vegetated areas of at least 50 acres but not listed parks***	≥50-foot-wide connection King County wildlife network or listed parks***	+1 point for ≥150-foot-wide connection King County wildlife network or listed parks***	1
2.5	**Patch size**	<0.-1.0 ac	1.0-5.0 ac	>5-10 ac	10-42 acres	>42 acres = 4 points	3

City of Bellevue

DRAFT FUNCTIONAL ASSESSMENT TOOL

for upland habitat

2.0	LANDSCAPE PARAMETERS	No points	1 point	2 points	3 points	Additional points	Total
2.6	*Interspersion of habitat patches (excluding patches <1 ac in area)	No or isolated patch (no others within 0.5-ac circle)	Low	Moderate	High	+1 point if wildlife network or listed park is included	1
3.0	**LOCAL PARAMETERS**	**No points**	**1 point**	**2 points**	**3 points**	**Additional points**	**Total**
3.1	Size of native trees on site	No significant trees on site	6-12" dbh tree(s) present	12-20" dbh tree(s) present	>20" dbh tree(s) present	+1 point if tree(s) >30" dbh are present	4
3.2	Coniferous component	No conifers on site	Conifers very sparse or present in understory only	Conifers co- or sub-dominant in overstory	Conifers dominant	+1 point if conifers >30" dbh are present	4
3.3	Percent cover (sample vegetated areas only)						
	Ground layer (0-2.3 ft) (5-ft radius)	0%	0-25%	25-50%	50%+	+1 point for cover >75%; -1 point if mowed grass is >50%	3
	Shrub layer (2.3-25 ft) (10-ft radius)	0%	0-25%	25-50%	50%+	+1 point for cover >75%	2
	Canopy (>25 ft) (30-ft radius)	0%	0-25%	25-50%	50%+	+1 point for cover >75%	2
3.4	Vegetative vertical structural diversity (foliage height diversity)	FHD = 0	FHD < 0.70	FHD = 0.70-0.90	FHD > 0.90		2
3.5	Vegetative species richness	0-1 species	2-5 species	6-19 species	20+ species		2
3.6	Invasive species component	>75% cover	25-75% cover	10-25%cover	<10% cover		2

City of Bellevue

DRAFT FUNCTIONAL ASSESSMENT TOOL

for Upland Habitat

3.0	LOCAL PARAMETERS	No points	1 point	2 points	3 points	Additional points	Total
3.7	**Proximity to year-round water**	>1.0 mi or artificial feature with maintained /invasive buffer present within 0.3-1 mi	0.3-1.0 mi or artificial feature with maintained/ invasive buffer present within <0.3 mi	<0.3 mi or artificial feature with maintained/ invasive buffer present within patch	Natural water feature present within patch with native buffer		1
3.8	**Snags (≥4 in dbh)**	No snags on site	1/ac or fewer	2-6/ac	>7/ac	Add 0.5 point for each >20 in dbh and 1 point for each >30 in dbh	2
3.9	**Other habitat features**	None	1	2-4	5 or more		2
Landscape parameters points							12
Local parameters points							26
TOTAL POINTS							38

* Use circle of the appropriate size for the property's zone:

Zone A – 0.5 ac
Zone B – 5.0 ac
Zone C – 100 ac
Zone D – 250 ac

** PHS data required for sites in Zone D

***Parks: Mercer Slough, Phantom Lake wetland complex, Larson Lake wetland complex, Cougar Mountain Regional Wildland Park, Weowna Park; King County wildlife network

APPENDIX B

WDFW PILEATED WOODPECKER

MANAGEMENT RECOMMENDATIONS

Pileated Woodpecker

Dryocopus pileatus

Last updated: 2003

Written by Jeffrey C. Lewis and Jeffrey M. Azerrad

GENERAL RANGE AND WASHINGTON DISTRIBUTION

Pileated woodpeckers are year-round residents from northern British Columbia, across Canada to Nova Scotia, south through central California, Idaho, Montana, eastern Kansas, the Gulf Coast and Florida (Bull and Jackson 1995). The Washington range encompasses the forested areas of the state (see Figure 1; Smith et al. 1997).

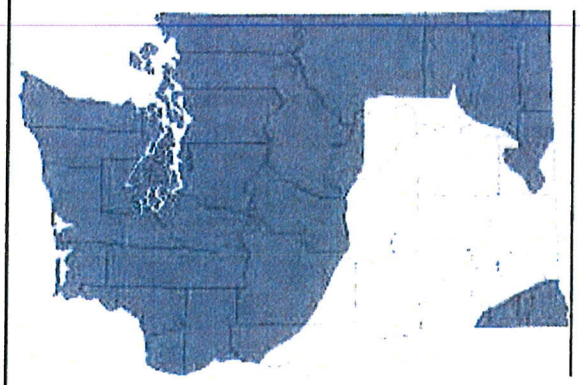

Figure 1. General range of the pileated woodpecker, *Dryocopus pileatus*, in Washington (Smith et al. 1997).

RATIONALE

The pileated woodpecker is listed as a State Candidate species in Washington. The pileated woodpecker is a significant functional component of a forest environment because it creates nesting cavities used by other forest wildlife species (Aubry and Raley 2002a). Their deep foraging excavations provide foraging opportunities for weak excavators, and they accelerate the decay process by physically breaking apart wood and exposing prey that can be consumed by other species (Aubry and Raley 2002a). For these reasons the pileated woodpecker is considered a "keystone habitat modifier" (Aubry and Raley 2002a). The availability of large snags (standing dead trees) and large decaying live trees used for nesting and roosting by pileated woodpeckers has declined in many areas as a result of forest conversion (e.g, removal of forest for urban development) and timber management practices (Bull and Jackson 1995, Ferguson et al. 2001).

HABITAT REQUIREMENTS

Pileated woodpeckers inhabit mature and old-growth forests, and second-growth forests with large snags and fallen trees (Bull and Jackson 1995, Aubry and Raley 1996). Large snags and large decaying live trees in older forests are used by pileated woodpeckers for nesting and roosting throughout their range (Mellen et al. 1992, Bull and Jackson 1995, Aubry and Raley 2002b). In western Oregon and western Washington, they may use younger forests (<40 years old) as foraging habitat (Mellen et al. 1992, Aubry and Raley 1996).

Nesting and Roosting

Pileated woodpeckers excavate large nest cavities in snags or large decaying live trees (Bull et al. 1986, Aubry and Raley 2002b). In northeast Oregon, Bull (1987) reported the dimension of the nest entrances were 12 cm (5 in) in height and 9 cm (4 in) in width; the internal dimensions were 57 cm (22 in) deep and 21 cm (8 in) wide. Wood chips are typically found on the cavity floor (Bull and Jackson 1995). During the breeding season, birds may start a number of cavity excavations, but only complete one nest cavity (Bull and Jackson 1995, Aubry and Raley 2002a). The breeding and nesting periods of the pileated woodpecker extends from late March to early July (Bull et al. 1990). Pileated woodpeckers lay 1-6 eggs/clutch; the eggs are white in coloration and are about 3.3 cm (1.3 in) in length and 2.5 cm (1 in) in breadth (Bull and Jackson 1995).

Preferred nest tree species and characteristics vary to some degree among different regions of the northwest (Table 1). Most nest cavities were observed in hard snags with intact bark and broken tops, or live trees with dead tops. Hard snags are characterized as being comprised of sound wood while soft snags are composed primarily of wood in advanced stages of decay or deterioration (Brown 1985). Researchers studying pileated woodpeckers on the Olympic Peninsula found that woodpeckers used snags and large decaying live trees for nesting (Aubry and Raley 2002b). Sites used for nesting and roosting in the Olympics had a higher diversity of tree species and a greater density of large decaying live trees and large snags than surrounding forested areas (Aubry and Raley 2002b).

Table 1. Diameter at breast height (DBH), height, and tree species reported for pileated woodpecker nest trees in Oregon and Washington.

Location	DBH (average)	DBH (range)	Height (average)	Height (range)	Species	References
Olympic Peninsula	101 cm (40 in)	65-154 cm (26-61 in)	39 m (128 ft)	17-56 m (56-184 ft)	Pacific silver fir (*Abies amabilis*), western hemlock (*Tsuga heterophylla*)	Aubry and Raley 2002b
Western Oregon	69 cm (27 in)	--	27 m (87 ft)	--	Douglas-fir (*Pseudotsuga menziesii*), grand fir (*Abies grandis*)	Mellen 1987, Nelson 1989
Northeastern Oregon	80-84 cm (31-33 in)	52-119 cm (20-47 in)	28 m (92 ft)	10-43 m (33-141 ft)	grand fir, ponderosa pine (*Pinus ponderosa*), western larch (*Larix occidentalis*)	Bull 1987; Bull et al. 1992b; E. Bull, personal communication

Pileated woodpeckers roost in hollow trees or vacated nest cavities at night and during inclement weather (Bull and Jackson 1995). Excavation of roost cavities may occur at any time during the year (E. Bull, personal communication). Pileated woodpeckers may use up to 11 roosts over a 3-10 month period; however, some individuals will use one roost for a long period before switching to a new roost, while others regularly switch among several roosts (Bull et al. 1992b). The availability of roost trees apparently explained why some birds roosted in a limited number of trees (Bull et al. 1992b)

Roost and nest trees of pileated woodpeckers differ with respect to species and physical characteristics. Pileated woodpeckers used live trees or snags for roosting and nesting and selected these based on tree species, wood condition and diameter at breast height (dbh) in both northeastern Oregon and the Olympic peninsula (Bull et al. 1992b, Aubry and Raley 2002b). Bull et al. (1992b) reported that roost trees [mean = 70 cm dbh (28 in)] were smaller than nest trees [mean = 80 cm dbh (31 in)]; in contrast to nest trees, roosts trees in northeastern Oregon were often hollow. The hollow interior of roost chambers was typically the result of heartwood decay rather than excavation (Bull et al. 1992b, Aubry and Raley 2002b). In northeastern Oregon, roost chambers had more entrance holes than nests, and roosts were predominantly in grand fir, whereas nest trees were predominantly ponderosa pine and western larch (Bull et al. 1992b). In the Olympics, pileated woodpeckers preferred to roost within western redcedar (*Thuja plicata*) (Aubry and Raley 2002b). The extensive use of grand fir in northeast Oregon and western redcedar in

the Olympics was attributed to the greater propensity for these species to form large, hollow chambers (Bull et al. 1992b, Aubry and Raley 2002b). Aubry and Raley (1996) found that 88% of all roosts were located in old or mature forests. The remaining roosts were primarily found in naturally regenerated young forests that were approximately 75 years old (Aubry and Raley 1996). Roosts east of the Cascades were also primarily found in old-growth forests (Bull et al. 1992b, McClelland and McClelland 1999). General characteristics of roost trees in Oregon and Washington are described in Table 2.

Table 2. DBH, height, and tree species reported for pileated woodpecker roost trees in Oregon and Washington.

Location	DBH (average)	DBH (range)	Height (average)	Height (range)	Species	References
Olympic Peninsula	149 cm (59 in)	37-309 cm (15-122 in)	36.5 m (120 ft)	11-63 m (36-207 ft)	Pacific silver fir, western hemlock, western redcedar	Aubry and Raley 2002b
Western Oregon	112 cm (44 in)	40-208 cm (16-82 in)	--	--	--	Mellen et al. 1992
Northeastern Oregon	71 cm (28 in)	40-131 cm (16-52 ft)	22 m (72 ft)	6-44 m (20-144 ft)	grand fir, ponderosa pine, western larch	Bull et al. 1992b; E. Bull, personal communication

Foraging

Pileated woodpeckers forage in forests containing large trees and snags that support abundant insect prey associated with dead and dying wood. Large rectangular/oval excavations in snags are indicative of pileated woodpecker foraging (McClelland 1979, Neitro et al. 1985, Bull and Jackson 1995). In Oregon and Washington, prey consisted of carpenter and thatching ants (Hymenoptera), beetle larvae (Coleoptera), termites (Isoptera), and other insects (Bull et al. 1992a, Torgersen and Bull 1995, Aubry and Raley 1996). Mature and old-growth coniferous forest are considered high quality foraging habitat (Aubry and Raley 1996), but forests as young as 40 years of age are used if snags, particularly large residual snags from burns or harvests, are present (Mellen et al. 1992). Pileated woodpeckers seldom use clearcuts, but will forage in clearcuts or shelterwood cuts if substantial foraging habitat is retained (see Mannan 1984, Mellen 1987). Researchers working in the Oregon Coastal Range determined that pileated woodpeckers used deciduous riparian for foraging activities (Mellen et al. 1992).

Pileated woodpeckers forage on large snags [>50 cm (20 in) dbh], live trees, logs, and stumps (Bull et al. 1986, Bull 1987, Torgersen and Bull 1995). Snags and live trees take on special importance in winter when logs and stumps may be covered with snow (McClelland 1979, Bull and Holthausen 1993). Pileated woodpeckers forage on snags in a broad range of decay conditions but appear to prefer large snags that may harbor more insects and larvae than smaller snags (Mannan et al. 1980). In contrast to foraging behavior east of the Cascade Range, downed logs are rarely used as foraging substrate in wet coastal forests (Aubry and Raley 2002b).

Home Range

Home ranges vary in size within the Pacific Northwest, ranging from 407 ha (1,006 ac)/breeding pair (data collected between June and March) in northeastern Oregon (Bull and Holthausen 1993), 480 ha (1,186 ac)/breeding pair during the summer in the central Oregon Coast Range (Mellen et al. 1992), and 863 ha (2,132 ac)/breeding pair annually on the Olympic Peninsula (Aubry and Raley 1996). The home range figures reported in the central Oregon Coast Range are likely smaller than the actual year-round home range for the pileated (Mellen et al. 1992). Home ranges for individuals that lost mates are larger than those of mated individuals (Bull and Holthausen 1993, Aubry and Raley 1996), and pairs with young have larger home ranges than pairs without young (Mellen et al. 1992). Although home ranges in the central Oregon Coast Range were actively defended, the ranges of adjacent birds overlapped (9-30% of an individual's home range overlapped) (Mellen et al. 1992). Home ranges in northeastern

Oregon generally consisted of >85% forested habitat (Bull and Holthausen 1993). Home ranges consisted primarily of late-successional forested habitat or second-growth forest with residual large snags (Bull and Holthausen 1993, Bull and Jackson 1995, Aubry and Raley 1996).

Urban/Suburban Habitat Use

Pileated woodpeckers are residents in some developing areas throughout Washington (M. Tirhi; P. Thompson; H. Ferguson, personal communications). In these areas they occupy remnant patches of forest, parks, and green-belts. Because of their need for large trees and their sizeable territory requirements, loss or reduction of extensive wooded tracts and large trees will impact the species (Moulton and Adams 1991). Pileated woodpeckers in suburban areas forage on a variety of substrates, including large and small diameter coniferous and hardwood trees and snags (P. Thompson, personal communication; J. Lewis, unpublished data), and occasionally on suet feeders, utility poles, and fruit trees (Bull and Jackson 1995; J. Buchanan, personal communication).

Although habitat use in urbanizing environments in Washington has been given little attention, it is likely that pileated woodpeckers select large diameter trees and snags for nesting and roosting. Similarly, sizes of home ranges in urban environments are unknown, but they may be relatively large due to the fragmented nature of remnant forest habitats in most suburban landscapes. The relationship between cavity-nesters and urbanizing areas in Washington has only been investigated by a single study in the greater Seattle area (see Rohila 2002)

LIMITING FACTORS

Timber harvest can significantly impact pileated woodpecker habitat (Bull and Jackson 1995). The removal of large snags, large decaying live trees and downed woody debris of the appropriate species, size and decay class eliminates nest and roost sites and foraging habitat. Intensively managed forests typically do not retain these habitat features (Spies and Cline 1988). However, more recent state and federal forest management guidelines call for the retention of a specified number of wildlife trees during timber harvest (Washington Forest Practices Board 2001, Aubry and Raley 2002a). Bull and Jackson (1995) suggest that fragmentation of forested habitat may lead to reduced population density and increased vulnerability to predation as birds are forced to fly between fragmented forested stands; however, information on predation effects is currently lacking. Known predators include the northern goshawk (*Accipiter gentiles*), Cooper's hawk (*A. cooperii*), red-tailed hawk (*Buteo jamaicensis*), great horned owl (*Bubo virginianus*), American martin (*Martes americana*), and gray fox (*Urocyon cinereoargenteus*) (Bull and Jackson 1995).

The amount of forest retained in the suburban and urbanizing environment will influence the degree to which an area is used by pileated woodpeckers for foraging and reproduction (Moulton and Adams 1991, Rohila 2002). If the collective area of these retained forest tracts is large enough, suburban and other urbanizing environments could support pileated woodpeckers (Rohila 2002). However, because of their need for larger trees and their sizeable territory requirements, loss or reduction of wooded tracts and large trees could eliminate or preclude pileated woodpeckers from an urbanizing area (Moulton and Adams 1991).

MANAGEMENT RECOMMENDATIONS

General Recommendations

Specific management prescriptions should be developed for actions that will be undertaken at the home range scale (Mellen et al. 1992, Bull and Holthausen 1993) as discussed later in this chapter. Management activities for pileated woodpeckers should focus on providing and maintaining a sufficient number of appropriate large snags and large decaying live trees for nesting and roosting (Aubry and Raley 2002b). Retaining snags and decaying live trees (of appropriate size, species and decay classes) provides suitable nesting and roosting structure for a longer period of time than retaining only hard snags (Aubry and Raley 2002b). Trees, snags and stumps with existing pileated nest cavities and foraging excavations should be retained (Bonar 2001).

Management of nesting and roosting habitat may be accomplished in several ways in managed forests. A variety of snag creation techniques are being developed and it is likely that such techniques can produce suitable snags in older second growth forests (e.g., removal of tree-top, girdling) (Neitro et al. 1985, Bull and Partridge 1986, Lewis 1998). Properly conducted uneven-aged management of forest stands can create adequate canopy closure and sufficient large snags and large decaying live trees to maintain suitable nesting and roosting habitat for pileated woodpeckers. Defective or cull trees can be retained during commercial thinning operations, or these can be recruited to become snags in subsequent rotations (Neitro et al. 1985). Because of the difficulties in recruiting large snags in managed forests (Wilhere 2003), one of the most effective means to improve snag densities may involve extending the length of harvest rotations (Neitro et al. 1985).

Managers may have some flexibility when providing foraging habitat. Naturally formed stumps and numerous large logs in various stages of decay can be retained to improve foraging habitat (Torgersen and Bull 1995). Management for large snags, culls, and green replacement trees can ultimately provide large downed logs as foraging habitat. Protection of riparian habitat throughout Washington and the provisions of buffers along streams may also ensure that adequate foraging habitat exists for pileated woodpeckers (Mellen et al. 1992, Knutson and Naef 1997). However, we currently lack adequate information to define appropriate riparian buffers for pileated woodpeckers in managed forests.

Forest managers often apply minimum size standards that are determined through research (e.g., the smallest recorded nest tree dbh) to achieve a combination of wildlife conservation and resource extraction goals (McClelland and McClelland 1999). Conner (1979) argued that managing forests using minimum size standards may cause gradual population declines and suggested that average values for habitat components should be used in forest management. The following set of recommendations is based primarily on average (rather than minimum) standards.

Western Washington

The following recommendations are primarily based on the goals identified by the Partners in Flight (PIF) Conservation Plan for the Westside Coniferous Forest region (Altman 1999). These goals were derived from research conducted in the Oregon Coast Range and Washington's Olympic Peninsula (Nelson 1989, Mellen et al. 1992, Aubry and Raley 1996, 2002b). The PIF recommendations for managed coniferous forests (stands with >70% conifer stems) of about 60 years of age or older include maintaining >70% canopy closure and an average of ≥5 nest snags/10 ha (2 snags/10 ac) that are >76 cm dbh (30 in). In areas used for both nesting and roosting, an average of 18 large snags/ha (7 snags/ac) and 8 decaying large trees/ha (3 trees/ac) should be retained (Aubry and Raley 2002b). Trees ≥27.5 m (≥90 ft) in height should be retained to provide nesting and roosting structures (Aubry and Raley 2002b). Overall, pileated woodpeckers selected larger trees for roosting than those used for nesting (see Buchanan, in press). Based on Aubry and Raley's (2002b) work in the Olympics, trees between 155 and 309 cm dbh (61-122 in) should be retained for roosting. In addition, an average of 30 foraging snags/ha (12 snags/ac) (mix of hard and soft snags) should be provided in the following size classes (see Table 3; Altman 1999).

Table 3. Suggested number of foraging snags to retain.

Size class	Foraging snags retained
• 25-50 cm dbh (10-20 in)	= ≥18 snags/ha (7 snags/ac)
• 51-76 cm dbh (20-30 in)	= ≥8 snags/ha (3 snags/ac)
• >76 cm dbh (>30 in)	= ≥5 snags/ha (2 snags/ac)

Population targets suggested by the PIF conservation plan called for about nine pairs of pileated woodpeckers per township (9.7 pairs/100 km^2), based on an average breeding season home range of 600 ha (Altman 1999:36-37). Using the annual home range size of 863 ha for the Olympic Peninsula (Aubry and Raley 1996), a comparable target could be adjusted to about six pairs per township (6.4/100 km^2) on the Olympic Peninsula (Buchanan, in press). At the landscape-level, an average of 60% of a landscape management unit (e.g., watershed, township) should be retained as suitable habitat (early successional forest with adequate snag densities, young forest [40-80 years] with adequate snag densities, and late successional forest), and >40% of this

suitable habitat should be retained in late-successional forest. Adequate snag densities are defined as the combination of nesting, roosting and foraging snag numbers (see above).

Eastern Washington

The following recommendations are based on research conducted in the Blue Mountains of northeastern Oregon (Bull 1987, Bull and Holthausen 1993) as well as research conducted in northwestern Montana (McClelland and McClelland 1999). Because most work on pileated woodpeckers in the inland northwest was conducted in the Blue Mountains, it should be noted that the following recommendations might be less applicable to areas outside of this region.

Several key habitat components are necessary to maintain suitable pileated woodpecker habitat. These include a mature forest with ≥2 canopy layers, the uppermost being 25-30 m (82-98 ft) in height; large live trees to provide cover and eventual replacement of dead trees; large dead trees for nesting; and dead trees and downed woody material for foraging (Bull 1987). Territory size for breeding pairs in the Blue Mountains averaged 407 ha (1006 ac) and was considered an adequate size to manage for each breeding pair in that region (Bull and Holthausen 1993). Researchers working in the Blue Mountains recommended that 75% of management areas be in grand fir forest types and they suggested that the composition of this area include 25% old growth and 75% mature stands. Additionally, they suggested that ≥50% of the management areas have ≥60% canopy closure and that at least 40% of the stands remain unlogged (Bull and Holthausen 1993).

Bull and Holthausen (1993) recommended retaining 8 snags/ha (3.2 snags/ac) with at least 20% being ≥ 51 cm (20 in) dbh for both nesting and roosting. Based on Bull's (1987) research, trees ≥ 28 m (92 ft) should be retained to provide nesting structures. Bull and Holthausen (1993) recommended retaining ≥100 logs/ha (40/ac) as foraging substrate in management areas, with a preference for logs ≥38 cm (15 in) dbh that include all species except lodgepole pine (*Pinus contorta* var. *latifolia*). McClelland and McClelland (1999) suggested that the optimum dbh for nest and roost trees should be: 77-91 cm (30-36 in) for western larch, 76-96 cm (30-38 in) for ponderosa pine, and 75-100 cm (30-39 in) for black cottonwood (*Populus balsamifera*).

Urban/Suburban Areas

Although pileated woodpeckers are known to use suburban and other urbanizing areas (Moulton and Adams 1991, Rohila 2002), few studies have examined habitat use in these areas. Consequently, the following generalized recommendations address the principle needs of pileated woodpeckers based primarily on the findings of a recent study conducted in the greater Seattle area (Rohila 2002). Additional research will be necessary to develop specific guidelines for urban and suburban areas.

In urbanizing areas, the greatest negative influence to pileated woodpeckers is likely the clearing of remnant forest patches. Based on research in greater Seattle, Rohila (2002) recommended that planners retain forest in the largest patches available (>30 ha [74 ac] would be considered large). Where large patches are unavailable, smaller patches should be retained; where the average size of smaller patches should be no less than approximately 3 ha (7 ac) (see Rohila 2002). Forest patches with high densities of existing snags and live trees should be targeted when selecting areas to retain during the planning process (Rohila 2002). The creation of snags or decaying live trees (Lewis 1998) may benefit pileated woodpeckers in suburban areas (see previous sections for preferred snag and tree size guidelines). Pileated woodpeckers and other cavity-dependent species would benefit from the retention of snags as well as the retention of live trees in the largest size classes available in the stand (Rohila 2002). Because designated suburban and urban parks often contain large forested tracts, park managers should also consider pileated woodpecker requirements.

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PERSONAL COMMUNICATIONS

Joe Buchanan
Wildlife Biologist
Washington Department of Fish and Wildlife
Olympia, Washington

Evelyn Bull
Research Wildlife Biologist
USDA Forest Service
La Grande, Oregon

Howard Ferguson
District Wildlife Biologist
Washington Department of Fish and Wildlife
Spokane, Washington

Patricia Thompson
Urban Wildlife Biologist
Washington Department of Fish and Wildlife
Mill Creek, Washington

Michelle Tirhi
Urban Wildlife Biologist
Washington Department of Fish and Wildlife
Kent, Washington

KEY POINTS

Habitat Requirements

- Inhabits mature and old-growth forests, and second-growth forests with large snags and fallen trees
- Excavates large nest cavities in snags or large decaying live trees
- Breeds and nests between late March to early July
- Roosts in hollow trees or vacated nest cavities at night and during inclement weather
- Forages in forests containing large trees and snags, and dead and dying wood

- Preys on carpenter and thatching ants, beetle larvae, termites, and other insects
- Present in some urban and suburban areas throughout Washington

Management Recommendations

General Recommendations

- Maintain large snags and large decaying live trees for nesting and roosting
- Retain naturally formed stumps and numerous large logs in various stages of decay to improve foraging habitat
- Use average size standards (rather than minimums) for managing pileated woodpecker habitat components (e.g., nest size standards).

Western Washington

- Maintain managed coniferous forests (stands with >70% conifer stems) of about 60 years of age or older at>70% canopy closure and an average of ≥5 nest snags/10 ha (2 snags/10 ac) that are >76 cm dbh (30 in)
- Retain an average of 18 large snags/ha (7 snags/ac) and 8 decaying large trees/ha (3 trees/ac) in areas used for both nesting and roosting
- Retain trees ≥27.5 m (≥90 ft) in height to provide nesting and roosting structures. Trees between 155 and 309 cm dbh (61-122 in) should be retained for roosting
- Retain an average of 30 foraging snags/ha (12 snags/ac)

Eastern Washington

- Maintain mature forest with ≥2 canopy layers, the uppermost being 25-30 m (82-98 ft) in height; large live trees to provide cover and eventual replacement of dead trees; large dead trees for nesting; and dead trees and downed woody material for foraging
- Retain 8 snags/ha (3.2 snags/ac) with at least 20% being ≥ 51 cm (20 in) dbh for both nesting and roosting
- Retain ≥100 logs/ha (40/ac) as foraging substrate in management areas, with a preference for logs ≥38 cm (15 in) dbh

Urban/Suburban Areas

- Conserve larger forest patches with large trees and snags
- Retain forest in the largest patches available (≥30 ha [74 ac] would be considered large). Where large patches are unavailable, smaller patches should be retained; where the average size of smaller patches should be no less than approximately 3 ha (7 ac).
- Retain or create snags as well as retain live trees in the largest size classes available in the stand

APPENDIX C

SLOPE BUFFER IMPACT AND MITIGATION PLAN/ VEGETATION MANAGEMENT PLAN

Altmann Oliver Associates, LLC

AOA

PO Box 578 Carnation, WA 98014 Office (425) 333-4535 Fax (425) 333-4509

Environmental Planning & Landscape Architecture

June 26, 2013

AOA-4157

Brian Harron, PE
Patrick Harron & Associates, LLC
14900 Interurban Avenue S., #279
Seattle, WA 98168

SUBJECT: **LDS Temple Residence, 2808 148th Ave. SE, Bellevue, WA**
Permit # 12-117993-GC
Slope Buffer Impact and Mitigation Plan
Vegetation Management Plan

Dear Brian:

The proposed residence and associated yard area is located within the outer 25 feet of the 50-foot buffer of the top of a steep slope (**Drawings L-1 through L-3**). It is my understanding that this slope was artificially created through historic excavation and that the stability of the slope has been confirmed as part of a geotechnical investigation. As part of the proposed project, 2,356 s.f. of forested slope buffer area would be impacted through the construction of the residence and yard.

1.0 SLOPE ENHANCEMENT PLAN

Mitigation for the 2,346 s.f. of impacted slope buffer would occur by supplementing native trees and shrubs within a 10,089 s.f. enhancement area located to the east and south of the proposed residence. As part of the enhancement, blackberry will be removed and a variety of native tree and shrub species would be field located. These supplemental plantings should increase the plant species and structural diversity of the slope buffer and adjacent forest, thereby increasing the area's value to wildlife.

1.1 Goal, Objectives, and Performance Standards for Enhancement Area

The primary goal of the enhancement plan is to remove invasive plants and supplement with native species to increase the habitat value of the area. To meet this goal, the following objectives and performance standards have been incorporated into the design of the plan:

Objective A: Increase native plant species diversity within the enhancement area.
Performance Standard: Following every monitoring event for a period of at least five years, the enhancement area will contain at least 6 native plant species. In addition, there will be 100% survival of all planted species throughout the enhancement area at the end of the first year of planting. Following Year 1, success will be based on an 80% survival rate for years 2 through 5.

Objective B: Limit the amount of invasive and exotic species within the enhancement area.
Performance Standard: After construction and following every monitoring event for a period of at least five years, exotic and invasive plant species will be maintained at levels below 20% total cover in all planted areas. These species include, but are not limited to, English ivy, Himalayan and evergreen blackberry, Scot's broom, morning glory, Japanese knotweed, and thistle.

1.2 Construction Management

Prior to commencement of any work in the enhancement area, the clearing limits will be staked and all existing vegetation to be saved will be clearly marked. A pre-construction meeting will be held at the site to review and discuss all aspects of the project with the landscape contractor and/or owner.

A consultant will supervise plan implementation during construction to ensure that objectives and specifications of the enhancement plan are met. Any necessary significant modifications to the design that occur as a result of unforeseen site conditions will be jointly approved by the City of Bellevue and the consultant prior to their implementation.

1.3 Monitoring Methodology

The monitoring program will be conducted for a period of five years, with annual reports submitted to the City of Bellevue.

Rather than set up vegetation sampling plots, the entire mitigation area will be reviewed. Vegetation monitoring will include general appearance, health, mortality, colonization rates, percent cover, percent survival, volunteer plant species, and invasive weeds.

Photo-points will be established from which photographs will be taken throughout the monitoring period. These photographs will document general appearance and progress in plant community establishment in the enhancement area. Review of the photos over time will provide a visual representation of success of the plan.

2.0 MAINTENANCE PLAN

Maintenance will be conducted on a routine, year round basis. Contingency measures and remedial action on the site shall be implemented on an as-needed basis at the direction of the consultant or the owner.

2.1 Weed Control
Routine removal and control of non-native and other invasive plants (e.g., English ivy, Himalayan and evergreen blackberry, Japanese knotweed, Scot's broom, morning glory, and thistle) shall be performed by manual means whenever possible. Chemical means (Rodeo or Roundup) will only be used if necessary. Undesirable and weedy exotic plant species shall be maintained at levels below 20% total cover within any given stratum at any time during the five-year monitoring period.

Himalayan and Evergreen Blackberry Control
Small patches (areas <3' x 3') need to be grubbed out, large areas (>3' x 3') need to be cut down. New shoots (approx. 6" in height) which reappear should be spot-sprayed with Round-up concentrate.

2.2 General Maintenance Items
Routine maintenance of planted trees shall be performed. Measures include resetting plants to proper grades and upright positions. Tall grasses and weeds shall be removed at the base of plants to prevent engulfment. Weed control should be performed by; hand removal, installation of weed barrier cloth with mulch rings, or selective weed-whacking. If weed-whacking is performed, great care shall be taken to prevent damage to desired native species either planted or re-colonized.

3.0 CONTINGENCY PLAN
All dead plants will be replaced with the same species or an approved substitute species that meets the goal of the enhancement plan. Plant material shall meet the same specifications as originally-installed material. Replanting will not occur until after reason for failure has been identified (e.g., moisture regime, poor plant stock, disease, shade/sun conditions, wildlife damage, etc.). Replanting shall be completed under the direction of the consultant, City of Bellevue, or the owner.

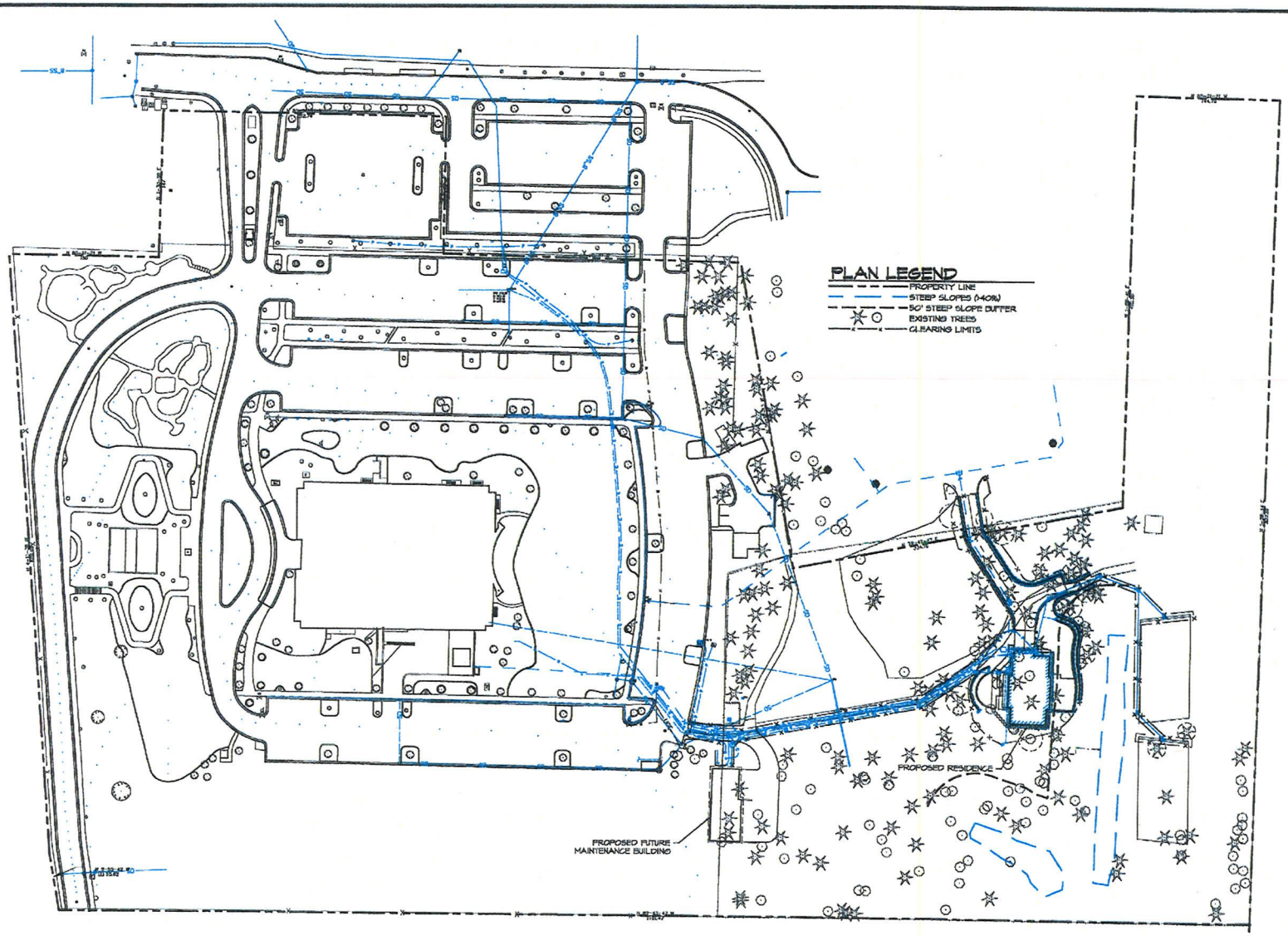
4.0 AS-BUILT PLAN
Following completion of construction activities, an as-built plan for the enhancement area will be provided to the City of Bellevue. The plan will identify and describe any changes in relation to the original approved plan.

If you have any questions regarding the proposed enhancement plan, please give me a call.

Sincerely,

ALTMANN OLIVER ASSOCIATES, LLC

John Altmann
Ecologist



OVERVIEW PLAN

GRAPHIC SCALE (IN FEET)

0 25 50 75 100 150

SCALE: 1:50

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SHEET INDEX

SHEET NUMBER	SHEET TITLE
L-1	OVERVIEW PLAN
L-2	STEEP SLOPE BUFFER IMPACT & MITIGATION PLAN

NOTES

1. SITE PLAN PROVIDED BY CORE DESIGN, 14711 NE 29TH PLACE, SUITE 101, BELLEVUE, WA 98007, (425) 885-7877.

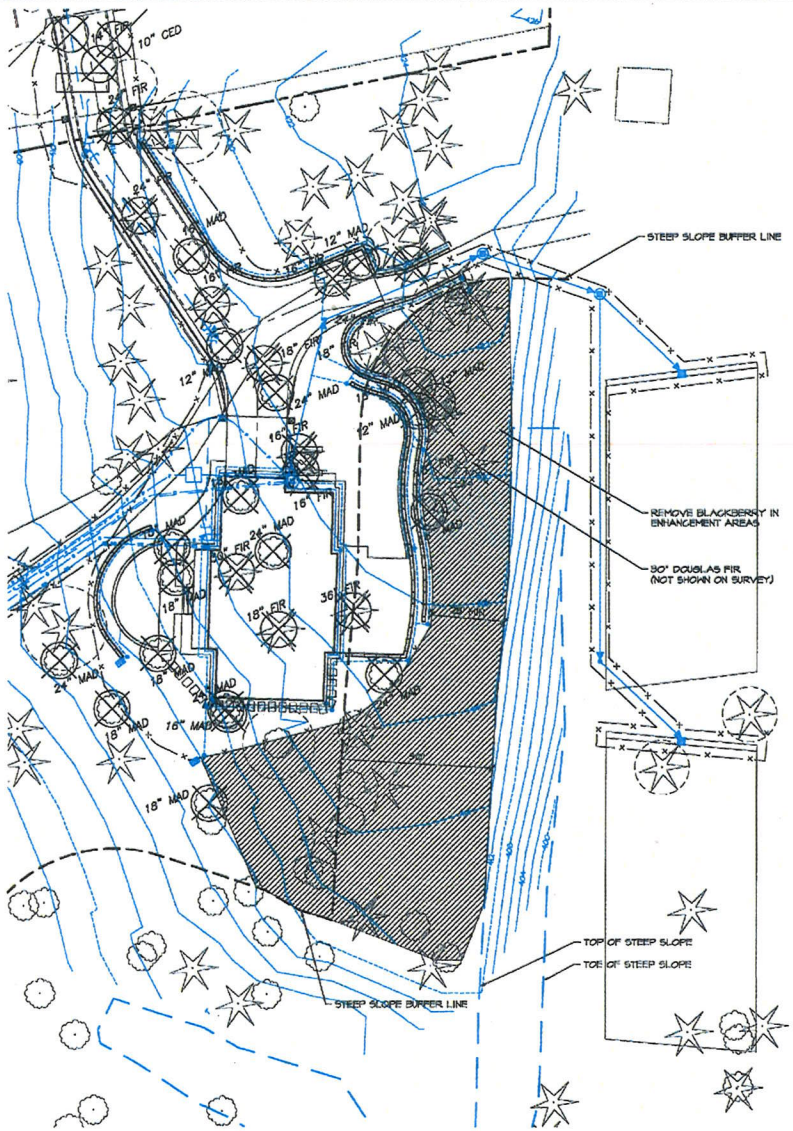
Altmann Oliver Associates, LLC
AOA Environmental Planning & Landscape Architecture
PO Box 378 Carnation, WA 98014 Cell (425) 111-1759 Fax (425) 333-0218

LDS TEMPLE RESIDENCE
OVERVIEW PLAN
2808 148TH AVE. SE
BELLEVUE, WA 98007

Revisions	Date	By

Date 08-19-13
Scale AS NOTED
Project# 4157

Sheet # L-1



STEEP SLOPE BUFFER MITIGATION PLAN

PLAN LEGEND

- PROPERTY LINE
- STEEP SLOPES (40%)
- 50' STEEP SLOPE BUFFER
- EXISTING TREES TO REMAIN
- EXISTING TREES TO BE REMOVED
- CLEARING LIMITS

MITIGATION LEGEND

STEEP SLOPE ENHANCEMENT 10,084 SF

MITIGATION PLANT SCHEDULE

TREES

KEY	SCIENTIFIC NAME	COMMON NAME	QTY.	DENSITY	SIZE (MIN.)	NOTES
AC	ACER CIRCINATUM	VINE MAPLE	14	12' O.C.	2 GAL.	MULTI-STEM (3 MIN.)
PM	PSEUDOTSUGA MENZIESII	DOUGLAS FIR	14	9' O.C.	2 GAL.	FULL & BUSHY
TP	THUJA PLICATA	WESTERN RED CEDAR	14	9' O.C.	2 GAL.	FULL & BUSHY

SHRUBS

KEY	SCIENTIFIC NAME	COMMON NAME	QTY.	DENSITY	SIZE (MIN.)	NOTES
M	MAHONIA AQUIFOLIUM	OREGON GRAPE	44	6' O.C.	1 GAL.	FULL & BUSHY
OC	OEMLERIA CERASIFORMIS	INDIAN PLUM	44	6' O.C.	1 GAL.	MULTI-STEM (3 MIN.)
S	SYMPHORICARPOS ALBUS	SNOWBERRY	44	6' O.C.	1 GAL.	MULTI-STEM (3 MIN.)

NOTE: ALL PLANTS WILL BE FIELD LOCATED WITHIN THE HATCHED STEEP SLOPE ENHANCEMENT AREA.

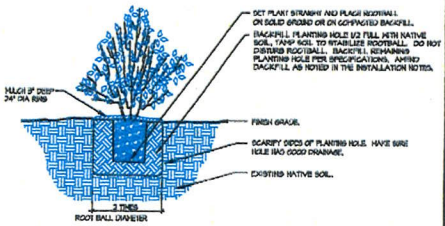
SPECIFICATIONS

1. CONTRACTOR INFORMATION. WHEN IT IS AVAILABLE, CONTACT INFORMATION SHALL BE PROVIDED TO THE CITY OF BELLEVUE THAT INCLUDES NAMES, ADDRESSES AND PHONE NUMBERS OF PERSON(S)/FIRMS THAT WILL BE RESPONSIBLE FOR INSTALLING REQUIRED PLANTS AND PERFORMING REQUIRED MAINTENANCE.
2. CONTRACTOR'S QUALIFICATIONS. ALL WORK SHALL BE PERFORMED BY A LICENSED LANDSCAPE CONTRACTOR REGISTERED IN THE STATE OF WASHINGTON. CONTRACTOR MUST BE EXPERIENCED IN MITIGATION AND RESTORATION WORK. THE CONTRACTOR SHALL PROVIDE THAT THERE IS ONE PERSON ON THE SITE AT ALL TIMES DURING WORK AND INSTALLATION WHO IS THOROUGHLY FAMILIAR WITH THE TYPE OF MATERIALS BEING INSTALLED AND THE BEST METHODS FOR THEIR INSTALLATION, AND WHO SHALL DIRECT ALL WORK BEING PERFORMED UNDER THESE SPECIFICATIONS. THIS PERSON SHALL HAVE A MINIMUM OF FIVE (5) YEARS EXPERIENCE INSTALLING NATIVE PLANT MATERIALS FOR WETLAND MITIGATION OR RESTORATION PROJECTS, UNLESS OTHERWISE ALLOWED BY THE LANDSCAPE DESIGNER, BIOLOGIST AND/OR THE CITY OF BELLEVUE.
3. ALL PLANTS SHOULD BE INSTALLED BETWEEN DECEMBER 1ST AND MARCH 15TH.
4. INTERMEDIATE INSPECTIONS. ALL PLANTS SHALL BE INSPECTED AND APPROVED BY THE LANDSCAPE DESIGNER AND/OR BIOLOGIST PRIOR TO INSTALLATION. CONDITION OF ROOTS OF A RANDOM SAMPLE OF PLANTS WILL BE INSPECTED, AS WILL AS ALL ABOVEGROUND GROWTH ON ALL PLANTS. ROOTS OF ANY BARE ROOT PLANTS, IF PERMITTED FOR USE, WILL BE INSPECTED. PLANT MATERIAL MAY BE APPROVED AT THE SOURCE, AT THE DISCRETION OF THE LANDSCAPE DESIGNER AND THE BIOLOGIST, BUT ALL MATERIAL MUST BE RE-INSPECTED AND APPROVED ON THE SITE PRIOR TO INSTALLATION. PLANT LOCATIONS SHALL ALSO BE INSPECTED AND APPROVED PRIOR TO PLANTING.
5. PRIOR TO INSTALLATION OF PLANT MATERIAL, THE PLANTING AREAS WILL BE LAID OUT BASED ON THE PLANTING PLAN, AND ALL HIMALAYAN BLACKBERRY, ENGLISH IVY OR OTHER INVASIVE PLANT SPECIES LOCATED IN THE PLANTING AREAS WILL BE REMOVED BY HAND.
6. ALL PLANTS SHALL BE PIT-PLANTED IN PLANTING PITS EXCAVATED 3X THE DIAMETER OF THE PLANT. PITS SHALL BE BACKFILLED WITH A SOIL/COMPOST MIX OF PACIFIC GARDEN MULCH TO NATIVE SOIL. PITS SHALL BE AMENDED WITH A HYDRATED SOIL POLYMER (INSTALLED AT RATES PER MANUFACTURER'S SPECIFICATIONS). PLANTS SHALL BE INSTALLED 2" HIGH AND SURFACED MULCHED TO A DEPTH OF 2" WITH MEDIUM-COURSE BARK MULCH PLACED CONTINUOUSLY THROUGHOUT THE PLANTING BED.
7. ALL PLANTS SHALL BE NURSERY GROWN (IN WESTERN WA OR OR) FOR AT LEAST 1 YEAR FROM PURCHASE DATE, FREE FROM DISEASE OR PESTS, WELL-ROOTED, BUT NOT ROOT-BOUND AND TRUE TO SPECIES.
8. PLANT LAYOUT SHALL BE APPROVED BY AOA PRIOR TO INSTALLATION AND APPROVED UPON COMPLETION OF PLANTING.
9. ALL PLANTINGS SHALL BE HAND-WATERED AT A RATE OF 1/2" OF FLOW 2-3 TIMES WEEKLY, FROM JUNE 15-OCT 31 THE FIRST YEAR AFTER PLANTING. THE SECOND YEAR, FLOW SHOULD BE REDUCED TO PROVIDE 1/2" OF FLOW 1-2 TIMES WEEKLY, FROM JULY 1-OCT 15.
10. UPON APPROVAL OF PLANTING INSTALLATION BY AOA, THE CITY OF BELLEVUE WILL BE NOTIFIED TO CONDUCT A SITE REVIEW FOR FINAL APPROVAL OF CONSTRUCTION.
11. MAINTENANCE SHALL BE REQUIRED IN ACCORDANCE WITH THE CITY OF BELLEVUE SENSITIVE AREAS MITIGATION GUIDELINES AND APPROVED PLANS.
12. MAINTENANCE SHALL BE IMPLEMENTED ON A REGULAR BASIS ACCORDING TO THE SCHEDULE BELOW.

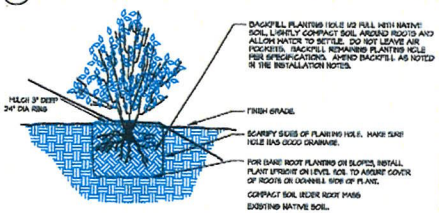
ANNUAL MAINTENANCE SCHEDULE

MAINTENANCE ITEM	J	F	M	A	M	J	J	A	S	O	N	D
WEED CONTROL			1	1	1	1	1	1	1	1		
GENERAL MAINT.	1	1	1	1	1	1	1	1	1	1	1	1
WATERING - YEAR 1						4	8	8	8	4		
WATERING - YEAR 2							4	4	4			

1-8 = NUMBER OF TIMES TASK SHALL BE PERFORMED PER MONTH.



1 CONTAINER TREE/SHRUB PLANTING DETAIL (typ.)
N.T.S.



2 BARE-ROOT TREE/SHRUB PLANTING DETAIL (typ.)
N.T.S.

GRAPHIC SCALE (IN FEET)
0 10 20 30 40 60
SCALE: 1:20

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NOTES

1. SITE PLAN PROVIDED BY CORE DESIGN, 14711 NE 29TH PLACE, SUITE 101, BELLEVUE, WA 98007, (425) 885-7877.

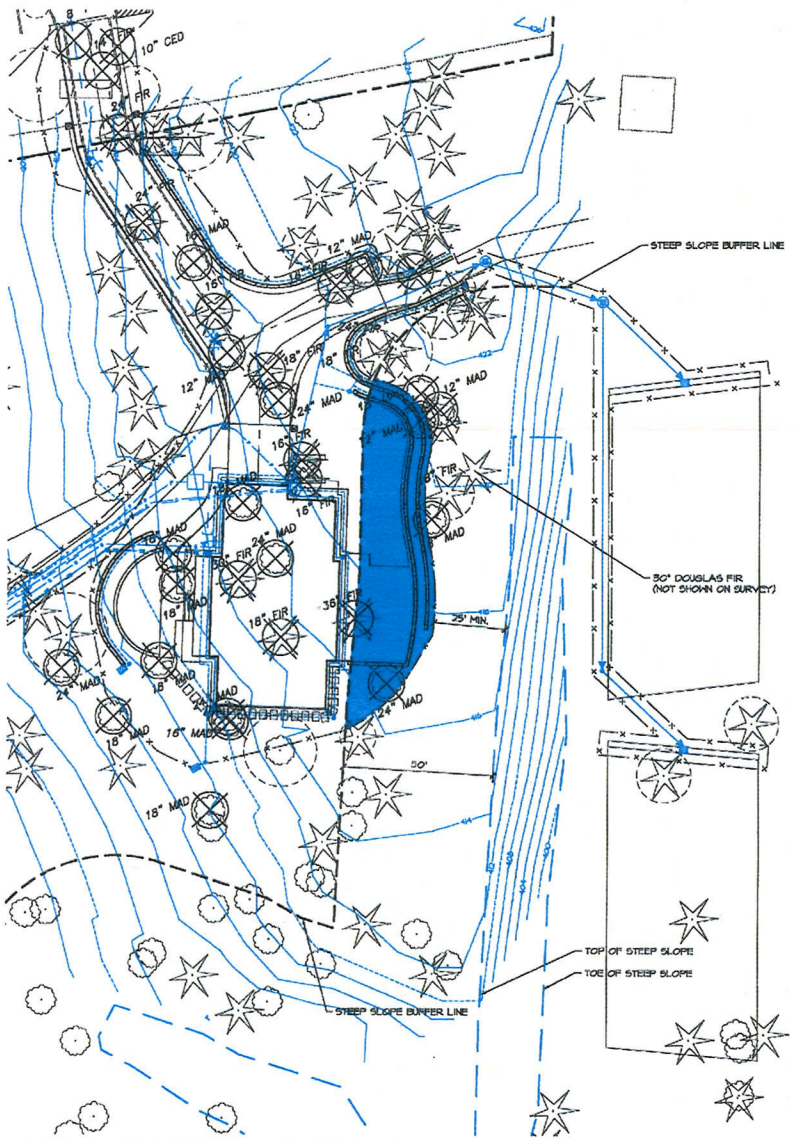
Altmann Oliver Associates, LLC | AOA
Environmental Planning & Natural Resource Applications
PO Box 279 Carnation, WA 98014 Office (425) 970-0550 Fax (425) 333-4369

LDS TEMPLE RESIDENCE
STEEP SLOPE BUFFER MITIGATION PLAN
2808 146TH AVE. SE
BELLEVUE, WA 98007

Revisions	Date	By

Date 06-14-13
Scale AS NOTED
Project# 4057

Sheet # L-3



STEEP SLOPE BUFFER IMPACT PLAN

PLAN LEGEND

- PROPERTY LINE
- STEEP SLOPES (>40%)
- 50' STEEP SLOPE BUFFER
- EXISTING TREES TO REMAIN
- EXISTING TREES TO BE REMOVED
- CLEARING LIMITS

IMPACT LEGEND

STEEP SLOPE BUFFER IMPACT 2,556 SF

GRAPHIC SCALE
(IN FEET)

0 10 20 30 40 60

SCALE: 1:20

N

NOTES

1. SITE PLAN PROVIDED BY CORE DESIGN, 14711 NE 29TH PLACE, SUITE 101, BELLEVUE, WA 98007, (425) 885-7877.

Altmann Oliver Associates, LLC

AOA Environmental Planning & Landscape Architecture

LDS TEMPLE RESIDENCE
STEEP SLOPE BUFFER IMPACT PLAN
2808 148TH AVE. SE
BELLEVUE, WA 98007

Revisions	Date	By

Date 06-19-13
Scale AS NOTED
Project# 4157

Sheet # L-2

Attachment B

Geological/Geotechnical Assessment

Gary A. Flowers, PLLC
Geological & Geotechnical Consulting
19532 12th Avenue NE
Shoreline, WA 98155-1106

November 30, 2012
Project No. GF12005

The Corporation of the Presiding Bishop of
The Church of Jesus Christ of Latter-day Saints
c/o Patrick Harron & Associates
14900 Interurban Avenue South, Suite 279
Seattle, WA 98168

Subject: Geological/Geotechnical Assessment
Proposed Temple President's Residence
2808 148th Ave SE, Bellevue, Washington 9807

This report presents the results of our geological and geotechnical assessment for the new residence for the Church of Jesus Chris of Latter-day Saints Temple in Bellevue, Washington. The overall temple property is located at the SE corner of the intersection of SE 28th Street and 148th Avenue SE. The planned residence will be situated on an undeveloped, forested knoll located in the southeastern portion of the property. A building pad will be created by clearing the property and adding structural fill to approximate elevation 419.5. Up to 8 feet of structural fill will be required near the southwest corner of the building. Ingress and egress will be via a driveway that extends from the southeast corner of the existing temple parking lot, across an existing detention pond berm and up the hill to the top of the knoll. The existing berm will be rebuilt and widened to accommodate the new driveway. Storm water control will be via dispersion from spreader trenches into existing forested areas.

The purpose of our site evaluation was to document existing shallow soil and ground water conditions on the property and to provide data for the design and construction of the planned residence. A site plan dated November 28, 2012 by Patrick Harron & Associates and a recent topographic survey by Downing & Associates were used as references for this study.

EXISTING SITE CONDITIONS

The subject site is a small area within the southeast corner of the overall temple property that is accessed by an existing dirt maintenance road. The area is heavily wooded with evergreen trees and native undergrowth. The existing elevation in the area of the planned residence is about 420 feet which is about 18 feet above the nearby temple parking lot. The planned development area is on the south end of a north-south trending ridgeline. Elevation falls off to the west, south and east and is relatively level to the north.

Recessional Sand

Light brown to brown, moist, medium sand to sand with some silt and gravel was observed in all of the exploration pits. This material ranged from 13 to 26 inches in thickness and was generally in a loose to medium dense condition. This sediment is interpreted to be Vashon age recessional sand. Recessional sand was deposited by melt water streams from the receding continental glacier as it retreated from this area about 10,000 years ago.

Glacial Till

Beneath the recessional sand layer in all of the exploration pits around the planned residence glacial till sediments were observed. The upper part of the till is a weathered zone consisting of medium dense, moist, gray, medium sand with some silt and gravel. This weathered zone ranges in thickness from about 12 to 24 inches.

Beneath the weathered zone, and extending to the bottom of all the exploration pits, dense to very dense, moist, gray silty sand with gravel was observed. This sediment is interpreted to be Vashon age lodgement till. Lodgement till was deposited at the base of and subsequently overrun by the advancing continental ice sheet as it entered this area about 15,000 years ago. The ice in this area is thought to have been several thousands of feet thick. The tremendous weight of the ice sheet consolidated the lodgement till into a nonhomogenous mass with high strength and low permeability characteristics.

Mappings

According to the Geologic Map of King County, 2007, by Booth, Troost and Wisher, the subject site is mapped as Vashon age glacial till (Qvt). These sediments were deposited as the base of, and subsequently overridden by, several thousand feet of glacial ice. Till is typically a nonhomogenous mixture of sand and gravel in a silt/clay matrix. Our findings are in agreement with the published map for the area.

According to the National Resources Conservation Service soil survey the surficial soils on the site are mapped as Alderwood gravelly sandy loam, 6 to 15 percent slopes. These soils form atop glacial till plains. Based on our observations of the overlying natural soil unit it is our opinion that the surficial soils are more likely to be Everett gravelly sandy loam, 5 to 15 percent slopes, which forms over outwash sediments, not till plains. These soils are typically well drained. The capacity for erosion is typically provided by the k factor. For the Everett soil the k factor is 0.05 for the whole soil which is very low. This is indicative of a low tendency for erosion in the natural state. The erosive capacity will increase when the soils are disturbed.

seismic event, severe shaking may cause liquefaction to occur and differential settlement may result. Glacially consolidated sediments are not subject to liquefaction and no mitigation is recommended.

Based on the encountered stratigraphy, it is our opinion that any earthquake damage to the proposed structures when founded on suitable foundation bearing strata in accordance with the recommendations provided in this report would be caused by the intensity and acceleration associated with the event and not any of the above-discussed impacts. Design of the project should be consistent with 2009 *International Building Code* (IBC) guidelines. In accordance with the 2009 IBC, the site is identified as Site Class C. Based on USGS guidelines, the design parameter for seismic acceleration on this site, with a 10% probability of exceedance in 50 years is .42g.

Steep Slope Hazards

The slope to the east of the planned residence is steeper than 40 percent, rises 12 to 14 feet and is classified as a steep slope hazard. However, as per Section 20.25H.120 of the Bellevue Municipal Code this slope does not meet the requirements of a landslide hazard. In addition, the subject slope, based on old and current survey information appears to be the result of past grading operations. The core of the slope is comprised of glacially consolidated sediments that, in the absence of ground water, are not typically noted to be unstable. No ground water was observed daylighting on the face of the slope and no ground water was observed within the explorations completed for this study. In addition, there were no visible sign of slope movement or instability noted at the time of our field investigation.

It is our opinion that the existing steep slope hazard area to the east of the project is currently stable with factors of safety in excess of 2.0 for static conditions and 1.5 for seismic loading conditions. The planned construction will not have an adverse impact on the stability of the steep slope area and a 25 foot buffer setback from the top of the slope is conservative and appropriate for this project.

CONCLUSIONS AND RECOMMENDATIONS

Our exploration indicates that, from a geotechnical standpoint, the subject site is suitable for the proposed development provided the recommendations contained herein are properly followed. Sediments encountered at the anticipated foundation depth will either consist of loose, medium sand with some silt and gravel or medium dense silty sand with gravel. These sediments should be re-compacted prior to footing concrete placement to provide a uniform bearing surface for the placement of typical shallow spread footing foundations.

The natural on-site soils are suitable for reuse as structural fill. However, the weathered till zone and unweathered till soil both contain a significant quantity of fine grained soil and will be

In the case of roadway and utility trench backfill, the structural fill should be placed and compacted in accordance with current local or county codes and standards.

The on-site soils, beneath the thin sand layer, generally contain a significant amount of fines and if they become over or under optimum moisture content, will be difficult to work and to compact. The soils should be placed at a moisture content within 3 percent of optimum moisture. At the time of the field exploration program the subsurface soils were generally at or near optimum moisture content and would be suitable to use as structural fill. During the hot summer months the primary concern will be over drying of the soils. Moisture conditioning of these soils should be attainable in the drier months but will be time consuming. Stockpiled soils should be protected from both drying and wetting conditions by covering with plastic sheeting. The contractor should strongly consider using imported pit run sand and gravel for structural fill purposes. If import soils are required for structural fill purposes they should meet the requirements of WSDOT 9-03.14(1) Gravel Borrow specification.

Driveway Construction on Berm Area

The existing berm is on the order of 12 feet wide although the original design documents indicate an 8 foot wide berm. Explorations on the south side of the berm indicate poor quality fill soils have been placed over the edge of the berm for many years which is why it is wider at this time than originally constructed.

It is our understanding that the new driveway will be 16 feet wide with 2 foot shoulders on each side or 20 feet total width. Roadway/berm widening will occur only on the south side of the existing berm.

All unsuitable fill soils and organics must be removed from the south side of the existing berm to expose compacted berm fill soils along the entire side of the berm and at the base of the new berm area. A minimum 2 foot deep by approximate 3 to 5 foot wide (or as determined appropriate at time of construction) keyway should then be excavated into bearing soils at the base of the new toe of slope. Once the keyway has been approved placement of structural fill can occur. All structural fill should be placed in lifts and compacted as described above in the **Site Grading** section.

All areas to be paved should be crowned or sloped to direct storm water flow to the edges of the roadway. Prior to application of the recommended pavement section the areas to be paved should be proofrolled with a fully loaded, tandem axle dump truck. Any soft or yielding areas identified during proofrolling should be overexcavated and backfilled with structural fill. Both the compaction of the subgrade and the proofroll should be witnessed and documented by a representative of this firm.

Retaining Walls

We are unaware of any retaining walls planned for the project unless the southwestern portion of the structure will be supported on extended foundation walls that are backfilled only on the outside. This will create an unbalanced condition that the structural engineer must address. Retaining walls taller than 3 feet should be lined with a minimum of 12 inches of washed rock or geotextile drainage mat to within 1 foot of finish grade. The washed rock or drainage mat must tie into the footing drain for the wall footing.

Retaining walls that can yield should be designed for an active equivalent fluid pressure of 35 pcf (pounds per cubic foot). Fully restrained, rigid walls that cannot yield should be designed using an "at-rest" equivalent fluid pressure of 55 pcf. These values assume level backfill using the on-site soils or imported clean granular soils.

Pavement Recommendations

All areas to be paved should be crowned or sloped to direct storm water flow to the edges of the roadway and parking areas. The subgrade should then be compacted to a dense and nonyielding condition. Any fill areas should be tested to verify a minimum compaction of 95 percent of the modified Proctor maximum density. Prior to application of the recommended pavement section the areas to be paved should be proofrolled with a fully loaded, tandem axle dump truck. Any soft or yielding areas identified during proofrolling should be overexcavated and backfilled with structural fill. Both the compaction of the subgrade and the proofroll should be witnessed and documented by a representative of this firm.

Once the subgrade is approved the following pavement section is the minimum recommended.

6" of base course/top course
4" of crushed surfacing top course
3" Hot Mix Asphalt (HMA) Class ½" aggregate with a PG 58-22 asphalt binder

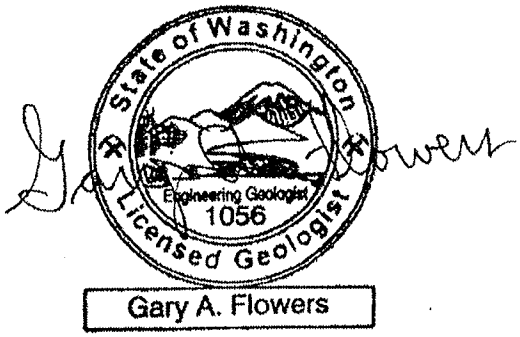
Base course and top course gravel should conform to Washington State Department of Transportation (WSDOT) Specification 9-03.9(3) for crushed surfacing materials.

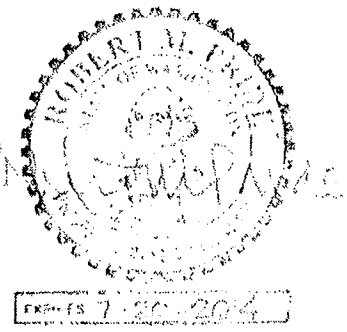
The HMA should be compacted to a minimum 91 percent of the maximum theoretical specific gravity (Rice's density).

Site Drainage

All storm water runoff from impermeable surfaces should be collected and tightlined to an approved storm water drainage system. No water should be discharged over the top of any steep slope hazard area.

Respectfully submitted,





Gary A. Flowers, P.G., P.E.G.
Engineering Geologist

Robert M. Pride, P.E.
Geotechnical Engineer

Attachments: Figure 1- Site & Exploration Plan
Appendix A – Exploration Logs

APPENDIX A

EXPLORATION LOGS

EP-5 Approximate elevation 413 feet

0.0' – 0.9' Forest duff & organic topsoil (OL)
0.9' – 2.0' Loose to medium dense, moist, light brown, medium SAND with some silt and gravel (SP)
2.0' – 2.9' Medium dense, gray, moist, silty SAND with gravel (SM)
2.9' – 5.0' Dense, gray, moist, silty SAND with gravel (SM)

T.D. @ 5.0 feet. No ground water. No caving.

EP-6 Approximate elevation 417 feet

0.0' – 0.7' Forest duff & organic topsoil (OL)
0.7' – 2.7' Loose to medium dense, moist, light brown, medium SAND with some silt and gravel (SP)
2.7' – 3.2' Medium dense, gray, moist, silty SAND with gravel (SM)
3.2' – 9.5' Dense, gray, moist, silty SAND with gravel (SM)

T.D. @ 6.0 feet. No ground water. No caving.

EP-7 Approximate elevation 400 feet – on southern edge of pond berm

0.0' – 4.0' Medium dense, moist, gray, silty SAND to sandy SILT (SM/ML) – original berm soils – on outside downslope the soils consisted of loose, silty sand with some gravel and mixed organics (FILL)

TD @ 4.0 feet. No ground water. Minor caving of fill soils

EP-8 Approximate elevation 400 feet – on west end of pond berm

0.0' – 3.0' Loose to medium dense, moist, brown, silty SAND with occasional gravel, some concrete and brick pieces (FILL)

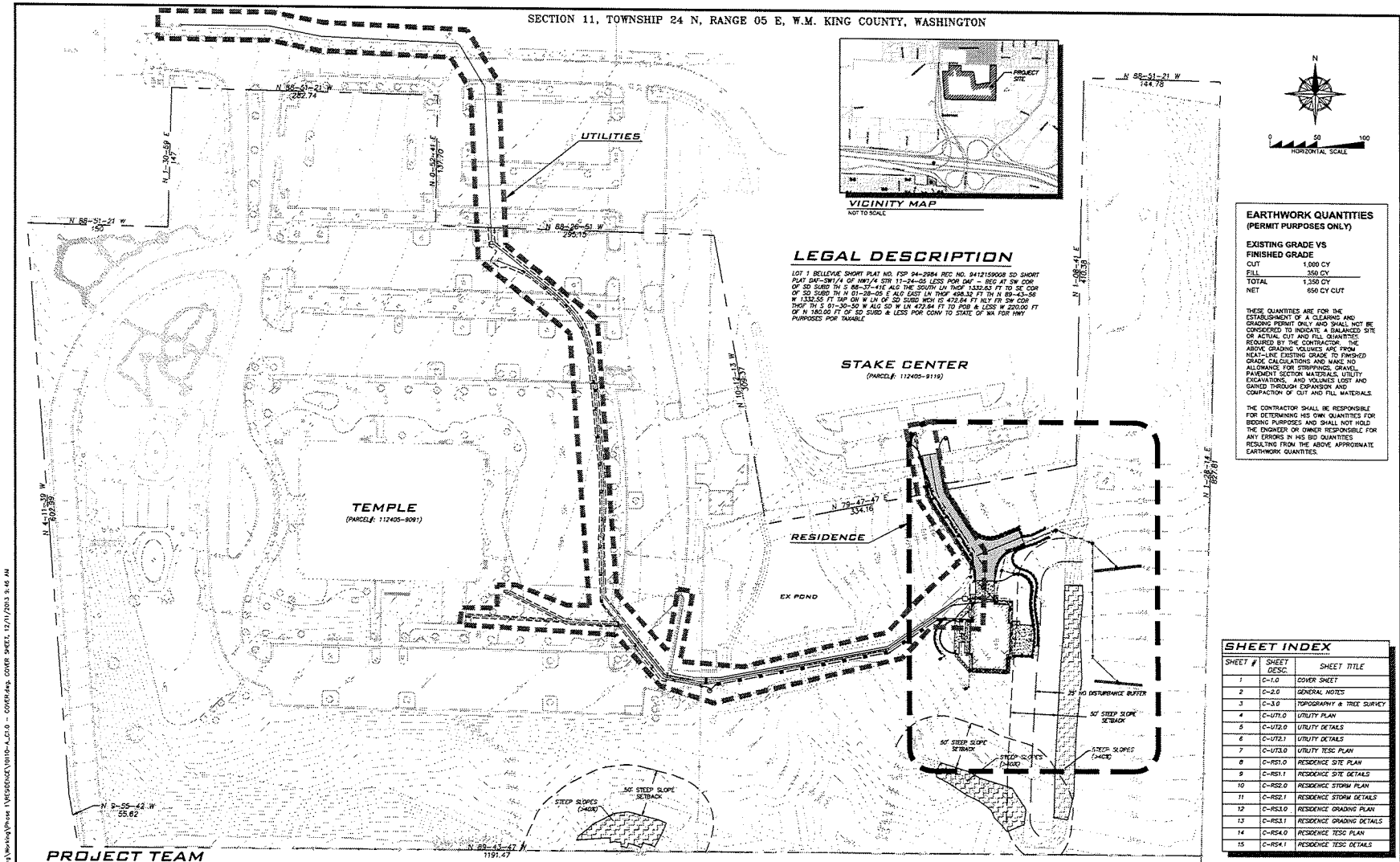
T.D. @ 3.0 feet. No ground water. No caving.

FINIS

Attachment C

Civil and Landscape Drawings

SECTION 11, TOWNSHIP 24 N, RANGE 05 E, W.M. KING COUNTY, WASHINGTON



VICINITY MAP
NOT TO SCALE

N

0 50 100
HORIZONTAL SCALE

LEGAL DESCRIPTION

LOT 1 BELLEVUE SHORT PLAT NO. FSP 94-2584 REC NO. 9412159008 SD SHORT PLAT DAF-SW1/4 OF NW1/4 STR 11-24-05 LESS POR DAF -- BEG AT SW COR OF SD SUBD TH S 88-37-41E ALG THE SOUTH LN THOF 1332.63 FT TO SE COR OF SD SUBD TH N 01-28-05 E ALO EAST LN THOF 498.32 FT TH N 89-43-56 W 1332.55 FT TAP ON W LN OF SD SUBD WCH IS 472.84 FT NLY FR SW COR THOF TH S 01-30-50 W ALG SD W LN 472.64 FT TO POB & LESS W 220.00 FT OF N 180.00 FT OF SD SUBD & LESS POR CONV TO STATE OF WA FOR HWY PURPOSES POR TAXABLE

EARTHWORK QUANTITIES
(PERMIT PURPOSES ONLY)

EXISTING GRADE VS FINISHED GRADE

CUT	1,000 CY
FILL	350 CY
TOTAL	1,350 CY
NET	650 CY CUT

THESE QUANTITIES ARE FOR THE ESTABLISHMENT OF A CLEARING AND GRADING PERMIT ONLY AND SHALL NOT BE CONSIDERED TO INDICATE A BALANCED SITE OR ACTUAL CUT AND FILL QUANTITIES REQUIRED BY THE CONTRACTOR. THE ABOVE GRADING VOLUMES ARE FROM NEAT-LINE EXISTING GRADE TO FINISHED GRADE CALCULATIONS AND MAKE NO ALLOWANCE FOR STRIPPINGS, GRAVEL PAVEMENT SECTION MATERIALS, UTILITY EXCAVATIONS, AND VOLUMES LOST AND GAINED THROUGH EXPANSION AND COMPACTION OF CUT AND FILL MATERIALS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING HIS OWN QUANTITIES FOR BIDDING PURPOSES AND SHALL NOT HOLD THE ENGINEER OR OWNER RESPONSIBLE FOR ANY ERRORS IN HIS BID QUANTITIES RESULTING FROM THE ABOVE APPROXIMATE EARTHWORK QUANTITIES.

SHEET INDEX

SHEET #	SHEET DESC.	SHEET TITLE
1	C-1.0	COVER SHEET
2	C-2.0	GENERAL NOTES
3	C-3.0	TOPOGRAPHY & TREE SURVEY
4	C-UT1.0	UTILITY PLAN
5	C-UT2.0	UTILITY DETAILS
6	C-UT2.1	UTILITY DETAILS
7	C-UT3.0	UTILITY TESC PLAN
8	C-RS1.0	RESIDENCE SITE PLAN
9	C-RS1.1	RESIDENCE SITE DETAILS
10	C-RS2.0	RESIDENCE STORM PLAN
11	C-RS2.1	RESIDENCE STORM DETAILS
12	C-RS3.0	RESIDENCE GRADING PLAN
13	C-RS3.1	RESIDENCE GRADING DETAILS
14	C-RS4.0	RESIDENCE TESC PLAN
15	C-RS4.1	RESIDENCE TESC DETAILS

PROJECT TEAM

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SHOFFNER CONSULTING
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BOTHELL, WA 98021
PH: 206.755.2871
EMAIL: tony@tonyshoffner.com

PROJECT INFORMATION

SITE ADDRESS:	15237 SE 28TH ST, BELLEVUE, WA 98007
PARCEL NUMBER:	112405-9091
ZONING:	CR
SITE AREA:	17.98 AC
WATER SERVICE:	CITY OF BELLEVUE
SEWER SERVICE:	CITY OF BELLEVUE

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PATRICK HARRON & ASSOCIATES, LLC
Civil Engineering & Planning
14900 Interurban Ave. S., Suite 279, Seattle, WA 98168
Phone: 206.674.4659 / Fax: 206.674.4660
www.patrickharron.com

BRIAN G. HARRON — EXPIRATION DATE — PROFESSIONAL ENGINEER
10/15/13

LDS TEMPLE
PRESIDENT'S RESIDENCE
15237 SE 28TH STREET
BELLEVUE, WA 98007

Project for:
THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

Mark	Date (mm/dd/yy)	Description
	15-OCT-13	BLDG PERMIT

Project Number: 10110
Plan Series: ---
Property Number: ---

Sheet Title: COVER SHEET

Sheet: 1 OF 15
C-1.0

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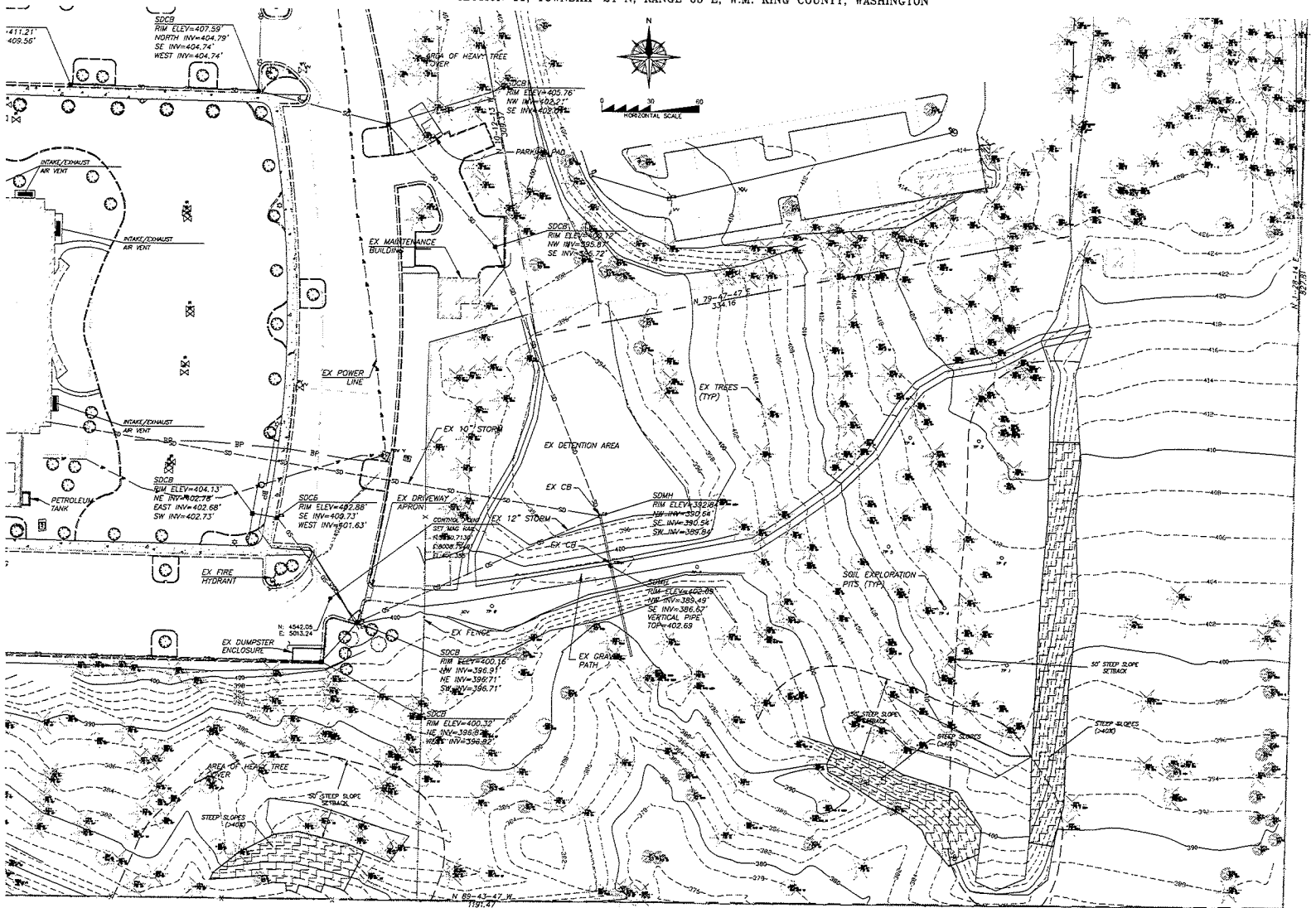
SECTION 11, TOWNSHIP 24 N, RANGE 05 E, W.M. KING COUNTY, WASHINGTON



SURVEYOR

CONTACT: DAVE DOWNING
DAVE R. DOWNING & ASSOCIATES, INC.
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PH: 360.653.5385
EMAIL: dave@downingsurveying.com

LEGAL DESCRIPTION

LOT 1 BELLEVUE SHORT PLAT NO. FSP 94-2984 REC NO. 9412159008 SD SHORT PLAT DAF-SW1/4 OF NW1/4 STR 11-24-05 LESS POR DAF – BEG AT SW COR OF SD SUBD TH S 88-37-41E ALG THE SOUTH LN THOF 1332.63 FT TO SE COR OF SD SUBD TH N 01-28-05 E ALG EAST LN THOF 498.32 FT TH N 89-43-56 W 1332.55 FT TAP ON W LN OF SD SUBD WCH IS 472.54 FT NLY FR SW COR THOF TH S 01-30-50 W ALG SD W LN 472.64 FT TO POB & LESS W 220.00 FT OF N 180.00 FT OF SD SUBD & LESS POR CONV TO STATE OF WA FOR HWY PURPOSES POR TAXABLE

DATUM

NAVD 88

NOTE: EXISTING TOPOGRAPHIC SURVEY AND BOUNDARY PROVIDED BY M/S ENGINEERING (AUG. 2012) WITH ADDITIONAL TOPOGRAPHIC SURVEY TO THE SOUTH AND EAST OF THE EXISTING PARKING LOT PROVIDED BY DOWNING & ASSOCIATES (OCT. 2012).

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12/5/13

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BELLEVUE, WA 98007

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JESUS CHRIST
OF LATTER-DAY SAINTS

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1	15-OCT-13	BLDG PERMIT

Project Number: 10110
Plan Series: --
Property Number: --

Sheet Title: TOPOGRAPHY & TREE SURVEY

Sheet: 3 OF 15
C-3.0

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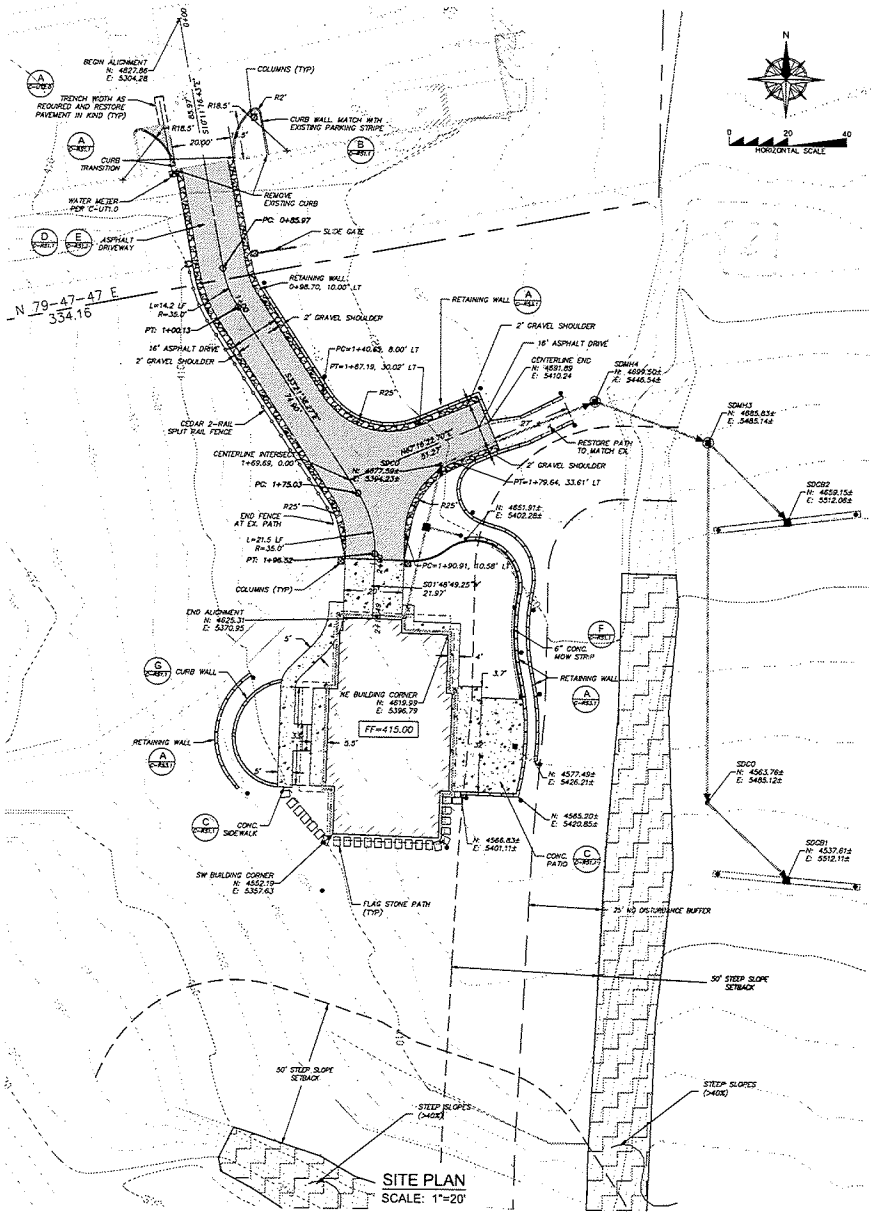
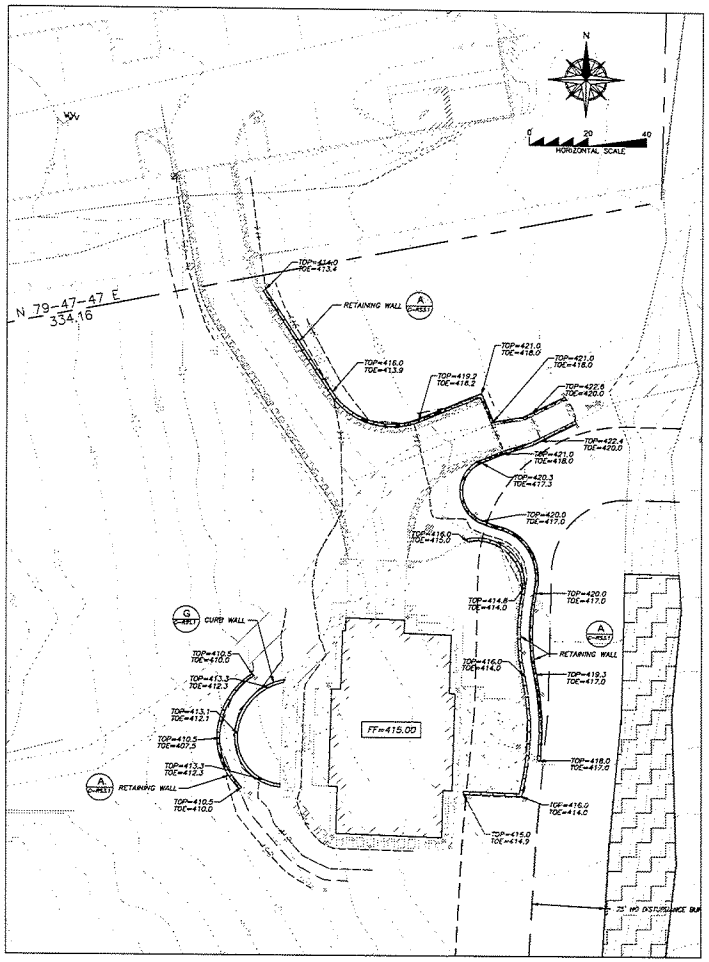


SITE PLAN
SCALE: 1"=20'



WALL ELEVATIONS
SCALE: 1"=20'

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BELLEVUE, WA 98007

Project for:
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	15-OCT-13	BLDG PERMIT

Project Number: 10110
Plan Series: ---
Property Number: ---

Sheet Title:
RESIDENCE SITE PLAN

Sheet: 8 OF 15
C-RS1.0

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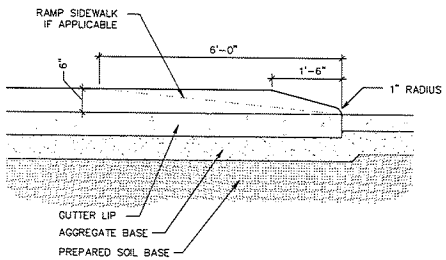
SECTION 11, TOWNSHIP 24 N, RANGE 05 E, W.M. KING COUNTY, WASHINGTON

GENERAL NOTES

1. SEE SITE PLAN FOR APRON, MOW STRIP AND SIDEWALK LOCATIONS AND WIDTHS.
2. 1" PRIOR TO SEEDING, 2" PRIOR TO SODDING AND 3" IN PLANTING AREAS.
3. EXPANSION JOINT MATERIAL SHALL BE RECESSED 1/4" WHERE SEALANT IS NOT APPLIED, AND 1/2" WHERE SEALANT IS APPLIED.
4. EXTERIOR CONCRETE – USE 4,500 PSI. MIN. TYPE D IF EXPOSED TO FREEZING AND/OR DE-ICERS, 3,000 PSI. MIN. TYPE A OTHERWISE.
5. CONTRACTOR TO INSTALL EXPANSION AND CONTRACTION JOINTS AS REQUIRED PER THE SPECIFICATIONS.
6. ALL AGGREGATES SHALL SATISFY ASTM AND DEPARTMENT OF TRANSPORTATION STRENGTH AND DURABILITY REQUIREMENTS. GRANITE AGGREGATES ARE PREFERRED BUT HIGH QUALITY LIMESTONE AGGREGATES ARE ACCEPTABLE. SEE SPECIFICATION



A CURB TRANSITION
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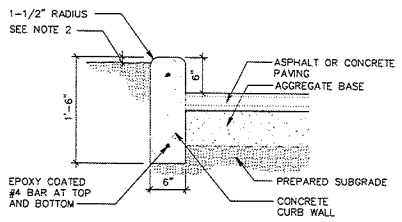
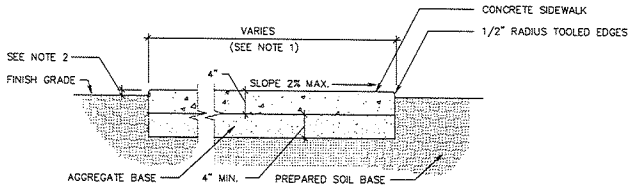
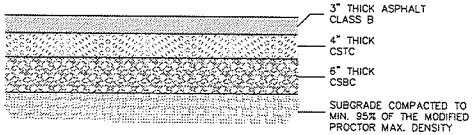


B CURB WALL IN PAVMENT
NTS



C SIDEWALK & PATIO
NTS



D ACCESS DRIVE PAVING SECTION
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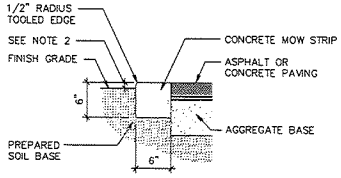

F MOW STRIP
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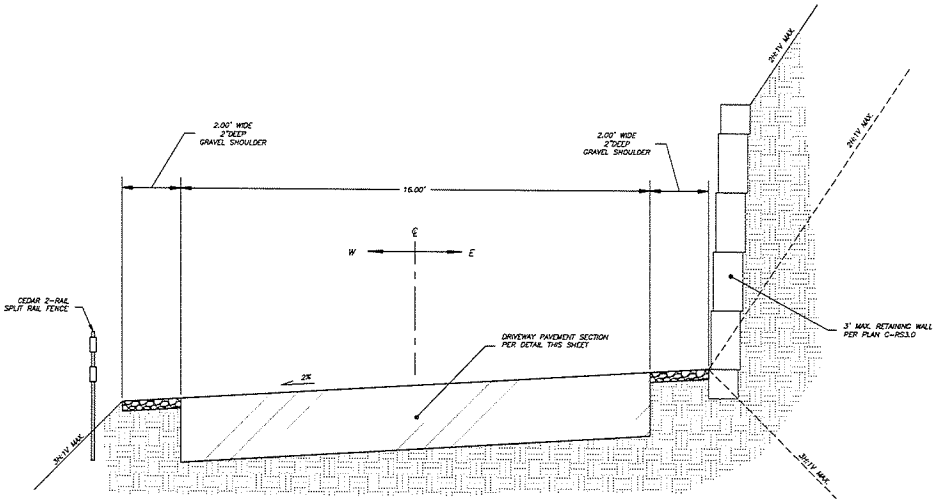

E TYPICAL ACCESS DRIVE SECTION
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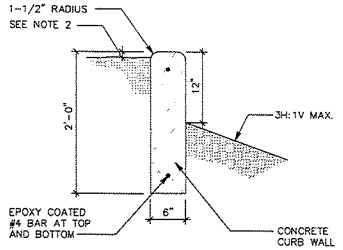

G CURB WALL IN LANDSCAPE
NTS

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LDS TEMPLE
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BELLEVUE, WA 98007

Project for:
THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

Mark	Date	Description
	15-OCT-13	BLDG PERMIT

Project Number: 10110
Plan Series: ---
Property Number: ---
Sheet Title: RESIDENCE SITE DETAILS
Sheet: 9 OF 15
C-RS1.1

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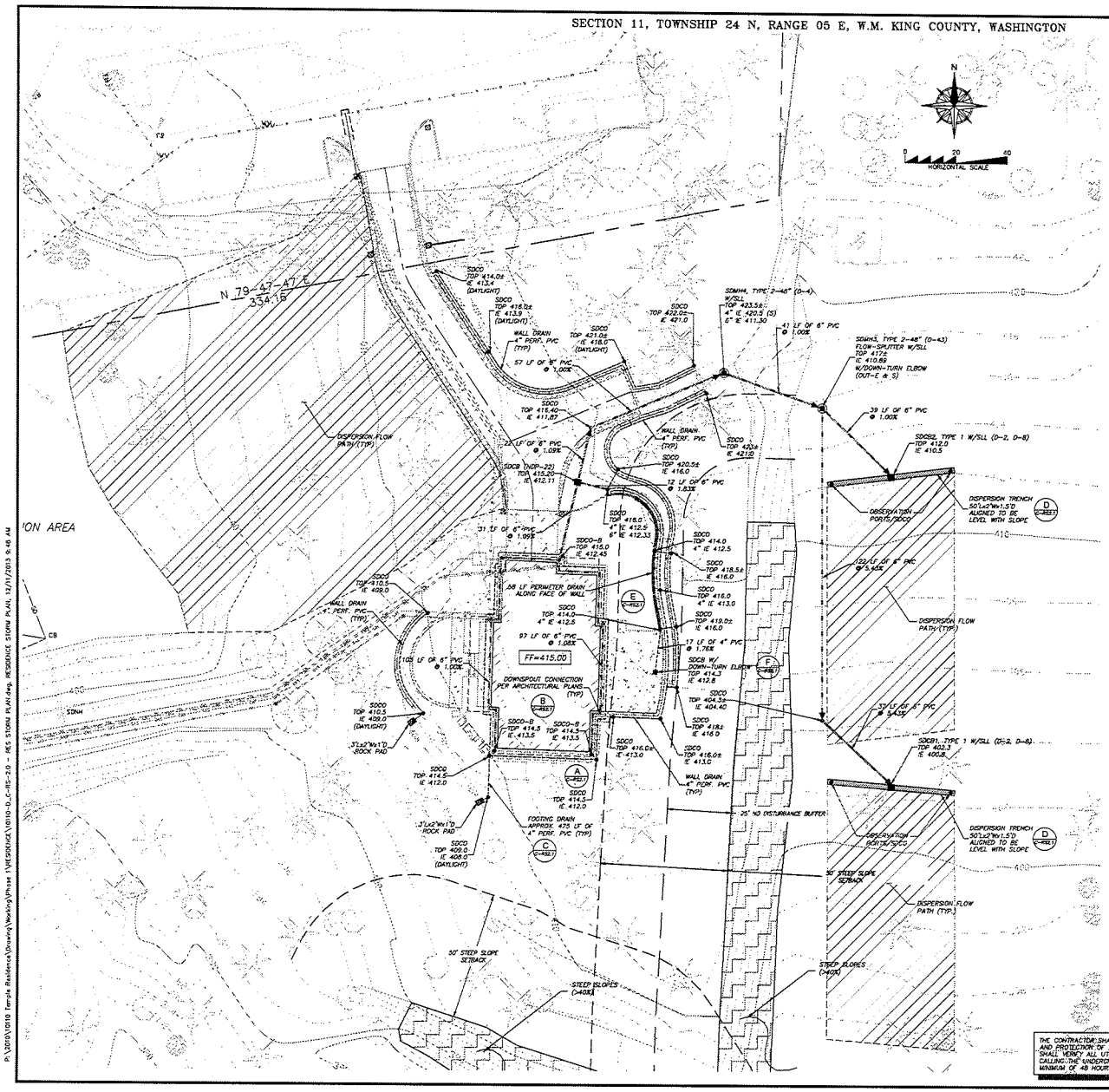
SECTION 11, TOWNSHIP 24 N, RANGE 05 E, W.M. KING COUNTY, WASHINGTON



NOTES:

BY REFERENCE THE FOLLOWING CITY OF BELLEVUE STANDARD DETAILS OR PORTIONS THEREOF, ARE INCORPORATED INTO THE DESIGN DRAWINGS:

DETAIL D-2	CATCH BASIN TYPE 1
DETAIL D-4	CATCH BASIN TYPE 2 - 48"
DETAIL D-7	PARKING LOT/AREA GRATE
DETAIL D-8	SOLID COVER
DETAIL NDP-22	ROOF DOWNSPOUT DISPERSION TRENCH
DETAIL D-25	TYPICAL TRENCH DETAIL
DETAIL D-43	SPILL CONTROL SEPARATOR TYPE 2 - 48"
DETAIL D-46	PIPE BEDDING
DETAIL D-52	CLEANOUT TO GRADE

1. FOR STORM DRAINAGE CLEAN OUT (SDCO) USE BELLEVUE STANDARD DETAIL D-52 "OUTSIDE OF R.O.W. OR EASEMENT". ALL 4" SDCO TO HAVE MSBCP-1118-1801 PLASTIC BOXES. ALL 6" SDCO TO HAVE MSBCP-1324-12 PLASTIC BOXES. CONCRETE COLLARS ARE REQUIRED FOR SDCO THAT ARE ADJACENT TO THE FACE OF THE RESIDENCE'S FOUNDATION. CONCRETE COLLARS ARE NOT REQUIRED FOR SDCO IN THE VEGETATED AREAS ASSOCIATED WITH THE LANDSCAPE RETAINING WALLS.
2. THE RESIDENCE HAS NUMEROUS DOWNSPOUTS CONNECTING TO AN UNDERGROUND DOWNSPOUT COLLECTION SYSTEM (SEE DETAIL C/SHEET C-RS2.1). THE ARCHITECTURAL DRAWINGS ALSO INCLUDE A LEAF GUARD SYSTEM FOR THE ROOF GUTTERS. IT IS NOT NECESSARY TO PLACE A CATCH BASIN AT ALL DOWNSPOUT LOCATIONS AS CALLED FOR IN CITY OF BELLEVUE DETAIL NDP-22. ONE DETAIL NPD-22 CATCH BASIN SHALL BE LOCATED IN THE LAWN AREA AT THE NE QUADRANT OF THE RESIDENCE.
3. DETAIL NDP-22 ILLUSTRATES A DISPERSAL TRENCH "SECTION A-A" AND IT'S ASSOCIATED "PROFILE VIEW". THE CONTRACTOR SHALL USE THE DIMENSIONS, LOCATIONS AND LAYOUT CHARACTERISTICS SHOWN ON THE OWNER'S "DETAIL D-DISPERSAL TRENCH" (SEE SHEET C-RS2.1) SINCE THE OWNER'S DESIGN IS A MORE ROBUST AND LONG LASTING SYSTEM.
4. A STORM DRAINAGE CATCH BASIN (SDCB) IS LOCATED IN THE CONCRETE PATIO TO THE EAST OF THE RESIDENCE. IT IS NOT INTENDED THAT THIS CATCH BASIN BE A TYPE 1 CB BUT INSTEAD WILL BE A SMALLER YARD DRAIN WITH AN ARCHITECTURAL STYLED BRONZE GRATE. THE SPECIFIC STYLE HAS NOT BEEN SELECTED. THE CONTRACTOR SHALL PROVIDE "CUT SHEETS" TO THE ARCHITECT FOR THIS SPECIFIC STRUCTURE.

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	15-OCT-13	BLDG PERMIT

Project Number: 10110
Plan Series: —
Property Number: —

Sheet Title: RESIDENCE STORMWATER PLAN

Sheet: 10 OF 15
C-RS2.0

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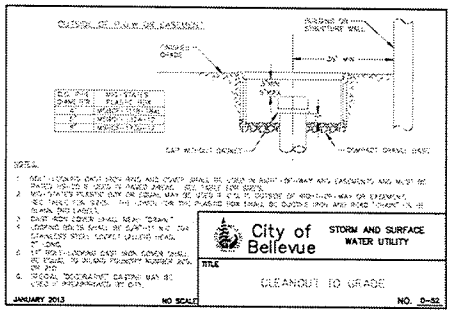
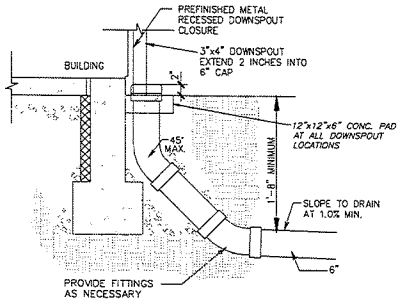
SECTION 11, TOWNSHIP 24 N, RANGE 05 E, W.M. KING COUNTY, WASHINGTON



A CLEANOUT
NTS



B DOWNSPOUT CONNECTION
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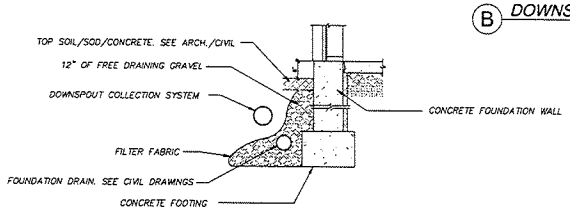
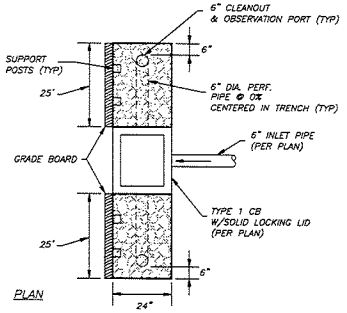
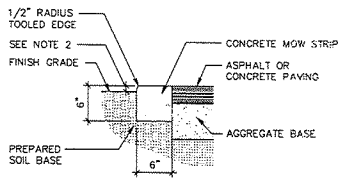


C FOOTING AND DOWNSPOUT DRAIN DETAIL
NTS

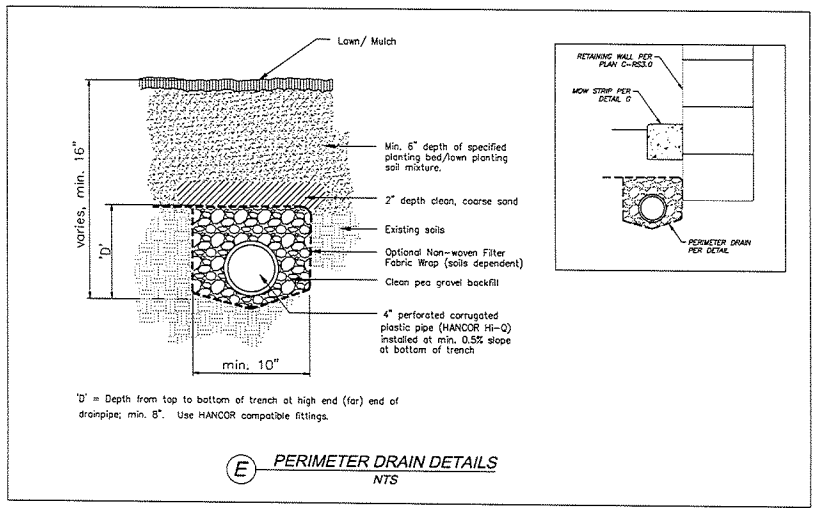


NOTE:
REFER TO THIS DETAIL FOR PIPE SIZES, DIMENSIONS, AND CONFIGURATION OF THE DISPERSION TRENCH. ADDITIONAL DETAILS FOR COMPONENTS OF THE SYSTEM IS PROVIDED ON SHEET CRS2.1B DETAIL NOP-22

D DISPERSION TRENCH
NTS

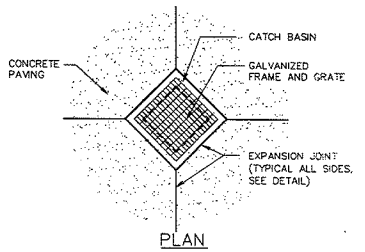


G MOW STRIP
NTS



'D' = Depth from top to bottom of trench at high end (far) end of drainpipe; min. 8". Use HANCOR compatible fittings.

E PERIMETER DRAIN DETAILS
NTS



SECTION

F BASIN IN CONCRETE
NTS

THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION BY CALLING THE UNDERGROUND LOCATE LINE AT 1-800-424-5555 A MINIMUM OF 48 HOURS PRIOR TO ANY EXCAVATION.

APPROVED FOR CONSTRUCTION
BY THE CITY OF BELLEVUE
BY:_____ DATE:_____
TITLE:_____

PATRICK ARRON & ASSOCIATES, LLC
Civil Engineering & Planning
14900 Interurban Ave. S. Suite 278, Seattle, WA 98168
Phone: 206.674.4659 / Fax: 206.674.4660

10/15/13

LDS TEMPLE
PRESIDENT'S RESIDENCE
15237 SE 28TH STREET
BELLEVUE, WA 98007

Project for:
THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

Mark	Date	Description
	15-OCT-13	BLDG PERMIT

Project Number: 10110
Plan Series: ---
Property Number: ---

Sheet Title:
RESIDENCE STORM DETAILS

Sheet: 11 OF 15
C-RS2.1

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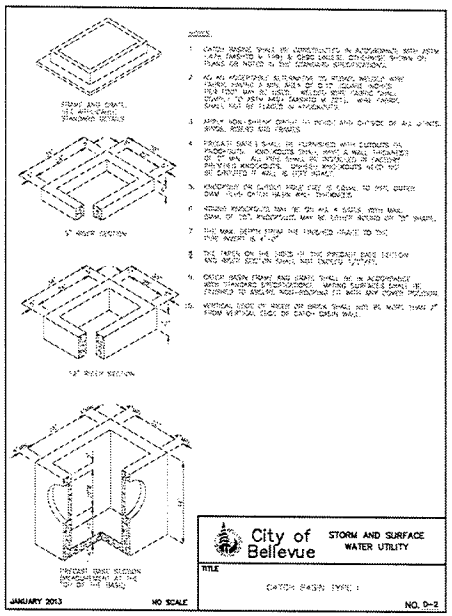
SECTION 11, TOWNSHIP 24 N, RANGE 05 E, W.M. KING COUNTY, WASHINGTON

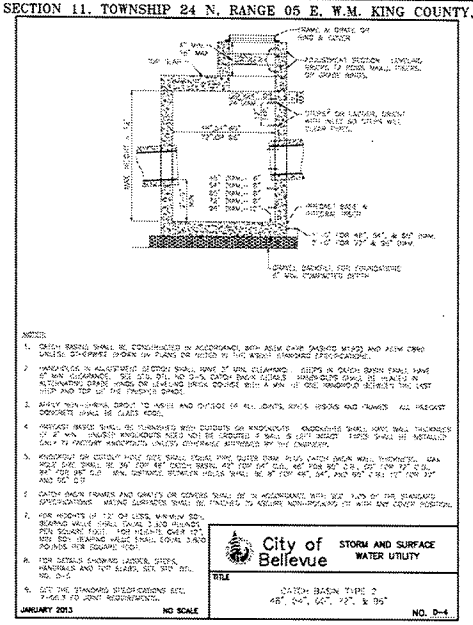


NOTES:
1. CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C478 (AASHTO M199) EXCEPT AS MODIFIED BY THE STANDARD SPECIFICATIONS.
2. ALL ADJUSTMENTS, ALTERATIONS OF EXISTING MANHOLES, WITH FRAMES & COVERS SHALL BE DONE UNDER THE DIRECTION OF THE CITY INSPECTOR. ALL NEW AND/OR CHANGED STRUCTURES SHALL BE BUILT, INSTALLED, AND/OR ADJUSTED TO FINAL GRADE BY THE CONTRACTOR.
3. APPLY NON-SHRINK GROUT TO INSIDE AND OUTSIDE OF ALL JOINTS, SPIGOT, RISERS AND FRAMES.
4. PRECAST BASE SHALL BE FURNISHED WITH KNOCKOUTS OR PERFORATIONS. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF NOT LESS THAN 1" AND SHALL BE DESIGNED FOR EASY REMOVAL. PERFORATIONS SHALL BE PROVIDED FOR PIPE SIZES AND LOCATIONS SHOWN ON THE PLANS. PIPE OPENINGS SHALL BE CAST OR DRILLED TO ALLOW A SNUG FIT FOR PIPE AND GASKET.
5. KNOCKOUTS OR CUTOUTS SHALL EXIST AS CLOSE TO PIPE OUTLET INVERT AS POSSIBLE. SEE STD. DTL. NO. 2-04 FOR CATCH BASIN WALL THICKNESS.
6. ROUND MANHOLES SHALL BE 23" AS A SIZED WITH WALL, BASE, OR CAP MANUFACTURER MAY BE LOWER ACCORD OF THE SHAPE.
7. THE MAX. DEPTH FROM THE FINISHED GRADE TO THE PIPE INVERT IS 4'-0".
8. THE TAPER ON THE INSIDE OF THE PRECAST BASE SECTION MAY BEGIN AT OR BELOW THE TOP OF THE PIPE.
9. CATCH BASIN FRAME AND GRATE SHALL BE IN ACCORDANCE WITH STANDARDS SPECIFICATIONS. MATING SURFACES SHALL BE MACHINED TO ENSURE NON-ROCKING IN BOTH LOW COVER POSITIONS.
10. VERTICAL JOINT IN RISER OR BRICK SHALL NOT BE MORE THAN 1" FROM VERTICAL EDGE OF CATCH BASIN WALL.

City of Bellevue — STORM AND SURFACE WATER UTILITY

TITLE: CATCH BASIN TYPE 1

JANUARY 2013 — NO SCALE — NO. D-2

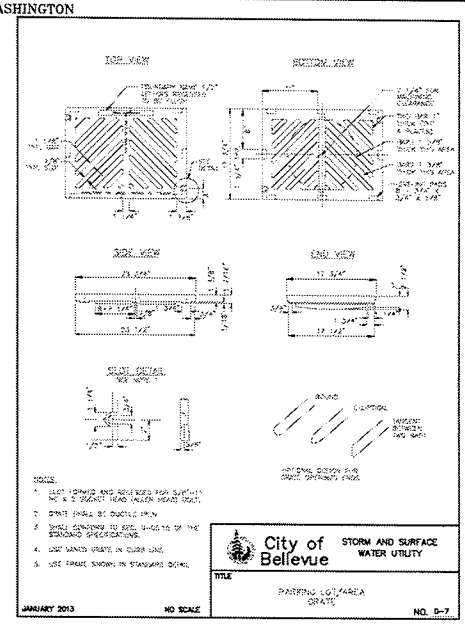


NOTES:
1. CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C478 (AASHTO M199) AND ASTM C890 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE WSDOT STANDARD SPECIFICATIONS.
2. HANDHOLES IN ADJUSTMENT SLEEVES SHALL HAVE 12" MIN. CLEARANCE. JOINTS IN CATCH BASIN SHALL HAVE 1/2" MIN. CLEARANCE. SEE STD. DTL. NO. 2-04. CATCH BASIN OUTLET PIPE MAY BE PLACED IN ALTERNATIVE SPACE ABOVE OR BELOW BRICK COURSE WITH A MIN. OF ONE COMPLETE COURSE OF BRICK BELOW THE LOST TOP AND TOP OF THE PREVIOUS SPACE.
3. APPLY NON-CHEMICAL GROUT TO INSIDE AND OUTSIDE OF ALL JOINTS, KNOCK HOLES AND FRAMES. ALL PRECAST CONCRETE SHALL BE CLASS 4000.
4. PRECAST BASE SHALL BE FURNISHED WITH KNOCKOUTS OR PERFORATIONS. KNOCKOUTS SHALL HAVE WALL THICKNESS OF 2" MIN. UNLESS KNOCKOUTS ARE NOT REQUIRED. SHALL BE 6" FOR 36" DIA. AND LESS, 8" FOR 42" DIA., 10" FOR 48" DIA., AND 12" FOR 54" AND 60" DIA. MIN. DISTANCE BETWEEN HOLES SHALL BE 8" FOR 48", 54", AND 60" DIA. AND 12" FOR 72" AND 84" DIA.
5. KNOCKOUT OR CUTOUT HOLE SIZE SHALL EQUAL PIPE OUTER DIAM. PLUS CATCH BASIN WALL THICKNESS. MAX. HOLE SIZE SHALL BE 24" FOR 48" CATCH BASIN, 30" FOR 54" DIA., 36" FOR 60" DIA., 42" FOR 72" DIA., AND 48" FOR 84" DIA. MIN. DISTANCE BETWEEN HOLES SHALL BE 8" FOR 48", 54", AND 60" DIA. AND 12" FOR 72" AND 84" DIA.
6. CATCH BASIN FRAMES AND GRATES OR COVERS SHALL BE IN ACCORDANCE WITH SEC. 9-05.15 OF THE STANDARD SPECIFICATIONS. MATING SURFACES SHALL BE MACHINED TO ASSURE NON-ROCKING IN BOTH LOW COVER POSITIONS.
7. FOR HEIGHTS OF 12'-0" OR LESS, MINIMUM BEARING VALUE SHALL EQUAL 2,100 POUNDS PER SQUARE FOOT. FOR HEIGHTS OVER 12'-0", MIN. BEARING VALUE SHALL EQUAL 2,800 POUNDS PER SQUARE FOOT.
8. FOR DETAILS ENDWALL LADDER, STEPS, HANDRAILS AND TOP SLABS, SEE STD. DTL. NO. D-5.
9. SEE THE STANDARD SPECIFICATIONS SEC. 7-08.3 FOR JOINT REQUIREMENTS.

City of Bellevue — STORM AND SURFACE WATER UTILITY

TITLE: CATCH BASIN TYPE 2
48", 54", 60", 72", & 84"

JANUARY 2013 — NO SCALE — NO. D-4

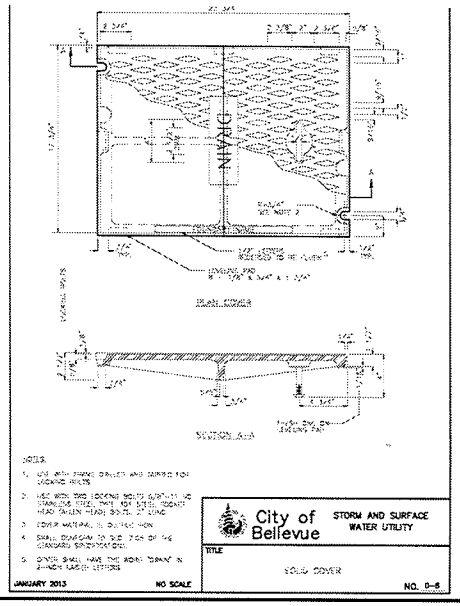


NOTES:
1. CAST IRON AND STEEL PER AASHTO M306 FOR 30" DIA. & 3" BOLT HEAD (ALLEN HEAD) TYPE.
2. GRATE SHALL BE DUCTILE IRON.
3. SHALL CONFORM TO SEC. 9-05.15 OF THE STANDARD SPECIFICATIONS.
4. USE VANED GRATE IN CURB LINE.
5. USE FRAME SHOWN IN STANDARD DETAIL.

City of Bellevue — STORM AND SURFACE WATER UTILITY

TITLE: PARKING LOT/AREA GRATE

JANUARY 2013 — NO SCALE — NO. D-7

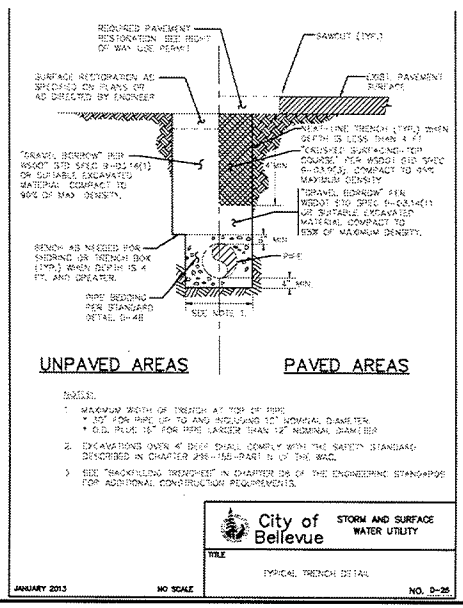


NOTES:
1. USE WITH FRAME DRILLED AND TAPPED FOR LOCKING RIVETS.
2. USE WITH TWO LOCKING BOLTS (SPECIAL NO STANDARD TYPE) THAT HAS LESS CONCAVE HEAD TAPER (EASY) SO CL. 2" LONG.
3. COVER MATERIAL IS DUCTILE IRON.
4. SMALL DIAGRAM IS 3/4" THICK OF THE STANDARD SPECIFICATION.
5. COVER SHALL HAVE THE WORD "DRAIN" IN 2-INCH RAISED LETTERS.

City of Bellevue — STORM AND SURFACE WATER UTILITY

TITLE: SOLID COVER

JANUARY 2013 — NO SCALE — NO. D-8



UNPAVED AREAS | PAVED AREAS

NOTES:
1. MAXIMUM WIDTH OF TRENCH AT TOP OF PIPE:
   - 30" FOR PIPE UP TO AND INCLUDING 24" NOMINAL DIAMETER.
   - O.D. PLUS 16" FOR PIPE LARGER THAN 24" NOMINAL DIAMETER.
2. EXCAVATIONS OVER 4' DEEP SHALL COMPLY WITH THE SAFETY STANDARD DESCRIBED IN CHAPTER 296-155-PART N OF THE WAC.
3. SEE "BACKFILLING TREATMENT" IN CHAPTER D6 OF THE ENGINEERING STANDARDS FOR ADDITIONAL CONSTRUCTION REQUIREMENTS.

City of Bellevue — STORM AND SURFACE WATER UTILITY

TITLE: TYPICAL TRENCH DETAIL

JANUARY 2013 — NO SCALE — NO. D-26

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14800 Interurban Ave. S. Suite 230, Seattle, WA 98168
Phone: 206.674.4659 / Fax: 206.674.4660
www.patrickharron.com

Project for:
THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

LDS TEMPLE
PRESIDENT'S RESIDENCE
15237 SE 28TH STREET
BELLEVUE, WA 98007

Mark	Date (MM/YY)	Description
1	15-OCT-13	BLDG PERMIT

Project Number: 10110
Plan Sensor: —
Property Number: —

Sheet Title: RESIDENCE STORM DETAILS

Sheet: 11A OF 15
CRS2.1A

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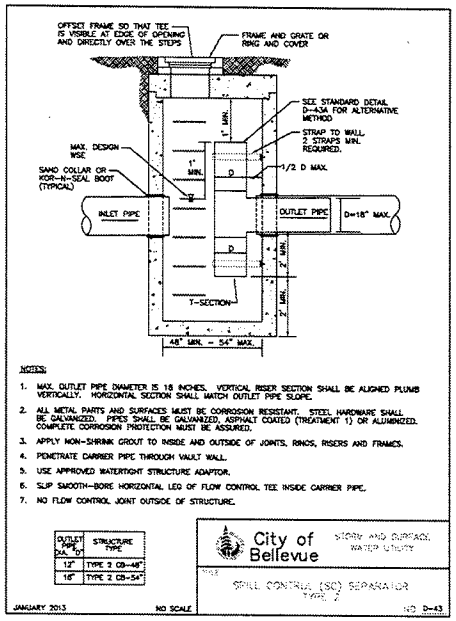
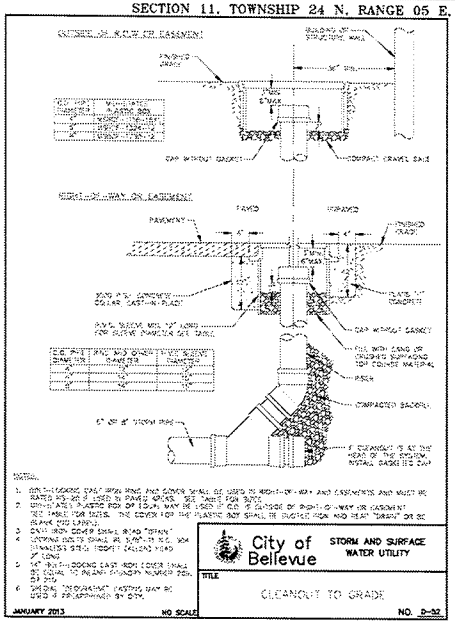
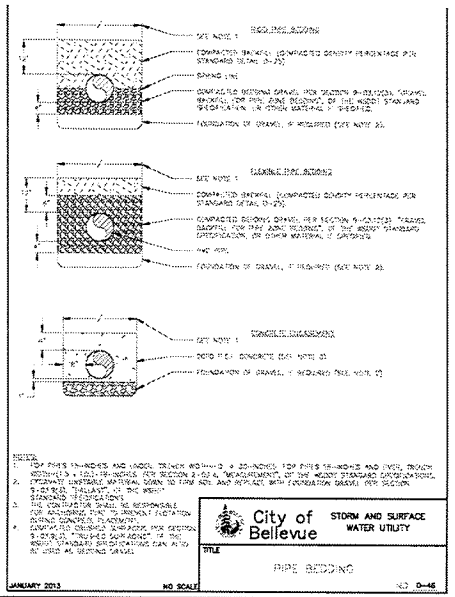
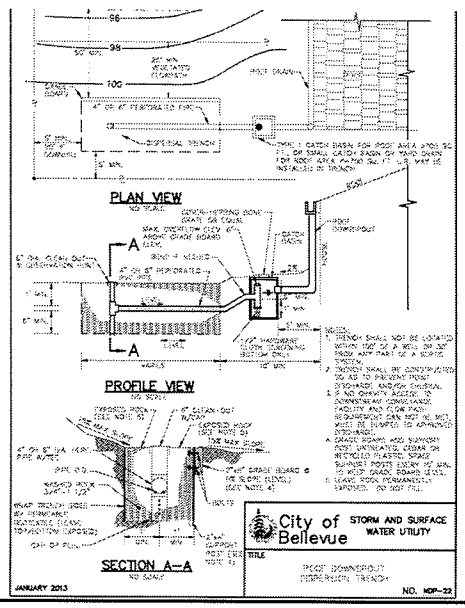
SECTION 11, TOWNSHIP 24 N, RANGE 05 E, W.M. KING COUNTY, WASHINGTON









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10-15-13

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16237 SE 26TH STREET
BELLEVUE, WA 98007

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Project Number: 10110
Plan Series: —
Property Number: —
Sheet Title: RESIDENCE STORM DETAILS
Sheet: 11B OF 15
CRS2.1B

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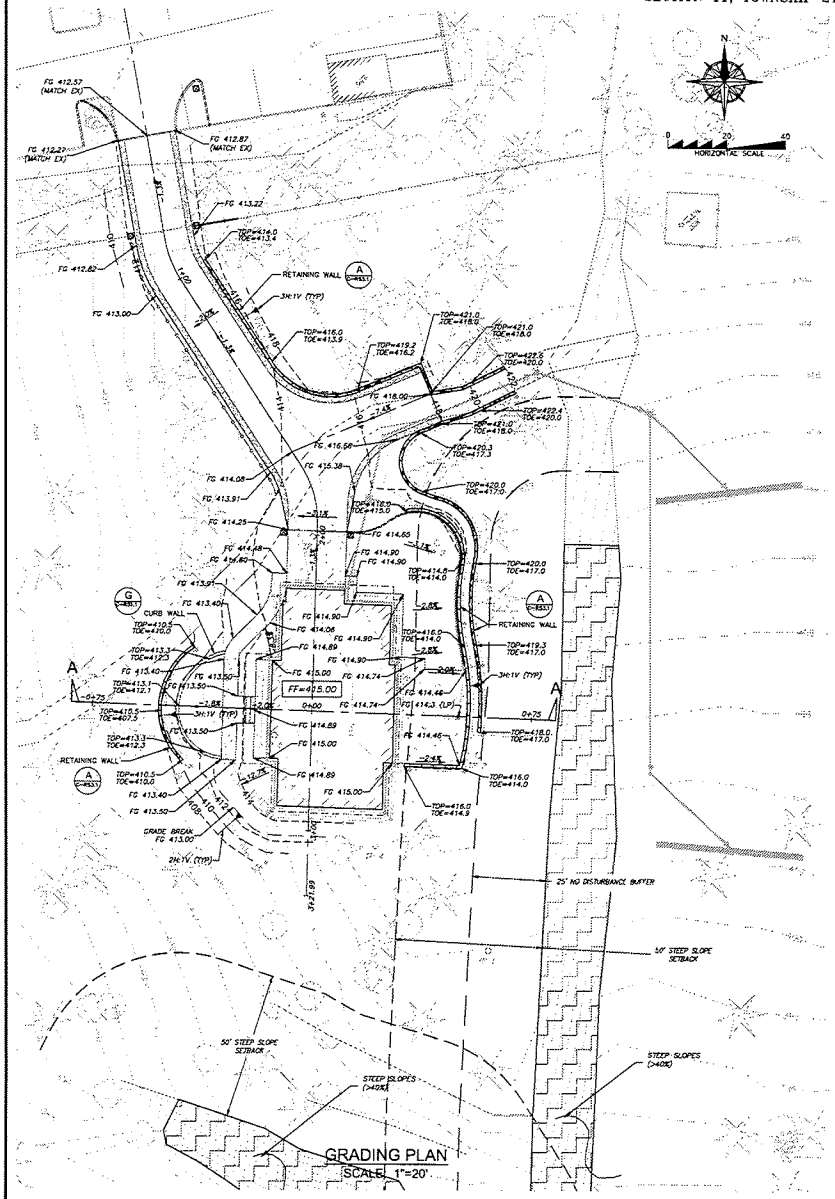
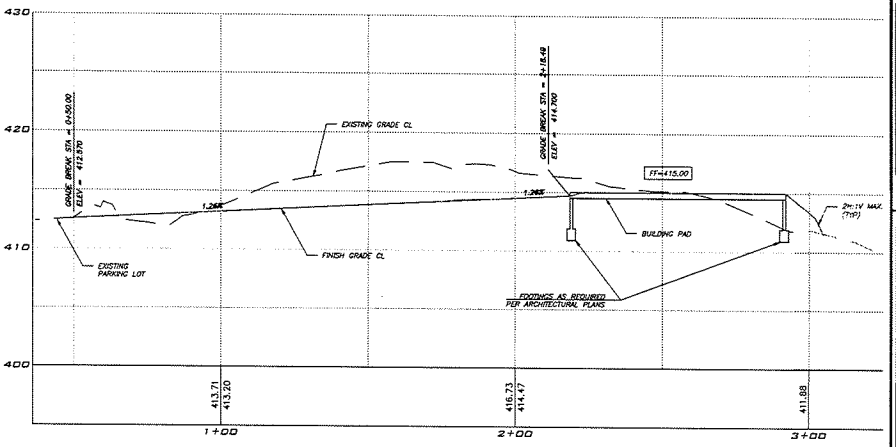
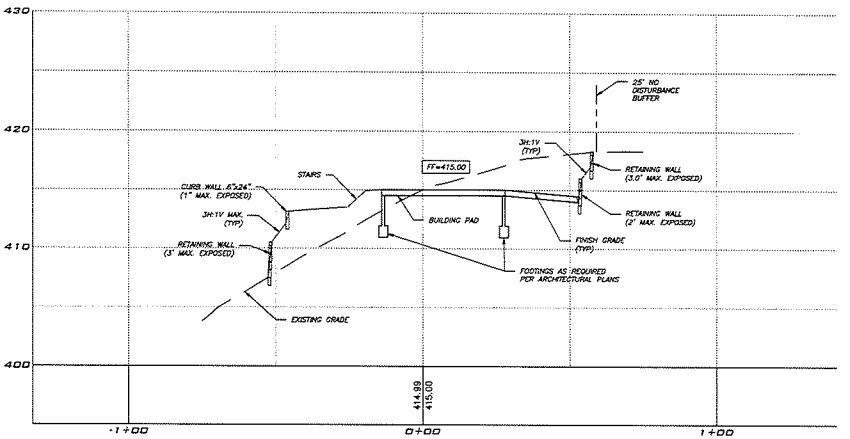




DRIVEWAY PROFILE
SCALE: 1"=20'H, 1"=5'V



SECTION A-A
SCALE: 1"=20'H, 1"=5'V

RETAINING WALL NOTES

1. RETAINING WALL TOE ELEVATION CALLOUTS ARE TO FINISH GRADE (BOTTOM OF EXPOSED WALL). ACTUAL WALL BOTTOM SHALL BE AT MINIMUM 12" BELOW FINISH GRADE OR AS REQUIRED BY WALL SUPPLIER.
2. RETAINING WALL TO BE KEYSTONE PER SHEET C-RS3.1 OR APPROVED EQUAL.

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Web: patrickharron.com

12/13/13

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Mark	Date (mm/dd)	Description
1	15-OCT-13	BLDG PERMIT

Project Number: 10110
Plan Series: --
Property Number: --

Sheet Title: RESIDENCE GRADING PLAN

Sheet: 12 OF 15
C-RS3.0

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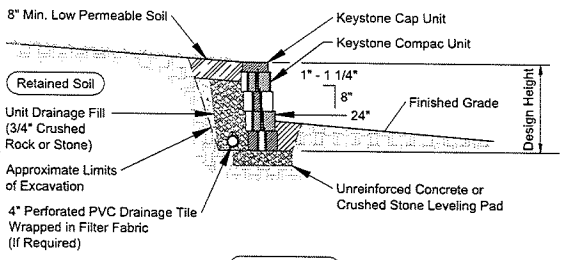
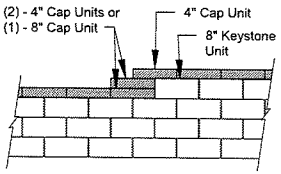
SECTION 11, TOWNSHIP 24 N, RANGE 05 E, W.M. KING COUNTY, WASHINGTON



Typical Gravity Wall Section

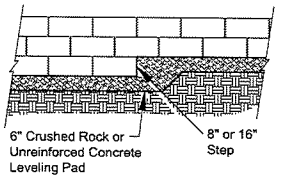
Compac Unit - 1" Setback



Note:

1. Secure all cap units with Keystone Kapseal or equal.

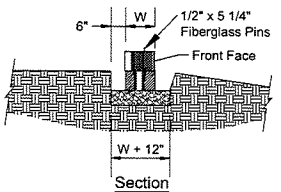
Top of Wall Steps



Elevation

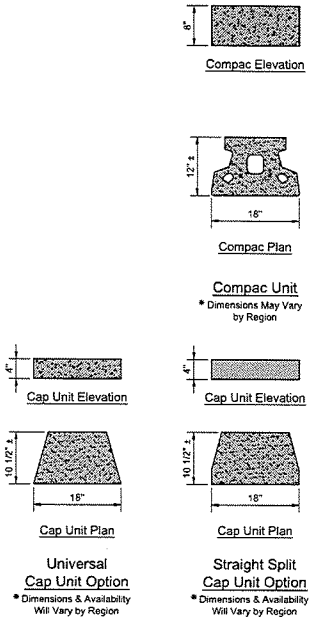
Note:

1. The leveling pad is to be constructed of crushed stone or 2000 psi ± unreinforced concrete.



Section

Leveling Pad Detail

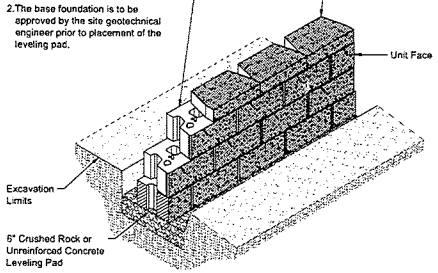


Base Leveling Pad Notes:

1. The leveling pad is to be constructed of crushed stone or 2,000 psi± unreinforced concrete
2. The base foundation is to be approved by the site geotechnical engineer prior to placement of the leveling pad.

Compac Unit	
Width:	18"
*Depth:	12"
Height:	8"
*Weight:	90 lbs

Cap Unit	
Width:	18"
*Depth:	10 1/2"
Height:	4"
*Weight:	50 lbs



Compac Unit/Base Pad Isometric Section View

* Dimensions & Weight May Vary by Region

(A) KEYSTONE RETAINING WALL

NTS

(OR APPROVED EQUAL)

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12/5/13

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Mark	Date	Description
	15-OCT-13	BLDG PERMIT

Project Number: 10110
Plan Series: ---
Property Number: ---

Sheet Title: RESIDENCE GRADING DETAILS

Sheet: 13 OF 15

C-RS3.1

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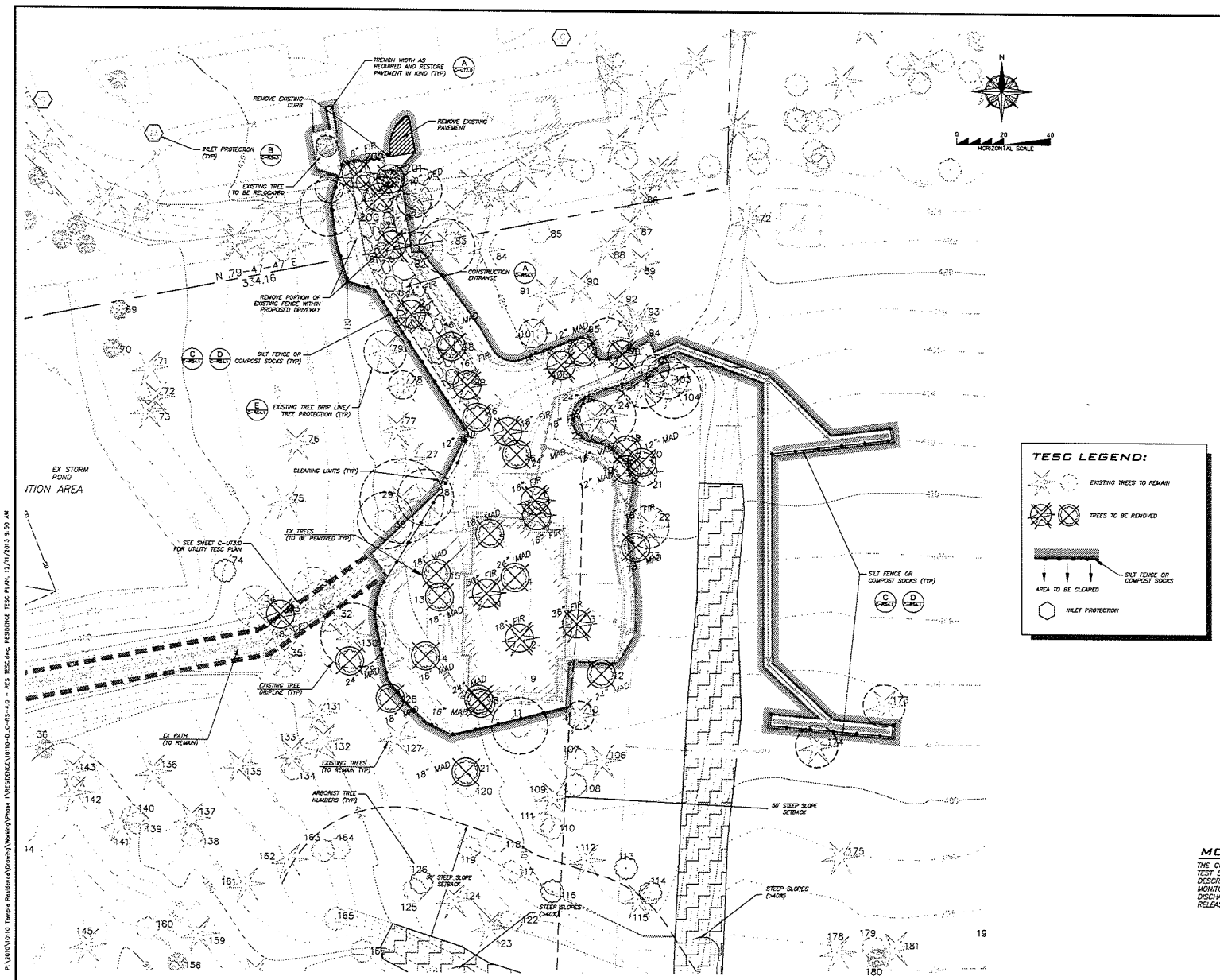

MONITORING NOTE:

THE CONTRACTOR WILL BE RESPONSIBLE TO TEST STORMWATER FOR TURBIDITY AND pH AS DESCRIBED IN THE TURBIDITY AND pH MONITORING PLAN AT ANY LOCATIONS WHERE DISCHARGE FROM THE CONSTRUCTION AREA IS RELEASED IN A CONCENTRATED MANNER.

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	15-OCT-13	BLDG PERMIT

Project Number: 10110
Plan Series: ---
Property Number: ---

Sheet Title: RESIDENCE TESC PLAN

Sheet: 14 OF 15
C-RS4.0

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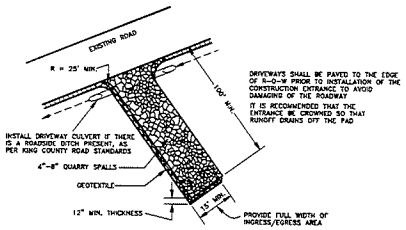
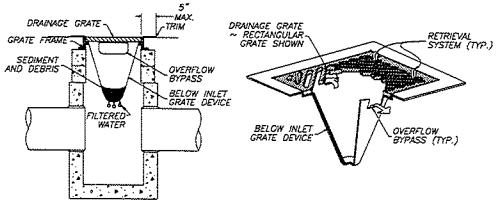
SECTION 11, TOWNSHIP 24 N, RANGE 05 E, W.M. KING COUNTY, WASHINGTON

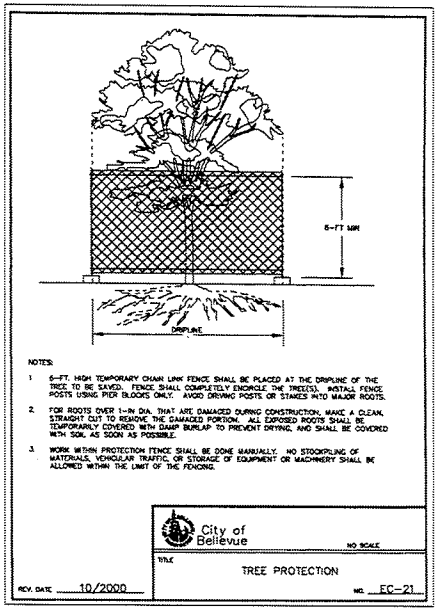


A STABILIZED CONSTRUCTION ENTRANCE
NTS

1. SIZE THE BELOW INLET GRATE DEVICE (BIGD) FOR THE STORM WATER STRUCTURE IT WILL SERVICE.
2. THE BIGD SHALL HAVE A BUILT-IN HIGH-FLOW RELIEF SYSTEM (OVERFLOW BYPASS).
3. THE RETRIEVAL SYSTEM MUST ALLOW REMOVAL OF THE BIGD WITHOUT SPILLING THE COLLECTED MATERIAL.
4. PERFORM MAINTENANCE IN ACCORDANCE WITH STANDARD SPECIFICATION 8-01.3(15).



B CATCH BASIN INLET PROTECTION
NTS



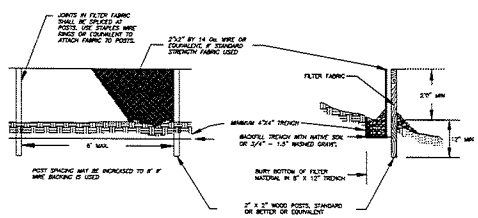
NOTES:
1. 6-FT. HIGH TEMPORARY CHAIN LINK FENCE SHALL BE PLACED AT THE DRIPLINE OF THE TREE TO BE SAVED. FENCE SHALL COMPLETELY ENCIRCLE THE TREE(S). INSTALL FENCE POSTS USING PIER BLOCKS ONLY. AVOID DRIVING POSTS OR STAKES INTO MAJOR ROOTS.
2. FOR ROOTS OVER 1-IN DIA. THAT ARE DAMAGED DURING CONSTRUCTION, MAKE A CLEAN, STRAIGHT CUT TO REMOVE THE DAMAGED PORTION. ALL EXPOSED ROOTS SHALL BE TEMPORARILY COVERED WITH DAMP BURLAP TO PREVENT DRYING, AND SHALL BE COVERED WITH SOIL AS SOON AS POSSIBLE.
3. WORK WITHIN PROTECTION FENCE SHALL BE DONE MANUALLY. NO STOCKPILING OF MATERIALS, VEHICULAR TRAFFIC, OR STORAGE OF EQUIPMENT OR MACHINERY SHALL BE ALLOWED WITHIN THE LIMIT OF THE FENCING.

City of Bellevue — NO SCALE
TITLE: TREE PROTECTION
REV. DATE: 10/2000 — NO. EC-21

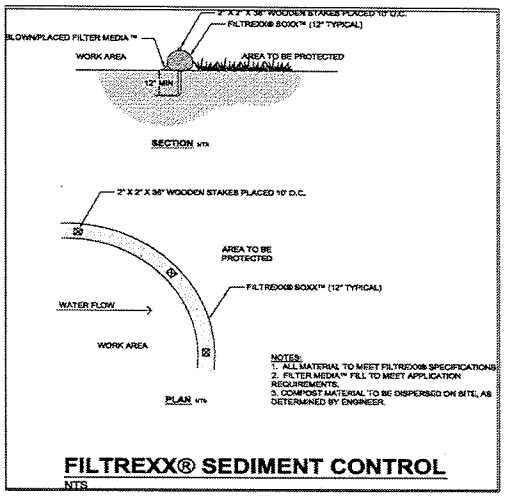
E TREE PROTECTION
NTS

DESIGN AND INSTALLATION SPECIFICATIONS

- STANDARD STRENGTH FABRICS SHALL BE SUPPORTED WITH WIRE MESH, CHICKEN WIRE, 2-INCH X 2-INCH, SAFETY FENCE OR JUTE MESH TO INCREASE THE STRENGTH OF THE FABRIC SILT FENCE MATERIALS ARE AVAILABLE THAT HAVE SYNTHETIC MESH BACKING ATTACHED
- FILTER FABRIC MATERIAL SHALL CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF SIX MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0°F TO 120°F
- 100 PERCENT BIODEGRADABLE SILT FENCE IS AVAILABLE THAT IS STRONG, LONG LASTING, CAN CAN BE LEFT IN PLACE AFTER THE PROJECT IS COMPLETED, IF PERMITTED BY LOCAL REGULATIONS.
- THE CONTRACTOR SHALL INSTALL AND MAINTAIN TEMPORARY SILT FENCE AT THE LOCATIONS SHOWN IN PLANS. THE SILT FENCES SHALL BE CONSTRUCTED IN THE AREAS OF CLEARING, GRADING, OR DRAINAGE PRIOR TO STARTING THOSE ACTIVITIES. A SILT FENCE SHALL NOT BE CONSIDERED TEMPORARY IF THE SILT FENCE MUST BE FUNCTION BEYOND THE LIFE OF THE CONTRACT. THE SILT FENCE SHALL PREVENT SOIL CARRIED BY RUNOFF WATER FROM GOING BENEATH, THROUGH, OR OVER THE TOP OF THE SILT FENCE, BUT SHALL ALLOW THE WATER TO PASS THROUGH THE FENCE
- THE MINIMUM HEIGHT OF THE TOP OF SILT FENCE SHALL BE 2 FEET AND THE MAXIMUM HEIGHT SHALL BE 2 1/2 FEET ABOVE THE ORIGINAL GROUND SURFACE.
- THE GEOTEXTILE SHALL BE SEWN TOGETHER AT THE POINT OF MANUFACTURE, OR AT AN APPROVED LOCATIONS AS DETERMINED BY THE ENGINEER, TO FORM GEOTEXTILE LENGTHS AS REQUIRED. ALL SEWN SEAMS SHALL BE LOCATED AT A SUPPORT POST. ALTERNATIVELY, TWO SECTIONS OF SILT FENCE CAN BE OVERLAPPED, PROVIDED THE CONTRACTOR CAN.



C SILT FENCE
NTS



D COMPOST SOCKS
NTS
(OR APPROVED EQUAL)

RECOMMENDED CONSTRUCTION SEQUENCE

1. PRE-CONSTRUCTION MEETING WITH CITY OF BELLEVUE.
2. PRE-CONSTRUCTION MEETING WITH OWNER
3. CONTRACTOR MUST SPECIFICALLY REQUEST INSPECTIONS AT THE FOLLOWING STAGES:
   a. PRIOR TO PLACING SUB-BASE, BASE, OR PAVING SURFACES.
4. FLAG OR FENCE CLEARING LIMITS.
5. POST NOTICE OF CONSTRUCTION ACTIVITY SIGN WITH NAME AND PHONE NUMBER OF ESC SUPERVISOR.
6. INSTALL CATCH BASIN PROTECTION IF REQUIRED PRIOR TO CONSTRUCTION AND AS CONSTRUCTION PROCEEDS.
7. GRADE AND INSTALL CONSTRUCTION ENTRANCE(S).
8. INSTALL PERIMETER PROTECTION (SILT FENCES, BRUSH BARRIER, ETC.)
9. CLEAR AND GRUB SITE.
10. GRADE SITE. CONSTRUCT SURFACE WATER CONTROLS (INTERCEPTOR DIKES, PIPE SLOPE DRAINS, ETC.) SIMULTANEOUSLY WITH CLEARING AND GRADING OF PROJECT.
11. BEGIN DRIVEWAY AND UTILITY CONSTRUCTION.
12. MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH AGENCY STANDARDS AND MANUFACTURERS RECOMMENDATIONS. RELOCATE WATER CONTROLS AND EROSION CONTROL MEASURES OR INSTALL NEW MEASURES SO THAT AS SITE CONDITIONS CHANGE THE SEDIMENT AND EROSION CONTROL IS ALWAYS IN CONFORMANCE WITH AGENCY STANDARDS AND POLICY.
13. COVER ALL AREAS THE WILL BE UNWORKED FOR MORE THAN TWO DAYS DURING THE WET SEASON WITH STRAW, WOOD FIBER MULCH, COMPOST, PLASTIC SHEETING, OR EQUIVALENT.
14. STABILIZE ALL AREAS THAT REACH FINAL GRADE WITHIN SEVEN DAYS.
15. SEED OR SOD ANY AREAS TO REMAIN UNWORKED FOR MORE THAN 30-DAYS.
16. UPON COMPLETION OF LANDSCAPE INSTALLATION REMOVE ALL CATCH BASIN PROTECTION. CLEAN AND PUMP ALL STORM FACILITIES.
17. UPON COMPLETION OF PROJECT, ALL DISTURBED AREAS MUST BE STABILIZED AND BEST MANAGEMENT PRACTICES REMOVED (SILT FENCES, STRAW BALES, CATCH BASIN INSERTS, ETC.). THE STORM SYSTEM MUST BE FLUSHED AND CLEANED.

THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION BY CALLING THE UNDERGROUND LOCATE LINE AT 1-800-424-5555 A MINIMUM OF 48 HOURS PRIOR TO ANY EXCAVATION.

APPROVED FOR CONSTRUCTION
BY THE CITY OF BELLEVUE
BY:_____ DATE:_____
TITLE:_____

PATRICK HARRON & ASSOCIATES, LLC
Civil Engineering & Planning
19900 Intl Blvd, Suite 219, Seattle, WA 98188
Phone: 206.674.4639 / Fax: 206.674.4660
www.patrickharron.com

12/15/13

LDS TEMPLE
PRESIDENT'S RESIDENCE
15237 SE 26TH STREET
BELLEVUE, WA 98007

Project for:
THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

Mark	Date (YY.M.D)	Description
	15-OCT-13	BLDG PERMIT

Project Number: 10110
Plan Series: —
Property Number: —
Sheet Title: RESIDENCE TESC DETAILS
Sheet: 15 OF 15
C-RS4.1

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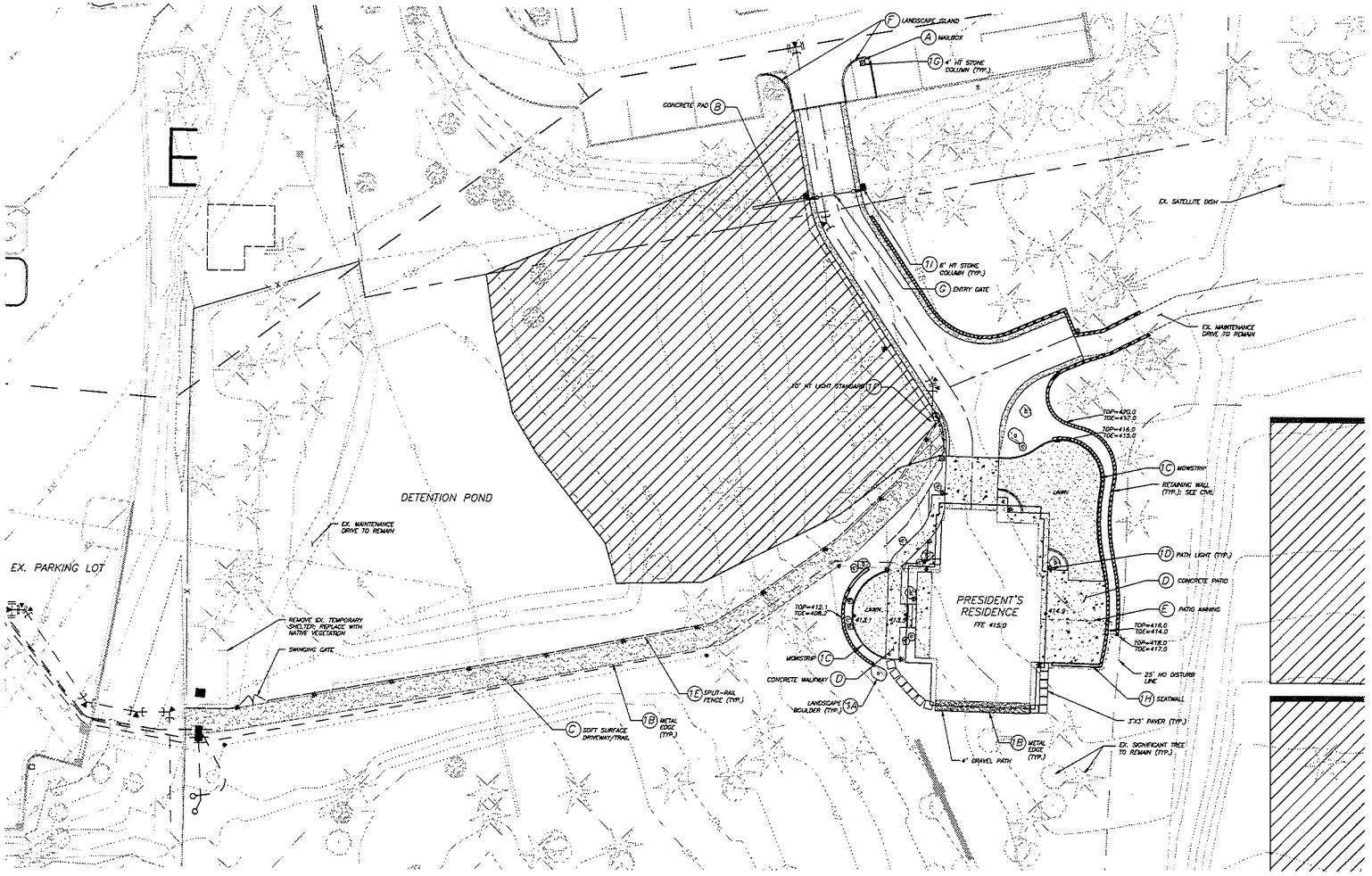


LEGEND

- (1A) DETAIL REFERENCE (SEE L1.02)
- (A) NOTE REFERENCE (SEE L1.02)
- 4' HT. STONE COLUMN
- 6' HT. STONE COLUMN
- 36" HT. IRON RAIL FENCE
- (0) LANDSCAPE BOULDER (SEE SCHEDULE ON L1.02)
- COLUMN (GLOBE) LIGHTING (SEE SCHEDULE ON L1.02)
- PATH LIGHTING (SEE SCHEDULE ON L1.02)
- SCONCE-LIGHTING (SEE SCHEDULE L1.02)

THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION BY CALLING THE UNDERGROUND LOCATE LINE AT 1-800-424-5555 A MINIMUM OF 48 HOURS PRIOR TO ANY EXCAVATION.

SHEET INDEX

LANDSCAPE DRAWINGS BY CORE DESIGN, INC.

1. L1.01 SITE PLAN
2. L1.02 SITE SCHEDULES, NOTES & DETAILS
3. L2.01 PLANTING PLAN
4. L2.02 PLANTING SCHEDULE & DETAILS
5. L2.03 SOIL & PLANTING SPECIFICATIONS
6. L3.01 IRRIGATION PLAN
7. L3.02 IRRIGATION SCHEDULES & SPECIFICATIONS
8. L3.03 IRRIGATION DETAILS

SCALE: 1" = 20'

0 10 20 40

CORE DESIGN
14711 NE 29th Place Suite 101
Bellevue, Washington 98007
(425)885-7007 Fax (425)885-7963
ENGINEERING - PLANNING - SURVEYING

TEMPLE PRESIDENT'S RESIDENCE
SEATTLE TEMPLE
2808 146TH AVENUE SE
BELLEVUE, WA 98007

Project for:
THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

Mark Date Description

Project Number:
Plan Series12109
Property Number:

Sheet Title:
SITE PLAN

Sheet 1 OF 8
L1.01

BOULDER SCHEDULE

BANDERA WEATHERED GRANITE BOULDERS	QUANTITY
(a) 7' X 5' X 4' BOULDERS	X
(b) 4' X 4' X 4' BOULDERS	X
(c) 3' X 3' X 4' BOULDERS	X

NOTES:
1. REUSE EXISTING BOULDERS ON SITE, WHEN POSSIBLE. IF EXISTING BOULDERS NOT ADEQUATE, BOULDERS SHALL BE A LOCALLY AVAILABLE GRANITE, WEATHERED, AND SEMI-ROUND IN SHAPE. LANDSCAPE ARCHITECT TO APPROVE BOULDERS AT HOLDING AREA PRIOR TO SITE DELIVERY.
2. LANDSCAPE ARCHITECT TO FIELD APPROVE ALL BOULDER LOCATIONS.

LIGHTING SCHEDULE

LIGHT TYPE	LAMP WATTS	LAMP TYPE	QUANTITY
10' HT LIGHT STANDARD: HADCO, P2560, OR SIMILAR	100	HPS	X
PATH LIGHTING (LOW VOLTAGE): FX LUMINAIRE CAPELLI BIONDI OR SIMILAR	20	XENON G4	X
SCONCE LIGHTING: KIM ELB07, OR SIMILAR	12.8	LED	X
LIGHT ACORN ON COLUMN: HADCO, EQUAL TO STANDARD	100	HPS	X

NOTES:
1. ALL LIGHTING TO BE DARK BRONZE FINISH.
2. 120V LINE TYPE FOR ALL LIGHTING SHOWN EXCEPT AS NOTED ON SCHEDULE.

SITE NOTES

A. MAILBOX: TO BE LOCATED WITHIN STONE COLUMN (SEE DETAIL 1G HEREON)

B. CONCRETE PAD: 1'W X 6" DEPTH CONCRETE PAD FOR FUTURE ROLLING GATE.

C. SOFT SURFACE DRIVEWAY/TRAIL: 8' WIDTH TYPICAL ALONG EXISTING DRIVEWAY ALIGNMENT.

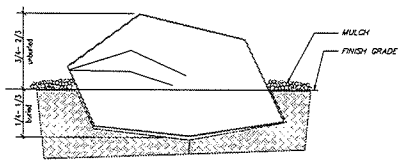
D. WALKWAY & PATIO SURFACE TREATMENT: LIGHT BROOM FINISH, SCORED (PATTERN 5'X5' STACKED BOND)

E. PATIO AWNING: DESIGN T.B.D.

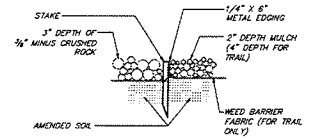
F. LANDSCAPE ISLAND: FINAL DIMENSIONS OF EXISTING LANDSCAPE ISLAND MODIFICATION & PROPOSED LANDSCAPE CONSTRUCTION T.B.D.

G. ENTRY GATE: REMOTE ENTRY ORNAMENTAL IRON GLIDING GATE (FINAL MODEL T.B.D.)

DETAILS

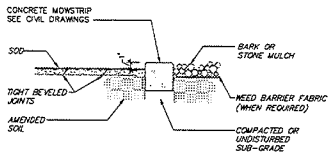


1A BOULDER PLACEMENT
NOT TO SCALE



1B METAL EDGE
NOT TO SCALE

1. STRUCTURAL CONCRETE.
2. CONTRACTOR TO ENSURE POSITIVE DRAINAGE AROUND MOWSTRIPS-DO NOT CREATE A DAM EFFECT WITH PLACEMENT OF MOWSTRIP.
3. MAXIMUM 1/2" WIDTH VARIATION.
4. PRECISELY FOLLOW LAYOUT AS SHOWN ON MOWSRTRIP/EDGING DIMENSION PLAN.
5. RAISE THE LAWN GRADE 1" WHEN SEEDING.



1C MOWSTRIP
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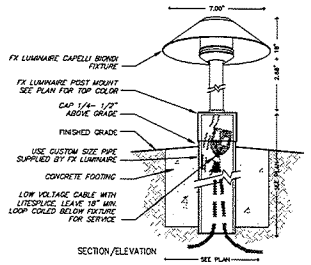
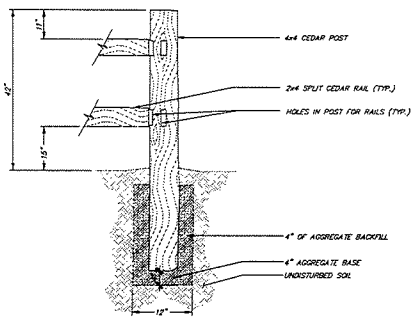
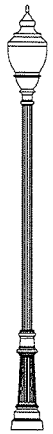


NOTE:
FX LUMINAIRE CAPELLI BIONDI FIXTURE, AS WITH ANY PATH LIGHT, LOCATE IN PLANTER AREAS ONLY. DO NOT INSTALL IN OPEN TURF AREAS WITHOUT FOOTER WITH PROTECTIVE PAD.

1D PATH LIGHTING
NOT TO SCALE



1E SPLIT RAIL FENCE
NOT TO SCALE

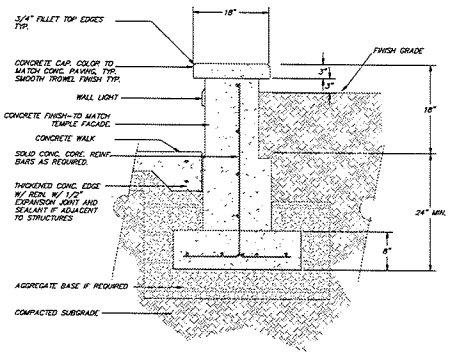


SPECIFICATIONS:

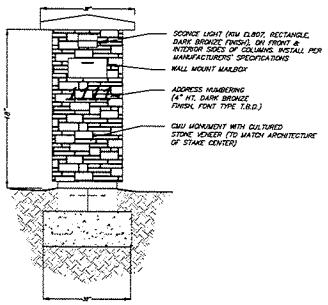
NOTES:
HADCO POLE MODEL: P2560-10-A-B-D

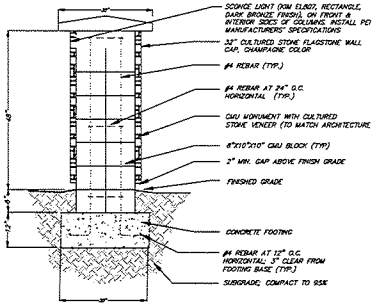
HADCO GLOBE MODEL: R54BANN2JNNG100SG

1F 10' HT LIGHT STANDARD
NOT TO SCALE



1H SEATWALL
NOT TO SCALE





1G 4' HT COLUMN
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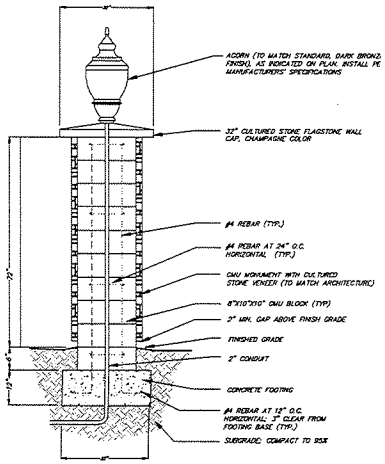

1I 6' HT COLUMN
NOT TO SCALE

NO SCALE

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ENGINEERING · PLANNING · SURVEYING

STATE OF WASHINGTON
REGISTERED LANDSCAPE ARCHITECT
JOSHUA PENNINGTON BEARD
CERTIFICATE NO. 938

TEMPLE PRESIDENT'S RESIDENCE
SEATTLE TEMPLE
2800 148TH AVENUE SE
BELLEVUE, WA 98007

Project for:
THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

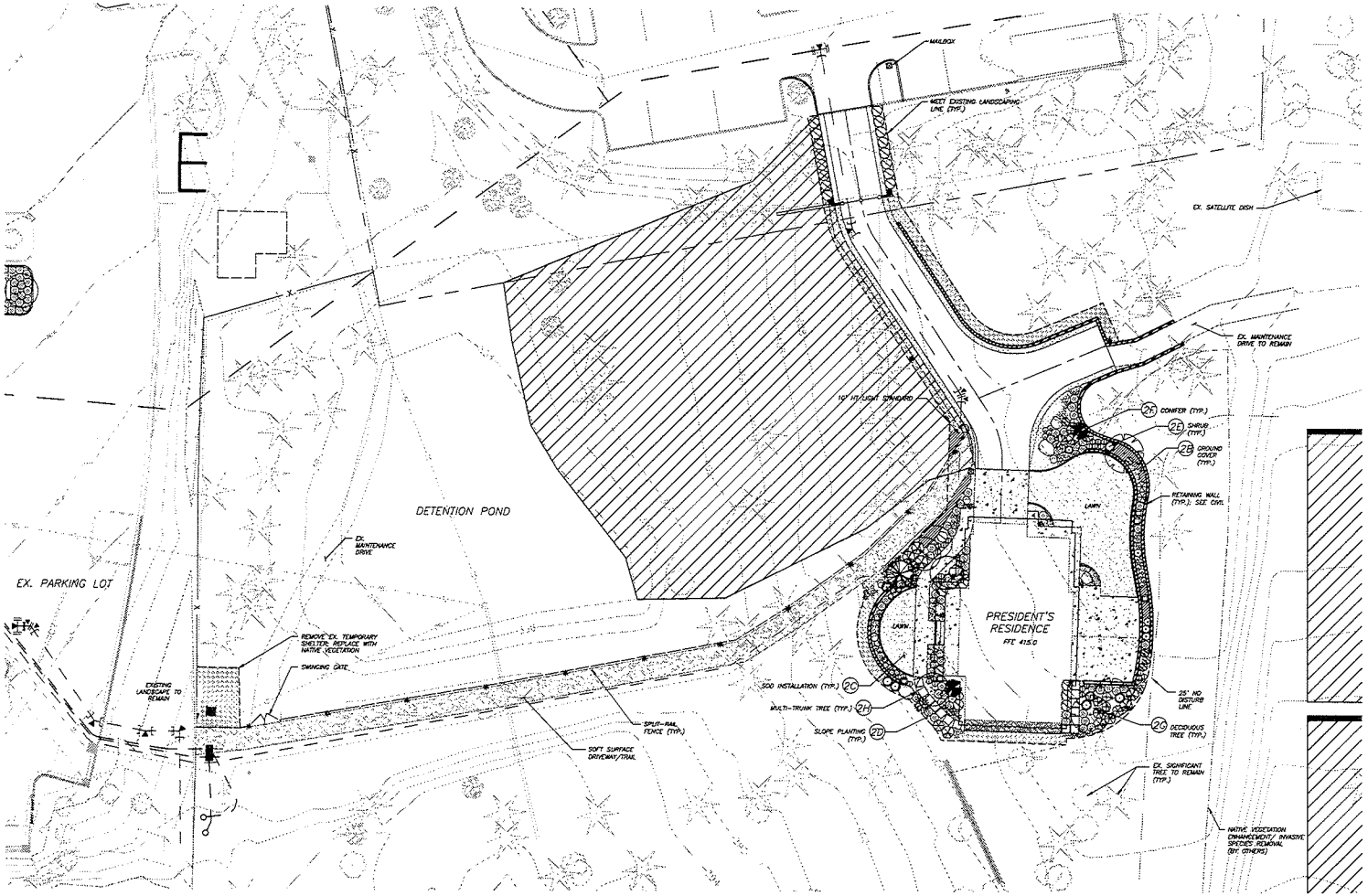
Mark	Date	By	Description

Project Number:
Plan Series: 2109
Property Number:

Sheet Title: SITE SCHEDULES, NOTES & DETAILS

Sheet: 2 OF 8

L1.02



LEGEND

- (2) DETAIL REFERENCE (SEE L2.02)
- (A) NOTE REFERENCE (SEE L2.02)
- 4' HT. STONE COLUMN
- 6' HT. STONE COLUMN
- 36" HT. IRON RAIL FENCE
- LANDSCAPE BOULDER (SEE SCHEDULE ON L1.02)
- COLUMN (GLOBE) LIGHTING (SEE SCHEDULE ON L1.02)
- PATH LIGHTING (SEE SCHEDULE ON L1.02)
- SCONCE-LIGHTING (SEE SCHEDULE L1.02)

SCALE: 1" = 20'

0 10 20 40

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SEATTLE TEMPLE
2808 148TH AVENUE SE
BELLEVUE, WA 98007

Project for:
THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

Mark	Date	Description

Project Number:
Plan Series 2109
Property Number:

Sheet Title:
PLANTING PLAN

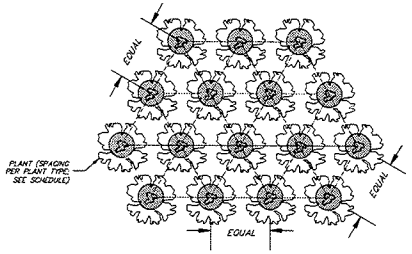
Sheet 3 OF 8

L2.01

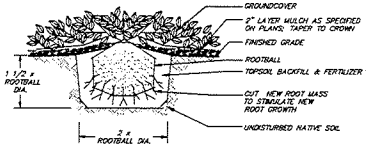
PLANT SCHEDULE

SYMBOL	QNTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	NOTES
TREES						
DECIDUOUS		ACER CIRCINATUM	VINE MAPLE	7'-8' HT.	AS SHOWN	CLUMP FORM
		ACER PALMATUM	JAPANESE MAPLE	15 GAL.	AS SHOWN	MULTI-STEMMED
		CORNUS 'EDDIES WHITE WONDER'	EDDIES WHITE WONDER DOGWOOD	2.5" CAL.	AS SHOWN	
CONIFEROUS		CHAMAECYPARIS OBTUSA 'GRACILIS'	SLENDER HINOKI CYPRESS	7'-8' HT.	AS SHOWN	
		PSUEDOTSUGA MENZIESSII	DOUGLAS FIR	10'-12' HT.	AS SHOWN	
		THUJA OCCIDENTALIS 'PYRAMIDALIS'	PYRAMIDAL ARBORVITAE	6'-7' HT.	4' O.C.	
		TSUGA MERTENSIANA	MT. HEMLOCK	7'-8' HT.	AS SHOWN	
SHRUBS		ACER PALMATUM 'DISSECTUM ATROPURPUREUM'	LACELEAF JAPANESE MAPLE	15 GAL.	AS SHOWN	
		CORNUS STOLONIFERA 'CARDINAL'	CARDINAL REDTWIG DOGWOOD	5 GAL.	4' O.C.	5 CANE MIN.
		HYDRANGEA MACROPHYLLA 'ALL SUMMER BEAUTY'	ALL SUMMER BEAUTY HYDRANGEA	5 GAL.	3' O.C.	
		MAHONIA AQUIFOLIUM	OREGON GRAPE	5 GAL.	4.5' O.C.	
		NANDINA DOMESTICA 'PLUM PASSION''	PLUM PASSION HEAVENLY BAMBOO	5 GAL.	3' O.C.	
		POTENTILLA FRUTICOSA 'GOLD DROP'	GOLD DROP CINQUEFOIL	3 GAL.	3' O.C.	
		PRUNUS LAUROCERASUS 'OTTO LUYKEN'	OTTO LUYKEN LAUREL	5 GAL.	3' O.C.	
		RIBES SANGUINEUM 'KING EDWARD VII'	KING EDWARD VII FLOWERING CURRANT	5 GAL.	4' O.C.	
		RHODODENDRON X 'SEPTEMBER SONG'	SEPTEMBER SONG RHODODENDRON	24" HT.	4' O.C.	
		RHODODENDRON 'RLM1-3P3 P.P.#21512'	BLOOMATHON WHITE RHODODENDRON	18" HT.	2' O.C.	
		SPIREA X BUMALDA 'ANTHONY WATERER'	ANTHONY WATERER SPIREA	5 GAL.	3' O.C.	
		SPIREA JAPONICA 'MAGIC CARPET'	MAGIC CARPET SPIREA	3 GAL.	3' O.C.	
		SYMPHORICARPOS 'BOKRABRIGHT'	BRIGHT FANTASY SNOWBERRY	3 GAL.	3' O.C.	
		VACCINIUM OVATUM	EVERGREEN HUCKLEBERRY	5 GAL.	4' O.C.	
		VIBURNUM DAVIDII	DAVIDS VIBURNUM	3 GAL.	30" O.C.	
PERENNIALS		POLYSTICHUM MUNITUM	SWORD FERN	1 GAL.	2' O.C.	
GROUNDCOVER		ARCTOSTAPHYLOS UVA-URSI	KINNIKINNICK	1 GAL.	18" O.C.	FOR SPACING SEE DETAIL HEREON
		CALLUNA VULGARIS 'ROBERT CHAPMAN'	ROBERT CHAPMAN HEATH	1 GAL.	2' O.C.	
		ERICA X DARLEYENSIS 'SILBERSCHMELZE'	DARLEY HEATH	1 GAL.	2' O.C.	
		GAULTHERIA SHALLON	SALAL	1 GAL.	2' O.C.	FOR SPACING SEE DETAIL HEREON
		MAHONIA REPENS	CREEPING MAHONIA	1 GAL.	18" O.C.	FOR SPACING SEE DETAIL HEREON
ANNUALS		VARIOUS		4"POT	8" O.C.	FOR SPACING SEE DETAIL HEREON
TURF		SOD	SUNMARK DOT MULTIPURPOSE MIX			

DETAILS

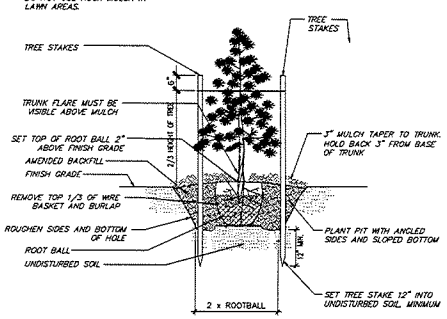


2A GROUND COVER & ANNUALS SPACING
NOT TO SCALE

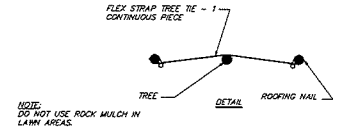


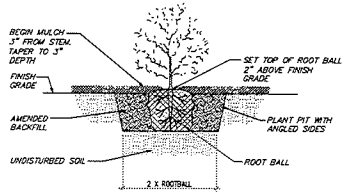
NOTE: SPACING PER PLANT TYPE; SEE DETAIL 2G

2B GROUND COVER & ANNUALS
NOT TO SCALE

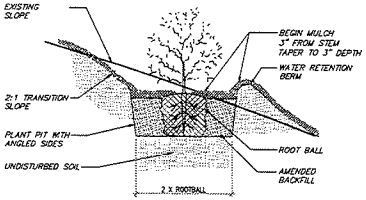


2F CONIFER PLANTING & STAKING
NOT TO SCALE

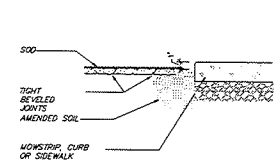




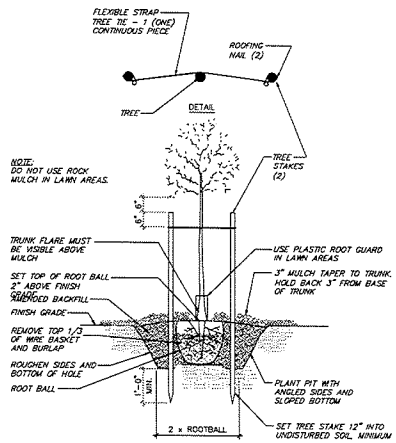
2E SHRUB
NOT TO SCALE



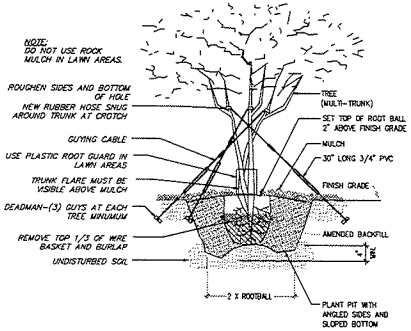
2D SLOPE PLANTING
NOT TO SCALE



2C SOD INSTALLATION
NOT TO SCALE



2G DECIDUOUS TREE
NOT TO SCALE



2H TREE GUYING (MULTI-TRUNK)
NOT TO SCALE

CORE DESIGN
ENGINEERING - PLANNING - SURVEYING
14711 NE 29th Place Suite 101
Bellevue, Washington 98007
425.885.7877 FAX 425.885.7963

TEMPLE PRESIDENT'S RESIDENCE
SEATTLE TEMPLE
2808 148TH AVENUE SE
BELLEVUE, WA 98007

Project for:
THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

Mark	Date	Description

Project Number:
Plan Series 12109
Property Number:

Sheet Title:
PLANTING SCHEDULE & DETAILS

Sheet: 5 OF 8

L2.02

SOIL PREPARATION (9113)

PART 1 - GENERAL

1.1 SUMMARY

A. INCLUDES BUT NOT LIMITED TO:
1. PERFORM SOIL PREPARATION WORK AS DESCRIBED IN CONTRACT DOCUMENTS.
2. FURNISH AND APPLY SOIL AMENDMENTS AS DESCRIBED IN CONTRACT DOCUMENTS.

B. RELATED REQUIREMENTS:
1. SECTION 31 0501: COMMON SITE CONSTRUCTION REQUIREMENTS.
a. GENERAL PROCEDURES AND REQUIREMENTS FOR EARTHWORK.
2. SECTION 31 1413: 'TOPSOIL STRIPPING AND STOCKPILING'.
3. SECTION 31 2213: 'ROUGH GRADING'.
4. SECTION 32 9001: 'COMMON PLANTING REQUIREMENTS':
a. PRE-INSTALLATION CONFERENCE HELD JOINTLY WITH OTHER COMMON PLANTING RELATED SECTIONS.
5. SECTION 32 9120: 'TOPSOIL PLACEMENT'.
6. SECTION 32 9121: 'TOPSOIL GRADING'.

1.2 REFERENCES

A. REFERENCE STANDARDS:
1. ASTM INTERNATIONAL:
a. ASTM D1557-09, 'STANDARD TEST METHODS FOR LABORATORY COMPACTION CHARACTERISTICS OF SOIL USING MODIFIED EFFORT (56,000 FT-LBF/FT3)'.

1.3 ADMINISTRATIVE REQUIREMENTS

A. PRE-INSTALLATION CONFERENCE:
1. PARTICIPATE IN PRE-INSTALLATION CONFERENCE AS SPECIFIED IN SECTION 32 9001.
2. IN ADDITION TO AGENDA ITEMS SPECIFIED IN SECTION 01 3100, REVIEW THE FOLLOWING:
a. REVIEW SOIL AMENDMENTS AND FERTILIZER REQUIREMENTS.

1.4 SUBMITTALS

A. ACTION SUBMITTALS:
1. PRODUCT DATA:
a. PRODUCT LITERATURE AND CHEMICAL / NUTRIENT ANALYSIS OF SOIL AMENDMENTS AND FERTILIZERS.
2. SAMPLES:
a. SAMPLE OF SOIL CONDITIONER FOR APPROVAL BEFORE DELIVERY TO SITE. INCLUDE PRODUCT ANALYSIS LIST.

B. INFORMATIONAL SUBMITTALS:
1. FIELD QUALITY CONTROL SUBMITTALS:
a. SUBMIT TESTS ON IMPORTED AND SITE TOPSOIL BY LICENSED LABORATORY BEFORE USE, USING OWNER FORM 'TOPSOIL TESTING REPORT':
1) BEFORE USE, TOPSOIL SHALL MEET MINIMUM SPECIFIED REQUIREMENTS AND BE APPROVED BY ARCHITECT.
2) IF NECESSARY, SUBMIT PROPOSED AMENDMENTS AND APPLICATION RATES NECESSARY TO BRING TOPSOIL UP TO MINIMUM SPECIFIED REQUIREMENTS.
b. SUBMIT REPORT STATING LOCATION OF SOURCE OF IMPORTED TOPSOIL AND ACCOUNT OF RECENT USE.
2. INSTALLER REPORTS:
a. DELIVERY SLIPS INDICATING AMOUNT OF SOIL CONDITIONER DELIVERED TO PROJECT SITE.

C. CLOSEOUT SUBMITTALS:
1. INCLUDE FOLLOWING IN OPERATIONS AND MAINTENANCE MANUAL SPECIFIED IN SECTION 01 7800:
a. OPERATIONS AND MAINTENANCE DATA:
1) 'TOPSOIL TEST REPORT'.

PART 2 - PRODUCTS

2.1 MATERIALS

A. TOPSOIL:
1. TOPSOIL USED IN LANDSCAPED AREAS, WHETHER IMPORTED, STOCKPILED, OR IN PLACE, SHALL BE WEED FREE, FERTILE, LOOSE, FRIABLE SOIL MEETING FOLLOWING CRITERIA:
a. CHEMICAL CHARACTERISTICS:
1) PH 5.5 TO 8.0
2) SOLUBLE SALTS: LESS THAN 3.0 MMHOS/CM.
3) SODIUM ABSORPTION RATIO (SAR): LESS THAN 4.0.
4) ORGANIC MATTER: GREATER THAN ONE PERCENT.
b. PHYSICAL CHARACTERISTICS:
1) GRADATION AS DEFINED BY USDA TRIANGLE OF PHYSICAL CHARACTERISTICS AS MEASURED BY HYDROMETER.
a) SAND: 15 TO 60 PERCENT.
b) SILT: 10 TO 60 PERCENT.
c) CLAY: 5 TO 30 PERCENT.
2) CLEAN AND FREE FROM TOXIC MINERALS AND CHEMICALS, NOXIOUS WEEDS, ROCKS LARGER THAN OR EQUAL TO 1-1/2 INCH IN ANY DIMENSION, AND OTHER OBJECTIONABLE MATERIALS.
3) SOIL:
a) SOIL SHALL NOT CONTAIN MORE THAN FIVE (5) PERCENT BY VOLUME OF ROCKS MEASURING OVER 1/4 INCH IN LARGEST SIZE.
b) SOIL SHALL BE TOPSOIL IN NATURE.
c) SOIL RESEMBLING ROAD BASE OR OTHER LIKE MATERIALS ARE NOT ACCEPTABLE.

B. SOIL AMENDMENTS:
1. INCORPORATE FOLLOWING SOIL AMENDMENTS INTO TOPSOIL USED FOR PROJECT:
a. ACCEPTABLE SOIL AMENDMENTS, SOIL CONDITIONERS, AND APPLICATION RATES. (CHOOSE ONE)
1) 'SOIL PEP' <INSERT APPLICATION RATE FROM TOPSOIL TESTING REPORT>.
2) EPA CLASS 'A' CO-COMPOST OR COMPOST WITH SAR LESS THAN 3.0, EC LESS THAN 4.0, AND CN RATIO OF 15 TO 25:1 PASSING THROUGH 1/2 INCH MESH SCREEN. <INSERT APPLICATION RATE FROM TOPSOIL TESTING REPORT>.
3) OTHER AMENDMENTS AND CONDITIONERS AS SPECIFIED BY TOPSOIL TESTING REPORT, SUCH AS LIME, GYPSUM, ASH, ETC. <INSERT MATERIAL AND APPLICATION RATE FROM TOPSOIL TESTING REPORT>.
4) EQUALS AS APPROVED BY ARCHITECT BEFORE USE. SEE SECTION 01 6200.
b. ACCEPTABLE FERTILIZERS AND APPLICATION RATES:
1) <INSERT FERTILIZER AND APPLICATION RATES FROM TOPSOIL TESTING REPORT>.
2) <INSERT FERTILIZER AND APPLICATION RATES FROM TOPSOIL TESTING REPORT>.
3) <INSERT FERTILIZER AND APPLICATION RATES FROM TOPSOIL TESTING REPORT>.
4) EQUAL AS APPROVED BY ARCHITECT BEFORE INSTALLATION. SEE SECTION 01 6200.

PART 3 - EXECUTION

3.1 PERFORMANCE

A. SOIL AMENDMENTS:
1. ADD SPECIFIED SOIL AMENDMENTS AT SPECIFIED RATES TO TOPSOIL AS DIRECTED BY SOIL TESTING LABORATORY.
2. ROTO-TILL OR OTHERWISE MIX AMENDMENTS EVENLY INTO TOPSOIL.
3. ADD SPECIFIED FERTILIZERS AT SPECIFIED RATES INTO TOPSOIL AS DIRECTED BY SOIL TESTING LABORATORY.
4. INCORPORATE AND LEACH SOIL AMENDMENTS WHICH REQUIRE LEACHING, SUCH AS GYPSUM, WITHIN SUCH TIME LIMITS THAT SOIL IS SUFFICIENTLY DRY TO ALLOW PROPER APPLICATION OF FERTILIZER AND SOIL CONDITIONERS.

END OF SECTION

TOP-SOIL PLACEMENT (9120)

PART 1 - GENERAL
PROJECT NUMBER — PROJECT DATE — PROJECT NAME
TOPSOIL PLACEMENT — - 3 - — 32 9120

TOPSOIL PLACEMENT

PART 1 - GENERAL

1.1 SUMMARY

A. INCLUDES BUT NOT LIMITED TO:
1. PERFORM TOPSOIL PLACEMENT REQUIRED FOR TOPSOIL GRADING AS DESCRIBED IN CONTRACT DOCUMENTS.

B. RELATED REQUIREMENTS:
1. SECTION 31 0501: COMMON EARTHWORK REQUIREMENTS.
2. SECTION 31 1413: STRIPPING AND STORING OF EXISTING TOPSOIL.
3. SECTION 31 2216: 'FINISH GRADING' FOR LANDSCAPING AND PLANTING AREAS.
4. SECTION 32 9001: 'COMMON PLANTING REQUIREMENTS':
a. PRE-INSTALLATION CONFERENCE HELD JOINTLY WITH OTHER COMMON PLANTING RELATED SECTIONS.
5. SECTION 32 9113: 'SOIL PREPARATION' FOR TOPSOIL PREPARATION AND SOIL AMENDMENTS.
6. SECTION 32 9121: 'TOPSOIL GRADING'.

1.2 REFERENCES

A. REFERENCE STANDARDS:
1. ASTM INTERNATIONAL:
a. ASTM D1557-09, 'STANDARD TEST METHODS FOR LABORATORY COMPACTION CHARACTERISTICS OF SOIL USING MODIFIED EFFORT (56,000 FT-LBF/FT3)'.

1.3 ADMINISTRATIVE REQUIREMENTS

A. PRE-INSTALLATION CONFERENCE:
1. PARTICIPATE IN PRE-INSTALLATION CONFERENCE AS SPECIFIED IN SECTION 32 9001.
2. IN ADDITION TO AGENDA ITEMS SPECIFIED IN SECTION 01 3100 AND SECTION 32 9001, REVIEW THE FOLLOWING:
a. REVIEW FINISH GRADE TOLERANCE REQUIREMENTS.
b. REVIEW SURFACE PREPARATION REQUIREMENTS INCLUDING DISKING, TILLING, OR AERATING.

PART 2 - PRODUCTS NOT USED
PART 3 - EXECUTION

3.1 EXAMINATION

A. VERIFICATION OF CONDITIONS:
1. DO NOT COMMENCE WORK OF THIS SECTION UNTIL GRADING TOLERANCES SPECIFIED IN SECTION 31 2216 ARE MET.
2. DO NOT COMMENCE WORK OF THIS SECTION UNTIL IMPORTED, STOCKPILED AND IN PLACE TOPSOIL ARE AMENDED AS SPECIFIED IN SECTION 32 9113.
3. RECEIVE APPROVAL FROM LANDSCAPE ARCHITECT OF SUBGRADE ELEVATIONS PRIOR TO COMMENCEMENT OF THIS WORK.

3.2 PREPARATION

A. PROTECTION OF IN-PLACE CONDITIONS:
1. PROTECT UTILITIES AND SITE ELEMENTS FROM DAMAGE.

B. SURFACE PREPARATION:
1. SURFACES TO RECEIVE IMPORTED AND STOCKPILED TOPSOIL:
a. DISK, TILL, OR AERATE WITH APPROVED AGRICULTURAL AERATOR TO DEPTH OF 6 INCHES.
b. PLACE SPECIFIED AND APPROVED TOPSOIL ON PREPARED SURFACE.

END OF SECTION

3.3 PERFORMANCE

A. GENERAL:
1. LIMIT USE OF HEAVY EQUIPMENT TO AREAS NO CLOSER THAN 6 FEET FROM BUILDING OR OTHER PERMANENT STRUCTURES. USE HAND HELD TILLERS FOR PREPARATION OF SUBSOIL IN AREAS CLOSER THAN 6 FEET.
2. DO NOT EXPOSE OR DAMAGE EXISTING SHRUB OR TREE ROOTS.

B. TOPSOIL DEPTH:
1. TOTAL TOPSOIL DEPTH OF 6 INCHES MINIMUM IN LAWN AND GROUNDCOVER PLANTING AREAS.
2. NO TOPSOIL AS DEFINED IN THIS SECTION IS REQUIRED OVER TREE AND SHRUB PLANTING AREAS OR NATIVE GRASS, SHRUB, OR TREE AREAS AS LONG AS WHAT IS IN PLACE IS NOT EXCESSIVELY ROCKY OR OTHERWISE UNCONDUCIVE TO HEALTHY PLANT GROWTH.

C. IMPORTED TOPSOIL:
1. PLACE TESTED AND APPROVED TOPSOIL:
a. REMOVE ORGANIC MATERIAL, ROCKS AND CLODS GREATER THAN 1-1/2 INCH (38 MM) IN ANY DIMENSION, AND OTHER OBJECTIONABLE MATERIALS.
b. PROVIDE AMOUNTS AS REQUIRED TO BRING SURFACE TO SPECIFIED ELEVATION RELATIVE TO CONCRETE SITE ELEMENTS.
c. DO NOT PLACE TOPSOIL WHOSE MOISTURE CONTENT MAKES IT PRONE TO COMPACTION DURING PLACEMENT PROCESS.
d. DO NOT PLACE TOPSOIL WHEN SUBGRADE IS EITHER WET OR FROZEN ENOUGH TO CAUSE CLODDING.

D. STOCKPILED TOPSOIL:
1. REDISTRIBUTE TESTED AND APPROVED EXISTING TOPSOIL STORED ON SITE AS A RESULT OF WORK OF SECTION 31 1413.
a. REMOVE ORGANIC MATERIAL, ROCKS AND CLODS GREATER THAN 1-1/2 INCH IN ANY DIMENSION, AND OTHER OBJECTIONABLE MATERIALS.
b. PROVIDE ADDITIONAL APPROVED IMPORTED TOPSOIL AS REQUIRED TO BRING SURFACE TO SPECIFIED ELEVATION RELATIVE TO CONCRETE SITE ELEMENTS.
c. DO NOT PLACE TOPSOIL WHOSE MOISTURE CONTENT MAKES IT PRONE TO COMPACTION DURING PLACEMENT PROCESS.
d. DO NOT PLACE TOPSOIL WHEN SUBGRADE IS EITHER WET OR FROZEN ENOUGH TO CAUSE CLODDING.

E. IN PLACE TOPSOIL:
1. AT LOCATIONS WHERE TOPSOIL CAN REMAIN IN PLACE AND HAS BEEN TESTED AND APPROVED, PERFORM THE FOLLOWING:
a. REMOVE EXISTING VEGETATION AS REQUIRED IN PREPARATION FOR NEW LANDSCAPING.
b. REMOVE ORGANIC MATERIAL, ROCKS AND CLODS GREATER THAN 1-1/2 INCH IN ANY DIMENSION, AND OTHER OBJECTIONABLE MATERIALS.
c. PROVIDE ADDITIONAL APPROVED IMPORTED TOPSOIL AS REQUIRED TO BRING SURFACE TO SPECIFIED ELEVATION RELATIVE TO CONCRETE SITE ELEMENTS.
d. DO NOT PLACE TOPSOIL WHOSE MOISTURE CONTENT MAKES IT PRONE TO COMPACTION DURING PLACEMENT PROCESS.
e. DO NOT PLACE TOPSOIL WHEN SUBGRADE IS EITHER WET OR FROZEN ENOUGH TO CAUSE CLODDING.

F. GRADING:
1. SLOPE GRADE AWAY FROM BUILDING FOR 12 FEET MINIMUM FROM WALLS AT SLOPE OF 1/2 INCH IN 12 INCHES MINIMUM UNLESS OTHERWISE NOTED.
a. HIGH POINT OF FINISH GRADE AT BUILDING FOUNDATION SHALL BE 6 INCHES MINIMUM BELOW FINISH FLOOR LEVEL.
b. DIRECT SURFACE DRAINAGE IN MANNER INDICATED ON CONTRACT DOCUMENTS BY MOLDING SURFACE TO FACILITATE NATURAL RUN-OFF OF WATER.
c. FILL LOW SPOTS AND POCKETS WITH TOPSOIL AND GRADE TO DRAIN PROPERLY.

END OF SECTION

PLANTING (9300)

PART 1 - GENERAL

1.1 SUMMARY

A. INCLUDES BUT NOT LIMITED TO:
1. FURNISH AND INSTALL LANDSCAPING PLANTS AS DESCRIBED IN CONTRACT DOCUMENTS.

B. RELATED REQUIREMENTS:
1. SECTION 32 8423: IRRIGATION SYSTEM.
2. SECTION 32 9001: COMMON PLANTING REQUIREMENTS.
a. PRE-INSTALLATION CONFERENCE HELD JOINTLY WITH OTHER COMMON PLANTING RELATED SECTIONS.
3. SECTION 32 9113: 'SOIL PREPARATION'.
4. SECTION 32 9120: 'TOPSOIL PLACEMENT'.
5. SECTION 32 9121: 'TOPSOIL GRADING'.
6. SECTION 32 9223: 'SODDING'.

1.2 REFERENCES

A. DEFINITIONS:
1. CROP COEFFICIENTS AND HYDRO-ZONES: CROP COEFFICIENTS (KC) ARE USED WITH ETO TO ESTIMATE SPECIFIC PLANT EVAPOTRANSPIRATION RATES. CROP COEFFICIENT IS DIMENSIONLESS NUMBER (BETWEEN 0 AND 1.2) THAT IS MULTIPLIED BY ETO VALUE TO ARRIVE AT PLANT ET (ETC) ESTIMATE. PLANTS GROUPED BY WATER NEEDS, ORGANIZED INTO ONE IRRIGATION ZONE.
2. ECO-REGION IRRIGATION DESIGN: BIO-REGIONAL APPROACH TO IRRIGATION AND PLANTING DESIGN THAT IS RELEVANT TO GEOGRAPHIC AREA FOR WHICH PLANTING PLAN AND IRRIGATION SYSTEM IS DESIGNED. THESE GEOGRAPHIC AREAS ARE DEFINED BY ENVIRONMENTAL PROTECTION AGENCY AND HAVE BEEN MODIFIED BY THE LDS CHURCH INTO 15 GEOGRAPHICAL AREAS THROUGHOUT NORTH AMERICA, AND HAWAIIAN ISLANDS.
3. HARDINESS ZONE: HARDINESS ZONE IS MORE PRECISELY GEOGRAPHICALLY-DEFINED ZONE WITHIN AN ECO-REGION IN WHICH SPECIFIC CATEGORY OF PLANT LIFE IS CAPABLE OF GROWING, AS DEFINED BY TEMPERATURE HARDINESS, OR ABILITY TO WITHSTAND MINIMUM TEMPERATURES OF ZONE. HARDINESS ZONES MAY BE DEFINED BY ONE OF TWO SOURCES:
a. SUNSET WESTERN GARDEN BOOK MAPS.
b. USDA HARDINESS ZONE MAP.
PLANT HARDINESS ZONE SOURCES SHALL BE LISTED BY LANDSCAPE ARCHITECT THROUGH PLANTING AND IRRIGATION DESIGN PROCESS.
4. HYDRO-ZONE: PLANTS GROUPED BY WATER NEEDS (SIMILAR CROP COEFFICIENTS (KC), ORGANIZED INTO ONE IRRIGATION ZONE.
5. REFERENCE EVAPOTRANSPIRATION (ETO): TOTAL WATER LOST FROM THE SOIL (EVAPORATION) AND FROM PLANT SURFACE (TRANSPIRATION) OVER SOME PERIOD.

B. REFERENCE STANDARDS:
1. AMERICAN NURSERY & LANDSCAPE ASSOCIATION / AMERICAN NATIONAL STANDARDS INSTITUTE:
a. ANLA / ANSI Z60.1-2004, 'AMERICAN STANDARD FOR NURSERY STOCK.'

1.3 ADMINISTRATIVE REQUIREMENTS

A. PRE-INSTALLATION CONFERENCE:
1. PARTICIPATE IN PRE-INSTALLATION CONFERENCE AS SPECIFIED IN SECTION 32 9001.

1.4 SUBMITTALS

A. ACTION SUBMITTALS:
1. SAMPLES:
a. TOP DRESSING MULCH FOR APPROVAL BEFORE DELIVERY TO SITE.

B. CLOSEOUT SUBMITTALS:
1. INCLUDE FOLLOWING IN OPERATIONS AND MAINTENANCE MANUAL SPECIFIED IN SECTION 01 7800:
a. MAINTENANCE CONTRACTS:
1) SEE TEMPLE SITE MANAGEMENT PLAN (SMP) FOR ESTABLISHMENT PERIOD MAINTENANCE.
b. OPERATIONS AND MAINTENANCE DATA:
1) INSTALLER INSTRUCTIONS:
a) PROVIDE WRITTEN INSTRUCTIONS COVERING MAINTENANCE REQUIREMENTS BY OWNER FOR ONE YEAR BEYOND CONTRACT MAINTENANCE PERIOD SPECIFIED IN SECTION 32 9001.
c. WARRANTY DOCUMENTATION:
1) INCLUDE FINAL, EXECUTED COPY OF WARRANTY.

1.5 DELIVERY, STORAGE, AND HANDLING

A. DELIVERY AND ACCEPTANCE REQUIREMENTS:
1. DELIVER TREES, SHRUBS, GROUND COVERS, AND PLANTS AFTER PREPARATIONS FOR PLANTING HAVE BEEN COMPLETED AND INSTALL IMMEDIATELY.
2. DO NOT PRUNE BEFORE DELIVERY, EXCEPT AS APPROVED BY LANDSCAPE ARCHITECT.
3. PROTECT BARK, BRANCHES, AND ROOT SYSTEMS FROM SUN SCALD, DRYING, WHIPPING, AND OTHER HANDLING AND TYING DAMAGE.
4. DO NOT BEND OR BIND-TIE TREES OR SHRUBS IN SUCH A MANNER AS TO DESTROY NATURAL SHAPE.
5. PROVIDE PROTECTIVE COVERING DURING DELIVERY.

B. STORAGE AND HANDLING REQUIREMENTS:
1. HANDLE BALLED STOCK BY ROOT BALL OR CONTAINER. DO NOT DROP TREES AND SHRUBS DURING DELIVERY.
2. IF PLANTING IS DELAYED MORE THAN SIX HOURS AFTER DELIVERY, SET PLANTING MATERIALS IN SHADE AND PROTECT FROM WEATHER AND MECHANICAL DAMAGE.
3. SET BALLED STOCK ON GROUND AND COVER BALL WITH SOIL, SAW DUST, OR OTHER ACCEPTABLE MATERIAL APPROVED BY LANDSCAPE ARCHITECT. DO NOT PLACE ON PAVEMENT.
4. DO NOT REMOVE CONTAINER-GROWN STOCK FROM CONTAINERS BEFORE TIME OF PLANTING.
5. WATER ROOT SYSTEMS OF TREES AND SHRUBS STORED ON SITE WITH FINE SPRAY. WATER AS OFTEN AS NECESSARY TO MAINTAIN ROOT SYSTEMS IN MOIST CONDITION. DO NOT ALLOW PLANT FOLIAGE TO DRY OUT.

1.6 WARRANTY

A. SPECIAL WARRANTY:
1. PROVIDE WRITTEN WARRANTIES AS FOLLOWS:
a. GUARANTEE SHRUBS, GROUND COVERS, AND VINES TO LIVE AND REMAIN IN STRONG, VIGOROUS, AND HEALTHY CONDITION FOR 90 DAYS MINIMUM FROM DATE LANDSCAPE INSTALLATION IS ACCEPTED AS COMPLETE.
b. GUARANTEE TREES TO LIVE AND REMAIN IN STRONG, VIGOROUS, AND HEALTHY CONDITION FOR ONE YEAR FROM DATE LANDSCAPE INSTALLATION IS ACCEPTED AS COMPLETE.

PART 2 - PRODUCTS

2.1 MATERIALS

A. PLANTS:
1. CONFORM TO REQUIREMENTS OF PLANT LIST AND KEY ON CONTRACT DOCUMENTS AND TO ANLA / ANSI Z60.1.
2. NOMENCLATURE:
a. PLANT NAMES USED IN PLANT LIST CONFORM TO 'STANDARDIZED PLANT NAMES' BY AMERICAN JOINT COMMITTEE ON HORTICULTURAL NOMENCLATURE EXCEPT IN CASES NOT COVERED. IN THESE INSTANCES, FOLLOW CUSTOM OF NURSERY TRADE. PLANTS SHALL BEAR TAG SHOWING GENUS, SPECIES, AND VARIETY OF AT LEAST 10 PERCENT OF EACH SPECIES DELIVERED TO SITE.
3. QUALITY:
a. PLANTS SHALL BE SOUND, HEALTHY, VIGOROUS, FREE FROM PLANT DISEASE, INSECT PESTS OR THEIR EGGS, NOXIOUS WEEDS, AND HAVE HEALTHY, NORMAL ROOT SYSTEMS. CONTAINER STOCK SHALL BE WELL ESTABLISHED AND FREE OF EXCESSIVE ROOT-BOUND CONDITIONS.
b. DO NOT PRUNE PLANTS OR TOP TREES PRIOR TO DELIVERY.
c. PLANT MATERIALS SHALL BE SUBJECT TO APPROVAL BY LANDSCAPE ARCHITECT AS TO SIZE, HEALTH, QUALITY, AND CHARACTER.
d. BARE ROOT TREES ARE NOT ACCEPTABLE.
e. PROVIDE PLANT MATERIALS FROM LICENSED NURSERY OR GROWER. PLANTS SHALL BE WASHINGTON GRADE NO. 1.
4. MEASUREMENTS:
a. MEASURE HEIGHT AND SPREAD OF SPECIMEN PLANT MATERIALS WITH BRANCHES IN THEIR NORMAL POSITION AS INDICATED ON CONTRACT DOCUMENTS OR PLANT LIST.
b. MEASUREMENT SHOULD BE AVERAGE OF PLANT, NOT GREATEST DIAMETER. FOR EXAMPLE, PLANT MEASURING 15 INCHES IN WIDEST DIRECTION AND 9 INCHES IN NARROWEST WOULD BE CLASSIFIED AS 12 INCH STOCK.
c. PLANTS PROPERLY TRIMMED AND TRANSPLANTED SHOULD MEASURE SAME IN EVERY DIRECTION.
d. MEASURE CALIPER OF TREES 6 INCHES ABOVE SURFACE OF GROUND.
e. WHERE CALIPER OR OTHER DIMENSIONS OF PLANT MATERIALS ARE OMITTED FROM PLANT LIST, PLANT MATERIALS SHALL BE NORMAL STOCK FOR TYPE LISTED.
f. PLANT MATERIALS LARGER THAN THOSE SPECIFIED MAY BE SUPPLIED, WITH PRIOR WRITTEN APPROVAL OF LANDSCAPE ARCHITECT, AND:
1) IF COMPLYING WITH CONTRACT DOCUMENT REQUIREMENTS IN ALL OTHER RESPECTS.
2) IF AT NO ADDITIONAL COST TO OWNER.
3) IF SIZES OF ROOTS OR BALLS ARE INCREASED PROPORTIONATELY.
5. SHAPE AND FORM:
a. PLANT MATERIALS SHALL BE SYMMETRICAL OR TYPICAL FOR VARIETY AND SPECIES AND CONFORM TO MEASUREMENTS SPECIFIED IN PLANT LIST.
b. WELL GROWN MATERIAL WILL GENERALLY HAVE HEIGHT EQUAL TO OR GREATER THAN SPREAD. HOWEVER, SPREAD SHALL NOT BE LESS THAN 2/3'S OF HEIGHT.

2.1 MATERIALS

A. PLANTS:
1. CONFORM TO REQUIREMENTS OF PLANT LIST AND KEY ON CONTRACT DOCUMENTS AND TO ANLA / ANSI Z60.1.

1. NOMENCLATURE:
a. PLANT NAMES USED IN PLANT LIST CONFORM TO 'STANDARDIZED PLANT NAMES' BY AMERICAN JOINT COMMITTEE ON HORTICULTURAL NOMENCLATURE EXCEPT IN CASES NOT COVERED. IN THESE INSTANCES, FOLLOW CUSTOM OF NURSERY TRADE. PLANTS SHALL BEAR TAG SHOWING GENUS, SPECIES, AND VARIETY OF AT LEAST 10 PERCENT OF EACH SPECIES DELIVERED TO SITE.
3. QUALITY:
a. PLANTS SHALL BE SOUND, HEALTHY, VIGOROUS, FREE FROM PLANT DISEASE, INSECT PESTS OR THEIR EGGS, NOXIOUS WEEDS, AND HAVE HEALTHY, NORMAL ROOT SYSTEMS. CONTAINER STOCK SHALL BE WELL ESTABLISHED AND FREE OF EXCESSIVE ROOT-BOUND CONDITIONS.
b. DO NOT PRUNE PLANTS OR TOP TREES PRIOR TO DELIVERY.
c. PLANT MATERIALS SHALL BE SUBJECT TO APPROVAL BY LANDSCAPE ARCHITECT AS TO SIZE, HEALTH, QUALITY, AND CHARACTER.
d. BARE ROOT TREES ARE NOT ACCEPTABLE.
e. PROVIDE PLANT MATERIALS FROM LICENSED NURSERY OR GROWER. PLANTS SHALL BE WASHINGTON GRADE NO. 1.
4. MEASUREMENTS:
a. MEASURE HEIGHT AND SPREAD OF SPECIMEN PLANT MATERIALS WITH BRANCHES IN THEIR NORMAL POSITION AS INDICATED ON CONTRACT DOCUMENTS OR PLANT LIST.
b. MEASUREMENT SHOULD BE AVERAGE OF PLANT, NOT GREATEST DIAMETER. FOR EXAMPLE, PLANT MEASURING 15 INCHES IN WIDEST DIRECTION AND 9 INCHES IN NARROWEST WOULD BE CLASSIFIED AS 12 INCH STOCK.
c. PLANTS PROPERLY TRIMMED AND TRANSPLANTED SHOULD MEASURE SAME IN EVERY DIRECTION.
d. MEASURE CALIPER OF TREES 6 INCHES ABOVE SURFACE OF GROUND.
e. WHERE CALIPER OR OTHER DIMENSIONS OF PLANT MATERIALS ARE OMITTED FROM PLANT LIST, PLANT MATERIALS SHALL BE NORMAL STOCK FOR TYPE LISTED.
f. PLANT MATERIALS LARGER THAN THOSE SPECIFIED MAY BE SUPPLIED, WITH PRIOR WRITTEN APPROVAL OF LANDSCAPE ARCHITECT, AND:
1) IF COMPLYING WITH CONTRACT DOCUMENT REQUIREMENTS IN ALL OTHER RESPECTS.
2) IF AT NO ADDITIONAL COST TO OWNER.
3) IF SIZES OF ROOTS OR BALLS ARE INCREASED PROPORTIONATELY.
5. SHAPE AND FORM:
a. PLANT MATERIALS SHALL BE SYMMETRICAL OR TYPICAL FOR VARIETY AND SPECIES AND CONFORM TO MEASUREMENTS SPECIFIED IN PLANT LIST.
b. WELL GROWN MATERIAL WILL GENERALLY HAVE HEIGHT EQUAL TO OR GREATER THAN SPREAD. HOWEVER, SPREAD SHALL NOT BE LESS THAN 2/3'S OF HEIGHT.

2.2 ACCESSORIES

A. PLANTING MIX:
1. MIXTURE OF THREE (3) PARTS EXCAVATED SOIL AND ONE PART WELL ROTTED COMPOSTED MANURE, APPROVED COMMERCIAL MIX, OR OTHER AMENDMENT RECOMMENDED IN 'TOPSOIL TESTING REPORT'.

B. FERTILIZER:
1. FERTILIZER AS RECOMMENDED IN TOPSOIL TESTING REPORT.

C. TREE STAKES:
1. TWO ACCEPTABLE PRODUCTS:
a. 2 INCH DIAMETER LODGEPOLE PINE.
b. EQUAL AS APPROVED BY LANDSCAPE ARCHITECT BEFORE INSTALLATION.

D. TREE STAKING TIES:
1. TWO ACCEPTABLE PRODUCTS:
a. 32 INCH CINCH-TIE TREE TIES BY V.I.T. PRODUCTS INC, ESCONDIDO, CA WWW.VITPRODUCTS.COM.
b. FLEX STRAP TREE TIES BY AQUARIUS BRANDS INC, ONTARIO, CA WWW.AQUARIUSBRANDS.COM.
c. EQUAL AS APPROVED BY LANDSCAPE ARCHITECT BEFORE INSTALLATION.

E. TREE GUYS:
1. TWO ACCEPTABLE PRODUCTS:
a. DUCKBILL MODEL 40DTS GUYING KIT.
b. EQUAL AS APPROVED BY LANDSCAPE ARCHITECT BEFORE INSTALLATION.

F. PRE-EMERGENT HERBICIDE:
1. CATEGORY FOUR APPROVED PRODUCTS:
a. CHIPCO DIMENSION GRANULAR BY THE ANDERSONS INC, MAUMEE, IL WWW.ANDERSONSINC.COM.
b. ELANCO XL2G GRANULAR BY CROP DATA MANAGEMENT SYSTEMS, MARYSVILLE, CA WWW.CDMS.NET.
c. RONSTAR G GRANULAR BY BAYER CROP SCIENCE, MONHEIM, GERMANY WWW.BAYERCROPSCIENCE.COM.
d. SURFLAN AS LIQUID BY UNITED PHOSPHOROUS INC, TRENTON, NJ WWW.UPI-USA.COM.
e. ORYZALIN 4 A.S. LIQUID BY FARMSAVER, SEATTLE, WA WWW.FARMSAVER.COM.

G. WEED BARRIER:
1. TWO ACCEPTABLE PRODUCTS:
a. DEWITT 4.1 OZ 20 YEAR WOVEN POLYPROPYLENE WEED BARRIER.
b. EQUAL AS APPROVED BY LANDSCAPE ARCHITECT BEFORE BIDDING.

H. BARK OR WOOD TOP DRESSING MULCH:
1. TWO ACCEPTABLE PRODUCTS:
a. MEDIUM SIZE FIR BARK.
b. MEDIUM OR LARGE SIZE REDWOOD BARK.
c. SHREDDED PINE BARK.
d. SHREDDED CEDAR.
e. EQUAL AS APPROVED BY LANDSCAPE ARCHITECT BEFORE INSTALLATION.

I. ROCK MULCH (PATH):
1. ONE ACCEPTABLE PRODUCT:
a. 5/8" MINUS DECOMPOSED GRANITE.
b. EQUAL AS APPROVED BY LANDSCAPE ARCHITECT BEFORE INSTALLATION.

PART 3 - EXECUTION

3.1 EXAMINATION

A. EVALUATION AND ASSESSMENT:
1. BEFORE PROCEEDING WITH WORK, CHECK AND VERIFY DIMENSIONS AND QUANTITIES. REPORT VARIATIONS BETWEEN DRAWINGS AND SITE TO LANDSCAPE ARCHITECT BEFORE PROCEEDING WITH WORK OF THIS SECTION.
2. PLANT TOTALS ARE FOR CONVENIENCE ONLY AND ARE NOT GUARANTEED. VERIFY AMOUNTS SHOWN ON CONTRACT DOCUMENTS. ALL PLANTING INDICATED ON CONTRACT DOCUMENTS IS REQUIRED UNLESS INDICATED OTHERWISE.

3.2 PREPARATION

A. LAYOUT INDIVIDUAL TREE AND SHRUB LOCATIONS AND AREAS FOR MULTIPLE PLANTINGS:
1. STAKE LOCATIONS AND OUTLINE AREAS.
2. SECURE LANDSCAPE ARCHITECT'S ACCEPTANCE BEFORE PLANTING.
3. MAKE MINOR ADJUSTMENTS AS MAY BE REQUESTED.

3.3 INSTALLATION

A. INTERFACE WITH OTHER WORK:
1. DO NOT COMMENCE WORK OF THIS SECTION UNTIL WORK OF SECTION 32 9113 HAS BEEN COMPLETED AND APPROVED.

B. EXCAVATION:
1. IF UNDERGROUND CONSTRUCTION WORK OR OBSTRUCTIONS ARE ENCOUNTERED IN EXCAVATION OF PLANTING HOLES, LANDSCAPE ARCHITECT WILL SELECT ALTERNATE LOCATIONS.
2. PLANT EXCAVATION SIZE:
a. DIAMETER: TWICE DIAMETER OF ROOT BALL OR CONTAINER MINIMUM.
b. DEPTH: EQUAL TO CONTAINER OR ROOTBALL DEPTH.
3. UNLESS EXCAVATED MATERIAL MEETS TOPSOIL REQUIREMENTS AS SPECIFIED IN SECTION 32 9113, REMOVE FROM LANDSCAPE AREAS AND DO NOT USE FOR LANDSCAPING PURPOSES.
4. ROUGHEN SIDES AND BOTTOMS OF EXCAVATIONS.
5. WITH APPROVAL OF LANDSCAPE ARCHITECT, SELECT FIVE (5) TYPICAL PLANTING EXCAVATIONS THROUGHOUT SITE FOR DRAINAGE TESTING.
a. FILL SELECTED EXCAVATIONS WITH WATER AND VERIFY THAT WATER DRAINS AWAY AT RATE OF 3 INCHES PER HOUR MINIMUM. INFORM LANDSCAPE ARCHITECT IN WRITING OF EXCAVATIONS WHERE WATER DOES NOT DRAIN PROPERLY.
b. SELECT THREE (3) EXCAVATIONS APPROXIMATELY 5 FEET AWAY FROM EACH NON-DRAINING EXCAVATION AND REPEAT TESTS. CONTINUE TESTING PROCESS UNTIL NON-DRAINING AREAS HAVE BEEN IDENTIFIED.
c. IN EXCAVATIONS LOCATED IN IDENTIFIED NON-DRAINING AREAS, AUGER 4 INCH DIAMETER HOLE 3 FEET DEEP IN LOW POINT OF EACH EXCAVATION AND FILL WITH TAMPED PLANTING MIX.
d. DO NOT PLANT TREES OR SHRUBS IN HOLES THAT DO NOT PROPERLY DRAIN.

C. PLANTING:
1. REMOVING BINDERS AND CONTAINERS:
a. REMOVE TOP ONE / THIRD OF WIRE BASKET AND BURLAP BINDERS.
b. REMOVE PLASTIC AND TWINE BINDERS FROM AROUND ROOT BALL AND TREE TRUNK.
c. REMOVE WOOD BOXES FROM AROUND ROOT BALL. REMOVE BOX BOTTOMS BEFORE POSITIONING PLANT IN HOLE. AFTER PLANT IS PARTIALLY PLANTED, REMOVE REMAINDER OF BOX WITHOUT INJURING ROOT BALL.
2. PLANT IMMEDIATELY AFTER REMOVING BINDING MATERIAL AND CONTAINERS. PLACE TREE AND SHRUB ROOTBALLS ON UNDISTURBED SOIL. AFTER WATERING AND SETTLING, TOP OF TREE ROOT BALLS SHALL BE APPROXIMATELY TWO INCHES HIGHER THAN FINISHED GRADE AND TRUNK FLARE IS VISIBLE. SHRUB ROOT BALLS SHALL BE APPROXIMATELY TWO INCHES HIGHER THAN FINISHED GRADE.
3. PROPERLY CUT OFF BROKEN OR FRAYED ROOTS.
4. CENTER PLANT IN HOLE, REMOVE REMAINING WIRE BASKET, AND BACKFILL WITH SPECIFIED PLANTING MIX. EXCEPT IN HEAVY CLAY SOILS, MAKE RING OF MOUNDED SOIL AROUND HOLE PERIMETER TO FORM WATERING BASIN.
5. ADD FERTILIZER IN PLANT PIT AS PER 'TOPSOIL TESTING REPORT' AND DURING PROPER SEASON.
6. FILL LANDSCAPE EXCAVATIONS WITH TAMPED PLANTING MIX AND RECOMMENDED FERTILIZER. COMPACT IN 6 INCH LIFTS. SETTLE BY WATERING TO ENSURE TOP OF ROOT BALL IS 2 INCHES HIGHER THAN SURROUNDING SOIL FOLLOWING COMPACTION AND SETTLING.
7. DO NOT USE MUDDY SOIL FOR BACKFILLING.
8. MAKE ADJUSTMENTS IN POSITIONS OF PLANTS AS DIRECTED BY LANDSCAPE ARCHITECT.
9. THOROUGHLY WATER TREES AND SHRUBS IMMEDIATELY AFTER PLANTING.
10. AT BASE OF EACH TREE, LEAVE 36 INCH DIAMETER CIRCLE FREE OF ANY GRASS.

D. SUPPORTS FOR NEW TREES:
1. PROVIDE NEW SUPPORTS FOR TREES NOTED ON CONTRACT DOCUMENTS TO BE STAKED.
a. REMOVE NURSERY STAKES DELIVERED WITH AND ATTACHED TO TREES.
b. SUPPORT SHALL CONSIST OF AT LEAST TWO (2) TREE STAKES DRIVEN INTO HOLE BASE BEFORE BACKFILL SO ROOTS ARE NOT DAMAGED. PLACE STAKES VERTICALLY AND RUN PARALLEL TO TREE TRUNK. INSTALL STAKES SO 3 FEET OF STAKE LENGTH IS BELOW FINISH GRADE.
c. DECIDUOUS TREES:
1) PLACE TREE TIES 12 INCHES BELOW CROTCH OF MAIN TREE CANOPY. SECOND SET OF TREE TIES MAY BE REQUIRED 18 TO 24 INCHES ABOVE FINISH GRADE, IF DIRECTED BY LANDSCAPE ARCHITECT.
2) REMOVE TOPS OF TREE STAKES SO TOP OF STAKE IS 6 INCHES BELOW MAIN TREE CANOPY TO PREVENT DAMAGE TO TREE BRANCHES AND CANOPY GROWTH.
d. EVERGREEN TREES:
1) PLACE TREE TIES 2/3'S OF HEIGHT OF TREE UP FROM ROOT BALL.
2. PROVIDE ROOT GUYING KITS TO SUPPORT 24 INCH BOX, 3 INCH CALIPER AND LARGER TREES.
3. STAKING AND GUYING SHOULD ALLOW SOME TREE MOVEMENT.

E. VINES:
1. REMOVE FROM STAKES, UNTIE, AND SECURELY FASTEN TO WALL OR FENCE NEXT TO WHICH THEY ARE PLANTED.

F. GROUND COVERS:
1. CONTAINER-GROWN UNLESS OTHERWISE SPECIFIED ON CONTRACT DOCUMENTS. SPACE EVENLY TO PRODUCE A UNIFORM EFFECT, STAGGERED IN ROWS AND INTERVALS SHOWN.

G. POST PLANTING WEED CONTROL:
1. APPLY SPECIFIED PRE-EMERGENT HERBICIDE TO SHRUB AND GROUND COVER PLANTING AREAS AND GRASS-FREE AREAS AT TREE BASES AFTER COMPLETION OF PLANTING.
2. AREAS SHALL BE FREE OF EXISTING WEED GROWTH BEFORE APPLICATION OF HERBICIDE.

H. WEED BARRIER FABRIC:
1. AFTER PLANTING AND APPLICATION OF HERBICIDE IN SHRUB BEDS, APPLY COVERING OF SPECIFIED WEED BARRIER FABRIC.
2. ACHIEVE 100 PERCENT COVERAGE OVER GROUND AREAS.
3. OVERLAP SEAMS 6 INCHES MINIMUM.
4. STAPLE AT 5 FEET ON CENTER EACH WAY AND WITHIN 3 INCHES OF EDGE OF SHRUB BED, WITH TWO (2) AT EACH CORNER.

I. MULCHING:
1. AFTER APPLICATION OF HERBICIDE, MULCH SHRUB AND GROUND COVER PLANTING AREAS WITH 3 INCHES DEEP LAYER OF SPECIFIED TOP DRESSING OR ROCK MULCH.
2. COVER GRASS-FREE AREA AT TREE BASES WITH 3 INCHES OF TOP DRESSING MULCH OR ROCK MULCH.
3. PLACE MULCH TO UNIFORM DEPTH AND RAKE TO NEAT FINISHED APPEARANCE.

END OF SECTION

CORE DESIGN
14711 NE 29th Place Suite 101
Bellevue, Washington 98007
425.885.7877 Fax 425.885.7963
ENGINEERING · PLANNING · SURVEYING

STATE OF WASHINGTON REGISTERED LANDSCAPE ARCHITECT
JOSHUA PENNINGTON BEARD
CERTIFICATE NO. 938

TEMPLE PRESIDENT'S RESIDENCE
SEATTLE TEMPLE
2808 148TH AVENUE SE
BELLEVUE, WA 98007

Project for:
THE CHURCH OF JESUS CHRIST OF LATTER-DAY SAINTS

Mark	Date	Description

Project Number:
Plan Series 12109
Property Number:

Sheet Title: SOIL & PLANTING SPECIFICATIONS

Sheet 5 of 8

L2.03

Sally Nichols
March 6, 2014

City of Bellevue Submittal Requirements | **27a**

ENVIRONMENTAL CHECKLIST

4/18/02

If you need assistance in completing the checklist or have any questions regarding the environmental review process, please visit or call the Permit Center (425-452-6864) between 8 a.m. and 4 p.m., Monday through Friday (Wednesday, 10 to 4). Our TTY number is 425-452-4636.

BACKGROUND INFORMATION

Received
MAR 06 2014
Permit Processing
City of Bellevue

Property Owner: The Church of Jesus Christ of Latter-Day Saints ✓

Proponent: The Church of Jesus Christ of Latter-Day Saints ✓

Contact Person: Patrick Harron & Associates, LLC; Att: Brian G. Harron, PE ✓
(If different from the owner. All questions and correspondence will be directed to the individual listed.)

Address: 14900 Interurban Avenue South, Suite 279, Seattle, WA 98168-4635 ✓

Phone: (206) 674-4659

Proposal Title: LDS Temple Presidents Residence ✓

Proposal Location: 2808 148th Avenue SE, Bellevue, WA 98007 ✓
(Street address and nearest cross street or intersection) Provide a legal description if available.

Please attach an 8 ½" x 11" vicinity map that accurately locates the proposal site.

Give an accurate, brief description of the proposal's scope and nature: ✓

1. General description: Construct a single-family 2,754 sf residence, and associated driveway/small lawn/gardens, adjacent to a critical slope area & within a Habitat Performance critical area. The building is outside the critical slope buffer, only landscape walls and patio encroach within the first 25' of the 50' buffer
2. Acreage of site: 17.98 acres
3. Number of dwelling units/buildings to be demolished: None ✓
4. Number of dwelling units/buildings to be constructed: One ✓
5. Square footage of buildings to be demolished: None ✓
6. Square footage of buildings to be constructed: 2,754 square feet ✓
7. Quantity of earth movement (in cubic yards): ~~650~~ 16,280 SF cubic yards net cut ✓
8. Proposed land use: Single-family residence; accessory to existing Temple, to be constructed within a critical slope ~~setback~~ buffer & within a Habitat Performance areas. ✓
9. Design features, including building height, number of stories and proposed exterior materials: ✓
   Single story residence with ridge line of less than 25-feet. Exterior to be "craftsman style" having brick and wood construction with composite roof. Colors have not been selected.
10. Other

no building structure w/in steep slope - only patio & low landscape walls w/in 1st 25' of 50' steep slope buffer

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Estimated date of completion of the proposal or timing of phasing:

Construction will begin as soon as permits are issued. Construction is anticipated to begin in late spring or early summer and last for approximately 90 days.

Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

None proposed

List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

1) A Geotechnical Report has been prepared by Gary Flowers (dated 12/2/2012). 2) A Habitat Assessment & a Vegetation Management plan by Altmann Oliver Associates, LLC, (revised 6/26/2013). 3) Conceptual Landscape Plans by Core Design. 4) Comprehensive Storm Drainage Report prepared by Patrick Harron & Associates, LLC (revised 11/19/2013)

All in project file

Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain. List dates applied for and file numbers, if known.

Single Family Bldg. Permit 13-119244 BS

List any government approvals or permits that will be needed for your proposal, if known. If permits have been applied for, list application date and file numbers, if known.

The following permits are anticipated from the City of Bellevue: Critical Areas Land Use Permit (12-131861 LO) Side Sewer Application (12-116995 UA); Residential Building Permit (13-119244 BS)

Please provide one or more of the following exhibits, if applicable to your proposal.
(Please check appropriate box(es) for exhibits submitted with your proposal):

☐ Land Use Reclassification (rezone) Map of existing and proposed zoning

☐ Preliminary Plat or Planned Unit Development
Preliminary plat map

☐ Clearing & Grading Permit
Plan of existing and proposed grading
Development plans

☐ Building Permit (or Design Review)
Site plan
Clearing & grading plan

☐ Shoreline Management Permit
Site plan

NA

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MAR 06 2014
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City of Bellevue

A. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site: ☐ Flat ☒ Rolling ☐ Hilly ☒ Steep slopes ☐ Mountains ☐ Other
Steep slope on the west side of meadow, steep slopes along the NW & SE corner of the property.)

b. What is the steepest slope on the site (approximate percent slope)?
There is an existing isolated 40% slope at the east and south edge of the proposed improvements. The site's average slope is approximately 5% where construction is proposed.

c. What general types of soil are found on the site (for example, clay, sand, gravel, peat, and muck)? If you know the classification of agricultural soils, specify them and note any prime farmland.
The King County Soil Survey identifies on-site soils as Alderwood gravelly sandy loam (AgC)

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

No indications of slope instability were observed. See Geological/Geotechnical Assessment prepared by Gary Flowers, LLC, date 11/30/2012.

in project file

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.

Approximately 650 cubic yards of fill and excavation, each, are anticipated for construction of the driveway and grading around the new residence. A majority of the cut/fill will occur in the area of the residence to construct a level building platform. Structural fill will come from local suppliers.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Minimal erosion could occur where soils are disturbed for construction. BMP will be used to mitigate any erosion impacts.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

Approximately 28.1% of the entire Temple campus will be impervious surfaces after this project is constructed of which this project represents less than 2% of that area.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

Temporary erosion control measures will be implemented in compliance with the City of Bellevue's standards. After construction is completed, sodding, landscaping, tree planting, and other landscaping measures will be implemented in order to permanently stabilize the site.

BCC 23.76 - Erosion & Sedimentation Control, Clear & Grade Code

2. AIR

a. What types of emissions to the air would result from the proposal (i.e. dust, automobile odors, and industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

Some emissions are expected during construction and those emissions will be typical for the construction of a single-family home. Emission when the project is completed will be insignificant in comparison to existing "background" emissions.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

None known.

c. Proposed measures to reduce or control emissions or other impacts to the air, if any:

None required and none proposed.

Construction Dust Suppression per BCC 23.76 - Clearing & Grading Code

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3. WATER

a. Surface

(1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If

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appropriate, state what stream or river it flows into.

There are no wetlands or streams on the property. An existing detention pond is located near the proposed location of the residence. Otherwise no surface water bodies are in the immediate vicinity of the site.

(2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If Yes, please describe and attach available plans.

The driveway will be constructed from the adjacent property to the north (owned by the Church). The residence will be some 60 feet up hill and east of the existing storm management pond' s berm and easterly edge.

(3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

None proposed.

(4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

None expected.

(5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

No.

(6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

None proposed.

b. Ground

(1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description.

No withdrawals or discharges proposed.

(2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals...; agricultural; etc.) Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

None proposed.

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c. Water Runoff (Including storm water)

(1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

Runoff is expected from the roof of the new residence and the new driveway. Runoff will be dispersed through dispersal trenches to the native vegetation and thence to the natural points of discharge from the site.

(2) Could waste materials enter ground or surface waters? If so, generally describe.

Not expected.

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:

Dispersion of stormwater runoff will comply with City of Bellevue standards will be implemented to reduce impacts from runoff. Dispersal trenches will be the primary method of stormwater management.

c&G code 23.76 TESC standards

4. Plants

a. Check or circle types of vegetation found on the site:

- [x] deciduous tree: alder, maple, aspen, other
- [x] evergreen tree: fir, cedar, pine, other
- [x] shrubs
- [x] grass
- [ ] pasture
- [ ] crop or grain
- [ ] wet soil plants: cattail, buttercup, bulrush, skunk cabbage, other
- [ ] water plants: water lily, eelgrass, milfoil, other
- [ ] other types of vegetation

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City of Bellevue

b. What kind and amount of vegetation will be removed or altered?

Approximately ~~30,200~~ 16,280 SF square feet of the site will be disturbed, requiring the removal of trees and the native vegetation located around those trees on the east side of the site.

storm drainage report Appendix C

c. List threatened or endangered species known to be on or near the site. ✓

A habitat review has been completed and that report will be part of the Land Use permit application. None of the 23 species of local importance appear to have a primary association with habitat on or immediately adjacent to the project. Habitat Management Plan for Pileated Woodpecker has been prepared.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

Lawn and other typical residential landscaping is proposed around the new residence meeting the City of Bellevue Zoning Code. Invasive plants in and around the residence will be removed in accordance with the Vegetation Management Plan prepared for this project.

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5. ANIMALS

a. Check or circle any birds and animals which have been observed on or near the site or are known to be on or near the site:

- [x] Birds: hawk, heron, eagle, songbirds, other:
- [x] Mammals: deer, bear, elk, beaver, other:
- [ ] Fish: bass, salmon, trout, herring, shellfish, other:

animals typical to lowland forest

Habitat Mgmt Plan by Altmann Oliver Assoc - revised 6/26/13 Pacific Flyway - WDW/ includes Puget Sound region

b. List any threatened or endangered species known to be on or near the site.
None known although a Habitat Management plan for the Pileated Woodpecker will be implemented.

c. Is the site part of a migration route? If so, explain.
Not known to be.

d. Proposed measures to preserve or enhance wildlife, if any:
A Habitat Management Plan will be implemented for this property.

6. Energy and Natural Resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy need? Describe whether it will be used for heating, manufacturing, etc.
Electricity and natural gas will be used for heating and lighting in the new residence.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.
No.

c. What kinds of energy conservation features are included in the plans of the proposal? List other proposed measures to reduce or control energy impacts, if any:
The project will meet Washington State Energy Codes

7. Environmental Health

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

No.

(1) Describe special emergency services that might be required.

None expected.

(2) Proposed measures to reduce or control environmental health hazards, if any:

None proposed.

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b. Noise

(1) What types of noise exist in the area which may affect your project (for example, traffic, equipment, operation, other)?

Traffic from 148th Avenue SE and Interstate 90 may affect this project. The existing vehicle use on the Temple campus will be the major noise impact for this residence. (It is noted that the residence is an accessory use to the Temple.

(2) What types and levels of noise would be created by or associated with the project on a short-term or long-term basis (for example, traffic, construction, operation, other)? Indicate what hours noise would come from the site.

Very little noise would be expected from this project and only of the types that are typical for single-family residences..

City noise Ordinance BCC 9.18

(3) Proposed measures to reduce or control noise impacts, if any:

None required and none proposed.

8. Land and Shoreline Use

a. What is the current use of the site and adjacent properties?
The site is currently used for religious purposes. Surrounding land use includes commercial and retail developments to the south and east, 148th Ave. SE to the west and Robinswood Park to the north.

b. Has the site been used for agriculture? If so, describe.
Not to our knowledge within the last 50-years.

c. Describe any structures on the site.
An existing 110,000 square-foot, six-story, Temple is located on the western half of the site as well as accessory outbuildings (guardhouse and maintenance building) associated with Temple use.

Residence will be SF home - subordinate use to Temple

d. Will any structures be demolished? If so, what?
No.

e. What is the current zoning classification of the site?
The southern portion of the site is zoned CB Commercial and the northern portion of the site is zoned R-5 Single-family residential.

f. What is the current comprehensive plan designation of the site?
Portions of the site are designated as commercial and residential.

g. If applicable, what is the current shoreline master program designation of the site?
Not applicable.

h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.
The project's topography mapping identified two small critical slope areas on the project site.

✓ steep slopes identified and part of this proposal see Geotechnical & Geological Assessment by Early & Flowers

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MAR 06 2014
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i. Approximately how many people would reside or work in the completed project?
Approximately 2 people would reside in the new residence.

j. Approximately how many people would the completed project displace?
None.

k. Proposed measures to avoid or reduce displacement impacts, if any:
None required and none proposed.

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i. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:
The project will comply with all of the City of Bellevue's zoning and municipal codes

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.
One single-family residence is proposed.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.
None.

c. Proposed measures to reduce or control housing impacts, if any:
None proposed.

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?
The house is anticipated to be less than 25 feet in height. The residence will be a "craftsman style" having exterior brick and wood finishes and have a composite roof.

b. What views in the immediate vicinity would be altered or obstructed?
None.

c. Proposed measures to reduce or control aesthetic impacts, if any:
None required and none proposed.

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?
Standard residential lighting is proposed for this project. Down directed driveway lights (48" in height) are proposed.

b. Could light or glare from the finished project be a safety hazard or interfere with views?
No.

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c. What existing off-site sources of light or glare may affect your proposal?
None. The adjacent commercial lighting should be adequately screened from the new residence by the existing and new trees.

d. Proposed measures to reduce or control light or glare impacts, if any:
None proposed.

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?
Lake Sammamish and and Robinswood Park are very close to the new residence.

b. Would the proposed project displace any existing recreational uses? If so, describe.
No.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:
None required and none proposed.

13. Historic and Cultural Preservation

a. Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe.
None known.

b. Generally describe any landmarks or evidence of historic, archeological, scientific, or cultural importance known to be on or next to the site.
None known.

c. Proposed measures to reduce or control impacts, if any:
None proposed.

14. Transportation

a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.
148th Avenue SE is directly west of the property and SE 28th Street is immediately north. Interstate 90 is within a mile of the site.

b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?
Yes. There is a bus stop at the corner of 28th and 148th.

c. How many parking spaces would be completed project have? How many would the project eliminate?
Plans propose a two car garage and space for another two cars in front of the garage. Two parking stalls will be eliminated from the Temple parking lot to allow access to the new residence.

d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not Including driveways? If so, generally describe (indicate whether public or private).
No.

e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.
No.

Received
MAR 06 2014
Permit Processing
City of Bellevue

f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.
The ITE indicates that a single-family residence would generate 9.57 average daily trips. The actual trips would be considerably less knowing the older age-group for Temple presidents.

g. Proposed measures to reduce or control transportation impacts, if any:
None required and none proposed.

15. Public Services

a. Would the project result in an increased need for the public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.
None expected beyond what a typical new residence would require.

b. Proposed measures to reduce or control direct impacts on public services, if any.
None proposed.

16. Utilities

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.
Sanitary sewer service will be provided with a grinder pump that will connect to the existing public sewer system; water service will be connected to the existing on-site main; natural gas service will be connected to the existing on-site service to the Temple; refuse service will be by the local provider; telephone service will be provided by Comcast or CenturyLink; electricity will be connected to an on-site transformer.

Signature

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature..... Brian G. Harron

Date Submitted..... March 3, 2014

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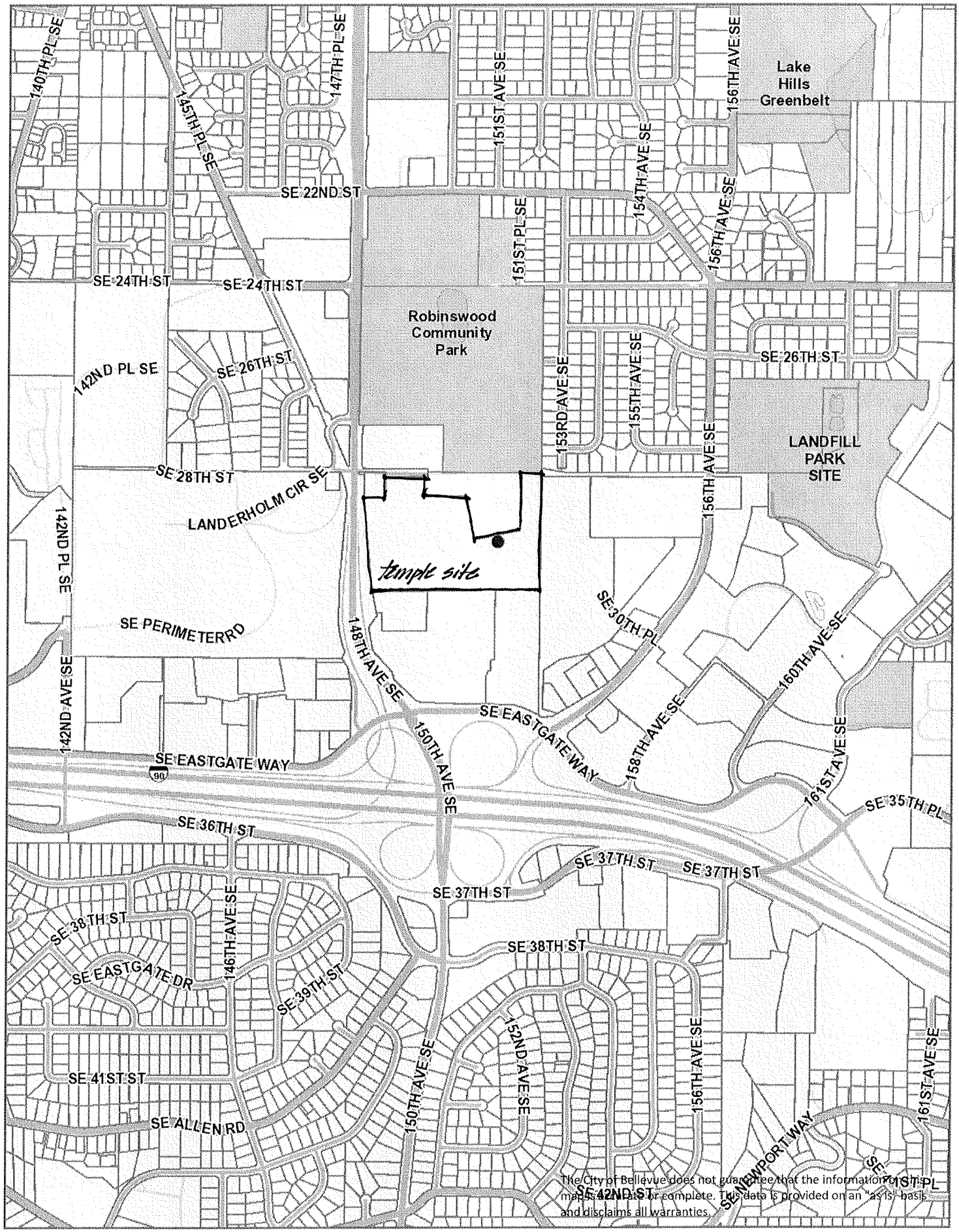

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