City of West Linn
Planning & Development • 22500 Salamo Rd #1000 • West Linn, Oregon 97068
Telephone 503.656.4211 • Fax 503.656.4106 • westlinnoregon.gov

DEVELOPMENT REVIEW APPLICATION

For Office Use Only		
STAFF CONTACT: TOM SOPPE	PROJECT NO(S).: DR-12-03 / CU-12-01	
NON-REFUNDABLE FEE(S)	REFUNDABLE DEPOSIT(S)	TOTAL: 0 See PREAPP-PG-5

Type of Review (Please check all that apply):

- [ ] Annexation (ANX)
- [ ] Appeal and Review (AP) *
- [x] Conditional Use (CUP)
- [x] Design Review (DR)
- [ ] Easement Vacation
- [ ] Extraterritorial Ext. of Utilities
- [ ] Final Plat or Plan (FP)
- [ ] Flood Management Area
- [ ] Hillside Protection & Erosion Control
- [ ] Historic Review
- [ ] Legislative Plan or Change
- [ ] Lot Line Adjustment (LLA) */**
- [ ] Minor Partition (MIP) (Preliminary Plat or Plan)
- [ ] Non-Conforming Lots, Uses & Structures
- [ ] Planned Unit Development (PUD)
- [ ] Pre-Application Conference (PA) */**
- [ ] Street Vacation
- [ ] Subdivision (SUB)
- [ ] Temporary Uses *
- [ ] Time Extension *
- [ ] Variance (VAR)
- [ ] Water Resource Area Protection/Single Lot (WAP)
- [ ] Water Resource Area Protection/Wetland (WAP)
- [ ] Willamette & Tualatin River Greenway (WRG)
- [ ] Zone Change

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Home Occupation, Pre-Application, Sidewalk Use, Sign Review Permit, and Temporary Sign Permit applications require different or additional application forms, available on the City website or at City Hall.

Site Location/Address:	**Assessor's Map No.: 21E35B**
Estimated 23120 block of Bland Circle (Map number 21E35B 00504)	**Tax Lot(s): 00504**
	Total Land Area: 1 ACRE +/-

Brief Description of Proposal: **NEW BOOSTER PUMP STATION FOR THE CITY OF WEST LINN.**

Applicant Name: (please print)	**CITY OF WEST LINN**	**Phone: 503-657-0331**
Address:	**22500 SALAMO ROAD**	Email:
City State Zip:	**WEST LINN, OREGON 97068**	**dwright@westlinnoregon.gov**
Owner Name (required): (please print)	**CITY OF WEST LINN**	**Phone: 503-657-0331**
Address:	**22500 SALAMO ROAD**	Email:
City State Zip:	**WEST LINN, OREGON 97068**	**dwright@westlinnoregon.gov**
Consultant Name: (please print)	**4B ENGINEERING & CONSULTING, LLC**	**Phone: 503-589-1115**
Address:	**3700 RIVER ROAD N, SUITE 2**	Email:
City State Zip:	**KEIZER, OREGON 97303**	**BROOKE@4BENGINEERING.COM**

1. All application fees are non-refundable (excluding deposit). ~~Any overruns to deposit will result in additional billing.~~
2. The owner/applicant or their representative should be present at all public hearings.
3. A denial or approval may be reversed on appeal. No permit will be in effect until the appeal period has expired.
4. **Three (3) complete hard-copy sets (single sided) of application materials must be submitted with this application. One (1) complete set of digital application materials must also be submitted on CD in PDF format. If large sets of plans are required in application please submit only two sets.**

* No CD required / ** Only one hard-copy set needed

The undersigned property owner(s) hereby authorizes the filing of this application, and authorizes on site review by authorized staff. I hereby agree to comply with all code requirements applicable to my application. Acceptance of this application does not infer a complete submittal. All amendments to the Community Development Code and to other regulations adopted after the application is approved shall be enforced where applicable. Approved applications and subsequent development is not vested under the provisions in place at the time of the initial application.

Dennis E Wright — Applicant's signature — 12/12/2011 — Date

Dennis E Wright — Owner's signature *(required)* — 12/12/2011 — Date

CITY OF WEST LINN – PUBLIC WORKS DEPARTMENT
Bland Circle Intertie Water Pump Station
Conditional Use and Class II Design Application Narrative

I. INTRODUCTION

The purpose of this document is to demonstrate that the design for the Bland Circle booster pump station complies with all applicable requirements as found in the City of West Linn Community Development Code (CDC). Because the pump station site has been zoned as "Single-Family Residential Detached and Attached, R-7," it was necessary to procure a conditional use permit to place a utility building on a residential site. Additionally, as this construction reflects a more than minimal change to the site, a Type II Design Review was required.

II. PROJECT SUMMARY

This project entails the construction of a water booster pump station with three (3) variable frequency drive (VFD) pumps totaling 1800 gallons per minute (GPM), with the ability to operate on a backup generator. Additionally, this project contains ductile iron piping from the proposed pump station to the Rosemont Reservoir.

The construction of the pump station is the primary purpose of this design review.

The approximately 1 acre site presently contains the Bland Reservoir, fencing around the reservoir, and natural vegetation, including plants and trees.

III. CONDITIONAL USE APPLICATION NARRATIVE

The following are written responses to the applicable portions of section 60 of the City of West Linn Community Development Code (CDC). The Site Plan and Map as required in Section 60.080 is attached as an exhibit and should be reviewed in conjunction with this narrative.

Section 60.070(A): Approval Standards and Conditions Criteria

60.070(A)(1): Site size and dimensions provide:
60.070(A)(1)(a): Adequate area for the needs of the proposed use
The pump station is planned to be 22' x 16' in dimension, with a 5' sidewalk along the eastern side. The existing location for the pump station currently contains the Bland Reservoir in the northeast corner, fencing around the reservoir, and vegetation and trees, primarily on the western half of the site. Of the non-vegetative area on the site, there exists an access road to the reservoir and a landing area comprised of gravel and dirt. The pump station will sit on the site with appropriate setbacks on all sides. The site in total is

1 acre ± in size, more than adequate for the pump station footprint, while still leaving room to negotiate vehicles around the site for access to the pump station and the reservoir, as well as minimizing changes to existing landscaping.

60.070(A)(1)(b): Adequate area for aesthetic design treatment to mitigate any possible adverse effect from the use on surrounding properties and uses.
The current design of the pump station calls for the station to be located on the southeast of the site, near the access road. It will be buffered on the south and west sides with vegetation, either with existing trees or new arborvitae. At the present, there are no structures on the adjoining property to the east of the site. The pump station is planned to be located a minimum of 30' from the east fence, to mitigate aesthetic and sound detriment to any potential future development on the neighboring property. The added trees on the south side of the pump station, as well as trees along the fenceline between the pump station/reservoir site and the plot of land to the east, were selected to visually and audibly conceal the pump station.

60.070(A)(2): The characteristics of the site are suitable for the proposed use considering size, shape, location, topography, and natural features.
The site was selected for a pump station due to the fact that the Bland Reservoir that will supply the station with a suction supply of water currently exists on the site. However, the size and layout of the site, as well as its existing vegetation, make it an ideal location for a pump station. As the pump station will be located at a lower elevation than the reservoir that is feeding it, this will also aid in the design of the pumps, by providing a static head on the suction side of the pumps.

60.070(A)(3): The granting of the proposal will provide for a facility that is consistent with the overall needs of the community.
The site currently has an underutilized water storage reservoir. Of the six water storage reservoirs existing in the City of West Linn, only the Bland and Rosemont reservoirs lack associated booster pump stations. As Rosemont is the highest elevation reservoir of the six city reservoirs, at 860 ft, there is not a necessity for a booster pump station at that site. However, there is a purpose for a booster pump station at the Bland Reservoir. This pump station will service the Rosemont zone, providing an additional method to transport water around the city. It will help to bolster the Rosemont pressure zone, and allow for future growth and thereby, additional demand for the city's water system.

60.070(A)(4): Adequate public facilities will be available to provide service to the property at the time of occupancy.
This pump station will have restricted access, to the City of West Linn Public Works Department, and no additional public facilities are planned into this project.

60.070(A)(5): The applicable requirements of the zone are met, except as modified by this chapter.
The site in question has been zoned as "Single-Family Residential Detached and Attached, R-7," as found in Chapter 12 of the CDC. The usage has been labeled "Utilities, major," which falls under 12.060(10), Conditional Use.

a. **12.070**: the size of the lot in question is larger than the minimum of 50 foot wide. The building height will be less than the maximum 35 feet. The accessway to the site is existing and is at a minimum, 15 feet wide in total, which complies with the required minimum width.
b. **12.080:** As this is a conditional use, the dimension requirements (12.080) are developed from the criteria set out in 60.070(A) and (B). The site plan and map for this project demonstrate our detailing of a response to these criteria.
c. **12.090(A), Other applicable development standards**
    i. **12.090(A)(1): Chapter 34, Accessory Structures, Accessory Dwelling Units, and Accessory Uses:** NA, as we will not have any accessory structures, dwelling units, or uses on this project.
    ii. **12.090(A)(2): Chapter 35, Temporary Structures and Uses:** NA. There will be no temporary structures built on this site.
    iii. **12.090(A)(3): Chapter 38, Additional Yard Area Required; Exceptions to Yard Requirements; Storage in Yards; Projections Into Yards:** This structure will be more than three feet from the property line, more than 25 feet from the nearest street, will have nothing stored on site, and will not have any projections extending into the front or rear yard (such as porches, decks, or balconies) by more than five feet.
    iv. **12.090(A)(4): Chapter 40, Building Height Limitations, Exceptions:** NA, Repealed by Ord. 1604
    v. **12.090(A)(5): Chapter 41, Building Height, Structures on Steep Lots, Exceptions:** Our building will be less than 45 feet in height, measured from both the lowest and highest grading points of the building.
    vi. **12.090(A)(6): Chapter 42, Clear Vision Areas:** NA. This project site is not located at a street intersection. It is not located at a street and accessway intersection.
    vii. **12.090(A)(7): Chapter 44, Fences**: As part of the project, a cyclone perimeter fence will be installed along the perimeter of the site.
        1. **44.040, Landscaping:** We will be planting trees along a section of the eastern fence area, and southern side of the pump station. These areas do not conflict with the clear vision area, as the road does not include a street intersection or street and accessway intersection.
    viii. **12.090(A)(8): Chapter 46, Off-Street Parking, Loading, and Reservoir Areas**
        1. **46.020:** As detailed on the site plan, an area for parking will be established on the site to allow public works employees a location to park vehicles.
        2. **46.090:** Space for a minimum of one vehicle will be provided, to the south of the pump station. Additionally,

there is ample room for additional vehicles to park on the site.

3. No parking will be provided for the public or visitors.
4. No bicycle facilities will be placed on this site.

ix. **12.090(A)(9): Chapter 48: Access, Egress, and Circulation**

1. Access to the site already exists with the shared driveway that leads to the Bland Reservoir.
2. **48.040: Minimum Vehicle Requirements for Non-Residential Uses**
   a. The existing access/service drive is made of hard surface pavement, with a minimum width of 15 foot with horizontal clearances of 2.5' wide on either side of the driveway, to allow for one-way traffic.
   b. The minimum vertical clearance of the access road is 13 feet, six inches, to comply with the requirements of this provision.
3. **48.060: Width and Location of Curb Cuts and Access Separation Requirements**: There will not be any curbs on the access road to the site. Thus, this provision is not applicable to this project.
4. **48.080: Bicycle and Pedestrian Circulation**: This is not a multi-family development or subdivision. Thus, this provision is not applicable to this project.

x. **12.090(A)(10): Chapter 52: Signs**: There will be no signs leading up to the pump station site. The signage for the site will be located on the south gate/fence of the pump station site to identify the site. As per 52.109(D), and the fact that the sign will be a City of West Linn sign, this sign shall be exempt from Chapter 52 CDC.

xi. **12.090(A)(11): Chapter 54: Landscaping: All reasonable efforts to maintain the existing vegetation and trees on the site are made.**

1. **54.020(D). Heritage Trees.** A meeting between a representative of 4B Engineering and Consulting and City of West Linn City Arborist Mike Perkins was held on December 29, 2011. During this meeting, Mr. Perkins verified that there were no heritage trees on the site.
2. **54.020(E)(2):** Existing vegetation to remain on site will ensure that a minimum of 20% of the site is landscaped. City of West Linn City Arborist Mike Perkins approved the usage of arborvitae trees for screening for the pump station.
3. **54.040. Installation**. All landscaping to be added to the site will comply with the requirements of installation as laid out in this section.

d. 12.090(B): The provisions of Chapter 55 are answered in Section IV of this document: CLASS II DESIGN REVIEW NARRATIVE

60.070(A)(6): The supplementary requirements set forth in Chapters 52 to 55 CDC, if applicable, are met.

a. Chapter 52: See response to requirement 5, item x.
b. Chapter 53: Sidewalk Use: There will be no sidewalks on this site. Thus, standards regarding the use of sidewalks are not applicable to this project.
c. Chapter 54: See response to provisions of Chapter 54 in item C(xi) in response to provision 60.070(A)(5): **The applicable requirements of the zone are met, except as modified by this chapter.**
d. Chapter 55: Design Review: **The provisions of Chapter 55 are answered in Section IV of this document: CLASS II DESIGN REVIEW NARRATIVE**

60.070(A)(7): The use will comply with the applicable policies of the Comprehensive Plan.

As this is a public facility, the construction of this pump station corresponds with Goal 11 of the City's Comprehensive Plan: Public Facilities and Services. Specifically, it will help the City to provide adequate access to water service, as referenced in Goal 11, Policy 1: "Establish, as the City's first priority, the maintenance of existing services and infrastructure in all areas within the existing City limits." Constructing this pump station will provide flexibility and buffering to the overall water system by adding an additional method to transport water around the City's infrastructure, allowing for future growth. The need for this pump station was identified on Page 8-7 of the City's 2008 Water Master Plan, performed by Murray, Smith & Associates, Inc.

> "Bland Intertie Supply to Rosemont: The storage and pumping analysis identified a deficiency in supply to the Rosemont pressure zone under future conditions. Construction of a third pump station to boost water from a lower pressure zone into the Rosemont pressure zone is recommended. Through discussions with City staff it was determined that the best location for this pump station is at the Bland Reservoir site. Siting the pump station at this location provides a geographical distribution of the supply to the Rosemont pressure zone, is a hydraulically suitable location with adequate suction supply to the pump station and is located relatively close (approximately one-half mile) from an existing 12-inch diameter transmission main in the Rosemont pressure zone."

60.090 Additional Criteria for Transportation Facilities (Type II)& 60.100: Additional Criteria for Schools and Other Government Facilities: These provisions do not apply, as this project is neither a transportation facility nor a school or other government facility that attracts a regular and significant volume of users.

IV. CLASS II DESIGN REVIEW NARRATIVE

55.070: Submittal Requirements

55.070(D)(2)(a): A site analysis: The site analysis is contained as an attached document. A supporting narrative is found in the response to **CDC 55.110** in this document.

55.070(D)(2)(b): A site plan: The site plan is contained as an attached document.

55.070(D)(2)(c): A grading plan: The grading plan is contained as an attached document.

55.070(D)(2)(d): Architectural drawings, indicating floor plan and elevation: The architectural drawings with floor plan and elevation are contained as attached documents.

55.070(D)(2)(e): A landscape plan: The landscape plan is contained as an attached document.

55.070(D)(2)(f): A sign plan: This section is not applicable, as the area of the CDC referenced (55.160) does not exist. Additionally, no signs on the property will be large or obtrusive to the surrounding parcels.

55.070(D)(2)(g): A pedestrian and automobile circulation plan: NA. The pump station proposed for this site is to be a major utility, carrying particular safety and security issues. Thus, no pedestrians will be allowed on the site. The automobile circulation for the site will include only areas for turn-around of vehicles, as detailed on the site plan.

55.070(D)(2)(h): The application shall include a submittal appropriate to respond to the approval criteria of CDC 55.100(I)(1) through (5) relating to streets, drainage, municipal water, sanitary sewers, solid waste, and recycling storage.

1. Streets: NA, no new streets will be added.
2. Drainage: NA, to mitigate changes in permeable surfaces, the surrounding area of the pump station will not be paved. The runoff and drainage potential will not be affected with the installation of this pump station.
3. Municipal Water: NA, the pump station will not require any municipal water fire flow. The municipal water for the site will come from the Bland Reservoir and be pumped up the hill to the north.
4. Sanitary Sewers: NA, as there will be no sanitary sewer in the pump station.
5. Solid waste and recycling storage areas: NA, as there will not be any solid waste or recycling storage areas needed for the operation of this pump station.

55.070(E): The applicant shall submit samples of all exterior building materials and colors in the case of new buildings or building remodeling: The exterior building material will be cast in place concrete, similar to other booster pump stations in the City of West Linn. The color of the building will match the Bland reservoir that is already on site.

55.070(F): The applicant shall pay the required fee. As this is a City project, the application fee has been waived.

<u>55.100: Approval Standards – Class II Design Review</u>

55.100(A)(1): Chapter 33 CDC, Stormwater Quality and Detention. NA, as there will not be a stormwater detention facility on this site.

55.100(A)(2): Chapter 34 CDC, Accessory Structures, Accessory Dwelling Units, and Accessory Uses. NA, as there will not be any accessory structures, dwelling units, or uses on this project.

55.100(A)(3). Chapter 38 CDC, Additional Yard Area Required; Exceptions to Yard Requirements; Storage in Yards; Projections into Yards. This structure will be more than three feet from the property line, more than 25 feet from the nearest street, will have nothing stored on site, and will not have any projections extending into the front or rear yard (such as porches, decks, or balconies) by more than five feet.

55.100(A)(4). Chapter 40 CDC, Building Height Limitations, Exceptions. NA, Repealed by Ord. 1604

55.100(A)(5). Chapter 42 CDC, Clear Vision Areas. This project site is not located at a street intersection. It is not located at a street and accessway intersection. Thus, this CDC does not apply.

55.100(A)(6). Chapter 44 CDC, Fences. As part of the project, a cyclone perimeter fence will be installed along the perimeter of the site, not to exceed six feet in height. **44.040, Landscaping:** We will be planting trees along a section of the fence east of the pump station, and on the southern side of the pump station. These areas do not conflict with the clear vision area, as the road does not include a street intersection or street and accessway intersection.

55.100(A)(7). Chapter 46 CDC, Off-Street Parking, Loading and Reservoir Areas.

1. **46.020:** As detailed on the site plan, parking will be made available on the site to allow public works employees access to park vehicles. These parking spaces will be made available by the time of the final building inspection.
2. **46.090**: Space for a minimum of one vehicle will be provided, to the north of the pump station. Additionally, there is ample room for additional vehicles to park on the site.
3. No parking will be provided for the public or visitors.
4. No bicycle facilities will be placed on this site.

55.100(A)(8). Chapter 48 CDC, Access, Egress and Circulation.

1. Access to the site already exists with the shared driveway that leads to the Bland Reservoir.
2. **48.040: Minimum Vehicle Requirements for Non-Residential Uses**
    e. The existing access/service drive is made of hard surface pavement, with a minimum width of 15 foot with horizontal clearances of 2.5' wide on either side of the driveway, to allow for one-way traffic.
    f. The minimum vertical clearance of the access road is 13 feet, six inches, to comply with the requirements of this provision.

3. **48.060: Width and Location of Curb Cuts and Access Separation Requirements**: There will not be any curbs on the access road to the site. Thus, this provision is not applicable to this project.
4. **48.080: Bicycle and Pedestrian Circulation**: This is not a multi-family development or subdivision. Thus, this provision is not applicable to this project.

55.100(A)(9). Chapter 52 CDC, Signs. There will be no signs leading up to the pump station site. The signage for the site will be located on the south gate/fence of the pump station site to identify the site. As per 52.109(D), and the fact that the sign will be a City of West Linn sign, this sign shall be exempt from Chapter 52 CDC.

55.100(A)(10). Chapter 54 CDC, Landscaping. All reasonable efforts to maintain the existing vegetation and trees on the site are made.

1. **54.020(D). Heritage Trees.** A meeting between a representative of 4B Engineering and Consulting and City of West Linn City Arborist Mike Perkins was held on December 29, 2011. During this meeting, Mr. Perkins that there are no heritage trees on the site.
2. **54.020(E)(2):** Existing vegetation to remain on site will ensure that a minimum of 20% of the site is landscaped. City of West Linn City Arborist Mike Perkins approved the usage of arborvitae trees for screening of the pump station.
3. **54.040. Installation**. All landscaping to be added to the site will comply with the requirements of installation as laid out in this section. The plants to be removed from the site were approved for removal by the City Arborist, and this project will yield a greater amount of vegetation and trees than currently exist on the site.

55.100(B). Relationship to the natural and physical environment. No heritage trees or trees on Type I or Type II lands will be removed as a result of this project. In order to maintain appropriate setback of the pump station from existing trees for dripline purposes, the distance between the pump station footprint and existing trees will be a minimum of ½ foot per 1 inch of tree diameter, as per City Arborist. The architecture of this building will be modeled after existing City pump stations, for conformity. In order to make the design sympathetic to surrounding properties, we will be installing tree screening on the south side of the pump station, and near the fence to the east of the pump station, to provide visual and sound buffering for neighboring houses. The pump station location was selected to provide the optimal setback that would still allow for easy access for the public works crew.

55.100(C). Compatibility between adjoining uses, buffering, and screening. As mentioned in the previous response and shown on the drawings, we will be installing new trees and landscaping around the pump station to best facilitate buffering between the pump station and neighboring houses, both visually and audibly. This, coupled with existing trees, will provide adequate buffering and screening.

55.100(D). Privacy and noise.

1. Although the pump station will make noise, the noise level will not be in excess of the noise standards in the West Linn Municipal Code. From a field study

performed on a similar City of West Linn pump station, we have determined that two pumps running at the same time does not add to ambient noise level at a distance of 25 feet or greater. As there is 30 feet of distance between the eastern wall of the pump station with the door (where the sound level will be greatest) and the fence, the pump station will not add to the ambient noise level of the surrounding community. This, coupled with the fact that we will be providing trees around the pump station for sound buffering, means that the noise level will not exceed the noise standards in the West Linn Municipal Code.

2. Additionally, the outdoor lighting to be on-site is designed to shine down, so that the radius of influence is made as small as possible. Lighting for the pump station will be on a switch, so that the light will not be on all of the time. This is done to lessen the effect of lighting on the surrounding area of the site.

55.100(E). Private outdoor area. NA, as this section applies only to multi-family projects.

55.100(F). Shared outdoor recreation areas. NA, as this section applies only to multi-family projects and projects with 10 or more duplexes or single-family attached dwellings on less than 4,000 square feet.

55.100(G). Demarcation of public, semi-public, and private spaces. A boundary fence around the approximate 1 acre site will demarcate the site and provide for safety and crime prevention.

55.100(H). Public transit. NA. There will not be a need for public transportation for this facility.

55.100(I). Public facilities.

1. Streets: NA, no new streets will be added.
2. Drainage: NA, to mitigate changes in permeable surfaces, the surrounding area of the pump station will not be paved. The runoff and drainage potential will not be affected with the installation of this pump station.
3. Municipal Water: NA, the pump station will not require any municipal water fire flow. The municipal water for the site will come from the Bland Reservoir and be pumped up the hill to the north.
4. Sanitary Sewers: NA, as there will be no sanitary sewer in the pump station.
5. Solid waste and recycling storage areas: NA, as there will not be any solid waste or recycling storage areas needed for the operation of this pump station.

55.100(J). Crime prevention and safety/defensible space. A security fence of up to 8 feet with a locked gate will be established around the site, in order to protect the site and public safety. Lighting fixtures with downward facing bulbs and motion sensors will be established on the site to aid with crime prevention.

55.100(K). Provisions for people with disabilities. The site will be, as much as possible, designed to accommodate people with disabilities, without violating codes for height placement of electrical panels or safety of the overall site.

55.100(L). Signs. There will be no signs leading up to the pump station site. The signage for the site will be located on the south gate/fence of the pump station site to identify the site.

55.100(M). Utilities. As detailed on the proposed site plan, the primary electrical conduit to the site will be underground. The piping will also be underground, outside of the pump station.

55.100(N). Wireless communication facilities (WCFs). NA, as this project is not a WCF.

55.100(O). Refuse and recycling standards. NA, as there will be no solid waste or recycling storage area necessitated for the operation of this pump station.

55.110: Site Analysis.

55.110(A). A vicinity map showing the location of the property in relation to adjacent properties, roads, pedestrian and bike ways, transit stops and utility access is shown in both the site analysis drawing, as well as the included GIS map of the site.

55.110(B)(1-5): Refer to attached Site Analysis drawing.

55.110(B)(6): Potential natural hazard areas: As detailed in the attached documents, there are no potential natural hazard areas on this site, including floodplain areas, areas subject to a high water table, landslide areas, and areas having a high erosion potential.

55.110(B)(7): Resource areas: There are no marsh, wetland or wildlife habitat areas on this site.

55.110(B)(8): Site features: There are no large rock outcroppings, areas having unique views or streams and stream corridors on this site.

55.110(B)(9): There are no potential historic landmarks or registered archaeological sites on this site.

55.100(B)(10): Refer to Site Analysis drawing.

55.110(B)(11): Refer to Sound Level drawing. This drawing details testing done to estimate the sound level from the pump station, with readings taken at the View Drive Pump Station.

55.110(B)(12): Refer to Site Analysis drawing.

55.110(B)(13):

	Type I Land	Type II Land
Square Footage	1500	600
Percentage of Total Site Area	3.44%	1.38%

55.110(B)(14): Policy 2 of the Natural Environment section of Goal 5: Open Spaces, Scenic and Historic Areas, and Natural Resources requires the planting of trees as a condition of approval for land use development. As a part of this project, we will be planting trees along two sides of the pump station and along the fence directly east of the pump station, keeping in line with the aforementioned policy. Additionally, the preservation of existing trees, as well as setback requirements from trees, were taken into account for the location of the pump station, to maintain the greatest amount of trees as possible.

55.120: Site Plan
55.120(A-F): Refer to Site Plan Drawing

55.120(G): Refer to attached Utilities Map.

55.120(H-I): Refer to Site Plan Drawing.

55.120(J): Refer to Lighting Plan.

55.120(K): Refer to Elevation View drawing.

55.120(L): There are no mailboxes on this site.

55.120(M): Refer to Sound Level drawing. The sound level of the pumps will not exceed noise standards.

55.125: Transportation Analysis: Not required.

55.130: Grading Plan
55.130(A): Refer to Grading Plan drawing.
55.130(B): As the grading for this project will involve less than 5000 cubic yards, it is considered to be "regular grading." If a grading permit is required for this project separate from the building permit, we will submit all information relating to the requirements spelled out in Appendix 33 of the Uniform Building Code. The Grading Plan drawing that is submitted with this application demonstrates the general vicinity of the proposed site, and the location of any buildings and structures within 15 feet of the proposed grading. All cuts, fills, setbacks, drainage and terracing (if required) as dictated in Appendix 33 of the UBC will be followed. Erosion control methods on any cut and fill slopes will be performed.

55.130(C): The off-site impacts from a 10 year storm are taken into consideration. To determine the increased runoff off-site as a result of the pump station being constructed, the rational method of determining runoff was used.

- The equation for the rational method is Q = CIA, where Q = peak runoff, cfs; C = runoff coefficient representing ratio between runoff to rainfall, dimensionless; I = average rainfall intensity, inches/hour; A = drainage area contributing to the point-of-interest, acres.
- Method to determine the runoff coefficient was based on the soils in the affected area. The soils at this site are in the hydrologic soil group C. Information regarding these soils are attached as part of this application. The changes to the site will include creating a flat area of packed gravel/finished dirt on the north and east side of the pump station, as shown in the drawings. From Table 6.5 of the City of Portland Bureau of Environmental Services Sewer and Drainage Facilities Design Manual, the runoff coefficient for packed gravel areas and walks is 0.8, and for pavement and roof, is 1.0.
- To determine the average rainfall intensity for a 10 year storm, the City of Portland BES Sewer and Drainage Facilities Design Manual was again referenced. Figure 6.1, which is attached as part of this application, shows the rainfall intensity for a 10 year storm with a worst case scenario for time of concentration of 5 minutes. The rainfall intensity is thus slightly under 3 inches/hour.
- The area will be approximately 2200 square feet (0.05 acres) in total, with 1700 square feet (0.04 acres) of gravel/dirt, and the pump station footprint of approximately 500 square feet (slightly greater than 0.01 acre, so use 0.02 acres for calculation).
- With these figures, the total runoff of the site is equal to the combined runoff from the two areas of interest, $Q = Q_1 + Q_2 = (0.8)*(3 \text{ inches/hour})*(0.04 \text{ acre}) + (1.0)*(3 \text{ inches/hour})*(0.02 \text{ acre}) = 0.156$ cfs (70 gallons/minute).
- The majority of this site already consists of dirt and gravel. The location where the pump station will be placed is currently grassy and is most accurately considered as "Lawn, Pasture and Meadow" from Table 6.5 of the City of Portland BES Manual. The major change to the site as a result of this project will be the addition of the pump station. Thus, a more accurate representation of the change in runoff will be as a result of the change in the runoff coefficient of the footprint of the pump station from 0.45 to 1.0. This means the actual change in runoff is $Q = (1\text{-}0.45)*(3 \text{ inches/hour})*(0.02) = 0.033$ cfs (15 gallons/minute).
- Thus, although the runoff flow for the site will increase slightly, there will be no adverse impacts from increased intensity of runoff off-site. The affected area in the site is approximately 1.1% of the site.

55.130(E): Refer to Grading Plan drawing.

55.140: Architectural Drawings: Refer to Building Elevations and Proposed Mechanical drawings.

55.150: Landscape Plan: Refer to Landscaping Plan drawing.

City of West Linn

PRE-APPLICATION CONFERENCE MEETING

Notes

October 6, 2011

SUBJECT: Conditional Use Permit and Class II Design Review for new pump station at 23120 Bland Circle

ATTENDEES: Applicants: Dennis Wright (City of West Linn Public Works), Brooke Saltarello, Ed Butts, Adam Butts (all of 4B Engineering)

Review Staff: Tom Soppe (Planning Department), Khoi Le (Engineering)

Neighborhood: Dave Rittenhouse (Savanna Oak NA)

The following is a summary of the meeting discussion provided to you from staff meeting notes. Additional information may be provided to address any "follow-up" items identified during the meeting. <u>These comments are PRELIMINARY in nature</u>. Please contact the Planning Department with any questions regarding approval criteria, submittal requirements, or any other planning-related items. Please note disclaimer statement below.

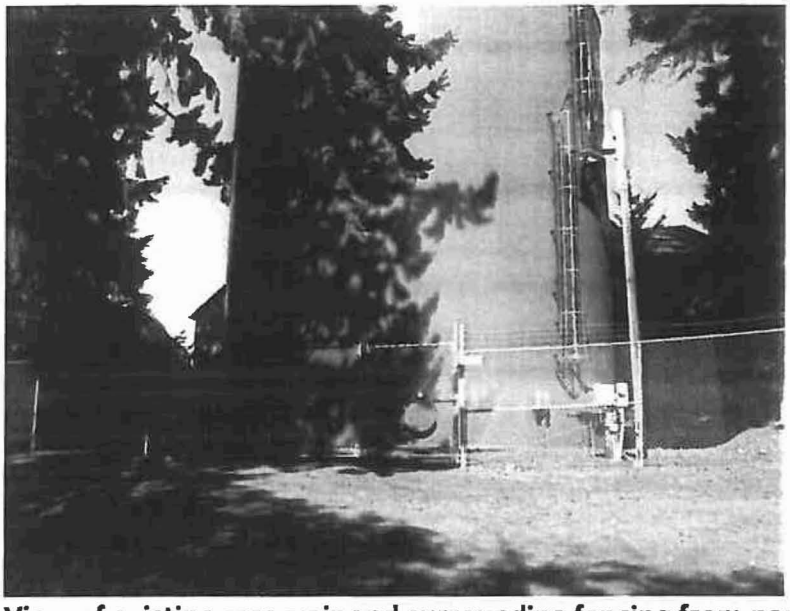
<u>Project Details</u>

The applicant, the City Public Works Department, proposes a new water pump station at an existing Bland Reservoir site in the Savanna Oak neighborhood. The pump station would pump water from the Bland Reservoir into the Rosemont water zone further uphill when need arises, but would normally be on "standby" mode. Currently the site only contains the Bland Reservoir, fencing around the reservoir, a driveway from Bland Circle to access the reservoir, and multiple trees. The reservoir is a towerlike structure containing water, not an open water body. The reservoir and its surrounding fencing take up approximately the northeastern 20% of the site. Per the site plan submitted at the conference, the pump station would be in the east central area of the site, just south of the fenced reservoir area, where the driveway approaches the reservoir gate. While the current application is only for the pump station, the submitted site plan also shows a potential future water tank west of the existing water tank/reservoir. That would require its own permitting process but is shown on this site plan as a reference to how the applicant plans to further develop the site, explaining in part why the pump station is placed south rather than west of the existing reservoir.

All pump station equipment is proposed to be inside a one-story building approximately 18 feet by 26 feet in size and approximately 17 feet in height, located above the existing

water line in the east central area of the site. It will have concrete walls and will be partly nestled into the hillside, per the applicant and the submitted elevations. In these ways the proposal seeks to mitigate noise and visual effects as much as possible. The pump station is proposed in an area with no trees.

If the pump station equipment were to fail, the water would simply not be pumped out of the reservoir. Therefore possible equipment failure would not result in leakage or flooding but would simply result in the water staying in the reservoir where it is already being stored.



View of existing reservoir and surrounding fencing from parking area/driveway; pump station would be in foreground on right

View west from driveway, across the site. Area with trees but with clear ground in foreground, "brush line" in background as noted on applicant's site plan

The pump station is identified in the City's Water Master Plan as needed improvement. The Water Master Plan can be seen at http://westlinnoregon.gov/publicworks/water-master-plan. See "Bland Intertie Supply to Rosemont" on Page 8-7, as well as Table 8-6 on Page 8-12. The pump station improvement is tied in part to serving possible growth within the Rosemont pressure zone within the current city limits. While the Rosemont zone borders the western city limits, the Water Master Plan specifically excludes planning for any growth into the Stafford Triangle, so the pump station is not proposed to serve the Stafford Triangle.

The applicant's pre-application conference submittal originally proposed a zone change to allow this, but in conversations with Planning staff the applicants have agreed that a Conditional Use Permit and Class II Design Review are the more appropriate course of action. Major utilities (pump stations included, per CDC Chapter 3 definitions) are a conditional use in this zone, the R-7 zone. In fact, they are a conditional use in every zone in the city except for Campus Industrial where they are not allowed, and General Industrial (GI) where they are a permitted use. Since this is a conditional use in this zone it would be more appropriate and feasible to apply for this (and the concurrent required Class II Design Review) than to rezone this residential parcel in a residential neighborhood to industrial zoning.

As discussed above, a pump station requires a Class II Design Review approval along with the Conditional Use Permit approval. This can be inferred from the CDC because Class I Design Review covers "Minor modifications and/or upgrades of pump stations..." per 55.020(M), meaning that the more major change of building an entirely new pump station where one doesn't currently exist is a Class II Design Review activity. Another reason Class II Design Review is required is that the equipment is proposed to be in a new building.

Design Review and Conditional Use criteria that may be most relevant to the review of the site include screening new development from surrounding existing residential properties, architecture of the building, and noise. Keep in mind the possible future development of the site to the east when responding to criteria.
Also, for the Conditional Use criteria, the applicant should address how the pump station fulfills the Water Master Plan and how it serves the current city population and potential growth within the current city limits.

Site to the east, which has one house at north end but could be redeveloped to similar density of existing subdivision in background

Existing house to the south, which shares a driveway with the City-owned site

Process

Conditional Use and Class II Design Review permits are required.

A neighborhood meeting is required for this application, since it involves a Conditional Use Permit. The site is in the Savanna Oaks neighborhood but within 500 feet of the Willamette neighborhood. A neighborhood meeting is required with Savanna Oaks

(Willamette must still at least be contacted) and is encouraged with Willamette. Contact Dave Rittenhouse, President of the Savanna Oaks Neighborhood Association, at (503) 635-0800 or daver@europa.com, and Beth Kieres, President of the Willamette Neighborhood Association, at 503-722-1531 or willametteneighborhood@gmail.com. Follow the provisions of 99.038 precisely, including regarding what needs to be submitted with the application regarding the meeting.

The applicant is required to provide the neighborhood association with conceptual plans and other material at least 10 days prior to the meeting.

The criteria of 60.070 and 55.100 shall be responded to individually in a narrative. N/A is not an acceptable response to the approval criteria.

Prepare the application and submit to the Planning Department with deposit fees and signed application form. Follow 60.060 and 55.070 strictly and completely regarding submittal requirements (including plans, maps, etc.) that should accompany the narrative and the application form.

Submittal requirements may be waived but the applicant must first identify the specific submittal requirement and request, in letter form, that it be waived by the Planning Director and must identify the specific grounds for that waiver. The waiver may or may not be granted by the Planning Director. Since the applicant is another City department, the Planning Department plans to waive application fees.

Once the submittal is deemed complete, the staff will schedule a hearing with the Planning Commission and will send out public notice of the hearing at least 20 days before it occurs. The Planning Commission's decision may be appealed to City Council by the applicant or anyone with standing.

Pre-application notes are void after 18 months. After 18 months with no application approved or in process, a new pre-application conference is required.

Typical land use applications can take 6-10 months from beginning to end.

DISCLAIMER: This summary discussion covers issues identified to date. It does not imply that these are the only issues. The burden of proof is on the applicant to demonstrate that all approval criteria have been met. These notes do not constitute an endorsement of the proposed application. Staff responses are based on limited material presented at this pre-application meeting. New issues, requirements, etc. could emerge as the application is developed. Thus, there is no "shelf life" for pre-apps.

City of West Linn
Bland-Rosemont Pump Station
Neighborhood Association Meeting
November 3, 2011
7pm

Introduction of presenters by President of Association
Ed Butts: Introduction of Edward and Adam Butts from 4B Engineering in Salem

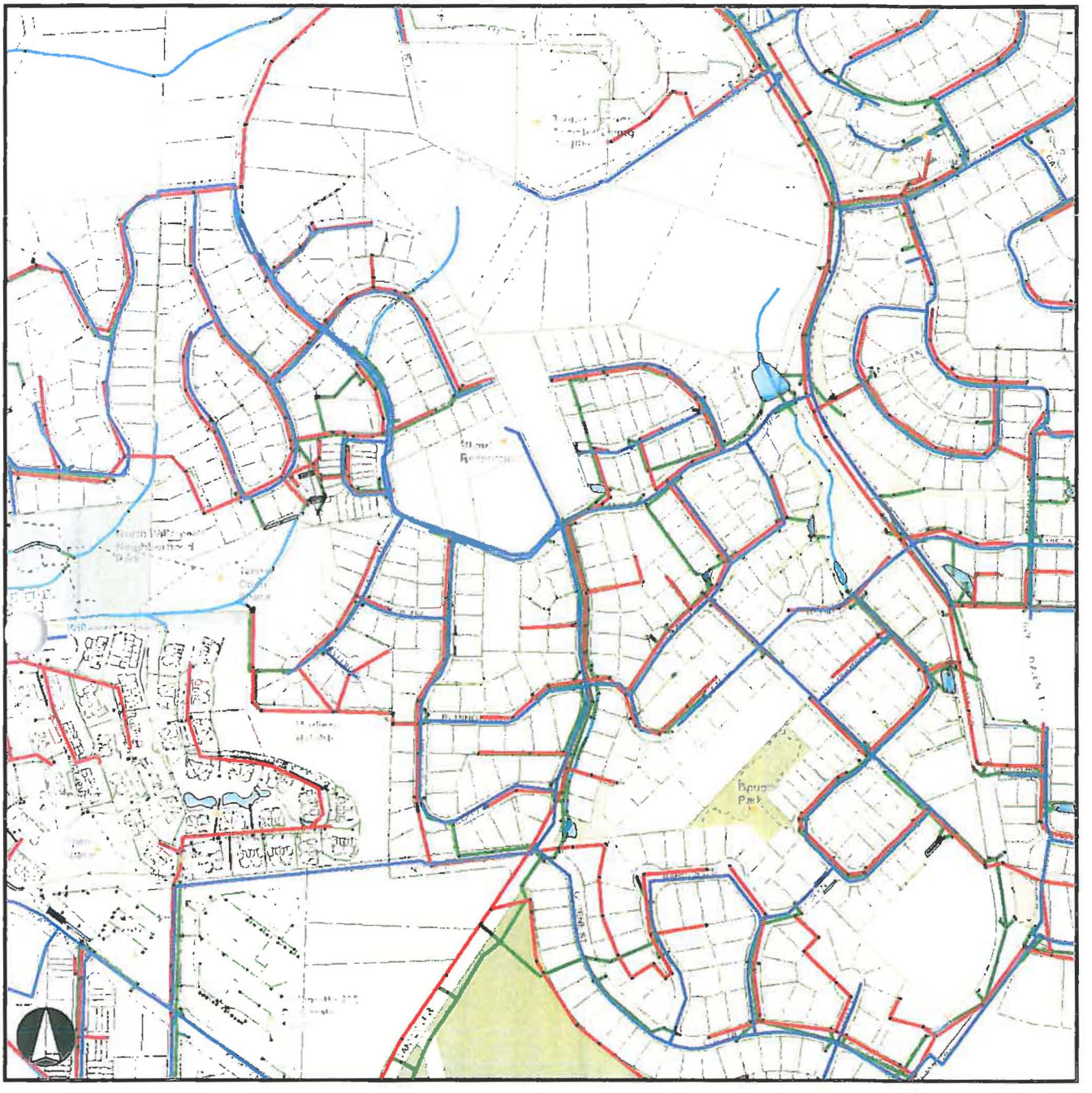
- Adam Butts to discuss PowerPoint presentation
- We distributed six sets of plans
- Presentation
    - Project overview
        - Project is to build a booster pump station with 3 pumps, 2 performing at a time
        - Total buildout of 1800 GPM through the pump station
        - Ability to connect backup generator if power into site fails
        - Site also includes existing water storage reservoir,
        - Part of the project is to assure open room for additional tank in future
        - Piping up the hill to Rosemont pressure zone
    - Site plan
        - Shows existing tank
        - Road down to Bland Circle
    - Proposed site plan
        - Details tree coverage
        - Sound and visual and lighting issues
        - Underground waterlines
    - Closer view of proposed site plan
        - Yard light
        - Underground piping
    - Mechanical view
        - 3 pumps to bring water into station and back up the hill
    - Elevation view
        - Cast in place concrete walls
    - Painting options - with/without color
        - Paint chips
        - Existing tank is green, City wants to match that color
        - Front and side view of proposed pump station
    - Electrical pictures
        - Motor control center
    - Sound
        - Decibels - 10 dB increase is twice as loud
        - Prolonged exposure to 85 dB or greater can cause long-term hearing damage
        - Chart from CDC
        - Existing pump station sound
        - Ambient noise without pumps running: 50-55 dB
        - Beyond 20' from pump station, back to ambient noise level
        - Chart of noise for proposed pump station
    - Lighting
        - Cut sheet of lighting fixture - shines down and not out as much
        - Lighting plan
        - Show affected area of lighting
- Questions
    - Citizen from 2305 Crestview has concern about lighting
        - Q: Why is lighting needed
        - A: Two purposes

        - Security for site for vandalism
        - Means of allowing personnel to enter site and see what they're doing
    - Fixture is shown, but light does not always have to be on
        - Discussion of lighting switches, on building or gate
- Question about easement for pipeline
    - Dennis Wright: negotiations to attain easement through private property to bring pipe from Bland to Weatherhill, not successful yet in attaining easements
    - If not successful, pipeline will have to go down Bland Circle, up Salamo and connect to Weatherhill that way
- Question regarding city's easement as regards to walking path
    - Approved land use action for property on east side of the pump station site
    - Pathway would be over the pipe
    - Fir tree would be removed
- Question to HOA President regarding course of action to oppose pump station
    - The HOA can oppose to plarming commission or appeal to city council
    - HOA President: Now is time to raise concerns for engineers to potentially adjust the plan
- Revisiting sound concerns
    - Question regarding ambient noise as existing sound without pumps running
    - Edward Butts answered question regarding sound and local houses people living right on top of facility
        - Two elements to facility design
            - Blend in as much as possible with local environment
            - Safe for City operators
                - Emergency service at night may be necessary
- Lighting concerns
    - Need some method to allow illuminate site for emergency
    - Many different methods to turn on lights
        - Infrared, remote, inside switches
    - Fixture is shown, does not mean it will illuminate every night or all the time
- Sound
    - Noise is potential concern
    - Incorporated venting and access ports to direct noise away from active neighbors as much as possible
    - Motors make noise, design lends itself to buffering noise
    - Additional mitigation?
        - Thickness of walls and ceiling to mitigate noise as much as possible
        - Buffering over motors with ceiling and insulation and thick concrete walls
    - Cannot make building perfectly soundproof
        - Need ventilation for heat - motors and electrical equipment
    - Balance between operating efficiency/life of equipment and concerns of neighbors
- Q: Sound escaping from skylights?
    - Thick material, located on roof
    - Air space and insulation buffering between ceiling and roof
    - Must have way to pull pumps for service and maintenance
    - Skylights are preferable to hatches for sound
- Q: Air flow through pump station
    - Varies with HP and electrical equipment
    - Typically: 1200-1500 CFM air movement
    - Motorized dampers
- Ambient noise at night
    - 4B did not measure levels at night
    - Rise of dB will be same from whatever threshold exists
        - Design has implemented steps to screen backside and south side of building to provide buffering for sound

- Q: Will pumps run all the time?
  - A: No, pump control is driven by water level in reservoir
  - Potentially less pumping at night due to lowered demand
- Additive sound
  - Q: Do two sources with 50 dB create 100 dB?
  - A: No. Explained with demonstration of difference with 1 pump or 2 pumps running
- Q: Was nearest home consulted?
  - Yes. Nearest homes made aware of project
- Q: Does sound travel downhill?
  - A: Due to transmission of sound in air, it dissipates rapidly
  - City of Keizer has many deep well pump stations located right next to residential homes successfully buffered sound
  - Deep well louder than booster pump station
- Q: Fencing
  - A: Demonstrate site fencing on site plan drawing
- Q: Any additional buffering solutions?
  - A: There are no more effective solutions to buffering.
  - Cannot perceive sound 40-50 foot away from pump station at other stations
  - Continued discussion on sound dissipation procedures and ambient noise
  - Dennis Wright invited public to drive by other pump stations to experience sound level first-hand
- Light
  - Jim Whynot mentioned that there is an existing light at the site
- Frequency of sound
  - Difficult to quantify the exact frequency of the sound
  - The motors in question are vertical, hollow-shaft motors
- Q: Will putting big motors in cause drain on the system
  - A: To run pumps, will need to bring in 3 phase power. Installation of 3 phase power should yield improved electrical service for neighborhood
  - Flicker in neighborhood is biggest problem with electric motors
  - We add devices and methods to prevent flicker
    - Reduced voltage starting methods
    - Electrical devices
- Q: Earthquake safety of existing water tank?
  - Water master plan did not identify existing reservoir as a seismic hazard
  - Existing reservoir is already tied down
- Q: Earthquake safety of pump station?
  - Pump stations are often viewed as essential facilities
  - Very stout, "earthquake bunkers"
- Question of who will pay for damage as result of flooding if the reservoir breaks
  - Dennis Wright directed citizen to City of West Linn Risk Management Office for information
- Q: Cost of the project?
  - Project cost is $1 .25 million for pump station and piping
- 4B altered the site plan to provide for best sound and visual buffering as possible
- Is pump station sized for 2nd reservoir?
  - Pump station is sized for the demand, and a 2nd reservoir provides additional suction supply only
- Piping coming out of the station
  - 12" diameter, ductile iron (DI)
  - Buried 3-5 feet (City of West Linn standards require 3' minimum cover)
  - City of West Linn uses ductile iron pipe - most earthquake resistant pipe
  - Low chance of DI pipe breaking in seismic event
  - Corrosion?

        - DI pipe has low corrosion
        - Cement lining inside to provide barrier between water and pipe
        - In very corrosive soil, PE wrapping on exterior
            - Rare event
- Project timing
    - Answered by Dennis Wright
    - Trillium school application triggered need for improvement
    - School is inside city boundaries
    - School will not use all of the water
    - Fire flow, other demand
    - Pump station built for future buildup of area
- Is water flowing through pipe audible?
    - Possible with high velocity
    - We will be using slower velocities
    - A hum may be heard, if standing right over pipe
- Is there any way to stop the pump station?
    - The contract for the design is already let, the construction contract has not
    - Will be advertised to construction bidders once the project is designed
- Comment: At around 5' deep, there is thick basalt rock
    - Jim Whynot: Recent potholding did not find any basalt
- Q: Existing easements
    - A: 20' easement on driveway to reservoir is only existing easement
- Q: Is existing easement sufficient to put pipe in if piping route follows Bland Circle?
    - Jim Whynot says he imagines so. Further investigation will be required

Map UTILITY MAP



Water Mains

Sewer Pipes

Storm Lines

- Storm Pipes
- Storm Pipes County
- Storm Pipes ODOT
- Ditches and Creeks
- Private Pipes

Tax Lot Lines

West Linn GIS Map Disclaimer, click here

West_Linn_Base_Map_EX1109V1

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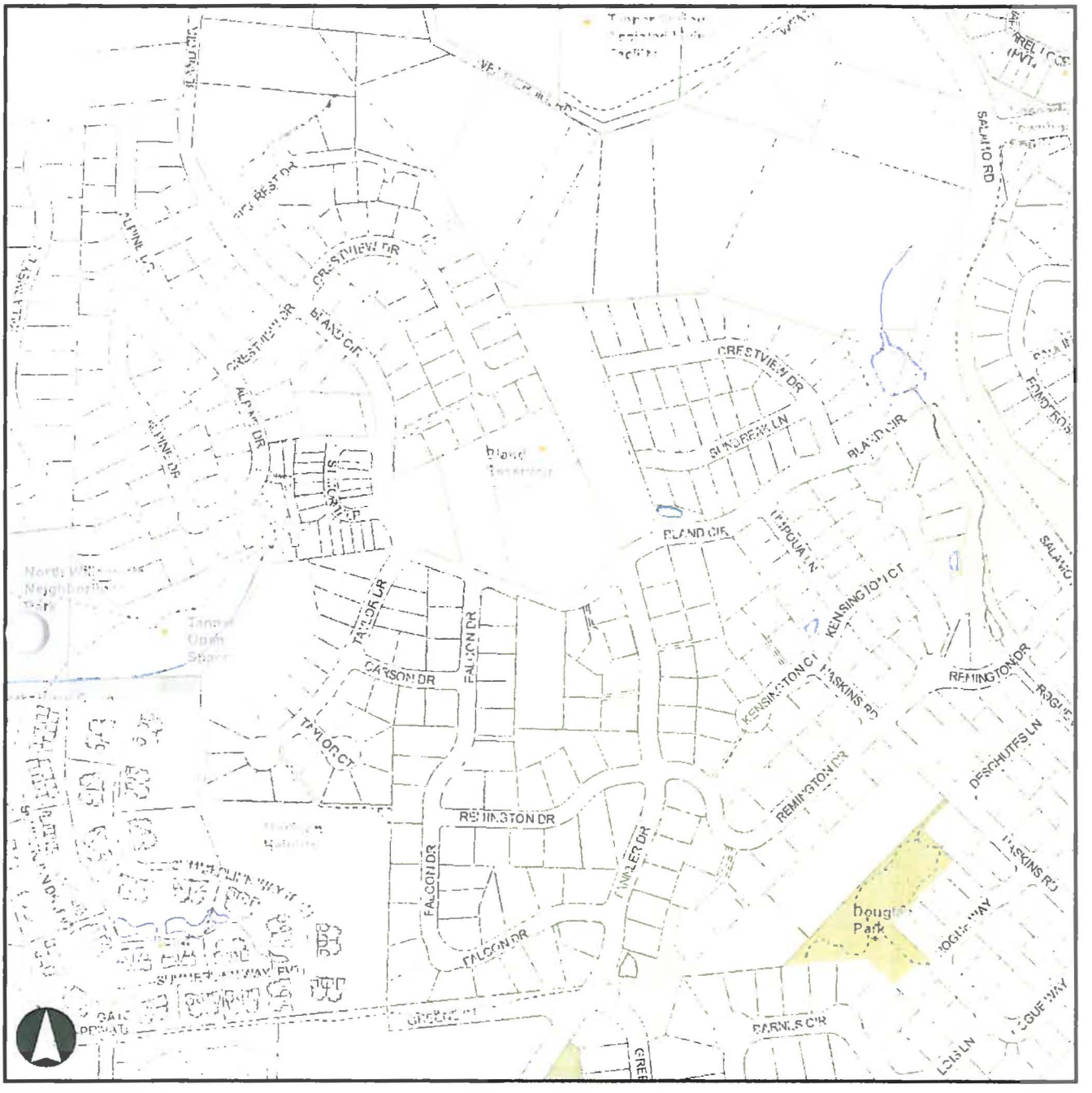
Map



Water Mains

Sewer Pipes

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- Storm Pipes
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MILO - Mineral Information Layer for Oregon

Oregon Department of Geology and Mineral Industries

Mineral Information Layer for Oregon-Release 2 (MILO-Release 2) is a geospatial database that stores and manages information regarding Oregon's mineral occurrences, prospects, and mines. A **subset of the data** is shown on this data viewer site; see the bottom of this page to order the full data set.

To view the map, your browser must be JavaScript enabled and must allow cookies. *Internet Explorer users*: If you get a message asking if you want to stop loading slow scripts, click "No" or view in another browser (e.g., Firefox, Safari, Chrome).

Respect the rights of private property owners. Understand that recreation in or around inactive mine sites is extremely dangerous and can result in serious injury or death. Stay out and stay alive!

Baker-
- south of Durkee
- north of Durkee and east of Baker City
- north of Durkee and west of Baker City

Benton
Clackamas
Clatsop

Go!

MILO Data Viewer - *Due to the large number of data points, please select a county area from the dropdown menu first. After selecting an area, you can view data as a* ***MAP****, by* ***DETAILS****, or as a* ***TABLE****. Click on the map image above to view a large PDF of the map.*

Filter by:

Commodity Type

645 aggregate <javascript:{}>
2 coal <javascript:{}>
29 industrial mineral <javascript:{}>
18 metal <javascript:{}>

Commodity

1 bauxite, iron, titanium <javascript:{}>
3 borrow / fill / topsoil <javascript:{}>
4 cement <javascript:{}>

Site Name

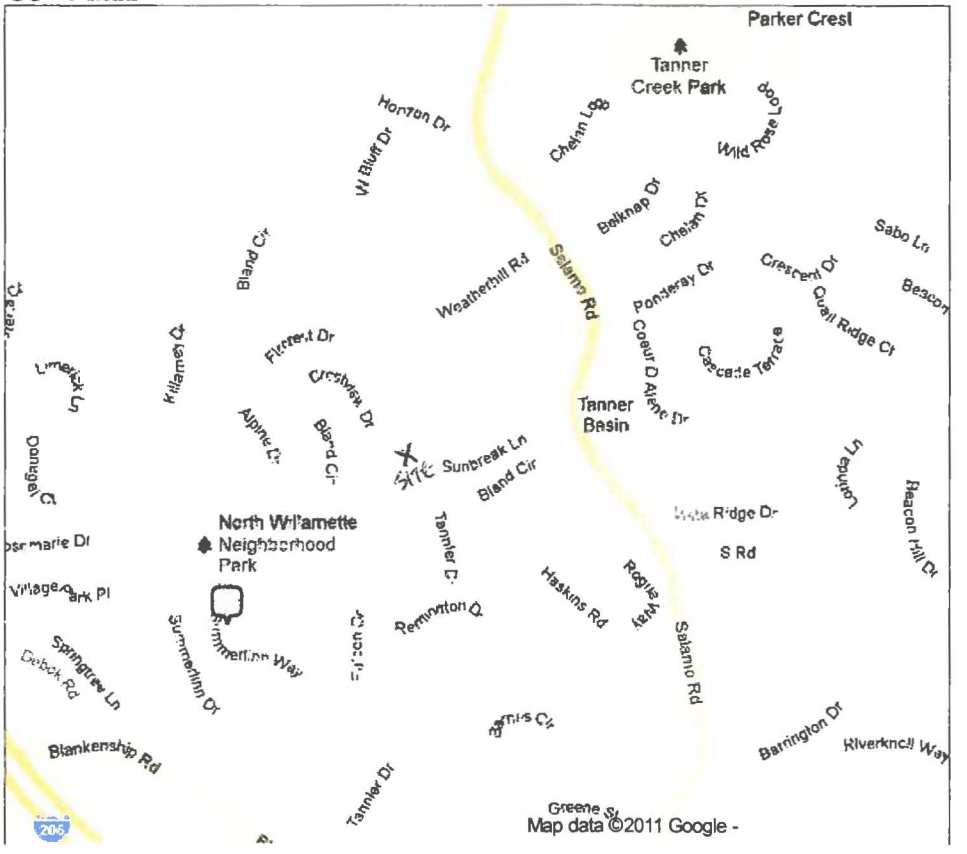
1 100-120 Pit <javascript:{}>
1 107 Pit <javascript:{}>
1 111-112 Pit <javascript:{}>
1 130 Pit <javascript:{}>

Mining District

1 Chena Creek <javascript:{}>
3 GTE <javascript:{}>

LOCATION MAP • DETAILS • TABLE

694 Items



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Rock Type

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1 Alluvium,

Search:

Disclaimer: No warranty expressed or implied is made regarding the accuracy or utility of the data on any other system or for general or scientific purposes, nor shall the act of distribution constitute any such warranty. This disclaimer applies both to individual use of the data and aggregate use with other data. We also urge you to pay careful attention to the contents of the metadata file associated with these data and to the compilation process and limitations described therein. The Oregon Department of Geology and Mineral Industries shall not be held liable for improper or incorrect use of the data described and/or contained herein. **Data are not intended for site-specific investigations.**

This site contains a **subset of the data** in MILO-2. Order <http://www.naturenw.org/cgi-bin/quikstore.pl?store=maps&product=000611> the complete MILO-2 database and GIS data from Nature of the Northwest for $30.

Program Contact:

Clark Niewendorp <mailto:Clark.Niewendorp@dogami.state.or.us>
Industrial Minerals Geologist
800 NE Oregon St. #28, Ste. 965
Portland, OR 97232

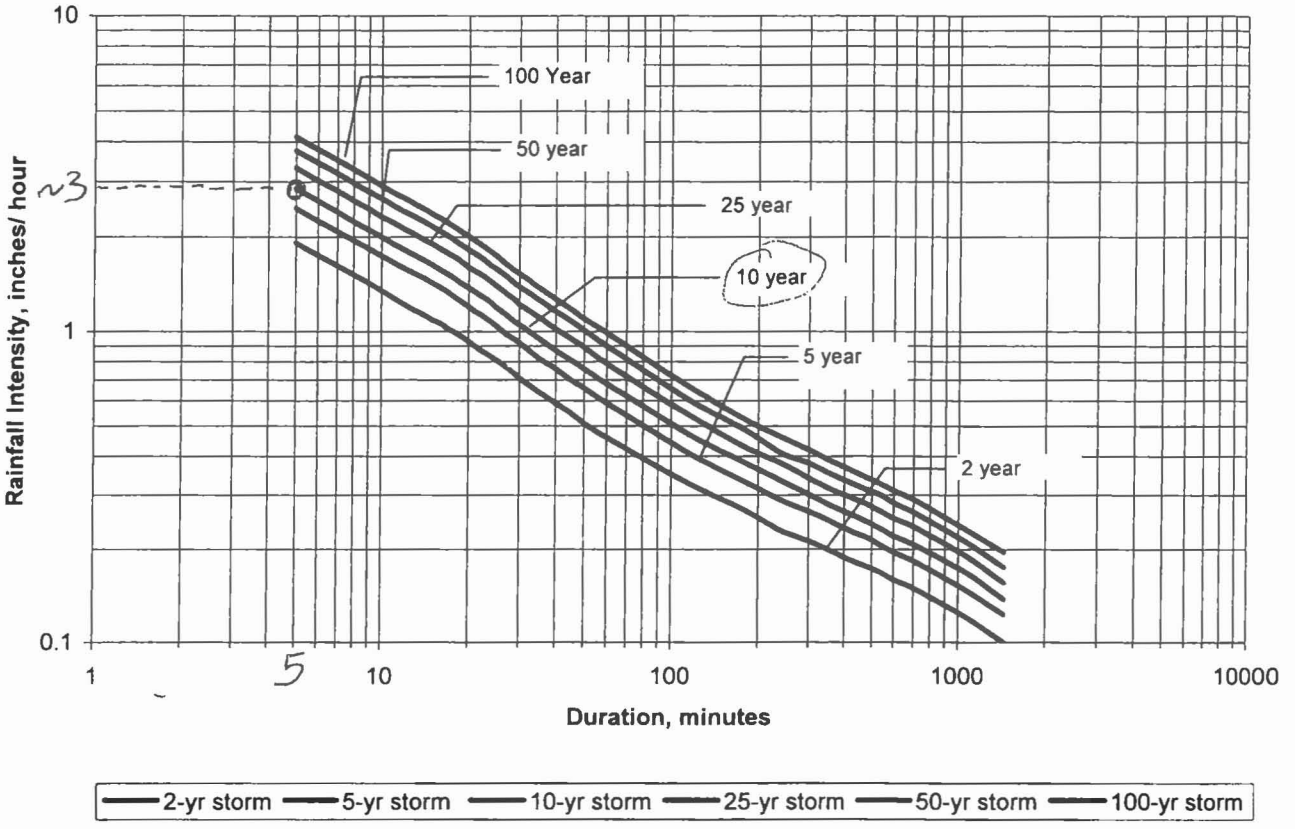
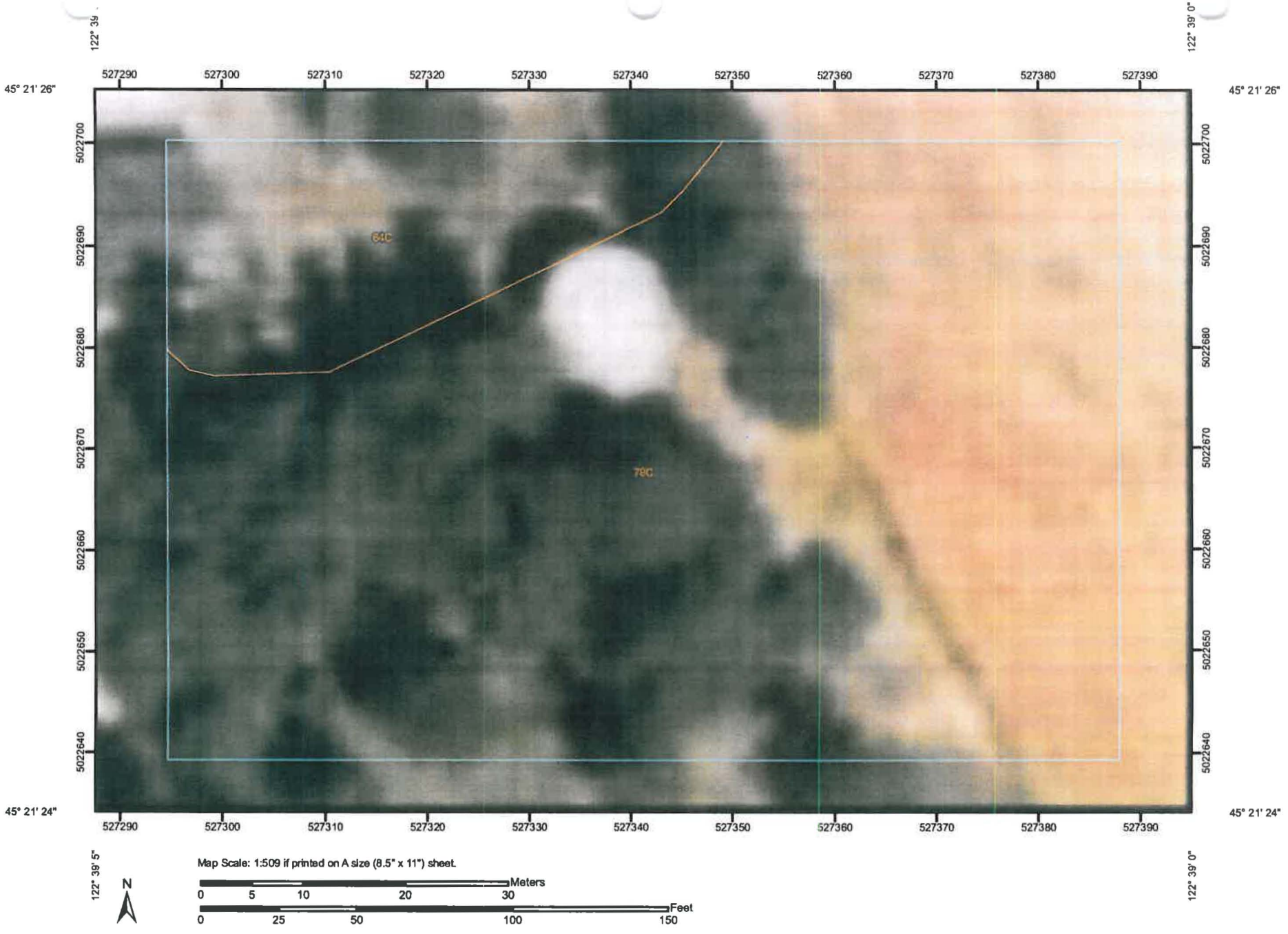


Figure 6.1 Intensity Duration Frequency (IDF) Curves for Portland, Oregon

Table 6.11 contains the tabulated data used to develop these curves. There is no precipitation value given for less than a 5-minutes duration.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64C
78C
Map Scale: 1:509 if printed on A size (8.5" x 11") sheet.
N
Meters
0 5 10 20 30
Feet
0 25 50 100 150

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features
- Gully
- Short Steep Slope
- Other

Political Features
- Cities

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:509 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 10N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Clackamas County Area, Oregon
Survey Area Data: Version 6, Feb 9, 2010

Date(s) aerial images were photographed: 8/3/2005

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Clackamas County Area, Oregon (OR610)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
64C	Nekia silty clay loam, 8 to 15 percent slopes	0.2	15.2%
78C	Saum silt loam, 8 to 15 percent slopes	1.2	84:8%
Totals for Area of Interest		**1.4**	**100.0%**

Clackamas County Area, Oregon

64C—Nekia silty clay loam, 8 to 15 percent slopes

Map Unit Setting

Elevation: 250 to 1,200 feet
Mean annual precipitation: 40 to 60 inches
Mean annual air temperature: 52 to 54 degrees F
Frost-free period: 165 to 210 days

Map Unit Composition

Nekia and similar soils: 80 percent

Description of Nekia

Setting

Landform: Hillslopes
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Nose slope, crest, interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Colluvium derived from basalt

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 6.2 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability (nonirrigated): 3e

Typical profile

0 to 19 inches: Silty clay loam
19 to 39 inches: Clay
39 to 43 inches: Unweathered bedrock

Data Source Information

Soil Survey Area: Clackamas County Area, Oregon
Survey Area Data: Version 6, Feb 9, 2010

Clackamas County Area, Oregon

78C—Saum silt loam, 8 to 15 percent slopes

Map Unit Setting

Elevation: 250 to 800 feet
Mean annual precipitation: 40 to 50 inches
Mean annual air temperature: 52 to 54 degrees F
Frost-free period: 165 to 210 days

Map Unit Composition

Saum and similar soils: 80 percent

Description of Saum

Setting

Landform: Hillslopes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Material silty and colluvium

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 8.4 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability (nonirrigated): 2e

Typical profile

0 to 8 inches: Silt loam
8 to 26 inches: Silty clay loam
26 to 50 inches: Gravelly silty clay loam
50 to 54 inches: Unweathered bedrock

Data Source Information

Soil Survey Area: Clackamas County Area, Oregon
Survey Area Data: Version 6, Feb 9, 2010

Engineering Properties

Clackamas County Area, Oregon

Absence of an entry indicates that the data were not estimated. The asterisk '*' denotes the representative texture; other possible textures follow the dash.

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percent passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 Inches	3-10 Inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
64C:												
Nekia	0-19	Silty clay loam	ML	A-6	0	0-15	100	85-100	85-95	70-90	35-40	10-15
	19-39	Clay, Cobbly clay, Gravelly clay, Silty clay	CL, GC	A-7	0	0-30	70-100	50-100	50-95	40-85	40-50	15-25
	39-43	Unweathered bedrock	—	—	—	—	—	—	—	—	—	—

Engineering Properties

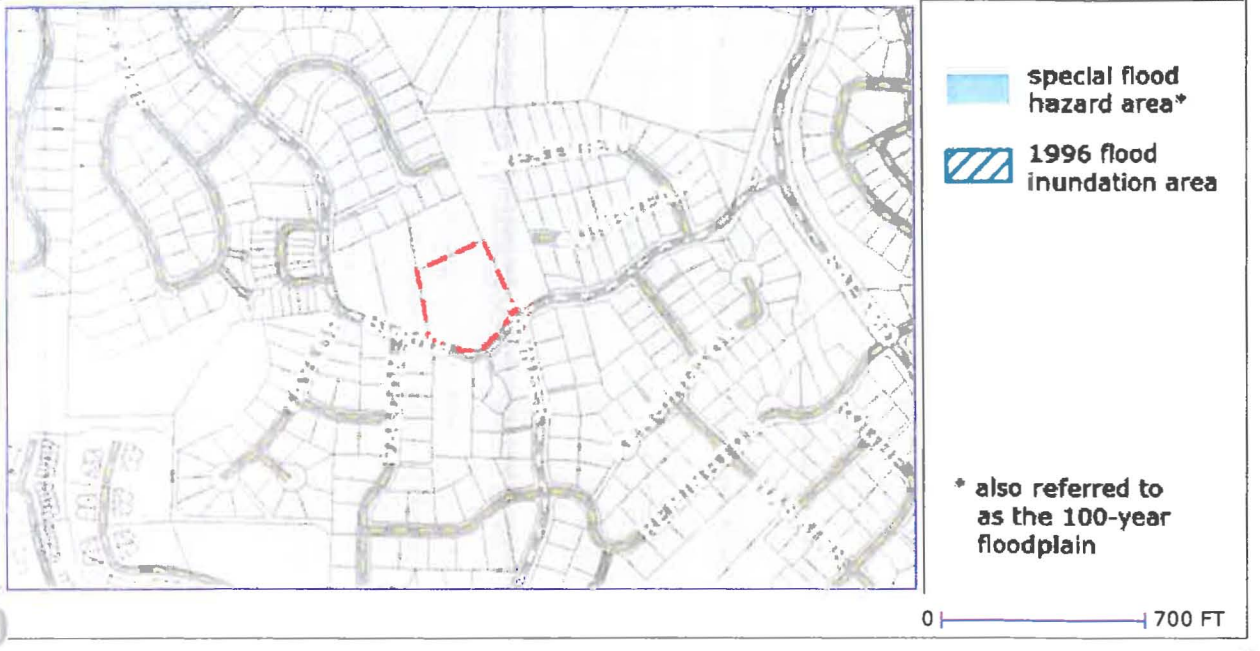
Clackamas County Area, Oregon

Absence of an entry indicates that the data were not estimated. The asterisk '*' denotes the representative texture; other possible textures follow the dash.

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percent passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 Inches	3-10 Inches	4	10	40	200		
	In				*Pct*	*Pct*					*Pct*	
78C:												
Saum	0-8	Silt loam	ML	A-4	0	0	90-95	90-95	80-95	65-85	30-40	5-10
	8-26	Silty clay loam	ML	A-6, A-7	0	0	80-90	80-90	75-90	75-85	35-45	10-15
	26-50	Cobbly silty clay loam, Gravelly silty clay, Gravelly silty clay loam, Stony silty clay loam	MH	A-7	0-30	10-30	60-80	60-75	55-75	50-70	50-55	15-20
	50-54	Unweathered bedrock	—	—	—	—	—	—	—	—	—	—

Flood Hazards: FEMA Special Flood Hazard Area (SFHA) & 1996 Flood Inundation Area

Is this property within 50' of the SFHA?	No

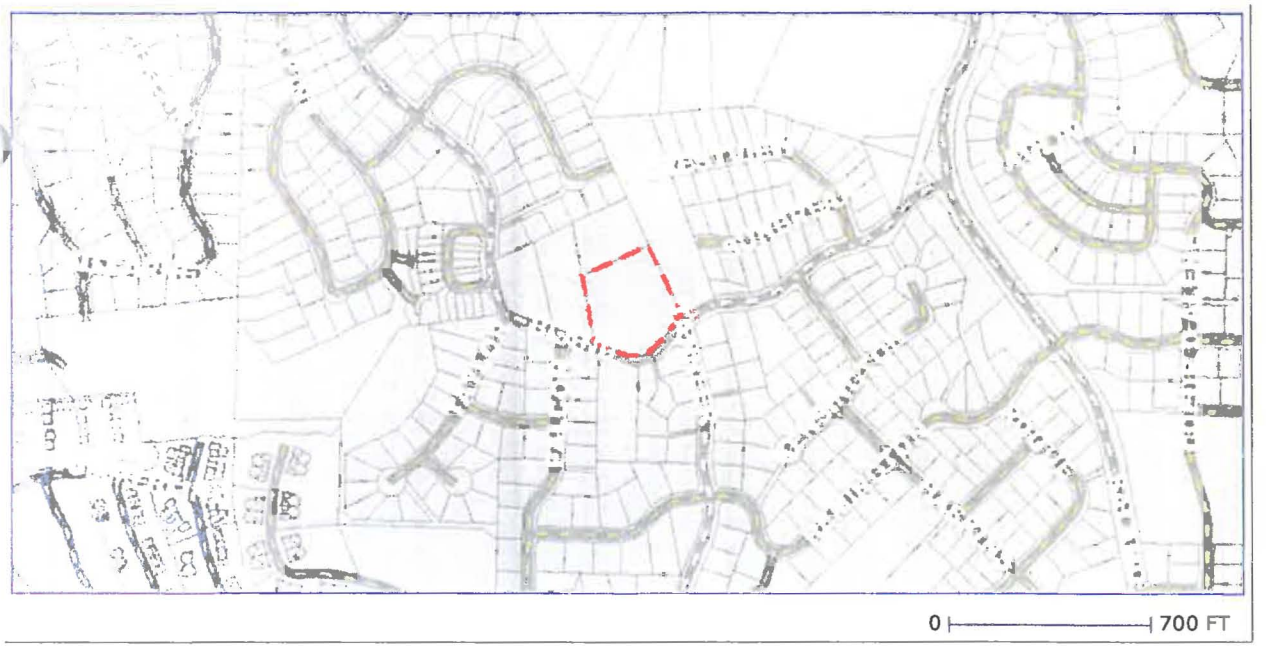


Steep Slope (25%)

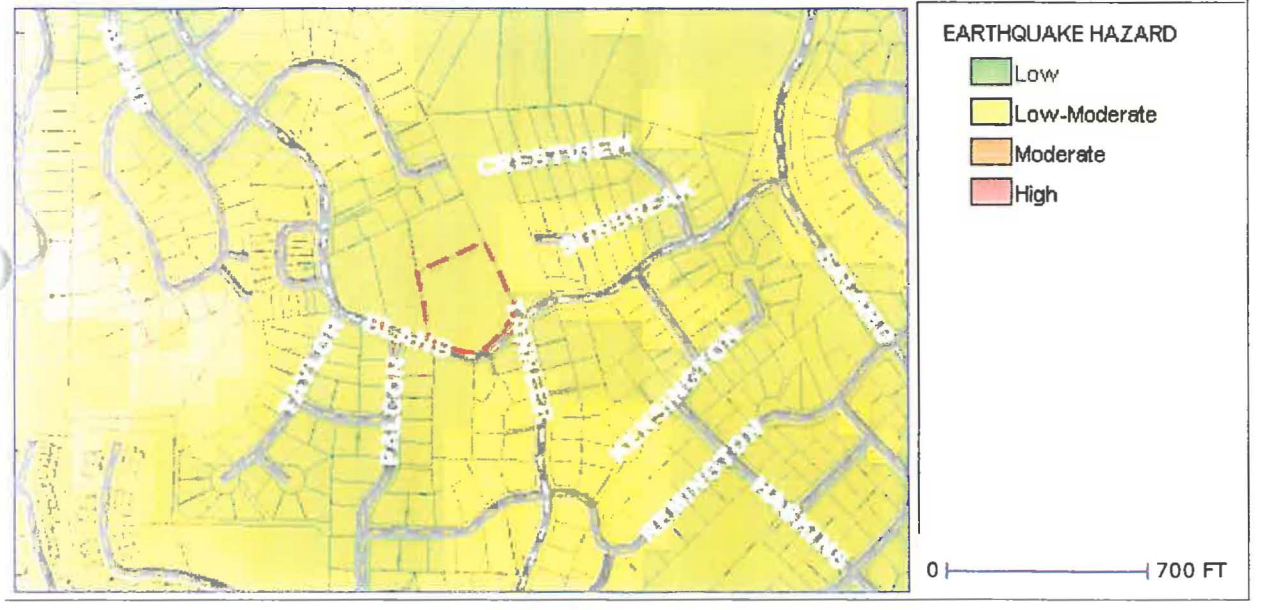
On Steep Slope	No

Wild Lands Fire Hazard

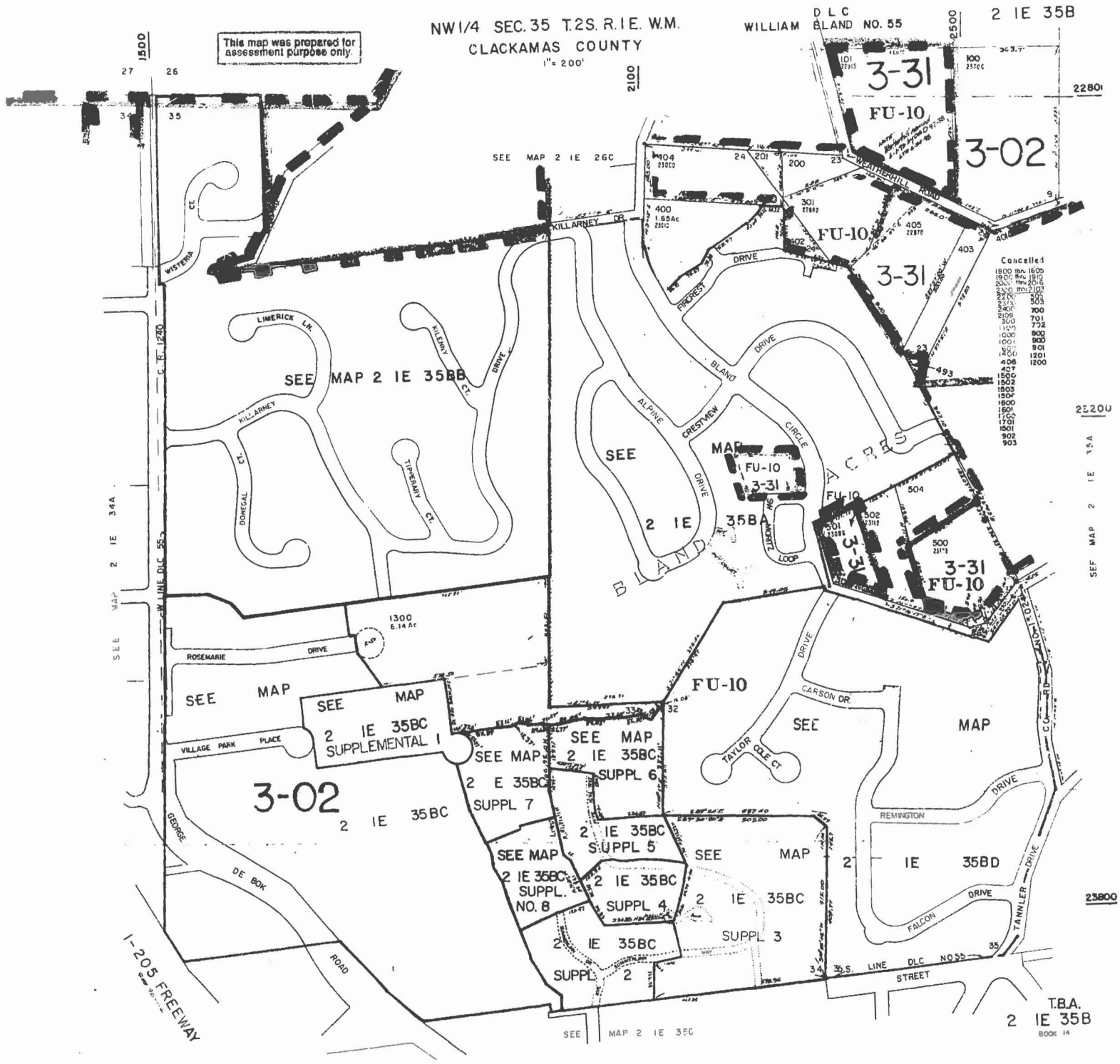
Wild Fire Hazard	No

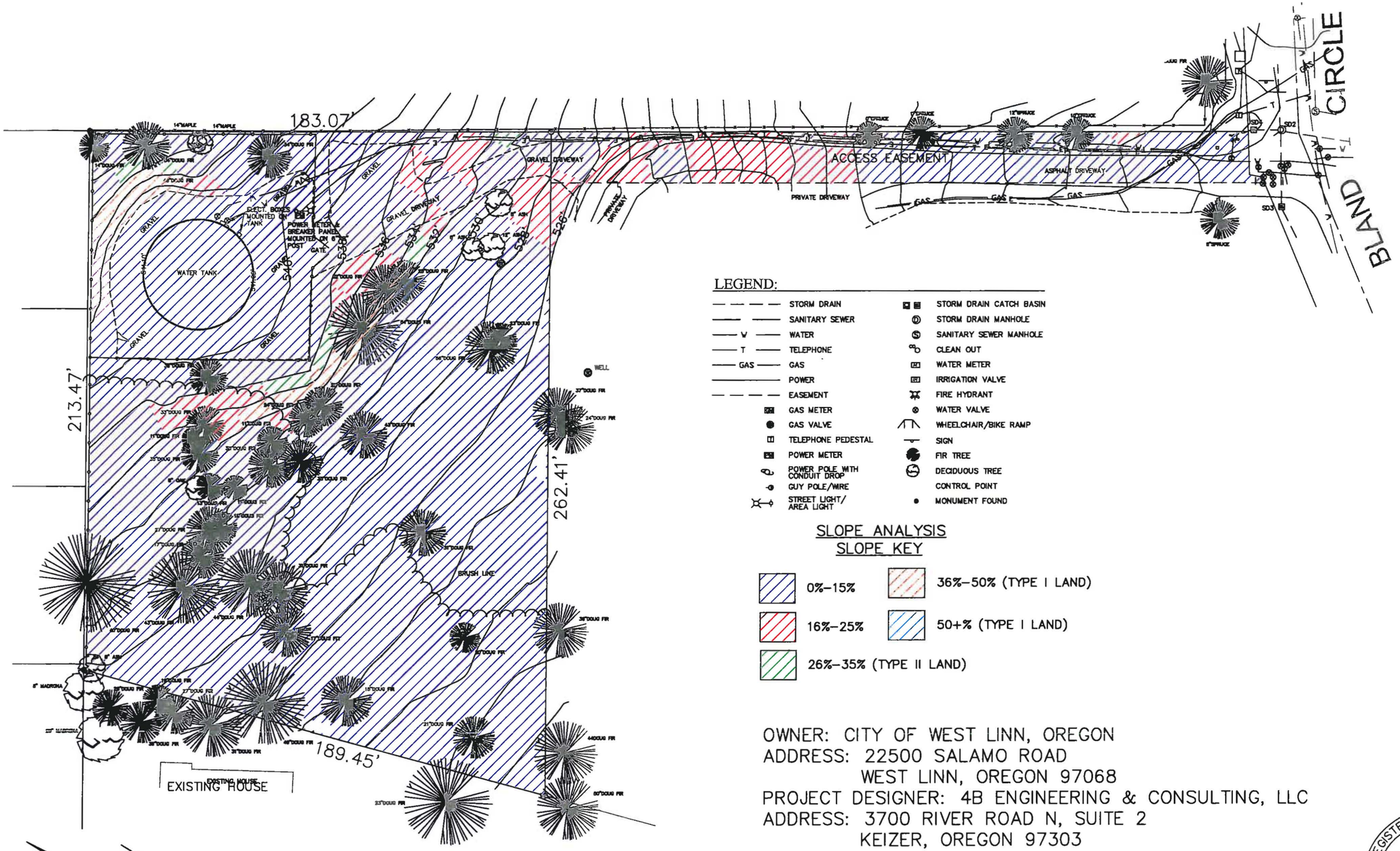


Earthquake Hazard



City of Portland, Corporate GIS 12/19/2011


NW1/4 SEC. 35 T.2S. R.1E. W.M.
CLACKAMAS COUNTY
1"= 200'
This map was prepared for assessment purpose only
WILLIAM BLAND D.L.C. NO. 55
2 1E 35B
3-31
FU-10
3-02
SEE MAP 2 1E 26C
KILLARNEY DR.
WEATHERHILL ROAD
FIRCREST DRIVE
Cancelled
SEE MAP 2 1E 35BB
LIMERICK LN.
KILLARNEY CT.
KILKENNY CT.
DRIVE
TIPPERARY CT.
DONEGAL CT.
WISTERIA CT.
ALPINE DRIVE
CRESTVIEW CIRCLE
BLAND DRIVE
SEE MAP 2 1E 35BA
SW MONTZ LOOP
BLAND ACRES
ROSEMARIE DRIVE
VILLAGE PARK PLACE
SEE MAP 2 1E 35BC SUPPLEMENTAL 1
SEE MAP 2 1E 35BC SUPPL 6
SEE MAP 2 E 35BC SUPPL 7
SEE MAP 2 1E 35BC SUPPL. NO. 8
2 1E 35BC SUPPL 5
2 1E 35BC SUPPL 4
2 1E 35BC SUPPL 3
2 1E 35BC SUPPL 2
CARSON DR.
TAYLOR COLE CT.
REMINGTON DRIVE
2 1E 35BD
FALCON DRIVE
TANNLER DRIVE
GEORGE DE BOK ROAD
I-205 FREEWAY
35 S. LINE DLC NO 55
STREET
SEE MAP 2 1E 35C
T.B.A.
2 1E 35B
BOOK 14
SEE MAP 2 1E 34A
W. LINE DLC 55
C.R. 1240
SEE MAP 2 1E 35A
1500
2100
2500
22800
23200
23800



LEGEND:

STORM DRAIN	STORM DRAIN CATCH BASIN
SANITARY SEWER	STORM DRAIN MANHOLE
WATER	SANITARY SEWER MANHOLE
TELEPHONE	CLEAN OUT
GAS	WATER METER
POWER	IRRIGATION VALVE
EASEMENT	FIRE HYDRANT
GAS METER	WATER VALVE
GAS VALVE	WHEELCHAIR/BIKE RAMP
TELEPHONE PEDESTAL	SIGN
POWER METER	FIR TREE
POWER POLE WITH CONDUIT DROP	DECIDUOUS TREE
GUY POLE/WIRE	CONTROL POINT
STREET LIGHT/ AREA LIGHT	MONUMENT FOUND

SLOPE ANALYSIS
SLOPE KEY

- 0%–15%
- 16%–25%
- 26%–35% (TYPE II LAND)
- 36%–50% (TYPE I LAND)
- 50+% (TYPE I LAND)

OWNER: CITY OF WEST LINN, OREGON
ADDRESS: 22500 SALAMO ROAD
WEST LINN, OREGON 97068
PROJECT DESIGNER: 4B ENGINEERING & CONSULTING, LLC
ADDRESS: 3700 RIVER ROAD N, SUITE 2
KEIZER, OREGON 97303

SECTION: 35
TOWNSHIP: 2S
RANGE: 1E
TAX LOT NUMBER: 504
TOTAL ACRES: 1 ACRE ±

4B ENGINEERING & CONSULTING, LLC
3700 RIVER ROAD N, SUITE 2
KEIZER, OREGON 97303
(503) 589–1115

CITY OF WEST LINN
BLAND CIRCLE INTERTIE
WATER PUMP STATION
SITE ANALYSIS

PREPARED FOR:
CITY OF WEST LINN

DESIGN: EDWARD P. BUTTS, P.E.
DRAWN: BROOKE SALTARELLO
DATE: SEPT 10, 2011
DRAWING:
SCALE: AS SHOWN

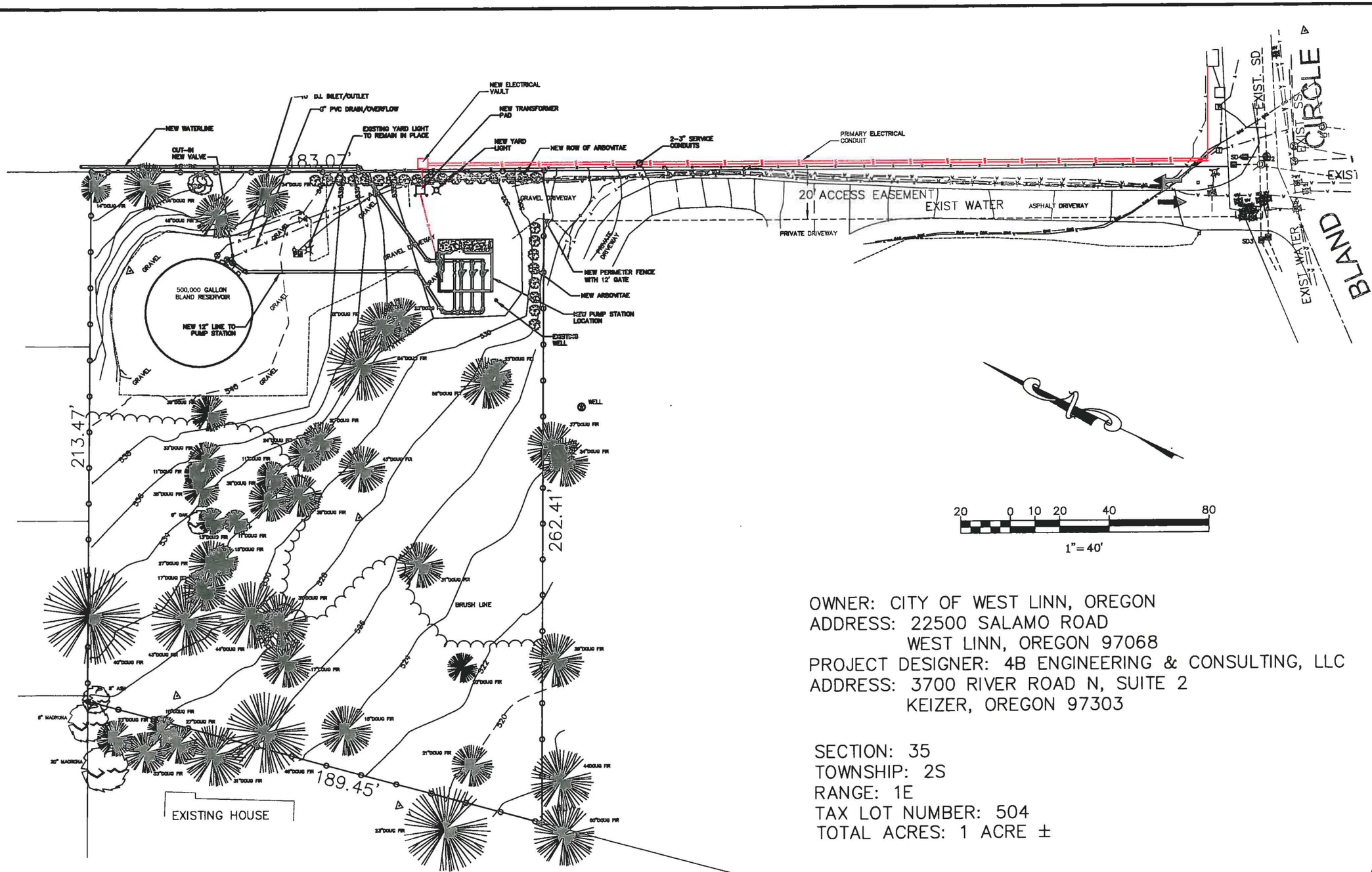
REVISIONS:

No.	Date	By

SHEET: 1

REGISTERED PROFESSIONAL ENGINEER
13,250
OREGON
JULY 17, 1986
EDWARD P. BUTTS

EXPIRES: 12-31-13



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WEST LINN, OREGON 97068
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ADDRESS: 3700 RIVER ROAD N, SUITE 2
KEIZER, OREGON 97303

SECTION: 35
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REGISTERED PROFESSIONAL ENGINEER
13250
OREGON
JULY 17, 1986
EDWARD P. BUTTS
EXPIRES: 12-31-13

4B ENGINEERING & CONSULTING, LLC
3700 RIVER ROAD N, SUITE 2
KEIZER, OREGON 97303
(503) 589-1115

CITY OF WEST LINN
BLAND CIRCLE INTERTIE
WATER PUMP STATION
PROPOSED SITE PLAN

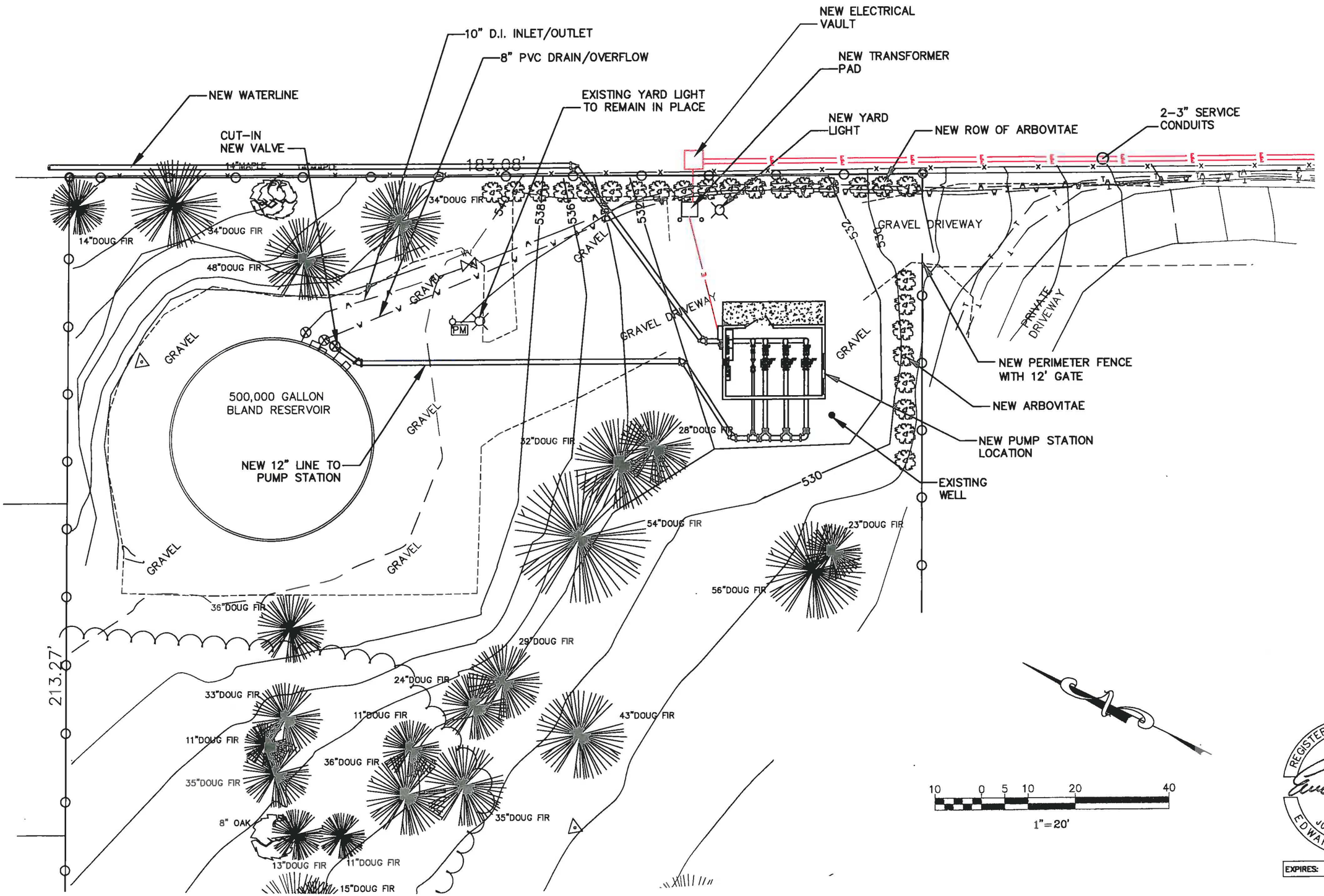
PREPARED FOR:
CITY OF WEST LINN

DESIGN: EDWARD P. BUTTS, P.E.
DRAWN: BROOKE SALTARELLO
DATE: SEPT 10, 2011
DRAWING:
SCALE: AS SHOWN

REVISIONS:

No.	Date	By

SHEET: 2



48 ENGINEERING & CONSULTING, LLC
3700 RIVER ROAD N, SUITE 2
KEIZER, OREGON 97303
(503) 589-1115

CITY OF WEST LINN
BLAND CIRCLE INTERTIE
WATER PUMP STATION
BUILDING SITE PLAN

PREPARED FOR:
CITY OF WEST LINN

DESIGN: EDWARD P. BUTTS, P.E.
DRAWN: BROOKE BALTARELLO
DATE: SEPT 10, 2011
DRAWING:
SCALE: AS SHOWN

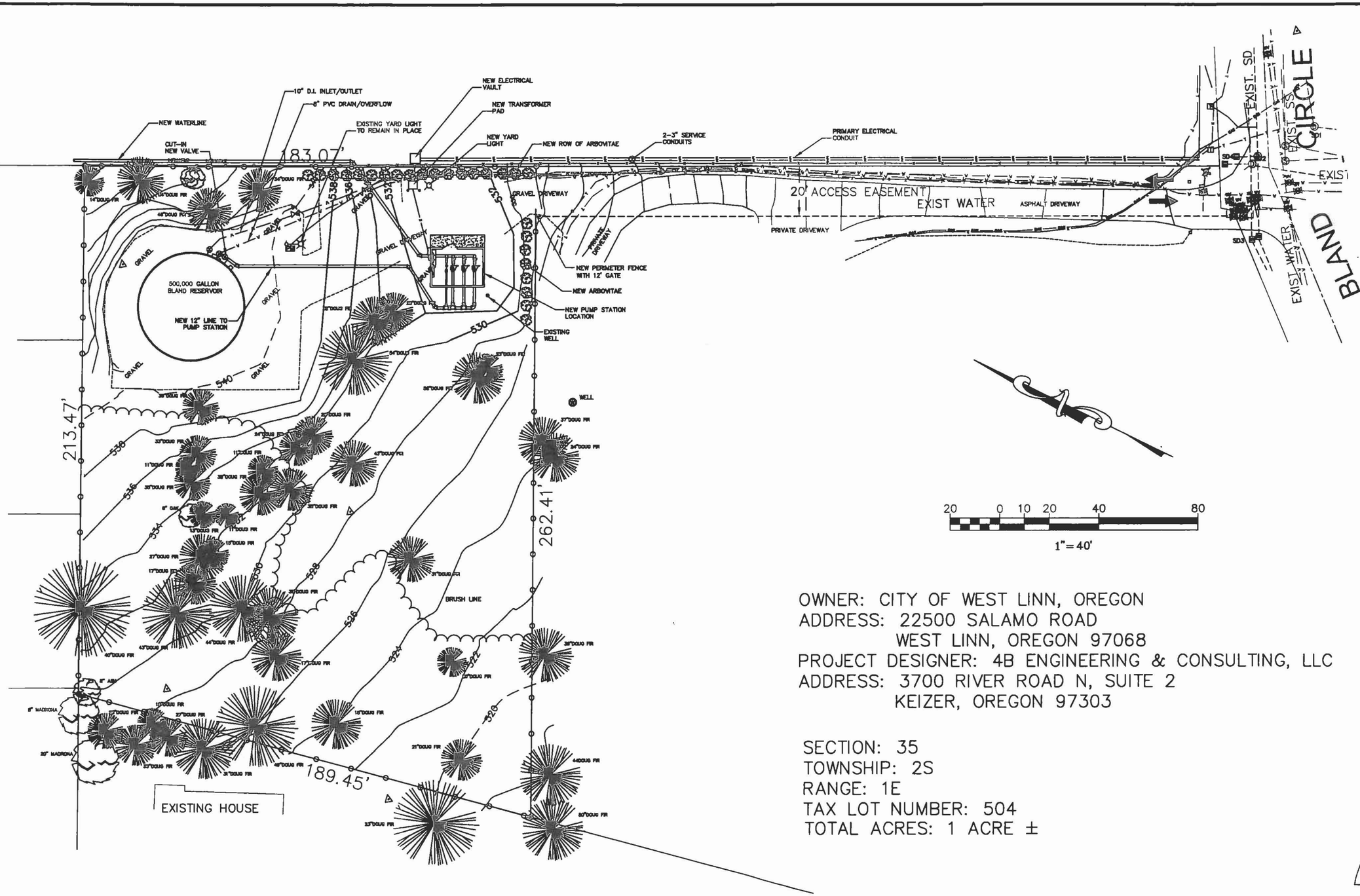
REVISIONS:

No.	Date	By

SHEET: 3

REGISTERED PROFESSIONAL ENGINEER
13,250
OREGON
JULY 17, 1986
EDWARD P. BUTTS

EXPIRES: 12-31-13



OWNER: CITY OF WEST LINN, OREGON
ADDRESS: 22500 SALAMO ROAD
WEST LINN, OREGON 97068
PROJECT DESIGNER: 4B ENGINEERING & CONSULTING, LLC
ADDRESS: 3700 RIVER ROAD N, SUITE 2
KEIZER, OREGON 97303

SECTION: 35
TOWNSHIP: 2S
RANGE: 1E
TAX LOT NUMBER: 504
TOTAL ACRES: 1 ACRE ±

4B ENGINEERING & CONSULTING, LLC
3700 RIVER ROAD N, SUITE 2
KEIZER, OREGON 97303
(503) 589-1115

CITY OF WEST LINN
BLAND CIRCLE INTERTIE
WATER PUMP STATION
GRADING PLAN

PREPARED FOR:
CITY OF WEST LINN

DESIGN: EDWARD P. BUTTS, P.E.
DRAWN: BROOKE SALTARELLO
DATE: SEPT 10, 2011
DRAWING:
SCALE: AS SHOWN

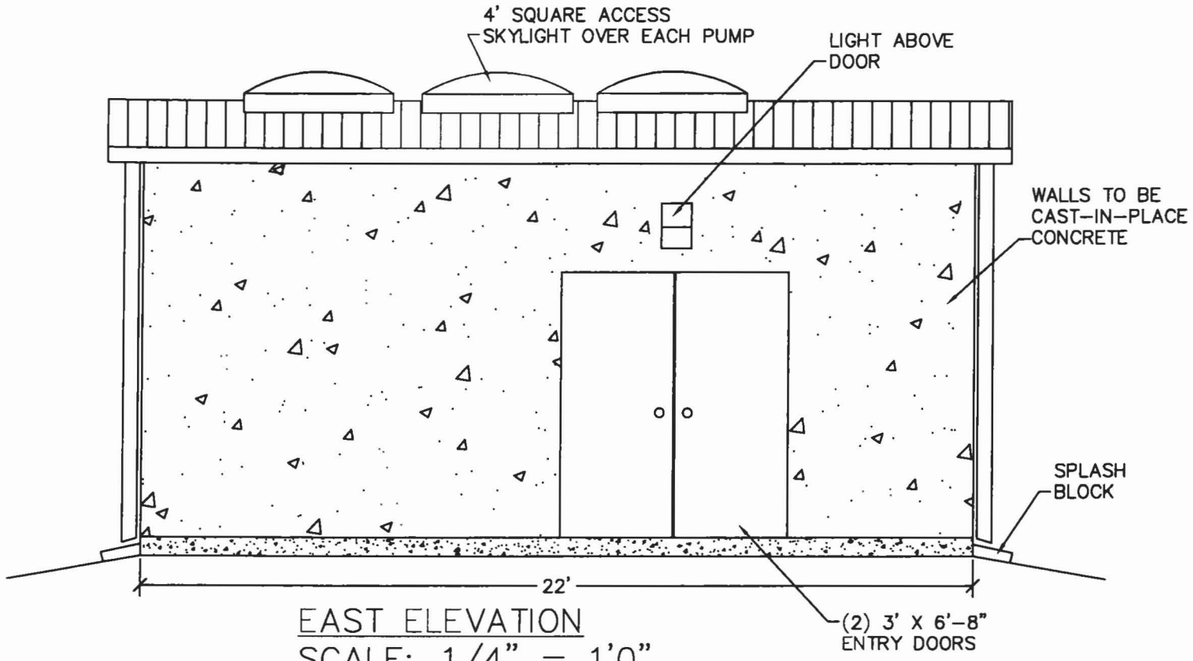
REVISIONS:

No.	Date	By

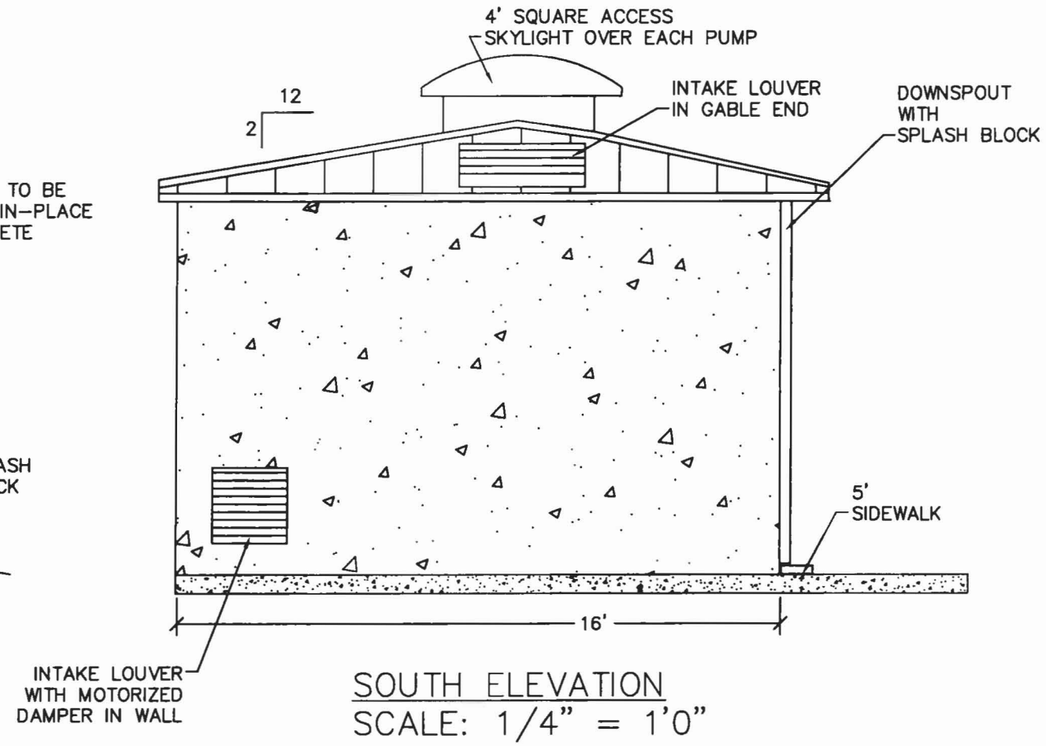
SHEET: 4

REGISTERED PROFESSIONAL ENGINEER
14,250
OREGON
JULY 17, 1986
EDWARD P. BUTTS

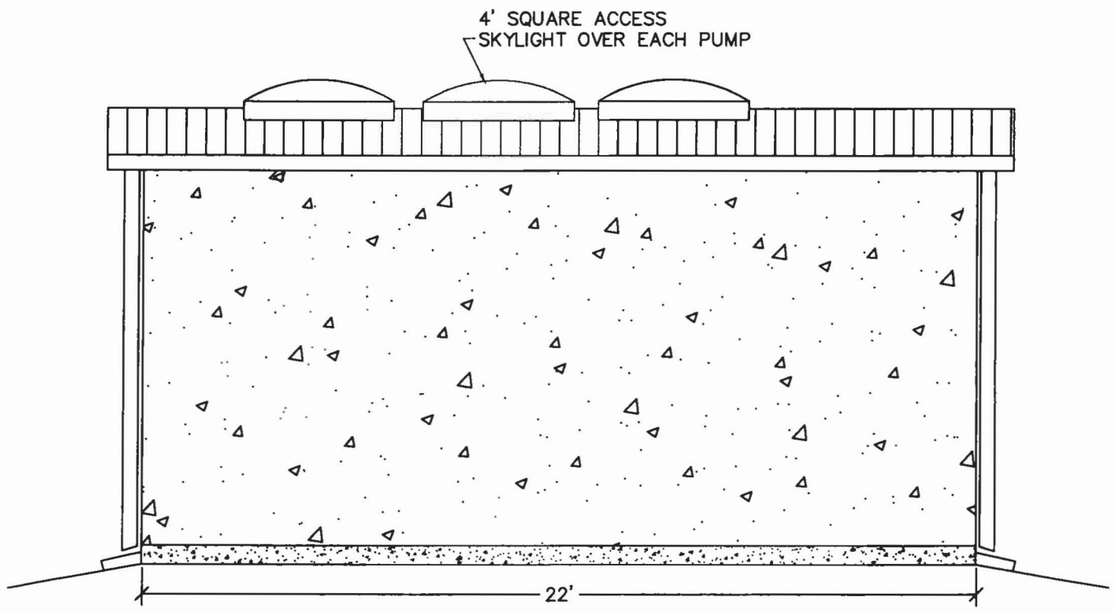
EXPIRES: 12-31-13



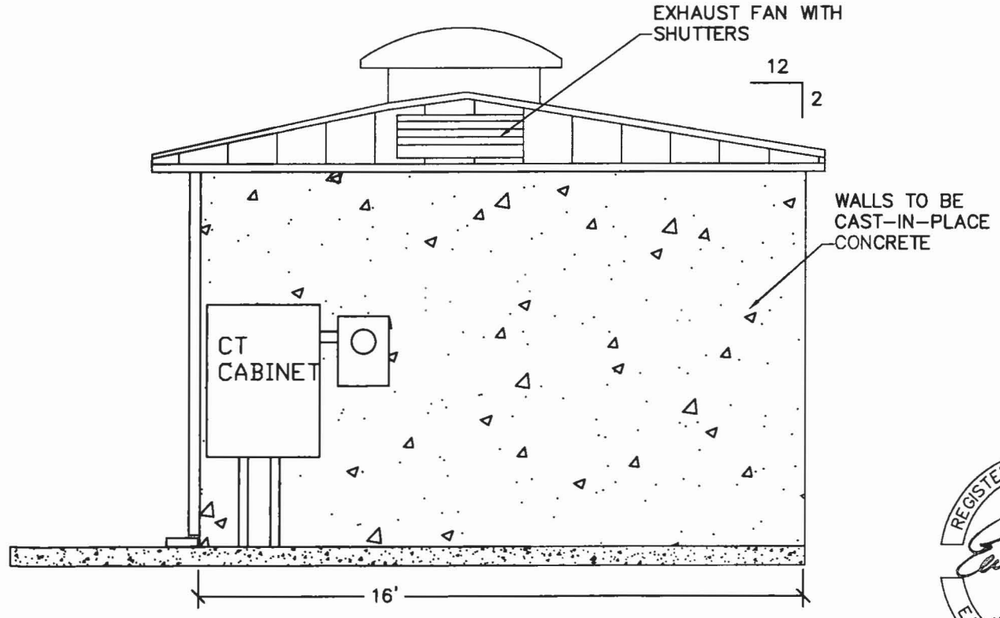
EAST ELEVATION
SCALE: 1/4" = 1'0"



SOUTH ELEVATION
SCALE: 1/4" = 1'0"



WEST ELEVATION
SCALE: 1/4" = 1'0"



NORTH ELEVATION
SCALE: 1/4" = 1'0"

4B ENGINEERING & CONSULTING, LLC
3700 RIVER ROAD N, SUITE 2
KEIZER, OREGON 97303
(503) 589-1115

CITY OF WEST LINN
BLAND CIRCLE INTERTIE
WATER PUMP STATION
BUILDING ELEVATIONS

PREPARED FOR:
CITY OF WEST LINN

DESIGN: EDWARD P. BUTTS, P.E.
DRAWN: BROOKE SALVARELLO
DATE: SEPT 28, 2011
DRAWING:
SCALE: AS SHOWN

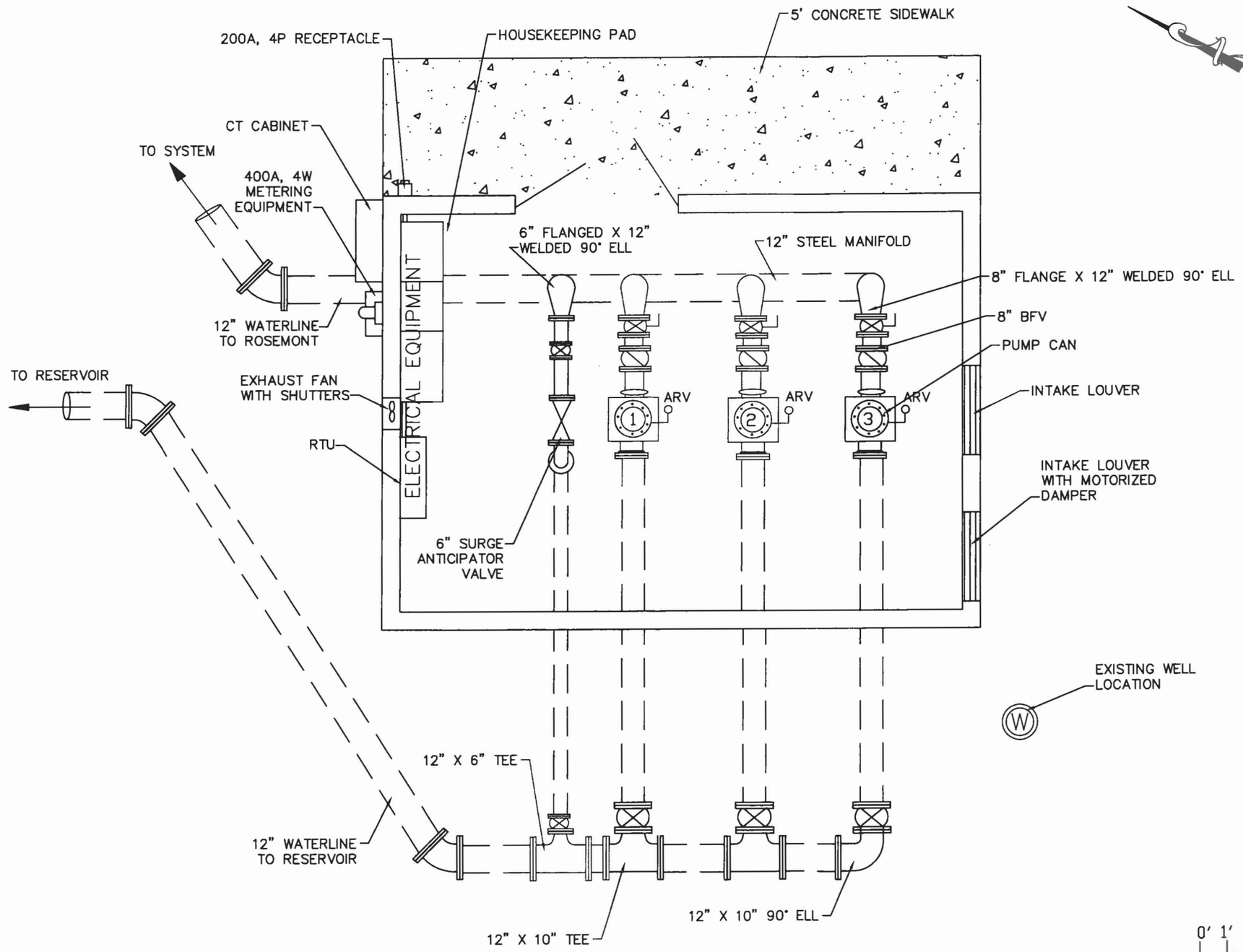
REVISIONS:

No.	Date	By

SHEET: 5

REGISTERED PROFESSIONAL ENGINEER
13250
OREGON
JULY 17, 1986
EDWARD P. BUTTS

EXPIRES: 12-31-13



MECHANICAL PIPING
SCALE: 1/4" = 1'0"

4B ENGINEERING & CONSULTING, LLC
3700 RIVER ROAD N, SUITE 2
KEIZER, OREGON 97303
(503) 589-1115

CITY OF WEST LINN
BLAND CIRCLE INTERTIE
WATER PUMP STATION
PROPOSED MECHANICAL

PREPARED FOR:
CITY OF WEST LINN

DESIGN: EDWARD P. BUTTS, P.E.
DRAWN: BROOKE SALTARELLO
DATE: SEPT 30, 2011
DRAWING:
SCALE: AS SHOWN

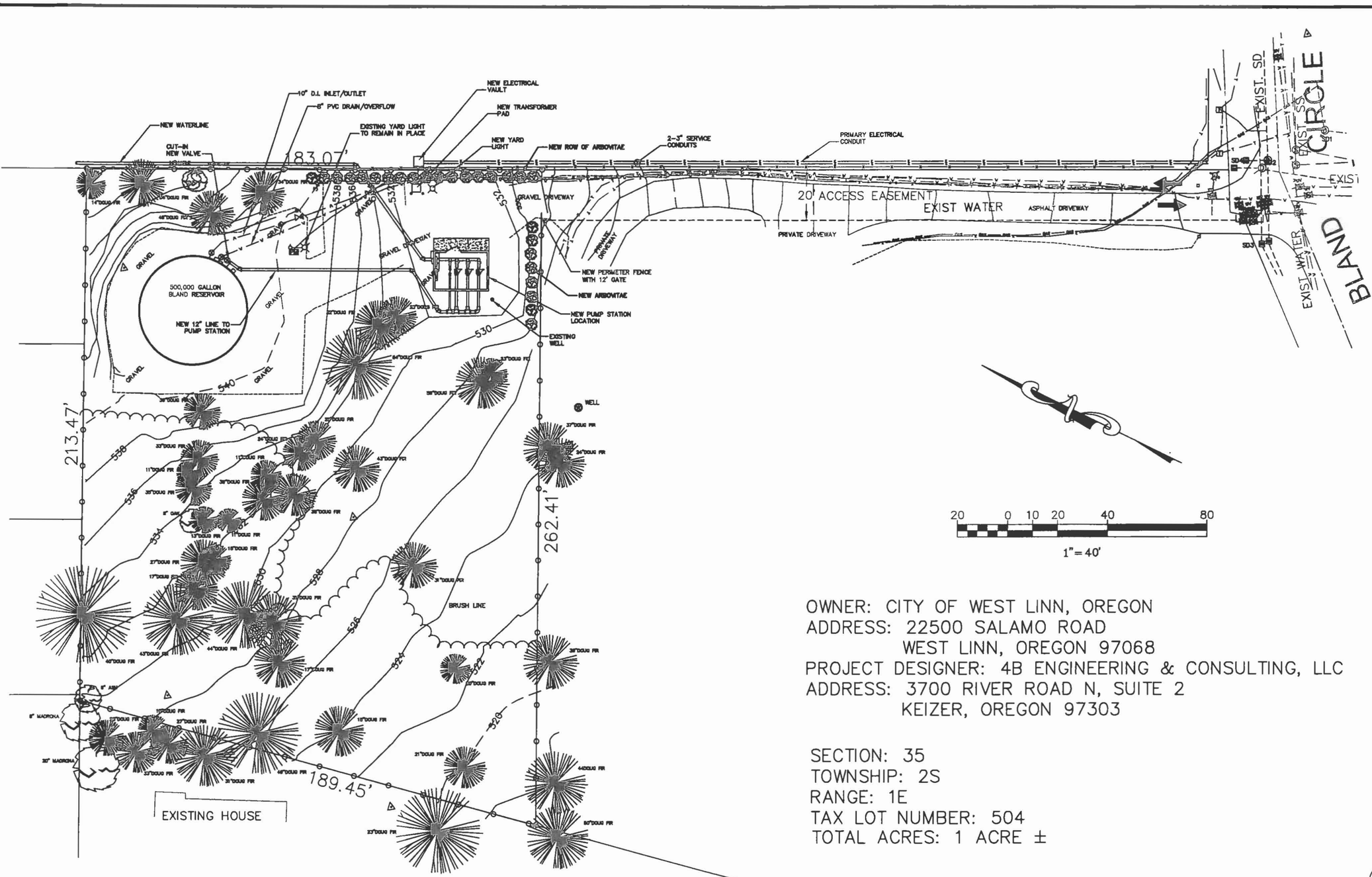
REVISIONS:

No.	Date	By

SHEET: 6

REGISTERED PROFESSIONAL ENGINEER
10,250
OREGON
JULY 17, 1986
EDWARD P. BUTTS

EXPIRES: 12-31-13



OWNER: CITY OF WEST LINN, OREGON
ADDRESS: 22500 SALAMO ROAD
WEST LINN, OREGON 97068
PROJECT DESIGNER: 4B ENGINEERING & CONSULTING, LLC
ADDRESS: 3700 RIVER ROAD N, SUITE 2
KEIZER, OREGON 97303

SECTION: 35
TOWNSHIP: 2S
RANGE: 1E
TAX LOT NUMBER: 504
TOTAL ACRES: 1 ACRE ±

4B ENGINEERING & CONSULTING, LLC
3700 RIVER ROAD N, SUITE 2
KEIZER, OREGON 97303
(503) 589-1115

CITY OF WEST LINN
BLAND CIRCLE INTERTIE
WATER PUMP STATION
LANDSCAPE PLAN

PREPARED FOR:
CITY OF WEST LINN

DESIGN: EDWARD P. BUTTS, P.E.
DRAWN: BROOKE BALTARELLO
DATE: SEPT 10, 2011
DRAWING:
SCALE: AS SHOWN

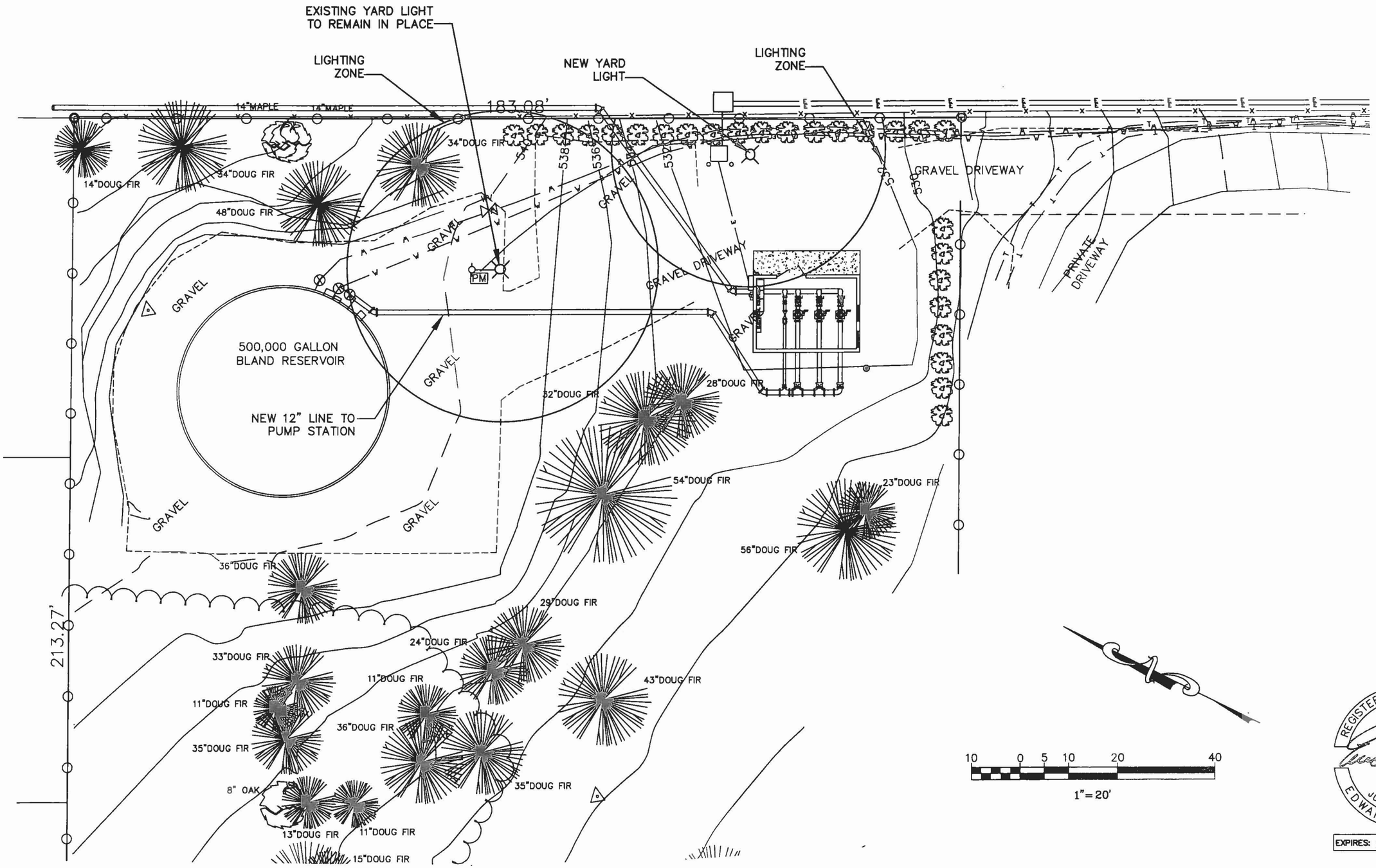
REVISIONS:

No.	Date	By

SHEET: 7

REGISTERED PROFESSIONAL ENGINEER
13,250
OREGON
JULY 17, 1986
EDWARD P. BUTTS

EXPIRES: 12-31-13



4B ENGINEERING & CONSULTING, LLC
3700 RIVER ROAD N, SUITE 2
KEIZER, OREGON 97303
(503) 589-1115

CITY OF WEST LINN
BLAND CIRCLE INTERTIE
WATER PUMP STATION
LIGHTING PLAN

PREPARED FOR:
CITY OF WEST LINN

DESIGN: EDWARD P. BUTTS, P.E.
DRAWN: BROOKE SALTARELLO
DATE: SEPT 10, 2011
DRAWING:
SCALE: AS SHOWN

REVISIONS:

No.	Date	By

SHEET: 8

REGISTERED PROFESSIONAL ENGINEER
13250
OREGON
JULY 17, 1986
EDWARD P. BUTTS

EXPIRES: 12-31-13

dB LEVEL WITH ONE PUMP

dB LEVEL WITH TWO PUMPS

183.08'

G FIR

538

536

532

GRAVEL DRIVEWAY

53 dB — 55 dB

54 dB — 56 dB

56 dB — 58 dB

60 dB — 64 dB

71 dB — 78 dB

530

GRAVEL DRIVEWAY

PRIVATE DRIVEWAY

ELECTRICAL EQUIPMENT

ARV

32"DOUG FIR

28"DOUG FIR

54"DOUG FIR

23"DOUG FIR

530

KEY

5' RADIUS

10' RADIUS

15' RADIUS

20' RADIUS

5 0 5 10 20

1"=10'

REGISTERED PROFESSIONAL ENGINEER
13,250
OREGON
JULY 17, 1986
EDWARD P. BUTTS

EXPIRES: 12-31-13

4B ENGINEERING & CONSULTING, LLC
3700 RIVER ROAD N, SUITE 2
KEIZER, OREGON 97303
(503) 589-1115

CITY OF WEST LINN
BLAND CIRCLE INTERTIE
WATER PUMP STATION
SOUND LEVELS

PREPARED FOR:
CITY OF WEST LINN

DESIGN: EDWARD P. BUTTS, P.E.
DRAWN: BROOKE SALTARELLO
DATE: SEPT 10, 2011
DRAWING:
SCALE: AS SHOWN

REVISIONS:

No.	Date	By

SHEET: 9