

Land Use Application

Applicant(s):

PUD No. 1 of Klickitat County

Property Owner(s):

J and A Lands, LLC

Mailing Address:

1313 S. Columbus Ave,
Goldendale, WA 98620

Mailing Address:

1100 HWY 141 White Salmon, WA 98672

Phone: 509-773-7620

Phone: 541-490-5663

Email:

rpatton@klickitapud.com

Email: gorgespirit@gorge.net

Location of property:

Township 3N

Range 12E

Street Address Gene Dr. Approx. 0.2 Mi.
north of upper reservoir.

Section & Qtr Section
SE 34

County Klickitat

Tax Lot No(s).
03123455000700

Parcel Size (acres) 14.00

Existing development
and use of parcel

General Rural, grazing

GMA Small woodland

Proposed use or development:
General Rural, grazing

Use of Adjacent Parcels
General Rural and
Residential

Project description: This should include all proposed activities and details on size, height, exterior colors, and construction materials of proposed structures. Any areas of ground disturbance and landscaping details should also be described. It is important to describe all aspects of your project so that you may gain approval for all of the development activities you plan to do.

Provide a well for domestic water use for the community of Lyle, WA. The project will be constructed on an approximately one acre portion of Tax Lot 0312345500070 and will include a wellhead, electrical transformation and control equipment, and a pipeline from the treatment building to the existing reservoir. A chain link security fence is planned to be placed around the structures. A barbed wire fence will be constructed around the one-acre parcel in order to help to maintain a 100-ft. sanitary control radius around the well as required by Washington State Dept. of Health.

In order to construct the well, a smooth, relatively level construction pad with dimensions of 43 ft. by 89 ft. will be required for the well drilling equipment. A 14-ft. wide road will be constructed from Gene Drive to the drilling pad. The materials for the pad and road will be imported structural fill.

After construction of the well is completed, the site will be regraded to reduce the footprint of the pad to 30 ft. by 50 ft. The pipeline will be buried and will be under the existing Gene Dr. to the existing reservoir site in order to avoid disturbing additional land.

An underground vault will be placed at the existing reservoir site between the existing well building and the reservoir and the existing flow meter and disinfectant injection point will be relocated to the vault.

Natural landscaping will be provided as recommended in the Botanical and Wildlife survey report.

Application checklist: The following is required to complete your application:

- Application form completed and signed
- Site plan
- Key viewing areas checklist, elevation drawings, and landscape details, if required
- Names and addresses of adjacent property owners, if required
- Any additional information as required

Signature of the property owner(s) indicates that the property owner(s) is/are aware that an application is being made on the subject property. **Signature of the property owner(s) also authorizes the Gorge Commission or the Commission's designee(s) reasonable access to the site in order to evaluate the application.**

Applicant(s) signature:

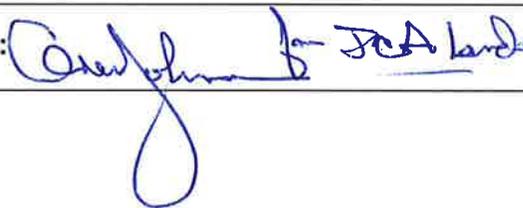


date

3/20/2017

date

Property owner(s) signature:



date

3/21/2017

date

Site Plan

A plan drawn in black ink at a scale of 1 inch equals 200 feet (1:2400) or at a scale providing greater detail must be included with the application.

If the parcel is very large, you may show on the portion of the parcel affected by the proposed use. Be sure, however, to show enough of the parcel or some adjacent features, such as roads, so that the planners can orient themselves on your map. A small vicinity map showing the subject parcel and surrounding parcels may help.

At a minimum, you must show the following features; other site plan information may be required depending on the type or location of development being proposed.

- applicant(s) name
- location and width of existing and proposed roads, driveways, and trails
- scale and north arrow
- location and size of all existing and proposed structures
- boundaries of parcel with dimensions and size
- location of existing and proposed services including wells or other water supplies, sewage disposal systems, power and telephone poles and lines and outdoor lighting
- significant terrain features or landforms
- location and depth of all proposed grading and ditching
- groupings and species of trees or other vegetation on the parcel
- location and species of vegetation that would be removed or planted
- bodies of water and water courses

***Please use this template or attach a separate site plan**

Site plan (continued):

SEE RESOURCE FEASIBILITY REPORT

Each grid equals 50'x 50' at scale of 1" = 200'.

Key Viewing Areas:

Key viewing areas are important public viewpoints and areas that afford opportunities to view the Gorge scenery. Key viewing areas are listed below.

Please check those sites which can be seen from your property:

- Historic Columbia River Highway
- Old Highway 8 (County Road 1230)
- Highway I-84
- Washington State Route 142
- Washington State Route 14
- Washington State Route 141
- Panorama Point Park
- Columbia River
- Rowena Plateau and Nature Conservancy Viewpoint
- Cook-Underwood Road

If your project would be visible from one or more key viewing areas, then you must submit elevation drawings and landscaping details.

No buildings will be on site. Electrical transformer and control panel in addition to the wellhead, which will be less than 3 ft above ground, will be the only structures on site.

Elevation drawings must show the sides of proposed buildings which would be visible from key viewing areas, including:

- the appearance of proposed buildings over 400 square feet in size* **N/A**
- surrounding final grades* **SEE RESOURCE FEASIBILITY REPORT**

Landscape details must show how your project will be screened from key viewing areas, including:

- location of plants used* **SEE RESOURCE FEASIBILITY REPORT**
- number of plants* **SEE RESOURCE FEASIBILITY REPORT**
- size of plants* **SEE RESOURCE FEASIBILITY REPORT**
- type of plants* **SEE RESOURCE FEASIBILITY REPORT**
- irrigation provisions or other measures to ensure the survival of landscaping planted for screening purposes* **SEE RESOURCE FEASIBILITY REPORT**
- location of existing and proposed topographical features which would screen your project.* **SEE RESOURCE FEASIBILITY REPORT**

***Please use this template or attach a separate Elevation and Landscape plan**

Elevations and Landscape Details:

Each grid equals 50'x 50' at scale of 1" = 200'.

SEE RESOURCE FEASIBILITY REPORT

Adjacent Property Owners:

If your project is included in one of the categories below, then you must submit names and address of adjacent property owners within a specified distance (200 feet or 500 feet) of the perimeter of your parcel. The following list specifies the distance within which property owners must be notified of your proposal. You only need to provide the names and address (along with the parcel number); the Commission will send the notice.

Your county Assessor's Office can assist you in obtaining this property owner information. You may use the back of this form to record the names and addresses or you may submit forms which the county may provide you.

Notification of landowners within 200 feet:

- Uses within Residential designation (except single-family dwellings located adjacent to Agriculture or Forest designations - see notification of landowners within 500 feet)
- Uses within Agriculture designation (except non-farm single-family dwellings in Large-Scale Agriculture designation - see notification of landowners within 500 feet)
- Uses within Forest designation (except **utility facilities**, railroads, home occupations, cottage industries, wineries, agriculture product processing and packaging, mineral resources, geothermal resources, aquaculture, boarding of horses, temporary asphalt/batch plants, expansion of non-profit camps-retreats-conference centers, bed and breakfasts, and non-profit learning/research facilities - see notification of landowners within 500 feet)
- Uses within Commercial designations
- Uses within Recreation designations
- Uses within Open Space designations
- Uses within Agriculture-Special designations
- Uses within Special Management Areas

Notification of landowners within 500 feet:

- Single-family dwellings within Residential designation located adjacent to Agriculture or Forest designations
- Non-farm single-family dwellings within Large-Scale Agriculture designation
- Utility facilities, railroad, home occupations, wineries, agriculture product processing and packaging, mineral resources, geothermal resources, aquaculture, boarding of horses, temporary asphalt/batch plants, expansion of nonprofit camps/retreats/conference centers, and bed and breakfasts, non-profit learning/research facilities within Forest designations

Adjacent property owners (continued):

PARCEL_NUM	LEGAL	NAME	ADDRESS
03123454021400	LOT 10 BLK 2 OMEG HGHTS-LYLE SESE; 34-3-12	ROGERS, KENNETH	85127 SUMMIT VIEW DR KENNEWICK WA 99338 ✓
03123454021100	LOT 11 BLK 2 OMEG HGHTS LYLE SESE; 34-3-12	KAGARISE, KARL	PO BOX 98 THE DALLES OR 97058 ✓
03123454020900	LOT 9 BLK 2 OMEG HEIGHTS SESE; 34-3-12	SORENSEN, RONALD	1325 W 119405 RIVERTON UT 84065 ✓
03123454020700	LOT 7 BLK 2 OMEG HTS LYLE	JOHNSON, KEITH	PO BOX 382 LYLE WA 98635 ✓
03123400100000	R/W 34-3-12 NESE4 LYING NLY OF RR	WA STATE PARKS COMMISSION	7150 CLEARWATER KY11 OLYMPIA WA 98504 ✓
03123441000100	34-3-12 LOT 3 SP 98-16 IN NESE (INCLUDES PTN OF LOT 3 IN NWSW OF SEC 35); 34-3-12	UNITED STATES OF AMERICA	902 WASCO AVE STE 200 HOOD RIVER OR 97031 ✓
03123464000300	LOT 2 SP 98-16 IN NESE;	HANDY, DONALD	PO BOX 3 WISHRAM WA 98673 ✓
03123464000200	34-3-12 LOT 1 SP 98-16 IN NESE;	HANDY, DONALD	PO BOX 3 WISHRAM WA 98673 ✓
03123464000100	34-3-12 LOT 1 BL 91-02 IN SE; 34-3-12: (FORMERLY LOT 1 SP WS 114)	KINDER, ELMER	PO BOX 1387 WHITE SALMON WA 98672 ✓
03123451000100	LOT 2 BL 91-02 IN SE; 34-3-12 (FORMERLY LOT 2 SP WS 114)	ELLINGHAM, RON	576 SINDA CIR MOAB UT 84532 ✓
03123451000200	LOT 3 BL 91-02 IN SE; 34-3-12: (FORMERLY LOT 3 SP WS 114)	HERBERG, DARRELL	23304 52ND AVE W MOUNTLAKE TERRACE WA 98043 ✓
03123451000300		CLARK, ANNA	PO BOX 728 WHITE SALMON WA 98672 ✓

03123552000400	LOT 4 SP 86-10 IN SWSW; 35-3-12	BERGER, DAVID	PO BOX 373 LYLE WA 98635	✓
03123552000300	LOT 3 SP 86-10 IN SWSW; 35-3-12: MH TITLE ELIM '94 RDMAN 28x38 #11820312AB	BRUCKNER, TRACY	PO BOX 462 BINGEN WA 98605	✓
03123552000200	LOT 2 SP 86-10 IN 34 & 35-3-12	JOY, KRISTIN	PO BOX 33 LYLE WA 98635	✓
03123452000100	LOT 1 SP 86-10 SESE; 34- 3-12 & SWSW; 35-3-12 N2SW LESS TL 4 & 4A; SWSW LESS LOT 4 SP 86- 10 AND LESS TL 11 BY BLA BY DEED; 35-3-12	HAMILTON, JAMES	PO BOX 757 LYLE WA 98635	✓
03123500001200	LOT 1 BLK 1 OMEG HTS	J AND A LANDS, LLC	1100 HWY 141 WHITE SALMON WA 98672	✓
03123454010100	LYLE SESE; 34-3-12	MOTT, THOMAS	PO BOX 758 LYLE WA 98635	✓
03123454010200	LOT 2 BLK 1 OMEG HTS	NICHOLS, JOHN	PO BOX 1063 WHITE SALMON WA 98672	✓
03123454010300	LYLE SESE 34-3-12	BURROWS, CHARLES	PO BOX 141 LYLE WA 98635	✓
03123454010400	LOT 4 BLK 1 OMEG HTS	DORR, LARRY	PO BOX 662 LYLE WA 98635-0014	✓
03123454010500	LYLE SESE 34-3-12 :MH: LOT 6 BLK 1 OMEG HTS	LYLE PROPERTIES INC	415 SHERMAN AVE HOOD RIVER OR 97031	✓
03123454010600	LYLE SESE 34-3-12	OLDENBURG, DEAN	PO BOX 262 LYLE WA 98635	✓
03123454010700	LOT 7 BLK 1 OMEG HIGHTS SESE; 34-3-12	HAMMER, RORY	7292 S 2825 E COTTONWOOD HEIGHTS UT 84121	✓
03123454010800	LOT 8 BLK 1 OMEG HTS	BLAZER, BRADLEY	PO BOX 915 LYLE WA 98635	✓
03123454040100	LYLE SESE 34-3-12	TITUS, JAMES	PO BOX 72 LYLE WA 98635	✓
03123454040200	LOT 1 BLK 4 OMEG HTS	TITUS, JAMES	PO BOX 72 LYLE WA 98635	✓
03123454040300	LYLE SESE 34-3-12	TITUS, JAMES	PO BOX 72 LYLE WA 98635	✓

03123454020800	LOT 8 BLK 2 OMEG HTS LYLE	ANDERSON, CHRISTOPHER	PO BOX 763 LYLE WA 98635	✓
03123454021200	LOT 12 BLK 2 OMEG HTS TO LYLE SESE; 34-3-12	SANTORO JR, VINCENT	PO BOX 974 LYLE WA 98635	✓
03123454021300	LOT 13 BLK 2 OMEG HTS LYLE SESE; 34-3-12	ANDERSON, JOHN	5101 NE 121ST AVE VANCOUVER WA 98682-2123	✓
02120354020300	LOT 3 BLK 2 LYLE OMEG HGTS; NENE; 3-2-12	TURREY, VINCENT	PO BOX 91066 SAN DIEGO CA 92169	✓
02120354020400	LOT 4 BLK 2 LYLE OMEG HGTS NENE; 3-2-12	GUNDLACH, PAUL	PO BOX 106 LYLE WA 98635	✓
02120354020500	LOT 5 BLK 2 LYLE OMEG HGTS NENE; 3-2-12	CONLEY, WILLIAM	PO BOX 501 LYLE WA 98635	✓
02120354020600	LOT 6 BLOCK 2 LYLE OMEG HTS NENE; 3-2-12	TAYLOR, DOUGLAS	876 CENTERVILLE HWY LYLE WA 98635	✓
02120354020100	LOT 1 BLK 2 LYLE OMEG HGTS NENE; 3-2-12	KENDRICK, DELESE	1300 HIGHWAY 35 HOOD RIVER OR 97031	✓
02120354020200	LOT 2 BLOCK 2 LYLE OMEG HTS; NENE; 3-2-12;	MITCHELL, RICHARD	PO BOX 356 LYLE WA 98635	✓
02120354021400	LOT 14 BLK 2 LYLE OMEG HGTS NENE; 3-2-12	MARKEY, BARRY	PO BOX 288 LYLE WA 98635-0007	✓
03123455000100	LOT 1 SP 90-10 IN SESE4 34-3-12	J AND A LANDS, LLC	1100 HWY 141 WHITE SALMON WA 98672	✓
03123455000200	LOT 2 SP 90-10 IN SESE 34-3-12	J AND A LANDS, LLC	1100 HWY 141 WHITE SALMON WA 98672	✓
03123455000300	LOT 3 IN SP 90-10 IN SESE4 34-3-12	J AND A LANDS, LLC	1100 HWY 141 WHITE SALMON WA 98672	✓
03123459000200	LOT 2 SP 91-09 IN SESE4 34-3-12	OMALLEY, ROBERT	PO BOX 613 LYLE WA 98635	✓
03123414020200	LOT 2 BL 2014-02; 34-3- 12	ESSLEY, STEVEN	PO BOX 301 LYLE WA 98635	✓
03123462000100	LOT 1 BLA 99-02 IN SESE 34-3-12 (formerly lot 1 SP 94-18)	POST, SANDRA	PO BOX 110 LYLE WA 98635	✓
03123462000200	LOT 2 BLA 99-02 IN SESE; 34-3-12 (FORMERLY LOT 2 SP 94-18)	RASMUSSEN, JOHN	PO BOX 973 LYLE WA 98635	✓

03123463000100	LOT 1 SP 99-26 IN SESE; 34-3-12	RASMUSSEN, JOHN	PO BOX 973 LYLE WA 98635
03123444000200	TL 9D SE; 34-3-12	JASPERSON, JAY	PO BOX 366 LYLE WA 98635
03123444000300	TAX LOT 9C IN SE 34-3-12	JOHNSON, KELLY	PO BOX 222 LYLE WA 98635
03123415190400	Lot 4 SPL 2015-19; 34-3-12	PETERSON, ALICE	PO BOX 22 LYLE WA 98635
03123444000100	80' CIRCLE OF LAND IN TAX LOT 9 FOR RESERVIOR; 34-3-12	PUD #1 OF KLICKITAT COUNTY	1313 S COLUMBUS GOLDENDALE WA 98620
03123444000500	TAX LOT 8C S2SE 34-3-12	LYNN, TRUSTEE, CHRISTINE	PO BOX 713 LYLE WA 98635
02120222000400	TAX LOT 1 IN NWNW4 2- 2-12 HIGH SCHOOL	SCHOOL DIST #406 LYLE	PO BOX 368 LYLE WA 98635
02120311002100	TAX LOT 12-A IN NE1/4 LOT 1 BLA 2006-05 IN SESE 34-3-12	SCHOOL DIST #406 LYLE	PO BOX 368 LYLE WA 98635
03123465000100	Lot 1 SPL 2015-19; 34-3-12	REINERTH, THOMAS	524 W ISLAND RD MORGAN UT 84050-9602
03123415190100	Lot 2 SPL 2015-19; 34-3-12	GITCH, TANIA	12318 NE 111TH AVE VANCOUVER WA 98662
03123415190200	Lot 3 SPL 2015-19; 34-3-12	PETERSON, ALICE	PO BOX 22 LYLE WA 98635
03123415190300	Lot 3 SPL 2015-19; 34-3-12	PETERSON, ALICE	PO BOX 22 LYLE WA 98635

Projects Requiring Grading Plans:

If your project meets one of the following, then you must submit a grading plan:

In the General Management Area:

- applications for structural development involving more than 100 total cubic yards of grading (material excavated and/or used as fill) with slopes of more than 10%;
- applications for structural development involving more than 200 total cubic yards of grading (material excavated and/or used as fill) where the building site is visible from one or more Key Viewing Areas

In the Special Management Area:

- applications for structural development involving more than 100 total cubic yards of grading (material excavated and/or used as fill) with slopes of more than 10% (except trails)

The grading plan must include the following:

- A map of the site prepared at a scale of 1 inch equals 200, feet (1:2;400) or at a scale providing greater detail, with contour intervals of at least every five feet including:
 - Existing and proposed final grades
 - Location of all areas to be graded, with cut banks and fill slopes delineated; and,
 - Estimated dimensions of graded areas.
- A narrative description of the proposed grading activity, including:
 - Its purpose
 - An estimate of the total volume of material to be moved
 - The height of all cut banks and fill slopes
 - Provisions to be used for compaction, drainage, and stabilization of graded areas (preparation of this information by a licensed engineer or geologist is recommended)
 - A description of all plant materials used to revegetate exposed slopes and banks, including types of species, number of, size and location of plants, and a description of irrigation provisions or other measures necessary to ensure the survival of plantings; and
 - A description of any interim or permanent erosion control measures to be utilized.

Please note: Structural development on slopes greater than 30% is prohibited.

***Please use this template or attach a separate Grading Plan:**

SEE RESOURCE FEASIBILITY REPORT

Each grid equals 50'x 50' at scale of 1" = 200'.

If your project is listed below, you will also need to submit additional information. Contact a Gorge Commission planner for help in identifying the information required.

Projects in the General Management Area:

- Agricultural Buildings and Agricultural Labor Housing
- Projects within 1000 feet of sensitive wildlife and plant sites or water resources
- Single-family dwellings on lands designated Large or Small Woodland
- Single-family dwellings in conjunction with agricultural use
- Single-family dwellings not in conjunction with agricultural use (on Large-Scale Agriculture)
- Single-family dwelling for an Agricultural Operator's Relative
- Wineries or tasting rooms
- Temporary Hardship Dwelling
- Communications and Utility Facilities on lands visible from key viewing areas
- New livestock grazing; new fences, livestock watering facilities, and corrals; or soil, water, and vegetation conservation activities on lands designated Agriculture-Special
- Production and/or development of mineral resources and expansion of existing quarries
- Uses located in or providing recreational access to the Columbia River or its tributaries

Projects in the Special Management Area:

- Single-family dwellings on lands designated Forest, Agriculture or Public Recreation
- Agricultural Buildings and Agricultural Labor Housing
- Clearing trees for new agricultural use
- Any new use or development on lands designated Open Space

Projects Requiring Cultural Resources Reconnaissance Surveys and Historic Surveys for Large-Scale Uses:

- Residential development of two or more dwellings
- Recreation facilities
- Commercial or industrial development
- Public transportation facilities
- Electric facilities, lines, equipment, and appurtenances that are 33 kilovolts or greater
- Communication, water and sewer, and natural gas transmission lines, pipes, equipment, and appurtenances

Projects Requiring Sensitive Plant and Wildlife Surveys:

- Land divisions that create four or more parcels
- Recreation facilities that contain parking areas for 10 cars, overnight camping facilities, boat ramps, and visitor information and environmental education facilities
- Public transportation facilities that are outside improved rights-of-way
- Electric facilities, lines, equipment, and appurtenances that are 33 kilovolts or greater
- Communication, water and sewer, and natural gas transmission lines, pipes, equipment, and appurtenances (except minor projects as specified in Commission Rule 350-81)

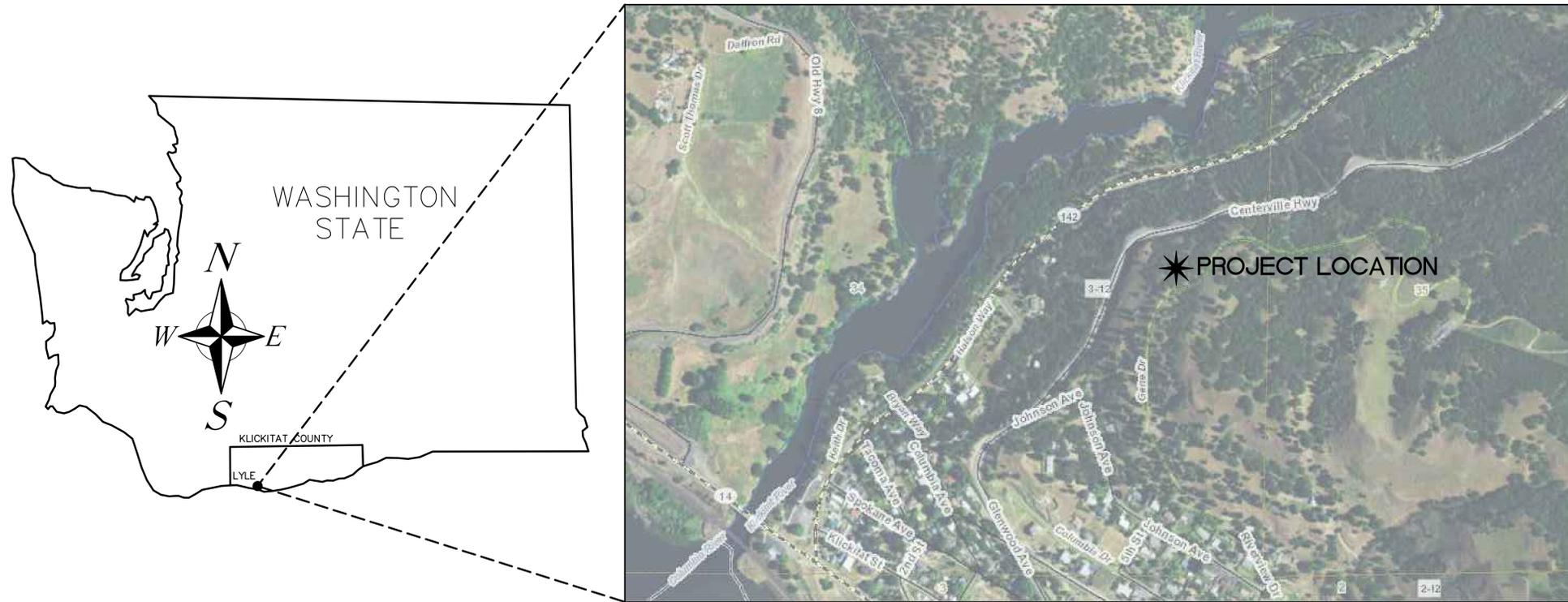
Please contact the Columbia River Gorge Commission's office if you need assistance or have any questions. The Commission recommends scheduling a pre-application meeting to discuss your project with a planner before submitting your application for review. Please call 509-493-3323 or contact us via our website at www.gorgecommission.org.

KLICKITAT PUBLIC UTILITY DISTRICT

LYLE UPPER WELL SITE

LYLE, WA

VICINITY MAP



DRAWING SHEET LIST

- CE-0.0 COVER SHEET AND VICINITY MAP
- CE-1.0 OVERALL SITE PLAN
- CE-2.0 ORIGINAL GROUND SITE PLAN
- CE-3.0 CONSTRUCTION SITE PLAN
- CE-3.1 FINISHED GRADE SITE PLAN
- CE-4.0 PROFILE VIEWS
- CE-5.0 EROSION CONTROL PLAN
- CE-6.0 FENCE DETAILS

CIVIL LEGEND

- x — x — FENCE LINE
- · — · — NEW WATER LINE
- — — — — PROPERTY LINE
- [Dashed Box] NEW ROAD & PAD SURFACE
- [Hatched Box] BUILDING FOOTPRINT
- [Dotted Box] EXISTING ROAD
- [Star Symbol] CONIFER TREE
- [Circle Symbol] DECIDUOUS TREE
- [Star with Circle Symbol] PLANTINGS OF PONDEROSA PINE SEE CE-3.1
- [Circle with Star Symbol] PLANTINGS OF OREGON WHITE OAK SEE CE-3.1

PROJECT NARRATIVE

PURPOSE: THE PURPOSE OF THIS PROJECT IS TO PROVIDE ADDITIONAL WATER TO THE CITIZENS OF LYLE, WASHINGTON.

CUT/FILL: THE NET CUT OF THE PROJECT SITE BASED OFF ORIGINAL GROUND MINUS FINISHED GRADE IS APPROXIMATELY 191 CUBIC YARDS OF MATERIAL.

EROSION CONTROL: THE DRILL PAD AND ACCESS ROAD WILL BE FINISHED WITH COMPACTED GRAVEL TO SUFFICIENTLY SUPPORT THE WELL DRILL RIGS. THE GRADED HEEL AND TOE SLOPES WILL HAVE GRASS SEED PLANTED TO MAINTAIN STABLE SLOPES (SEE GRASS SEED TABLE FOR MORE INFORMATION). ADDITIONALLY A SEDIMENT FENCE WILL BE INSTALLED PRIOR TO CONSTRUCTION TO CATCH ANY ADDITIONAL SURFACE RUNOFF DURING CONSTRUCTION. SEE EROSION CONTROL PLAN CE-5.0 FOR MORE INFORMATION.

TREE REMOVAL: ROUGHLY (51) EASTERN WHITE OAK TREES WILL BE REMOVED. MOST OF THOSE BEING IN THE RANGE OF 6-10 INCH TRUNK DIAMETER. ONLY (1) OF THE OAKS HAVE A DIAMETER IN THE RANGE OF 20-24 INCHES. OWNER WILL BE PLANTING (51) NEW EASTERN WHITE OAKS AND (12) PONDEROSA PINES IN UNDISTURBED SOIL SURROUNDING THE SITE. THE LOCATION OF THE REMOVED TREES AND CORRESPONDING NUMBER CAN BE FOUND ON SHEET CE-2.0. SEE SHEET CE-3.1 FOR LOCATION OF NEW PLANTINGS.

UTILITY STATEMENT

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED AS ACCURATELY AS POSSIBLE FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. PIONEER SURVEYING AND ENGINEERING, INC. MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. FURTHER, WE DO NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN EXACT LOCATION INDICATED, ALTHOUGH WE DO CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE.

GRASS SEED INFORMATION

Kind and Variety of Seed in Mixture	Percent By Weight	Minimum Percent of Pure Seed	Minimum Percent of Germination
Colonial Bent Grass:	10 percent	9.8 percent	85 percent
Creeping Red Fescue:	40 percent	39.2 percent	90 percent
Perennial Rye Grass:	30 percent	29.4 percent	90 percent
White Clover:	20 percent	19.6 percent	90 percent
Maximum Percentage of Weed Seed	1.0 percent		
Maximum Inert and Other Crops	1.0 percent		

PROJECT CONTACT INFORMATION

OWNER:
RUSSELL PATTON
KLICKITAT PUD
310 S ROOSEVELT AVE,
GOLDENDALE, WA 98620
P#: (509) 773-4022

ENGINEER:
DUSTIN CONROY, PE, PLS
COREY WEHR, PE
PIONEER SURVEYING AND ENGINEERING, INC.
125 SIMCOE DRIVE
GOLDENDALE, WA 98620
P#: (509) 773-4945

CALL
BEFORE YOU DIG
1-800-424-5555
ONE CALL NUMBER
48 HR. NOTICE REQUIRED

Pioneer Surveying & Engineering, Inc.

Civil/Structural Engineering and Land Planning
125 E. Simcoe Drive
Goldendale, Washington 98620
Phone (509) 773-4945, Fax (509) 773-5888, E-Mail pse@gorge.net,

PSE



1/8/2017

KLICKITAT PUD -
LYLE UPPER WELL SITE
LYLE, WA
COVER SHEET AND VICINITY MAP

No.	Date	Revisions
1	1/8/2017	INCREASED DRILL PAD SIZE
2	7/7/2016	GORGE COMMISSION REVISIONS #3
3	3/30/2016	GORGE COMMISSION REVISIONS #2
4	1/25/2016	GORGE COMMISSION REVISIONS
5	1/4/2016	FINAL SUBMITTAL
6	12/18/2015	SUBMITTED FOR FINAL REVIEW
7	12/7/2015	SUBMITTED FOR REVIEW

SHEET NO.

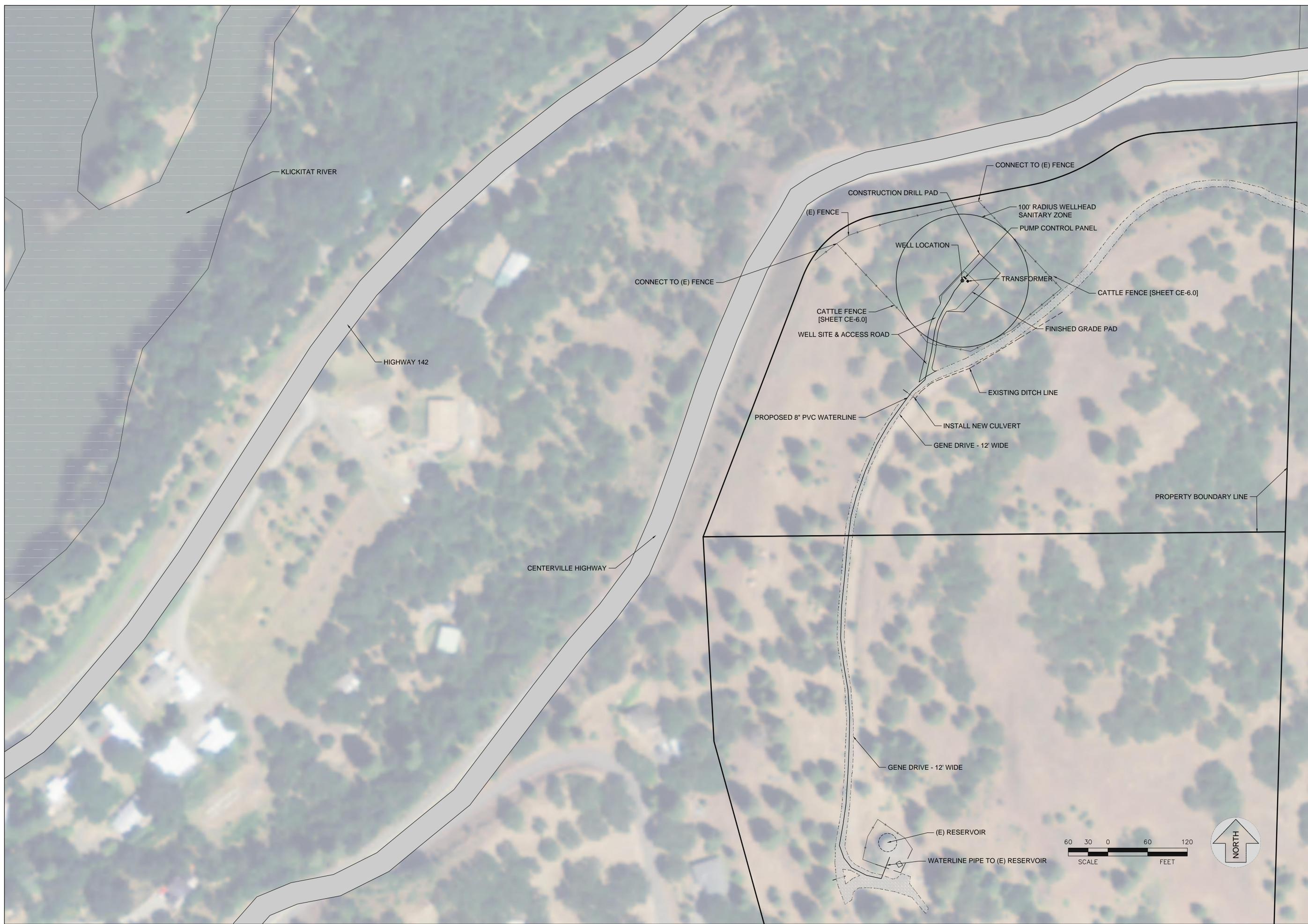
CE-0.0

SCALE: AS NOTED

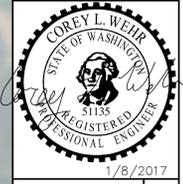
JOB NO. REV.

15-146





Pioneer Surveying & Engineering, Inc.
 Civil/Structural Engineering and Land Planning
 125 E. Simcoe Drive
 Goldendale, Washington 98620
 Phone (509) 773-4945, Fax (509) 773-5888, E-Mail pse@gorge.net,
 DWG FILE: L2015-J0882015-146-RPUD LYLE WELL SITE\2015-146 LYLE WELL SITE V4 - CLW.DWG

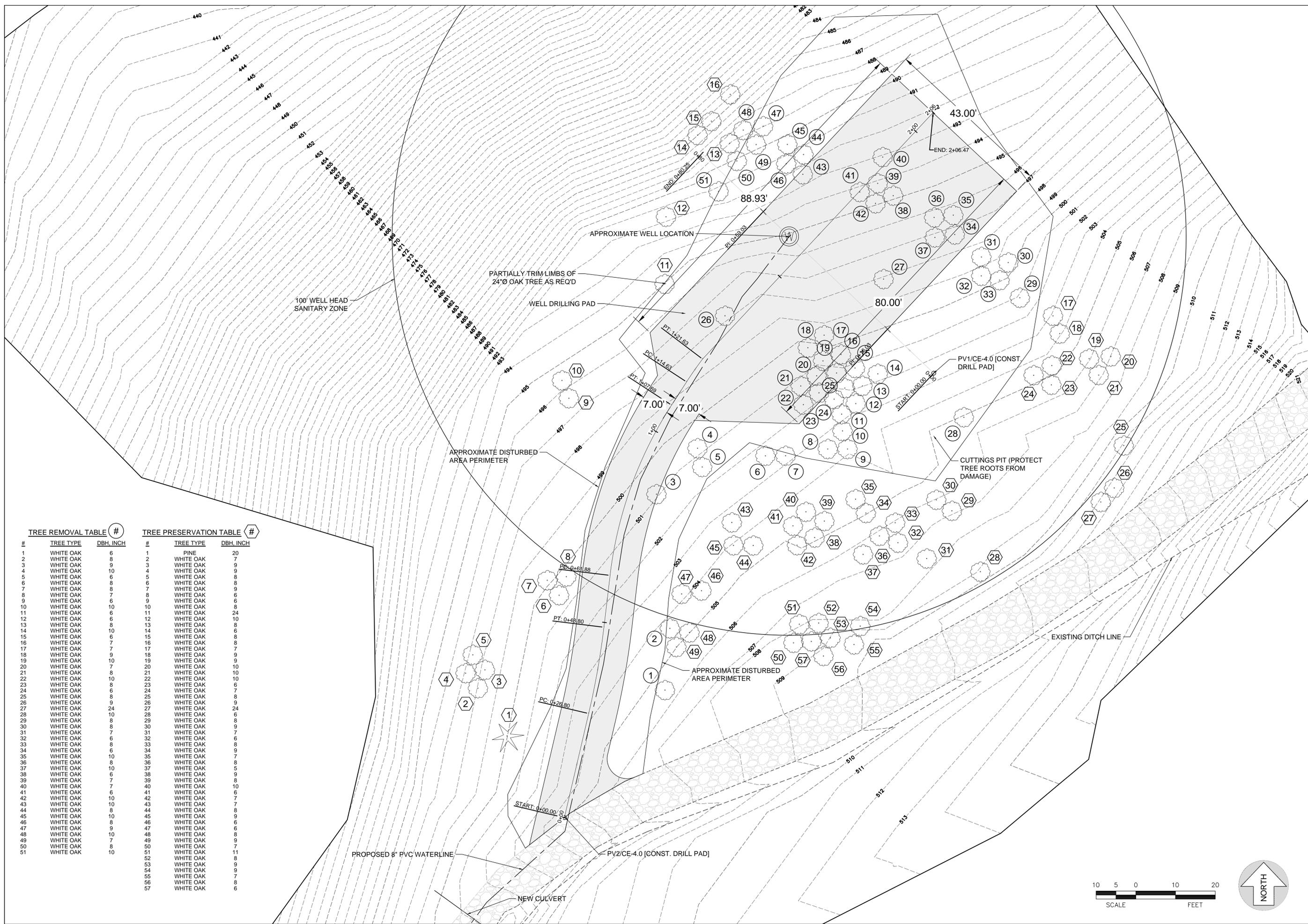


**KLICKITAT PUD -
 LYLE UPPER WELL SITE**
 LYLE, WA
OVERALL SITE PLAN

No.	Date	Revisions
1	1/8/2017	INCREASED DRILL PAD SIZE
2	7/7/2016	GORGE COMMISSION REVISIONS #3
3	3/30/2016	GORGE COMMISSION REVISIONS #2
4	1/25/2016	GORGE COMMISSION REVISIONS
5	1/4/2016	FINAL SUBMITTAL
6	12/18/2015	SUBMITTED FOR FINAL REVIEW
7	12/7/2015	SUBMITTED FOR REVIEW

SHEET NO.
CE-10
 SCALE: AS NOTED
 JOB NO. REV.
15-146





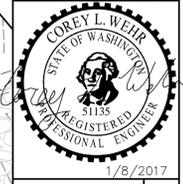
TREE REMOVAL TABLE #

TREE PRESERVATION TABLE #

#	TREE TYPE	DBH_INCH
1	WHITE OAK	6
2	WHITE OAK	8
3	WHITE OAK	9
4	WHITE OAK	10
5	WHITE OAK	6
6	WHITE OAK	8
7	WHITE OAK	8
8	WHITE OAK	7
9	WHITE OAK	6
10	WHITE OAK	10
11	WHITE OAK	6
12	WHITE OAK	6
13	WHITE OAK	8
14	WHITE OAK	10
15	WHITE OAK	6
16	WHITE OAK	7
17	WHITE OAK	7
18	WHITE OAK	9
19	WHITE OAK	10
20	WHITE OAK	7
21	WHITE OAK	8
22	WHITE OAK	10
23	WHITE OAK	8
24	WHITE OAK	6
25	WHITE OAK	8
26	WHITE OAK	9
27	WHITE OAK	24
28	WHITE OAK	10
29	WHITE OAK	8
30	WHITE OAK	30
31	WHITE OAK	7
32	WHITE OAK	6
33	WHITE OAK	8
34	WHITE OAK	6
35	WHITE OAK	10
36	WHITE OAK	8
37	WHITE OAK	10
38	WHITE OAK	6
39	WHITE OAK	7
40	WHITE OAK	10
41	WHITE OAK	6
42	WHITE OAK	10
43	WHITE OAK	10
44	WHITE OAK	8
45	WHITE OAK	10
46	WHITE OAK	8
47	WHITE OAK	9
48	WHITE OAK	10
49	WHITE OAK	7
50	WHITE OAK	8
51	WHITE OAK	10

#	TREE TYPE	DBH_INCH
1	PINE	20
2	WHITE OAK	7
3	WHITE OAK	9
4	WHITE OAK	9
5	WHITE OAK	8
6	WHITE OAK	8
7	WHITE OAK	9
8	WHITE OAK	6
9	WHITE OAK	6
10	WHITE OAK	8
11	WHITE OAK	24
12	WHITE OAK	10
13	WHITE OAK	10
14	WHITE OAK	6
15	WHITE OAK	8
16	WHITE OAK	8
17	WHITE OAK	7
18	WHITE OAK	9
19	WHITE OAK	9
20	WHITE OAK	10
21	WHITE OAK	10
22	WHITE OAK	10
23	WHITE OAK	6
24	WHITE OAK	7
25	WHITE OAK	8
26	WHITE OAK	9
27	WHITE OAK	24
28	WHITE OAK	6
29	WHITE OAK	8
30	WHITE OAK	9
31	WHITE OAK	7
32	WHITE OAK	6
33	WHITE OAK	8
34	WHITE OAK	9
35	WHITE OAK	7
36	WHITE OAK	8
37	WHITE OAK	5
38	WHITE OAK	9
39	WHITE OAK	8
40	WHITE OAK	10
41	WHITE OAK	6
42	WHITE OAK	7
43	WHITE OAK	7
44	WHITE OAK	8
45	WHITE OAK	9
46	WHITE OAK	6
47	WHITE OAK	6
48	WHITE OAK	8
49	WHITE OAK	9
50	WHITE OAK	7
51	WHITE OAK	11
52	WHITE OAK	8
53	WHITE OAK	8
54	WHITE OAK	9
55	WHITE OAK	7
56	WHITE OAK	8
57	WHITE OAK	6

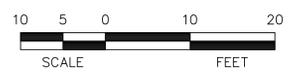
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 125 E. Simcoe Drive
 Goldendale, Washington 98620
 Phone (509) 773-4945, Fax (509) 773-5888, E-Mail pse@gorge.net,
 DWG FILE: L2015-08852015-146.RPUD.LYLE.WELL.SITE.V4.CAD.DWG

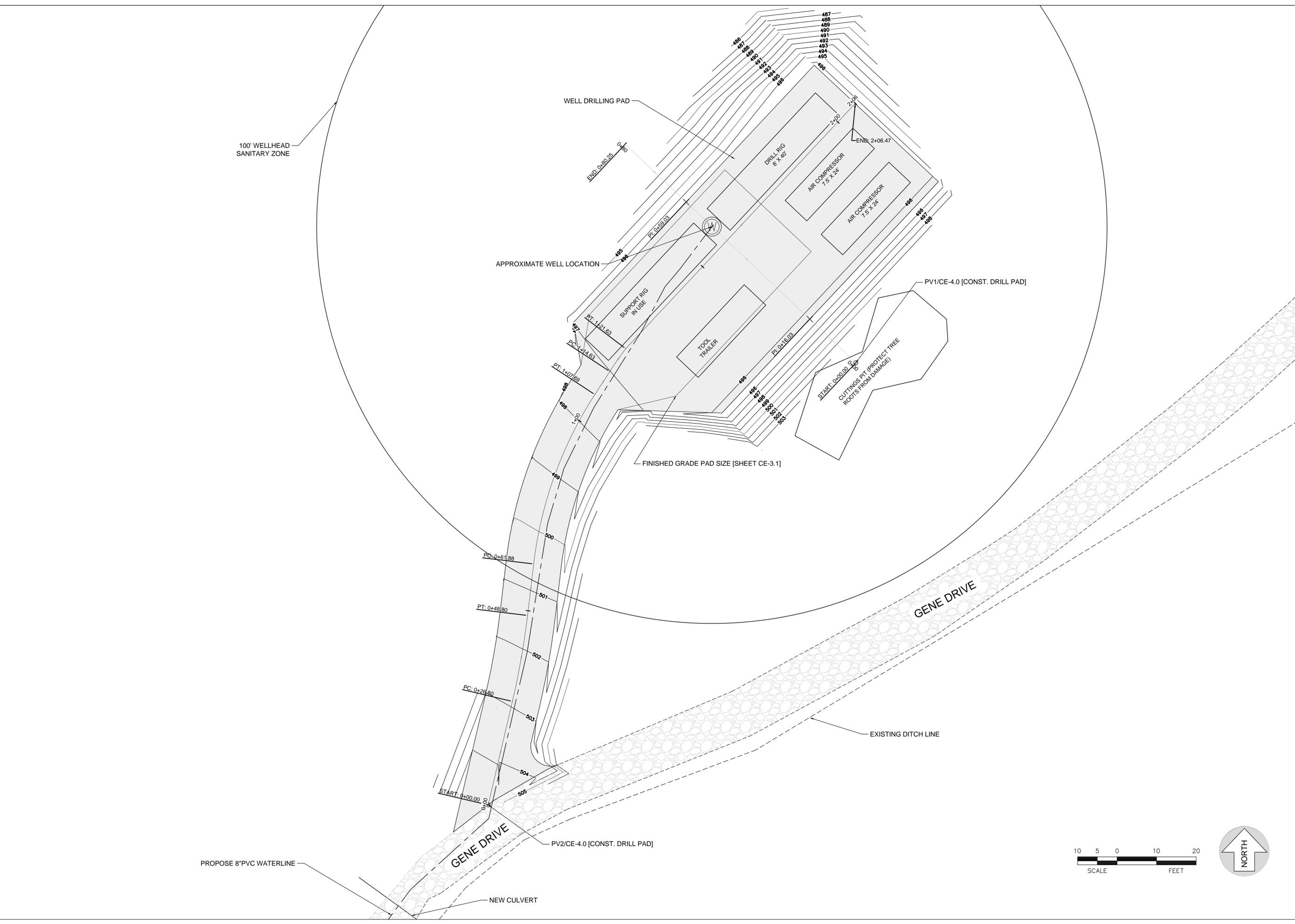


**KLICKITAT PAD -
 LYLE UPPER WELL SITE**
 LYLE, WA
ORIGINAL GROUND SITE PLAN

No.	Date	Revisions
1	1/8/2017	INCREASED DRILL PAD SIZE
2	7/7/2016	GORGE COMMISSION REVISIONS #3
3	3/30/2016	GORGE COMMISSION REVISIONS #2
4	1/25/2016	GORGE COMMISSION REVISIONS
5	1/4/2016	FINAL SUBMITTAL
6	12/18/2015	SUBMITTED FOR FINAL REVIEW
7	12/7/2015	SUBMITTED FOR REVIEW

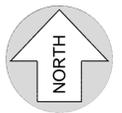
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CE-2.0
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15-146



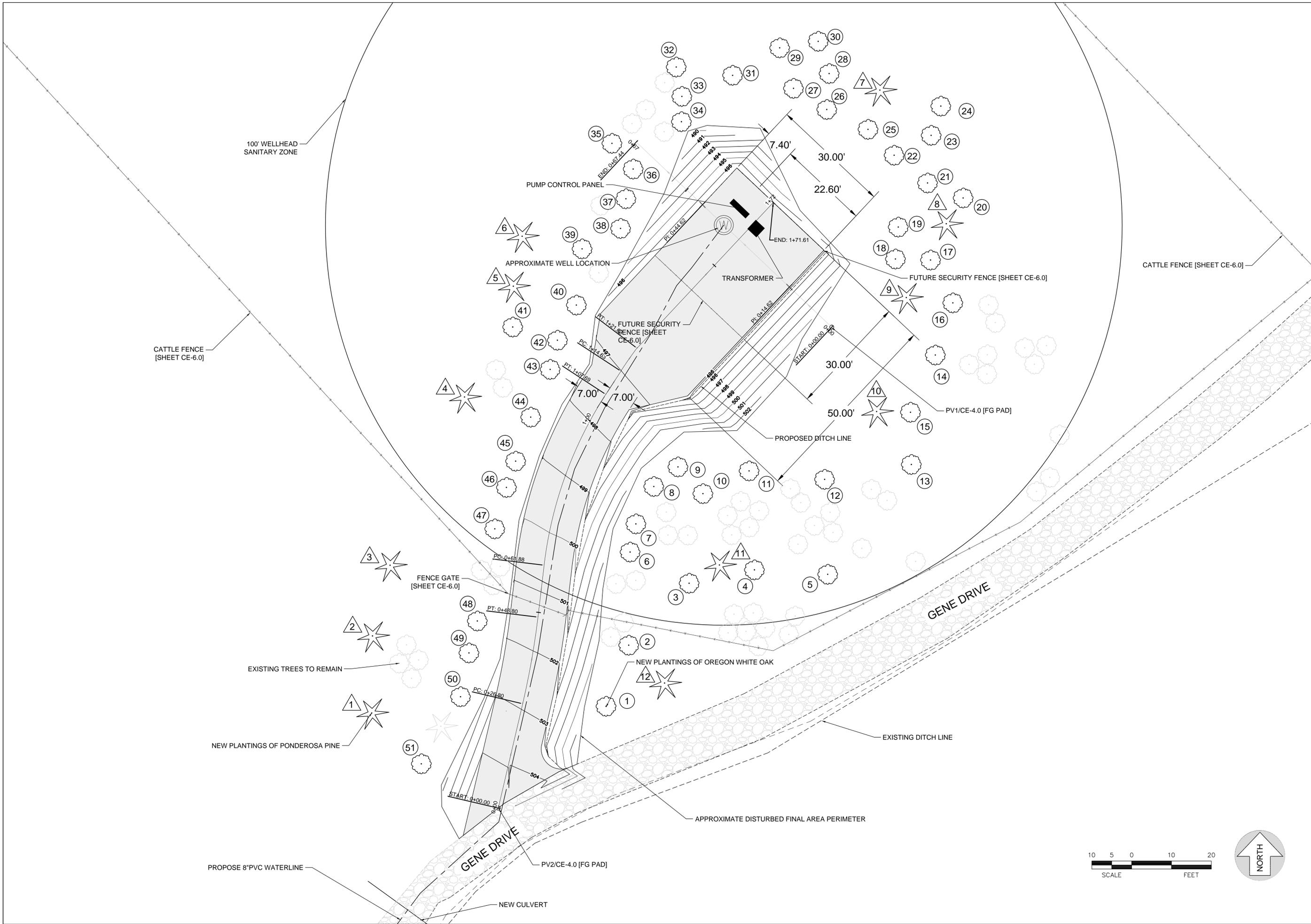


PROPOSE 8" PVC WATERLINE

NEW CULVERT



<p>Pioneer Surveying & Engineering, Inc. Civil/Structural Engineering and Land Planning 125 E. Simcoe Drive Goldendale, Washington 98620 Phone (509) 773-4945, Fax (509) 773-5888, E-Mail pse@gorge.net, DWG FILE: L:\2015-JOBS\2015-146 RFLD LYLE WELL SITE\2015-146 LYLE WELL SITE V4 - CLW.DWG</p>		
<p>1/8/2017</p>		
<p>Klickitat PUD - LYLE UPPER WELL SITE LYLE, WA</p>		
<p>CONSTRUCTION SITE PLAN</p>		
No.	Date	Revisions
A	1/8/2017	INCREASED DRILL PAD SIZE
B	7/7/2016	GORGE COMMISSION REVISIONS #3
C	3/30/2016	GORGE COMMISSION REVISIONS #2
D	1/25/2016	GORGE COMMISSION REVISIONS
E	1/4/2016	FINAL SUBMITTAL
F	12/18/2015	SUBMITTED FOR FINAL REVIEW
G	12/7/2015	SUBMITTED FOR REVIEW
<p>SHEET NO.</p>		
<p>CE-3.0</p>		
<p>SCALE: AS NOTED</p>		
JOB NO.	REV.	
15-146	A	



100' WELLHEAD
SANITARY ZONE

CATTLE FENCE
[SHEET CE-6.0]

EXISTING TREES TO REMAIN

NEW PLANTINGS OF PONDEROSA PINE

PROPOSE 8" PVC WATERLINE

PUMP CONTROL PANEL

APPROXIMATE WELL LOCATION

TRANSFORMER

FUTURE SECURITY FENCE [SHEET CE-6.0]

FUTURE SECURITY FENCE [SHEET CE-6.0]

CATTLE FENCE [SHEET CE-6.0]

FENCE GATE [SHEET CE-6.0]

NEW PLANTINGS OF OREGON WHITE OAK

EXISTING DITCH LINE

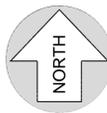
APPROXIMATE DISTURBED FINAL AREA PERIMETER

GENE DRIVE

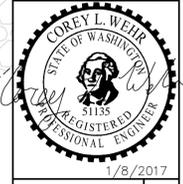
GENE DRIVE

PV2/CE-4.0 [FG PAD]

PV1/CE-4.0 [FG PAD]



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DWG FILE: L:\2015 JOBS\2015-146 KPLUD LYLE WELL SITE\2015-146 LYLE WELL SITE V4 - CLW.DWG

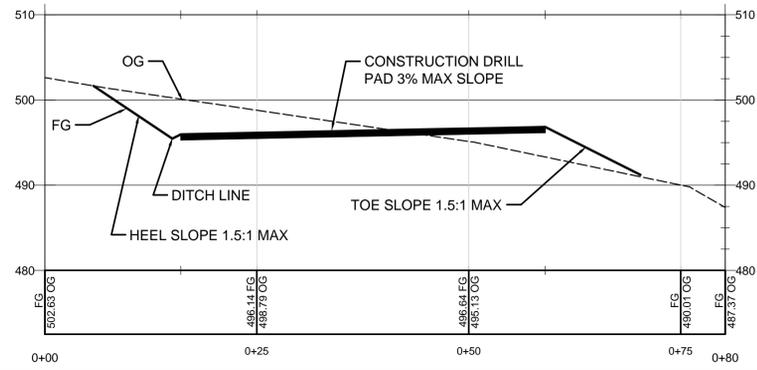


KLICKITAT PUD -
LYLE UPPER WELL SITE
LYLE, WA
FINISHED GRADE SITE PLAN

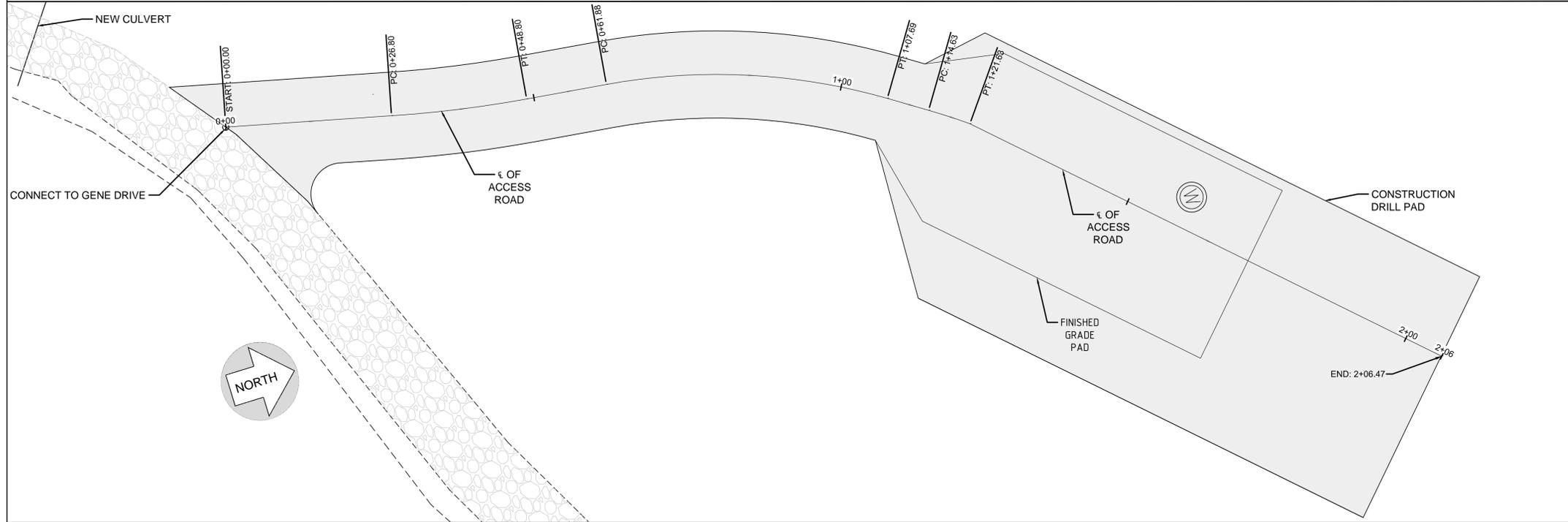
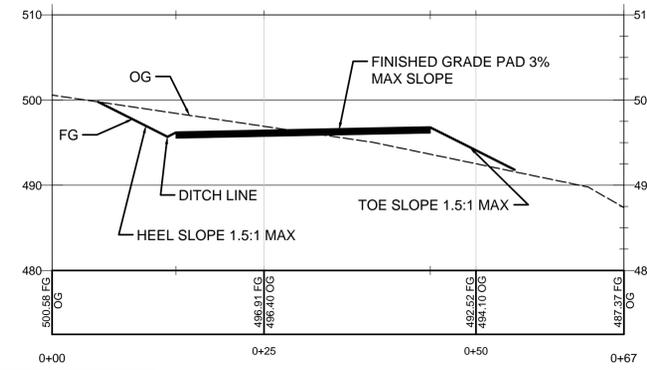
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6	12/18/2015	SUBMITTED FOR FINAL REVIEW
7	12/7/2015	SUBMITTED FOR REVIEW

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CE-3.1
SCALE: AS NOTED
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15-146 7

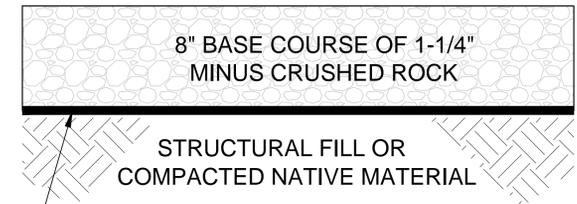
PROFILE VIEW (PV) 1 OF ORIGINAL GROUND (OG) VS FINISHED GRADE (FG)



PROFILE VIEW (PV) 1 OF ORIGINAL GROUND (OG) VS FINISHED GRADE (FG)

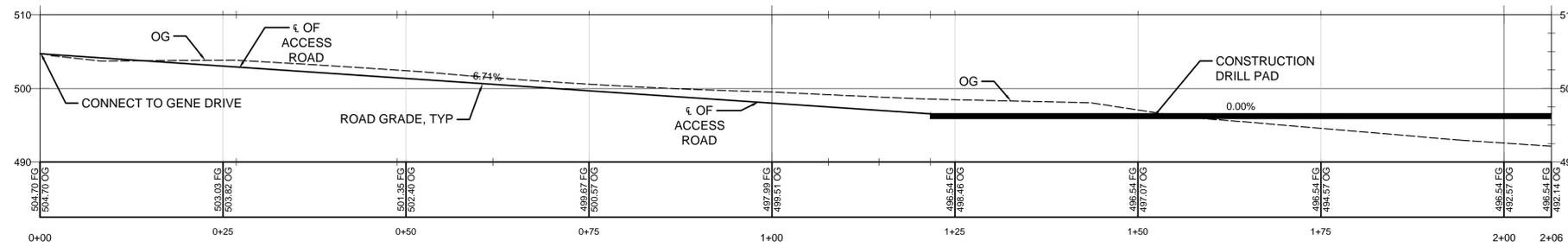


TYPICAL ACCESS ROAD SECTION

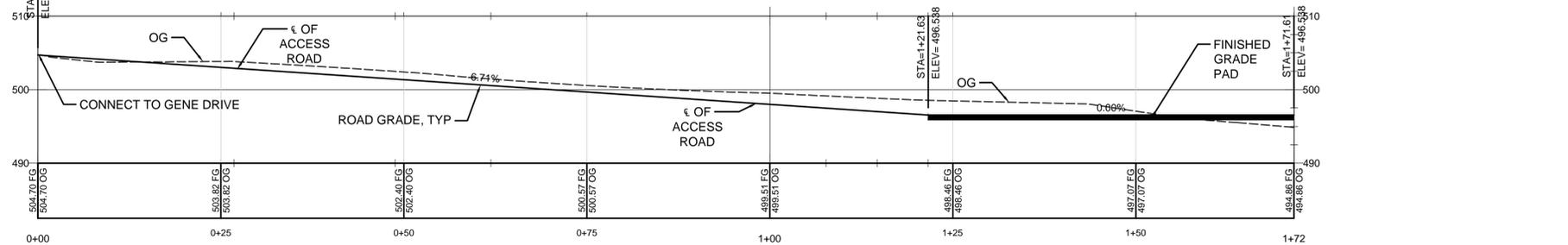


GEO-TEXTILE FABRIC UNDER ROCK IF GROUND IS WET DURING CONSTRUCTION. GEO-TEXTILE FABRIC TO BE MIRAFI FILTERWEAVE 500 OR EUQAL

PROFILE VIEW (PV) 2 OF ORIGINAL GROUND (OG) VS CENTERLINE GRADE OF ACCESS ROAD

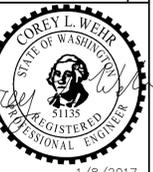
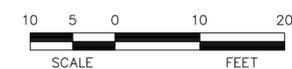


PROFILE VIEW (PV) 2 OF ORIGINAL GROUND (OG) VS CENTERLINE GRADE OF ACCESS ROAD



CRUSHED SURFACING (PER WSDOT STANDARD SPECIFICATIONS) SECTION 9-03.9(3)

SIEVE SIZE	TOP COURSE PERCENT PASSING
1-1/4"	99-100
1"	80-100
3/4"	--
5/8"	50-80
1/2"	--
No. 4	25-45
No. 40	3-18
No. 200	7.5 MAX.
% FRACTURE	75 MIN
SAND EQUIVALENT	40 MIN
COLOR	DARK GREY



1/8/2017

KLICKITAT PAD -
LYLE UPPER WELL SITE
LYLE, WA

PROFILE VIEWS

No.	Date	Revisions
1	1/8/2017	INCREASED DRILL PAD SIZE
2	7/7/2016	GORGE COMMISSION REVISIONS #3
3	3/30/2016	GORGE COMMISSION REVISIONS #2
4	1/25/2016	GORGE COMMISSION REVISIONS
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7	12/7/2015	SUBMITTED FOR REVIEW

SHEET NO.

CE-4.0

SCALE: AS NOTED

JOB NO. REV.

15-146



PRE-CONSTRUCTION, CLEARING, AND DEMOLITION NOTES:

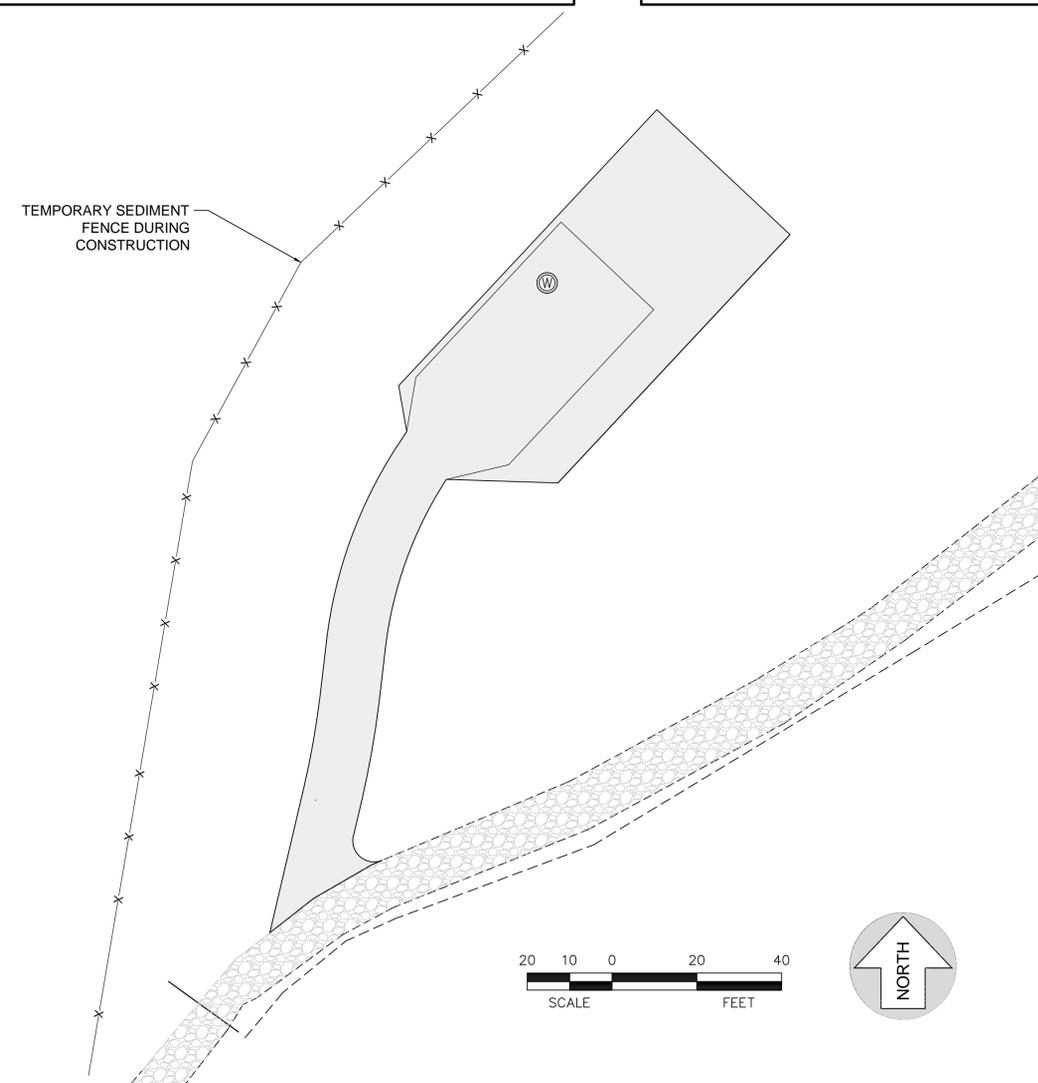
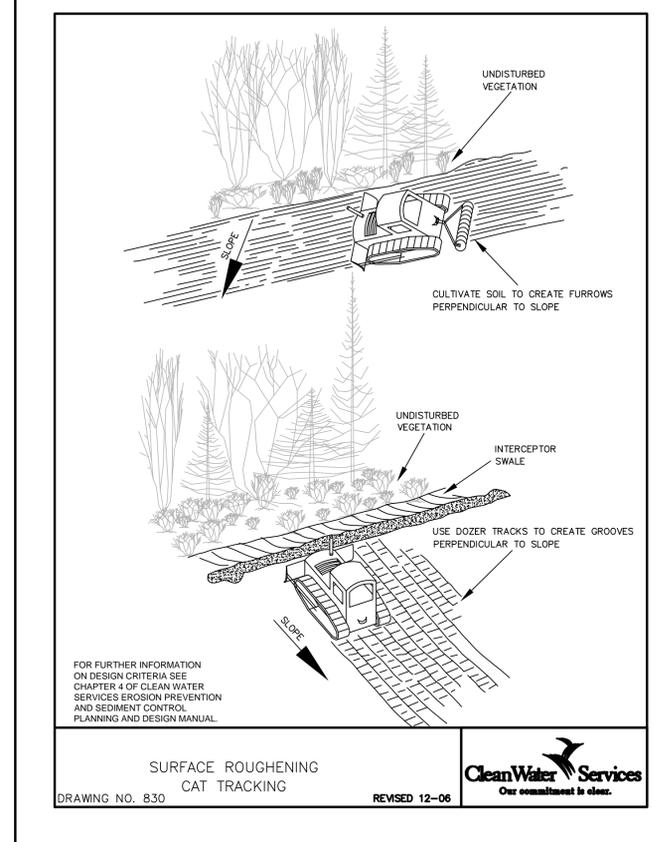
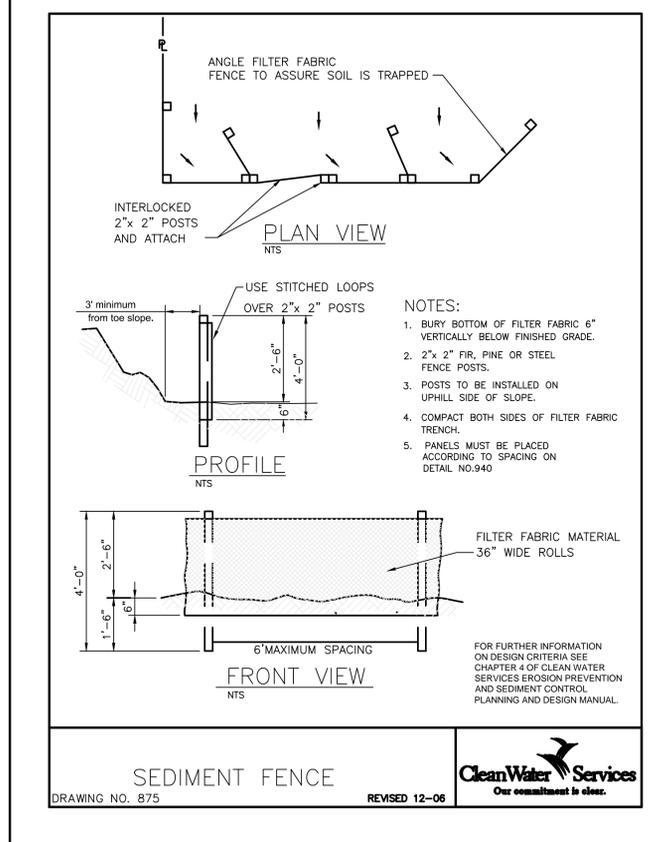
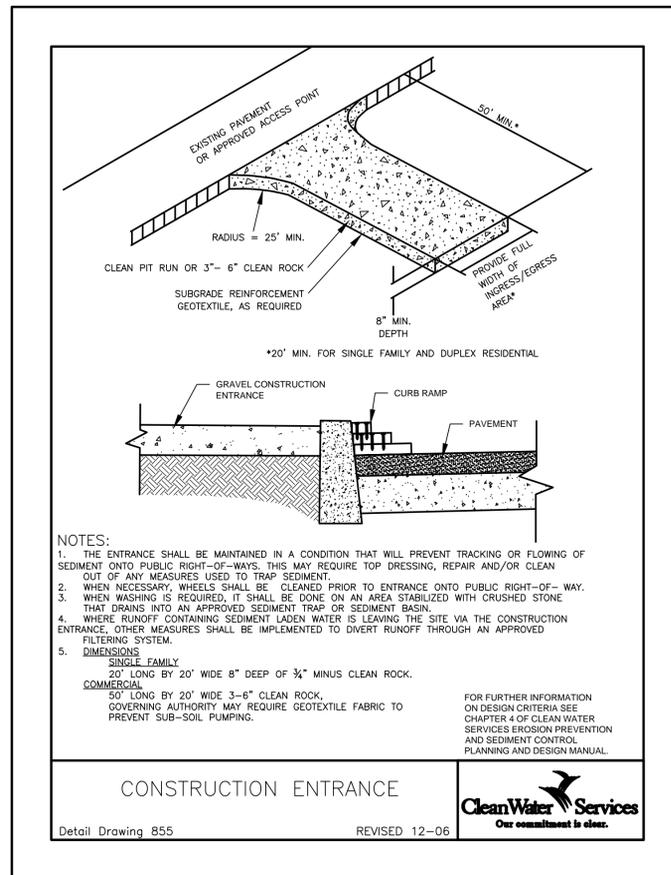
1. ALL BASE ESC MEASURES (INLET PROTECTION, PERIMETER SEDIMENT CONTROL, GRAVEL CONSTRUCTION ENTRANCES, ETC.) MUST BE IN PLACE, FUNCTIONAL, AND APPROVED IN AN INITIAL INSPECTION, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
2. SEDIMENT BARRIERS APPROVED FOR USE INCLUDE SEDIMENT FENCE, BERMS CONSTRUCTED OUT OF MULCH, CHIPPINGS, OR OTHER SUITABLE MATERIAL, STRAW WATTLES, OR OTHER APPROVED MATERIALS.
3. SENSITIVE RESOURCES INCLUDING, BUT NOT LIMITED TO, TREES, WETLANDS, AND RIPARIAN PROTECTION AREAS SHALL BE CLEARLY DELINEATED WITH ORANGE CONSTRUCTION FENCING OR CHAIN LINK FENCING IN A MANNER THAT IS CLEARLY VISIBLE TO ANYONE IN THE AREA. NO ACTIVITIES ARE PERMITTED TO OCCUR BEYOND THE CONSTRUCTION BARRIER.
4. CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES INCLUDING, BUT NOT LIMITED TO, STREET SWEEPING, AND VACUUMING, MAY BE REQUIRED TO INSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
5. RUN-ON AND RUN-OFF CONTROLS SHALL BE IN PLACE AND FUNCTIONING PRIOR TO BEGINNING SUBSTANTIAL CONSTRUCTION ACTIVITIES. RUN-ON AND RUN-OFF CONTROL MEASURES INCLUDE: CHECK DAMS, SURFACE ROUGHENING,

GRADING, STREET AND UTILITY EROSION AND SEDIMENT CONSTRUCTION NOTES:

1. SEED USED FOR TEMPORARY OR PERMANENT SEEDING SHALL BE COMPOSED OF ONE OF THE FOLLOWING MIXTURES, UNLESS OTHERWISE AUTHORIZED: SEE SEED TABLE ON SHEET CE-1.0
2. SLOPE TO RECEIVE TEMPORARY OR PERMANENT SEEDING SHALL HAVE THE SURFACE ROUGHENED BY MEANS OF TRACK-WALKING OR THE USE OF OTHER APPROVED IMPLEMENTS. SURFACE ROUGHENING IMPROVES SEED BEDDING AND REDUCES RUN-OFF VELOCITY.
3. LONG TERM SLOPE STABILIZATION MEASURES SHALL INCLUDE THE ESTABLISHMENT OF PERMANENT VEGETATIVE COVER VIA SEEDING WITH APPROVED MIX AND APPLICATION RATE.
4. TEMPORARY SLOPE STABILIZATION MEASURES SHALL INCLUDE: COVERING EXPOSED SOIL WITH PLASTIC SHEETING, STRAW MULCHING, WOOD CHIPS, OR OTHER APPROVED MEASURES.
5. STOCKPILED SOIL OR STRIPPINGS SHALL BE PLACED IN A STABLE LOCATION AND CONFIGURATION. DURING "WET WEATHER" PERIODS, STOCKPILES SHALL BE COVERED WITH PLASTIC SHEETING OR STRAW MULCH. SEDIMENT FENCE IS REQUIRED AROUND THE PERIMETER OF THE STOCKPILE. STOCKPILES MUST BE LOCATED AT LEAST 50' FROM WATERBODIES.
6. EXPOSED CUT OR FILL AREAS SHALL BE STABILIZED THROUGH THE USE OF TEMPORARY SEEDING AND MULCHING, EROSION CONTROL BLANKETS OR MATS, MID-SLOPE SEDIMENT FENCES OR WATTLES, OR OTHER APPROPRIATE MEASURES. SLOPES EXCEEDING 25% MAY REQUIRE ADDITIONAL EROSION CONTROL MEASURES.
7. AREAS SUBJECT TO WIND EROSION SHALL USE APPROPRIATE DUST CONTROL MEASURES INCLUDING THE APPLICATION OF A FINE SPRAY OF WATER, PLASTIC SHEETING, STRAW MULCHING, OR OTHER APPROVED MEASURES.
8. CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES INCLUDING, BUT NOT LIMITED TO, TIRE WASHES, STREET SWEEPING, AND VACUUMING MAY BE REQUIRED TO INSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
9. AN AREA SHALL BE PROVIDED FOR THE WASHING OUT OF CONCRETE TRUCKS IN A LOCATION THAT DOES NOT PROVIDE RUN-OFF THAT CAN ENTER THE STORM WATER SYSTEM. IF THE CONCRETE WASH-OUT AREA CAN NOT BE CONSTRUCTED GREATER THAN 50' FROM ANY DISCHARGE POINT, SECONDARY MEASURES SUCH AS BERMS OR TEMPORARY SETTLING PITS MAY BE REQUIRED. THE WASH-OUT SHALL BE LOCATED WITHIN SIX FEET OF TRUCK ACCESS AND BE CLEANED WHEN IT REACHES 50% OF THE CAPACITY.
10. SWEEPINGS FROM EXPOSED AGGREGATE CONCRETE SHALL NOT BE TRANSFERRED TO THE STORM WATER SYSTEM. SWEEPINGS SHALL BE PICKED UP AND DISPOSED IN THE TRASH.
11. USE BMPs SUCH AS SEDIMENT FENCE AND BIOBAG DIKES TO PREVENT RUN-OFF FROM REACHING DISCHARGE POINTS.

EROSION AND SEDIMENT CONTROL BMP IMPLEMENTATION:

1. ALL BASE ESC MEASURES (PERIMETER SEDIMENT CONTROL, GRAVEL CONSTRUCTION ENTRANCES, ETC.) MUST BE IN PLACE, FUNCTIONAL, AND APPROVED IN AN INITIAL INSPECTION, PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES.
2. AS SITES ARE EXCAVATED THE MATERIAL SHALL BE SPREAD AND PERMANENT SEEDING AND PLANTING SHALL OCCUR.
3. THE "STAGING, EQUIPMENT MAINTENANCE, FUELING, PORTA-POTTY, AND SOLID WASTE AREA SHALL BE CONSTRUCTED AND INPLACE PRIOR TO COMMENCEMENT OF ROAD CONSTRUCTION ACTIVITIES.
4. ALL "SEDIMENT BARRIERS (TO BE INSTALLED AFTER GRADING)" SHALL BE INSTALLED IMMEDIATELY FOLLOWING ESTABLISHMENT OF FINISHED GRADE AS SHOWN ON THESE PLANS.
5. LONG TERM SLOPE STABILIZATION MEASURES " SEEDING AND PLANTING" SHALL BE IN PLACE OVER ALL EXPOSED SOILS BY OCTOBER 1.
6. ENERGY DISSIPATORS SHALL BE CONSTRUCTION IMMEDIATELY AFTER INSTALLATION OF CULVERTS



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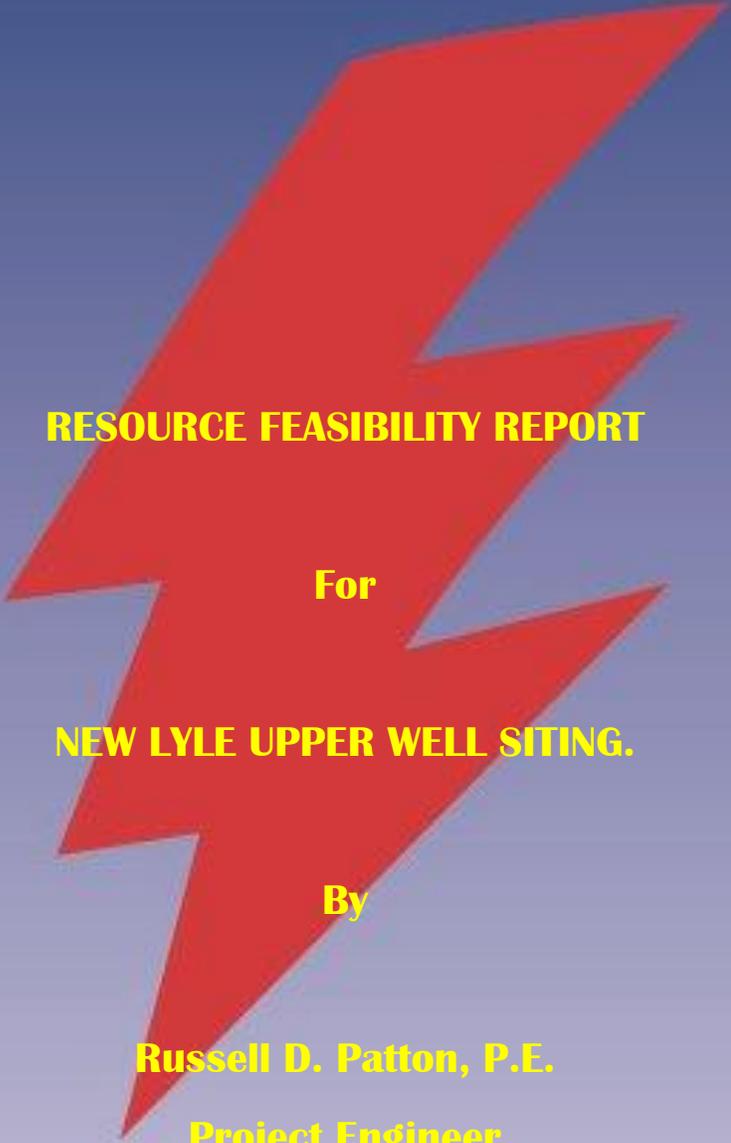
PSE

COREY L. WEIR
STATE OF WASHINGTON
5135
REGISTERED PROFESSIONAL ENGINEER
1/8/2017

KLUKIKAT PUD - LYLE UPPER WELL SITE
LYLE, WA
EROSION CONTROL PLAN

No.	Date	Revisions
1	1/8/2017	INCREASED DRILL PAD SIZE
2	7/7/2016	GORGE COMMISSION REVISIONS #3
3	3/30/2016	GORGE COMMISSION REVISIONS #2
4	1/25/2016	GORGE COMMISSION REVISIONS
5	1/4/2016	FINAL SUBMITTAL
6	12/18/2015	SUBMITTED FOR FINAL REVIEW
7	12/7/2015	SUBMITTED FOR REVIEW

SHEET NO.
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SCALE: AS NOTED
JOB NO. **15-146** REV. **7**



RESOURCE FEASIBILITY REPORT

For

NEW LYLE UPPER WELL SITING.

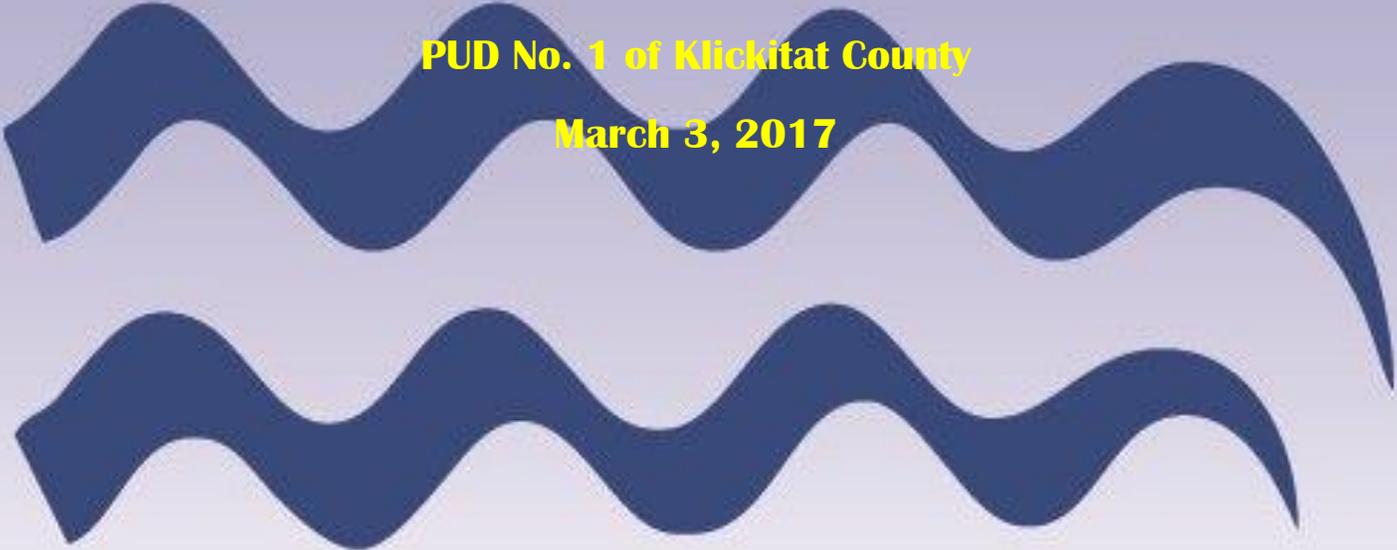
By

Russell D. Patton, P.E.

Project Engineer

PUD No. 1 of Klickitat County

March 3, 2017



RESOURCE FEASIBILITY REPORT FOR NEW LYLE UPPER WELL SITING

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PROJECT DESCRIPTION 2
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SCOPE OF CONSTRUCTION 9
OPERATION AND MAINTENANCE 11
SCENIC RESOURCE 11
NATURAL RESOURCES 14
CULTURAL RESOURCES 15
RECREATIONAL RESOURCES 15

ATTACHMENTS

- A – LYLE WATER SYSTEM RETAIL SERVICE AREA MAP**
- B – BOTANICAL AND WILDLIFE HABITAT SURVEY**
- C – CULTURAL RESOURCES SURVEY**
- D – SITE PLANS**

RESOURCE FEASIBILITY REPORT FOR NEW LYLE UPPER WELL SITING

PROJECT DESCRIPTION

1.1 Lyle Water System

The Lyle Water System (LWS) is a municipal water system that provides potable water to the community of Lyle, Washington. There are currently two wells with storage tanks that support different zones of the community of Lyle via underground water distribution mains.

1.2 Service Area

The LWS provides potable water to a Retail Service Area defined in the Public Utility District No. 1 of Klickitat County (District) water system planning documents approved by Washington State Department of Health as, “Parcels of land that are currently served by, or adjacent to, the water distribution system, as well as developable land immediately adjacent to the existing water system.” Parcels of land outside of the Urban Growth Boundary as defined by Columbia River Gorge National Scenic Act are not considered developable. The total area served by the Retail Service Area is approximately 226 acres. **See Attachment A for map of the Retail Service Area.**

The LWS currently has 292 active customers. The Washington State Department of Health has approved up to 324 connections.

As municipal water provider, the District has a duty to provide water in the Retail Service Area.

1.3 Condition of Existing Wells

The LWS is currently supplied by two active groundwater wells. The lower well provides water to the downtown area as well as residents in lower Lyle. The upper well serves customers of the community that are higher in elevation than the lower well and supply tank can adequately serve.

The lower well has been deteriorating over the last 10 years. In the summer of 2015 the District was forced to announce rationing to the LWS customers because the lower well was unable to keep up with demand. The summer of 2016 also experienced demand in excess of capacity at the lower well. Water from the upper well was used to make up the deficit and rationing was not implemented in 2016.

The upper well, which is located outside the Urban Growth Area, has never been able to produce water at the design capacity. While it currently has sufficient capacity for the upper Lyle customers, there is concern that this well will not keep up with demand in the near future, particularly if it becomes necessary to supply the entire Service Area due to the deterioration of the lower well.

RESOURCE FEASIBILITY REPORT FOR NEW LYLE UPPER WELL SITING

1.4 Projected Water Demands

The September, 2011 Lyle Water System Plan, a planning document that Washington State Department of Health requires for water systems that meet certain criteria, identified the projected water demands shown on Table 1.

Level of Service	ERUs	Estimated Demands				Facility Capacity			
		Source Production (afy)	ADD (gpd)	MDD (gpm)	PHD (gpm)	Source Capacity (gpd)	Source Capacity (gpm)	Water Right Qi (gpm)	Water Right Qa (afy)
Current	370	106	94,741	200	446	328,320	228	600	224
6 year	389	112	99,585	210	464	328,320	228	600	224
20 year	438	126	112,230	237	512	328,320	228	600	224

Table 1. Water System Capacity Summary

Table 1 shows that the source capacity for the LWS is 228 GPM. After the Water System Plan was developed, the capacity of the lower well has shown a sharp decline in capacity. In 2011 the average pumping capacity of the lower well was 75 GPM. Figure 1 shows that the flow rate has been in a state of decline as of the summer of 2016 when the pumping rate of the well dropped to about 57 GPM during the peak months as of 2015, which was less than the daily demand. During the summer of 2016, the capacity of the lower well dropped to about 45 GPM. The total combined capacity of the lower and upper wells has been reduced to 190 GPM.

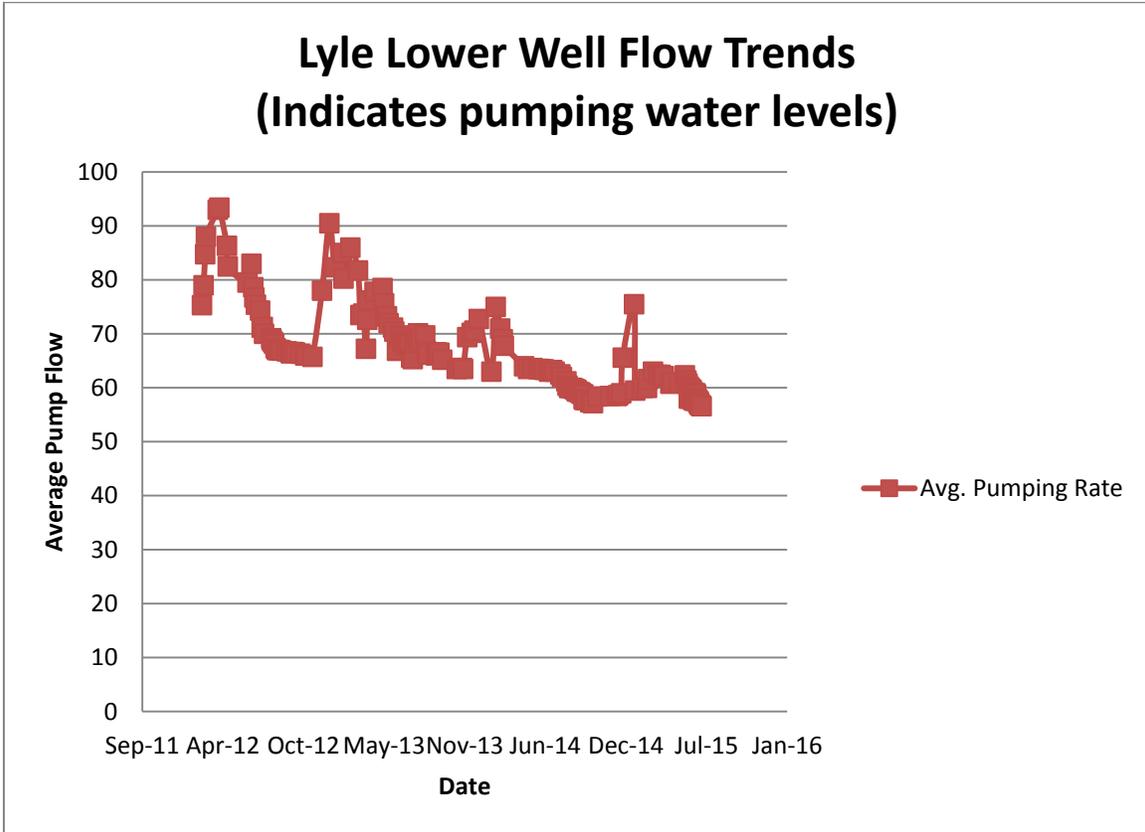


Figure 1. Lower Well Capacity Decline.

As Figure 2 shows, the system **capacity is already less than the theoretical maximum daily demand**. This means that if there is an extended heat wave, the LWS may not be able to keep up with demand, water rationing may be required, and fire protection capability may be impaired. An additional source needs to be provided as soon as possible.

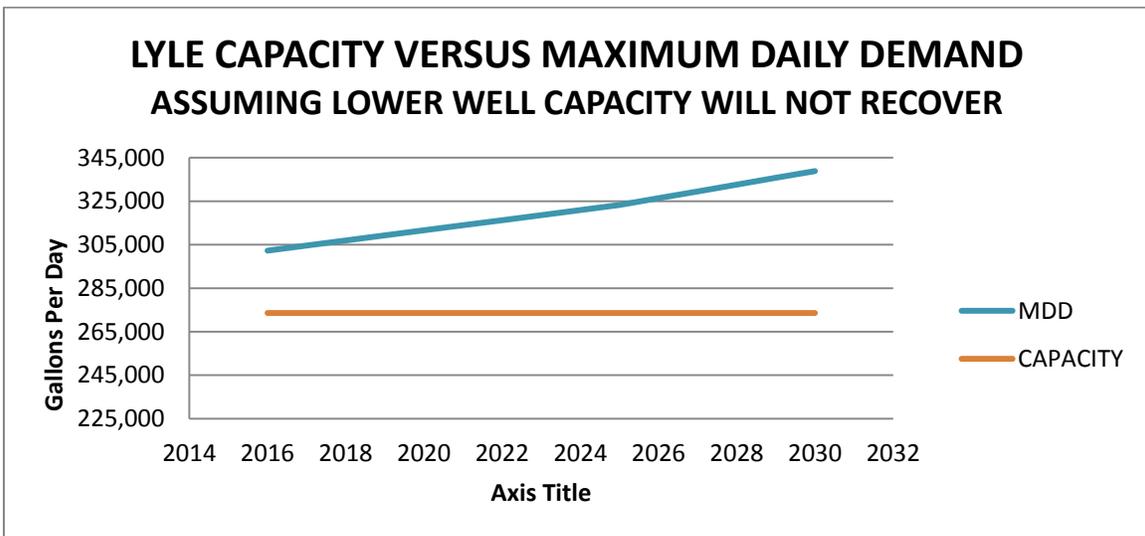


Figure 2. Capacity vs Demand.

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1.5 Project Purpose

The purpose of this project is to ensure that the water supply capacity is adequate to meet the needs of the Service Area. Since the lower well is declining and the upper well does not have sufficient capacity to meet the needs of the entire community, the proposed new well will be sized to provide the water needed to supply the entire Service Area. The two existing wells will then be used as backups in the event that the new well cannot keep up with demand or requires maintenance.

1.6 Proposed Project Site

- a. Location: The proposed New Upper Well site is located approximately 900 feet north of the existing Upper well (Parcel No. 0312340000700). This parcel is approximately 16.9 acres. The proposed well site will occupy about 1.09 acres. The approximate proposed well site coordinates are: 45°42'1.56"N, 121°16'55.66"W
- b. From the proposed new Upper Well, a trench will be excavated for a water transmission pipeline as well as electrical supply line and control wiring southerly on the existing Gene Drive roadway located on said Parcel 0312340000700 thence continuing southerly along said Gene Drive in Parcel 03123455000400, which occupies approximately 14.00 acres, to the existing Upper Well site (Parcel No. 03123444000100, approximately 0.8 acres). This water transmission pipeline will terminate at a connection point on the existing water main that supplies the reservoir from the existing upper well. The existing source flow meter, which is currently located in the pump house, will be relocated to a new approximately 4-ft. square underground vault between said connection point and the reservoir.
- c. Vegetation/Cover: The vegetation consists of primarily Oregon White Oak with a grassy understory. A single Ponderosa Pine is located near the proposed disturbed area.
- d. Total Acreage: Property: 31.7 acres.
- e. Property Owners: J and A Lands, LLC owns Parcels 0312340000700 and 03123455000400. PUD No. 1 of Klickitat County owns Parcel 03123444000100.
- f. Land Use: The land use designation for the proposed project site is General Management Area (GMA), small woodland. Adjacent properties west of the proposed project parcels are designated as GMA, residential. To the north, adjacent properties are designated GMA, open space. The adjacent properties to the east are primarily GMA, small woodland with the exception

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of a strip southeast of said project parcels that is designated as GMA, residential.

- g. Development Size: Because the proposed well site is separated from the existing storage, the development size is divided into two areas. The first area is the well site. It is approximately 1.02 acres, of which 0.25 acres are anticipated to be disturbed. The second area is the pipeline, which consists of a trench of approximately three (3) feet wide by 1025 feet long (.07 acres). This will all be placed on previously disturbed land. The total ground disturbance is 0.32 acres for this project. Of this total, 0.25 acres will be on land that is currently undisturbed.

PROJECT GOALS

1.7 Intent of Proposed Well: The intent of the proposed project is to provide a reliable supply of potable water to the community of Lyle, WA.

1.8 Project Objectives:

- a. Drill a new groundwater well with sufficient water to provide for the entire Lyle Water System Service Area.
- b. Perform the Work in a safe manner.
- c. Avoid excessive costs in order to reduce the financial impact on the Lyle community.
- d. Reduce the impact to Columbia Gorge National Scenic Area as much as practicable.

1.9 Construction Timeline: The proposed construction timeline is:

- | | |
|-----------------|---|
| 1/6/17-1/31/17 | Final project approval. |
| 1/6/17-1/31/17 | Prepare contract documents for bidding |
| 1/31/17-2/24/17 | Procure contractors for site preparation, well construction, and pipeline construction. |
| 2/27/17-5/30/17 | Drill and test the proposed well. Construct the new water pipeline and provide electrical service to the new well. Tie new pipeline into existing water tank supply line. |

ALTERNATIVES ANALYSIS

1.10 Site Selection Criteria:

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- Washington State Department of Health requires that the wellhead of public water supply systems have a sanitary radius of 100 feet minimum to protect the groundwater from potential contamination. Potential contamination sources include hazardous materials (fuels, pesticides, etc.), sanitary sewer lines, animal waste, septic systems, landfills, wastewater spray irrigation, and cemeteries. By locating the site on an unoccupied area of at least 200 feet in length in any direction, the sanitary radius can be controlled by the District.
- The site shall be in the area defined by the water right. The water right allows for the proposed well to be in the northeast quarter of the southeast quarter of Section 34, Township 03N, Range 12E. The existing Upper Well is located in the southeast quarter of the southeast quarter of Section 34, Township 03N, Range 12E.
- The site shall be NOT be located closer than 750 feet from the nearest non-District well.
- The site should be located on a level or gently sloped grade to reduce the amount of cut and fill needed in order to construct a level pad for the well drilling equipment.
- The site should be located in an elevation of the area served by the existing upper well so that the upper water storage reservoir can be filled without the need for booster pumping stations.

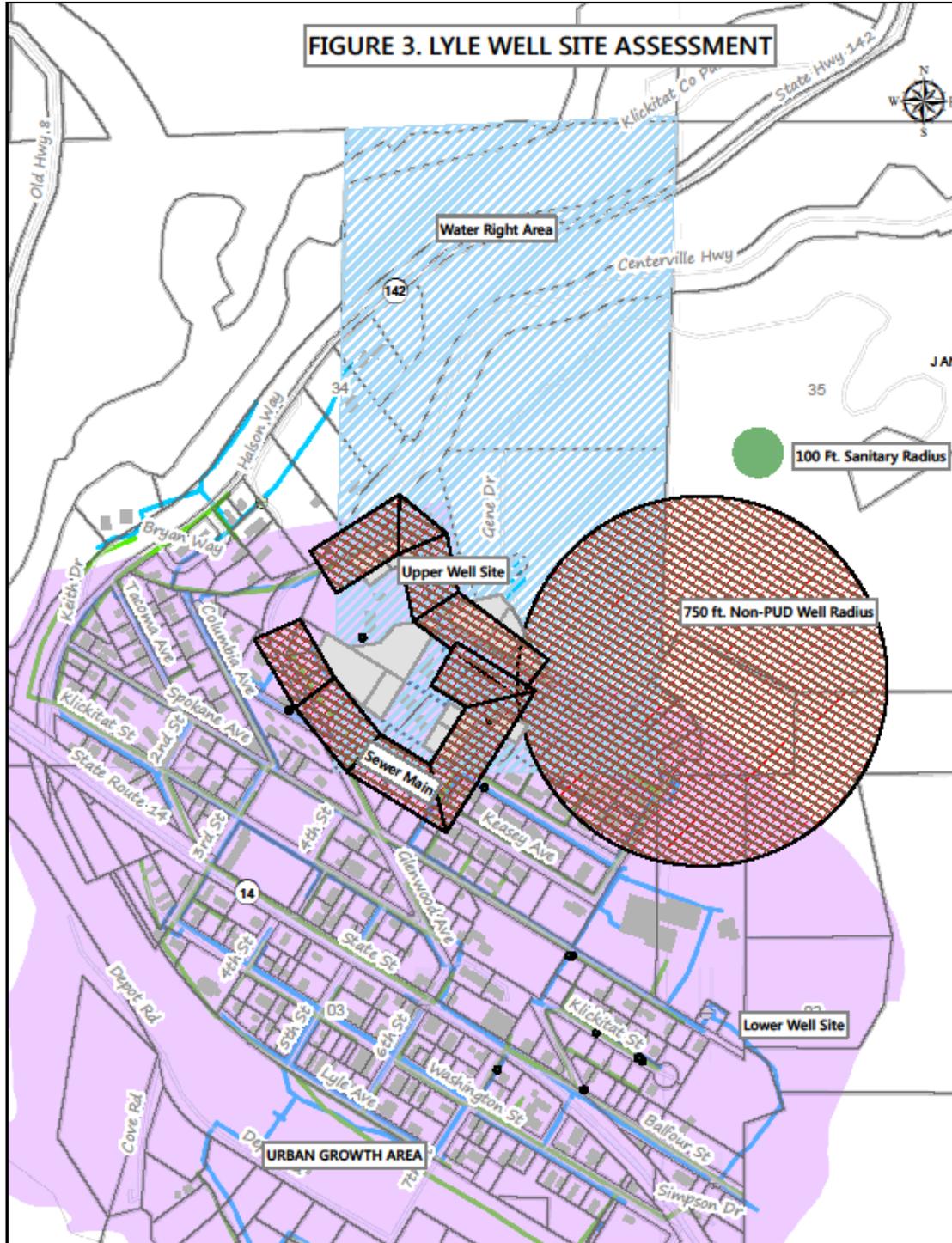
1.11 Alternatives Considered

- a. Do Nothing: This option is unacceptable because there is a strong need for an additional supply of water in the community of Lyle, WA.
- b. Locate at Existing Upper Well Site: According to a hydrogeological study that was performed while reviewing alternative locations for the proposed well, placing the new well near the existing well has three issues.
 - (i) If the new well does not achieve the production rate needed to supply the community, there is a possibility that both upper wells will need to operate simultaneously. If the wells are too close to each other they can interfere with each other, reducing the overall capacity. The hydrogeologists recommended a minimum of 500 feet of separation between wells.
 - (ii) The second issue is that the water right specifically prohibits placing the new well within 750 feet of any existing non-PUD well. This limits the location of the well to the west of the existing well. There was no place in that area that the property owner was willing to allow the well to be located.

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- (iii) Thirdly, the existing well is located outside the Urban Area so there is no real benefit as far as reducing impact on the scenic area.
- c. Locate inside Urban Growth Area: A review was made of possible sites that could be used inside the Urban Growth Area that met the site selection criteria. There are no unoccupied parcels within the Urban Growth Area that meet the Dept. of Health sanitary requirements as well as the Water Right requirement of 750 ft. minimum from a non-District well. The approved quarter section for the new well is entirely outside of the Urban Growth Area. The residential parcels were evaluated and none met the selection criteria. Figure 3 shows the information used to assess the possible drilling sites.

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a. Locate at Proposed Site: The proposed site meets all of the selection criteria. The District would have preferred the well site to be closer to the existing storage tank, but there was no place that met the selection criteria that was acceptable to the property owner. In addition, even if the property owner would accept other locations, all

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other sites that meet the selection criteria are outside the urban boundary and therefore have the same or higher impact as the proposed site.

1.12 Public Discussions: Discussions with the public concern the addition of a potable water well has been ongoing at least annually since the project was funded in October, 2012. The funding for the well is from a Public Works Trust Fund that was provided to the District as part of a general water system improvement project that included upgrading water mains in the lower portion of Lyle. No feedback has been received from the general public regarding siting of the proposed well.

1.13 Other Agency Recommendations: The District was unable to locate any public agencies in the water right area that could provide alternative well site locations.

1.14 Justification for Selected Alternative: The District was unable to find a site within the Urban Area that met the site selection criteria.

SCOPE OF CONSTRUCTION

1.15 Site Preparation and Grading: The site must be de-grubbed and graded to accommodate the access road and well drilling pad. The road and pad have been designed to minimize the area that needs to be cleared in order to keep the visual impact as low as possible. The original design required over 600 cubic yards of cut. After discussions with representatives of the Gorge Commission, the site was redesigned. This reduced the net cut to 116 cubic yards.

1.16 Access Road and Well Pad Construction: Provide an access road from Gene Drive to the well site and prepare a level pad of sufficient width to accommodate the well drilling equipment. The well drilling equipment includes the drill rig and the air compressor. There are also service vehicles that are used for transporting personnel and tools. The pad needs to be approximately 43 feet wide by 93 long at a minimum to accommodate the drill rig and support equipment. The other vehicles should be able to find suitable parking along the access road or Gene Drive. The road needs to be suitable for all season access to the well site in order to avoid disruption of water service to the community, so it will have a crushed rock base and cover, further described in Section 1.33a(iii).

1.17 Once the well is drilled and ready for use, the size of the drilling pad can be reduced significantly. The portion of the drilling pad that will not be required for operation and maintenance will be restored to original grade as much as practicable. This will reduce the pad size from 3,956 square feet to 1,759 square feet.

1.18 Equipment Expected: Bulldozer, dump trucks, road compactor, excavator, well drilling vehicle, portable air compressor, pump installation truck, personnel transport vehicles, wire pulling vehicles.

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1.19 Construction Dust Abatement: Since the project requires grading and excavation as well as driving on a dirt road, there is a strong possibility of dust generation. In order to abate the dust, the project site will be wetted down as needed to prevent dust generation.

1.20 Hazardous Materials: No hazardous materials are anticipated.

1.21 Temporary Site Access: There will be no temporary access to the site.

1.22 Drainage: The access road and well drilling pad are sloped to a collection ditch where it will percolate into the surrounding soil.

1.23 Electrical Power Supply: The existing electrical supply is at the Upper Well site. The supply line will be underground. A 4" conduit will be placed in the same trench as the water line from the existing supply to the new well power transformer. The transformer will be a pad-mounted transformer with dimensions of approximately 4' x 6' x 4'-9" tall. The proposed color is Munsell Green to blend in with the surrounding vegetation.

1.24 Construction Operations: The contractor will be allowed to work Monday through Friday between the hours of 7 AM and 7 PM.

1.25 Material Movement: All materials will be moved via Gene Drive.

1.26 Labor Movement: All labor will be moved via Gene Drive.

1.27 Well Drilling: The drilling contractor typically prefers a relatively level pad for drilling of up to 100 feet square. The drill rig is located on one side of the well, farthest from the access road, and space is provided directly in front of the drill rig on the access road side of the well for support equipment, such as the water truck – a vehicle that provides drilling water as well as the drilling shafts, and truck/trailer combo that supplies the casing pipe to the drill rig. Other equipment includes compressors, tool trailer, and a portable toilet. Because of concerns with the visual impact a large pad requires, the drilling contractor will need to make accommodations. A study was made of the necessary equipment for the drilling operation and the pad size was designed to provide space for the needed equipment in the least practical amount of space.

Also, a "cuttings pit" needs to be provided for the drilling operation. This pit is an area for the materials – water and rock chips – to be discharged into. This pit, located on the southeast side of the drilling pad, is temporary and will be restored to original grade after the drilling is complete.

The drilling is anticipated to take 30 days with scheduled delays for finalizing the well design based on the actual conditions of the borehole.

1.28 Pump Control System: The pump control system will be placed in a weather proof enclosure measuring 2'-1" x 6'-0" x 7'-2" tall. This enclosure will be painted Munsell Green in

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order to blend in with the surroundings. A sample of coating has been provided to the Gorge Commission Planner.

1.29 Pipeline Construction: The pipeline will be 6" PVC, underground construction. The trench will be shared with the electrical and control conduits. The trench will be placed on Gene Drive and on the proposed access road and well drilling pad in order to avoid disturbing addition grounds.

1.30 Modifications at Existing Upper Well/Tank Site

- a. Connect to Existing Reservoir Supply water main. The water transmission pipeline will be connected to the existing water main between the well and the reservoir.
- b. Relocate Flowmeter. The existing flowmeter will be relocated in an underground vault between the connection of the proposed new well and the reservoir on the existing water supply main. This will allow the flow to be monitored from either well.
- c. Relocate Disinfection Injection Point. The injection point for the disinfection system will be relocated downstream of and in the same vault as the relocated flowmeter. This will insure that the disinfection system will work for each well.
- d. Electrical System Modifications. Since the flowmeter is being relocated, the electrical connection for it will also be relocated. In addition, a SCADA and alarm system will be installed.

OPERATION AND MAINTENANCE

1.31 Operation: Since the disinfection system and flow meter will remain at the existing site, it is expected that the need to access the proposed new well site will not be necessary for normal operations so site access is expected to be infrequent.

1.32 Maintenance: The construction of the new well will enable an opportunity to provide Supervisory Control and Data Acquisition to both the existing well and the new well. This will enable the District personnel to troubleshoot most problems remotely. This will reduce the frequency of visits to both sites. The existing well will require regular visits, though, to replenish the disinfectant.

SCENIC RESOURCE

1.33 Description: The scenic resources in the vicinity of the proposed well site include Rowena, Old Hwy 8, the Columbia River, Historic Columbia River Highway, Interstate 84, and Washington State Route 14. As shown in Figures 4 and 5, a portion of the river can be

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seen from the proposed development site. The proposed site is on a slope that tends toward the Klickitat River. It is on mid-slope so it there should not be any exposed silhouettes from most, if not all, of the key viewing areas.



Figure 4. Westerly View from Proposed Well Site.



Figure 5. Panoramic View from Proposed Well Site.

1.34 Provide Visual Subordination

- a. Minimize footprint of construction
 - (i) Original Well Site Design: A public water well requires space for the wellhead, with maintenance access, metering and controls, and disinfection. Additionally an electrical transformer is required to supply electricity to the well pump and controls at the proper voltage. In order to meet these needs, the District typically requires a building that is approximately 200 square feet as well as an approximately five-foot square by 4 feet tall “doghouse” to cover the wellhead.
 - (ii) Revised Well Site Design: Due to the requirements of the NSA, discussions with Gorge Commission planners, and the principal of minimizing visual impact, the District considered alternatives to the traditional wellhead design. Since the proposed well will connect to

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the system near the existing Upper well, it was determined that the metering and disinfection could be shared between the two wells. This means that the proposed wellhead could be a “pitless” wellhead, therefore not requiring any shelter over it. Also, the controls can be located inside a weatherproof enclosure rather than inside a building. This reduces the structural footprint from about 225 square feet to less than 20 square feet (excluding transformer, which is needed in both cases).

- (iii) Pipeline Construction in Existing Roadway: The pipeline will share the trench with the power and control conduits. The new pipeline will be placed approximately in the middle of the roadway in order to avoid disturbing any additional land. The roadway will be restored to the same or better condition than it currently is. The finish course will be dark grey 1-1/4” minus crushed surfacing per WSDOT Standard Specifications Section 9-03.9(3).
- b. Minimize tree removal: To minimize tree removal, the well drilling pad has been reduced to the smallest area that it can be to allow the well drilling to take place. The access road, which initially was a straight line from Gene Drive to the wellhead, has been redesigned with some curves in order to avoid trees.
- c. Replace trees removed: Any trees that need to be removed will be replaced with trees of the same species. The saplings will be at least 6 feet tall. These saplings will be primarily concentrated between the disturbed area and the Columbia Gorge key viewing areas in order to help to keep the visual impact to a minimum.

1.35 Utilize Existing Upper Well Site Resources where Practicable: Rather than setting up the new well site as an independently operating water supply, the metering and disinfection will be shared with the existing Upper Well site. This will require the addition of a 4ft square underground vault at the existing Upper Well site to protect the metering and disinfection system from the elements. This will reduce the visual impact as compared to a 10 ft. x 20 ft. x 10 ft. high control and disinfection building at the new well site.

1.36 Site Topography: The proposed well site is on an average of approximately 14 percent slope. The terrain becomes steeper between the proposed wellhead location and the Centerville Highway.

1.37 Landscaping

a. Existing: The existing landscaping is small woodland with primarily Oregon White Oak (*Quercus garryana*) trees. A mature Ponderosa Pine (*Pinus Ponderosa*) is on the proposed site, along with native grassy undercover.

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b. Proposed: The proposed landscape is to maintain the existing landscape as much as possible. Removed trees will be replaced with Oregon White Oak. Disturbed areas that will be restored to natural habitat will have native grasses planted, with emphasis on preventing overcrowding of the Oak saplings.

NATURAL RESOURCES

1.38 Natural Resource Surveys Conducted: Wildlife habitat and Botanical study. , which was completed January 12, 2016, by AKS Engineering & Forestry (Habitat Study). No sensitive wildlife species, sites or plants were documented within the project site.

1.39 Existing Conditions: The site is Oregon White Oak woodland.

1.40 Parcel History: The currently named Gene Drive, which is a gravel/dirt access road that is maintained up to the Lyle Substation, was once a portion of an old county road called Mud Springs Road. There is evidence of a homestead to the east of the proposed well site, near the electrical transmission line between the proposed well site and the Lyle Substation. The site is considered undeveloped.

1.41 Environmental Features

- a. Wildlife Habitat: The parcel is primarily Oregon Oak woodland with some Ponderosa Pine and open meadow. The area of proposed development is woodland.
- b. Wetlands: none.
- c. Ponds: none.
- d. Lakes: none.
- e. Riparian Areas: none.
- f. Wildlife: The wildlife survey observed a juvenile bald eagle that flew overhead as well as a downy woodpecker on a tree outside of the disturbance area.
- g. Plant Areas: Oak woodland with occasional pines. Endemic species encountered include yampah (*Perideridia gairdneri*), Poet's shooting stars (*Dodecatheon poeticum*), Mariposa Lily (*Calochortus macrocarpus*), and Shelton's violet (*Viola sheltonii*). White meconella (*Meconella oregana*) was also found on these parcels.
- h. Priority Habitats: none.

1.42 Proposed Mitigation Plan

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Habitat Enhancement: As recommend in Habitat Study, a new Oregon White Oak sapling will be planted for every Oregon White Oak that needs to be removed. In addition, 12 Ponderosa Pine and 300 native shrubs will be planted within the project site. The tree plantings will complement the remaining oak trees to provide a continuous overlapping canopy will improve wildlife habitat for Western gray squirrel. The site will be fenced off to protect from grazing and the plant/tree growth will be monitored for at least 2 years to insure survivability. These enhancements are expected to provide an overall net benefit to wildlife habitat. The Habitat Study is included in this report as Attachment B.

CULTURAL RESOURCES

1.43 Cultural Resource Survey: a Cultural Resources Survey was completed on March 1, 2017 by Lower Columbia Research & Archaeology LLC (Cultural Study). A pedestrian survey and 12 “shovel tests” were performed throughout the project site. Nothing of cultural significance was found near the location of the proposed well site. The Cultural Study recommends monitoring of the well pad site during ground disturbance operations. The Cultural Study is included in this report as Attachment C.

RECREATIONAL RESOURCES

1.44 Effect on Existing Recreational Sites: The proposed site is high in elevation, with a slope to the north. The footprint of the finished well site will be kept to a minimum. The equipment color scheme will consist of dark natural colors to allow the equipment to blend in with the surrounding environment. The anticipated effect on existing recreational sites is negligible.

1.45 Effect on Existing Trails: This site is not visible to existing trails so there will be no impact on them.

1.46 Effect on Visibility: Every effort will be made to insure that the effect on visibility is negligible.

1.47 Key Viewing Areas:

The following key viewing areas are not visible from the site and therefore will not be affected by the proposed project:

Crown Point, Multnomah Falls, Beacon Rock, Panorama Point Park, Cape Horn, Dog Mountain Trail, Cook-Underwood Road, Portland Women’s Forum, Bridal Veil State Park, Larch Mountain, Rooster Rock State Park, Bonneville Dam Visitor Centers, Washington State Route 141, Oregon Highway 35, Sandy River, Pacific Crest Trail.

The following key viewing areas are located in the vicinity of the proposed development site:

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Washington State Route 14: A strip of SR 14 is visible near the Klickitat River. Elevation difference, topography, color selection, and tree cover are expected to make the site visually subordinate to the surrounding area.

Highway I-84: The site is visible from Interstate Highway 84 and from Memaloose Rest Area. Elevation difference, topography, color selection, distance, and tree cover are expected to make the site visually subordinate to the surrounding area.

Historic Columbia River Highway: A portion of the section of the Historic Columbia River Highway between Mosier and The Dalles is in the vicinity of the site viewing area. Distance, topography, color selection, and tree cover are expected to make the site visually subordinate to the surrounding area.

Columbia River: The Columbia River is also visible from the proposed site. Elevation difference, topography, color selection, and tree cover are expected to make the site visually subordinate to the surrounding area.

Rowena Plateau and Nature Conservancy Viewpoint: The Rowena Plateau is visible from the proposed site. Topography, color selection, and tree cover are expected to make the site visually subordinate to the surrounding area.

Washington State Route 142 is visible to the northeast of the proposed site. Topography, color selection, and tree cover are expected to make the site visually subordinate to the surrounding area.

Other Recreational Sites: Klickitat River: The Klickitat River is visible from the proposed site. Like the Columbia River, elevation difference, topography, color selection, and tree cover are expected to make the site visually subordinate to the surrounding area.